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A Path Model of Stress among Farmers under Globalization in Thailand

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Abstract:

Background: Psychosocial stress is one of the health hazards in the workplace. This is especially true for stress among farmers in Thailand who experience psychosocial stress from state policies; the labor market; the job environment under globalization.
Objective: To study about path model that explains the causal relationship of stress among farmers in Thailand resulting from globalization in term of occupational stress.
Method: Primary data were collected from 600 Thai farmers at the central of Thailand by using simple random sampling. The relationship of stress among Thai farmers under globalization was verified using Path Analysis Model.
Results: Transnational practices, transnational economics, labor market, state social protection, state regulation, job environment (e.g. technology) had a direct effect on stress. Transnational corporations had an indirect effect on stress.
Conclusion: The strength of the path analysis between globalization and stress was investigated and indirect effects were found between variables examined and stress. Furthermore, the study will reveal the relevant factors that explain the causes of job stress under globalization, and provide a solution to the psychosocial health problem and to help reduce the cost of health care in Thailand.
Keywords: Farmers, Globalization, Path Model, Psychosocial stress, Thailand.

Introduction

Psychosocial stress is one of the psychosocial health hazards in the workplace [1-4]. Stress is a result of psychosocial health hazards that occur because of state policies; the labor market; advanced technologies; the job environment; labor and working conditions; and individual personality [2].

Furthermore, there are a causal relationship between psychosocial stress among workers and the increasingly rapid changes in work practices due to globalization [5]. Globalization is a worldwide dynamic structural phenomenon that is driven by socio-economic, cultural, political, technological and biological factors [5]. Globalization in this research focuses on transnational corporations, transnational practices and transnational economics [6, 7].

The health effects from globalization on stress are mediated by the growth and distribution of income, economic instability, and the presence or absence of physical and mental health, especially, stress [8]. Stress caused by changes in the workplace, stressors at work [9], the physical environment [10], stress within the family, the economic situation (e.g. low income among workers, monetary debts, homelessness, and loss of property) and social conditions (e.g. conflict with workers and in neighborhoods)[11].

Previous studies on the job among teachers, nurses, workers, and medical doctors for example are concerned with the formal sector of the economy and, furthermore, have not linked stress to globalization [12, 13]. Thai farmers, who are an important group in Thailand, have not received enough attention concerning their health problems, especially, stress from work. This is especially true for stress among farmers in Thailand who may experience psychosocial stress from state policies; the labor market; the job environment under globalization in the present era [14-16].

In 2004, the non-formal sector accounted for 46% of GDP which was equivalent to 62% of National Income. Furthermore, the non-formal sector accounted for 65% of the employed in Thailand from the National Economic and Social Development Board (NESDB). Then, the Ministry of Labor in Thailand began to map social protection strategies for six groups of non-formal labor in2007. One of these groups was agricultural worker [17]. The next year, agricultural workers accounted for the highest percentage at 57.5 %. They were divided into three categories of workers in the agricultural sector: independent workers; contract farmers; and casual workers.

From a previous study about FTA policy in Thailand showed that more than 30% of agricultural workers were in debt and increased significantly more when compared to the level of overall household debt [18, 19]. Besides, a Thai study found that Thai farmers who had gone into debt to invest in agriculture had high levels of stress and high rates of suicide resulting from the impact of the global economic recession [14].

In 2008 to 2009 a survey at Ministry of Public Health in Thailand, covering about 52,000 participants reported that mental health problems existed in the country. The results showed that one-fifth of the respondents had the highest levels of stress. This was especially true for the Central Region of Thailand including Bangkok [15]. In general, Thai farmers experience disadvantages in their lives from the indebtedness, a decrease in their land holdings, from encroachment of international capitalist class, and state policies [16, 20, 21]. The latter, are linked to the rules of trade (e.g. WTO, IMF and FTA). Of these agreements, FTA policy appeared to

have the greatest impact on Thai society and stress in the workplace. The IMF also plays an important role in the process of economic globalization in the present period.

The models of occupational stress are divided into: (i) Person-Environment Fit model [22], Effort Reward model [23-25], and Job Demand Control model [26-42]. These psychosocial models lack a social dimension at the theoretical macro level so as to explain associated with stress. They only explain related to stress at the theoretical micro level. The latter, are unable to clearly explain stress among Thai farmers, and other workers as well, in this global era. Consequently, the psychosocial model adapted from Navarro V, Berman DM [44] based on both psychology and social dimension were used in this study because it can explain the relationship of both the theoretically macro and micro levels and their associate with stress [2, 43-45].

Hypothesis of this study is that there is a direct relationship between globalization (e.g. transnational corporations, transnational economies, and transnational practices) and stress; between the Thai labor market and stress; between job environments (e.g. land and technology) and stress; and between Thai state policies (e.g. state regulations and state social protection) and stress.

The aim of this article is to test a path model that explains the causal relationship of stress among farmers in Thailand resulting from globalization in terms of occupational stress.
This research will assist in guiding future research by encourages health policy analysis in Thailand. In addition, it will reveal the relevant factors that explain the causes of stress in the workplace under global era, and provide a solution to the mental health problems and so help reduce the Thai health expenditures.

Method

This research was conducted among 600 farmers who lived in Central Thailand and are in a transition phase from a pre-existing system of farm production to a new system under globalization. This sampling was simple random sampling. The latter, means that all members of the population have an equal chance of being picked.

At the sub-district, district, and provincial levels variables were measured by age; marital status; number of children; level and type of education; ownership of a house; type of agriculture; income; and physical and mental health. The globalization variables were measured by transnational corporations as the multinational organization; transnational practices as the culture-ideology of consumption in the world capitalist system through mass media; and transnational economics as the investment about agriculture in government and Thai farmers through economic rules. Job environment variables measured from land size and advance technology. The variables that were measured for the Thai labor market as price and profit of agricultural products resulting from fierce competitive markets in Thailand, and state policies variables that were: measured related to state regulation, and state social protection. The stress measurement used "The Self Analyzed and Self Evaluated Stress Test" at Department of Mental Health, Ministry of Public Health in Thailand that interpreted at five stress levels. There were as follows; 0-5 points = less stress than a normal level; 6-17 points = stressed at a normal level; 18-25 points = moderate level of stress; 26 – 29 points = high level of stress; and 30 points and above = severe stress. [46].

The main measure of predictor variables in the questionnaire used in this study was interval scale but for general data used nominal, ordinal and interval scales. Verification of the accuracy of the data used content and construct validity by five professors at Mahidol University and Kasertsart University in Thailand. Reliability of questionnaires was identified by test-retest reliability. The

questionnaires were verified to be reliable at no less than 0.8 by using SPSS/PC+ for windows to find Cronbach's Alpha Coefficient. With a coefficient of almost 1.0 it showed that the questionnaires were of very high reliability. The reliability of the predictor variables and stress were 0.94 and 0.91 respectively.

The data collected among farmers in Thailand were analyzed by frequency, percentages, minimum and maximum scores, skewness, kurtosis, mean, standard deviation and Pearson correlations to measure predictor variables on stress among farmers in Thailand.

The relationships of stress among farmers under globalization in Thailand were verified by Path model using version 5.2 of the M Plus Program [47] to find these relationships. The Path analysis was used to estimate r square and measure the fit of the model. The condition for test of Path diagram is as follows: chi square and degrees of freedom $\neq$ 0, P-value>0.05, CFI>0.95, RMSEA < 0.08 and SRMR <0.05. Individual parameters test considered total relationship, direct relationship, and indirect relationship of independent variables on dependent variables and path model.

Results

For 600 participants farmers in Thailand, the most participants live at Salaya sub district (36.8%), married (80.8%), have three and above children (25.3%). They finished pre high school (37.3%) the most. The ownership of a house has rented house, house owner, and somebody else's house (33.8, 33.2, and 33%), respectively. They did not have landowner. In 2000, majority of them had land holding but their sold land to capitalist class to repay debt (62.2%). After they sold land and/or rented land, their stress level are more (60.3%). They have income about 50,000-100,000 ,and less than 50,000 baht/ year cover in 2000 and 2010 (53.2 and 55.3%), respectively. 60% of them do not have enough income to high expenditures with their family in 2010.

The mean and standard deviation for the age of farmers in Thailand is 51.45 ± 8.35. The minimum and maximum age is 32 and 77 years old, respectively. Age variable appears the positive skewness and negative kurtosis (0.32 and -0.35), respectively. The mean and standard deviation for the land size for work in 2000 and 2010 is 17.64 ± 13.44 and 10.32 ±10.86 that the minimum and maximum land size for work is zero. Both number of land in 2000 and 2010 are positive skewness and kurtosis (0.85 and 0.37 in 2000, and 1.76 and 3.76 in 2010). The mean and standard deviation for the stress score variable is 28.12 ± 16.29. Four and fifty-eight points are the minimum and maximum of stress score among Thai farmers, respectively.

The average land size under job environment is -7.323 ± 8.257 because number of land holding is decreased. The results of Pearson correlation analysis confirm the significance of all these postulated relationships at the p< 0.01 level of two-tiled t test. The most significant relationship is between Thai labor market variable, and transnational practices variable under global capitalist system (r = 0.960, p < 0.01). The least significant relationship is between scientific management; advance technologies variable under job environment, and Thai state regulation variable under state and state policies (r = 0.121, p < 0.01).

This article estimated a maximum likelihood path analysis using M-plus Version 5.2 software by Muthen &Muthen to find path model the relationship of global capitalist system, Thai labor market, Thai state and state policies, job environment, and stress. The final path diagram focused on goodness of fit index among farmers in Thailand under globalization. It indicated a very close fit model (CFI > .95, RMSEA and SRMR < .08 represent an excellent fit). Besides, the total variables described stress change by 90.9% (R square = 0.9.0, p< 0.05).
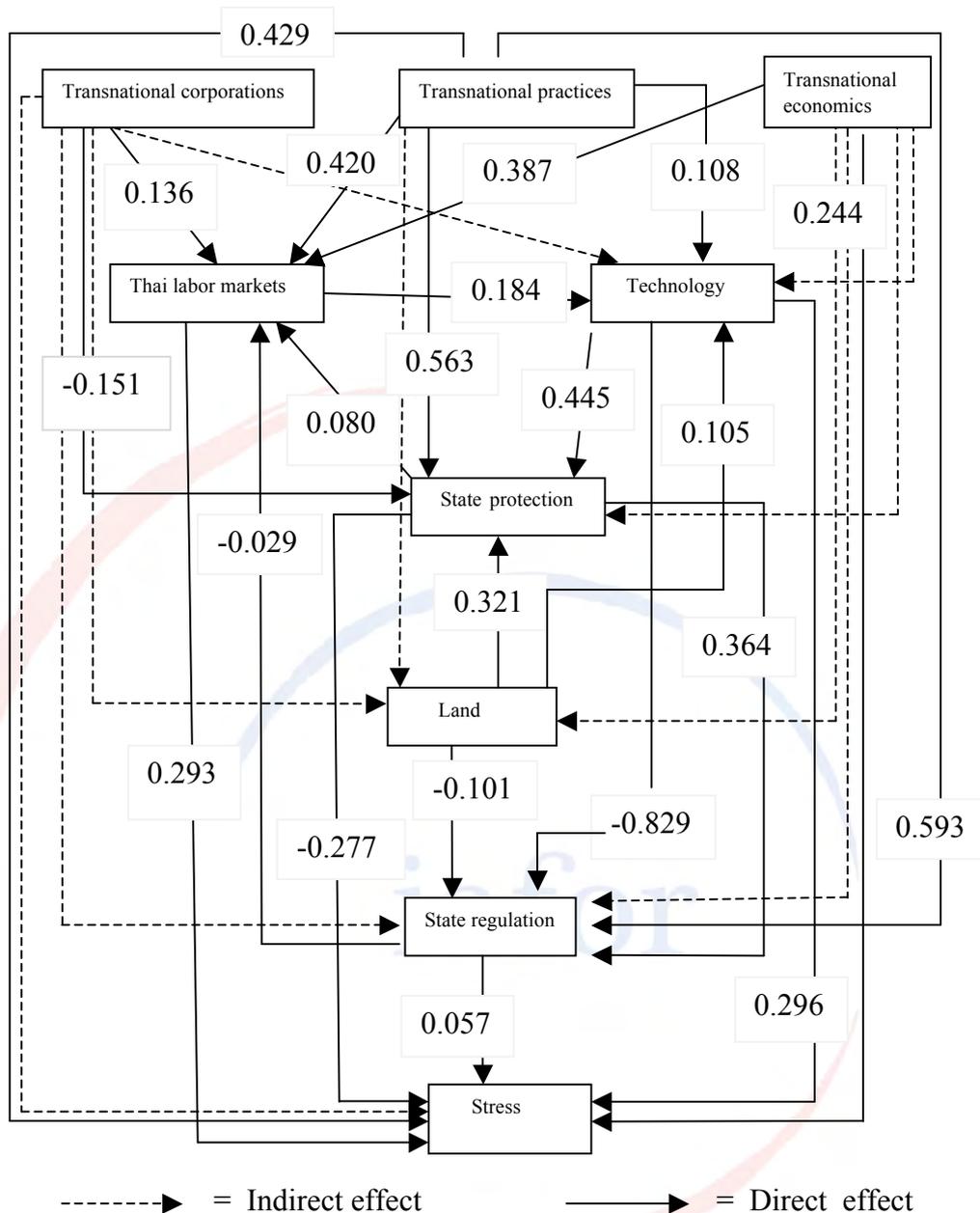
Figure 1 Path model of stress among farmers under globalization in Thailand

(N= 600)

According to figure 1, the result displayed that globalization (both transnational practices, and transnational economics, except, transnational corporations), Thai labor market, Thai state and state polices (both state regulation and state protection), and job environment variables (both natural resource and scientific management) had a direct effect on stress with standardized regression weight of 0.429, 0.244, 0.293, 0.057, -0.277 and 0.296, respectively. The most of these variables had a positive relationship with stress, except, state protection in Thailand.

Transnational practices, state protection, natural resource and scientific management had a direct relationship on state regulation with standardized regression weight of 0.593, 0.364, -0.101 and -0.829, accordingly. As standardized regression weight of -0.151 (transnational corporation), 0.563 (transnational practice), and 0.445 (scientific management) were showed a direct

relationship on state protection in Thailand. The most of these variables had a positive effect with state protection except transnational corporation.

Globalization (transnational corporation, transnational practice, and transnational economic), Thai state and state policies (state regulation and state protection) had standardized direct effects estimate on labor market in Thailand. They were as follows: 0.136, 0.420, 0.387, -0.029, and 0.080, respectively. State regulation was the only independent variable that had a negative relationship with standardized direct effect estimate -0.029.

State protection had a positive direct relationship on natural resource with standardized regression weight of 0.321.

Transnational practices, Thai labor market, and natural resource had a positive direct effect on scientific management with standardized regression weight of 0.108, 0.184, and 0.105, respectively (Figure 1).

Discussion and Conclusion

The changes to the lives of farmers under globalization in Thailand lead to stress results from a complex mechanism. The latter, are both direct and indirect and are shown in a path model of stress (Figure 1).

This article displayed that the health of 75 percent of the respondents is poor and that the most prevalent mental health is stress. This finding is not so different from those related to farmers in general during this period of globalization in the early part of the twenty-first century [15, 16]. The changes brought about in works by globalization create psychosocial conditions of stress that represents in people as physical-psycho symptoms. According to questionnaire, it indicated that the persistence of stress among Thai farmers results from at least uncertainties in production and markets due to factors such as their commodity prices and government policies. The stress of these farmers is also attributed to their low levels of education, limited access to information, limited access to factors of production that includes land ownership and access to water and accumulated debt. These results are consistent with those from previous studies [14, 15].

The result of testing the hypothesis found that the model supported the existence of direct relationships between stress and globalization: the variables concerned are transnational corporation variables (e.g. workers) and transnational economic variables (e.g. the financial system) but did not include transnational practice variables (e.g. mass media). Indirect effects between the Thai labor market and stress; between the job environment (e.g. land, and technology), and stress; and between Thai state policy (e.g. state regulation, and social protection) and stress were investigated using the path model in M plus program. The finding of a direct effect between stress and globalization is consistent with findings for several studies [16, 21]. However, the indirect effects on stress is weakened by the influence of transnational practices (e.g. mass media), labor market (e.g. price and profit of agricultural goods), job environments (e.g. land, and technology), and Thai state policy (e.g. state regulation ,and state social protection) to stress displays a new finding related to the term of occupational stress (Figure 1). In addition, the absence of a direct effect between low state social protection and high levels of stress is surprising given finding reported for several studies that supported a strong link between the two [2, 15, 16, 33, 34, 48]. This needs to be studied further.

The limitations of this research were as follows: (i) "Self-Analyzed and Self- Evaluated Stress" Test were used to measure stress symptoms only. It was a measure with high sensitivity, but

lower specificity in terms of occupational stress under globalization [46]. Therefore, results maybe appear both high false- positive and negative. The several stress measurements in Thailand do not have stress measurements linked to the influence of globalization in this period. (ii) The limitation of Time and budget could also have an effect on how representative the results are for the population at large who reporting stress under globalization is.

The major strength of this research focuses on a psychosocial model of how globalization is linked to stress among farmers under globalization in Thailand. It deals with globalization at a macro level and stress at a micro level. This research explores globalization and stress to clearly explain a causal relationship in terms of occupation stress in Thailand.

A suggestion for future research is to add some individual factors (e.g. age, education, income etc.) to the path model associated with stress under globalization. In addition, the finding suggest that the path model of stress in this article highlights the importance for the development of workers' mental health policies, and decision makers to consider all facets of farmers under globalization in Thailand.

In conclusion, the result from this study displays a new and interesting finding in the literature under occupational stress. In addition, the absence of a direct effect between low state social protection and high stress is surprising given the findings for several studies supporting a strong relationship between the two constructs. It needs to be mediated in the future.

Acknowledgments

References

1. Vischer JC. The effects of the physical environment on job performance: towards a theoretical model of workplace stress. Stress & Health. 2007; 23: 175-84.

2. Muntaner C, Chung H, Solar O, Santana V, Castedo A, Benach J; EMCONET Network.
A macro-level model of employment relations and health inequalities. Int J Health Serv. 2010;40(2):215-21.

3. Barry L, Wegman D. Occupational Health: Recognizing and preventing work-related disease. Boston: Little Brown; 1995.

4. Hansen AM, Kaergaard A, Andersen JH, Netterstrom B. Associations between repetitive work and endocrinological indicators of stress. Work & Stress. 2003; 17: 264-76.

5. Robinson WI. A Theory of Global Capitalism: production, class, and state in a transnational world. United States of America: The Johns Hopkins University Press; 2004.

6. Sklair L. Globalization: Capitalism and Its Alternatives. Oxford: Oxford University Press; 2002.

7. Rosenau JN. Distant Proximities: Dynamics beyond Globalization. Princeton, M.J.: Princeton University Press; 2003.

8.Labonte R, Schrecker T, Packer C, Runnes V. Globalization and Health pathways, evidence and policy. New York : Taylor & Francis; 2009.

9. Ragins BR, Singh R, Cornwell JM. Making the invisible visible: Fear and disclosure of sexual orientation at work. J Appl Psychol. 2007; 92: 1103-18.

10. Wilkinson R, Marmot M. Social determinants of health: the solid facts. 2nd ed. Denmark: WHO Regional Office for Europe; 2003.

11. Department of Mental health in Ministry of Public health. The 2003 National Survey on stress of Thai people. Bangkok: Beyoun Publishing co., Inc; 2003.

12. Lau VM, Callaghan P, Twinn SF, Goodfellow B. The nursing gaze: power relations in a study of nurse-resident interactions in learning disability. J Psychiatr Ment Health. 2007; 14: 346-55.

13. Leung SK, Spurgeon PC, Cheung HK. Job satisfaction and Stress among Ward-based and community-based Psychiatric nurses. Hong Kong J Psychiatry. 2007; 17: 45-54.

14. Charttananon T, Mahutnirangol S, Pompaisan V. Stress, coping mechanism with stress and suicide of Thai people in economic crisis. Bangkok: Department of Mental health; . 1998.

15. Jumrutritirung A, Prasrtgul P, Chulert P. Mental health situation in Thailand: Social reflex view. Bangkok : Jaransanitwong Publication., Ltd; 2010.

16. Chiangkul W. The future of world economy and solve the problem in Thailand. Bangkok: Eastern Printing Ltd; 2008.

17. National Economic and Social Development Board. Strategic Plan for Informal Economy. Bangkok: NESDB; 2004.

18. Institute of Population and Social Research. Health of the Thais. Bangkok: Amarin Printing; 2009.

19. Social Security Office. Social Protection for Informal Labour. Bangkok: SSO; 2005.

20. Nirathron N. Social integration through social protection programs: some considerations from social protection scheme for workers in the informal economy in Thailand. Proceedings of Policies to Advance Social Integration; 2009 Nov 2-4; United Nations Headquarters, New York; 2009. P. 1-8.

21. Nuntabutr K. Community Health Care System: Concepts, Instruments and Design. Bangkok: USA Printing; 2005.

22. Van Veldhoven M, De Jonge J, Broersen S, Kompier M, Meijman T. Specific relationships between psychosocial job conditions and job-related stress: A three-level analytic approach. Work & Stress. 2002; 16: 207-28.

23. Godin I, Kittel F, Coppieters Y, Siegrist J. A prospective study of cumulative job stress in relation to mental health. BMC Public Health. 2005; 5: 67-77.

24. Ertel M, Pech E, Ullsperger P, Knesebeck OVD, Siegrist J. Adverse psychosocial working conditions and subjective health in freelance media workers. Work & Stress. 2005; 19: 293-9.

25. Johnston DW, Beedie A, Jones MC. Using computerized ambulatory diaries for the assessment of job characteristics and work-related stress in nurses. Work & Stress. 2006; 20: 163-72.

26. Karasek R, Brisson C, Kawakami N, Houtman I, Bongers P, Amick B. The Job Content Questionnaire (JCQ): an instrument for internationally comparative assessments of psychosocial job characteristics. J Occup Health Psychol. 1998; 3: 322-55.

27. Muntaner C., O' Campo PJ. A critical appraisal of the demand/control model of the psychosocial work environment: epistemological, social, behavioral and class considerations. Soc Sci Med. 1993; 36: 1509-17.

28. Mikkelsen A, Ogaard T, Landsbergis P. The effects of new dimensions of psychological job demands and job control on active learning and occupational health. Work & Stress. 2005; 19 : 153-75.

29. Rodriguez I, Bravo MJ, Peiro JM, Schaufeli W. The Demands-Control-Support model, locus of control and Job dissatisfaction: a longitudinal study. Work & Stress. 2001; 15: 97-114.

30. McClenahan CA, Giles ML, Mallett J. The importance of context specificity in work stress research: A test of the Demand-Control-Support model in academics. Work & Stress. 2007; 21: 85-95.

31. Searle BJ, Bright JEH, Bochner S. Testing the 3-factor model of occupational stress : the impact of demands, control and social support on a mail sorting task. Work & Stress. 1999; 13 : 268-79.

32. Fifeld J, Mcquillan J, Armeli S, Tennen H, Reisine S, Affleck G. Chronic strain, daily work stress and pain among workers with rheumatoid arthritis: Does job stress make a bad day worse? Work & Stress. 2004; 18: 275-91.

33. Baker E, Israel B, Churman S. Role of control and support in occupational stress: an integrated model. Soc Sci Med. 1996; 43: 1145-59.

34. Beehr TA, Glaser KM, Canali KG, Wallwey DA. Back to basics: Re-examination of Demand-Control theory of occupational stress. Work & Stress. 2001; 15: 115-30.

35. Sutinen R, Kivimaki M, Elovainio M, Forma P. Associations between stress at work and attitudes towards retirement in hospital physicians. Work & Stress. 2005; 19: 177-85.

36. Ibrahim S, Smith P, Muntaner C. A multi-group cross-lagged analyses of work stressors and health using Canadian National sample. Soc Sci Med. 2009; 68: 49-59.

37. Schmidt KH, Neubach B, Heure H. Self-control demands, cognitive control deficits and burnout. Work & Stress. 2007; 21: 142-54.

38. Mäkikangas A, Feldt T, Kinnunen U. Warr's scale of job-related affective well-being: A longitudinal examination of its structure and relationships with work characteristics. Work & Stress. 2007; 21: 197-219.

39. Hansez I. The "Working Conditions and control questionnaire" (WOCCQ): Towards a structural model of subjective stress. Eur Re Appl Psychol. 2008; 58: 253-62.

40. Innstrand ST, Langballe EM, Espnes GA, Falkum E, Aasland OG. Positive and negative work-family interaction and burnout: A longitudinal study of reciprocal relations. Work & Stress. 2008; 22: 1-15.

41. Beckers DGJ, Van der Linden D, Smulders PGW, Kompier MAJ, Taris TW, Geurts SAE. Voluntary or involuntary? Control over overtime and rewards for overtime in relation to fatigue and work satisfaction. Work & Stress. 2008; 22: 33-50.

42. Grzywacz JG, Alterman T, Muntaner C, Gabbard S, Nakamoto J, Carroll DJ. Measuring job characteristics and mental health among Lation farmworkers: Results from cognitive Testing. J Immigr Minor Health. 2009; 11: 131-8.

43. Goodman D, Redclift M. From Peasant to Proletarian: Capitalist development and agrarian transitions. New York: ST. Martin's press; 1982.

44. Navarro V, Berman DM. Health and Work under Capitalism: An International perspective. New York: Baywood Publishing Co; 1983.

45. Navarro V, Muntaner C. Political and economic determinants of population health and well-being: controversies and developments. New York: Bayhood; 2004.

46. Department of Mental health in Ministry of Public health. Self-analyzed and self-Evaluated Stress Test. Nonthaburi: Agricultural Cooperative Federation of Thailand Press; 2008. p. 1-52.

47. Muthe´n LK, Muthe´n BO. *Mplus user's guide* (4th ed.). Los Angeles, CA: Muthe´n & Muthe´n; 2006.

48. Chung H, Muntaner C, Benach J, EMCONET network. Employment relations and global health: A typological study of world labor markets. Int J Health Serv. 2010; 40: 229-53.

Organizational Trust in Public Sector

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Abstract:

Nowadays, Public administration for citizen anticipates government officers to work morally and ethically in order to make citizen recognize on public trust. Hence, government officers consider and pay attention on it and also seek for the way to develop trust for citizen. However, in order to building trust for citizen, the public organizations require to build organization trust firstly. On the other hand, the government officers should trust each other and then its result will lead to working together efficiently. The relationship within organization, which each person abide by basing on the status and role, may perceive trust in 3 levels. i.e. 1) the trust of superior toward subordinate 2) the trust of subordinate toward superior and 3) the trust between colleagues. Building trust in each level requires the supportive factors and may have some differences in terms of focusing points. For the trust of superior toward subordinate and the trust of subordinate toward superior are likely to focus on the factors which are related to working directly whereas the trust between colleagues is likely to pay attention on feeling and taking care each other.
Key words : Organizational Trust ,Public Trust, Building Trust

Organizational Trust in Public Sector

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Introduction

Nowadays, Public Administration for citizen anticipates government officers to work morally and ethically, to have good governance as a framework, and to realize the transparency without corruption so that citizen perceive the public trust. Building trust on public sector is important that government officers give precedence to it and seek for the way to develop trust for citizen. However, in order to build trust for citizen, the public organizations require building organizational trust firstly. On the other hand, the government officers should trust each other, and its result then will lead to working together efficiently and affect citizen's good perception of organizational image. The objective of this article is to make understanding about concept of organizational trust in accordance with its meaning, levels of trust, significant components, and supportive factors within public organizations amid various relationships in order to be beneficial for making interpersonal trust further.

1. Definition of Organizational Trust

The meaning of organizational trust can be firstly considered the word "Trust". In English language used the word trust from "Trost" of German language which means providing facilitation or reliance on a person who can do as what we hope or give us a favor on one matter (Shaw,1997) Furthermore, the trust meaning has also been described by scholars; for example, Reina & Reina (1999) said that trust means the confidence between each other placed in results of any activity which is agreed or promised with integrity and honesty, the expectation of the other, and the interaction to each other without carefulness. Rottor (1967) suggested that trust relates to an expectation of a person or a group that relies on a promise, word or written record of another person or another group.

Hence, refer to the meanings mentioned above; the organization trust relates to many significant terms, especially confidence, integrity, honesty, and promise. We may define the public trust as confidence, trust, acceptance or expectation in a positive way of an officer in an organization has toward another officer, hoping that another can be a supporter and perform what one officer hopes or trusts successfully. And the expected performance is not only charitable to other officers, but also the success of the organization.

2. Levels of Trust

The Scholars who pay attention on the concept of trust, have considered the levels of organizational trust which have both similarity and difference as follows.

2.1 Two Levels of Trust
Some scholars such as Barney & Hansen (1994 citing in Bachmann & Zaheer, ,2006) Doney & Cannon (1997) Jeffiries &Reed (2000) divided organizational trust into 2 levels:

interpersonal trust and inter-organizational trust. However, both levels of trust may not comply with each other. Organizational officers; for instance, highly trust each other whereas their inter-organizational trust remains less.

2.2 Three levels of Trust

Some scholars of the group such as Currall & Inkpen (2002 citing in Bachmann & Zaheer, ,2006) suggested the trust into 3 levels: interpersonal level, intergroup level and inter-organizational level, which are similar to the concept of Backmann & Zaheer (2006) that described the levels of trust into 3 major levels: interpersonal, group, and organization. Moreover, we can map the relationships into 9 pairs. Start with the trust toward each other. Both trustee and trustor are human such as an officer trusts an administrator. Then, the trust of a person toward a group such as an officer trusts a group of administrators. And the trust of a person toward an organization such as an officer trusts an organization. Next is to consider the trust between a group and an organization as a main, having trust toward trustee, separated into person, group and organization as well. See a figure.

	Person	Group	Firm
Person	Person to Person	Person to Group	Person to Firm
Group	Group to Person	Group to Group	Group to Firm
Firm	Firm to Person	Firm to Group	Firm to Firm

Figure: Level of Trust
Source: Adapted from Backmann & Zaheer (2006)

Besides, Shamir & Lapidot (2003 citing in Puusa & Tolvanen,2006) suggested that the organizational trust can be considered as 3 levels: individual, group and system. That is, refer to individual level, the trust is willingness of an individual to believe any action of another, having an expectation of precedence from another even though it may risk on damage. Refer to group level, it is about to consider the trust in collective phenomenon i.e. a teamwork which needs individual to consider the trust toward another or another team, basing on overall views such as common objective or value toward reduction of uncertainty, proper rule and regulation for working and so on. Finally, the trust from individual toward system level is the trust by considering own organizational issue, basing on status, system, rule and regulation, which all can build trust including formally organizational structure. However, some scholars pay attention toward prioritizing all 3 levels of trust. For example, Yilmaz's research (2008) on the relationship between the trust within organization and commitment upon an organization, he studied the level of organizational trust as of the dimensions of administrator, colleague and stakeholder of an organization.

As the trust levels presented above, after considering interpersonal trust, the authors notices that most scholars have paid attention on the study in 3 roles of persons in an organization: superior, subordinate and colleague. The trust of each level or each relationship in an organization, which may happen, depends on various factors. In this article, the author presents the significant components creating trustworthy atmosphere in order to be a fundamental understanding before further analysis of government organization in Thailand.

3. Significant Components of Creating Trustworthiness

Several scholars have paid attention on presenting the crucial factors to promote trust. For example, Shaw (1997) stated that there were 3 factors for an individual in case an individual trust another. The factors consist of achieving results, acting with integrity, and demonstrating concerns. Firstly, achieving result, it relates to an individual's achievement. If an individual lacks of performance or competence, or an individual has insufficient competence, not as expected, the tendency of trust may be lower or decrease. To build trust in an achievement, an individual should clarify own intention toward objective, present well-organized management, and be ready to encounter with both achievement and failure. Secondly, acting with integrity, it is about honesty, integrity, sincerity and doing as mentioned or agreed. The trust will be at high level if an individual is fairly honest, behaves under agreement, discloses information, works or coordinates with each other by uncovered style and procedure, follow up result regularly, and keep promise such as granting who has a good performance as agreed. To do this, it is necessary to hold justice in evaluation. And thirdly, demonstrating concerns, it is about paying attention toward people around with special and well care. Furthermore, Mayer et al. (1995) showed the 3 significant components of trust. Firstly, willingness- although a person tends to trust another, to trust another person with willingness is an identified phenomenon or is done on purpose. Secondly, vulnerability-it is a reflective factor of perception and acceptance on loss, which may occur if an individual trusts another. Nevertheless, the damage must not happen from bad intention toward a person. And lastly, expectation- it expresses the condition of trust or confidence on competence of whom an individual trusts. Hardin (2004), adding the point, explained more about Mayer's concept that trust depends on two dimensions of expectation. That is; 1) motivation of trustee that trustee will pay attention toward interest or need of trustor. 2) Competence of trustee to do as trustor needs. That is very important dimensions of expectation.

Besides, some skills are considered as significant factors of promoting mutual trust. That is communication, which is important for trust. Significant components of communication are open-communication. It is about exchanging required information openly and suitably via easily-reachable communicating channels from all directions, exchanging existing data. It is communication supporting teamwork creation, making an individual feel as a part of the team, which means the existence of individual.

The above significant components build trust between individuals. It is important for organizations to launch any activity. Some scholars pointed out the importance of trust that although some part of organizational efficiency comes from organizational officers, each officer's ability will be fully utilized only when all have a good relationship to each other. A good relationship partially comes when members in an organization trust each other. The

trust is considered very important for human relationship in an organization and necessary for organizational efficiency. Without trust toward each other, members will neglect, hide the truth, protest, and so on. These become an obstacle from achievement (Carr,1992). As well as organization, in public sector, trust from members in an organization is also needed for driving organizational mission efficiently. The basic concept presented above can be a magnifier in order to make understanding in building trust within public sector.

4. The Trust in Public Sector

The performance of government officers at the presence is variously expected by citizen who is served, by the government and the original sectors to follow the policy with highest efficiency. Not only personal efficiency but also a good cooperation from other officers in the organization is also playing a major role. It is seen as the same team to drive the mission. Consequently, the trust toward each other becomes necessary to create good relationship and harmonized working.

In the midst of relationships between individuals within public sector regarding status and role of each individual, it can categorize the trust into three levels; the trust of superior toward subordinate, the trust of subordinate toward superior, and the trust among colleagues. If the trust in each level can be created, it will help strengthen relationship and enlarge the power of work in public sector. Regarding this part, the writer will illustrate factors and/or behaviors enhancing the trust in order that the readers could perceive what should perform to establish the trust in work for each individual in each pair of relationships as below.

The Trust of Superior toward Subordinate

Behavior influencing on trust of superior toward subordinate relates to working behavior directly. Let's say, superior will trust subordinate when he/she has knowledge, ability, apparent performance. Achievement at work represents that subordinate is working-oriented with responsibility. Subordinate cares others and supports organizational mission. Besides, communication ability is also the beginning of trust; as a result, subordinate should be able to communicate efficiently in order to prevent from any coordination problem. The vital point which is different from other careers is to devote oneself to the public benefit or work, especially citizen. Moreover, subordinate should have integrity, perform straightforwardly, work with intention and conform to mutual promise or agreement.

The Trust of Subordinate toward Superior

For subordinate, the trust toward superior highly relates to factors concerning personal characteristics and administrative style of superior. Gathering working experience and sharing makes subordinates perceive various ability and characteristics of superior, which can establish trust such as leadership of superior when putting a right job on the right man, ability in controlling strategy to comply with organization, prioritizing job, making decision, having acceptable knowledge and ability, giving opportunity for subordinate to make decision, creating good relationship with sincerity, demonstrating care, supporting various things no matter how big or small they are, such as sadness or happiness, or even giving a hand when

subordinate encounters the problem. Keep not only organizational secret, but also private matter of subordinate. Respect and listen to other's decision making .Create working participation within organization. Communicate efficiently, especially verbal communication which should consider listener's feeling toward delivered message or implication. Work with transparency. Reward as reasonably as performance showed. Make decision and consideration on important subjects straightforwardly. The above mentioned characteristics of superior could build subordinate's trust.

The Trust among Colleagues

Regarding the trust in this level, there is a significantly supportive factor building the trust between colleagues. It emphasizes on team awareness in the sense of feeling and participation toward activities, brotherhood, helpfulness in both regular situation and when encountering problem, straightforwardness, collective problem solving, integrity, especially on the performance, loyalty in work and private matter, including emotional support such as working encouragement, sympathy when colleague face problem, confidence to colleague's knowledge and ability.

Conclusion

The trust within public sector is necessary that it results in the working performance between government officers and also the trust from citizen because; at the result, the government officers' performance becomes very effective and efficient that it is vastly acceptable. Building trust in each level: superior, subordinate and colleague needs supportive factors to establish trust as mentioned above. They may be emphasized differently. The trust of superior toward subordinate and the trust of subordinate toward superior tend to emphasize on factors concerning work directly whereas the trust between colleagues pays attention on feeling and taking care each other. However, even though this article presents supportive factors of each level, in the reality, these various factors may not occur in working. In contrast, some may unfortunately happen and destroy rather than create trust such as lacking of justice in administration, aiming more at personal interest than common interest. As a result, it is challenging public sector to try and support how to create various factors in order that government officers work with trust.

Bibliography

Bachmann, R. and Zaheer, A.(2006). *Handbook of Trust Research*. Cheltenham: Edward Elgar.

Barney, J. and M.H. Hansen (1994), 'Trustworthiness as a source of competitive advantage', *Strategic Management Journal*, 15, 175–90.citing in Bachmann, R. and Zaheer, A.(2006). *Handbook of Trust Research*. Cheltenham: Edward Elgar.

Carr, C. (1992). *Team Power : Lessons From Companies on Putting Teampower to work.* New Jersey : Prentice Hall.

Currall, S.C. and A.C. Inkpen (2002), 'A multilevel measurement approach to trust in joint

ventures', *Journal of International Business Studies*, 33, 479–95.citing in Bachmann, R. and Zaheer, A.(2006).*Handbook of Trust Research*. Cheltenham: Edward Elgar.

Doney, P. M. and Joseph P. Cannon. (1997), "An Examination of the Nature of Trust in Buyer-Seller Relationships," *Journal of Marketing*, 61 (2),pp.35-51.

Hardin, R. (2004). Distrust: Manifestations and management. In R. Hardin (Ed.), *Distrust,* pp. 3-33. New York: Russell Sage Foundation.

Jeffries, F.L.and Reed, R. (2000), "Trust and adaptation in relational contracting", *Academy of Management Review*, Vol. 25 No.4, pp.873-82.

Mayer, R.C., Davis, J.H. and Schoorman, F.D. (1995) "An Integrative Model of Organizational Trust", *Academy of Management Review*. Vol. 20 No. 3, pp. 709–734.

Reina,D.S.and Reina,M.L. (1999). *Trust and Betrayal in the Workplace: Building Effective in Your Organization.* San Francisco: Berrett Koehler.

Rotter, J.B. (1967). A new scale for the measurement of interpersonal trust. *Journal of Personality*, Vol.35, pp.651 – 665.

Shamir, B. and Lapidot, Y. (2003). "Trust in Organizational Superiors: Systemic and Collective Considerations", Organization Studies, Vol. 24 No.3, pp. 463–491.citing in Puusa & Tolvanen.(2006). Organizational Identity and Trust. Electronic Journal of Business Ethics and Organization Studies. Vol. 11, No. 2 ,pp.29-33.

Shaw, R. B. (1997). *Trust in Balance Building Successful Organizations on Results, Integrity, and Concern*. San Francisco: Jossey Bass.

Yilmaz. (2008). The Relationship Between Organizational Trust and Organizational Commitment in Turkish Primary Schools. *Journal of Applied Sciences* 8(12),pp.2293-2299.

The Definition qf Psymentology

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Abstract:

Being categorized amidst other fields in Complementary and Alternative Medicine (CAM) of Iran, and concerning the mind-psychology of mankind, Psymentology has an Interuniversalist perspective on the human being with an all inclusive approach. Mind and psyche each are dealt as a separate concept in Psymentology, comprising a specific part of an individual. This subject tries to alleviate mental and psychic disorders.

In the Interuniversal approach each fragment is contemplated in correspondence with every other element. Physique, psyche, mind, different bodies and other human components of existence are interrelated, where any impairment to one part could lead to the destruction of the others. Subsequently any exact diagnosis and/or even locating the particular component pertinent to the malady would be out of question.Here only an intelligent system with thorough competence, via an exhaustive scrutiny - or Scanning,could diagnose and cure any afflicted constituent part.

Such a superb conscious grid, known as the "Universal Consciousness Network – or Interuniversal Consciousness" is being utilized in Psymentology.This network is the overall awareness & consciousness,dominating the whole universe,just like a "Universal Internet";which is intelligently integrating and cohesively overlapping all the components there.

Psymentology Objective

The main target of Psymentology is the recognition of humankind, and the constituent softwares of the human existence, the diagnosis and treatment of mental and psychic disorders, as well as the unknown & unidentified disorders, which could also be pursued further as sub-classified below:

1-Acquiring Self-recognition in order to truly locate the human status in universe and the constituent softwares of the human existence.

2-Assisting mankind to attain the best quality of: Well being , Well doing ,Well having ,Well thinking

3-Diagnosis of mental and psychic disorders along with resolving and software treatment of the above-mentioned problems.

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Definition of Psymentology

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Methodology:

During a Psymentology session the patient is asked to close their eyes for at least five minutes and manage to dispel the distracting thoughts, and merely observe, impartially, the feelings and experience encountered during the therapy. The patient was required to do this procedure at least once a day and afterwards the details of his treatment and the subsequent outcome and feelings were discussed once a week with the Psymento-therapist. In summary; through Psymentology the patient becomes connected to the Interuniversal Consciousness (the network of awareness and consciousness encompassing the universe) via Fara-therapist and undergoes the Scanning process; due to the nature of this connection, some information is conveyed and the defective parts are treated.

Keywords: Psymentology, complementary and alternative medicine, mind-psychology, Interuniversal consciousness, human existence, Cosmic Internet,Iran

TEXT:

Being categorized amidst other fields in Complementary and Alternative Medicine (CAM) of Iran, and concerning the mind-psychology of mankind, Psymentology has an Interuniversalist perspective on the human being with an all inclusive approach. Mind and psyche each are dealt as a separate concept in Psymentology, comprising a specific part of an individual. This subject tries to alleviate mental and psychic disorders.

Psymentology Objective

The main target of Psymentology is the recognition of humankind, and the constituent software of the human existence, the diagnosis and treatment of mental and psychic disorders, as well as the unknown & unidentified disorders, which could also be pursued further as sub-classified below:

1-Acquiring Self-recognition in order to truly locate the human status in universe and the constituent software of the human existence.

2-Provision of precise definitions embracing the Human; Excellence; Perfection & man's Culmination, & etc.

3-Assisting mankind to attain the best quality of:
a. Well being
b. Well doing
c. Well having
d. Well thinking

4-Diagnosis of mental and psychic disorders along with resolving and software treatment of the above-mentioned problems.

5-Provision of up-to-date definitions in relation to mental and psychic maladies, besides diagnosis and dissociation of normality and abnormality.

History

Founded by I thirty years ago, "Psymentology" or "Interuniversal Mind-Psychology" has now gone through its experimental phases quite successfully.

Psymentology originated from the time when I (the founder of Faradarmani and Psymentology) encountered with the truths and facts of existence, excessively grabbing my attention as a child; reflecting over "Where do we come from? Where are we going to? Why are we here? Where are we heading to? Who is the creator? What has he made the creation for? What is the outcome of this creation? Who is mankind? What are the possible ways to approach & acknowledge Him? How are His potential powers activated? What are life and death? And etc." I mean I had a great enthusiasm to comprehend the existing universe, to discover its mysteries and secrets which was incessantly conquering my mind. Then, on November 1st 1978 and all of a sudden, some mental inspirations and revelations occurred to me following which some dimensions/angles of the human being and existence were disclosed, and led me to the understanding that there is an immense Awareness & Consciousness dominating the whole of existence.

Identical to a "Cosmic Internet", this all-encompassing awareness has integrated all its constituent elements covering them up consciously. This revelation was not only including the theoretical issues but also the applicable information and operational instructions for practice; therefore the manner of applying such an Internet was the due reason to establish fields like: Faradarmani, Psymentology, and some other. As a consequence to such a perception came the "Interuniversal" mentality, based on which mankind is supposed to expand his reflections unto the entire existence, viewing life from a wider viewpoint, figuring and reaching out to his/her own unique position.

Psymentology: General Principles

1-The human existence possesses an infinite number of interrelated components. Likewise, any method intending to analyze him must previously contain an "Interuniversalist" approach, simply to be able to inclusively explore his infinite number of interrelated existing components all together.

2-To learn about man's intrinsic essence and philosophy of existence, besides his true status in the ecosystem , his behavior and personality as well as other definitions relating to mankind are to be lucidly interpreted and illustrated. Having this in mind, Psymentology pays special attention to the comprehension of man's stance in the ecosystem.

3-Man's psyche, physique and other constituent elements in his existence are considered all integrated and unified, whereas separating them apart would only lead to erroneous consequences.

With regards to the fact that Psymentology is an Interuniversal science, each and every internal and external factor contributing to man's conduct is totally investigated.

A Brief Definition of the Dimensions of the Human Existence

As stated earlier, in "Psymentology", defining the dimensions of the human existence is a function of the "Interuniversalist" approach by having an Omni-lateral prospect upon the human being.

Within this perspective, the aspects of the human dimensions are viewed as countless, comprised of various counts of software & hardware fragments. Of course, the entire hardware components are eventually managed and controlled by a single software compartment.

Some of human constituent components are:
1-Diverse bodies like: the physical body, psychic body, mental body, astral body, etc.
2-Various energy transformers, namely known as "Chakra".
3- Numerous energy channels like those of limited, restricted or the fourteen non-physiological channels in the body as investigated in acupuncture.
4-Varied energy fields surrounding the body such as: polarity field, bio-plasma field, etc.
5-Components like: cellular consciousness, molecular frequency, several software constituents, and an infinite number of other unidentified elements.

In the Interuniversal approach, each fragment is contemplated in correspondence with every other element. Physique, psyche, mind, different bodies and other human components of existence are interrelated, where any impairment to one part could lead to the destruction of the others.

Subsequently any exact diagnosis and/or even locating the particular component pertinent to the malady would be out of question. Here only an intelligent system with thorough competence, via an exhaustive scrutiny - or Scanning, could diagnose and cure any afflicted constituent part.

Such a superb conscious grid, known as the "Universal Consciousness Network – or Interuniversal Consciousness" is being utilized in Psymentology. This network is the overall awareness & consciousness, dominating the whole universe, just like a "Universal Internet"; which is intelligently integrating and cohesively overlapping all the components there.

General Subjects in Psymentology
The subjects of Psymentology fall into two general categories:

1. Theoretical
-Definitions regarding the components of the human existence as well as an understanding of the setup of man's structural blueprint.
-Recognition and recovery methods of psymental disorders and psychosis.
-Analysis and description of the complications concerning the mental perceptions, psychic emotions & drives, and the resulting behavioral phenomena.

2. Practical
-Includes all the prevention methods, the elimination procedures of the mind-psyche injuries, and healing unidentified disorders.

"Psymentology" or "Interuniversal Mind-Psychology" is a framework in which the treatment is achieved through a software approach and without any hardware interventions or manipulations & Process

"Psymentology" or "Interuniversal Mind-Psychology" is a framework in which the treatment is achieved through a software approach, without any hardware interventions or manipulations (by hardware we mean the treatments applied physically [i.e. externally] such as pharmaceutical, invasive & surgical, physiotherapy, massage treatments, or any other similar method in which utensils and devices are to be implemented. On the contrary, by software interventions we mean only those therapeutic applications related to the internal software of man, away from any pharmaceutical or operational, & etc. treatments, and without resorting to any technique, in order to examine and resolve the patients' ailments).Despite that psychoanalysis, psychotherapy and etc. are classified as software interventions; none of them are applied in Psymentology. In fact, Psymentology is not technique-based, and by this, it is vividly distinguished from other common psychology & psychiatry therapies.

"Psymentology" seeks to understand mankind and the constituent software of his existence, and also to cure man's unidentified mental conflicts by serving as Complementary & Alternative Medicine (CAM) in helping those who are troubled. Viewed as a tiny member in this set-up, humankind is supposed to play his/her role quite accurately. Abnormality (malady) refers to any type of: disorder, blockage, damage or imbalance in any of the infinite constituting components of man's existence.

Assuming the definition of the malady and implementing it in accordance with that of the Interuniversalist approach, drawing a diagnosis, in that case, would be something unlikely and impossible.

One of the reasons to the existence of such a variety of specialized fields in current medicine is to achieve a more accurate diagnosis as well as implementing a more applicable treatment procedure.

Therefore, a common field of therapy is divided into as many subcategories and specialties as demanded, in order to facilitate a more accurate diagnosis. Finally, the patient's status is diagnosed with many varied opinions and several diagnostic statements.

In Faradarmani and Psymentology, the patient's treatment process is followed as described by an "Interuniversalist Approach". Through these two complementary methods and quite unlike other medical fields, neither the diagnosis nor its treatment is attained by a human being; it is a process in which the therapist plays no role at all. This distinctive diagnosis, free from any human initiative or even intervention, takes place principally by the grand Consciousness (the unique Cosmic Awareness), through investigating (Scanning) the being, diagnosing/locating the defected components, and healing them afterwards. As a matter of fact, "Scan" indicates that the whole human existence is thoroughly scrutinized by the magnifying glass of this Consciousness (Interuniversal Consciousness Network).

As explained earlier, mankind is comprised of countless constituent components, thus, the scanning and correction could only be made possible with the support of this grand Consciousness.

Psymentology and Its Significant Practical Application

It is more than three decades since the foundation of Interuniversal mysticism (Erfan-e Halgheh) and its subdivisions including the two complementary medicines of "Faradarmani" and "Psymentology" by Dr Mohammad Ali Taheri in Iran. Currently about 20,000 trainers are teaching the concepts of this pathway worldwide and there are millions of people who are familiar with and users of its practical applications.

Interuniversal Mysticism is a mystical outlook that its insights conform to the framework of Iran's native Erfan (mysticism). Interuniversal Mysticism examines the mystical concepts both in theory and in practice, and since it includes all human beings, everybody regardless of their race, nationality, religion and personal beliefs, can accept its theoretical part and experience and make use of the practical aspect.

The practical aspect of this Erfan is based on the connection/establishing a link to the several circles (Halgheh) of the "Interuniversal Consciousness" and the entire pathway of exploration and transformation is made possible through the circles (Halgheh) which can be applied and utilized in practice.

The Interuniversal Consciousness (the "whole" consciousness - Divine Intelligence) is the collection of awareness or consciousness encompassing and governing the universe that is similar to a "Universal Internet" and is intelligently integrating and cohesively overlapping all the components. Establishing a link or connection (Ettesal) between man and the whole consciousness (the Interuniversal Consciousness) can accomplish affairs and bring about results that man, singlehandedly, through his own abilities is not capable of attaining. Amongst the outcomes of this connection are comprehensions of the truths of existence, the Unity of the world of existence, the purposefulness of creation, human's mission in ecosystem. Amongst numerous other applications of this connection is healing and recovery which is the subject of *Faradarmani* and Psymentology as 2 complementary and alternative medical treatment methods. Due to the

broad spectrum of the applications, we only limit our discussion relevant to the scope of this paper.

As discussed, one of the circles (Halgheh) of the "Interuniversal Consciousness" is Psymentology that is based on the theory of "the Consciousness Bond of the Parts" or "Parts Having Consciousness in Common". Through this therapy, the patient/individual becomes connected to the Interuniversal Consciousness via Psymento-therapist (the practitioner is just a mediator providing the connection between the individual and the Interuniversal Consciousness). After this bond is established, the person automatically undergoes the Scanning stage in which all existential constituents of the individual undergo scrutiny through the Consciousness Bond in order to detect any manifested or hidden defects or diseases .

The process of Psymentology has revealed the existence of the Interuniversal Consciousness, and also exposes its functional and practical applications to be experienced exploited.Through such experiences, new portals of intellectual revolution have been opened to mankind, because he is on the way to observe and ponder over the whole creation from a different outlook. In other words at this stage mankind would attain a practical acquaintance with the Consciousness leading the universe.

Interuniversal Consciousness or "Cosmic Internet"

As mentioned above, the Interuniversal Consciousness is an immense Awareness and Consciousness governing the world of existence. Similar to a "Cosmic Internet", this all-encompassing consciousness has covered up all its constituent elements and subsets by intelligence/consciousness. A meaningful resemblance could be established between the Interuniversal Consciousness and a Universal or "Cosmic Internet". To clarify this expression (Cosmic Internet) one should consider the capabilities of the internet at the present time and comparable features with those of the Cosmic Internet.

One of the applications of the internet is updating the product's software and this can be done by referring to the manufacturer's website. It is worth mentioning that the manufacturer releases the product with some initial in-built operating software; however accessing more advanced updates or utilities requires referring to the manufacturer's website. For a human being, the same procedure has been arranged by the designer and the manufacturer.

 In this manner, there is a Cosmic Internet (Interuniversal Consciousness) and a Manufacturer Website (The Creator on High) for mankind. In this systematic approach some of the many programs and capabilities have been consolidated potentially within an individual but in an inactive fashion. To activate such dormant features one should refer to the producer's website. In order to accomplish this, one should get connected to the manufacturer website via Cosmic Internet (Interuniversal Consciousness) so that, through accessing highly advanced programs, his restricted capabilities and potentials become upgraded to a more optimum level, and through this assistance which reactivates (i.e. turns on his existential switches which were off before) a series of his inactive and dormant abilities such as Fara-zehni receptors, will progress further.

In fact human beings are regarded as "parts" (like single websites) which make sense when their link to the "whole" (like the Internet network) is considered. Inevitably humans must establish such a connection with the ultimate whole to find out his identity and capabilities and present them (the method of establishing such a connection/ link must be discussed separately as it is out of the scope of this paper).

By making use of the consciousness encompassing the existing universe, in addition to attaining therapy and self-exploration, it is hoped that we will be able to comprehend the Creator's (On High) strategy and manner of managing the world of existence as well as perceiving His excellent design and the breath taking creation. It is hoped that through understanding the precise calculation of the universe we perceive this important point; what splendid preparations the Creator has foreseen to facilitate our presence on the planet Earth. Having this knowledge, more than ever, we become aware of our negligible and trivial presence; and in reaction to such a spectacular creativity, express our genuine and heartfelt praise.

Reference:
* Taheri, M. (2010), Journal of Medical Sciences (Danesh-e Pezeshki), Specialized *Psymentology* Edition, 4th year, Vol.4-No.1-Feb.2011 supplement

- Taheri.M.A. Human from Another Outlook, Bijan publication, 2009

The Gap detween Global Issues cnd Personal Behaviors: Curtailment Behaviors qf Citizens voward Mitigating Global Warming

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0057

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Abstract:

Around 1750, about the start of the industrial revolution in Europe, there was about 280 ppm of CO_2 in the atmosphere. Today the amount of green house gas (GHG) has topped 390 ppm CO2e. Scientists believe the Earth's average temperature should not rise by more than 2°C over pre-industrial levels, if the total GHG concentration below 450 ppm.

Most of the climate change policy has been addressed to long-term options to mitigate global warming, such as inducing new, low-carbon technologies. However, energy use by households account for approximately 38% of overall U.S. CO2 emissions, or 626 million metric tons of carbon in 2005, it is approximately 8% of global emissions and larger than the emissions of any entire country except China.

Therefore, one of the commitments of the United Nations Framework Convention on Climate Change (UNFCCC, article 4), shows that all countries shall promote and cooperate in public awareness related to climate change and encourage the widest participation in this process. According to the commitments, Taiwanese government had promoted a series of energy saving methods base on citizens' curtailment behaviors.

This research based on the theory of planned behavior and integrated habit as a modified model. The results reveal that attitude of climate change, perceived behavior control, behavior intention, and habit showed positive and significant correlation with curtailment behaviors, yet subjective norm was not salient in the model. This research suggests that the more convenient and acceptable methods may induce people to act more. "Keep it simple" might be a guide for the energy conservation methods.

**The gap between global issues and personal behaviors:
Curtailment behaviors of citizens toward mitigating global warming**

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1 Introduction

Changes in the atmospheric concentrations of greenhouse gases (GHGs) and aerosols, land cover and solar radiation alter the energy balance of the climate system and are drivers of climate change. Global atmospheric concentrations of long-lived GHGs (e.g., CO_2 & CH_4) have increased since 1750; it's a 90% probability which causes by human activities (such as fossil fuel use) (IPCC, 2007).

Most climate policies have been directed toward long-term options, such as inducing new low-carbon technologies and creating cap-and-trade regimes for emissions. However, direct energy use by households accounts for approximately 38% of overall CO_2 emissions in the U.S., or approximately 626 million metric tons of carbon in 2005, it is approximately 8% of global emissions and larger than the emissions of any entire country except China (Dietz, Gardner, Gilligan, Stern, & Vandenbergh, 2009). Therefore, one of the commitments of the UNFCCC (article 4) shows that all countries shall promote and cooperate in education and public awareness related to climate change and encourages the widest participation in this process, involving NGOs as well. Acting upon this commitment, the Taiwanese government and NGOs promoted a series of energy-saving methods based on pro-environmental behaviors.

The purposes of this study are 1) to analyze the attitude of citizens in Taiwan after several years of promoting public awareness toward climate change and 2) to determine the key factors that influence pro-environmental behaviors significantly.

2 Literature Review

Pro-environmental behavior is probably best viewed as a mixture of self-interest and of concern for other people, the next generation, other species, whole ecosystems, or global climate (Bamberg, & Möser, 2006). McAndrew (1993) indicated that, though theory is very important in environmental psychology or behavioral research, there is no one theory that applies to all environmental issues in an analysis of pro-environmental behavior of people. The theory of planned behavior (TPB; Ajzen, 1986) and the theory of value-belief-norm (VBN; Stern, 2000) are often used to examine pro-environmental behavior. While the TPB focuses on self-interest and rational choice deliberation, the VBN is grounded in values and moral norms (Kaiser, Hubner, & Bogner, 2005).

As for energy consumption on transportation, the travel mode choice of student passengers had a good model fit to TPB (Klöckner & Blöbaum, 2010). The TPB also explained intentions to use public transport, further more; the attitude and subjective norm influenced the intentions (Tikir & Lehmann, 2011). On the other hand, Kerr, Lennon, and Watson (2010) found that the behavioral intention of the TPB was the strongest predictor of private vehicle usage. To go further, Chen and Chao (2011) found that habitual behavior hinders an individual's intention to switch from private vehicle to public transport.

Besides the TPB, Scherbaum et al. (2008) applied the VBN to the energy conservation behaviors of employees, and found that personal norms predicted behavioral intentions and energy-conservation behaviors significantly.

Contrasting the TPB and the VBN regarding their ability to explain pro-environmental behaviors, Kaiser et al. (2005) found that the TPB covered its concepts more fully, in terms of proportions, in explaining the variance of energy conservation behavior. More

importantly, the fit statistics revealed that only the TPB depicts the relations among its concepts appropriately, whereas the VBN model does not. Fielding, McDonald, and Louis (2008) also found that, whether considering private or public environmental actions, the TPB is an effective model for identifying the predictors of pro-environmental behaviors.

TPB model has been applied successfully to a wide range of human behaviors (Brown, Ham, & Hughes, 2010). The present study covers the pro-environmental behaviors that the Taiwanese government and NGOs promoted, and chose the TPB as the model to examine these behaviors.

3   Methods

Kaohsiung City is the most important industrial metropolis in Taiwan. The annual average per capita emissions of CO_2 in Kaohsiung is 26.3 tons (Environmental Protection Bureau of Kaohsiung City Government, 2009) which far exceeds the average per capita emissions in Taiwan of 11.1 tons and the global per capita emissions of 3.96 tons. The majority of CO_2 emissions in Kaohsiung result from the industrial sector (68%) followed by the residential and commercial sectors (23%). Based on the TPB model, this study aimed to realize the pro-environmental behavior of Kaohsiung City residents, living under the aura of climate change in a high CO_2 emission city.

Research Design

The present study used the five constructs of TPB to design and develop the questionnaire. "*Attitude towards environment*" indicated residents' view about global warming, and their awareness of climate change. "*Subjective norms*" indicated the views of the person who residents concern (e.g., family and friends) with regard of residents adopting energy conservation methods. "*Perceived behavioral control*" indicated residents' perceived capacity to implement the energy conservation methods. "*Behavioral intention*" indicated residents' willingness to engage in energy conservation methods. "*Behavior*" aims to understand whether, and to what extent, residents engaged in energy conservation methods.

Sampling

This study selected a sample of 223 individuals based on the ratio of each administrative area's population to the total population in Kaohsiung City. Quota sampling was used, and city residents conducting business at each household registration office in Kaohsiung City were targeted as samples. The researchers used questionnaires and face-to-face interviews to collect information.

4   Results

Among the 223 valid respondents of this study, females (53.4 %) outnumbered males (46.6%). Respondents aged 30-39 (27.4%) accounted for the largest age category, followed by those aged 20-29 (22.9%). The majority of respondents had a junior college level of education (48.9%). Regarding marital status, 60.5% of the respondents were married, while 57% of respondents had children. Regarding personal monthly disposable income, the largest group of respondents were in the TWD$15,000 to 20,000 (US$500 to 660) category. Regarding religious beliefs, the category of "no religious beliefs" comprised the most respondents (32.3 %), followed by Buddhism (21.1 %) and Taoism (12.6 %).

Analysis of model fit

A confirmatory factor analysis was conducted. Hair, Black, Babin, Anderson, and Tatham (2006) suggested that a critical ratio (CR) of 0.7 and above indicated a good composite reliability. Hair et al. (2006) also suggested that an average variance extracted

(AVE) value of 0.5 and above indicated a good convergent validity. Doll, Xia, and Torkzadeh (1994) suggested that goodness-of-fit (GFI) and adjusted goodness-of-fit (AGFI) values of 0.8 and above indicated a reasonable fit. Byrne (2001) suggested that a comparative fit index (CFI) value of 0.9 and above indicated a well-fitting model. Byrne (2001) suggested that a root mean square error of approximation (RMSEA) value below 0.08 indicated a comparatively good fit. Joreskog and Sorbom (1993) suggested that a x^2/df value below 5 indicated that the model was acceptable. Most of the indicators of this study showed a good fit to the corresponding TPB constructs, meaning that all of the indicators (observed variables) reflected the constructs (latent variables) effectively. This study classified the pro-environmental behaviors into five categories. Structural equation modeling (SEM) was conducted to analyze goodness of fit of these five models; each indicator showed that the TPB model fits the sample data fairly well.

5   Discussion and Conclusion

This research suggests that it is best to encourage citizens to accept energy saving methods by experiencing them. For example, the government could subsidize the purchase of energy-saving appliances (e.g., energy saving lamp, LED tube) instead of just promotiong climate change and asking citizens to buy them. Once people understand their benefits, purchases of energy-saving appliances might increase.

The present findings also confirm previous evidence that pro-environmental methods must be easy to connect to the decision at hand. This research suggests that "Keep it simple" might be a guide for energy conservation methods.

The important finding of this research is that, people's concern about climate change and their intention to practice pro-environmental behavior may be high, but it seems hard to change their appetite or travel modes to cool down global warming. The fact that habitual behavior hinders intention (Chen & Chao, 2011) may be a reasonable explanation.

Reference

Abrahamse, W. and Steg, L., 2009, How do socio-demographic and psychological factors relate to households'direct and indirect energy use and savings? *Journal of Economic Psychology*, **30**, 711-720.

Aertsens, J., Verbeke, W., Mondelaers, K. and Huylenbroeck, G. V., 2009, Personal determinants of organic food consumption: a review. *British Food Journal*, 111(10), 1140-1167.

Ajzen, I. and Fishbein, M., 1980, *Understanding attitudes and predicting social behavior.* Englewood Cliffs, NJ: Prentice.Hall.

Ajzen, I. and Madden, T. J., 1986, Prediction of goal-directed behavior: attitude, intentions, and perceived behavioral control. *Journal of experimental social psychology,* 22, 453-474.

Ajzen, I., and Manstead, A. S. R., 2007, Changing health-related behavior: An approach based on the theory of planned behavior. *The scope of social psychology: Theory and application*. New York: Psychology press

Bamberg, S. and Möser, G., 2006, Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behavior. *Journal of Environmental Psychology*, 27, 14-25.

Brown, T. J., Ham, S. H. and Hughes, M., 2010, Picking up litter: an application of theory-based communication to influence tourist behavior in protected areas. *Journal of Sustainable Tourism*, 18, 7, 879-900.

Byrne, B.M., 2001, *Structural Equation Modeling with Amos Basic*. New Jersey: Lawrence

Erlbaum Associates.

Chen, C. F. and Chao, W. H., 2011, Habitual or reasoned? Using the theory of planned behavior, technology acceptance model, and habit to examine switching intentions toward public transit. *Transportation Research Part F*, 14, 128–137.

Clark, W. A. and Finley, J. C., 2007, Determinants of water conservation intention in Blagoevgrad, Bulgaria. *Society and Natural Resources*, 20, 613-627.

Dietz, T., Gardner, G. T., Gilligan, J., Stern, P. C. and Vandenbergh, M. P., 2009, Household actions can provide a behavioral wedge to rapidly reduce US carbon emissions. *Proceeding of National Academy of Science of the United States of America,* 106(44), 18452-18456.

Doll, W. J., Xia, W. and Torkzadeh, G., 1994, A confirmatory factor analysis of the end-user computing satisfaction instrument, *MIS Quarterly*, 18(4), 357–369.

Dunlap, R. and Van Liere, K., 1978, The new environmental paradigm: A proposed measuring instrument and preliminary results. *Journal of EnvironmentalEducation*, 9, 10–19.

Environmental Protection Bureau, Kaohsiung City Government, 2009, *Introduction of environmental protection administration in Kaohsiung City* (in Chinese)

Fielding, K. S., McDonald, R. and Louis, W. R., 2008, Theory of planned behavior, identity and intentions to engage in environmental activism. *Journal of Environmental Psychology,* **28**, 318–326.

Fishbein, M. and Ajzen, I., 1975, *Belief, attitude, intention, and behavior: An introduction to theory and research.* Reading, MA: Addison.Wesley.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. and Tatham, R. L., 2006, *Multivariate data analysis*. New Jersey: Pearson Prentice Hall.

IPCC (Intergovernmental Panel on Climate Change) http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html\

Joreskog, K. G. and Sorbom, D., 1993, *LISREL 8*：*Structural equation modeling with SIMPLIS TM command language*. Chicago, IL：Scientific Software International Inc.

Kaiser, F. G., Hubner, G.. and Bogner, F. X., 2005, Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behavior. *Journal of Applied Social Psychology*, **35**(10), 2150-2170.

Kerr, A., Lennon, A. and Watson, B., 2010, The call of the road: factors predicting students' car travelling intention and behavior. *Transportation*, 37, 1-13.

Kirby, A., 2008, *Kick the habit- a UN guide to climate neutrality*. UNEMG, UNEP/GRID-Arendal.

Klöckner, C. A. and Blöbaum, A., 2010, A comprehensive action determination model: Toward a broader understanding of ecological behavior using the example of travel mode choice. *Journal of Environmental Psychology,* 30, 574-586.

McAndrew, F.T., 1993, *Environmental Psychology.* Brooks/Cole, A Division of International Thompon Publishing Inc.

Scherbaum, C. A., Popovich, P. M. and Finlinson, S., 2008, Exploring individual-level factors related to employee energy-conservation behaviors at work. *Journal of Applied Social Psychology,* 38(3), 818–835.

Schwartz, S., 1977, Normative influences on altruism. In L. Berkowitz (Ed.), *Advances in experimental social psychology,* 10, 221–279. New York: Academic Press.

Stern, P.C., 2000, Toward a coherent theory of environmentally significant behavior. *Journal of Social Issue*, 56(3), 407-424.

Stern, P. C., Gardner, G. T., Vandenbergh, M. P., Dietz, T. and Gilligan, J. M., 2010, Design principles for carbon emissions reduction programs. *Environmental Science & Technology*, 44(13), 4847-4848.

Tikir, A. and Lehmann, B., 2011, Climate change, theory of planned behavior and value: a structural equation model with mediation analysis a letter. *Climate Change,* 104, 389-402.

UNFCCC

http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php

Comparison qf vhe Riding Six Amusement Facilities qn Psychophysiological cnd Behavioral Responses

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Abstract:

The purpose of this study was to explore the psychophysiological and behavioral responses of while passengers riding in the six amusement facilities. Although all of the rides in amusement park showed the limitations of riders e.g., stature, body weight, age, pregnant women, heart patients, however, potential impact of physical and psychological for passengers might be occurred. Thus, present study was to measure the psychophysiological responses of riders while riding the roller coasters, swinging ship, monorail, falling tower, carousel and 360 degrees swinging rides. The heart rate, respiratory rate, skin temperature, changes in trunk angle, maximum acceleration and three-axis acceleration of change have collected by physiology monitoring system (BioHarness, Biopac Systems Inc, USA). Results of ANOVA showed that the peak heart rates were significant difference between riding amusement facilities. These were the highest heart rates in riding the falling tower (142 bpm) and 360 degrees swinging rides (133 bpm). On the other hand, there were higher increment from resting heart rates and respiratory rate while riding the winging ship. Indeed, range of motion in trunk postures were variations in intensity while riding 360 degrees swinging rides. Peak acceleration had occurred in riding the falling tower (2.21g) and roller coasters (2.1g). Results of present study could be provided information for classifying the recreational facilities, such as general level (all passengers), slightly stimulated level (with their parents or with some of the risk), stimulation level (strongly recommended to consider passengers' health condition required).

Comparison of the Riding Six Amusement Facilities on Psychophysiological and Behavioral Responses

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1. Introduction

Amusement and theme parks are terms for a group of entertainment attractions and rides and other events in a location for the enjoyment of large numbers of people. Amusement parks evolved in Europe from fairs and pleasure gardens which were created for people's recreation. The oldest amusement park in the world (opened 1583) is Bakken, at Klampenborg, north of Copenhagen, Denmark. In the United States, world's fairs and expositions were another influence on development of the amusement park industry (Adams, 1991). Modern amusement parks now run differently than those of years past. Amusement parks are usually owned by a large corporate conglomerate which allows capital investment unknown by the traditional family-owned parks. Starting with Disneyland in the 1950s, the park experience became part of a larger package, reflected in a television show, movies, lunch boxes, action figures and finally park rides and costumed characters that make up the "theme."Disney also won seven Emmy Awards and gave his name to the Disneyland and Walt Disney World Resort theme parks in the U.S., as well as the international resorts Tokyo Disney, Disneyland Paris, and Disneyland Hong Kong. In addition, The US Amusement and Theme Park Industry continued to grow in popularity. Amusement parks reported a record $9.1 billion in revenue during 1999. In 1999, the 450 fixed-site amusement parks in the United States accommodated approximately 309 million visitors from around the world (International Association of Amusement Parks and Attractions).

In recent years, people are with the increasing capacity of economy and improving the quality of life, theme park in Taiwan were rapidly development including Janfusun Fancy World, LeoFoo Village Theme Park, Formosan Aboriginal Culture Village, Farglory Ocean park, E-Da Theme Park, and Window on China Theme Park etc. The theme park industry was in order to attract more tourists, theme parks have build more facilities involving about free fall, roller coaster and other rides mechanical, for example, the "Atlas Shuttle" of Janfusun Fancy World is the speed of 80 km/h surged to an altitude of 65 meters, and then slowly drop back to the ground . The "windy Eagle" of LeoFoo Village Theme Park was to drop from height of 56 meters, and reached maximum speed 122 km/h. The "UFO free fall" of Formosan Aboriginal Culture Village had fall for 85 meters high and reached maximum 105km/h speed from the rapid decline in high altitude. In addition, the facility of "Mayan Adventure" was

from the 11-story top straight down, passengers are exposed to 4.5G. However, the physiological impact of changes to its passengers, it will require further study.

However, media coverage of amusement park injuries has increased over the past several years, raising concern that amusement rides may be dangerous. Amusement park fatalities and increases in reported injuries have prompted proposed legislation to regulate the industry (Braksiek & Roberts, 2002). Based on regulation on management and inspection of mechanical recreational facilities, recreational facilities were divided into as followed:

(1) Rail track mechanical amusement facilities, such as: roller coaster, monorail, ship and other vehicle facilities.

(2) Rotary mechanical amusement facilities, such as: carousel, rotary coffee mugs, flight tower, centrifugal wheel, and other single or multi-center rotary movement of the facilities.

(3) Suspension ropes, mechanical amusement facilities, such as: cable cars, Ferris wheel and the other to cable (chain) suspension movement facilities.

Although safety consideration for each amusement facilities had been announced for limitations of age, physical conditions, and stature restrictions, passengers do not understand the responses after riding amusement facilities. Potential impact of physical and psychological for passengers might be occurred. Thus, present study was to measure the psychophysiological responses of passengers while riding the roller coasters, swinging ship, monorail, falling tower, carousel and 360 degrees swinging rides.

2. Methods

2.1 Subjects

Fifteen undergraduate students were recruited from St. John's University, serving as paid volunteers during the study. Their average (SD) age was 22.3 (0.49) years and average stature was 165 (16.5) cm. The average body weight was 61.4 (15.5) kg. All subjects were healthy and reported no musculoskeletal problem and cardiovascular diseases that would influence their performance detrimentally.

2.2 Experimental Equipment

Present study applied the Physiology Monitoring System (The BIOPAC BioHarness™) is a state-of-the-art lightweight portable biological data collection and analysis system. See Figure 1 for reference.

Figure 1 Physiology   Monitoring System

Physiological parameters were recorded as followed:

(1) Heart rate: ECG data is filtered and processed to produce this value. (Data Frequency 1 Hz, 1.008 Seconds; Units BPM, Beats per minute; Min-Max Value 0 to 240).

(2) Respiration Rate: Respiration rate. It will take 30-45 seconds from start of data processing to stabilize. Respiration rate can be subject to artifacts (peaks and troughs) as the sensor responds to non-breathing related input such as movement of the torso, speech, coughing, etc. (Data Frequency, 1 Hz; Units BPM, breaths per minute, Min-Max Value 0-70).

(3) Skin Temperature: Skin temperature as measured by IR (infrared) sensor in apex of device (Data Frequency 1 Hz, Units °C, Min-Max Value 10-60).

(4) Posture: Degrees off vertical in any orientation. A positive value indicates an anterior (subject lean forward) component, negative a posterior component. Subject's natural posture may mean an 'upright' position does not generate a value of 0° (Data Frequency 1 Hz, Units Degrees from vertical Min-Max Value 90 to +90).

(5) Peak Acceleration: Maximum 3-axis acceleration magnitude achieved during previous 1 second epoch (Data Frequency 1 Hz, 18Hz sampling, Units g (gravitational force), Min – Max Value 0-5.7).

2.3 Design of Experiments

Participants have been riding six recreational facilities the falling tower (A), swinging

ship (B), monorail (C), the 360 degrees swinging rides (D), carousel (E), and roller coasters (F). The order of these trials was randomly assigned for each subject.

Figure 2 Falling tower (A)

Figure 3 Swinging ship (B)

Figure 4 Monorail (C)

Figure 5 The 360 degrees swinging rides (D)

Figure 6 Carousel (E)

Figure 7 Roller coasters (F)

2.5 Experimental procedure

The participants were dressed in sport wear during the trials. A rest period of at least 10 min was provided for each subject (longer if required) before resting physiological measurements were collected to serve as baseline. A total of six trials were performed. A minimum rest period of 30 min (more if required) was provided between trials until baseline physiological indices were restored. During the rest periods, participants were asked to stay seated, relax and remain silent. If baseline measurements could not be achieved after a rest period, the experimental session was resumed the next day.

2.6 Data analysis

A randomized complete block design (blocks as individual subjects) with riding recreational facilities was used for this study. The Physiology Monitoring System was utilized for determination of physiological response including heart rate, Respiration Rate, Skin Temperature, Posture and Peak Acceleration. Data have been coded and analyzed by SPSS statistical analysis software. All trial data files were exported in Microsoft Excel format, with the mean values for dependent variables then calculated over the final 2 min of each trial, by which time observed variables were deemed to have achieved a steady state for in each participant. Further, analysis of variance (ANOVA) was utilized to identify significant differences between conditions for dependent variables. Statistical significance was set at a probability level of 0.05

4 Results

Results of ANOVA showed that the peak heart rates were significant difference between riding amusement facilities. These were the highest heart rates in riding the falling tower (140.6 bpm) and 360 degrees swinging rides (132.7 bpm). On the other hand, there were higher increment from resting heart rates and respiratory rate while riding the winging ship. Indeed, range of motion in trunk postures were variations in intensity while riding 360 degrees swinging rides. Peak acceleration had occurred in riding the falling tower (2.0g) and roller coasters (1.8 g). Results of present study could be provided information for classifying the recreational facilities, such as general level (all passengers), slightly stimulated level (with their parents or with some of the risk), stimulation level (strongly recommended to consider passengers' health condition required).

Table 1 Mean measures between amusement facilities

Amusement facilities	Max heart rate (bpm)	Max respiration rate	Max skin temperature	Max posture	Peak acceleration
Falling tower (A)	140.6 ***	18.8	34.3***	24.6***	2.0***
Swinging ship (B)	125.5	21.1	34.5	26.4	1.2
Monorail (C)	119.6	19.6	34.6	29.7	1.2
The 360 degrees swinging rides (D)	132.7	20.2	34.6	55.4	1.7
Carousel (E)	120.7	19.3	34.2	25.9	1.1
Roller coasters (F)	122.2	19.6	33.7	30.1	1.8

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
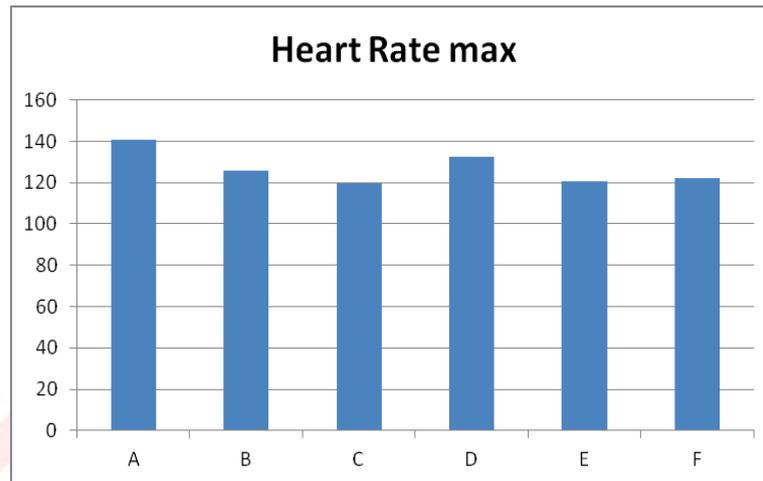
Figure 8 Maximum heart rate between six recreational facilities
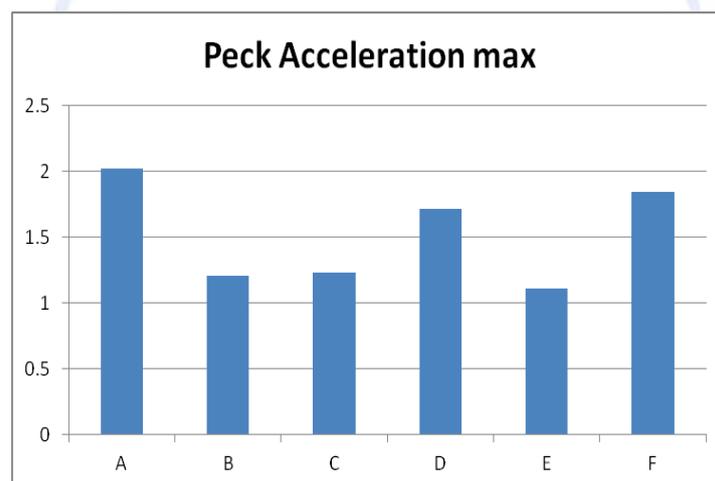
Figure 9 Peak acceleration between six recreational facilities

5. Discussion and conclusion

Min et al. (2002) was to measure the sensibility of young passengers through autonomic responses and subjective assessment under different speeds and driving modes of a vehicle. The study is composed of two categories: (1) measurement of the human sensibility at five speeds of a vehicle (i.e., 0, 30, 60, 90, and 120 km/h), and (2) three modes of driving conditions (i.e., rest, constant speed (60 km/h), sudden start, and sudden stop). The physiological measurements used are autonomic responses of heart rate, galvanic skin response, and skin temperature, and the psychological measurement is the subjective assessment. Comparing the results of the pre-test with the post-test under various speed

conditions, it was found that subjects feel tension under the high speed driving condition (120 km/h). The result of physiological signals also showed that as the speed of a car increased, the sympathetic nervous system of passengers became more highly activated. This study investigated the change of sensitivity (or change of tension) contingent to the speed and modes of driving. If it is assumed that drivers and passengers will show similar, then the following results can be inferred: the increment of speed, or sudden-stop or sudden start produces high tension, indicating the increment of the driving workload and driving stress. Therefore, the evaluation of the tension from the autonomic nervous system, or from the subjective assessment, could be one method for evaluating the driver's workload or stress. In addition, Chang (2011) reported that the average heart rate was significantly higher on taking high-speed rail than on rail travel. High-speed rail passengers aboard the impact of physical load, study results showed that subjects were different stops take trips to stop at every station with direct train times are compared, the results are shown for each station stop and different physiological responses through train times, stop times for each station are higher heart rate, heart rate value more direct train times the average acceleration of heart rate changes have a significant effect.

The study of Wen et al. (2008) was conducted in four famous theme parks in Taiwan. It consisted of field study using a questionnaire and cardiovascular measurement using a wrist-worn monitor. They randomly measured heartbeat and blood pressure for some young visitors before and after their riding. Field study indicated that a number of visitors did not fully understand the potential risk for riding those breath-taking facilities because the warning slogans were not very detailed. The measurement showed that both swing-type and rolling-type facilities induced bradycardia in 70.2% of riders. Later on we also found that up to 33.3% of those who rode roller coaster with -Gz/ +Gz transition within 30 minutes right after riding above two type facilities presented their slower heartbeats. Among them, bradycardia appeared in 23.1% of subjects after both swing/rolling and roller coaster riding. Wen et al. (2008) suggested that a minimum 30-minute break should be taken for challenging themselves in roller coaster in case of having swing and roll previously.

6. Conclusions and recommendations

Results of analysis showed that heart rate, respiratory rate of physiological responses are higher than under normal condition while taking the recreational facilities. Results of present study could be provided information for classifying the recreational facilities, such as general level (all passengers), slightly excitement level (with their parents or with some of the risk), high excitement level (strongly recommended to consider passengers' health condition required). Administration staffs should be provided the physiological measurement (e.g.

blood pressure and heart rate) to evaluate the health conditions of passengers before taking amusement facilities. In addition, a minimum 30-minute break should be taken for challenging recreational facilities.

References

Adams, J. A. 1991, *The American Amusement Park Industry: A History of Technology and Thrills.* Boston: Twayne Publishers.

Allen, M. E., Weir-Jones, I., & Eng, P. 1994, Acceleration perturbations of daily living. *Spine,*19, 1285-1290.

Braksiek, R. J. & Roberts, D. J. 2002, Amusement park injuries and deaths, *Annals of Emergency Medicine*, 39, 65-72.

Chang, Y. Y. 2011, *Evaluation of Physiological Responses and Subjective ratings for High Speed Rail Passengers*, Master Thesis, St. John's University, Tamsui, New Taipei City.

International Association of Amusement Parks and Attractions Web Site. Available at: http://www.iaapa.org.

Min, B. C., Chung, S. C., Park, S. J., Kim, C. J., Sima, M. K. & Sakamotoc, K. 2002, Autonomic responses of young passengers contingent to the speed and driving mode of a vehicle, *International Journal of Industrial Ergonomics*, 29, 187-198.

Shin, K., Lee, Y., Song, Y., Han, S., & Lee, M. 2008, Ride comfort analysis based on heart rate and blood pressure variability according to changed tilting angle at tilting train simulator. *International Conference on Smart Manufacturing Application*, 570-574.

Wen, T. S., Chen, C. L., Hong, C. N., & Huang, C. R. 2009, A Consideration of Safe Aspect for Roller Coaster Riders, *The 57th International Congress of Aviation and Space Medicine*, pp.92, Croatia.

Renegotiating Your Marriage, Balancing vhe Terms qf Your Relationship cs kt Changes.

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Official Conference Proceedings 2012

Abstract:

I want to conduct a 60 minute workshop on how to develop trust that promotes flexibility in a long term relationship. This workshop will be based on my recently published book, "renegotiating your marriage, balancing the terms of your relationship as it changes", published by adam's media, december 15, 2011. I will also include material from my five other published books on relationships. Special attention will be paid to my book "choose to be happily marriage, how everyday decisions effect lasting love." all of the books that i have written are based on how to establish trust in a relationship between two people, family members, groups and institutions. I will train participants to distinguish between boundaries and barriers through the inadvertant choices that they are making from moment to moment. Boundaries allows personal space between people while making a connection--the basis of trust. Barriers are impentrable walls that lead to lonliness and isolation ---- the basis for mistrust.

Knowing how to make choices that lead to space between close others as well as comfortable access leads to long-term psychological and social development.

To renegotiate the implicit bargains that we all make in long-term relationships --trust is the most essential factor.

I am an expert modern analytical group therapist and can present this workshop in a dynamic manner so that each participant leaves the experience with profoundly new personal knowledge that can transform their everyday lives if they are willing to hold onto the insights that they will gain from their participantion in the workshop

I am the director of the new york institute for psychlogical change a collaborative of 15 psychiatrists, psychologists and social workers. I conduct five modern analytic long-term psychotherapy groups in my private practice.

I supervise graduate students from new york university, hunter college and yeshiva university on treating public school students.

Renegotiate Your Marriage—balance the terms of your relationship as it changes.

This paper is a summary of forty years of experience as a clinical psychologist, author of six self-help books, adjunct professor in the applied psychology department at New York University, modern analytic group therapist, wife and mother.

The structure of this paper will follow the format of my book called *Renegotiate Your Marriage*, published in 2012 by Adam's media. Adam's is currently negotiating to have it translated into Japanese.

Although the book is geared towards marriage much of it is applicable to any relationship you wish to sustain over the length of your life.

The talk will be divided into three parts which are:

1. Renegotiating how to love one another

2. Renegotiating how to honor one another

3. Renegotiating how to cherish one another

The basic premise for all lasting associations is that implicit relationship contracts are flexible and open to renegotiation. Any long term connection is either doomed or a misery to sustain if a couple believes the original agreement must be kept for a lifetime.

As the author, Lillian Hellman opines, "People change and forget to tell us."

And on occasion even we fail to notice our own changes until our frustration directed at the other person does so much damage that for some, repair is beyond reach.

The research findings listed below compare people who cohabitate with those who marry. The results reinforce why I find the thesis of how to renegotiate your marriage fascinating and important. Married people have the following advantages:

1. Live longer

2. Have less psychological illness

3. Exhibit fewer risky behaviors and suffer fewer economic hardships

4. Have more sex

First we will discuss, renegotiating how to love one another and begin with sexuality between long term couples, each section of the talk will address the answers to the following seven topics:

1. How to identify when your needs have changed

2. How to express them in an unthreatening way

3. How to accept your spouse's needs

4. How to rekindle desire and enhance your sensual life.

5. How to mediate the differences between you and your partner that could threaten the relationship

6. How to put your partner ahead of your principles

7. How to increase your ability to support, encourage, and empathize with each other.

We begin with how to position yourself for a better marriage. This is a play on words as varying sexual positions do help to sustain the interest in the relationship. Hormone production changes as a couple's sexuality evolves. This discovery has been uncovered in the seminal work of Dr. Helen Fisher. There are three biological stages in a sexual relationship:

1. Lust

2. Romantic relationship

3. Attachment

Becoming aware of this normal hormonal evolution, helps the couple to appreciate the changes that occur as the pair progresses throughout life. The value of naming and accepting these changes is that when a person understands what is occurring between him and his spouse he is less likely to personalize the experience and erroneously believe reduced sexual appetite means lack of interest in one's partner. In actuality dissimilar developmental stages require different approaches to a sexual relationship.

Most new couples are physiologically designed to lust for each other. The strong desire they feel provides a chemical high of testosterone and adrenalin, in both men and women, loosens inhibitions, and fuels a wish to procreate. During this stage an implicit promise is forged, "I will always want you the way I want you right now." If a couple is lucky, lust turns into love, and they progress to the romantic stage, in which partners court. This is generally when the idea of marriage arises. Ultimately, after about two years, they reach the attachment phase. When this

stage commences some couples must contend with dramatic changes, often one of the first significant challenges to their happiness.

The next slide will show the three forms of attachment:

1. Secure

2. Anxious

3. Insecure

First I will describe these three stages and then I explain the insecure stage in detail as defined by Dr. John Bowlby one of the originators of these concepts. Knowledge is power and the more we understand the changes that are occurring in our relationship the more we can manage them and not feel victimized by them.

Secure attachments are formed when our parents respond appropriately to our needs and make us feel safe and surrounded by love. If both people in the couple come from families that offered secure attachments, very likely there will be no traumatic or dramatic change of sexual interest with each other.

Anxious attachments occur when the child's confidence is undermined. Overprotective parents can often trigger the feeling that the world is dangerous. Within a couple this could lead to excessive jealousy, over demandingness, or general discomfort with autonomy either ones own or ones partner's. This kind of anxiety can to serve as cold water on hot sexuality. One or both partners can feel less sexual which in turn can lead to more anxiety as the closeness seems to lessen. In this situation one negotiation strategy would be to address the subject that personal freedom is being challenged. The more independent partner can offer assurance that her desire for independence is not about abandonment but positive self love. A bargain can then be struck for a fun exchange. Every Wednesday I will go out with my girlfriends for dinner and a chick flick. Every Friday we will come home, get into bed early and commit to a sexual, sensual experience. The one who was feeling trapped begins to get some breathing room and her interest returns. If both people have anxious attachments, sex may be used as a form of comfort and assurance that there will be no desertion. Eventually even as a protection against abandonment the sexuality may become less compelling, but not necessarily. Once negotiation begins sexuality can resume even if it has started to wane.

Insecure attachments are formed when a parent is negligent or distant. If you have had this experience as a child or your spouse has had this it helps to look further into Bolwby's breakdown so that you can name what is happening and develop negotiation strategies to heal the hurt of the past. Bowlby has four categories in insecure attachment:

1. Avoidant

   a. Parental style—unavailable

   b. Adult characteristics—distant, intolerant

2. Ambivalent

   a. Parental style—Inconsistent, intrusive

   b. Adult characteristics—anxious, insecure, charming

3. Disorganized

   a. Parental style—parental behavior frightening

   b. Adult characteristics—chaotic, craves security, untrusting

4. Reactive

   a. Parental style—unattached, malfunctioning

   b. Adult characteristics—no positive relationships.

Starting with avoidant attachment, if you discover after several years that your partner becomes increasing distant and intolerant the natural tendency would be to begin avoiding him. Then he would have unconsciously recreated his relationship with his first family. Renegotiating with yourself to stay connected and warm towards the other no matter how difficult this becomes makes the possibility of change in attachment style possible for your partner. Negotiate that no matter how the day goes each night and every morning there will be a full body hug and that at least once a week, make sure the couple has sex.

Ambivalent attachment style leads to charming seduction and fearful flight; almost like seduce and abandon. The problem with an ambivalent attachment is that it triggers in the recipient, an obsessive thought disorder. Ironically this compulsive thinking about the other person leads to becoming overly solicitous, protective, and insecure just like the original caregiver. Renegotiation requires looking at oneself first. If you notice you are frequently wondering where your partner is, what he is doing, when you will be meeting up, etc., you can make a

family calendar. Each person puts his schedule into the family computer. Make sure one night a week the couple has a date out of the house. With this date include sensuality as a means of creating a feeling of security. Meditate to calm your mind and do your best to offer a soothing secure home for both people. Eventually the safety at home will influence the ambivalent attachment style. Be as optimistic as possible as pessimism fuels ambivalence.

 A disorganized attachment style leads to chaos and insecurity in the home. Will she be there for dinner, can I count on her to pick up the children, will she remember the milk and the cat food as she promised, etc. The house is a mess, the clothes are not washed, and everything is haphazard. Yet she is adorable and I love her. Sit down and list every task needed in the household. Begin a lottery where each person gets to select a task that is easiest for him to complete. Allow the chaotic partner to pick the first task and then alternate until all is assigned. Review every three months how the list is working out and if it needs improvement, agree to work on it. The main personal challenge is to stay calm and not allow yourself to lose your temper although it is tempting to scream at the chaotic partner again recreating the frightening household within which she was raised. Do not expect your mate to initiate sex if you withdraw due to frustration as his fear makes taking risks almost impossible until he feels completely safe. His primary self defense in childhood was isolation and he is very familiar with living his life apart but together. Since the first section of this talk is about renegotiating how to love one another, the question now arises-- how do you love a person who is unattached and malfunctioning in and out of bed. This is where serious negotiation must take place, including suggesting that the couple see a marriage therapist in exchange for something dearly sought after by your partner. Maybe it is a Canadian fishing trip next Summer, or a hike alone on the Appalachian trail, or being able to go solo to violent movies once a week or once a month. Whatever could be a bargain chip to entice your partner to take his withdrawing seriously and know that you love him enough to not give up on him, but in this case a third party is required to re-position the marriage.

Next we will discuss finding new passions as well supporting your partner's interest. Adding new interest to your own life can eventually be stimulating for the couple. At first it feels disruptive and abandoning to begin training for a marathon when your partner has a hip injury. But eventually if you hold onto your personal boundaries and belief in yourself it may influence your partner to find his own new passion, like bridge, or music, or swimming.

Continuing with the topic of renegotiating how to love one another, we move on to giving with no strings attached. A best selling author Gary Chapman devised seven gestures that intensify loving:

1. Verbal affirmations

2. Gentle touches

3. Quality time

4. Gifts

5. Acts of Service

6. Kind gestures

7. Considerate behavior

Finally we complete this section of the discussion with how to regain trust and forgive each other after one or both of the partners have had an extra marital affair.

In their book, *SuperCooperators,* Nowak and Highfield convincingly argue that survival of the fittest is also survival of the most cooperative. If the goal is family stability in a marriage where there is infidelity the cheating spouse needs reassurance that cooperating to rebuild the marriage will not result in a lifetime of guilt trips and perpetual distrust, but an existence of increased fulfillment, security, comfort, and safety.

Successful renegotiations through infidelity have two things in common:

1. The betrayed spouse refrains from verbal or emotional attack

2. The cheating spouse undergoes a journey of self discovery

Four initial steps to renegotiating after infidelity:

1. Take a journey of self-discovery

2. Show up—welcome your betrayer with warmth and acceptance when your partner tries to come closer

3. Breed desire through freedom and novelty

4. Move out of your comfort zone

Five more steps to renegotiating after infidelity.

1. Seek help within the community

2. See through the other's eyes

3. Abandon your assumptions

4. Stay flexible

5. Be open to surprise

We now move on to renegotiating how to honor one another

Starting with, remaining lovers after becoming parents. We honor our partner by knowing the difference between influence and control. Once the children are here family life needs structure. Influencing each other to provide for the children and for the couple honors the marriage. Neglecting the couple is dishonor, neglecting the children is also dishonor. This idea seems easier said than done according to the research conducted by Margolis and Myrskyla. They surveyed 200,000 people in 86 countries and their data was not optimistic when it came to children. Young couples in their twenties who remain childless are happier than pairs who became parent, couples in their thirties experience a dramatic dip in contentment once children are born. Couples procreating in the late thirties, forties, and even fifties report a consistent level of happiness above what they previously experienced, presumably because they are grateful to have children as their biological window is closing. Daniel Gilbert declares, "Children take lovers and turn them into disgruntled parents". Couple's who can negotiate their partnership through the three stages of child rearing, infancy/childhood, adolescence, and young adulthood, can accomplish the goal of honoring one another. Negotiating with wisdom allows parents to set themselves up for a lifetime of joy and satisfaction once the kids are launched and they are able to focus exclusively on each other again. Of course they must protect themselves from becoming all consuming grandparents at the expense of rediscovering being lovers.

"A baby changes everything." Negotiate date night, sex nights, sharing baby sitting with other parents, fight as hard as you can for private time. It is a matter of life or death of the couple's special connection to each other. Remember romance and forget fairness.

Four steps to renegotiating childcare:

1. Make a list

2. Find creative solutions

3. Show need—especially for your spouse

4. Give and give

Adolescence—the main skill for becoming parents of this species of humankind is to put worrying on hold. Negotiate ways to spend psychic energy to keep you and your spouse bonded instead of worrying about what could happen in the future to your adolescent children, in cars, dating, drugs, school, police and so forth. When the children are in their teen years the main renegotiation is how to support each other while parenting these strangers. Ways to stay bonded:

1. Remember your youth

2. Renegotiate your perspective

3. Find humor

4. Discover why cool is cool

Young adulthood—empty nest is a fresh stage of loverhood. The couple needs to negotiate a new life.

1. Talk out feelings

2. Court each other

3. Rekindle desire

4. Be compassionate

5. Understand intent.

The alternative to dealing with empty nest is your child re-entering the home. Here you must create a firm contract on what are the expectations of parents, for their own relationship and well as what obligations the adult child has once he re-enters the parents' home.

Another topic that addresses how to honor one another is the topic of money. Seventy-six percent of Americans named money as the number one source of stress in their lives. Having a candid conversation when it comes to money is often very difficult. As this topic elicits feelings

of shame, I am not good enough, and guilt, I am too greedy. There are three steps to renegotiate your financial life, which will serve to honor both you and your spouse. They sound simple to describe but once you are on the hot spot they are sometimes very challenging to accomplish:

1. Speak calmly

2. Give and give

3. Get into the details.

The next topic---career transitions: following your dream without leaving anyone behind is clearly about honoring your own potential, talent, creativity while acknowledging that you have agreed to a life partnership. Interestingly Peetz and Hammrath have uncovered that couples who are the most effusive in the courting days are usually the ones that have the greatest difficult navigating a spouse's career transitions. Perhaps sweeping promises during the heady days of love make unforeseen change difficult to adjust to.

Four steps to renegotiating a career transition:

1. Get away—change the environment to begin the discussion

2. Create rituals

3. Make your partner the priority—plan special time together

4. Implement modifications in small doses

As you discuss how you want your financial life to look, pay special attention to:

1. What has worked in the past

2. Envy, jealousy, fear of being left behind

3. Plan a time to discuss new beginnings for the partner who is remaining in status quo

Another important dynamic in honoring one another is the challenge of job loss and the test of embracing who you are, not what you do.

You honor yourself and your spouse by following the five precepts towards well-being noted in Seligman's book *Flourish:*

1. Positive emotion—learn to approach life with the glass half-full

2. Relationships—allow your spouse to support you

3. Engagement—find a passion which there is "flow"--- mindless absorption

4. Meaning—find it when washing the dishes to volunteering with the elderly

5. Accomplishment— feel as good about planting a flowerbed as finding a new job.

Some of the remaining topics that are under the heading of renegotiating how to honor one another are division of labor, forgoing assumptions and finding harmony, hobbies, championing each other's changing interests, changing values, respecting differences.

Finally part three is about renegotiating how to cherish one another.

Some of the intense challenges to cherishing another person are when:

1. The couple undergoes infertility. Here we must learn how to prevent our marriage from becoming barren—both spiritually and biologically.

2. Trauma—sticking together after a traumatic event. Nothing gives a person more inner strength then finding joy of life after something very dark occurs.

3. Addiction: recovering your true self whether you are the addict or the partner of the addict. Of course if one of your children becomes an addict this is also a challenge for discovering your true self.

4. Spiritual quests, searching for meaning without losing each other

5. Illness, finding intimacy when your are feeling lousy

6. Death and dying, learning to live with loss

All of these changes are experienced by most of us if we choose the challenge of a long term partnership. There are two ways to take a life-long journey---

1. Horizontally

2. Vertically.

Horizontally is finding a new mate when the disconnect between you are your partner seem almost impossible to transcend. Many people decide to change their spouse like changing their worn out sofa. It is exciting at first to be with a brand new person. Ultimately the same conflicts emerge. Why? Because, you have failed to challenge yourself to renegotiate your own habitual ways of responding.

Vertically is learning how to re-negotiate with the person with whom you have married. The second challenge is more lasting because you confront rigidity in yourself and learn new aspects of your own being by renegotiating with your long lasting partner.

Finally it leads to the joy of an intact family system for the children, their spouses, the grandchildren and hopefully by staying in the same marriage for a lifetime you increase the chances for a long life in which you may have the privilege of getting to know your great-grand-children.

The past generations had less ambivalence about staying together for a lifetime as economic and religious options were limited or non existent. Today we are blessed (and maybe cursed) with so many more choices, including never marrying. Each of us has to look deeply within ourselves to judge what choices give us the most opportunity to challenge ourselves for a lifetime of opportunities for self actualization. The more grateful we are for being given the gift of life the more likely we will be to search for ways to makes ourselves better throughout our lives.

RESOURCES

1. Blackwell, Debra and Lichter, Daniel. "Homogamy Among Dating, Cohabiting, and Married Couples." *The Sociological Quarterly* 45 (2004): 719-737.

2. Bowlby, John. "The Making and Breaking of Affectional Bonds." *British Journal of Psychiatry* 130 (1977): 201-210.

3. Carey, Benedict. "The Psychology of Cheating." *New York Times,* April 17, 2011.

4. Chang, Althea. Special to the Street.com. "Couples and Money." Lawyer.com. April 2011.

5. Fisher, Helen. *Why We Love.* New York: Henry Holt, 2004.

6. Gilbert, Daniel. *Stumbling on Happines.* New York: Alfred A. Knopf, 2006.

7. Nowak, Martin A. and Highfield, Roger. *SuperCooperators: Altruism, Evolution, and Why We Need Each Other to Succeed.* New York: Free Press, 2011.

8. Seligman, Martin. *Flourish: A Visionary New Understanding of Happiness.* New York: Simon and Schuster, 2011.

9. Ury, William. *Getting Past No.* New York: Bantam, 1993

The Causal Relationship Model of Work-Life Balance Affecting the Employees' Effective Work Behavior of the Automotive Part Manufacturers, The Eastern Thailand

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Abstract:

The purpose of this study was to develop a causal model of work-life balance affecting the employees' effective work behavior of the automotive parts manufacturers in the Eastern Thailand. Mixed methods research was employed. For quantitative method, data were collected from 676 employees of 50 automotive part manufactures by questionnaire. SPSS for windows was used for rudimentary data analysis. LISREL was used for analyzing the goodness of fit of model. In terms of qualitative method, data were collected from employees by open-ended questions and from mangers, employees and employees' family members by in-depth interview and focus group. The content analysis was used to analyze the data. The results revealed that: (1) the proposed model was modified to fit the data and chi-square value and goodness of fit indices of model was acceptable: c^2 =49.07, df= 37, p-value = .09, GFI = .99, AGFI = .97, SRMR = .02, RMSEA= .02, and CN = 824.92, (2) self-management, family support, and organizational support did not have direct effect on effective work behavior, but they had indirect effect on effective work behavior through work-life balance, and (3) self-management and organizational support had indirect effect on effective work behavior through problem focused coping. The qualitative result corresponded with the quantitative one. The additional qualitative results revealed that: (1) personality, upbringing, socialization, and organizational culture had effect on work-life balance, and (2) intrinsic motivation, work expertise, organizational culture, cooperation, co-worker relationships, communication, and physical and mental health had effect on effective work behavior.

The Causal Relationship Model Of Work-Life Balance

Affecting Employees' Effective Work Behavior: A Case Study Of Automotive Part

Manufacturers in Eastern Thailand*

Sayamon Akakulanan

Background

Due to the world crisis and the economic deceleration in Thailand during 2009, many automotive businesses and automotive part manufacturers in Thailand encountered decelerating production situation and continuously decreasing circulation. The automotive businesses and the automotive part manufacturers made an attempt to explore several strategies in order to support their businesses through this critical crisis i.e. reduction material cost , securing quality level, product reliability and so on. Their objective was to recall the customer reliability toward organizations and products as soon as possible (Kasikorn Research Center, 2009)

Only focusing on addressing the problem by building image and confidence from people outside organizations of the automotive businesses and automotive part manufacturers might be insufficient for long-term problem solving. Caring people inside organizations was also significant because during economic recession not only consumers lost reliability toward the organization, but employees, who were significant for the businesses, also obtained the direct effect from the crisis. The employees experienced the instability from both the automotive businesses and insecurity of employment such as cutbacks and salary reduction. The remaining employees were put more pressure to adapt themselves for highly-expected organizations by paying more attention, devoting body, heart and time to work for achieving the organizational goal which was the organizational survival and their own goal which are the long-term employment.

Above mentioned working aspect was considered to be a risk of losing balance between working and life. As it was found with Canadian workers in both public and private organizations during10 years ago, they got effect from organizational resizing due to economic recession. The recession resulted in losing work-life balance for workers because they had to work during weekend, spent more working hours and the needy time for life was shortened. They became discontent and anxious, causing health and family relationship problems (Duxbury et al., 2003).

There was a research result asserting that losing work-life balance negatively affected individuals and organizations. For individual effects, employees had health problems, stress, highly emotional weariness and decreasing work satisfaction. For organizational effects, employees' satisfaction toward organizations, employee engagement and efficiency and effectiveness in work were decreased, and absence and turnover rate was higher (Fu & Shaffer, 2001).

Conversely, there was a study about positive effects of work-life balance. It was found that if employees had well-balanced work life, it would increase satisfaction and motivation toward work. Also, it would help enhancing an organizational royalty, reducing work pressures, turnover and accident rate, whereas creating work with intention, which all would finally affect overall organizational performance (Forsthy & Polzer-Debruyne, 2007). As a result, it was very important that organizations should pay attention and realize its significance and promote adequate work-life balance for

employees in organizations so that effective work behavior could be established for better quality performance of organizations.

Agreeable to the relevant researches, it was found that there were many factors impacting work-life balance such as organizational factors: support from organizations and managers, work quantity, and work control, and individual factors: family support, family responsibility, work schedule, and tension in work (Warner, 2005). Besides, coping style (Rotondo et al., 2003) and self management (Warner, 2005), etc were factors affecting work-life balance as well.

According to the risk of losing work-life balance of Thai labors in the automotive businesses and the automotive part manufacturers in Thailand, including academic evidences, the researcher became interested in studying what factors had impacts on work- life balance and whether those factors together with work-life balance affected effective work behavior. The researcher expected that the research result would be beneficial for developing the theories of work-life balance and effective work behavior to be clearer. Then, it could finally have clear and specific practical planning and be beneficial for management. Factory managers of the automotive part industries could utilize this research result as a direction for supporting work-life balance and effective work behavior, managing and creating good and appropriate working atmosphere after the crisis of the automotive part industries so that employees could work more effectively and efficiently.

Objectives

The main objective of this research was to develop the causal model of work-life balance affecting the employees' effective work behavior. And minor objectives were to study whether the influences of family and organizational supports, self management, and problem-focused coping and work-life balance affected effective work behavior of employees in the automotive part industries, and how it should be.

Literature Review
Work-Life Balance

Many scholars severally defined the term of work-life balance, such as a definition of level or trend of individuals' satisfaction between paid-work and life which was not concerning with work by appropriately categorizing roles in life (McDonald and Bradley, 2005: 3), a definition of practically creating well-balanced life in every aspect: work, family, friend, health, emotional resting, and socialization by appropriate management on time and ability (Victoria, 2007: 66; Triple Creek, 2007), or a definition of emotional feeling that individuals had authority to deal with work, activities and managed time for practice as appropriately as personal demand (Pongatichat, 2006). Greenhaus et al., (2003) proposed three components of work-life balance: 1) *Time Balance* was how individuals prioritized time allocation toward appropriate responsibilities on work and beside work, 2) *Involvement Balance* was individuals' delight and willingness toward responsibilities on work and beside work, and 3) *Satisfaction Balance* was individuals' positive feeling affected from responsibilities on work and beside work.

Generally, individuals assumed that promoting work-life balance caused costing problem to employers, while benefit was on employees' side. Consequently, this motivated researchers on work-life balance to study on work-life balance and effective work behavior (Pongatichat, 2007) such as a research from Forthy and Polzer-Debruyne (2007) about perception on work-life balance support of employees who worked for organizations of production, service, education, transportation, finance and local administration in New Zealand, they found that a serious perception on work-life

balance support helped increase satisfaction and motivation in work, and royalty toward organization and decrease working pressure, turnover and accident. Moreover, it beneficially established intention in work and affected overall organizational performance.

Furthermore, there were several researches showed the relationship between work-life balance and other variables: self management, organizational and family support impacting work-life balance i.e. the study of McCannus (2009), studying about work and life balance: A Case Study of Technical Disempowerment. He found that skills of self control and self management were important to work-life balance, the study of Behson (2002) about relationship between work and family, organizational support and organizational atmosphere with employees' performance found that organizational support related to work-life balance, and the research of Lirio et al., (2007) on Exploring Career-Life Success and Family Social Support of Successful Women in Canada, Argentina, and Mexico found that the support from the marriage couple, family and friends would increase satisfaction in work, family and work-life balance.

Effective Work Behavior

Effective work behavior of individuals was very significant for good productivity and performance of organizations. The effective work behavior consisted of 4 important components (Mapobsook, 2002): 1) *Conscience and Ideology in Work* – the perceived expectation of the organization and society toward individuals' working responsibility in both formal and informal styles. Working conscience was to realize what was being done, for what and how to achieve as target. Working ideology was a good thinking system in work established in an individual in order that an individual had strong intention to achieve in work, 2) *Responsibility and Discipline in Work* - responsibility in work was to perform assigned works or activities willingly and intentionally, prepare and organize well, and to be ready for positive and negative comments on what had been performed. Disciplinary in work was individuals' ability to control own emotion and behavior as intended without breaking rules in society and other people's right, 3) *Self Confidence and Endeavor in Work* – self confidence was the verbal and manner expression with appropriate confidence via the process of reasonable data-sending, receiving and utilizing management for individuals, time, place and situation at the moment. Endeavor in work was to be industrious, endurable, and never giving up in work. And 4) *Creative Thinking and Consideration in Work* – the creative thinking was creatively thinking processes, which could lead to new ideas, creations, and inventions, both abstract and concrete. Consideration in Work was to think objectively, consider carefully based on information or appearing condition, together with knowledge, idea and personal experience before making rationally final decision.

According to the relevant research results, it was found that there were many factors impacting effective work behavior: organizational and family supports, problem-focused coping, self management such as the study of Dillinger, et al. (2003) studying about relationship between characteristics, stress management and performing result of flight –training participants of the University of Illinois. The result commonly revealed that if participants could cope with stress and happening problem, it would help increasing the successful level in work and smoothen working performance. The research of Brightman (2000) on Reinforcing Professional Self-Management for Improved Service Quality. He found that Improving organization performance and service quality by managers happened from satisfaction and working effectiveness due to ability of self management to make a balance between subordinates and customers.

And the survey of Lirio et. al., (2007) on the Exploring Career-Life Success and Family Social Support of Successful Women in Canada, Argentina, and Mexico found that the organizational support on information, equipments, emotion and assessment had relationship on satisfaction increment in work and working performance. Besides, the research of Marcinkus et al. (2007) on the Relationship of Social Support to Work-Family Balance and Work Outcomes of Midlife Women found that the family support positively related to performance, work satisfaction, and career success of midlife women.

Regarding the study on the concerning ideas and researches based on relationship among variables, the researcher summarized as hypothesis below.

Hypothesis of Research
1. Work-life balance had direct effect on effective work behavior.
2. Problem-focused coping had direct effect on effective work behavior.
3. Self management had direct effect on work-life balance.
4. Self management had direct effect on effective work behavior and indirect effect on effective work behavior through work-life balance.
5. Organizational support had direct effect on work-life balance.
6. Organizational support had direct effect on effective work behavior and indirect effect on effective work behavior through work-life balance.
7. Family support had direct effect on work-life balance.
8. Family support had direct effect on effective work behavior and indirect effect on effective work behavior through work-life balance.

Methods
Mixed methods were employed in this research.

Quantitative method
The sample consisted of 676 employees from 50 automotive part manufacturers in the Eastern part of Thailand who were randomly selected by way of multi-stage random sampling. Data were collected from 158 items, 6 rating-scales questionnaire. The Cronbach's alpha reliability coefficients of the questionnaires were around 772-.966. SPSS for windows was used for rudimentary data analysis. LISREL was used for analyzing the consistency of the relationship model.

Qualitative Method
The researcher collected the data from 2 sources; the first source was collected from open-ended questions in the quantitative questionnaire and the other one was collected from in-depth interview and focus group from 3 groups of participants; employee group, manager group, and employees' family group, totally 19 persons.

Results
Quantitative Research Result
The objective model was modified to fit the data and chi-square value and goodness-of-fit indices of the modified model was acceptable (χ^2 = 49.07, df = 37, p-value = .09, GFI = .99, AGFI = .97, SRMR = .02, RMSEA=.02, and CN = 824.92). Self management, family and organizational support, problem-focused coping and work-life balance accounted for 79 percents of the variance in effective work behavior. That meant that the causal relationship model was consistent with the empirical data as showing the model of the variables of the relationship model and the standard influence

of the causal variables affecting the dependent variables in the Table 1 and Figure 1 below.

Table 1 Direct effects (DE) ,Indirect effects(IE) ,Total effects (TE) of Antecedents affecting dependent variables and Squared Multiple Correlation (R^2)

Causal Variables		Dependent Variables		
	Effect	Problem-Focused Coping	Work-Life Balance	Effective Work Behavior
Work-Life Balance	Direct	-	-	.23 *
	Indirect	-	-	-
	Total	-	-	.23 *
Problem-Focused Coping	Direct	-	-	.71 *
	Indirect	-	-	-
	Total	-	-	.71*
Self Management	Direct	.73 *	.72 *	-
	Indirect	-	-	.44 *
	Total	.73 *	.72 *	.44 *
Organizational Support	Direct	.15 *	.46 *	-
	Indirect	-	-	.08 *
	Total	.15 *	.46 *	.08 *
Family Support	Direct	-	.13 *	-
	Indirect	-	-	.01 *
	Total	-	.13 *	.01 *
R^2		.60	.97	.79

* Significant Level of .05
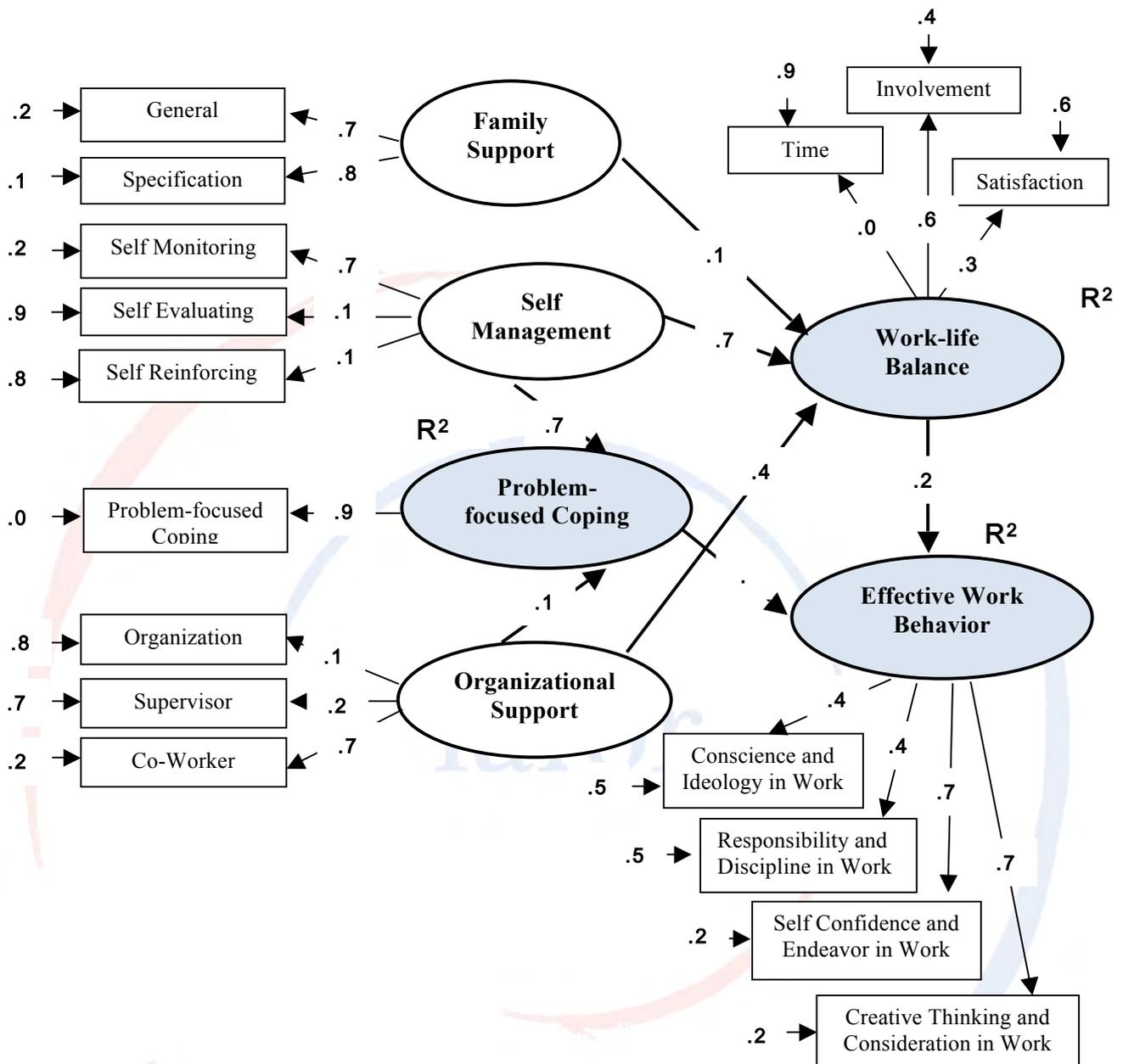
Figure 1: The Causal Relationship Model of Work-Life Balance Affecting Effective Work Behavior after Modified

According to the Table 1 and the Figure 1, the standardized path coefficient was summarized to reveal direct and indirect effects of antecedent and dependent variables by grouping as following hypotheses.

Hypothesis 1. It was found that work-life balance had direct effect on effective work behavior with statistic significant level of .05 and the path coefficient of .23. Therefore, this hypothesis was supported.

Hypothesis 2. It was found that problem-focused coping had direct effect on effective work behavior with statistic significant level of .05 and the path coefficient of .71. Therefore, this hypothesis was supported.

Hypothesis 3. It was found that self management had direct effect on work-life balance with statistic significant level of .05 and the path coefficient of .72. Therefore, this hypothesis was supported.

Hypothesis 4. It was not found that self management had direct effect on effective work behavior, but indirect impact is found. The finding was that self management had indirect effect on effective work behavior through work-life balance and problem-focused coping with statistic significant level of .05 and the path coefficient of .72. Therefore, this hypothesis was partially supported.

Hypothesis 5. It was found that organizational support had direct effect on work-life balance with statistic significant level of .05 and the path coefficient of .46. Therefore, this hypothesis was supported.

Hypothesis 6. It was not found that organizational support had direct effect on effective work behavior, but indirect impact was found. The finding was that organizational support had indirect effect on effective work behavior through work-life balance and problem-focused coping with statistic significant level of .05 and the path coefficient of .08. Therefore, this hypothesis was partially supported.

Hypothesis 7. It was found that family support had direct effect on work-life balance with statistic significant level of .05 and the path coefficient of .13. Therefore, this hypothesis was supported.

Hypothesis 8. It was not found that family support had direct effect on effective work behavior, but indirect effect was found. The finding was that family support had indirect impact on effective work behavior through work-life balance with statistic significant level of .05 and the path coefficient of .01. Therefore, this hypothesis was partially supported.

Qualitative Research Result

According to the result of qualitative data analysis by in-depth interview, focus group with manager, employee and family groups and open-end questions in the questionnaire, all three groups had consistent ideas that the models of problem-focused coping, self management, organizational support, and family support were the factor affecting effective work behavior.

Moreover, refer to the additional finding from qualitative data, which was different from quantitative data analysis, employee and manager groups had a mutual idea that work-life balance depended on individual's personality and habit.

The different idea of these two groups was: manager group saw that effective work behavior depended on upbringing, socialization descended from family, education, and work expertise, whereas employee group considered that effective work behavior depended on intrinsic motivation, cooperation, co-worker relationships, efficient communication (clear assignment, listening to others), and physical and mental health.

Discussion

The researcher presented the discussion based on the influential amount of causal factors affecting variables as below.

1. Causal Factors Affecting Work-Life Balance

The causal factors directly affecting work-life balance were family support, organizational support, and, the most influential factor, self management. This finding was consistent with Velsor's concept (Velsor, 2003) stated that an individual with good self management could balance work and life very well, as same as other common researches such as Muna and Mansour's (Muna & Mansour, 2007) and McCanus (McCannus, 2009).

They insisted that skills of self control and management were very vital for work-life balance.

The second influential factor affecting work-life balance, next to self management, was organizational support. The influence was medium which represented that organization could help to support and promote employee's work-life balance. As Thanacoody and team (Thanacoody et al., 2009) found similarly supportive result that receiving support from managers and co-workers resulted in better performance, good emotional feeling, life satisfaction and work-life balance.

Besides, a causal factor affecting work-life balance was family support. According to a study of Kirrance and Buckley (Kirrane & Buckley, 2004) and Lirio and team (Lirio et al., 2007) found that perception of support from marriage couple, family members, and friends could increase work satisfaction, family satisfaction and work-life balance.

However, the researcher made a notice according to the result that even though family support had influence on work-life balance, these influences was not considered to be high because most employees were not a local habitant; they just stayed temporarily in rented houses or apartments. They mostly went back home during weekend or holiday. If they felt upset, they could contact family by phone. This could make them get accustomed to work with family distance. Consequently, family influence could impact work-life balance, but not much when comparing with organizational support and self management.

2. Causal Factors Affecting Effective Work Behavior

The causal factors directly affecting effective work behavior were work-life balance and problem-focused coping. The most influential variable was problem-focused coping. When individual encountered problem, problem-focused coping could assist individual to perform assigned work successfully and satisfy individual to work with intention. This was consistent with a study of Bailey and Hailey (Bailey & Hailey, 2006). The research revealed that problem-focused coping could minimize anxiety and affect positive work behavior.

The influence of problem-focused coping was higher than of work-life balance because problem-focused coping was the same characteristic related to ability that directly concerning work success. Individual with problem-focused coping ability trended to adjust idea and behavior in order to learn and achieve. This characteristic could create effective work behaviors such as conscience and ideology in work, responsibility, self confidence, endeavor, creative thinking, and consideration. The mentioned behaviors derived from problem-focused coping more than work-life balance. Another possible factor was, referred to qualitative data, identified that effected from current business situation of manufacturers which were hurriedly being recovering was organizational resizing to reduce cost such as reduction of employee, working overtime. This action made employees feel satisfied with current work although they partially felt satisfied with work-life balance. They needed to perform as effectively as adequate level for continuing job. However, work-family balance was concerned with mental condition affecting individual behavior. To work good or not sometimes depended on mental condition; therefore, it was one reason that work-life balance influenced on effective work behavior, even it was not much, comparing to problem-focused coping.

For self management, organizational support and family support, it was not found direct influence affecting effective work behavior. Not found significance might happen from several reasons.

Firstly, Possibility from interview. The participants said that the world crisis situation mostly affected automotive industry such as organizational structure: employee reduction which affected mental condition. Everyday employee felt afraid of being layoff, job reduction or salary reduction. This working condition made employee feel unstable and

unsecure. Although having good self management, organizational and family support might not directly establish effective work behavior. But, it might depend on mental condition.

Secondly, because of Multinational Corporation such as from Japan, America, Taiwan, and so on, employees might get influence from cultural working from foreigners whose behaviors were target-focus, work-orientation, diligence, etc. Most employees might get cultural working transmission. Therefore, they worked for company with willingness and satisfaction with the current situation even though they had to work harder. Willingness and satisfaction could identify work-life balance. To sum up, effective work behavior didn't directly depend on skills of self management and organizational and family support.

Thirdly, after considering components of work-life balance, it was found that time management was balance identification which had less influence. How to judge balance depended on work-life balance of affective commitment and satisfaction. To sum up, work-life balance trended to be judged from willingness and current satisfaction more than from time management for work and living life such as time for family. Possibly, self management, family and social support didn't have direct impact on work, but had indirect impact through work-life balance of willingness and satisfaction. On the other hand, effective work behavior could happen if there was work-life balance that was willingness and satisfaction.

3. Causal Factors Affecting Problem-Focused Coping

When considering additional result from the research, direct influence of self management and organizational support on problem-focused coping was found. In other words, the linkage through effective work behavior was self management and organizational support which directly influenced on effective work behavior through problem-focused coping.

Self management had direct effect on problem-focused coping or indirect effect on effective work behavior through problem-focused coping. In other words, characteristic of employee with high skill of self management was that person always followed up progress of own responsible work, compared with determined standard performance, and awarded self for success (Thomas, 2000). When encountering any obstacles, individual would solve problem by trying to reduce internal and external stress, accept truth, devote self to work, survey self, estimate concern situations, seek for successful opportunity to solve problem or develop behavioral standard (Lazarus and Folkman, 1984 cited in Mitchell, 2004: 19). The mentioned characteristic was an important one for individuals who used problem-focused coping. To sum up, individuals with good self management would love to solve problem by problem-focused coping method. Therefore, self management had indirect impact on effective work behavior through problem-focused coping.

Besides, organizational support was found indirect impact on problem-focused coping or effective work behavior through problem-focused problem. It could be explained that even though employees got good organizational support from various dimensions (organization, supervisor, and co-workers), effective work behavior might not be directly established if it still depended on how employees solved problem. If employees got support from organization, and trended to solve problem by problem-focused coping method, effective work behavior of employees would be higher respectively.

From above mentioned causes above, in conclusion, self-management and organizational support could cause effective work behavior, while problem-focused coping might be done. Then, employees would express effective work behaviors such as conscience and ideology in work, responsibility in work, self confidence and endeavor in work and creative thinking and consideration in work.

Suggestion

For research result which found that problem-focused coping is the direct effect on effective work behavior of employees, which is considered as the most influence. Consequently, organizations should pay attention toward this factor the most. Employees can be supported to have effective work behavior with training, knowledge about needed skills and techniques, get opportunity to solve problems in simulated situations, and facilitate equipments for problem coping so that success of problem solving can be achieved more.

For research result which found that self management, organizational and family support affects work-life balance, and work-life balance affects effective work behavior. Organization can support work-life balance for employees by providing adequate allowance, compensation for current cost of living quickly, all over, and fairly. Moreover, efficient human resource system should be established such as performance evaluation, compensation and benefit, training, and so on. Besides, work-life balance for employees can be established by developing skill of self management more. Organization may provide opportunity for employees to select helpful activity for success, notice, control and check progress in order to assure that activity affects success. Furthermore, good family relationship can be established via activity building good relationship in family, supporting family members to help each other, which can create motivation and encouragement to each other.

In addition, qualitative research result, additionally found from quantitative research, found that personality and habit, upbringing, socialization from family, education and work, culture and atmosphere in organization are factors affecting work-life balance. It is found that self motivation, professionalism, culture and atmosphere in work, cooperation, co-worker relationship, and effective communication, and physical and mental health impact effective work behavior. Consequently, organization should prioritize developing concern systems such as building personality, motivation, professionalism by providing training for responsible employees so that they become more professional, motivating employees to perform challenging job, creating non-materialism value, developing facilitating personality for work and life, building awareness of physical and mental health such as religious activity, meditation, promoting self calmness and resting methods for problem-solving. Besides, that good atmosphere and organizational culture helpfully promote cooperation and relationships between co-workers and effective communication can be promoted with forming teamwork among employees.

Reference

Kasikorn Research Center. (2009). *Automotive Part Industry in Thailand of 2009: Challenging Decreased Automotive Market.* (Online). Cited on July, 25th, 2552 from www.positioningmag.com/prnews/prnews.aspx?id=76349.

Bailey, L. A., & Hailey, B. J. (2006). The Influence of Intelligence on Coping Style Selection. *Journal of Clinical Psychology, 39 (6),* 901-908.

Behson, S.J. (2002). Which Dominates? The Relative Importance of Work–Family Organizational Support and General Organizational Context on Employee Outcomes. *Journal of Vocational Behavior, 61 (2002),* 53–72.

Brightman, B.K. (2000). Reinforcing Professional Self-Management for Improved Service Quality. *Managing Service Quality, 10 (5*), 299-306.

Dillinger, T.G. *et al.* (2003). Relating Personality with Stress Coping Strategies among Student Pilots in a Collegiate Flight Training Program. *Document for*

    presenting at the 12th International Symposium on Aviation Psychology,
    Dayton, OH, 2003.

Duxbury, L. et al. (2003). *Voices of Canadians: Seeking Work-Life Balance.* Canada: Human Resources Development Canada.

Forsthy, S. & Polzer-Debruyne, A. (2007). The Organizational Pay-Offs for Perceived Work-Life Balance Support. *Asia Pacific Journal of Human Resources, 45,* 113-123.

Fu, C.K. & Shaffer, M. A. (2001). The Tug of Work and Family: Direct and Indirect Domain-Specific Determinants of Work-Family Conflict. *Personnel Review, 5 (30)*, 502-522.

Greenhaus, J. *et al*. (2003). The Relation Between Work-Family Balance and Quality of Life. *Journal of Vocational Behavior, 63 (3)*, 510-513.

Kirrane, M., & Buckley, F. (2004). The Influence of Support Relationship on Work-Family Conflict: Differentiating Emotional from Instrumental Support. *Equal Opportunities International, 23 (1)*, 97-107.

Lirio, P. et al. (2007). Exploring Career-Life Success and Family Social Support of Successful Women in Canada, Argentina, and Mexico. *Career Development International, 12 (1),* 28-50.

McDonald, P. and L.M. Bradley, (2005). *The Case for Work-Life Balance: Closing The Gap between Policy and Practice* (online). http://au.hudson.com/documents/emp_au_Hudson_Work-Life_A4_Std.pdf. 12 December 2010.

Mapobsook. V. (2002). *Psychology of work.* Bangkok. Academic support Center.

Marcinkus, W.C. et al. (2007). The Relationship of Social Support to the Work-Family Balance and Work Outcomes of Midlife Women. *Women in Management Review,22 (2)*, 86-111.

McCanus, R. (2009). Work–Life Balance: A Case of Technical Disempowerment?. *Social Politics, 16 (1)*, 111-131.

Mitchell, D. (2004). *Stress, Coping, and Appraisal in an HIV-Seropositive Rural Sample: A Test of the Goodness-of-Fit Hypothesis.* Thesis, Master of Science in Psychology, College of Arts and Sciences of Ohio University.

Muna, F.A., & Mansour, N. (2007). Balancing Work and Personal Life: The Leader as Acrobat. *Journal of Management Development, 28 (2)*, 121-133.

Pongatichat. P. (2006). *The Word for people Management.* (Online). http://www.ocsc.go.th/ocsccms/ front web/view.jsp?contentID=CNT0002901. 12 December 2009.

Pongatichat. P. (2007). *Enhancing Quality of life and work: The Way of Modern Management.* Bangkok. Airbernprint.

Rotondo, D.M. et al. (2003). Coping with Multiple Dimensions of Work-Family Conflict. *Personnel Review,32 (3)*, 275-296.

Thanacoody, P.R. et al. (2009). The Effects of Burnout and Supervisory Social Support on the Relationship between Work-Family Conflict and Intention to Leave. *Journal of Health Organization and Management, 23 (1),* 53-69.

Velsor, E.V. (2003). Handbook *of Leadership Development.* (2nd ed.). San Francisco: Jossey-Bass Inc.

Victoria. (2007). *Work and Family Balance Manual: Better practices for better business.*

(Online). http://www.business.vic.gov.au/busvicwr/_assets/main/
lib60072/work&family.pdf. 12 December 2010.

Warner, M. (2005). *Why We Should Care About Work-Family Conflict: Causes and Consequences.* Retrieved December 12, 2010 from
www.hrpao.org/HRPAO/HRResourceCenter/KnowledgeCenter.

Triple Creek Associates, Inc. (2007). *Masterful Mentoring: Work/Life Balance* (Online).
http://www.3creek.com/resources/newsletters/Masterful_
Mentoring_Aug07.pdf. 16 December 2010.

The Eorrelation between Vrust and the Hive Fimensions of the Bandung Family Relation Test (BFRT)

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Abstract:

Previous study in Indonesia (Samsunuwiyati, 2011) on the aspects of Trust in the Bandung Family Relation Test (BFRT) showed that according to the perception of adolescents there are differences between perception to mother and father on the five aspects of the relationship. This result indicates that trust is an important aspect that influences the perception of a child to the parents. This research is aimed at finding the correlations between trust and restrictiveness, affection, vulnerability, justice and acknowledgement. The participants were 129 randomly selected students (age 17-20 years) from a private university in Jakarta. The instrument being used for data collection was BFRT, an adapted form of the Dutch Nijmeegse Gezinsrelatie Test [NGT] (Oud & Welzen, 1989). The NGT was based on the binding theory of Stierlin (1976) and the loyalty theory of Ivan Boszormenyi-Nagy (Boszormenyi-Nagy & Spark, 1973) which consisted of six dimensions: restrictiveness, affection, vulnerability, justice, acknowledgement, and trust. The data was analyzed by Pearson's product moment correlation. The result shows that there are significant correlations between trust and the five dimensions of relationships with father as well as with mother. However, trust and restrictiveness has negative correlation on father (-0.543) and on mother (-0.500), whereas the other 4 dimensions indicate positive correlations. The result indicates that adolescent relationship with father on trust are influenced successively by (1) justice, (2) acknowledgement, (3) vulnerability and (4) affection; whereas the relationship with mother on trust are successively influenced by (1) acknowledgement, (2) vulnerability, (3) affection and (4) justice. Thus in general, the adolescent perception on trust toward mother is achieved primarily by acknowledgement, whereas toward father is achieved primarily by justice.

THE CORRELATIONS BETWEEN TRUST AND

THE OTHER FIVE DIMENSIONS OF THE

BANDUNG FAMILY RELATION TEST (BFRT)

1. INTRUDUCTION

Most cases of problem child which are brought to the psychological clinics started with no good parent – child relationship

According to Boszormenji – Nagy and Sterlin (1973) those problems accured because of different perceptions among family members on many dimention, such as acknowledgement, jutice, emotional binding, atc. Those unfavourable relationship showed by the test result, indicated that a harmonious life in a family is not easy to establish. For that reason, parents brought their children to the child psychologycal clinic to ask help how to overcome those problems. For a long time the help they got are in the form of therapies or other kind of intervention program. The binding theory used in NGT/BFRT are not popular yet.

The family system approach is still rarely used and not much developed yet.

The NGT was constructed with the aim to explore quickly specific experiences of adolescent with the other members of the family, which can influence their family interaction. That is why it is very important to know how are the perception of adolescent toward their father, mother and siblings.

In this test the adolescent are imvolved in the sense of they can give their opinions, not just being a passive client who should do according to the instruction.

BFRT (Bandung Family Relation Test) was constructed by Kai Welzen, Efi Fitriana and Peter Nelwan and used since 2009 for some researches in West Java (Bandung)

The aim of this test is to give help to adolescents and their families in order to understand their experiences and perceptions among each other. By doing this we can know how are the functions of the family as a whole.

This test measured 6 dimention, that is superego binding, affective binding, vulnerability, justice acknowledgement and trust.

1.1 BACKGROUND

- ❖ The test consists of six dimensions: Restrictiveness (R,11 items), Affection (AB,11 items), Vulnerability (V, 9 items), Justice (J, 12 items), Acknowledgement (ACK, 12 items), and Trust (T, 12 items).

- ❖ Boszorimeny-Nagy has written convincingly about the importance of justice and trust in several of his publications. In his workshops Nagy demonstrated the necessity of acknowledgement in family relations and the need of being sensitive to the vulnerability of each family member.

- ❖ Stierlin, used the concepts of super-ego binding and affect-binding, translated later as restrictiveness and affection, as fundamental dimensions for describing family dynamics.

- ❖ In this research, we consider Trust to be the dependent variable and next to Justice, Vulnerability, Acknowledgement, Affection and Restrictiveness as supporting the development of Trust.

1.2 OBJECTIVE

- ❖ To explore the relationships between Trust and the five other dimensions of the BFRT for father as well as mother.

- ❖ To predict the dependency of Trust on the other five dimensions for father as well as mother.

2. THEORETICAL BACKGROUNG

The NGT (Nijmegse Gezins Test) was constructed in 1989 which later became BFRT (Bandung Family Relation Test) for Indonesian version in 2009. Used for adolescent who has normal/average intelegence. This test was used to give informations for supporting other therapies in order to get more effective and efficient results. It can gives the picture about the realitionship between adolescent and their family. It can also used as an evaluation tool, by doing many times retest on a diffrent phases during the intervension program.

With NGT the adolescents have the freedom to use each item for/directed to every family member. Using NGT and other instruments for family, was the impact of the idea that family has a certain posisition and a important role in connection with the intervention program to family and also the need to have a diagnostic tool for the family. The relationship between dimentions in the NGT used the royalty theory and family theory. The Royal theory, which

conceptually belongs to Ivan Boszormenji – Nagy (Boszormenji – Nagy & Krasner, 1986) was inspired by obyect – relation theory which perceived family as a system of justice in the form of give and take (Boszormenji – Nagy & Spark G 1973). On the other side, Sterlin (1976) added 2 dimentions from a theory system which oriented to famiy theory based on psycho analysis approach. Both dimentions are resticthiveness and affection. Restrictiveness measured how far/much the child feels retricted by the other family members, while affection measured how affection/warmness between ane family member to the other exist in their family life. Loyalty concept of Boszormenji – Nagy consists of 4 different dimentions, namely vulnarability, this is a self expression toward the needs of thers. That means, how each member of the family gives attention and sensitive tho the need of the other family members. The second dimention is justice which describes how their experiences about the balance between "giving and taking" across the family members (to give and to take). Furthers is acknowledgement which measured whether each member in the family has been or often feels acknowledged by the others. At least is dimention trust, which measured whether they feel trusted by the other members.

Boszormenji – Nagy, in his many publications always discussed that important of Trust and Jusice.

The model of the theory are described as followes
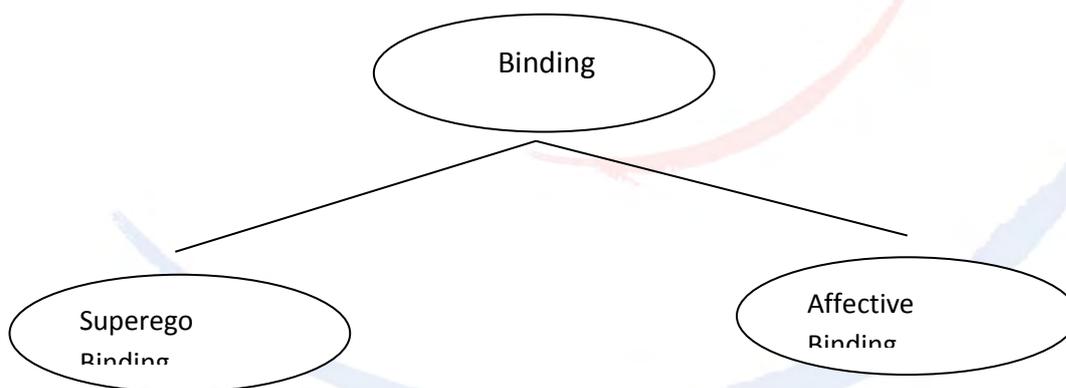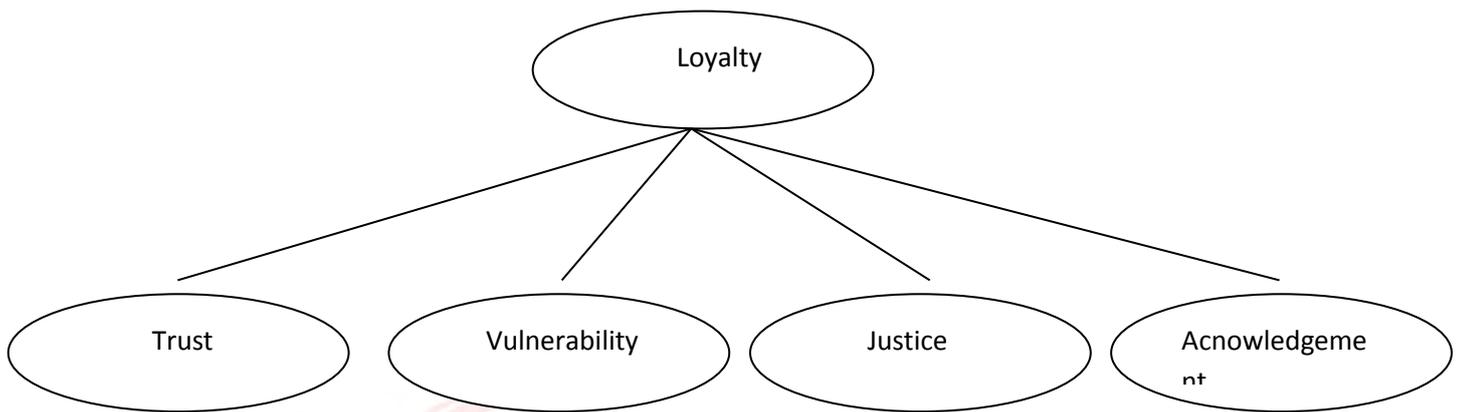
Loyalty Binding Model, Oud & Welzen, 1988

In 1980 some institution in the Mental Health in Europe began to handle behavior problems in the family, especially child/adolescent problem by using a theory system (Efi Fitriana, 2011). BFRT an adaption of NGT for Indonesian Version, made in Bandung City, that is why the name is Bandung Family Relation Test (BFRT).

3. THE METHODOGY

RESEARCH DESIGN
❖ Cross-sectional study design

SUBJECTS
❖ Adolesescent, age 18-25 years old
❖ 129 students from a privat university in Jakarta

MEASUREMENT TOOLS
❖ The BFRT (Bandung Family Relation Test)
❖ The Bio data: gender, age, the age of father and mother, the number of children and the position of the respondent in the row of siblings

STATISTICAL ANALYSIS
❖ Bivariate Pearson's correlation
❖ Multiple correlation and path analysis

4. RESULT

4.1 GENDER

Most respondents were female

4.2 NUMBER OF CHILDREN IN THE FAMILY

❖ The response rate regarding the number of children in the family and the position of the respondent in the row of siblings are 96.9% and 96.6%.

❖ In general, respondents came from families with 3 children, minimum number of children : 1, maximum : 7.

❖ The people from the eldest, the middle and the youngest child are 37.6%, 30.4% and 32%.

4.3 AGE OF RESPONDENT, AGE OF FATHER AND AGE OF MOTHER

❖ Response rate for Age-respondent : 98,4%

❖ Response rate for Age- Father 87,6%

❖ Response rate for Age-Mother 84,5%

❖ In general, respondents are 19 years old, the fatrhes are 52 years old and the mothers are 48 yare sold.

  ✚ Minimum age : 17 years old for respondent, 40 years old dor fathers, and 36 years old for mothers.

  ✚ Maximum age : 20 years old for respondent, 70 years old for fathers, and 63 years old for mothers.

DATA	N	MIN	MAX	MEAN
AGE - RESPONDENT	127	17	20	19
AGE-FATHER	113	40	70	52
AGE- MOTHER	109	36	63	48

4.4 THE CORRELATIONS BETWEEN TRUST AND THE OTHER FIVE DIMENSIONS

OF THE BANDUNG FAMILY RELATION TEST

❖ The following table summarizes the results of the correlation coefficients of the five dimensions of family relationships with Trust for father and mother data.

❖ Results are based on data from all respondents as much as 129 people.

The five dimensions	Father data	Mother data
Restrictiveness	-.543**	-.500**
Affection	.606**	.745**
Vulnerability	.725**	.756**
Justice	.770**	.700**
Acknowledgement	.732**	.775**
** : the correlation is significant at 1% level		

4.5 A. THE REGRESSION ANALYSIS RESULT

❖ The result of the multiple correlation between trust and the other five dimensions in the BFRT for father and mother data is presented in the following table

Father data			Mother data		
R	F	Significant level	R	F	Significant level
.819	50.077	.000	.843	60.517	.000

B. THE PATH COEFFICIENTS OF THE INDEPENDENT VARIABLES FOR FATHER

AND MOTHER DATA

The five dimensions	Father data			Mother data		
	Path Coefficient	t	*P-value*	Path coefficient	t	*P-value*
Restrictiveness	-.015	-.199	.843	-.046	-.578	.564
Affection	.031	.367	.714	.165	1.800	.074
Vulnerability	.269	2.898	.004	.291	3.368	.001
Justice	.405	4.068	.000	.156	1.566	.120
Acknowledgement	.188	1.966	.051	.305	3.541	.001

CONCLUSION

❖ The five dimensions of the BFRT namely Restrictiveness, Affection, Vulnerability, Justice & Acknowledgement correlated significantly to Trust for both father and mother data.

❖ Mother data (.843) showed bigger multiple correlation coefficient than father data (.819).

❖ One can conclude that adolescent Trust toward both parents is partly determined by Vulnerability.

❖ For father data it is next to Vulnerability Justice which has significant effect on trust.

❖ For mother data, Vulnerability and Acknowledgement show significant effect on Trust.

SUGESTION

Further research should be done with more variations of sample age group and also take a consideration to a balanced sum of sample groups.

GLOSSARY

Boszormenji-Nagy, I & Spark, G (1973), Invisible Loyalties: Reciprocity in

Intergenerational Family Therapy; New York; Harper & Row

Boszormenji-Nagy, I & Barbara R. Krasner (1986), Between Give and Take. A

Clinical Guide to Contextual Therapy; Brunner/Mazel. Publishers; New York

Delsing Marc; Family justice and Trust, (2004). Drukkery trioprint, Nijmegen, The

Netherland

Efi Fitriana (2011), Conformatory Factor Analysis of the Bandung Family Relation

Test: A Simulation Study Comparing ML, DWLS and WLS Estimation;

ISBN/EAN: 978-94-91211-39-3

Francis Fukuyama, Trust. The Social Virtues and The Ceation of Prosperity (1995).

Simon & Schuster New York

Janssens, J.M.A & M. Gerris, JR. Child Rearing (Editors). 1992. Swets &

Zeitlinger B.V. Amsterdam/Lisse

Oud And Welzen (1989), Nijmegen Gezindsrelatie Test: Kinderversie, Lisse, Swetz

and Zeitlinger

Research qn vhe Frustration Experiences qf Middle-Aged cnd Senior People y hile Interacting y ith Small Touch Screens

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Abstract:

In an aging society, providing the means in which to enrich elderly life is an important focus of product design. However, as technology improves, the user interfaces of some products become even more complicated. For example, previous research findings revealed that obstacles and frustration did exist when middle-aged and elderly users tried to operate the mobile phones by touch gestures, among which are subconscious psychological causes still yet to be studied. Therefore, the objective of this research is to study the frustration experiences from the psychological perspectives. The method of "thinking aloud" was mainly used as a basis for the experiment on the middle-aged and elderly users. In addition, structural interviews and protocol analysis were employed to understand their mental models of applying multi-touch. Thirty participants were invited to carry out two tasks on small touch screens. The findings provide the following suggestions for gesture design in the future. First, since some elderly users are technophobes, the mapping between digital content manipulations and gestures should be natural enough to facilitate the construction of correct mental models. In addition, the distinction of different gestures should be easily recognized. Second, since middle-aged and elderly users are not good at performing precise or speedy finger movement, the distance in movement should be the dominant parameter for continuous controls and be consistent in the same system. Third, for discrete controls, such as selecting one item from a list, it is better for a system to provide the functions for users to adaptively adjust target sizes, target hierarchies, or the sensitivity of triggering gesture events.

Research on the Frustration Experiences of Middle-Aged and Senior People While Interacting with Small Touch Screens

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1. Background

Taiwan Council for Economic Planning and Development estimates that the aged population ratio in Taiwan will increase to 14% until 2010, and the population aged 65 and over will reach to 20.4% until 2026; in future ten years, there will be as high as ten million population aged 45 and over. This trend shows the rapid aging of population in Taiwan.

However, as the result of the improvement of medical technology and health insurance system in Taiwan, the elderly life is prolonged and they become more health, and as consequence, more and more middle-aged and advanced aged persons find the way to eliminate loneliness or communicate with each other by using the high-tech electronic products. But, with the development of technology, the operation of interface becomes complicated increasingly, so that the middle aged and advanced aged persons with gradual degradation physically cannot know what course to take. Therefore, as a designer or maker, it is important to provide a friendly application environment to obtain an interface which can be operated by the middle and advanced aged persons favorably and joyfully, so as to meet the requirements of vulnerable groups.

So called the middle and advanced aged group is often ignored in the development of electronic products. However, in fact, this group gradually becomes the mainstream in the market, from the point of view of the development of the world population. Appeal is made to tell the enterprises that they may lose the market if they take no consideration of the aging population but are planned to launch relevant products. Among a good many of high-tech electronic products, mobile phone is the most popular one, and there will be one more user per second when comparing with that of

other high-tech electric products. By viewing this vulnerable group of high-tech application, in fact, most of them have high potential of economic consumption. From the perspectives of the social happiness and benefit and economy, it is worth the designers while to devote more in developing the mobile phones which are suitable for the middle and advanced aged persons.

With the broadening of screen size and the application of touch technology, and the effective improvement of human machine (mobile phone) interaction, more and more functions are developed and interface operation becomes more and more complicated. Thus, it is hard to avoid that the middle aged or the advanced age may meet with difficulties in using the mobile phone, more due to mental factors in addition to physiological degeneration.

The study is to discuss the frustration of the middle aged and advanced age in manual operation of touch mobile phone, on the theoretical basis of mental model; discuss mental applicability from the point of view of human factors, so as to explore the cognitive disorder of the middle and advanced aged in using the touch panels, and further understand and meet their requirements.

2. Literature Review

Firstly, investigations on the mental of human; in life, people choose ways available to accomplish in order to finish something, so they have the intent to operate a tool. Human-machine interaction is the process for accomplishment under this intention (Colman, 2000), whereas, metal model refers to the annotation to the status of system at the time of human-machine interaction (Rasmussen, 1986), by means of the analog or metaphor mode to understand the new information (Staggers & Norcio, 1993). However, the state of system is expressed through interface. Thus, users only have to understand and interpret the state of system by means of interface which by consequence can be referred to as the image of system (Norman, 1988).

The middle and advanced aged have difficulties in learning and disturbance in receiving new experiences, due to declines in physiological functions including memory, attentiveness and cognitive abilities. Therefore, this group is able to unscramble, interpret and operate the new high-tech products by using the low-level experiences and knowledge only.

2-1 Mental Model

The psychologist Norman (1988) brings up a design principle centered on the users. He thinks that the problems between "human/machine/environment" and

"human/products/situation" can be seen essentially only based on the user-oriented thought. Designs centered on users include many different mental models which are divided into three categories by Norman, including design model, user model and system impression. What's ideal is that design model and user model can become consistent, based on the coordination of system impression.

Mental model is a generalized and fuzzy term, which can be referred to as the channel or manner to understand a specified area of knowledge. Human brain is able to memorize the relationship between the exogenous events and inner interpretation, and build up the inner model by means of interaction with the exterior (Staggers & Norcio, 1993).

There are two mental construction models for mental model, including analogy and metaphor (Staggers & Norcio, 1993). The construction of model relates to all intangible and concrete things, operating in the analog or metaphor model, under the relationship structure of analogous actual state. Some studies adopt protocol analysis in order to prove the existence of mental model. In the test, the tested users have to finish the appointed tasks and give the protocol data, and describe the contents thought in the design process. Based on the data obtained hereof, different operating models can be understood (Popovic, 2003).

People can describe the actual state in the brain, and then forecast the causal relations, followed by the expression of behavior. The mental model of one person changes continuously, because knowledge and experiences increase and change at any moment in the brain (Tang, H.H, 2005).

2-2 Protocol Analysis

Since the issuing of the first article related to protocol analysis by Eastman (1970), protocol analysis, a research method which is stemmed from psychology, has entered into the area of design thinking. Currently, protocol analysis is the best test method for protocol analysis, because it includes mass data from human thinking, which is helpful to the analysis and design. Therefore, the study can have larger range of discussion and research by using the protocol analysis.

Protocol analysis is divided into think aloud protocol and audio protocol which is advanced by Suwa & Tversky (1997). Some studies show that the think aloud protocol is applicable to the process-oriented design study, but audio protocol is inclined to content oriented design study. Because the operation process of the test is

the important observation factor and lays stress on the protocol description in operation process. Thus, think aloud protocol is adopted as the main test method.

In recent years, think aloud protocol is significantly applied in the study on human-machine interaction (Carroll & Mack, 1985). The tested users express the process of thinking and idea in protocol in the testation of operation system. The testers may not intervene in the operation of the tested users, and take notes for all behaviors and discourses. Nielsen (1993) points out that think aloud protocol is the qualitative usability engineering method using for finding the problems in usability operation and identifying the misunderstanding of cognition of the users. The think aloud protocol has the advantages of being capable of understanding the mental model of the tested users in operating the system, representing the characteristics corresponding to the mental model and explicit behaviors, and obtaining the valuable information of system improvement through the suggestions and operations of the tested users.

Presentation in structural interviews was a common test method in think aloud protocol, which is characterized by allowing the testers to answer any question given by the tested, and to guide them to accomplish the tasks. This method is very suitable for the groups not good at expressing themselves orally. As for coaching method, it is an test method adopted by the tested users when they cannot operate at all, by means of the testers' guiding to the tested for continue accomplishing the tasks in every step and attaching the instructions on the concept. In the process, the testers shall ask the tested continuously until the accomplishment (Nielsen, 1993).

2-3 Touch Gesture

Gesture refers to a set of a specific language system based on the position and shape of hands and fingers established by human beings by means of speech center. However, the so called touch gesture hereof is defined as touching to remove to another menu and then leaving the screen. Page change by gesture is able to provide a function of page change without any units for menu operation in a limited menu.

Windows Touch gives definition to the eight standard gestures, including Panning, Press and tap, Press and hold, Select and drag, Rotation, Zoom in/out, Flicks & Two Finger tap, which can lighten the difficulties in products development, and can make the users have more consistent application experiences.

In addition, Apple Computer has obtained multiple patents in touch gesture. Of

which, one touch gesture is related to "blind operation". In the application, there are multiple touch gestures which can operate the device without seeing the screen. Based on the information above, it is happy to see that in the future development of touch gesture, diversification and vulnerable groups will be taken into consideration all the better.

2.4 Relevant Research

To clearly understand relevant research limitation and insufficiency, we review Literature in recent years for getting new founding, as Table 1.

Table 1. Relevant Research in Recent Years

Researcher	Main Context	Discussion
Tang (2005)	Emphasizing on the metaphor of operation system for touch-tone mobile and differences between design model and mental model of the user; realizes the deficiency of interface design of touch-tone mobile not meeting the requirements from the psychological cognition's point of view.	Nowadays, the emphasis is laid on the research of touch mobiles.
Wan (2009)	Adopted the general users, mainly to discuss whether the current touch model and the user's mode of intuitive operating have identity property or not, from which to discover the intuitive gesture and compare the differences.	No deep analysis is made when the touch panel changes from 3.5 inch, to 8 inch and 30 inch. It is expected that the researches will be centralized in the small panel or large panel in the future, to make it clear and make contributions.
Yong and Sung (2010)	Mainly discusses the influence of touch key size and position on the single finger input, and make statistical analysis on the practicability of position of touch key to confirm the provision of benign and available position.	The subsequent researches will pay attention to the differences of race, both sexes and the old and the young.
Parhi (2006)	Made a test on the key design on PDA touch panel, showing that the size of PDA will disturb the interaction between fingers and touch panel.	

3. Research Method

The study aims to discover the operating condition of mental model of the middle and high aged when they encounter the frustrations in using the touch mobile, and observe their thought and behaviors in the course; discuss the differences of mental model of the designer and the user and the causes of frustration. The test is based on the think aloud protocol, in combination with the structural interviews and coaching method, to obtain more information.

3.1 Tested Users

In the test, totally ten persons are investigated (five males and five females), aged from 45 to 55. In the beginning of test, the tested users are required to fill in the base data, including name, sex, age, periods of using mobile, experience of using touch mobile and the brand and model of the mobile they used currently. It can be seen from the statistical result that the average period of using the mobile exceeds 3 years, but it is found that all the tested users have no experience in using the touch mobile. The main cause is the learning of new technology in addition to the high cost.

3.2 Test Equipment, Device and Environment

The test equipment for the study takes iPhone 4 as the main device, for the reason that the amount of sales of Apple has exceeded that of NOKIA as Strategy Analytics' statistics shows, although NOKIA has the highest market share in the global mobile market. The amount of revenue of Apple for the last season is 24.67 billion US Dollars, half of which is from iPhone. Therefore, it has more advantages to use iPhone 4 as the test tool than other smartphones.

Another important test device is SONY HDR-XR350 Full HD digital camera (160GB), with wide-angle lens (Sony G), and diplex sensitive units (Exmor R CMOS) which can promote the sensitivity and reduce the video noise. The device is erected at the right side of the tested users, to record the operating video and sound at the same time, as the significant figures for the reference of subsequent analysis.

In order not to be disturbed by the external factors, the tested users are required to stay in a hidden space convenient for arranging the test equipment to record the video and sound clearly. Therefore, the laboratory is selected for testing.

3.3 Operating task and Operating model

The task for the test is set through questionnaire, starting from the basic

communication function, in combination with the secondary task, for the tested users to do the test under different conditions, so as to understand their metal model; there are two tasks in total, and the test shall be done by means of random sampling (tasks 1→tasks 2, tasks 2→tasks 1) within subject. The two tasks are as follows:

Task 1. Making a call: firstly, the tested users are required to enter into the subscriber list by touching, and find the appointed person to dial on the and then ring off, and return to the standby state (Fig 1).
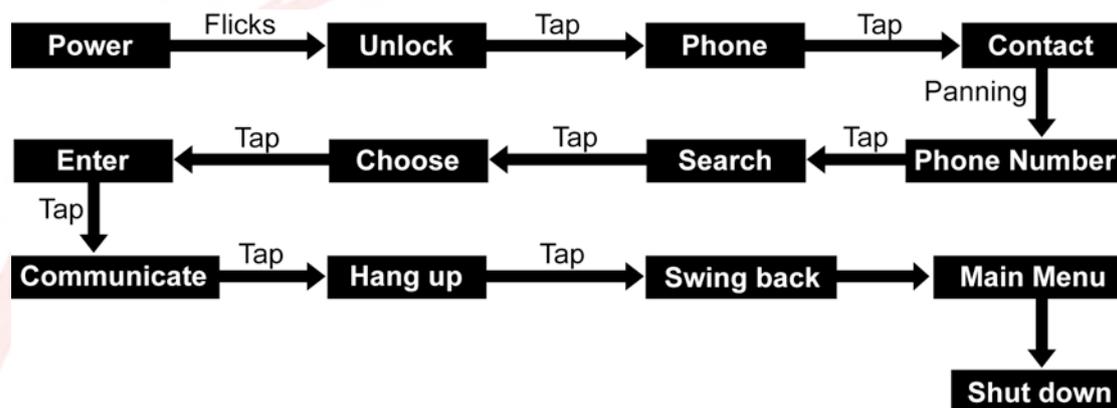
Fig 1. Task 1-Making a call

Task 2. Taking a photo and visual inspection: the tested users are required to enter into the camera function by touching, and take a photo of the appointed object, and then return to the main menu, and next, to enter into the album again to find the photo taken right now and do the visual inspection of magnification and magnification, and after that, return to the standby state (Fig 2).
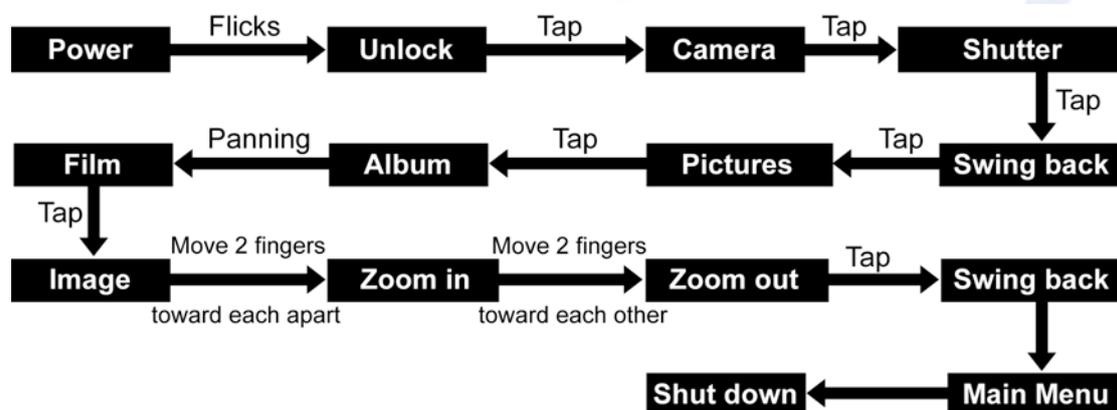
Fig 2. Task 2-Taking a photo and visual inspection

The test operating model is as follows (Fig 3.): the tested users adopt method of think aloud towards the set duties, as performing while talking. The researchers will record alongside without interrupt them at all, but they are allowed to remind the tested users by structural interview when they come to a standstill or expressing of frustration, for the proceeding of test. However, when the tested users were breakdown or give up we have to apply the coaching method, for guiding the tested users to continue testing. In performing coaching method, the following matters should be noted: firstly, return the interface to the final correct menu, and then ask questions based on the cycle process of performing the elevation. The researchers can determine the possible stage and range of frustration according to the answers, and give directions or tips according to different ranges. The guiding principle of coaching method is characterized by stopping coaching at once when the tested users have made progress in oral language, and recovering the test method of think aloud. At the time, the researchers are not allowed to interrupt them and only have to remind them for operating while talking (Tang, H. H, 2005).
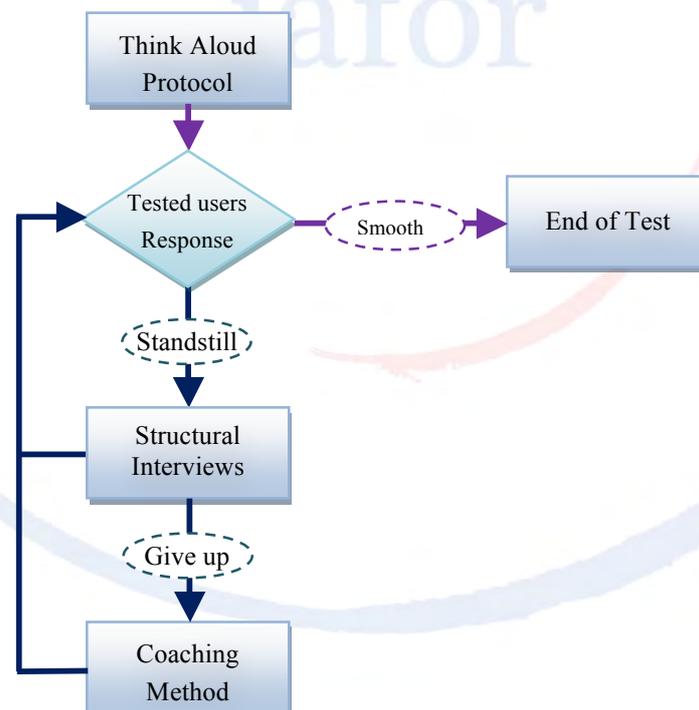
Fig 3. The test operating model

3.4 Analysis of Data

Protocol analysis takes the objects and process of performing and elevation as the

basis for coding, and the problems and frustrations as the guide, to make records and analysis of the frustrations in the overall operating process by using the protocol data. Through the coding of the two groups of test data, detailed error flow analysis and division of the interaction between the tested users and the interface; ten Tested Users are required to perform two duties respectively, the process of objectives, performing and elevation for the operation of totally 20 sets of mobiles. The results of research and analysis are processed as follows.

4. Result and Discussion

Summarize the problems occurred to the ten Tested Users in the test, and make analysis on the possible factors through coding, and process them into individual cases as follows:

1. Because most of the middle and high aged persons under test have poor experience in using the high-tech electronic products and this is the first time for them to contact with the multi-touch interface which is significantly different from the touch-tone operation. Thus, it is observed that the tested users feel like a fish out of water when using the touch mobile no matter in gesture or concept of order; thus, they cannot enter into or exit the option function and finish operations related to the order, and lack of confidence in gesture.

2. It is short of visual cues for displaying of operating logo and screen, resulting in the frustrations experienced by the tested users in dialing, because the functions are hidden which need to be reminded and learned. Most of the tested users have 3 years of experiences in using the mobile; thus, the analysis on these problems is not closely relevant to the experiences in using the high-tech electronic products.

3. Because the middle and high aged persons under test lack of experiences and knowledge in using the touch mobile, sometimes, they cannot understand the letters or signs appeared in the interface, and are not able to determine the relationship with the objects, resulting in the trapping of operation. For example, the tested users cannot understand the letters of "camera film" when performing the visual inspection of video, thus, they may do incorrect options.

4. In the actual observation, it is easy for the tested users to mix the "Recovery" operation for error option with "Restart" operation for getting lost. Because the function of recovery will be hidden automatically or laid at the position that is easily ignored visually, and because the tested users may feel frustrated or even give up easily due to process of building up the correct concept by means of trial and errors when they cannot accomplish the duties smoothly.

5. Because keypad is replaced by touch screen, iphone has larger window than that of the touch-tone mobile and smarter interface, the tested users may feel

frustrated in touch gesture. But, 24 input elements are set in the 3.5-inch screen of iphone, it is easy for the users to touch incorrectly. For example, in selecting the objectives on the main menu, the touch must be precise because the sign-to-sign distance is less than 3mm, or otherwise, no feedback will be given. Moreover, due to different sizes of fingers for male, female, the older and the young or different races, the users may make mistake in touching when searching within the telephone directory and dialing, especially for the middle and advanced aged (because the traditional keypad is replaced by the touch screen, the window is enlarged to make the operation of interface smarter. In addition, in continuous operation of gestures on touch screen, the tested users always mix the moving distance with speed.

6. As for multi-touch gesture operation, it is observed that the tested users of middle and advanced age may spend much time to perform the magnification and magnification functions by parting and closing the two fingers, through observation in duty 2, visual inspection of video. In addition, they may repeat the operation to finish the duty, possibly because of the decline of physiological function and the decreasing of knuckle mobility.

7. It is observed that the tested users may feel uneasy and confused when there is any information which cannot be understood in the menu; they may be puzzled when a moving slider (for unlocking) appears in the screen, and some of them cannot finish the duty without further reminding. Although this operation is a matter of course for common users, it is difficult for the middle and advanced aged users due to their mental factors, so that the first thing is to build confidence for learning.

5. Conclusion and Suggestion

The study shows that the tested users of middle and advanced age still feel confused and difficult in some basic operations which are easy to common people, resulting in differences of mental model between the users of middle and advanced age and the designers, and accordingly causing their frustration and retreat from operation.

Based on the observation and analysis of the study, the suggestions are given primarily in a general way, as follows, hoping to provide practical references for the designers and makers.

1. Because the touch screen is adopted, the information shown in the screen is very important. It is necessary to make the users of middle and advanced age fully understand the meanings of letters or symbols, so as to avoid the misunderstanding of some terms, for making correct determination, reducing the

error rate and promote the performance of operation.

2. It is indicated that the users of middle and advanced age has poor experiences in using high-tech electronic products and they are not clear about the order concept. It is not impossible to adopt the forced memorization for interface operation. Thus, based on the simplification of operations, the users of middle and advanced age still can finish the duty by means of forced memorization, even if they meet with the conditions that they cannot understand.

3. It is observed that the users of middle and advanced age have many problems in gesture, including the accuracy of touch and moving of fingers. In particular, the parameter of distance between the fingers is an important factor which should be considered for designing the gesture control. In the same system, the touch distance and size should meet the characteristics of the fingers' movement of the elderly.

4. As for the function option of lists, the operation of virtual key has high sensitivity. Thus, it is easy for the users of middle and advanced age to miss-touch. However, it is possible to solve such problems, if the virtual keys can be designed to response the fingers' movement and size of keys will change with the movement of fingers.

5. In present, many large technological factories devote themselves in the research and development of touch gesture one after another, based on the registration. It can be seen that the development of touch gesture will exceed the current model in the future surely. Thus, the designers and makers should make great efforts to developing the customized touch gesture for the elderly in the future.

It is hoped that, based on the result and discussion of the study, the designers can become conscious of actual condition of the using the touch mobile by the users of middle and advanced age. Thus, the designers can design and develop the products more suitable for the users of middle and advanced age, while attracting the attention and interest of the researchers of design cognition in discovering the change of mental model of the users of middle and advanced age in the process of using the high-tech electronic products, so as to provide better services for the life of the elderly, in hopes of creating more happiness and benefit.

References

Albinsson, P.A., Zhai, S., (2003). *High precision touch screen interaction*, In: SIGCHI Conference on Human Factors in Computing Systems.

Carroll, J.M., and Mack,R.L., (1985). *Metaphor,computing systems and active learning*, International Journal of Man-Machine Studies, vol.22, 39-97.

Colman, A.W., and Leung,Y.K., (2000). *Using intentional models for the interface design of multi-level systems*, International Journal of Human-Computer Studies, vol.52(6), 1007-1029.

Lee, Y.L., (2010). *Comparison of the conventional point-based and a proposed finger probe-based touch screen interaction techniques in a target selection task*, International Journal of Industrial Ergonomics, 40, 655-662.

Liao, C.C.,(2002). *A Study on the Product Usability in the Ageing Society* , Graduate Institute of Design Science, National Yunlin University, Yunlin.

Norman, D.A., (1988). *The Design of Everyday   Things*, New York : Currency.

Parhi, P., and Karlson, A.K., and Benderson, B.B., (2006). *Target size study for one-handed thumb use on small to uch screen devices*, In: Proceedings of the Mobile HCI,60,203-210.

Popovic, V., (2003) *Expert and novice users models and their application to the design process*, 6thADC, Tsukuba, Japan.

Rasmussen, J., (1993).*Deciding and doing : Decision making in natural contexts*,   In G. Klein, J. Orasanu, R. Calderwood, and C. Zsambok (Eds.), Decision Making in Action : Models and methods, Norwood (159-171)., NJ : Ables Publishing Corporation.

Staggers, N., and Norcio, A. F.,1993, *Mental models : concepts for human-computer interaction research*, International Journal of Man-Machine Studies, vol.38(4), 587-605.

Tang, H.H., (2005). *A Study of Frustration of Using Mobile Phone for Elderly Users-A Mental Model Approach*, *Joumal of Ergonomic Stydy*, vol.7(1), 63-71.

Wan, H.T., (2009). *A Study on the Gesture Operation with Multi-touch Panel*, Graduate Institute of Design Science, Tatung University, Taipei.

Yong, S. Park., and Sung, H. Han.,(2010) . *Touch key design for one-handed thumb interaction with a mobile phone: Effects of touch key size and touch key location* , International journal of Industrial Ergonomics, 40 , 68-78.

Consumer Behavior lor Design qf Workplace Utility Knives dy Factors Analysis cnd Performance Evaluation

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Abstract:

The purpose of this study was to determine the design factors subjectively for choice of workplace utility knives. The second objective was to examine the effect of types of knife, types of paper, holding postures and cutting curves on angles of wrist and muscles activities. Results of factor analysis from questionnaire presented that descriptors were classified in seven major factors with eigenvalues greater than 1. Participants concern the seven main dimensions about design of easy assembly, storage, appearance, length of knives, brand, materials, and comfortable using. In addition, participants performed thirteen-six trials with three types of knives (general, larger, and S-shape) cutting two path (circle and square) on three types of papers (i.e. office paper, cardboard and containerboard) with two holding postures (force grip, pen grip). Further, flexion angles of wrist and electromyography (EMG) for Pronator Teres and Biceps were measured by Biopac systems. Results of MANOVA showed that these were statistically significant differences between types of knives in flexion angles of wrist and accomplished time. After Duncan multiple range tests indicated that larger knife was higher flexion angles of wrist than others. By contrast, accomplished time was the fastest in applied the larger knife. For types of papers, the muscle activities reached on 60% of MVC in both muscle groups while cutting the cardboard and containerboard. As expected, participants need more effort to accomplish the tasks in circle cutting, because the wrist motion, muscle activities and time were higher than cutting square path. For grip posture, pen grip had less muscle activities than force grip in both muscle groups. These is the better performance in applied the larger knife with force grip posture. Apart from exterior design of knives, the topic of cutting operation should be taken account in design process of workplace utility knives.

Consumer Behavior for Design of Workplace Utility Knives by Factors Analysis and Performance Evaluation

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1. INTRODUCTION

Hand tools are still the primary interface for operators at work, in spite of full automation efforts mode by modern industry. In the past research, hand tool design was focused on tool function in order to improve task efficiency. Furthermore, design of hand tools was to pay special attention to the ergonomical design of tools and try to adapt the individual requirements for each user, then it would be possible to make the user both more effect and prevent many injuries through overloading (Berglund and Eriksson, 1995). Some studies reported that well-designed handle of hand tools can facilitate improved performance and reduce user musculoskeletal injuries (Chi and Drury, 1988; Okunribibo and Haslegrave, 1999). Statistical and epidemiological studies revealed a significant increase in upper member musculoskeletal disorders in the meat industry. The literature reports that knife users in the meat industry are subjected to high muscular stresses (Loppinet and Aptel, 1997; Juul-kristensen et al., 2002; Marsot, Claudon, & Jacqmin, 2007).

Use of an insufficiently sharp or dull knife is accompanied by an increase not only in force applied to the knife by operator, but also in carving time (Mc Gorry et al., 2003). The operators therefore needs more time to perform their tasks and maintain their knife; he is in fact trapped in a vicious circle, in which the worse their knife cuts, the less time they have to hone it, which inevitably results in their knife cutting even worse. Such a situation results in increased risk of developing musculoskeletal disorders (Vezina et al., 1997). Marsot et al. (2007) reports that observations confirm the need to set up suitable training of knife users to achieve best possible cutting performance. Bao, Silverstein and Cohen (2001) reported that repetitive pinching operations and the frequent use of knives in cutting may be a major contributing factors causing high forearm muscle loads.

Even though several studies have been conducted with the purpose of examining the various factors related to cutting performance. These studies concentrated on main intrinsic technical characteristics if the knives are likely to play a part in cutting performance (e.g., Bishu et al., 1996; Claudon, 2000). These are blade steel grade, blade inclination and edge angle. In addition, the posture is generally considered to be an important factor influencing the efficiency of the cutting process. Thus, The

primary purpose of this study was to determine the design factors subjectively for choice of workplace utility knives. The second objective was to examine the effect of types of knife, types of paper, holding postures and cutting curves on angles of wrist and muscles activities.

2. Methods

The present investigation consisted of two stages. In the first, a questionnaire was investigated which factors determine with respect to choice of workplace utility knives by users. In the second phase, an experiment was used to examine the effect of types of knife, types of paper, holding postures and cutting curves on angles of wrist and muscles activities.

2.1 Survey and questionnaires

2.1.1. Participants

A total of 500 questionnaires were dispatched, with a response rate of 82% (n = 412). Their age were stratified by less 20 years old (n = 102, 24.7%), 21-30 years old (n = 215, 52.2%), 31-40 years old (n = 44, 10.7%), 41-50 years old (n = 31, 7.5%) and more than 51 years old (n =20, 4.9%), respectively. Occupations of subjects are students (n = 242, 58.7%), office staffs (n = 71, 17.2%), art teachers (n = 48, 11.7%), and store staffs (n = 41, 12.4%).

2.1.2. Questionnaire

The questionnaire was designed to determine background information, usage purposes, preferred kinds of workplace utility knives. In addition, this questionnaire is about 17 factors with choice of utility knives. These are (1) assembly, (2) convenient, (3) failure rate, (4) length of knife, (5) length of blade, (6) edge angle, (7) blade inclination, (8) size, (9) price, (10) outlook, (11) modeling, (12) multi-function, (13) material, (14) brand, (15) place of manufacturing, (16) safety, (17) comfortable. Rating of the design attributes was accomplished via a 5-point Likert-type scale: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. After rating, factor analysis was used in the data reduction to identify the smallest number of factors that explained the most variance observed. The method of principal components analysis with varimax rotation was conducted for classification of the descriptors into factors.

2.2 Experimental evaluation of cutting performance

2.2.1 Participants

Six undergraduate students at the St. John's University were recruited in present study. Their mean age, mean stature and mean body mass were 21.5 years old (SD = 0.95), 163.7 cm (SD = 9.3), and 64.8 kg (SD = 12.6) respectively. All subjects were

healthy and reported no musculoskeletal problems that might influence performance detrimentally. All subjects claimed to 'dominantly right-handed 'and used the right hand during the study.

2.2.2. Apparatus and materials

A total of three workplace utility knives were used in present study. These are including general utility knife (SDI Corporation, Taiwan, L150 xW17x H9 mm), larger knife (SDI Corporation, Taiwan, L172 x W42x D20 mm) and curvature knife (Plus Corporation, Japan, L148 x W31x D17 mm). See Figure 1 for reference. Further, the circle (radius 50 mm) and square (100 x100 mm) for cutting path have been drawn on three types papers. (office paper, cardboard and containerboard).

Figure 1 three utility knives have been evaluated in present study

Figure 2 The circle (radius 50 mm) and square (100 x100 mm) for cutting path have been drawn on three types papers.

2.2.3. Experimental procedures

Upon arrival, the participants were given general instructions about the experiment. Subjects were trained and known experimental task until they were able to make smooth manipulation. In addition, subjects need performed each trial on standard pace that is defined as "effective rate of performance of a conscientious, self-pace, qualified employee when working neither fast nor slow (Niebel and Freivalds, 2003). Further, the miniature joint angle sensor (S720, Measurand Inc., Canada) was mounted on the neutral axis of wrist. Thus, wrist angles measured during cutting paper. In addition, electromyography (EMG) of Extensor Carpi Radialis was

measured by AcqKnowledge on Biopac systems (MP150, Biopac Inc., USA). The 5-sec isometric maximal voluntary contractions (MVC) were performed in order to normalize each EMG signal to its corresponding maximal voluntary electrical activity (MVE). A total of 36 trials with three types of utility knives, two cutting postures (i.e. force grip, pen grip) and two cutting path on three types of papers were conducted for each subject. See Figure 3 for reference. The order of these trials was randomly assigned for each subject.
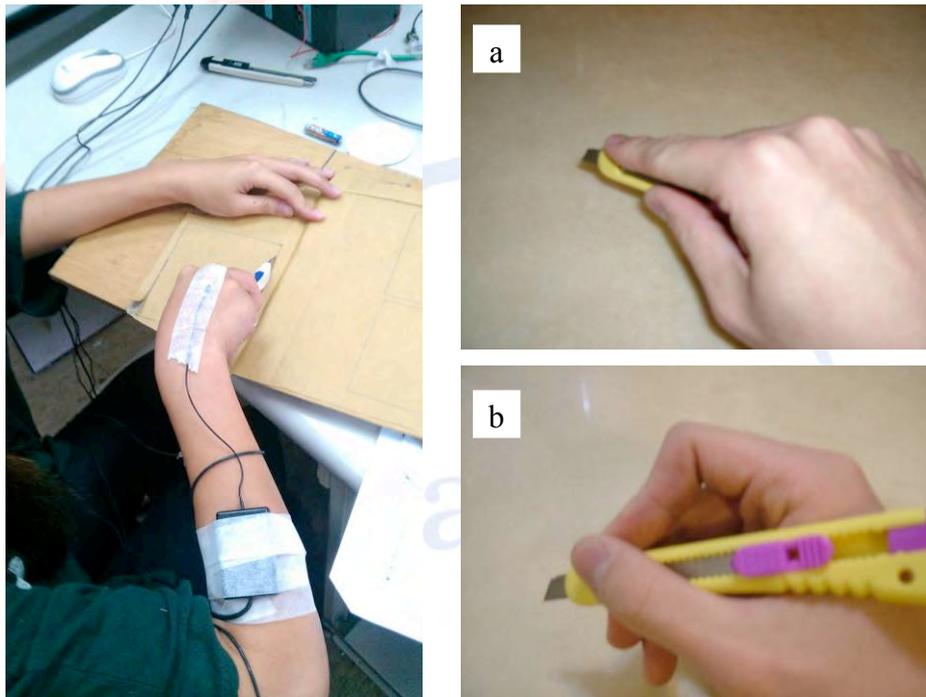
Figure 3 Experimental trial and (a) force grip, (b) pen grip

2.3 Data analysis

All data were coded and summarized using the SPSS (version 13.0) software for Windows (IBM SPSS Inc, Armonk, New York, United States). The frequencies procedure provided statistics useful for describing questionnaire results. Furthermore, factor analysis was conducted to identify the smallest number of factors that explained the most variance observed among a much larger number of manifest variables. For the cutting experiment, a factorial design with four factors (types of knives, cutting postures, types of papers and cutting path) was applied in present study Furthermore, analysis of variance (ANOVA) was utilized to identify significant differences between conditions for dependent variables. Statistical significance was set at a probability level of 0.05.

3. Results

3.1 Questionnaire

3.1.1 Describe analysis

The mean ranking scores are more than 4 (i.e., agree, and strongly agree levels) as the most important factors. There are safety, comfortable, length of knife, place of manufacturing, material, convenience, price, and size. These main factors should be considered in knife re-design. The most purposes of applied the workplace utility knives were cutting papers, cardboard, carton, art and craft. For safety consideration, 26.9% of subjects always concern cuts injuries while applied the workplace utility knives. In addition, about 70.9% of subjects sometimes concern cuts injuries.

3.1.2 Factors analysis

For the factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.71 and Bartlett's test of sphericity showed that the factor model was appropriate ($p < 0.001$ and KMO > 0.5). For the principle components analysis with varimax rotation, the attributes were classified into seven major factors with eigenvalues greater than 1. The seven factors explained 61% of the internal variance. Table 1 shows the factor loading of the attributes. The first factor contains attributes including assembly, failure rate, edge angle and blade inclination. These factors are labeled 'knife reliability.' The second factor is labeled 'outlook design,' which includes outlook and model. The third factor is about convenience, which includes attributes of convenience and size. The fourth factor is length of knife, including the attributes of length of knife, length of blade, and multi-function. The fifth factor contains attributes including Price and safety. These factors are labeled 'price.' The sixth factor is labeled 'comfortable,' which includes material and comfortable. The last factor contains the attribute of brand and place of manufacturing.

Table 1. Factor loading of the attributes

Attributes	Factor 1 Knife reliability	Factor 2 Outlook design	Factor 3 Convenience	Factor 4 Length of knife	Factor 5 Price	Factor 6 Comfortable	Factor 7 Brand
Assembly	0.663						
Failure rate	0.706						
Edge angle	0.656						
Blade inclination	0.510						
Outlook		0.741					
Model		0.677					
Convenience			0.743				
Size			0.8				
Length of knife				0.693			
Length of blade				0.822			
Multi-function				0.65			
Price					0.626		
Safety					0.746		
Material						0.712	
Comfortable						0.657	
Brand							0.61
Place of manufacturing							0.868

3.2 Results of experimental study

3.2.1 Effect of knife types

Results of ANOVA showed that these were significantly differences for wrist angles between knives ($F(2, 189) = 6.12$, $p < 0.05$). These were significant larger wrist angles in applied the larger knife (39.95 degrees) than in general knife (35.25 degrees) and curvature knife (34.29 degrees). In addition, the cutting time of general knife (16.72 sec) was longer than curvature knife (13.1 sec) and larger knife (12.89 sec). See Figure 4 to reference.
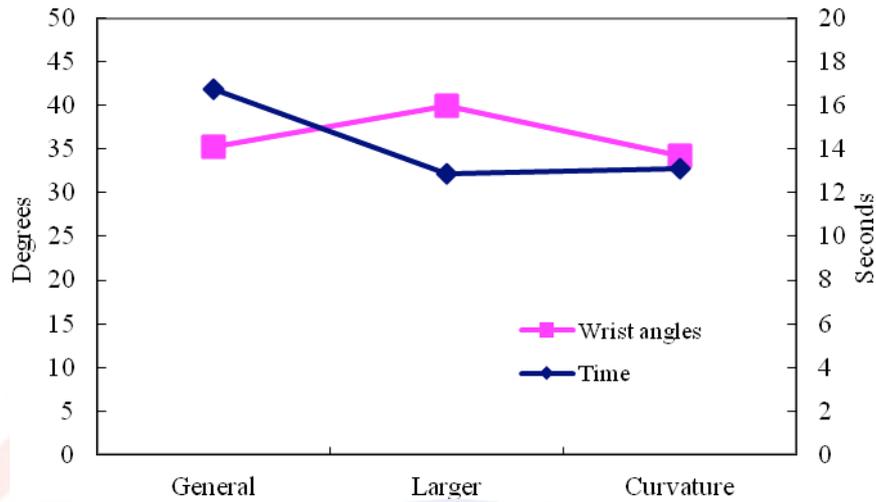
Figure 4 the wrist angles and cutting time between knives

3.2.2 Effect of paper types

Results of ANOVA showed that these were significantly differences for EMG of Extensor Carpi Radialis between papers ($F_{2, 189}$) = 20.7, $p < 0.001$). Certainly, cutting containerboard need more effort (60.3%) than cutting cardboard (47.5%) and office paper (43.1%). However, the cutting time of cardboard (15.75 sec) was longer than office paper (13.78 sec) and containerboard (13.19 sec). See Figure 5 to reference.
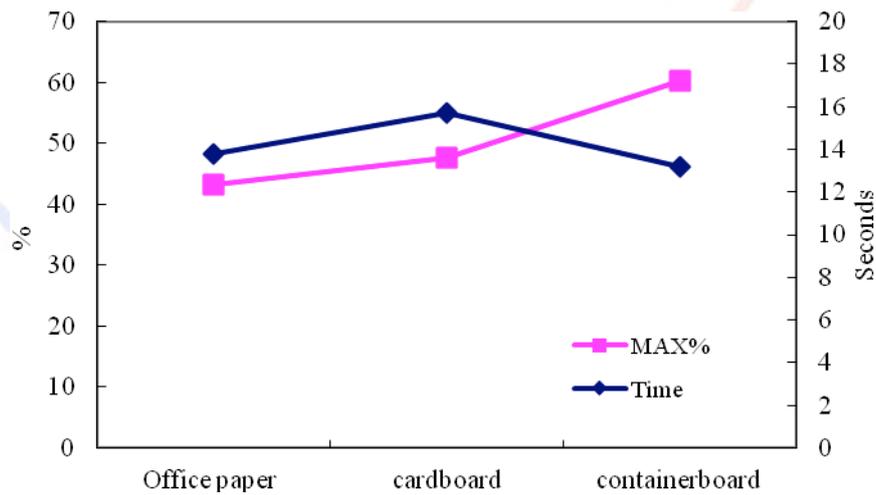
Figure 5 The EMG of Extensor Carpi Radialis (MAX%) and cutting time between papers

4.2 Effect of cutting postures and cutting path

These were significantly difference in EMG of Extensor Carpi Radialis between grip postures (F(1, 189) = 20.3, p < 0.001) Table 1 showed that the muscle effort of Extensor Carpi Radialis was higher on pen grip (55.3 %) than on force grip (43.3 %). In addition, the mean EMG of Extensor Carpi Radialis was higher in cutting circle path (53.7 %) than cutting square path (46.9 %). For cutting time, mean cutting time was longer significantly by cutting circle path (12.9 sec) as compared to cutting square path (15.5 sec).

Table 1 Mean measures across cutting postures and cutting path

	Wrist angles (degrees)	EMG (%) Carpi Radialis	Time (sec)
Cutting postures			
Force grip	36.8	43.3 ***	14.2
Pen grip	36.1	55.3	14.3
Cutting path			
Circle path	37.4	53.7 **	12.9***
Square path	35.5	46.9	15.5

* p < 0.05; ** p < 0.01; *** p < 0.001
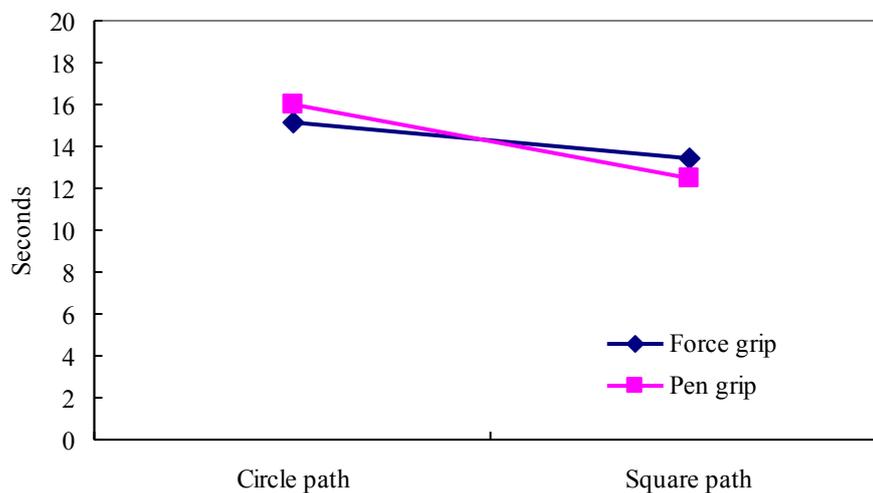
Figure 6 Interaction of grip postures and cutting path on cutting time

The interesting result from the viewpoint of cutting time was the significant interaction between grip postures and cutting path (F(1, 189) = 7.79, p < 0.01; Figure 6). Applied the force grip posture might be better performance on cutting circle path. By contrast, cutting square path by pen grip posture had better performance.

5. DISCUSSION AND CONCLUSION

Results of ANOVA showed that these were statistically significant differences between types of knives in flexion angles of wrist and accomplished time. After Duncan multiple range tests indicated that larger knife was higher flexion angles of wrist than others. By contrast, accomplished time was the fastest in applied the larger knife. For types of papers, the muscle activities reached on 60% of MVC in both muscle groups while cutting the cardboard and containerboard. As expected, participants need more effort to accomplish the tasks in circle cutting, because the wrist motion, muscle activities and time were higher than cutting square path. For grip posture, pen grip had less muscle activities than force grip in both muscle groups. These is the better performance in applied the larger knife with force grip posture. Apart from exterior design of workplace utility knives, the topic of cutting operation should be taken account in design process of workplace utility knives.

Detailed quantitative information on the forearm muscle loading of cutting papers provides insight to the factors causing musculoskeletal disorders and might be used to help evaluate ergonomic design of workplace utility knives

REFERENCES

Bao, S., Silverstein, B., Cohen, M. 2002, An electromyography study in three high risk poultry processing jobs. International Journal of Industrial Ergonomics, 27, 375-385.

Bishu, R. R., Calkins, C., Lei, X., & Chin, A. 1996, Effect of knife type sharpness on cutting forces. In A. Mital, H. Krueger, S. Kumar, M. Menozzi, & J. Fernandez (Eds.), Advances in Occupational Ergonomics and Safety I (pp. 479-483). Cincinnati, OH: International Society for occupational Ergonomics and Safety.

Berglund, K., Eriksson, M. 1995, Tool design in relation to hand function: course content for occupational therapists, Work, 5,191-195.

Chi, C. F., & Drury, C. G., 1988, Cross validation of measures of handle/human fit. Applied Ergonomics, 19(4), 309-314.

Claudon, L. 2000, Ergonomic hand tool design: Interview of users-ERGON-AXIA 2000: Second International Conference on Ergonomics and Safety for Global Business Quality and Productivity, Warsaw, Poland.

Juul-Kristensen, B., Fallentin, N., Hansson, G. A., Madeleine, P., Andersen, J. H., & Ekdahl, C. 2002, Physical workload during manual and mechanical deboning of poultry. International Journal of Industrial Ergonomics, 29, 107-115.

Loppinet, M., & Aptel, M. 1997, Musculoskeletal disorders in the meat industry (in France). Notes Scientifiques et Techniques no 162. INRS, Nancy, France.

Marsot, J., Claudon, L., & Jacqmin, M. 2007, Assessment of knife sharpness by
    means of a cutting force measuring system, Applied Ergonomics, 38, 83-89.

Mc Gorry, R. W., Dowd, P. C., & Dempsey, P. G. 2003, Cutting moments and grip
    forces in meat cutting operations and the effect of knife sharpness. Applied
    Ergonomics, 34, 375-382.

Niebel, B., Freivalds, A., 2003, Methods, standards, and work design, McGraw-Hill,
    New York.

Okunribibo, O. O., Haslegrave, C. M., 1999, Effect of handle design for cylinder
    trolleys. Applied Ergonomics, 30(4), 407-419.

Vezina, N., Prevost, J., Lajoie, A., & Aube, L. 1997. Les couteaux dans l'abattage et
    la transformation de la viande. Symposium international sur l'autoformation,
    Montréal, 20p.

The Discussion qf Class Management cnd Behavior Change

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Abstract:

   With the rapid change of technology, the ways of how to provide vivid teaching are getting more and more complicated. Children receive and learn the new information daily, so they will easily feel bored and lack for interests. The purpose of this study was to discuss the class management and students' behavior change while the researcher utilized various strategies upon motivation and inspiration. Chuang (2008) described that the leader's ability to react to the environment change inside and outside the industry and to unite a group and is the key to success. Three types of leadership could affect the team and behavior change. The laissez faire style implies low control, the autocratic style high control and the participative lies somewhere in between (Weber, 1905). The study found out that student was lack interest and bad performance while the teacher was the type of laissez faire or autocratic type. In order to enhance students' performance and motivation, this study found that teacher who has good control of class management is more easily to motivate and change their behavior.

CHAPTER I

INTRODUCTION

Betz and et al. (1970), Lin (1985), and Mangano and Corrado (1979) indicated that there was a relationship between student satisfaction, teaching instruction, teaching environment, learning efficiency, and teaching material.   Teaching methods directly affect students' learning. "A teacher can demonstrate effective decision-making tendencies and instructional behavior in an interactive teaching environment" (Brawdy & Byra, 1995).

If a teacher uses creative and interesting instructions, teachers will have a positive influence on student learning.   Chen (1997) indicated that a teacher plays an important role to teach, to guide, and to be a role model in school.   A teacher should use creative and interactive teaching methods to motivate student learning.   Good and interesting instruction will increase student satisfaction (Lin, 1985).   Through student satisfaction, teachers will know the effect of their teaching and they can correct it to fit the needs of students.

Various instructional methods can make teaching more interesting and vivid, such as short lecture, questioning, demonstration, role modeling, and observation (Background & Planning to Precept, n.d.).   The personal characteristics of an effective teacher usually is being trustworthy, enthusiastic, energetic, responsible, keeps promises, sets a good example, models appropriate behavior, stimulates interest, has knowledge and presents it with clarity, relates well interpersonally and enjoys teaching (Teaching Skills, n.d.).

Zahn (1976) indicated that the teaching environment affected teaching efficiency. Students would have high satisfaction if they had good interaction with their teachers.   If a teacher provided students support, respect, attention, and care, students' learning efficiency would increase. Mangano and Corrado (1979) indicated a good learning environment and teaching method would motivate students.   Teaching environment and instructional methods are an important factor when teaching yoga exercise.   A nice learning environment and interesting instruction will affect students to participate in yoga exercise (Zahn, 1976).   The purpose of this study was to discuss the class management and students' behavior change while the researcher utilized various strategies upon motivation and inspiration.

CHAPTER II

PARTICIPATION AND MOTIVE

Factors Affecting Participation

People who participate in activities are affected by personal interests, culture and society,

and educational background (Ou, 2006).   Recreational exercises are divided into several categories: competitive activities, noncompetitive activities, group activities, educational activities, observing and watching activities, creative activities, and collective activities (Liu, 1982). Ou (2006) indicates that people's attitudes are affected by their educational background. People who have a higher educational background value recreational activity as part of their life and like to be active.   On the contrary, people who have a low educational background think recreational activity is a luxury.   So, people's attitude toward participating in recreational activities can be based on their level of education.

Based on research, society and culture affect people to participate in recreational activities (Ou, 2006).   Personal incomes affect people's attitudes toward recreational activities because people with high income have more ability and time to participate in recreational activities than people with low income (Ou, 2006).

Ou (2006) indicated that an individual's attitude toward recreational activities may be affected by his or her personal educational background, personal income, gender, and living environment (Mack & shaddox, 2004).

Educational Background

Xie (2003) indicated that people who are interested in participating in many activities related to artistic and cultural activities may be affected by their educational background. Educational background can influence individual values and opinions, so an individual will have different values and opinions toward recreational activities (Cordell, 1988).

Research indicates that recreation activity helps children to have a better performance with their studies.   Many factors affect children's attitudes toward recreational activities in Taiwan (National Youth Commission, 1992).   These factors include: homework, time, money, facilities, knowledge, and student's counseling (National Youth Commission, 1992).   Siu (1993) found that five factors will affect youth's attitude toward recreational activities, such as interest, time, personal characteristics, peers, and money.

In Chinese culture and society, males and females were raised with different roles.   For example, males were taught to be tough and strong and the females are taught to be gentle and soft.   Females were taught to follow the culture and social value, so females could not freely participate in recreational activities like males (Xie, 2003).   Males liked to participate in more adventurous activities than females (Cai, 2004; Du, 1999; Wang, 2001; Bammel & Burrus-Bammel, 1982).

Comparing males' and females' physical strength, males were stronger than females (Dahlgren, 1988).   So, female students did not like to participate in physical activities as male

students.   Some people still think that females cannot participate in intense activities (Qiu, 1988).

Living Environment

Living environment affects people's recreational activities (Wen, 2001).   Generally, people who live in urban areas enjoy more convenient mass transit and communication and transportation than those in the country in Taiwan.   People who live in the urban areas participate in recreational activities more than people who live in the country (Bammel & Burrus-Bammel, 1982) because of easy access to transportation.

Motives of Participation

Motive, meaning stimulus to action, is a personal desire or need to stimulate to act (Weng, 2006).   For instance, teachers use verbal praise as a motive in teaching (Caruso, 1982). Motive is a desired motion that causes an individual to act or to feel (Zhang, 1996).   Motives come from intrinsic and extrinsic factors.   Extrinsic factors include an individual's age, gender, income, social class, and culture.   Intrinsic factors include personal characters and emotion.   Liu (2001) indicated that motives are created when an individual wants to satisfy self.

Gill (2000) indicated that an individual becomes and stays involved in sport and exercise activities for many reasons.   They are skill development, competence, excitement, challenge, and fun.   Butt (1995) "incorporated competence motivation literature into her more psychodynamic motivational model, which specifies four levels of sport motivation: biological motivations, psychological motivations, social motivation, and secondary reinforcements as motivations."

Theories that discuss motive are push-and-pull theory, expectancy theory, and need hierarchy theory.   The Push and Pull Theory indicates two forces which will affect an individual to make a decision, such as push force and pull force.   Push force happens in an original place and pull force happens in another place (Zheng, 1985; Lu, 2006).   Individuals participate in travel activities because they think they are pushed by surrounding pressure from families or work (Fluker & Turner, 2000).   Traveling would bring them satisfaction and pleasure.   These factors cause individuals to travel.

Need hierarchy theory was developed by Abraham H. Maslow (1943).   The need hierarchy theory indicates that motive is created because of individual necessity.   From bottom to top, there were five levels: physiological needs, safety needs, needs of love, affection and belongingness, needs for esteem, and needs for self-actualization (Maslow, 1971).   The top level is called "being needs", and others are called "deficiency needs."   Maslow (1970) focused on "Motivated behavior persists over a long time and is directed toward the attainment of a goal.

The behavior was a consequence of a felt need and this felt need creates tension within the individual that leads to activities designed to reduce the tension" (Lyon, Ivancevich, & Donnelly, 1970).

Expectancy theory was developed by Victor Vroom (1964).   The expectancy theory of Victor Vroom deals with motivation and management.   "Expectancy theory assumed that behavior results from conscious choices among alternatives whose purpose it is to maximize pleasure and minimize pain" (Wu, 2004).   This means that an individual has a belief in his expected outcome.   For instance, an individual participates in recreational activities due to his or her belief of the expected outcomes, such as relaxation or pleasure.

The expectancy theory is established on five essential ideas: force, valence, expectancy, outcome, and instrumentality.   The behavior of an individual is decided by his or her subjective opinions (Chu, 2004).   An individual deciding his or her choice depends on his or her expected outcome.

Noe (2003) indicated that expectancy theory is similar to self-efficacy.   In the expectancy theory, a belief that performing a given behavior is associated with a particular outcome is called instrumentality.   Valence is the value that a person places on an outcome. Various choices of behavior are evaluated according to their expectancy, instrumentality, and valence.

CHAPTER III
SATISFACTION

Huang (2004) indicated that satisfaction can be applied in many areas, such as private companies, governmental organizations, and educational design.   Satisfaction means that an individual has the expectant feeling or outcome toward one product (Xie & Xu, 1998). Satisfaction was the combination of needs, desires, and expectation (Wang & Lu, 2003). Satisfaction was an important factor attracting customers to consume constantly.

Wang and Lu (2003) indicated that satisfaction was an important element of affecting customers' loyalty to products.   Satisfaction can reflect the difference between expectancy and exact outcome (Hempel, 1977).   Kotler (1993) indicated that customer satisfaction is the differences between customers' expectative feeling and their real feeling to the products. Satisfaction is a feeling of an individual's likes or dislikes (Wang and Lu, 2003).

Customer satisfaction affects a customer to purchase again or not.   Howard and Sheth (1969) indicated that an individual has positive or negative feelings because of the differences

between his or her contribution and receiving outcome, which is called satisfaction.   Oliver (1980) indicated that satisfaction is an emotional reaction when the exact outcome is different from the expected outcome.

Bryant (2006) indicated "Student satisfaction survey results were a key way to demonstrate how a school was performing and thus contribute to overall documentation of institutional effectiveness."   "College and universities with higher satisfaction levels also enjoy higher retention and graduation rates, lower default rates, and increased alumni giving" (Miller, 2003).   Students who persist from semester to semester had significant differences in satisfaction than students who did not persist in school (Bailey, Bauman, & Lata, 1998). Students' attitudes about the student-college relationship significantly influenced student retention (Bruning, 2002).

Wu (2004) indicated that satisfaction was an individual subjective feeling or opinion. Parasuraman (1994) mentioned that customer satisfaction was an indicator where customers evaluated the quality of service, price, and the quality of products.   Satisfaction was affected by customers' subjective opinions (Lai, 2005).   Bulltena and Klessig (1969) indicated that satisfaction of recreational activity was affected by the beforehand expectancy and real experience.

Zhang (1989) defined satisfaction as a feeling when an individual accomplishes his or her goal.   Getzels and et al. (1968) indicated that an individual had higher satisfaction when his or her personal expectancy and group expectancy were the same, and vice versa.   Tough (1982) indicated that pleased feeling and positive attitude were called satisfaction.   The bad feeling and negative attitude was discontent (Ma, 1988).

Price (1972) thought satisfaction was when an individual had "a positive affective orientation".   Francken and Van Raaij (1981) considered that satisfaction was an indicator where an individual had a discontent feeling when his or her goal was not accomplished.   When his or her goal was accomplished, he or she would have a satisfied feeling.

Student Learning Satisfaction

Long (1985) and Tysome (2006) indicated that learning outcome and learning satisfaction are the main purposes of learning activities.   Learning Satisfaction indicates students' feeling and attitude toward their learning activities (Mullen & Tallent-Runnels, 2006).   Satisfaction means that an individual feels satisfied when their expected goal and real experience are similar or their real experience is greater than expected goals (Martin, 1988).

Student's satisfaction is a student's feeling toward their learning in class or in school. Schools can improve the learning efficiency and teaching quality through assessing students'

satisfaction survey (Chen, 2005; Sun, 2002).   "Satisfaction is a person's attitude toward an object.   It presents a complex assemblage of cognitions (beliefs or knowledge), emotions (feelings, sentiments or evaluations), and behavioral tendencies" (Hamner and Organ, 1978).

Vroom (1964) indicated that the expectancy theory is based on five elements: force, valence, expectance, outcome, and instrumentality.   Vroom suggested that a learner selects and evaluates a behavior which will bring a positive outcome.   The following framework shows the relationship between expectance and instrumentality in expectancy theory (Figure 2.2).   For this study, the model of expectancy theory was adopted and revised to fit the study (see Figure 3.1 on page 43).
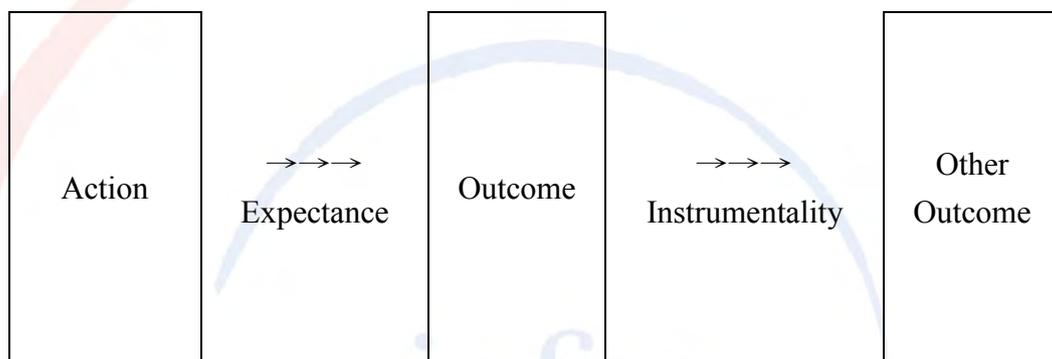
Figure 2.2
The Relationship Between Expectance and Instrumentality in Expectancy Theory (Huang, 1986; Hsiao, 2004)

"The force motivating a person to exert effort or to perform an act in a job situation depends on the interaction between what the individual wants from a job (valence) and the degree to which he/she believes that the company will reward effort exerted (expectancy) on that job with the things he or she wants. Individuals believe that if they behave in a certain way (instrumentality), they will receive certain job features" (Vroom 1982).

Harvey et al (1997) indicated that a school investing in students' learning satisfaction will have benefit because it will appear schools care about students.   When schools invest in students' learning satisfaction, they receive responses from students and know students' opinions. It appears that the school focusing on students' learning experiences helps students to increase learning opportunities.   It provides an explicit process to help schools to improve students' learning satisfaction.   It helps the school to have more information from students.   It also helps schools to know ways of improving students' learning.

CHAPTER IV
BEHAVIOR CHANGE

There are various and abundant researches related to teaching strategies, educational psychology, students behavior, and so forth. Sport coaching and educators have to utilize different content, technique, skill, and training procedure like academic courses. Sport coaches and educators need to use different training methods to escalate athletes' performance and to display the best performance. Therefore, the purpose of this study was to discuss the applied behavior analysis (ABA) theories into recreational education in Taiwan.

The Applied Behavior Analysis

Applied behavior analysis (ABA) was defined by Baer, wolf, and Risley (1968) as "process of applying sometimes tentative principles of behavior to the improvement of specific behaviors and simultaneously evaluating whether or not any changes noted are indeed attributable to the process of a application." The meaning of *applied* was on vague concepts of social problems, social interests, and the immediate importance of behavior (Baer et al, 1987). There were several eminent behaviorisms (Schloss & Smith, 1998).

Classical Conditioning

Classical conditioning (called as Pavlovian conditioning or respondent conditioning) was demonstrated by Ivan Pavlov (1927). Classical conditioning was used in behavior training which a subject comes to respond in a final manner to a previously neutral stimulus that has been repeatedly presented along with an unconditioned stimulus that elicits the desired response. The two elements are then known as the conditioned stimulus and the conditioned response. In the setting of coaching, classical conditioning could be used to modify athlete's behavior.

Operant Conditioning

Operant conditioning was demonstrated by B. F. Skinner (1953) which there was three principles of operant conditioning: reinforcement, extinction, and punishment to modify the occurrence and form of behavior. Pigeons increased pecking behavior if it was followed by the presentation of food. There were four procedures of operant conditioning: positive reinforcement, negative reinforcement, positive punishment, negative punishment.

Social Learning Theory

Social Learning Theory was demonstrated by Albert Bandura (1965; 1977) which individuals could learn new behaviors by watching others engage in those behaviors. Bandura's work on model learning which had studies describing the effects of televised aggression on young viewer. If people watch desired outcomes in their observed behavior, they are easier to imitate and adopt the behavior on their own.

Maslow's hierarchy of needs

Abraham Maslow (1954), who believed human behavior, is motivated by the need to satisfy positive internal forces such as love and concern. Maslow's hierarchy of needs included five levels (from bottom to top): physiological level, safety, love & belonging, esteem, and self-actualization. In the setting of coaching, coach usually encourages athletes to express the best performance by utilizing psychological model of Maslow's hierarchy of needs.

Leadership styles

There are different styles of leadership: transformational, transactional and laissez-faire leadership. Transformational leadership is hypothesized to occure when leaders and followers unite in pursuit of higher order common goals, when "one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality" (Burns, 1978). And it means that leader-follower relationship is one in which the purposes of both become fused, creating unity and collective purpose (Barker, 1990). Transactional leadership is hypothesized to occur when there is a simple exchange of one thing for another. Transactional leadership occurs "when one person takes the initiative in making contact with others for the purpose of exchange of valued things" (Burns, 1978). Kirby, Paradise & King (1992) mentioned that leader and the led exchange needs and services in order to accomplish independent objectives. Laissez-faire leadership was hypothesized to occur when there is an absence of leadership (Bass et al., 1997). Under the leadership styles, no attempt is made to motivate followers, or to recognize and satisfy their needs (Bass & Avolio, 1997).

CHAPTERV
CONCLUSION

Satisfaction might affect students' motivation and behavior.   On the university level, students can select different physical educational classes they like.   Therefore, student satisfaction would affect students' enrollment.   "How to motivate and interest students in class?" would be important issues for schools and instructors.   With proper behavior management during the class, it may change students' learning module and behavior change.

Students' behavior can be modified with various techniques and motivation.   Besides, educators have to evaluate the feedback of teaching as well in order to understand whether the training technique is useful for students or not. If not, educators need to adopt other techniques to adjust students' mind or to modify students' learning behavior to become better.   However, the applied behavior analysis theories do not work all the time.   Sometimes, students' performance will be affected by many reasons: family, friends, income, personal characteristic, and etc. Being a teacher or an educator will need to understand students' family background or friends' relationship.   Then, educators can use good behavior change techniques and strategies into students to arouse their potential and to interest them to better performance.

This study provided some suggestions for schools and instructors.

1. Classes need to enhance interaction and inspiration to motivate students. Instructors need to demonstrate postures and to provide clear directions.

2. In order to increase the enrollment, instructors and school officials need to investigate students' needs and try to improve student satisfaction.

3. Teaching instructions have various supported strategies.   An instructor should use various equipment and visual aids to interest students, like music, technology support, and games.

4. In order to interest students, instructors need to know students' needs and should present a variety of music.   The yoga teaching needs to be student-oriented, not instructor-oriented.

5. The instructor should utilize different teaching strategies: demonstration, observation, practice, lecture, and performance.

6. Schools should evaluate if the school facilities are safe and well-designed for yoga class.   A good place for practicing and learning yoga will motivate student learning.

7. In order to motivate special students' participation, the instructor should investigate the needs of each student who needs special education and various educational strategies.

8. Teaching evaluation helps improve teaching efficiency and to know the shortcomings of teaching.   Through teaching evaluation or student evaluation, school administrators and instructors can determine student's needs and provide

students with a more effective learning environment.

Future studies can investigate into curriculum plans, instruction, teaching strategies, and evaluation.   In order to increase students' learning efficiency and motive student who needs special education, future studies can investigate general and special educational curriculum design for Taiwanese special education.

REFERENCES

Background & Planning to Precept (n.d.). Department of Family Medicine Teaching
   Effectiveness. Retrieved Nov. 5, 2007, from
   http://www.mcg.edu/som/fmfacdev/fd_teaching.htm

Baer, D. M., Wolf, M. M. & Risley, t. r. (1968). Some current dimensions of applied behavior
   analysis. Journal of Applied Behavior Analysis, 1, 91-97.

Baer, D. M., Wolf, M. M., & Risley, T. R. (1987). Some still- current dimensions of applied
   behavior analysis, 20(4), 313-327.

Bailey, B. L., Bauman, C., & Lata, K. A. (1998). Student Retention and Satisfaction: The
   Evolution of a Predictive Model. Paper Presented at the 38th Annual AIR Forum,
   Minneapolis, Minn., ED 424797.

Bammel, C. & Burrus-Bammel L. L. (1982). Leisure and human behavior. Dubuque, Iowa : Wm.
   C. Brown Publishers. pp. 261-294.

Bammel, C. & Burrus-Bammel L. L. (1992). Leisure and human behavior. Time Mirror Higher
   Education Group.

Bandura, A. (1965). Influence of model's reinforcement contingencies on the
   acquisition of imitative responses. Journal of Personality and Social Psychology, 1, 589-595.

Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ: Prentice-Hall.

Barker, A. M. (1990). Transformational nursing leadership:A vision for the future.
   Baltimore: Williams and Wilkins.

Bass, B. M., & Avolio, B. J. (1997). The full range leadership development manual
   for the multifactor leadership questionnaire. Redwood City, CA: Mindgarden
   Inc.

Betz, E. L., Klingensmith, J. E., & Mene, J. W. (1970). The Measurement and Analysis of
   College Student Satisfaction. Measurement and Evaluation in Guidance, 3, 110-118.

Brawdy, P., & Byra, M. (1995).   Supervision of preservice teachers during an early field teaching
   experience. The Physical Educator, 147-159.

Bruning, S. D. (2002). Relationship Building As a Retention Strategy: Linking Relationship
   Attitudes and Satisfaction Evaluations to Behavioral Outcomes. Public Relations Review,
   28(1), 39-48.

Bryant, J. L. (2006). Assessing Expectations and Perceptions of the Campus Experience: The Noel-Levitz Student Satisfaction Inventory. New Directions for Community Colleges, 2006(134), p25-35.

Bulltena, G. L. & Klessig, L. L. (1969). Satisfaction in Camping : A Conceptualization and Guide at Social Research. Journal of Leisure Research, 348-364.

Burn, J. M. (1978). Leadership. New York: Harper and Row.

Butt, D. S. (1995). On the Measurement of Competence Motivation. In P.E. shrout & S. T. Fiske (Eds.), Personality Research, Methods, and Theory: A Festschrift Honoring Donald W. Fiske. Hillsdale, NJ: Erlbaum. 313-331.

Cai, H. J. (2004). Recreational Social Study. Taipei, Taiwan: Sanmin Book Publisher.

Caruso, V. M. (1982). Enthusiastic Teaching. Secondary School Physical Education, 53(3), 47-48.

Chen, M. Y. (1997). Professional Teaching: Teaching Theories and Application. Kaohsiung, Taiwan: FuWen Book Publisher.

Chen Yu Hui (2005). The Study of Marketing Mix and Student Satisfaction of National Hualien University of Education. Unpublished Master Thesis, National Hualien University of Education, Hualien city, Taiwan.

Chu, Wen- Yang. (2004). Public Senior High School Girl Students Satisfaction with Physical Education Teaching in Taipei. Unpublished Master Thesis, National Taiwan Normal University, Taipe, Taiwan.

Cordell, K. H. (1988). An Analysis of the Outdoor Recreation and Wilderness Situation in the United States 1989-2040, comp. K: Cordell, USDA Forest Service.

Du, J. J. (1999). Analysis of Gender in Recreational Behavior. Journal of Chinese Domestic Science, 28, 110-127.

Fluker, M. R. & Turner, L. W. (2000). Need, Motivations, and Expectations of a Commercial Whitewater Rafting Experience. Journal of Travel Research, 38(4), 380-389.

Francken, D. A. & Van Raaij, W. F. (1981). Satisfaction with Leisure Time Activities. Jouranl of Leisure research, 13, 337-352.

Getzels, J. W., Lipham, J. M., & Campbell, R. P. (1968). Educational Administration as a Social Process. New York: Harper & Row.

Gill, D. L. (2000). Psychological Dynamics of Sport and Exercose. Champaign, IL: Human Kinetics, 87-92.

Harvey, L., Plimmer, L., Moon, S., & Geall, V. (1997). Student Satisfaction Manual. Buckingham: SHRE & Open University Press.

Hempel, D. J. (1977). Consumer Satisfaction with the Home Buying Process: Conceptualization and Measurement, The Conceptualization of Consumer Satisfaction and Dissatisfaction, H. K. Kieth (ed.), Cambridge, Mass: Marketing Science Institute, 7-8.

Howard, J. A. & Sheth, J. N. (1969). The Theory of Buyer Behavior, New York: John Willey and Sons.

Hsiao, Yu Hsiang. (2004). A Study of Taipei City's Primary School Dancing Class current

situation and Teacher's Teaching Satisfaction. Unpublished Master Thesis, Taipei Municipal University of Education, Taipei, Taiwan.

Huang, Chi Hui (2004). Study on Visitors' Recreated Motivation and Satisfaction at the Reservoir Scenic Area- A Case Study of the Wu-San-To Reservoir Scenic Area. Leader University Leisure Management Department Master's Thesis.

Huang, Kun Hui (1986). The Principles of Educational Administration. Taipei, Taiwan: Sanmin Book Publisher.

Kirby, P. C.., King, M. I., & Paradise, L. V. (1992). Extraordinary leaders in education: Understanding transformational leadership. Journal of Educational Research, 85(5), 303-311.

Kotler, P. (1993). Marketing Management Analysis, Planning, Implementation and Control (9th ed), Upper Saddle River, NJ: Prentice-Hall Inc.

Lai, Mei Fen (2005). A Study of Customers' Experiences on Sport Tourism – The Case of F-1 Sport Tourism. Unpublished Master Thesis, National College of Physical Education and Sports, Taichung city, Taiwan.

Li, Ming Shu (1995). A Study of Educational Training Factors Affecting Trainer of Business Organization to Particpate in On-The-Job Training. Unpublished Master Thesis, National Changhua University of Education, Changhua, Taiwan.

Liu, K. H. (1982). Classify of Recreational Activities. Supplementary Reading of Living counseling. Taipei, Taiwan: Tienma Publisher.

Liu, Z. L. (2001). The meaning, purpose, function, and application of recreational education. *The study of Recreational activities, 14*(1). 33-53.

Long, H. B. (1985). Contradictory Expectations? Achievement and Satisfaction in Adult Learning. Journal of Continuing Higher Education, 33(3), 10-12.

Lyon, H. L., Ivancevich, John M., & Donnelly, J. H. (1970). A Motivational Profile of Management Scientists. Operations Research, 19(6). 1282-1299.

Mack, M. G., & Shaddox, L. A. (2004). Changes in Short-term Attitudes Toward Physical Activity and Exercise of University Personal Wellness Students. College Student Journal, 8, 587-593.

Mangano, J. & Corrado, T. (1979). Adult Students' Satisfaction at Six Two-Year Colleges. (ERIC Document Reproduction Service No. ED 180563).

Martin, C. L. (1988). Enhancing Children's Satisfaction and Participation Using A Predictive Regressin Model of Bowling Performance Norms. The Physical Educator, 45(4), 196-209.

Maslow, A. H. (1943). A Theory of Human Motivation. Psychological Review, 50, 370-396.

Maslow, A. H. (1954). *Motivation and Personality*, New York: Harper.

Maslow, A. H. (1970). Motivation and Personality (2nd Edition). New York: Harper & Row.

Maslow, A. H. (1971). *The farther reaches of human nature*. New York: The Viking Press.

Miller, R. (2003). Student Satisfaction and Institutional Success. Paper Presented at the 43rd annual AIR Forum, Tampa, FL.

Mullen, G. E. & Tallent-Runnels, M. K. (2006). Student outcomes and perceptions of instructors' demands and support in online and traditional classrooms. Internet &Higher Education, 9(4), 257-266.

National Youth Commission (1992). *Youth White Book*. Taipei, Taiwan: National Youth Commission.

Noe, R. A. (2003). Employee Training and Development. New York: McGraw-Hill companies Inc. 113-115.

Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of SatisfactionDecisions. Journal of Marketing research, 17(3), 460-469.

Ou, Zheng-Zhong (2006). Study on the Participation of Recreational Activities by Residents of Taiwn. Unpublished Master Thesis, National Taipei University, Taipei, Taiwan.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994). Reassessment of Expectations as A Comparison Standard in Measuring Service Quality: Implications for Further Research. Journal of Marketing, 58, 111-123.

Pavlov, I. P. (1927). Conditioned reflexes: An investigation of the psychological activity of the cerebral cortex. New York: Dover.

Price, J. L. (1972). Handbook of Organizational Measurement. Lexington, D. C.: Health.

Schloss, P. J. & Smith, M. A. (1998). Applied behavior analysis in the classroom. Needham Heights, MA: Allyn& Bacon.

Siu, Y. H. (1993). *The Study of Youth Recreational Activities and Disturbing Factors*. Taipei, Taiwan: National Youth Commission.

Skinner, B. F. (1953). Science and human behavior. New York: Macmillan.

Sun, Hao Chih (2002). A Study of the Importance of Student Satisfaction Indicators. Unpublished master thesis, National Chengchi University, Taipei, Taiwan.

Teaching Skills (Principles, Roles, Methods) (n.d.). Department of Family Medicine Teaching Effectiveness. Retrieved Nov. 5, 2007, from

http://www.mcg.edu/som/fmfacdev/fd_teaching.htm

Tough, A. (1982). Some Major Reasons for Learning. Eric Document Reproduction Service NO. ED 033251.

Tysome, T. (2006). Teaching tops the list for student satisfaction. Times Higher Education Supplement, 1769, p6-7.

Vroom, V. H. (1964). Work and Motivation. New York: Wiley.

Vroom, V. H. (1982) Work and Motivation, 2 nd edition. Malabar , FL : Robert E. Krieger.

Wang, D. M. & Lu, J. Q. (2003). A Study of Customer Satisfaction and Loyalty in Taipei Sea World. Journal of Taipei College of Maritime Technology, 47-66.

Wang, Z. Z. (2001). Introduction of Recreation. Taipei, Taiwan: Creative & More Inc.

Wen, C. Y. (2001). Taiwanese Recreational Activity. Taipei, Taiwan: Don Dai Publisher. Pp. 130-137.

Wu, P. Y. (2004). Thinking Styles, Academic Achievement and Learning Attitudes in

Face-to-Face and Web-Based Instructional Environments. Unpublished master thesis, National Chiao Tung University, Hsinchu, Taiwan.

Wu, Shih-Chun (2004). A Study on the Garden Restaurants Management Model Oriented by Costumers' Satisfaction--The Cases of Sakura Forest, Shinsir Lotus Garden and Beloved Landscape Restaurants in Shin-Sir Village, Taichung County, Taiwan. Unpublished Master Thesis, Feng Chia University, Taichung city, Taiwan.

Xie, W. Q. & Xu, S. J. (1998). Marketing and Management: Asian Cases. Taipei: HwaTai Publisher.

Zahn, J. C. (1976). Differences between adults and youth affecting learning. Adult Education, 17(20, 67-77.

Zhang, C. X. (1989). Zhang's Psychologic Dictionary. Taipei, Taiwan: Tunghua Publisher.

Zhang, C. X. (1996). Educational Psychology. Taipei, Taiwan: Tunghua Publisher.

Zheng, Y. Y. (1985). A Study of Teacher Satisfaction in Rural Elementary Schools. Kaohsiung, Taiwan: FuWen Publisher.
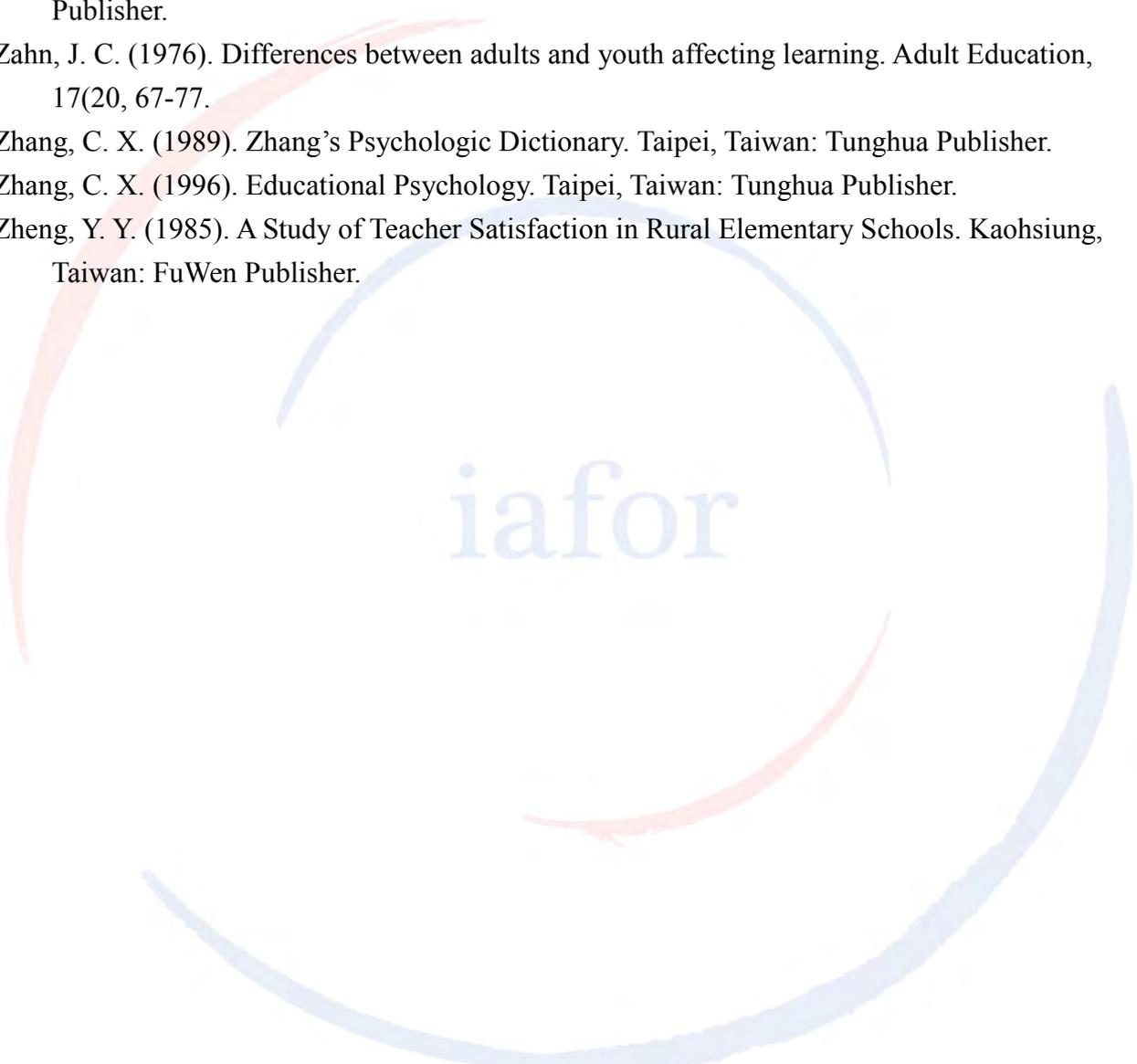
Development cnd Validation qf vhe Social Trusting Internal Control Scale hr Thai School Adolescents

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Abstract:

Academic and friendship trusts are two important groups of social phenomena for school adolescents. In addition, belief in internal locus of control of reinforcement seems to be lower in agricultural developing societies. This can slow down both personal and national progress. Thus, a preliminary measure integrating social trust and belief in internal locus of control of reinforcement, consisted of 30 items, each with 6 unit rating scale was constructed. A measure of social trusting internal control scale (STICS) was further developed by using two-step factor analysis method. The two samples were 400 and 640 adolescents from 5 schools around Bangkok. The Exploratory Factor Analysis yielded 4 factors of 12 items, and accounted for 52.81% of the explained variance. The four factors were named as follows: (1) uncertainty of the causes of own academic outcomes, (2) confidence that strong effort can lead to academic success, (3) belief that high effort can yield successful peer assisting influence, and (4) doubt that high effort can lead to desirable outcomes. The Confirmatory Factor Analysis performed in the second sample confirmed the structure of STICS. Predictive validity was demonstrated through the correlations of STICS with internal locus of control measure, academic behavior and related attitudes, and also peer-assisting behavior and related attitudes (with r values of .61, .50, .67, .63, and .67, respectively). It is expected that the STICS will be highly useful for both research and development of Thai adolescents in the near future.

Variety of Internal Locus of Control Measures

There must have been more than 50 measures of the belief in internal locus of control of reinforcement (Icon) since Rotter (1966) presented his measure of Internal-External Locus of Control Scale. Rotter's definition of external locus of control of reinforcement consisted of 3 aspects, namely, internal control, chance, and powerful others (Rotter, 1966; Spector, 1992, p. 7; Walkey, 1979). Many Icon measures were built on the concept of controllability (Crandall, et al, 1965; Miller, 1979; Ward & Kennedy, 1992) which also implied predictability as well. Another important component of internal locus of control has been the emphasis on a person's belief in making effort to get his or her desirable outcome or success in various areas such as academic success (Kukla, 1972; Weiner, Heckhausen, Meyer & Cook, 1972). Many other related constructs have been used, such as fate attributions (Norenzayan & Lee, 2010). Some found that I-E scale had an important component called "just world belief" (Be gne, 2002; Collins, 1974; Duffy, Shiflett & Downey, 1977). The latter is a mixture of trust, optimism, and internal locus of control. However, the three more popular components of the I-E locus of control seemed to be controllability, predictability and effort.

There are two groups of I-E measures, trait measures, and state measures (Spector, 1988). Eventhough both trait and state measures of the Internal locus of control of reinforcement (Icon) should be based on the same three belief components, namely, one's predictability, controllability, and the contingency of result on one's effort. Trait can be defined as concerning a more general or a wider area of coverage of a person's domain of thinking and believing. Therefore, Icon trait scores are expected to be positively related to Icon state scores. This statement formed the first research hypothesis in this report.

On the other hand, a state measure of any psychological characteristics, be it an attitude or a personality such as Icon can have a more specific focus such as Icon in school, Icon with friends.

Consequently, a state measure is expected to be better predictor of related behavior than the trait measure (Fishbein & Ajzen, 1974; Rotter, 1975)

At present, there are many important Icon-state measures, such as work Icon, heath Icon, academic Icon, child rearing locus of control scales, etc. (Spector, 1988; Wallston, 1976;Arlin & Whitley, 1978; Campis, et al., 1986; Bhanthumnavin, Chuchom, & Vanintanada, 1985, respectively). However, there is no "social trust Icon scale" for use with adolescents. This author plans to use this newly created measure for research and evaluation in the context of social trust, focusing on the social environment of adolescents.

Another important characteristics that should come to attention is the Rotter's original form of test (1966) in comparison with a Likert typed measure with 5 or 6 units rating scale accompanying each item. Most researchers used a 2-forced-choice form of 23 items Rotter's scale where high scores signify high externality. Many researchers

have decided to use Likert typed rating scales in their test (Bhanthumnavin, et al, 1995; Collins, 1974; Duffy, et al., 1977; Spector, 1988, 1992; Ward & Kennedy, 1992 for example). The present measure of STICS employed an 6-unit rating scale ranges from 1 to 6 for each item. The STICS data can assumed to be on interval rather than ordinal scale as will be explained later.

In sum, STICS is a measure of an internal locus of control of reinforcement in a specific social environment. Icon consists of 3 aspects of belief, namely, predictability, controllability, and effort as important cause of one's desirable outcome. This measure will be used by school adolescents whose social environment are essentially academic and friendship areas. The desirable outcomes are mostly academic success and peer-assisting success.

Importance of Social Trust
The question is, what necessitates the construction of STICS? At present, social trust become more important in most societies. There have been a widespread of social problems due to distrust within and between groups, e.g., Thai political, Japanese-nuclear, and American financial system for example. But social distrust can originate from a deeper psychological distrust developed from infancy throughout life (Erikson, 1950). On the contrary, it was found that, trust can increase cooperation (Lindskold, 1978). High trusters have less misconducts such as lying, stealing, and shop lifting (Rotter, 1980), and better health (Jen, Sund, Johnston, & Jones, 2010) Consequently, the Thai National Research Council has sponsored a research and development project, since 2006, for the enhancement of belief in internal locus of control of reinforcement in children and adolescents. This project is an experimental evaluation of an Icon intervention using newly constructed Icon tales and short stories. This is one of the 4 on-going psychological training programs in Thailand.

The use of STICS as an outcome measure as well as a mediating factor between Icon-tale training and the behavioral outcomes in academic and friendship aspect is demostrated (see Figure 1).
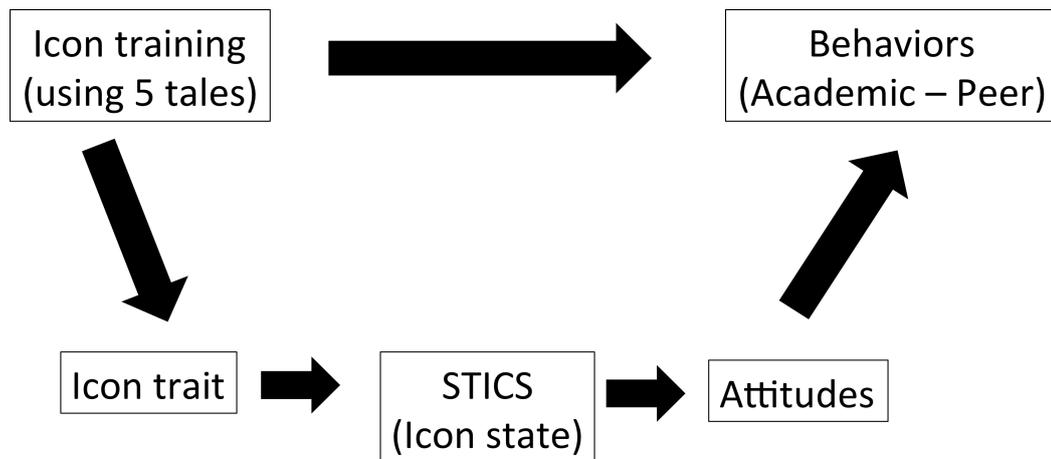
Figure 1   Simplified model of an Icon intervention project of the National Research Council of Thailand via the Center for R&D of Thai Behavioral System (2006 -2013)

In conclusion, the first step in this NRC project was to construct a measure called "STICS" as well as many other measures to be used in experimental evaluation studies. Furthermore, the Thai researchers in this project needed to show before hand, that the newly constructed STICS' scores are related to the targeted behaviors (academic and peer assisting) and their related attitudes of Thai adolescents prior to the experiments. Thus this research report was concerned with the development and validation of STICS

Internal Locus of Control and Social Trust
Internal locus of control and social trust share many common components such as predictability, controllability, and effort. Rotter's interpersonal trust (1967) was based on the same theory as his internal-external locus of control of reinforcement (1966), that is social learning theory. Repeated experience for a long period of time leads to learned about the cause and effect relationship (predictability). Both of the constructs are learning cognitive personalities which can be generalized to various situations. An attempt to create the cause often leads to the expected results (controllability). The stronger control of the cause (effort) can enhance the amount of the desirable results. These phenomena can be in general or in a more specific situations, such as within academic and friendship contexts.

Belief in the locus of control of reinforcement in academic domain has been measured and studied in young people from elementary school children to adolescents and university students (Arlin & Whitley, 1978; Cooper, Burger, & Good, 1981; Iskender & Akin, 2010). It was found that success in learning stem from applying greater effort which is often more controllable than the learner's ability (Iatridis & Fousiani, 2009).

However, friendship trust has not been found to be integrated into any measurement of state locus of control. STICS was constructed to measure the Icon in both academic and friendship areas for used by school adolescents.

It was hypothesized that STICS as a state-Icon correlated positively with trait-Icon in Thai school adolescents.

Trusting Locus of Control and Behaviors

Trust in self, others and the social environment originates early in life (Erikson, 1950). Social trust within a person continues to develop, by changing both quality and quantity, to old age as captured in Table 1. Most desirable social behaviors of a person depends on the development of trust among other things, such as moral behavior (Piaget, 1932; Kohlberg, 1976), and well-adjusted prosocial behaviors (Erikson, 1950).

During the period of adolescence and adulthood, a person will emphasize his or her social support to friends and spouses (Bernath & Feshbach, 1995; Doherty & Ryder, 1979). It was found that high Icon with high trust wives showed more assertive behavior when attempting to resolve marital conflict (Lindskold, 1978).

As for academic success, effort in learning together with high trust to teachers and the educational system or school were two important predictors (Wang, Tomlinson, & Noe, 2010). However, cultural and social environmental differences can influence Icon scores. In addition, females were found to have lower Icon than males in many countries (McGinnies, Nordholm, Ward, & Bhathumnavin, 1974). However, measurement invariance should be tested to add more credibility to the conclusions of present day studies. After reviewing 70 cross-cultural studies on Icon done prior to 1981, Hui (1982) concluded that, universal generality of Icon was not yet evident. There are some benefits if different cultures can construct their own I-E measures.

There were research evidences that low trust situations often had detrimental effect on job trainees who were low on Icon (Wang, Tomlinson, & Noe, 2010). Grade 5th to 7th students, scores on academic locus of control was more under situational influence than vice versa. (Arlin & Whitley, 1978). On the other hand, 3rd to 6th grade students with higher Icon scores were found to be more popular and had high peer status (Dahlquist & Ottinger, 1983). While, the higher the trusting personality of the online game players, the more they showed trusting behaviors (Evans & Revelle, 2008).

Thus, it can be expected that in the Thai school adolescents, the scores on STICS (Icon+Socual trust) relate to desirable academic and peer support behaviors. In addition, STICS is an important predictor of these behavior beyond attitude, sex, and age.

Table 1   Developmental levels of social trust

Trust in	Age period	Theoriest
Humanity, just world	Mature adults	Erikson (1950) Kohlberg (1976) Rotter (1967)
Government, Institutions	Adults	Kohlberg (1976) Rotter (1967)
School, teachers, Friends	Adolescents	Piaget (1932) Rotter (1967)
Family, Parents	Children	Kohlberg (1976) Rotter (1967)
Physical self, Care takers	Infants	Erikson (1950)

Research Hypotheses
H1 : STICS positively correlates with ICon trait.
H2 : STICS positively predicts Academic behavior and peer-assisting behavior
H3 : STICS can increase the prediction of each of the two behaviors beyond attitude, age, and sex.

Research Method

Samples
There were 3 similar samples in this study, whose data were used for STICS' construction, confirmation, and validation as in Table 2 . Hypothesis 1 was tested by using sample B and hypothesis 2 and 3 were tested by the data from sample C.

Table 2   Samples' sizes, sex, age, and data analyses

Sample Grades 5,7,9	Size	Female (%)	Age Mean (SD)	Analysis
A	400	60.5	12.51 (1.31)	Item analysis & EFA
B	247	80.0	13.08 (1.06)	CFA &Data analysis (H 1)
C	646	59.3	12.61 (1.32)	Data analysis (H 2,3)

Comparing the 3 samples, the students' biosocial and background data were mostly similar with the exception of the percentages of females was highest (80%) in sample B. Grade 9th students was proportionally higher in sample B (62.6%) than in sample A (42.8%), and sample C (47.3%). The three samples were from 5 elementary and secondary school around Bangkok. The average GPA in each sample was nearly identical (2.93 (SD= 0.59), 2.95 (SD= 0.63), and 2.95 (SD = 0.66) respectively). The father's education were on the average 10 to 11 years (SD = 7.54 to 8.16 years), and the mother's were 9 years (SD = 5.29 to 6.16 years).

Procedure for The Development of STICS
There were 5 steps as follows in Table 3

Table 3   Procedure for the Development of "STICS"

Step	Activities
1	Review of theories and research studies on locus of control, and trust
2	About 50 items were constructed . Tried out on 400 students.
3	Item analysis yielded 25 items with t-ratio (2.10 to 9.25) and r item total corr (.08 to .47)
4	EFA was carried out for STICS, yielding 4 factors of 12 items (accumulative percentage = 52.81, alpha coeff. = 0.61)
5	Performing CFA, and confirmed.

Results and Discussion

Factor Analysis for the Development of STICS
Exploratory factor Analysis (EFA) using Principal Component method with Varimax rotation yielded KMO = 0.68, Chi-square = 504.55, df = 66, p-value =.000. with 4 factors that had eigen value more than 1.00 (Table 4). The four factors were named as follows.   1) uncertainty of the causes of own academic outcomes.(Cause-effect unpredictability).   2) confident that strong effort can lead to academic success. (Emphasizing efforts for study success) 3) belief that high effort can yield successful

Table 4   STICS' EFA factor loadings and cumulative percentage

	Item content	Factor 1	Factor 2	Factor 3	Factor 4
1	I think I cannot improve my performance on the subjects I am weak.	0.76			
2	I am convinced that I cannot success in my study.	0.72			
3	I do not believe that I can increase my understanding eventhough I try hard to pay attention to the teaching.	0.61			
4	I rarely think of the negative consequences that can happen to my study no matter what I do.	0.53			
5	I know what I should do to improve my study (+)		0.74		
6	I believe the more efforts I put in studying and doing home work, the better grades I will get. (+)		0.69		
7	I try harder to help my friends, than they do to me. (+)		0.57		
8	I want my best friends to be successful, so I try to assist them. (+)			0.70	
9	I try to be a good exemplar, so that my friends can increase their concentration in their studies. (+)			0.68	
10	I can prevent my friends from doing wrong things because I know the ways to stop them. (+)			0.63	
11	No matter how much I give suggestions to my friends, they still cannot follow my advise.				0.76
12	"Success comes with efforts" cannot explain the results of my studies.				0.66
	Eigen value	2.41	1.68	1.21	1.03

		20.08	14.00	10.09	8.63
	Percent of variance	20.08	14.00	10.09	8.63
	Cumulative percentage	20.08	34.08	44.18	**52.81**

peer assisting influence. (High efforts for peer-assisting success). and 4) doubt that high effort can lead to desirable outcomes (Uncontrollablity). These 4 factors adequately captured the 3 major aspects of Icon.

It should be mentioned that two out of four factors consisted of negative items of unpredictability and uncontrollability. However, items concerning effort and success in the two areas were positive worded.

By performing Confirmatory Factor Analysis (CFA), the result showed that the measurement model from EFA was fit (Chi-square = 118.2, df = 48, p value = .00, RMSEA = 0.046, CFI = 0.92, CN = 399.4, SRMR = 0.046, GFI = 0.95, AGFI = 0.98).

Characteristics of STICS
STICS was conceptualized by the outcomes from the reviewed studies on internal locus of control measure and social trust (academic trust and friendship, interpersonal trust). The 12 items groups into 4 factors showed cumulative percentage of 52.81% in predicting the total test variance with α coefficient of reliability of 0.608. This was acceptable for a scale which has been developed successfully by the modern technique of Factor Analysis and to ensure good validity of the scale (Kerlinger & Lee, 2000: 662). This scale was intended to be used in research studies.

STICS employed summated ratings method with 12 items, each accompanied by an 6 unit Likert typed scale. Eventhough this technique is only at the ordinal level of scale but STICS can assume to be at the interval scale with the following characteristics. (1) STICS, with 12 six unit rating scales, this scale per item was carefully designed to have equal unit, or interval, demonstrated by a) the scale's appearance of equal unit, having the 6 unit scale on one line only with 6 short lines of equal length and b) equal intervals (equal distances between a pair of lines) or equal spacing and c) the wording of each of the 6 unit were selected to differ in the meaning of equal magnitude from "not true at all" to ""not true" to "nearly not true" to "nearly true" to "true" and "mostly true". Likert typed scale format has been very popular, especially with 6 unit scale accompanying each item. (2) when administering STICS, and the rest of the measures, careful instructions were given to the respondents to think about the answer by choosing one from the 6 continuous equal distance answers or lines. (3) summing of all the scale-items' scores within the same variable, for example, 12 items each with 6 unit rating scale, can have possible total scores range from 12 to 72 units which show the continuity and equal unit-values at the same time. High score of STICS signifies high internal locus of control on social trust.

Therefore, with these characteristics carefully designed and correctly used, STICS (and all other similar tests or measures) can assume interval scale (Kerlinger & Lee, 2000: 637-638) for further statistical analyses. Some are being carried out in this study. As for STICS, the next step is to find its validity.

Validity of STICS

In order to demonstrate the concurrent validity of STICS, this study employed 3 approaches as follows.

A) Correlation between STICS and Icon trait

The present study found a positive significant correlation between Icon trait and STICS ($r = 0.53$, $p < .01$, $n = 445$). Icon trait is measured by a summated rating scale consists of 11 items each with 6 unit rating scale. The test has 4 important factors namely (1) belief that one can succeed with great effort (positively worded) (2) not knowing the causes of outcomes (unpredictability) (3) do not belief that one can slove the problem (uncontrollability) and (4) do not belied that greater effort will lead to great resuls (effort-result not dependent and nor balanced). The test α reliability is 0.541 (Center for Research and Development of Thai Behavioral System, 2011).

The result from present study showed that Icon state on social trust and Icon trait could predicted each other with the accuracy of 28% ($r = 0.53$ squared and multiply by 100). Spector (1992) studied adult workers found similar result on work locus of control scale, and Icon trait measure from Rotter (1966). However, Oswald, et al (1994) found lower correlation relating to cocaine abuse. The result in this study also support hypothesis 1

B) Relationships between STICS and behaviors

Academic behavior is defined and factor analyzed to yield 3 factors as follows. (1) using various ways to better one's academic performance (2) doing things which will hinder one's academic success, and (3) putting more effort to facilitate one's learning success. There are 11 items in the test, with 6 unit rating scale. High score signified high academic behavior. The α coefficient for test reliability is 0.74.

Attitudes towards academic behavior was measured by a test of 12 items each with 6 unit rating scale. The test reliability is 0.74 the high scores reflect favorable attitudes towards academic behavior.

Peer assisting behavior is defined by 3 major factors, namely, (1) the amount of effort in peer development, (2) amount of involvement when peer is in trouble, and (3) the disadvantages resulting from peer intervention. The 10 item-test has α coefficient of reliability as 0.68. Summated rating scales with 6 unit Liket typed scale accompanying each item was the format of the test. High scores signify more peer-assisting behavior of the respondents.

Attitudes towards peer-assisting behavior is also measured by the summated rating techniques with 6 unit scale accompanying each of the 12 items. The α reliability of this test is 0.69.

These 4 variables were for testing hypotheses 2 and 3 as follows. Figure 2 shows the strong support for hypothesis 2.
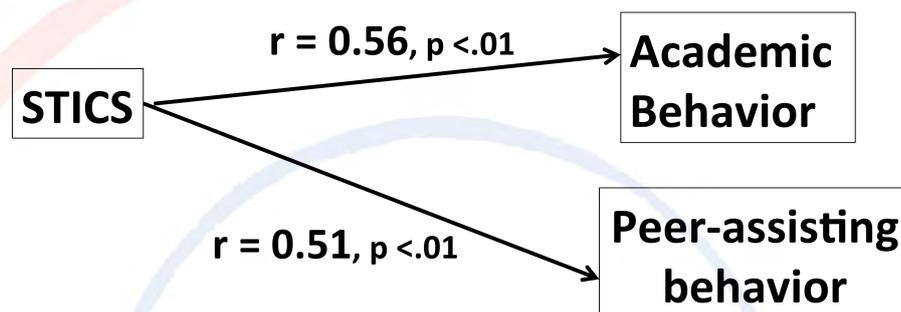
Figure 2   Correlations between STICS and each of the two behaviors. (n = 646)

Wang, et al (2010). Meta-analysis comparing effect sizes of IC and WLC with variables relating to work in 124 studies and 64 studies respectively. The WLC (IC state) better predicted work related variables than IC trait (Figure 3).
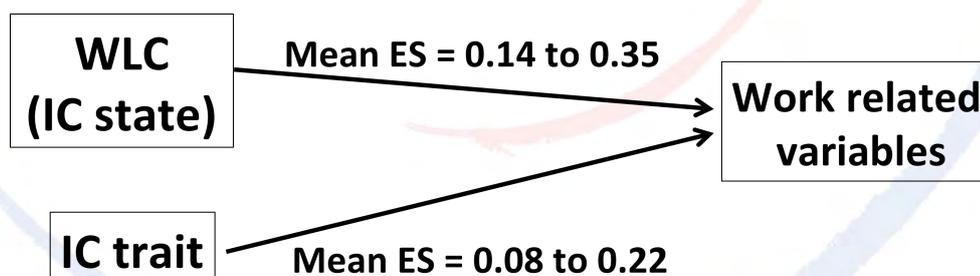
Figure 3   Relationships between IC state and trait with work related variables (Wang, et al, 2010)

C) Hierarchical MRA of The Two Behaviors
From Table 5 with the MRA technique, it was found that STICS could predict peer assisting behavior, and academic behavior beyond two other important predictors which supported the hypothesis 3.

Table 5 Hierarchical MRA using STICS to redict the two behaviors

Step and Predictors	Peer-assisting Behavior	Academic Behavior

Step 1
    Attitude
    Age, Sex
	28.4%	49.5%

Step 2 STICS	37.1%	54.1%
Important predictors	STICS 0.34 ATT peer 0.33 AGE 0.13	ATT acedemic 0.53 STICS 0.27 AGE -0.15
STICS R square changes beyond attitude and age	8.6%	4.6%
F change	87.73, df = 1,639 p<.001	64.45, df = 1,639 p<.001

Conclusions and Recommendations

This study shows that 1) STICS has positive relationship with Icon trait and the two behaviors. 2) Moreover in table 5, STICS can increase the percentage of variance accounted for each of the behavior by 4.6% to 8.6% beyond attitudes and age of students. Surprisingly, STICS turned out to be a better predictor than attitude for peer-assisting behavior. Thus, the second part of this study showed that STICS has strong construct validity.

Future use of STICS in any study or experimental evaluation of some Icon intervention is now justified with high confidence.

Reference.

Arlin, M., & Whitley, T.W. (1978). Perceptions of self-managed learning opportunities and academic locus of control: A causal interpretation. *Journal of Educational Psychology, 70(6)*, 988-992.

Be gue, L. (2002). Belief in justice and faith in people: Just world, religiosity and interpersonal trust. *Personality and Individual Differences, 32*, 375-382.

Bhanthumnavin, D., Chuchom, O., & Vanindanada, N. (1985). *The psycho-environmental correlates of child-rearing practices in Thai mothers*. Research report no.32. Behavioral Science Research Institute, Srinakharinwirot University, Thailand. (in Thai language with English abstract)

Bernardo, A.B.I. (2010). Extending hope theory: Internal and external locus of trait hope. *Personality and Individual Differences, 49*, 944-949.

Bernath, M.S., & Feshbach, N.D. (1995). Chilren's trust: Throry, assessment, development and research direction. *Applied and Preventive Psychology, 4(1)*, 1-19.

Campuis, L.K., Lyman, R.D., & Prentice-Dunn, S. (1986). The parental locus of control scale: Development and validation. *Journal of Clinical Child Psychology, 15(3)*, 260-267.

Center for Research and Development of Thai Behavioral System. (2011). *Report on the research study for the development of psychological characteristics and behavioral of adolescent students.* Research report. National Research Council, Thailand.

Collins, B.E. (1974). Four components of the Rotter Internal-External Scale: Belief in a different world, a just world, a predictable world, and a politically responsive world. *Journal of Personality and Social Psychology, 29*, 381-391.

Cooper, H.M., Burger, J.M., & Good, T.L. (1981). Gender differences in the academic locus of control belief of young children. *Journal of Personality and Social Psychology, 40(3),* 562-572.

Crandall, V.C., Katkovsky, W., & Crandall, V.J. (1965). Children's belief in their own control of reinforcement in intellectual-academic achievement situation. *Child Development, 36(1)*, 91-109.

Dahlquist, L.M., & Ottinger, D.R. (1983). Locus of control and peer status: A scale for children's perception of social interaction. *Journal of Personality and Assessment, 47*, 278-287.

Doherty, W., & Ryder, R.G. (1979). Locus of control, interpersonal trust, and assertive behavior among newlyweds. *Journal of Personality and Social Psychology, 37(12),* 2212-2220.

Duffy, P.J., Shiflett, S., & Downey, R.G. (1977). Locus of control: Dimensionality and predictability using Likert scales. *Journal of Applied Psychology, 62(2)*, 214-219.

Erikson, E. (1950). *Childhood in society*. New York: Norton.

Evan, A.M., & Revelle, W. (2008). Survey and behavioral measurements of interpersonal trust. *Journal of Research in Personality, 42*, 1585-2593.

Fishbein, M., & Ajzen, I. (1974). Attitudes towards objects as predictors of single and multiple behavioral criteria. *Psychological Review, 81(1)*, 59-74.

Jen, M.H., Sund, E.R., Jonston, R., & Jones, K. (2010). Trustful societies, trustful individuals, and health: An analysis of self-rated heath and social trust using the World Value Survey. *Health & Place, 16*, 1022-1029.

Hui, C.C. (1982). Locus of control: A review of cross-cultural research. *International Journal of Intercultutral Relations, 6, 301-323*.

Iatridis, T., & Fousiani, K. (2009). Effects of status and outcome on attribution and just-world beliefs: How the social distribution of success and failure may be rationalized. *Journal of Experimental Social Psychology, 45*, 415-420.

Imber, S. (1973). Relationship of trust to academic performance. *Journal of Personality and Social Psychology, 28,* 145-150.

Iskender, M., & Akin, A. (2010). Social self-efficacy, academic locus of control, and internet addiction. *Computer and Education, 54*, 1101-2206.

Kerlinger, F.N., & Lee, H.B. (2000). *Foundations of behavioral research*. (4th edition). United States, Thomson Learning.

Kohlberg, L. (1976). Moral stages and moralization: The cognitive-developmental approach. In T. Lickona (Ed.), *Moral development and behavior: Theory, research, and social issues* (pp.31-53). New York: Holt, Rinehart and Winston

Kukla, A. (1972). Attributional determinants of achievement related behavior. *Journal of Personality and Social Psychology, 21*, 166-174.

Lindskold, S. (1978). Trust development, the GRIT proposal, and the effects of conciliatory acts on conflict and cooperation. *Psychological Bulletin, 85(4)*, 772-793.

McGinnies, E., Nordholm, L.A., Ward, C.D., & Bhanthumnavin, D. (1974). Sex and culture differences in perceived locus of control among students in five countries. *Journal of Counseling and Clinical Psychology, 42*, 451-455.

Miller, S.M. (1979). Controllability and human stress: Method, evidence, and theory. *Behavioral Research and Therapy, 17(2),* 287-304.

Norenzayan, A., & Lee, A. (2010). It was meant to happen: Explaining cultural variation in fate attribution. *Journal of Personality and Social Psychology, 98(5)*, 702-720.

Oswald, L.M., Walker, G.C., Krajewski, K.J., & Reilly, E.L. (1994). General and specific locus of control in cocaine abusers. *Journal of Substance Abuse, 6*, 179-190.

Piaget, J. (1932). *The moral judgment of the child*. New York: Free Press.

Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80(1)*, whole no. 609.

Rotter, J.B. (1967). A new scale for the measurement of interpersonal trust. *Journal of Personality, 35*, 651-665.

Rotter, J.B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of Consulting and Clinical Psychology, 43(41)*, 56-67.

Rotter, J.B. (1989). Internal versus external control of reinforcement: A case history of a variable. *American Psychologist, 45(4),* 489-493.

Spector, P.E. (1992). *Summated rating scale construction: An introduction series, quantitative applications in the social sciences*. Newbury Park: Sage Publications.

Spector, P.E. (1988). Development of the work locus of control scale. *Journal of Occupational Psychology, 61*, 335-340.

Strickland, B.R. (1977). Internal-external control of reinforcement. In T. Blass (ed.), *Personality variables in social behavior* (pp. 219-280). New York: John Wiley & Sons.

Walkey, F.H. (1979) Internal control, powerful others, and chance: A confirmation of Levenson's factor structure. *Journal of Personality Assessment, 43*, 532-535.

Walston, K.A., Kaplan, G.D., & Maides, S. (1976). Development and validation of the health locus of control (HLC) scale. *Journal of Consulting and Clinical Psychology, 44(4),* 580-585.

Wang, Q., Bowling, A., & Eschleman, K.J. (2010). A meta-analytic examination of work and general locus of control. *Journal of Applied Psychology, 95(4)*, 761-768.

Wang, S., Tomlinson, E.C., & Noe, R.A. (2010). The role of mentor trust and protégé internal locus of control in formal mentoring relationships. *Journal of Applied Psychology, 95(2),* 358-367.

Ward, C., & Kennedy, A. (1992). Locus of control, mood disturbance, and social difficulty during cross-cultutral transition. *International Journal of Intercultutral Relations, 16*, 175-194.

Weiner, B., Heckhausen, H., Meyer, W.U., & Cook, R.E. (1972). Causal ascriptions and academic motivation. A Conceptual analysis of effort and reanalysis of locus of control. *Journal of Personality and Social Psychology, 21*, 239-248.

Wetzel, K.R. (1991). Relations between social competence and academic achievement in early adolescence. *Child Development, 62,*1066-1078.

Research qn ѵhe Strategic Innovation qf Taiwanese Advertising Agency –A Case Study qf Luxgen Automobile

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Abstract:

After going through the late 20th century of industry changes and the additional acquisition of foreign advertising groups and the rise of Mainland China, Taiwan's domestic advertising agencies have encountered extremely difficult challenges besides their originally existing operational hardship. Following the financial crisis in 2008 and the consolidation of automobile makers in the global market, the brand new LUXGEN automobile has suddenly emerged at this moment. LUXGEN automobile has combined numerous new resources by integrating Taiwan's world renowned information industry to jump off the current existing competitive environment. The purposes of this study are: (1) to analyze how the domestic advertising agency and LUXGEN automobile have touched the consumer hearts through the use of a strategic innovation advertising appeal, and (2) how the LUXGEN brand has chosen to enter the market amid the matured automobile scene, and the successful key factors behind the promotion of its LUXGEN brand.

The domestic advertising agent and LUXGEN automobile was taken as the research subjects by this study to conduct an in-depth interviews with high-ranking managers to understand their strategic innovation and the operational practices. The objective was to explore how the enterprises have created a competitive differentiation advantage in the wake of financial turmoil and entered the market smoothly. The study has discovered that besides the crystal clear brand structure and product positioning strategy, the utmost success behind the strategic innovation adopted by the domestic advertising agency on LUXGEN automobile is a comprehensive and extensive plan and implementation campaign on both brand marketing strategy and channel image. Finally, the study aims to provide the advertising agencies in East Asia countries on how to adopt the coping strategies after the financial downturn from a strategic innovation perspective.

Keywords:Strategic innovation, LUXGEN, Advertising agency

Agency –A Case Study of LUXGEN Automobile

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1. Introduction

Ever since entering the 21st century, the world has undergone major events. In 2008, the Lehman Brother bankruptcy led to a worldwide financial tsunami, creating major financial confidence crisis in the global financial markets. In Taiwan, after undergoing significant changes in the structure of the industry, Taiwan's advertising agencies have gradually been acquired by international advertising agencies. In 2010, China's advertising market has become the second largest market in the world, with size second only to the US market. With the rise of China, many global brands have moved their marketing resources to China, being attracted by China's large market size. With media agency services being spun off from advertising companies, most of the profits are loss. In addition, with the new form of digital marketing and the entry by public relation companies into the market, Taiwanese advertising companies face massive competitive pressures. With decreasing amount of budget and slim profits, the challenges for domestic advertising agencies to survive have increased significantly. Under these chaotic and challenging times, there is a tremendous need to upscale their management abilities, whether at organizational or strategic levels. Therefore, existing advertising agencies must seek differentiation and build their own brand premium in order to create a new niche instead of competing only of the basis of prices.

Looking at the sales figures in Taiwan's automobile market for the last 10 years, the peak was reached in 2005, with sales of over 510,000 vehicles. Afterwards, with changes in the macro environment, the number of vehicles sold since 2006 has decreased. The bottom was reached in 2008, with 229,497 vehicles sold in 2008 because of the financial tsunami.

TABLE 1

Sales Figures for Taiwanese automobile market from 2006-2010

Unit：No. of vehicles

Year	2006	2007	2008	2009	2010
Vehicles sold	366,316	326,781	229,497	294,423	327,615

Source：Taiwan Transportation Vehicle Manufacturers Association

During the height of the financial crisis in Aug 2009, Taiwan's Yulon Group announced the establishment of the indigenous automobile brand, LUXGEN. The LUXGEN7 MPV that was released used "Brand Taiwan" in the first stage as the core for its advertising strategy to enter the market. It also used the marketing strategy of emphasizing "The world's first intelligent and technological advanced vehicle". This strategy deeply implanted itself in people's minds, and LUXGEN 7 MPV became a key player in the highly competitive MPV category in Taiwan, with 3139 vehicles sold in only 6 months.

TABLE 2

LUXGEN7 MPV – Number of vehicles sold per month   Unit：No. of vehicles

2009/11	2009/12	2010/01	2010/02	2010/03	2010/04
564	418	755	412	504	486

Developing a brand takes long term effort. Even though the macro environment was unfavorable at the time, it was actually a good timing for a new brand. At the start, Yulon differentiates its market by using innovative marketing campaign, to quickly develop the brand equity by developing a good feel for its vehicles. Given the large market opportunity, a precisely targeted strategy helped it create a market advantage. This research swill review the how LUXGEN uses innovation and strategy to differentiate its product position from its competitors.

2. Literature Review

2.1 The current status and development of Taiwanese local advertising industry

Advertising agencies are independent service companies that are entrusted with requests from advertisers. The advertising industry is an ecosystem that consists of advertisers, advertising agencies, and broadcast media, with a division of work among each of them. There is a complex relationship of cooperation and competition among these 3 parties. The emergence of the advertising agency is sourced with the need of integrated market and sales promotion services from advertisers, to lower its advertising costs, and to achieve a greater media effect through the search of a unified

marketing and sales service (Hsu, 2001).

In Taiwan, the industry as developed from division of work to full service period, where there is full integration and unification of the industry.

Hu (2002b) discovered that multinational advertising agency groups' globalization strategies include: M&A to scale up their sizes provide integrated marketing and sales services, joint venture or cross investments, regionalize their operations, implementation localization and cooperation through competition. Between 2002-2003, the Taiwanese advertising market displayed a high degree of concentration, with local advertising agencies being acquired by multinational firms. Over 70% of ad revenues belonged to multinational groups. The research has shown that the continual expansion of multinational ad firms in Taiwan, local SME ad agencies are placed in increasing difficult positions marketwise, leading to major shifts in the Taiwanese advertising ecosystem.

TABLE 3

The ranks of Taiwanese local integrated advertising firms in 2010

RANK	AGENCY	No. Staff	Gross Income/Staff (10 Thousand)	CAPITAL (10 Thousand)	Gross Income(10 Thousand)		
					2010	2009	GROWTH RATE (%)
1	United	93	310	3,028	28,872	26,058	10.80
2	Hsu	9	2,404	1,000	21,639	10,572	104.68
3	Shape Ideology	59	253	3,000	14,900	11,800	26.27
4	Toplan	33	362	1,500	11,950	12,764	-6.38
5	Eastern	41	282	6,000	11,560	11,720	-1.37
6	The A Team	39	284	1,500	11,080	9,600	15.42
7	Target	33	296	2,250	9,763	8,633	13.09
8	BDM	21	362	2,388	7,600	9,300	-18.28
9	Proshine	27	209	2,800	5,646	6,631	-14.85
10	Uni-Smart	18	246	2,500	4,436	5,068	-12.47
11	STW	34	115	800	3,895	3,180	22.48

Source:brain(2011)，420:96-99

The global M&A trend in advertising agency industry is inevitable, with larger firms getting bigger and greater market share. In addition, many advertisers have shifted their focus and investment towards the Mainland China market. Under the consideration of global investment and market scale, they have gradually reduced their budget for the Taiwanese market by shifting their focus to China market. Therefore, the positioning and management of local ad agencies face significant challenges and difficulties.

2.2 The definition of Strategy

The word "strategy" originated in the Greek word "Strategos", which means "the art of the general". With the emergency of Game theory in the 1950's, strategy has gradually been used in business management, as more and more enterprises emphasize the use of strategy in their business operations.

In 1980, Michael Porter advocated the idea that competitive strategy means being different, or choosing a unique mix of value from different activities. Strategy's value and purpose lies in giving companies a better positioning in a competitive environment, either through taking a more aggressive or defensive positioning or actions. In 1984, Kenichi Ohmae advocated that the value of strategy lies in understanding customer needs and to truly make effort to satisfy their customers. The true value of strategy lies in creating customer value, and one that provides true customer satisfaction. In 1985, Aaker proposed that strategy is composed of product, scope of market, direction of growth, competitive advantage, synergistic market combination, and level of investments.

2.3 Competitive Advantage from Innovation

"Innovation" is a concept that Joseph Schumpter proposed in the field of economics. He believed that the realization of any new combination can be viewed as innovation (Schumpter, 1984). In the process of innovation, companies must break market rules while creating new value for the market. Parsons (1992) believed that a successful innovator will use place innovative activities as the central part of a company's strategy, and truly innovative companies innovated through the company's systems. He developed 3 different types of innovative strategies based on competitive background and innovative opportunities:

a. Big Bang Leader

Based on the competitive structure of an industry, the company will develop new technologies as there are sufficient opportunities to innovate. In terms of competition, the company is a market leader. By investing and setting technology standards, these types of companies will bear the costs and risks associated with innovative R&D in search of new S curves.

b. Fast follower or incremental refiner:

Once a company understands its own advantages as choosing to develop new technologies with sufficient conditions to become a market leader: to become a fast follower. Or in terms of innovative opportunities, choosing to capitalize on micro changes and advantages to lead the industry: becoming an incremental refiner. These strategies allow a company to quickly respond to and lead in terms of specifying

technical standards and new competitive products, with other companies sharing part of the R&D cost, instead of developing all by itself.

c. sprinter

The strategy used by these types of companies is to develop technology faster than other companies. In terms of competition, as long as there is fair competition, competitive advantages can come from within or without. Changes from within comes from innovation. Innovation not only creates competitive advantages, but also can subvert the cornerstone of other companies' competitive advantages. By using brand new experiences, products, or distribution, Strategic Innovation creates value for customers through different combinations.

2.4 Industry Analysis and Competitive Advantages

Porter (1980) believes that competitive strategies can be differentiated into the 3 following categories and their required conditions: Overall Cost Leadership Strategy, Differentiation Strategy, and Focus Strategy. He provided a simple and clear way to classify typical competitive strategy, and provided the industry practical ways to do a simple classification and analysis using available information, to help develop their strategies.

Kotler (1984) proposed to classify competitive positioning by the role different companies play in terms of targeted market. There are 4 categories based on the size and status of the competition:

a. Market leader:

These companies occupy the highest market share and influence other competitive brands by their strength and dominance in the market. These influences are seen in terms of current product innovation, distribution channels, pricing ability, product standard and specifications, etc. Strategies used include: targeting the enter market, maintaining and expanding their market shares.

b. Market challenger:

these companies are usually No. 2 in the industry, and have enough resources, ambition, and strategic capabilities to develop an offensive strategy to acquire larger market share. Strategies typically chosen are aggressive and offensive strategies.

c. Market follower:

These are usually No. 3 or 4 in the industry, and follow the market leader to maintain their current market share.

d. Market nicher:

these are small companies that service a particular niche or segment of the market, and they usually use guerrilla warfare tactics and strategies.

2.5 Strategic Planning to redefine the value chain

The concept of value chain was proposed in Porter's 1985 Book, *Competitive Advantage.* He classified business operations into 5 basic activities: Inbound Logistics, Operations, Outbound Logistics, Marketing & Sales, and Service. Through the value chain model, one can analysis the source of a company's competitive advantages. In addition, one can systemically evaluate all of company's internal activities and how these activities link together. Because different companies have different core asset values, they will emphasize different aspects of its operations. Also, given different timing and situations in different industries, different companies will make different strategic choices at different stages and create different values.

3. Research Method

This research focuses on the topic of innovative strategies of Taiwanese domestic advertising agencies, with core research on the innovative strategies of LUXGEN automobile commercials. Other topics are not touched upon. This research uses an exploratory method, and research methodology includes: literature review and analysis, in-depth interviews. By interviewing the advertiser in depth, the research hopes to understand the views by the advertiser on current status and on market competition. Because the interview content involved sensitive topics involving competitive relationships and business secrets, information obtained may not be complete.

1) Literature Review and Analysis

This method uses the objective description of literature content. This method allows the researcher to get information from related industry research and literature for the research.

2) In-depth interview

This method of research uses an open style and nonstructural approach to conduct research. By having an in-depth discussion between 2 people on a common topic, the research guides, leads, & gathers information the researched party to understand the researched party's view from the discussions (Taylor & Bogdan, 1984). This method allows the research to acquire first hand information, and when compared with the closed form Q&A format provides a more diversified answer. Therefore, to make up for the lack of collected information, this research supplements the study through the in-depth interview method to get industry information that is not provided by literature.

   As the research targets are advertising agencies, the focus of the research is on the development of that industry in terms of its process and management strategies. Therefore, when choosing interview targets, this research focuses on key management to understand the impact of industry changes on the advertising industry in Taiwan.

TABLE 4：Table – People interviewed

Company	Title	Person interviewed	Industry Experience	Interview Date
Shape Ideology	CEO	Nakakawa Hsieh	21	2011/12/29
LUXGEN Motor	Vice President	Calvin Lee	19	2012/2/9

4. Result and Discussion

The Taiwan Yulon Group's LUXGEN Brand released its first vehicle LUXGEN7 MPV in July 2009, and then released its second vehicle the LUXGEN7 SUV in Sept 2010. In contrast to the marketing of new vehicles, Yulon Group was able to reach NT$11 Billion in annual revenues for the year 2010 with its innovative and strategic product positioning.

4.1 Using the Think Ahead Branding for Initial Positioning

1) The CEO of the advertising agency for LUXGEN cars, Nakakawa Hsieh of Shape Advertising, stated: "Before the R&D of its product, its positioning is very clear". LUXGEN combined the parts from the 2 words, Luxury and Genius, giving its vehicles a combination of the attributes of luxury and genius. Simply stated, what LUXGEN hopes to convey is the message that the driving sensation is a combination of luxury comfort of innovative and advanced technology. Just as the A.I. robot in the commercial is a metaphor of the 2 aspects of 1 entity. Based on this core value, the DNA generated from the LUXGEN Brand Positioning is "Think head". By positioning the brand as a combination of Luxury and Intelligence, the LUXGEN 7 MPV received favorable reviews and acceptance by the general public and the consumers.

2) Facing the developed Taiwanese automobile market, LUXGEN must not only think domestically, but internationally. According to Calvin Lee, Marketing division VP of LUXGEN, LUXGEN automobiles' hardware must be able to compete with global brands and exceed domestically produced vehicles at the same time. Whether the main body of the vehicles provide safety through "vehicle engineering", or in terms of comfort and texture of interior, intelligence must be included into them, to become a winning product. By using the IT technology where Taiwan has a major competitive advantage, LUXGEN is able to produce vehicles that differentiate itself from others with its intelligent functions.

3) The role of advertising agencies – "clearly knowing the initial brand positioning, whether it is at VI, CI, or Event distribution channels, both parties need to know what each other wants. According to Nakakawa Hsieh, he said "We must be more flexible

than others. Not only in terms of commercials, but also in terms of event and channel design, to fulfill the one stop shopping needs of customers. These apply to the LUXGEN Branding most appropriately". According to Calvin Lee, "our agency is not to follow our operations, but participate at the first stage of development of the product". As shown in Table 5, the LUXGEN branding DNA of "Think ahead" is to be consistent throughout. When consumers are choosing a vehicle, each stage of the process is a potential entry point for the manufacturer to strengthen the consumer's impressions on the product. Nakakawa Hsieh stated: "Inconsistent strategies will lead to unclear branding positioning ". "Think Ahead" applies not only to the product, but also to the commercials. The ad agency links together all resources and organizations related to the customer, to play a role of a good brand manager.

Table 5

Taiwanese Ad Agencies and Participation in terms of Customer Side Operations

	Product	Channels	Image
Traditional Ad Agencies			∗
Shape Advertising	∗	∗	∗

4.2 Mastering the Core Strategy of Customer Value Required

1) What is the relationship between LUXGEN automobile product uniqueness and creative and innovative commercials? Lee stated: "Innovative products lead to innovative agency". The Yulon Group has 50 years of car making experiences and also subsidiaries such as Haitec, Altek, and Sanyi Production to support the R&D and manufacturing. Each attribute of the golden triangle of product, image, and channel is required (see Figure 1). In the process, the ad agency is faced with many challenges. Traditional ad agencies will see that the product definition is already completed, and can work on only the implementation and

Figure 1: The 9 major principles behind the LUXGEN's Golden Triangle

execution aspect. If they are not strong in the 3 areas, they can depend only on promotions to accomplish sales. "Developing a brand must take sufficient effort in each attribute of the golden triangle to stand above the crowded competition." In terms of the detailed attributes for the key 3 areas, there are a total of 9 elements. For product, the 3 elements are quality, design, and value. For image, the 3 elements are

advertising, PR, and reputation. For channel, the 3 elements are sales, service, and customer satisfaction. One must use long term vision with "Think Ahead" to position all 9 elements. For certain automobile branding, their channels are strong, but products are not good. For some, they have strong products, but weak channels and sales location. These will lead to poor sales and eventual withdrawal from the Taiwanese automobile market.

2) LUXGEN Sales Location have a unique atmosphere – not only are the ideal locations chosen, but also the sales process emphasis warmth to customers. By use of the pioneering "Experimental Theater", customers are able to simulate all types of conditions met when driving. Hsieh stated: "Our products are intelligent vehicles. These attributes can not be seen in a static demo. Therefore, for LUXGEN vehicles, a brand new experiential channel is created". Customer service representatives use the iPod Touch and Bluetooth System to introduce the functions of the vehicles, and letting the customers actually experience the driving sensation of driving a high tech car.

3) Utilizing the "Think Ahead" Product Positioning to the extreme, by pre-conceiving what customers need, such as View+ 360° surround imaging system, Side View$^+$ blind spot monitoring system, Night Vision$^+$ night driving image enhancing system, LDWS$^+$ lane departure warning system, unresolved and problematic issues that driving customers face are finally resolved. To further capitalize on the product advantages, using innovative ad strategies to deliver unique messages to influence the targeted outcome. According to Lee, innovation without the right strategies is not good creativity. Putting the automobile innovations into ad, such as QR Code into paper format, and combining the new media with HTC handsets will let the consumers sense the charm of intelligent vehicles. These marketing moves and strategies allow the innovative and creative nature of LUXGEN cars to be shown fully.

5. Conclusion and Suggestion

When developing Advertising strategies, one must first identify the target audience and set the advertising objectives. Next, the product position must lead the strategy, with clearly defined advertising positioning and further communications with the consumers. Successful cases of innovative strategic advertising in recent years include the Nike's "Just Do It" and Nintendo's Wii products.

1)LUXGEN automobiles have clear product positioning and competitive products. From the development of brand strategy, to product positioning strategy, brand advertising strategy, and image creation strategies, its ad agency proposed a complete set of plans at the start of the product and executed effectively. With its clean,

intelligent technology, LUXGEN was able to established Taiwan in the global stage. "With the role of Taiwan's domestic Brand of Ad Agency, following in the footsteps of its customer, LUXGEN, in terms of internationalization, there is a chance for domestic ad firms to become an international player". Mr. Hsieh, CEO of Shape Advertising, said that Taiwan's successful experience will enter a positive cycle, and like other global brand, have more of abundance of resources, and attract more talents.

2) "Local Brands are rising, with local ad agencies having a chance to follow its customer to become global ad agencies", stated Calvin Lee, Marketing division VP of LUXGEN. Lee said: "A major challenge for ad agencies lie in understanding the new media, recruiting creative teams for the new media, and understanding the habits and needs of local consumers".

3) LUXGEN started from Taiwan, and uses its intelligent capabilities and green technologies to support its brand positioning. LUXGEN wants to use "Intelligent and Technological Advanced Cars" to ensure that its product positioning combined Auto with IT and aims to give consumers of the new generation experience a different driving sensation and a convenient lifestyle. The next step is target the Mainland China market and to utilize the supply chain that exists between Taiwan and China. By increasing the economy of scale to lower the costs, it plans to develop a key cost advantage. Mr. Hsieh stated: "Every year, there will be a new vehicle, with complete product line, creating a complete portfolio for brand power. People from different areas of life can all enjoy the value provided by intelligent vehicles, and LUXGEN aims to become a future premium and global brand." Taiwan vehicles will introduce its technology and special business model into Mainland China. In addition to strengthening the competitiveness of Chinese vehicles, LUXGEN's next steps into the global market are topics worthy of future research to follow.

References

Aaker, D. A. (1991) , Managing Brand Equity : Capitalizing on the value of a brand name, New York Free Press

Hsu, A.Q. (2001), Integrated marketing communications cited theory. Taipei:P.E.Press

Hu, G. X. (2002), Research of International Advertising Industry - International advertising companies, globalization, regionalization, localization.Taipei:Wu Nan Press (in Chinese).

Parsons, A. J. (1992). Building Innovativeness in Large U.S. Corporations, The Journal of Consumer Marketing. 9(2), 35-50,

Porter, M. E. (1980), Competitive Strategy, New York , NY: Free Press

Robert Grant. (2010), Comtemporary Strategy Analysis. Hoboken, NJ : John Wiley & Sons

Taylor.S.J.,& Bogdan,R（1984）, Introduction to qualitative research methods: The search for meanings. New York: John Wiley & Sons, Inc.

The Influences of Perceived Interactivity and Perceived Value on the Loyalty of Using Social Network Services

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Abstract:

With the development of Social Network Service in recent years, a brand-new social interactive space is provided for users to enjoy the interpersonal interaction. There have been several studies on social platforms, but little on Perceived Interactivity and Perceived Value toward Loyalty. For this reason, this study aims to discuss the effects of Perceived Interactivity and Perceived Value on Loyalty in social platforms. The users of Facebook are selected as the research subjects for online questionnaire survey. With Regression Analysis, the relations among Perceived Interactivity, Perceived Value, and Loyalty are understood. When exploring Loyalty, it is noticed that the significance of Perceived Value is larger than it of Perceived Interactivity. It is therefore comprehended that values toward platforms should be generated before having users be loyal to a platform, where values is involved in Perceived Interactivity.

Keywords: Perceived Interactivity, Perceived Value, Loyalty, Facebook

The Influences of Perceived Interactivity and Perceived Value on the Loyalty of using Social Network Services.

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I.   Introduction

The development of the virtual world on the Internet seems to create a virtual living space that people's living is influenced as well as the delivery of human knowledge and ideas has been largely changed. In particular, the overwhelming Social Network Service (SNS), such as Facebook, Twitter, and My space, has offered a private web space. SNS integrates the functions on the Internet into a compound Internet application service platform, increases the abundance and the convenience of web sites, and creates a new domain for information flow convenience and interpersonal communication.

1-1 Research background and motivation

According to the survey of comScore, non-repeated visitors to Facebook rose up to 162 millions in July 2011. Apparently, with the numerous users, the addressed articles are countless on Facebook. Research on Facebook mainly focused on the characteristics and the behaviors of users, but little concerned Perceived Interactivity and Perceived Value toward Loyalty. For this reason, this study tended to quantitatively analyze Perceived Interactivity and Perceived Value toward Loyalty in network platforms so as to understand the correlations.

1-2 Research questions and purposes

The purposes of this study are briefly described as follows.

1. To discuss Perceived Interactivity in Social Network Service.

2. To discuss Perceived Value in Social Network Service.

3. To discuss the correlations among Perceived Interactivity, Perceived Value, and Loyalty in Social Network Service.

4. Expecting to discover the correlations among them for the applications to future network platform design.

II.   Literature review

2-1 Development of Social Network Service

Social Network Service (SNS) is regarded as the application service of socialized networks in which Facebook is considered as the most representative. Facebook has become a trend that individual social circle has expanded on online social platforms and become a large social network. With the interactivity among users, the new correlation between interpersonal

interaction and the real world is created.

2-2 Perceived Interactivity

When external stimuli function on senses, the overall ideas and understanding in human brains about the external world is regarded as Perception, which organizes and explains the sensed information from the external world. Perceived response is the entirety consisted of the attributes and the relationship of objects[1]. Based on Interactivity Theory, Endler & Magnusson (1978) considered behaviors as an interactive process between individuals and the situation where the individual was active with integral governing system. For understanding the effects of situations on individual behaviors, individual understanding and perception of situations should be understood (Wu, 1996). Steuer proposed a new point of view for interactivity in 1992 that it was a new observation different from traditional research on interactivity in which users were the primary element. Recent research paid more attention to such a new point of view; traditionally measuring the interactivity from the web functions was regarded insufficient. Only if the web interactivity was perceived, would the users actively provide information and web interactivity (Wu, 1999).

Perceived Interactivity was first proposed by Newhagen (1995), who considered Perceived Interactivity as a psychological meaning through the interactivity between information transmitters and receivers. In other words, Perceived Interactivity was a concept and a psychological state describing individual sense being able to successfully manage the system. In this case, Perceived Interactivity could be regarded as information transmitters and receivers being able to sense the real-time interactivity (Liu & Shrum, 2002; Song & Zinkhan, 2008; Hsueh, 2009).

From the above statements, individual perception capability presents activeness and selections and could response to external situations. Moreover, the effects of situations on individual behaviors could not be directly explored with objective situations, but with the perceived situation of individuals. Consequently, to understand the loyalty of users to platforms, Perceived Interactivity and Perceived Value of individuals should be realized. In this case, the interactive process among Perceived Interactivity and Perceived Value of users and the platform environment should be taken into account when discussing the interactivity and the value of social platforms. Besides, Regression Analysis could be applied to reflecting the fact of interactivity.

2-3 Perceived Value

Perceived Value is regarded as the user evaluation of product or service effectiveness as well as the user weight between paying for and gaining from products or services (Dodds & Monroe,

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[1] From Wikipedia. http://zh.wikipedia.org/zh-tw/%E7%9F%A5%E8%A7%89（Retrieved April 5, 2010）。

1985; Zeithaml, 1988). The perceived paying and gaining of products or services therefore could become the evaluation of the overall effectiveness of the product. Nonetheless, Perceived Value could arouse the repurchase intention of users over the time (Chen & Chen, 2001). According to Expectancy Value Theory developed by Eccles et al., behavioral selections, performance, and sustainability of human beings were mainly affected by the variables of expectancy and value (Lin, 2006). For this reason, the overall value of the target behaviors depended on the perception of target behavior orientation.

From the above viewpoints, Perceived Value is defined as the exchange between the gained benefit from and the paid cost for the products or services. Value is considered as individually subjective perception; Perceived Value of social networks is the perception between paying and gaining when the user participating in the social network. When the gained benefit is larger than the paid cost, the user would feel valued and further become a loyal user. In this case, the higher value is appeared, the higher loyalty is presented.

2-4 Loyalty

Loyalty refers to a high reliability and loyalty in the thoughts and the feeling to the dependence, the recognition, and the permanent use of certain products or services. Theory of Reasoned Action (TRA), developed by Fishbein & Ajzen (1975), regarded human behaviors being rational that they were the apparent activities reflected from rigorous belief evaluation processes (Wu, 2006). As a result, users would sense the obtainable benefit from certain behaviors and subjectively determine the attitude and the loyalty to the behavior.

Summing up the above discussions, use behaviors not only could affect consumers' attitude, but could create loyalty. In this case, Loyalty is defined as the behaviors with repeated use and recommendations for others, which are further emphasized to discuss the loyalty of users.

III.   Research method

3-1 Research framework

According to the above literatures, the variables of Perceived Interactivity, Perceived Value, and Loyalty were compared the linear relationship, judged the indicators of relative dimensions and intensity, and proceeded Regression Analysis with alternate comparisons to predict the future change. Regression Analysis was further applied to testing the research hypotheses in this study.

The research framework is proposed as Fig. 1.
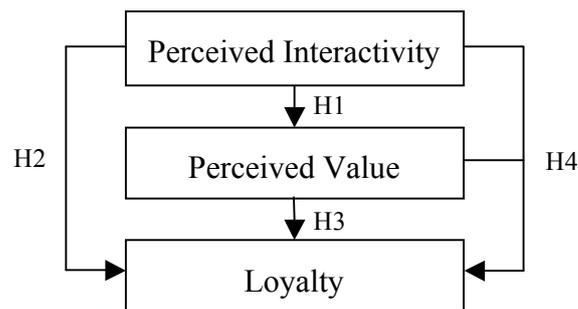
Fig.1   Relations among research hypotheses (Drawn by this study)

3-2 Research hypotheses

The hypotheses are listed as follows.

H 1: The higher Perceived Interactivity of Facebook, the higher Perceived Value of the platform.

Based on Social Exchange Theory, this hypothesis considered that the computer-intervened reward would affect the interactive behaviors of users with the platform. In this case, when users could receive the largest benefit and reward of information and pleasure from using the platform and consider the platform being attractive, they were likely to appear actively interactive behaviors with the platform that the overall Perceived Value appeared positive appreciation.

H 2: The higher Perceived Interactivity of Facebook, the higher Loyalty of the platform.

Lin & Lu (2000) believed that well-designed web sites could retain customers and even appeal to potential customers. According to the above research, it was presumed that the higher Perceived Interactivity of users on the social platform was presented, the higher Loyalty would be displayed.

H 3: The higher Perceived Value of Facebook, the higher Loyalty of the platform.

Singh & Sirdeshmukh (2000) regarded trust benefit as a key intervening variable between the pre-purchase and the post-purchase behaviors that it could lead customers to permanent loyalty and tightly connect both parties. They further considered customer trust as customer loyalty that it would occur and be performed on certain relationships (Hsueh, 2009). As a result, when Perceived Value positively affected Loyalty, the higher Perceived Value of users was shown, the higher Loyalty would be displayed.

H 4: Perceived Value appeared more effects on Loyalty to Facebook than Perceived Interactivity did.

Reichheld (1994) mentioned that customers were likely to present loyalty when receiving the best value. Based on value, it could create customer satisfaction and further obtain loyal customers. Consequently, Perceived Value of users could better explain Loyalty than Perceived Interactivity did.

3-3 Questionnaire design and the variables

Aiming at Perceived Interactivity, Perceived Value, and Loyalty, the questionnaire was designed with three dimensions. 1. Perceived Interactivity was divided into (1) communication, (2) mastering, and (3) controllability (Li, 2011). 2. The variables in Perceived Value were evaluated by the functional benefits and the used experiences in Facebook (Hsueh, 2009). 3. Loyalty tended to test the correlations among Perceived Interactivity, Perceived Value, and Loyalty (Hsueh, 2009). Moreover, the variables were alternatively compared between two dimensions to test Loyalty. With a 5-Likert scale, the questionnaire was tested the internal consistency with Cronbach's α.

3-4 Definition of research subjects

This study aimed to discuss the effects of Facebook services on Perceived Interactivity and Perceived Value toward Loyalty in the process of social networking. The research subjects were the users of Facebook. With online questionnaire, total 108 valid samples including 54 males and 54 females (most of them were the students aged 16-20) were retrieved.

IV.   Research outcomes

4-1 Reliability and validity analyses

With Cronbach α to analyze the reliability of internal consistency, the reliability reached 0.888. Valid test referred to Hsueh's study on the integrated model for the satisfaction and the loyalty of online shopping, in which the questionnaire was revised from several domestic and international literatures. Therefore, the inference should present certain content validity (Hsueh, 2009).

4-2 Regression Analysis

4-2.1 Perceived Interactivity vs. Perceived Value

H 1, the higher Perceived Interactivity of Facebook, the higher Perceived Value of the platform, was agreed.

According to Regression Analysis, Perceived Interactivity could positively affect Perceived Value, where Perceived Interactivity appeared 31. 8% explanation on predicting Perceived Value; Beta coefficient=0.564 (t=7.028, p=0.000) and VIF=1; and there was no serious collinearity that H1 was agreed. It could therefore be concluded that the core of the virtual interpersonal relationship on Fackbook was the establishment of relationship among people. In order to enhance the appreciation of users, the platform was required to reduce the effort made for interpersonal relationship. When the response of the platform information was rapid, the communications among users were frequent that the establishment of interpersonal relationship was enhanced as well as the users received the largest benefit from information exchange.

4-2.2 Perceived Interactivity vs. Loyalty

H 2, the higher Perceived Interactivity of Facebook, the higher Loyalty of the platform, was agreed.

Perceived Interactivity was applied to predicting Loyalty. In Regression Analysis of Perceived Interactivity and Loyalty, Perceived Interactivity presented 25.1% explanation on predicting Loyalty; Beta coefficient reached 0.501 (t=5.961, p=0.000); and there was no collinearity that H2 was agreed. It was concluded that Facebook could satisfy users' demands as the connections among people would be promoted when the platform provided multiple interactive services that users could expand the interpersonal relationship in the virtual space. Besides, the platform content satisfied the information exchange demand of users that it could promote user loyalty and form the virtual interpersonal relationship. In this case, when Facebook transmitted information to have users sense the real-time interactivity, i.e., Perceived Interactivity positively affected Loyalty, the higher Perceived Interactivity of the social platform was shown, and the higher Loyalty of users would be displayed.

4-2.3 Perceived Value vs. Loyalty

H 3, the higher Perceived Value of Facebook, the higher Loyalty of the platform, was agreed. The research outcomes revealed that Perceived Value appeared 53.2% explanation on Loyalty; Beta coefficient reached 0.729 (t=10.979, p=0.000); and there was no collinearity that H3 was agreed. It was further concluded that the interactive functions and the information content on Facebook were simple and abundant. After paying time and efforts, the received information interactivity and emotion exchange would largely cast out the paid value, enhanced Perceived Value and the overall trust, and further affected Loyalty to the platform.

Table 1. Regression Analysis with the factors of Perceived Interactivity and Perceived Value in Loyalty

Model	Beta	t	p	VIF	R^2	F	p
H1. Perceived Interactivity vs. Perceived Value							
Perceived Interactivity	.564	7.028***	.000	1.000	.318	49.397***	.000
H2. Perceived Interactivity vs. Loyalty							
Perceived Interactivity	.501	5.961***	.000	1.000	.251	35.532***	.000
H3. Perceived Value vs. Loyalty							
Perceived Value	.729	10.979***	.000	1.000	.532	120.546***	.000

4-2.4 Perceived Interactivity and Perceived Value vs. Loyalty

H 4, Perceived Value appeared more effects on Loyalty to Facebook than Perceived Interactivity did, was agreed.

Regression Analysis predicted the effects of Perceived Interactivity and Perceived Value on Loyalty. From the coefficient in Stepwise Regression Analysis, Table 2, Perceived Value could independently predict dependent variables; Beta=0.729 and t=10.979 (p=.000). With regression variance in R^2, Perceived Value presented 53.2% explanation on predicting Loyalty and F=120.546, p =.000 that the explanation presented statistical meaning. In Stepwise Regression Analysis, only the top relative variables were selected that the variables in Perceived Interactivity were deleted. The top relative variable therefore was Perceived Value.

Moreover, only one variable was included that there was no collinearity. As a consequence, Perceived Value was more suitable than Perceived Interactivity for explaining Loyalty that H4 was agreed. It could be concluded that Loyalty was likely to be acquired when users displayed higher interactivity with the social platform. When users could freely control the functions in the platform, i.e., the users presented active and selective perception, Loyalty would appear on the interactive process. Nevertheless, when the platform provided high values, users appeared high intention of re-use. Perceived Value therefore would more directly affect Loyalty in this study.

Table 2. Stepwise Regression Analysis with the factors of Perceived Interactivity and Perceived Value in Loyalty

Model	Beta	t	p	VIF	R^2	F	p
Perceived Interactivity	.132	1.650	.102	1.466	Excluded variance		
Constant		3.971	0.000				
Perceived Value	0.729	10.979***	.000	1.000	0.532	120.546***	0.000

a. Predicting variable: (Constant), Perceived Interactivity, Perceived Value   b. Dependent variable: Loyalty   c. Excluded variance: Perceived Interactivity

V.   Conclusions and suggestions

From Regression Analysis, it was found that the significance of Perceived Value was larger than it of Perceived Interactivity. According to the hypotheses, it was necessary to have users generate values for the platform before appearing Loyalty (R^2= 0.532). Besides, values were involved in Perceived Interactivity (R^2= 0.318) as there was high explanation between them. The relationship among the three was therefore regarded closely connected. With Expectancy Value Theory, the continuous behaviors of users depended on expectancy and value that the users would present perception on the overall value after using the social network platform. Besides, Theory of Reasoned Action regarded that users could determine and evaluate the behavioral attitude with subjective value and further develop Loyalty. In this case, Perceived Interactivity, Perceived Value, and Loyalty were tightly connected and mutually affected. However, the hierarchical effects would be further tested in the successive study.

The research outcomes showed that the users of Facebook did not simply stress on functional interactivity, but Perceived Value of the overall use of the platform. Perceived Value could directly affect Loyalty that Perceived Value was considered as the key factor in Loyalty. Perceived Interactivity, Perceived Value, and Loyalty presented significance in this study. According to Regression Analysis, Perceived Value appeared the largest effects on Loyalty, and then Perceived Interactivity. It was therefore concluded that Perceived Value was the key value affecting Loyalty of users to Facebook that Perceived Value (including interface design, convenient connection, and abundant information) should be prior considered when designing a platform, as it would directly affect the cohesion and loyalty of users to the platform. When platform designers could utilize the collaboration between functional operations and platform strategies, it would help promote the communication efficiency between the platform and the users. With the development of new technology, there will be more issues worth developing and studying in the future.

Reference

1. Chang-Pang Lin (2006). The Study of Sport Education Model Improved Expectancy and Value Beliefs in Sport. Physical Education Journal, 3, 115-127。

2. Chao-Ming Wu (2006). The Influencing Factors of Customer's Website Loyalty- the Case of Shopping Website. Journal of Information Management-Concepts, Systems, and Applications, 8(1), 48.

3. Dodds W.B., Monroe, K., and Grewal, D. (1991). The Effect of Price, brand, and store information on buyer's product evaluations. *Journal of Marketing Research,* 18, 416- 427.

4. Hsueh, Tai-Jung (2009). A Research on the Integration Model that Influences the Satisfaction of Internet Shopping and Customer Loyalty. Unpublished master's thesis, Advanced MBA Program, National Cheng- chi University, Taipei.

5. Lin and Lu.(2000). Toward an understanding of the behavioural intention to use a web site. International Journal of Information Management, 20.

6. Newhagen, John E., John W. Cordes and Mark R. Levy (1995). Nightly@nbc.com: Audience Scope and the Perception of Interactivity in Viewer Mail on the Internet, Journal of Communication, Summer, 45(3), 164-175.

7. Reichheld, F. F.(1994). Loyalty and the renaissance of marketing. Marketing Management, 2(4), 10-21.

8. Singh, J. and Sirdeshmukh, D. (2000). Agency and trust mechanicsms in consumer satisfaction and loyalty judgments. Journal of the Academy of Marketing Science, 28(1), 150-167.

9. Steuer J. (1992). Defining Virtual Reality: Dimensions Determining Telepresence. Journal of Communication, 42, 73-93.

10. Wu, G. (1999). Perceived interactivity & attitude toward website. Annual Conference of American Academy of Advertising.

11. Wikipedia (2010). Retrieved April 5, 2010, From http://zh.wikipedia.org/zh-tw/%E7%9F%A5%E8%A7%89

12. Wei-ya Chen (2003). A Study on Image, Perceived Value and Satisfaction of Study Tour for College Students. Unpublished master's thesis, Institute of Tourism Management, Nanhua University, Chiayi.

13. Wu, Yung-Yu (1996). A Study on the Single-parent Children: Parent-child relationship, Behavior disturbance, and Learning a Djustment. Unpublished master's thesis, College of Continuing Educaton, National Taipei Teacher's College, Graduate Institite of Elementary Education.

14. Yu- Lou Lee (2011). A Study on the Perceived Interaction and Perceived Value of Social

Network Service and Their Connection to Attitude, Using Facebook as a Case Study. Unpublished master's thesis, Ling Tung University Graduate Institute of Digital Content Design, Taichung.

15. Zeithaml V.A. (1988). Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence. Journal of Marketing Research, 52(7), 2-22.

Antecedents of Psychological Contract Breach: Evidences from the Context of Vietnam

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Abstract:

The current research investigates the antecedents of psychological contract breach in the context of Vietnam. This study distinguishes between perception of unmet promises which refer to the employees' perceptions that the organization has failed to meet one or more discrete promises and perceived psychological contract breach which is the overall perception of the organization's fulfillment of the contract. Specifically, engagement in formal performance appraisal, participative appraisal practice, employee's past performance, leader-member exchange quality and the overall organizational performance are expected to influence perception of unmet promises. These perceptions, in turn, contribute to the overall perception of psychological contract breach. Furthermore, because each individual employee place different valence on each promise, personal difference variables such as equity sensitivity and self-esteem are examined as moderators of the relationship. In addition, although psychological contract involve mutual obligations, previous psychological contract researches neglected the employees' side of contract fulfillments. In this study, a measure of employees' perceived self-fulfillment was developed and tested as an important moderator of the relationship between perceived unmet promises and psychological contract breach. Data was collected from full-time employees who enroll in evening MBA courses in a large University in Vietnam. Responses to a 44-item psychological contract content scale were factor analyzed to explore the latent structure of psychological contract in Vietnam. Perceived fulfillment of these factors was treated as perception of unmet promises in subsequent analyses.   Practical implications of the study for Vietnamese context will also be discussed.

Title**: Antecedents of psychological contract breach: evidences from the context of Vietnam**

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Introduction

The introduction of the economic renovation ''doimoi'' since 1986 has brought radical changes into the Vietnamese economy, turning it from a sluggish central-controlled egalitarian economy to a market oriented and open economy. Vietnam has enjoyed a long period of sustainable high economic growth and is now the second fastest growing economy in Asia, second only to China. However, the economic development of Vietnam is not without weaknesses. Research in Vietnam suggests that low work motivation and high turnover are the main challenges for Vietnamese economy. A survey by CIEM in 2009 showed that the productivity of an average Vietnamese worker was only about half of that of a Chinese worker and about one third of that of a worker in other Asian countries. Other report claims that Vietnamese workers lack work motivation and cited low pay, boring jobs and lack of career perspectives as the main reasons. Turnover rate was reported to be between 12 and 15% per year (Navigos, 2009). Reasons for quitting were not only pay but also lacks of trust and supports from supervisors, unfair working environment and lack of training. Survey results and research findings suggested that the reason for low motivation and high turnover among firms in Vietnam was not a single factor such as low pay or boring jobs but it involves the exchange relationship between employees and employers. More specifically, reported reasons for low motivation and high turnover in Vietnamese firms comprise the expectations of the employees within their employment relationships. The exchange relationships and expectations of the employees can best be studied under the scope of psychological contract process.

The construct of psychological contract has been well developed and heavily researched over the last 20 years. Psychological contract has been considered one of the most useful variables in studying the relationships between employers and employees. Previous research suggested strong relationships between psychological contract and various workplace attitudes and behaviors. (Guerrero and Herrbach, 2008; Coyle Shapiro and Kessler, 2002, Zhao et al., 2007; Suazo, 2005, 2008; Robinson and Rousseau, 1994)

This research attempts to look at the problems of the Vietnamese economy from the lenses of the

psychological contract. More specifically, assuming psychological contract breach is the possible causes of the aforementioned problems in Vietnam; this study aims to find the antecedents of psychological contract breach in Vietnam and suggests possible ways to reduce perceived psychological contract breach. First, this study constitutes a Vietnamese version of the psychological contract and explores the latent structure of the psychological contract in Vietnam. Second, this study adopts the classification between perceived unmet contracts and psychological contract breach proposed by Morrison and Robinson (1997) and examines the causes for unmet perceptions of each contract dimension. Third, leader-member exchange and personal difference variables such as equity sensitivity and self-esteem will be examined as the moderators of the relationship between perceived unmet contracts and breach. Fourth, a scale to measure the employee's perceived self-fulfillment of their contract obligations will be developed, perceived self-fulfillment will then be tested as moderator of the relationship between perceived unmet contracts and breach.

Pilot survey

Because psychological contract research in Vietnam is rare and the content of psychological contract in Vietnam remains undiscovered, a pilot survey was carried out to explore the content and latent structure of the psychological contract in Vietnam. The pilot survey focused on the employee's side of the psychological contract. A questionnaires instrument was developed for the pilot survey. The questionnaires include a list of items each of which express a specific employers' obligation. The respondents were asked to give their ideas about the extent to which they believe their employer is obligated to fulfill each obligation. Responses will be measured by a five-point Likert scale ranging from 1: "To minimum extent" to 5: "To a great extent". The items included in the questionnaires were developed as follows: first, relevant items used in previous psychological contract studies were extracted and included. Second, obligations extracted from previous studies in Vietnam were integrated. Finally, items which are regulated by Vietnamese law were also included. In the end, a total of 57 items for employer's obligations were developed. The 57-item draft scale was then sent to 50 people at different companies for reviews. Items which are not suitable for the context of Vietnam or which are not perceived as employer's obligations were omitted. The final version of the psychological contract scale contains 44 items. The completed instruments were translated into Vietnamese and used to collect data. Respondents were MBA students at National Economics University in Hanoi, Vietnam. Questionnaires were distributed to students with permission of the professors in charge of the classes. Respondents were requested to fulfill the questionnaires after class and return the completed questionnaires at the next class.

A total of 495 of the surveyed students responded to the questionnaires yielding a response rate of 59%. Nearly 44% of the respondents were males. The average age of the respondents was 30.4 and the average tenure at their respective organizations was 5.2 years. Three-fourth of the entire sample has university or college degree. In addition, about 76% were in non-management positions.

Factor analysis was conducted to discover the latent structure of the psychological contracts of Vietnamese employees. Principal component analysis with Direct Oblimin rotation suggested 3

psychological contract dimensions. Only items with factor loading greater or equal 0.4 will be reported.

The first factor, "Job characteristic contract", contains 10 items that focus solely on the characteristics of the jobs. This factor consists mainly of relational items such as "interesting job" or "job that is significant for the community". The second factor, labeled "Working environment contract", consists of 9 items which concentrate on the employers' obligations to provide fair, equitable, justice and safe working environment and support for the employees. This factor contains both relational and transactional items. The third and final factor, namely "Compensation contract" contains 9 items that deal primarily with salary and benefit obligations. This factor is therefore transactional in nature. Results of the pilot survey will be used in subsequent survey.
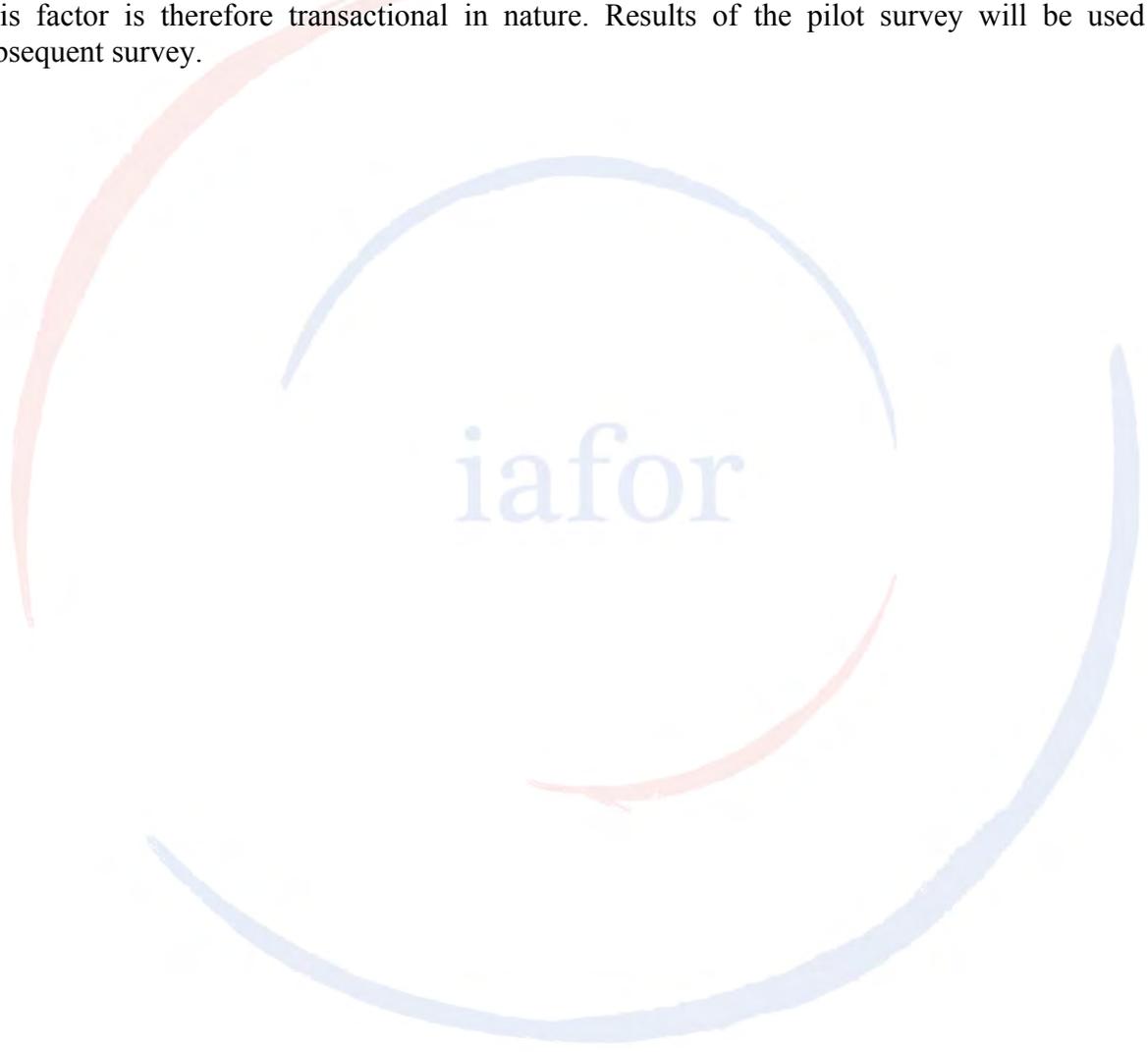
Table 1: Psychological contract dimensions

Obligations	Dimension		
	1	2	3
Job that is significant for the company	.778		
Job that is significant for the community	.696		
Interesting and challenging job	.663		
Opportunity to develop marketable skills	.556		
Opportunity to acquire new knowledge and skills	.479		
Flexible working hour	.456		
Information regarding the company's financial and operating performance	.450		
Opportunity to apply professional knowledge to the job	.445		
Appropriate job allocation considering my knowledge, abilities and skills	.444		
Regular feedback about job performance	.434		
No discrimination in the workplace		-.747	
Not to make unreasonable demand of employees		-.694	
No harassment at work		-.663	
Autonomy to decide the way to do the work		-.548	
Respect the employee as an individual		-.500	
Holistic concern		-.491	
Support from the company when encountering difficulties with the job		-.474	
Fair and equitable performance appraisal		-.462	
Empower and entrust the employees within the scope of the job		-.435	
Periodical salary increase			.734
Overtime pay for overtime work			.678
Benefit for employee (vacation, medical check-up, stock option…)			.636
Retirement benefit			.634
Subsidy for working night shift, working in chemical and/or noisy surrounding			.624
Incentive that is linked to job performance			.599
Safe and congenial working conditions			.590
Concern and benefits for family members			.487
High and Competitive salary			.484

Literature review and hypothesis development

Rousseau (1989) defined the psychological contract as "an individual's beliefs regarding the terms and conditions of a reciprocal exchange agreement between the focal person and another party. A psychological contract emerges when one party believes that a promise of future returns has been made, a contribution has been given and thus, an obligation has been created to provide future benefits".

Figure 1: The theoretical model
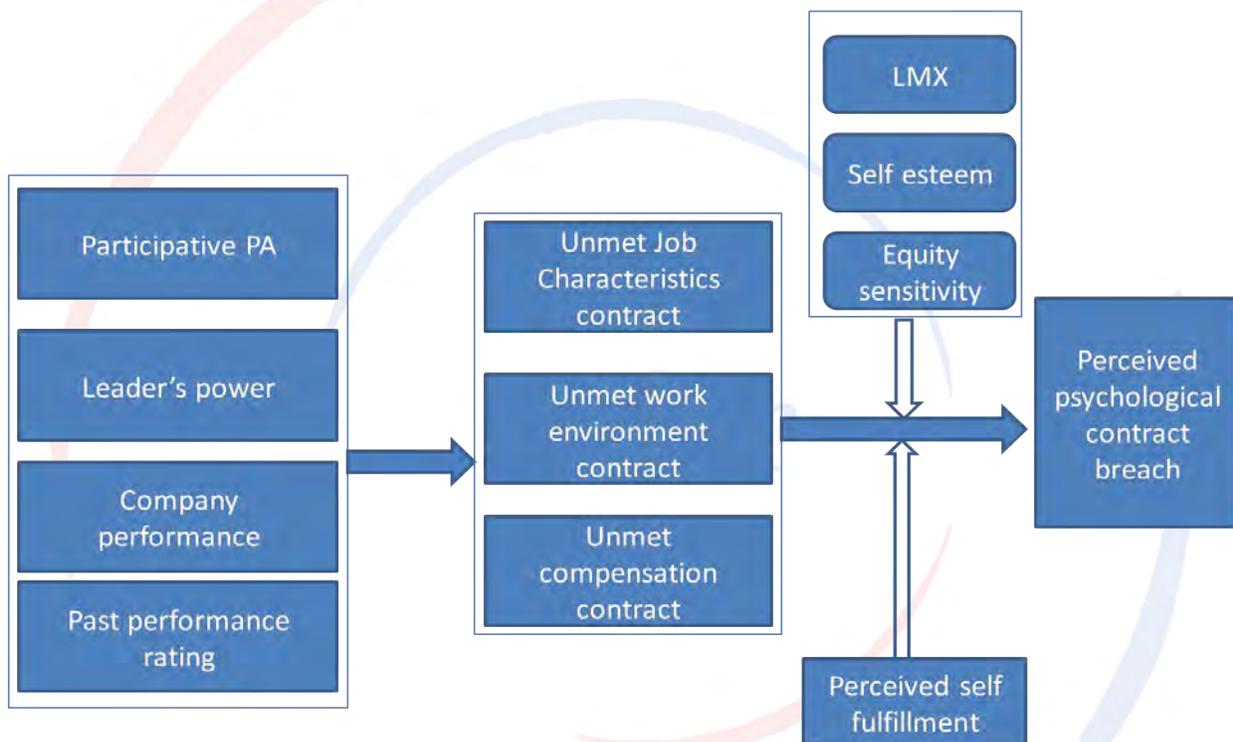
Robinson and Rousseau (1994) defined psychological contract breach as "the employee's perception regarding the extent to which the organization has failed to fulfill its promises or obligations". The definition emphasized the subjective nature of psychological contract breach. The perception of breach may result from a "real breach" in which the explicit promises on behalf of the employees were not kept by the organization. Breach can occur, however, in situation where the employees wrongly interpret a vague statement as a promise then experience breach when this misunderstood promise is not kept. The role of perceived psychological contract breach as a predictor of negative workplace attitudes and behaviors has been widely tested and accepted (Zhao et al., 2007; Turnley and Feldman, 1999; Pate et al., 2003). On the other hand, only few researches attempted to study the antecedents of psychological contract breach.

Morrison and Robinson (1997) suggested two root causes of psychological contract breach: reneging and incongruence. Reneging is the situation in which the organization recognizes that an obligation exists but knowingly fails to meet that obligation. On the other hand, incongruence is the situation in which the employee and the organization have different understandings about whether a given obligation exists or about the nature of a given obligation. Reneging may occur when the organization was unable to fulfill their obligations or when the organization was unwilling to fulfill promised obligations. They proposed that even the organization was keen to keep their promises; unexpected decreases in resources may prevent it from fulfilling obligations. Robinson and Morrison (2000) found that breach is more likely when the organization faced a declined performance or failed to meet targets. On the other hand, the organization is less likely to keep its obligations when it believes that the employees do not fulfill their own obligations. Robinson and Morrison (2000) also found that breach is more likely when the employee's performance is low.

Breach can also occur when there is incongruence in perceptions of both parties. Incongruence happens when an obligation was fulfilled by the organization but the employees think otherwise. According to Morrison and Robinson (1997), incongruence can exist when an obligation is set in the first time, or it can develop over time as perceptions become distorted in memory. Three primary factors contributing to incongruence: 1) the degree to which the employees and the organization hold different beliefs and assumptions regarding employment obligations, 2) the complexity and ambiguity of the perceived obligations between them, and 3) lack of sufficient communication regarding obligations. Robinson & Morrison (2000) tested a number of factors that may contribute to the perception of breach based on the three primary factors mentioned above. The results showed that breaches are less likely to occur when the employees have experienced a formalized socialization process which can help them develop beliefs and assumptions that are similar to those held by the organization. Breaches are more likely to occur if the employees have experienced breaches with former employers or if the employees have alternative employment choices at the time of recruitment. Interaction with the organization's agents prior to the recruitment has been found to reduce breach. On the other hand, whether the promises are made implicitly or explicitly and organizational changes did not have significant impacts on perceived breach.

Perceived unmet contracts and perceived breach

This study adopts Morrison and Robinson (1997) classifications between perceived unmet contract and breach. Perceived unmet contract refers to the perception of discrepancy between what was promised and what actually received for obligations within a contract dimension. On the other hand, breach refers to "the overall employee's perception regarding the extent to which the organization has failed to fulfill its promises or obligations", thus breach assesses the employees' overall cognition about the fulfillment of contract obligations rather than focuses on a particular obligation or contract dimension. Besides, because the psychological contract is a multi-dimensional construct (Freese and Schalke, 2008), the perception of discrepancy in one contract can be compensated for by the perception of fulfillment of other contracts. As a result, based on the importance an individual places on each contract, un-fulfillment of that contract may or may not lead to that person's perception of breach. Furthermore, as suggested by Morrison and Robinson (1997), weather perceived unmet contract would lead to breach is

subject to the individual's comparison process in which he or she compares the degree to which both parties upheld its respective promises. If the employee believes that he/she has fulfilled his or her obligations, yet they did not receives what was promised in return, breach may occur.

Three variables were created based on the results of the pilot survey: unmet job characteristic contract, unmet work environment contract and unmet compensation contract. Perceived unmet contract measures the discrepancies between by what the employees actually received and what had been promised for each contract dimension above.

Predictors of perceived unmet contracts

Participative performance appraisal: Performance appraisal is one of the most important human resource practices and is widely adopted by organizations. Performance appraisal is a formal meeting between a supervisor and a subordinate, in a periodical basis (often annually), in which the work performance of the subordinate is reviewed and examined in order to identify strengths, weaknesses and opportunities for improvement and skill development (Archer North & Associates, 2006). During performance appraisal, the supervisor focuses on measuring employees' work behaviors, identify the gap between work outcomes and established standards, the supervisor also aims to find the employees' strengths and weaknesses, provides performance feedback, opportunities for improvement and development (Cleveland, Murphy and Williams, 1989). Another important task of a performance appraisal session is to establish the performance goals for the next period. Research has suggested that participative performance appraisal in which the employees can have their voice about the process and results increase satisfaction with performance appraisal, which in turn lead to better uses of performance feedback and improved performance (Dipboye and Pontbriand, 1981; Burk, Weitzel and Weir, 1978). During a participative performance appraisal the employees will have opportunities to defend against judgment, give reasons for their performance, inquire about their performance target and ask for support in order to fulfill their jobs. The final rating will be jointly discussed and agreed upon. The supervisor can also provide information regarding the inducement in accordance with the ratings. Furthermore, the employees can also take part in setting up their own performance target for the next periods. Thus a participative performance appraisal session would reduce the incongruence between the employees and supervisor regarding their both their contributions to the company and the inducement they will receive in return for their contribution. The reduced incongruence will, in turn, lower perception of unmet contracts. Thus it is hypothesized that:

H1: Participate performance appraisal will be negatively related to the perception of unmet contracts.

Leader's power: The impact of leader-member exchange on the psychological contract process has been reported in a number of previous studies (Restubog et al., 2010; Zagenczyk et al., 2009). As an organizational agent, the supervisor can provide information regarding the obligations and fulfillment of these obligations from both parties, which reduce the discrepancies perceived by the employees. Therefore, leader-member exchange may reduce breach by minimizing the incongruence between the employees and the organization. Moreover, Zagenczyk et al., (2009) suggested that an influential leader may stand up for and protect his or her subordinates and even

persuade the organization to fulfill its promises to the employees. Thus having a powerful leader could reduce perception of unmet contracts. It is hypothesized that:

H2: The higher the leader's power the lower the likelihood that the employees will experience unmet contracts.

Company performance: Morrison and Robinson (1997) suggested that inability is one of the reasons for which the organization fails to fulfill their obligations. Even if the employer keens to keep its promises to the employees, current difficulties will prevent it from doing so. On the other hand, if the organization is doing well and have bright future prospects, it will not only fulfill short-term transactional obligations such as pay but also focus on long-term relational obligations to motivate the employees. Thus it can be hypothesized that:

H3: Company performance will be negatively related to employees' perception of unmet contracts

Past performance: Unwillingness is mentioned by Morrison and Robinson (1997) as one of the antecedents of psychological contract breach. In a later study, Robinson and Morrison (2000) found that breach is more likely when the employee's performance is low. We also propose that:

H4: An employee's past performance rating will be negatively related to his or her perception of unmet contracts

Perception of unmet contracts is expected to positively influence perceived psychological contract breach.

H5: Perception of unmet contracts will be positively related to perceived psychological contract breach.

The moderators of the relationship between perceived unmet promises and breach

Equity sensitivity and self-esteem

Personality is the particular combination of emotional, attitudinal, and behavioral response patterns of an individual. Personality is made up of the characteristic patterns of thoughts, feelings and behaviors that make a person unique. In addition to this, personality arises from within the individual and remains fairly consistent throughout his or her life. Recently, there are interests in linking personality with psychological contracts (Raja et al., 2004; Tallman and Bruning, 2008). Because psychological contracts are internal cognitions of individuals and because they are formed and held individualistically (Morrison and Robinson, 1997), each individual with unique set of personality traits may have different types of contracts and may show unique responses to psychological contract breaches and/or fulfillments. In other words, personality is expected to have significant influences on the psychological contract. Previous research has provided evidences that people with different personalities tent to form different

types of psychological contract (Tallman and Bruning, 2008; Raja et al., 2004; Nikolaou, Tomprou and Vakola (2007)

Equity sensitivity is a personality trait that explains individual differences in reactions to inequity. Miles et al., (1994) suggested that equity sensitive individuals are those who adhere to the traditional equity theory norm and prefer their outcome/input ratios to be equal to the outcome/input ratios of their referent others. Sauley & Bedeian (2000) found that people high in equity sensitivity are outcome-oriented, wanting more than others for a given level of inputs. Individuals high in equity sensitivity believe that their personal outcomes are of primary importance when dealing with their organizations, and therefore, are constantly looking for ways to improve their situation and maximize the rewards given by the organization. Literature suggested that high equity sensitivity employees tend to value transactional psychological contract (Raja et al., 2004; Zhao and Chen, 2008). Because people high in equity sensitivity tend to form and value transactional contracts, the relationship between perceived unmet transactional contracts and breach may be stronger for them than for those lower in equity sensitivity and vice versa for unmet relational contracts.

H6: Equity sensitivity will moderate the relationship between perceived unmet compensation contract and breach in that the relationship is higher for employees high in equity sensitivity than for those lower in equity sensitivity and moderate the relationship between unmet job characteristic contract and work environment contract and breach in the reverse direction

Self-esteem refers to the value one puts on the self. Researchers have suggested that people high in self-esteem value themselves, exhibit confidence, and opt for occupations that match their abilities and self-perceived traits (Judge et al., 2000; Tharenou, 1979). Individuals with high self-esteem tend to have a desire for achievement and are highly competitive (Brockner, 1988). Raja et al., (2004) found that self-esteem was positively linked with relational contracts. As high self-esteem employees place higher importance on relational contracts, the relationship between perceived unmet relational contracts and breach will be stronger for them than for people with low self-esteem. The reverse is expected for the relationship between perceived unmet transactional contracts and reach.

H7: Self-esteem will moderate the relationship between perceived unmet job characteristic contract and work environment contract and breach in that the relationship is higher for high self esteem employees than for low self-esteem employees, and moderate the relationship between unmet compensation contract and breach in the reverse direction

Leader-member exchange

Leader-member exchange (LMX) was heavily researched in the context of psychological contract. LMX was examined as predictor of psychological contract breach, as moderator of the relationship between breach and violation and related outcomes (Restubog et al., 2010; Zagenczyk et al., 2009; Dulac et al., 2008). Specifically, LMX has been found to reduce the perception of breach and increase perception of fulfillment (Collins, 2010; Henderson et al., 2008; Suazo, Turnley and Mai Dalton, 2008). Dulac et al., (2008) proposed two possible reasons for the negative relationship between leader-member exchange and breach. First, the quality of a

social exchange relationship is likely to influence an individual's expectation of the immediate return. In a relational exchange relationship, partners are not as concerned with the reciprocation as they are in more transactional or purely economic relationships. Individuals in high quality leader-member exchange are more likely to interpret breaches as natural lapses that will be rectified and are more likely to believe that the fulfillment of promises is delayed rather than abandoned. As a result, employees in high quality exchange are less likely to perceive breach. Second, the development of a high quality social exchange relationship requires significant time and investment on both parties. This investment motivates each party to engage in behaviors that support the continuance of the relationship. Thus it can be expected that although the employees may perceive unmet contracts, their relationship with the leader will prevent the occurrence of breach. LMX will act as a moderator of the relationship between perceived unmet contract and breach.

H7: Leader member exchange will moderate the relationship between perceived unmet contracts and breach in that the relationship is lower for employees in high LMX relationships than for those lower in LMX.

Perceived self-fulfillment

Robinson and Morrison (2000) suggested that the perception unmet promises does not necessarily lead to breach. The employee compares the degree to which both parties upheld its respective promises. If the employee believes that he/she has fulfilled his or her obligations, yet they did not receive what was promised in return, breach may occur. On the other hand, if the employees believe that their contributions were inadequate, perceived unmet contracts may not result in breach. It can be expected that:

H8: Perceived self-fulfillment will moderate the relationship between perceived unmet contracts and breach in that the relationship is stronger when self-fulfillment is high.

Table 2: Summary of hypotheses

Hypothesis	Predictors	Dependent variable	Moderator	Expected sign
H1	Participative PA	Perceived unmet contracts	N/A	-
H2	Past performance	Perceived unmet contracts	N/A	-
H3	Leader's power	Perceived unmet contracts	N/A	-
H4	Company performance	Perceived unmet contracts	N/A	-
H5	Perceived unmet contracts	Breach	N/A	+
	Moderator*Unmet compensation contract			+
H6	Moderator*Unmet job characteristic contract	Breach	Equity sensitivity	-
	Moderator*Unmet work environment contract			-
	Moderator*Unmet compensation contract			+
H7	Moderator*Unmet job characteristic contract	Breach	Self-esteem	+
	Moderator*Unmet work environment contract			-
	Moderator*Unmet compensation contract			-
H8	Moderator*Unmet job characteristic contract	Breach	LMX	-
	Moderator*Unmet work environment contract			-
	Moderator*Unmet compensation contract			+
H9	Moderator*Unmet job characteristic contract	Breach	Self-fulfillment	+
	Moderator*Unmet work environment contract			+

Procedures

The survey was carried out six month after the pilot survey. Self-administered questionnaires were distributed to MBA students at National Economic University and University of Commerce in Hanoi, Vietnam. Respondents are required to fill in the questionnaires at home and return within one week. Questionnaires were distributed and collected by our coordinators in Vietnam.

Measures

The variables were measured by a five-point Likert scale ranging from 1(Strongly disagree) to 5 (Strongly agree)

Perceived unmet contracts: This variable was measured by asking the respondents to compare between what they actually received and what had been promised on a five-point Likert scale ranging from 1 (Much less than promise) to 5(Much more than promised). The score for each item in a contract dimension derived from the pilot survey will be averaged to yield the final score.

Psychological contract breach (PCB): A five-item measure developed by Robinson and Morrison (2000) was used to assess perceived contract breach. The reliability of this scale in the current study was .842

Leader member exchange (LMX): was measure by 7-item (LMX-7) scale developed by Graen and Scandura (1987). Cronbach's alpha = 0.792

Equity sensitivity was measured with the 16-item Equity Preference Questionnaire (EPQ) developed by Sauley and Bedeian (2000). Cronbach's alpha for this scale was .75

Self-esteem was measured with the 10-item Rosenberg Global Self-Esteem Scale (Rosenberg, 1965). Cronbach's alpha for this scale was .70.

Self-fulfillment: A 5-item scale was developed to measure the employee's perception of the extent to which they fulfill their obligations. The scale does not focus on any particular obligation but on the overall fulfillment. Example items are "I believe that I have fulfilled all of my obligations to the company" and "I performed the tasks that each company member should do". Reliability score for this scale was .742

Leader power: A 6-item scale was developed to measure the employee's perception of their supervisor' power. Example items are "I supervisor was of great importance to this company" and "My supervisor has adequate authority to make work-related decisions". Cronbach's alpha for this scale was .881

Company performance: The respondents were asked to give their opinions about the current performance and the future prospects of the company. Four items were developed for this scale. Cronbach's alpha was .812

Participative performance appraisal: This variable measures the employees' ability to participate in and to have their voices in the performance appraisal process. Three items were developed for this scale. Cronbach's alpha was .735

Employee's past performance: This is the final performance rating of the employees for the last period given by the supervisor. The rating ranges from 1(Poor performance) to 5 (Outstanding)
Control variables: Sex, age, and tenure at the current organization will be included as control variables for the analysis.

Results

Out of 1000 questionnaires distributed, 462 were returned yielding a response rate of 46.2%. The analysis requires that the respondents had engaged in at least one performance appraisal session. Respondents who did not participate in any performance appraisal were omitted, leaving 398 data points. After screening the data and discarding observation with missing data, the final useable data set consists of 364 observations. Male respondents accounted for 52.2% of the data. The average age of the respondents was 27.1 and the average tenure at the current company was 3.42.

The Trust Effect qf Cpa WebtrustSm Assurance Seal qn Online Consumers' Expectancy Disconfirmation

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Abstract:

Related studies indicate that e-commerce hides a lot of risks and threats, including lack of security, privacy, and transaction integrity, etc. Therefore, it is an important issue concerned by stakeholders that a thirty party assesses whether safety mechanism and disclosure of information on websites meet standards of the authority institution. On the other hand, the traditional service of certified public accountant (CPA) is to verify the fairness of financial statements by determining if they've been prepared according to the accounting standards. However, CPA firms intensively involve in management consultation in recent years, so they also start to provide web assurance service. American Institute of Certified Public Accountants (AICPA) announced "WebTrustSM Principle and Criteria for Business-to-Consumer Electronic Commerce" to provide further assurance service to e-commerce websites in 1998. When the websites comply with the assurance principle, they would be awarded with WebTrustSM assurance seal. The purpose of this study is to investigate the trust effect of CPA WebTrustSM assurance seal on online consumers' expectancy disconfirmation. Experiment design is used to test the research model. The empirical results show that: (1) Online consumers could be classified into four types according to the extent of internal and external information searching. (2) Consumers shopping on a website with WebTrustSM assurance seal have lower "expectancy-disconfirmation of perceived quality" on products than that on one without such assurance seal. (3) The website with or without WebTrustSM assurance seal does not have significant difference in "price premium" between different consumers. (4) Consumers with higher level of information searching have lower "expectancy-disconfirmation of perceived quality" and "price premium" on products.

INTRODUCTION

The traditional auditing service of certified public accountant (CPA) is to verify the fairness of financial statements (financial information) of companies by determining if they've been prepared according to the accounting standards [1]. Some non-financial information, such as rationality of management system or fairness of information quality on products, is often managing issues concerned by the stakeholders [2, 3]. Hence, it is even more necessary that quality of non-financial information assessed and identified by independent external specialists. On the other hand, as the rapid development of the internet, business integrate IT (information technology) with electronic marketing is pervasive [4]. However, related studies indicate that e-commerce hides a lot of risks and threats, including lack of security, privacy, and transaction integrity, etc [5, 6]. Therefore, it is an important issue concerned by stakeholders that a thirty party assesses whether safety mechanism and disclosure of information on websites meet standards of the authority institution. In view of the above, American Institute of Certified Public Accountants (AICPA) and Canadian Institute of Chartered Accounts (CICA) announced "WebTrust[SM] Principle and Criteria for Business-to-Consumer Electronic Commerce" to provide further assurance service to e-commerce websites.

The web assurance service provided by CPA is based on the principles of WebTrust[SM]. Websites conforming to this assurance principle will be conferred with WebTrust[SM] assurance seal. The scope of CPA WebTrust[SM] assurance service covers not only assessment of online safety mechanism but also that of disclosure extent to which information of the products, which makes it distinguished from other assurance seal [1, 7, 8]. In other words, the web assurance service provided by CPA directly assesses the fairness of disclosure extent to which information of products on website. Information of product attributes includes appearance, material, function, price, after-service, and return policy. Web assurance service not only expands the scope of CPA practice but also meets requirements of stakeholders, for professional assessment on the quality of non-financial information. Although CPA firms in the USA have been conducting web assurance service, while most advanced countries in Europe, Asia and Australia just begin to plan and prepare for this service [9]. From the viewpoint of consumers, CPA's professional and independent standpoint and its even more in-depth assurance procedure relative to other web assurance institutes, such as TRUSTe or BBB OnLine, would definitely strengthen consumers' trust theoretically. However from the standpoint of CPA, the traditional auditing service has high risk. For example, the incident of Enron led to Arthur Andersen accounting firm collapsed consequently. As a result, CPA firms begin to pay attention to robustness and growing potential of consulting business [10]. To sum up, it is an important research issue to investigate the effect of CPA WebTrust[SM] assurance service on consumer behaviors.

With regard to related researches, most studies find that CPA WebTrust[SM] assurance seal could reduce consumers' perceived risk in online purchase or positively influence their purchase intention [7, 11, 12] and trust [8, 9]. It is found from previous literatures that most researches focus on consumers' perception and evaluation on the **websites** with CPA assurance seal **before** they purchase. But few researches aim at consumers' evaluation on **products** of the websites with CPA assurance seal. Besides, previous studies have never investigated the different levels of expectancy-disconfirmation against products existed in consumers "before and after" purchase, including perceived quality before and after purchase [13, 14] or price premium [15]. Not only is

this a managing issue concerned by website owners and online consumers but an even more important point emphasized by CPA in promoting assurance service. Hence this study applies expectancy disconfirmation theory [16] to explain consumers' evaluation of product purchase, which is why this paper is different from previous researches.

On the other side, subjects of previous web assurance researches are all tested in a same group. Tests conducted by gathering subjects with different information searching attributes into one group may yield deviation in empirical result. As consumers intending to purchase products from a website, they used to search for information internally and externally prior to making purchase decision [17]. Therefore, this study categorizes information searching consumers into four types based on the extent of internal and external information searching, including **internal-oriented cluster, external-oriented cluster, information integrator** and **non-rational decision cluster.** This classification of online consumers would be one of the major contributions of this study. In sum, the purpose of this study is to investigate the effect of CPA WebTrust[SM] assurance seal on online consumers' expectancy disconfirmation. In addition to serving as reference for CPA practice in the future, empirical results can also be used to explain receptivity and perception of website owners and consumers against CPA WebTrust[SM] assurance service.

LITERATURE REVIEW

A. CPA WebTrust[SM] Assurance Seal

Gefen et al. [5] propose the concept of institution-based structural assurances which referred to an assessment of success due to safety nets, including certification of compliance to laws and regulations in certain context. The third-party assurance seal is a common institution-based structural assurance. Hence, the ultimate purpose of the assurance seal is to evaluate whether the e-commerce websites comply with standards of the authority institute. BBB Online, TRUSTe, and VISA are the common web assurance seals [18]. However, CPA firms intensively involve in management consultation in recent years, so they also start to provide web assurance service. AICPA started to plan web assurance service in 1997. When the websites comply with the assurance principle set forth, they would be awarded with WebTrust[SM] assurance seal. As shown in Figure 1, this seal is located at prominent location in the homepage of the website. WebTrust[SM] assurance seal has a hyperlink function, so the stakeholders can access CPA's independent assurance report and the assurance principle [1, 12]. Further more, CPA will check and assess these websites regularly and continually. CPA would also request the website owner to improve based on the standard when inconsistencies are found, or otherwise remove the assurance seal [11]. The assurance scope of WebTrust[SM] principle are as follows [1,8,9, 19]: (1) The disclosure extent of information about the e-commerce enterprises, including operational status and conditions of the enterprises, the disclosure extent of consumer protection policy such as the information about products/services attributes, after-service/return policy, warranty conditions etc. (2) Transaction integrity, privacy and information integrity. (3) Rationality and completeness of websites' infrastructure. (4) Claim of compliance to legal regulations.

B. Expectancy Disconfirmation Theory

Expectancy disconfirmation theory holds that consumers form judgments about products or services using their prior expectations about the characteristics or benefits offered by the given product or service [16]. After experiencing the product's actual performance, these expectations then serve as a comparative referent for the formation of a satisfaction judgment. In related literatures, this discrepancy or gap between prior expectations and actual performance is termed "expectancy disconfirmation". It is important to note that the disconfirmation of expectations can be positive as well as negative: (1) Positive disconfirmation: performance exceeds expectations; (2) Negative disconfirmation: performance falls short of expectations; (3) Confirmation: a satisfactory state inconsistent with expected state does not happen [20]. Oliver [16] adopts this concept to classify incidents of expectancy disconfirmation and claims that if performance gap falls in acceptable range, then performance deviation would be regarded as usual. Identification of disconfirmation extent varies with knowledge, experience, and mental state of individual consumer. In subsequent researches, many researchers apply this theory to investigate the consumers' satisfaction towards e-commerce websites [21, 22]. Measurement indicators of expectancy-disconfirmation for product evaluation which are often investigated by researchers include: (1) Price premium: the extent of difference between "actual price" and "financial value of commodity subjectively acknowledged by individual" [15]; (2) Perceived quality [13, 14, 15].

Figure 1 CPA WebTrust[SM] Assurance Seal

C. Information Searching Type Consumers

Information searching including internal and external source of information, the former includes memory, knowledge, experience, familiarity, and preference, while the later includes the information obtained from outside the consumers such as advertisement media, internet, opinion leaders, professional book, and public praise [23, 24]. Besides, previous researches lack of the perspective of "information searching", and they do not take customer attributes into consideration [7, 8, 9]. Therefore, this study categorizes information searching consumers into four types based on the extent of internal and external information searching, The characteristics of information

searching consumers shown in Figure 2 are described as follows: (1) **Non-Information Searching Consumer**s ： This type of consumers is low in using internal and external information, and they are lack of information searching procedure in making purchase decision. As non-information searching consumers are often influenced by pictures of merchandises and the introduction of the websites when browsing the shopping websites. However, personal imagination and preference often stimulate their excitement in flow state because they could not touch those real merchandises. Finally, they behave impulsive purchase [25]. In such circumstance, they make the purchase directly as safety mechanism of online transaction existed or not, rationality of product price and quality are all not major factors affecting the purchase decision. (2) **Internal Information Oriented Consumers** ： This type of consumers intensively uses internal information but they are low in using external information. They used to make purchase decision (risk of websites, product attributes, or rationality of price) based on their own consumption experience, prior knowledge on the products [26]. This study argues that this type of consumers normally has higher self-consciousness or subjectivity. Although they reference to and search for minority external information, but the final judgment for purchase decision still relies on internal information. (3) **External Information Oriented Consumers** ： External information oriented consumers put emphasis on searching for external information but they are low in using internal information. Normally they are suitors of fashion or lovers of new products. Since they do not have sufficient information and so are they unconfident, they need much instant new knowledge to update and complement their internal information. Therefore they attach importance to information from external mass media, internet forums, and opinion leaders. Although they also consider their own consumption experience and preference, they give priority to external information as principle of judgment on purchase decision. (4) **Information Integrating Consumers** ： This type of consumers attaches importance to both searching for external and internal information, and then further rationally integrates all information for consumption decision making. In comparison with the other three types of consumers, information integrating consumers take ripe consideration in the process of consumption decision. Therefore, when making purchase decision, they not only assess transaction safety mechanism of the website but also look up public praise about the product from other consumers in the discussion forum [27]. Besides, information integrating consumers also compare the price with similar products. Finally, they integrate personal experience and knowledge to make comprehensive judgment for purchase decision.

Figure 2 The Types of Information Searching Consumers

METHODOLOGY

Research Model

The purpose of this paper is to investigate the effect of CPA WebTrust[SM] assurance seal on different types of consumers' expectancy disconfirmation. First, this study categorizes consumers into four types based on the extent of internal and external information searching. Next, two similar virtual websites are established respectively in the experiment design. But only Website A has WebTrust[SM] assurance seal, while the other one (Website B) has not. These websites are designed by simulating the real Taiwan Yahoo! shopping store, where the items of commodity categories and advisements are preserved so that the virtual websites have contexts similar to real websites. With regard to consumers' expectancy-disconfirmation, this study investigates the product evaluation (perceived quality, price) of different types of consumer in the above contexts, before and after purchase. The research model is showed in Figure 3.

Research Hypotheses

Based on the model of Engel et al. [23], this study propose that consumers start the behaviors of internal and external information searching after the need recognition is occurred. Then the consumers apply the information to analyze the value proposition, such as price, quality, and function of the objective product [24]. However, both internal and external searching behaviors show different levels of intensity. Hence, different types of consumers have different searching levels (high or low). This paper extends the concept of Engel et al. [23] to establish the classification indicators of information searching consumers: the level of external and internal

information searching. This paper also categorizes information searching consumers based on the extent of internal and external information searching. The hypotheses are as follows:

H1: Consumers can be classified into high and low-level types based on the degree of external information searching.

H2: Consumers can be classified into high and low-level types based on the degree of internal information searching.
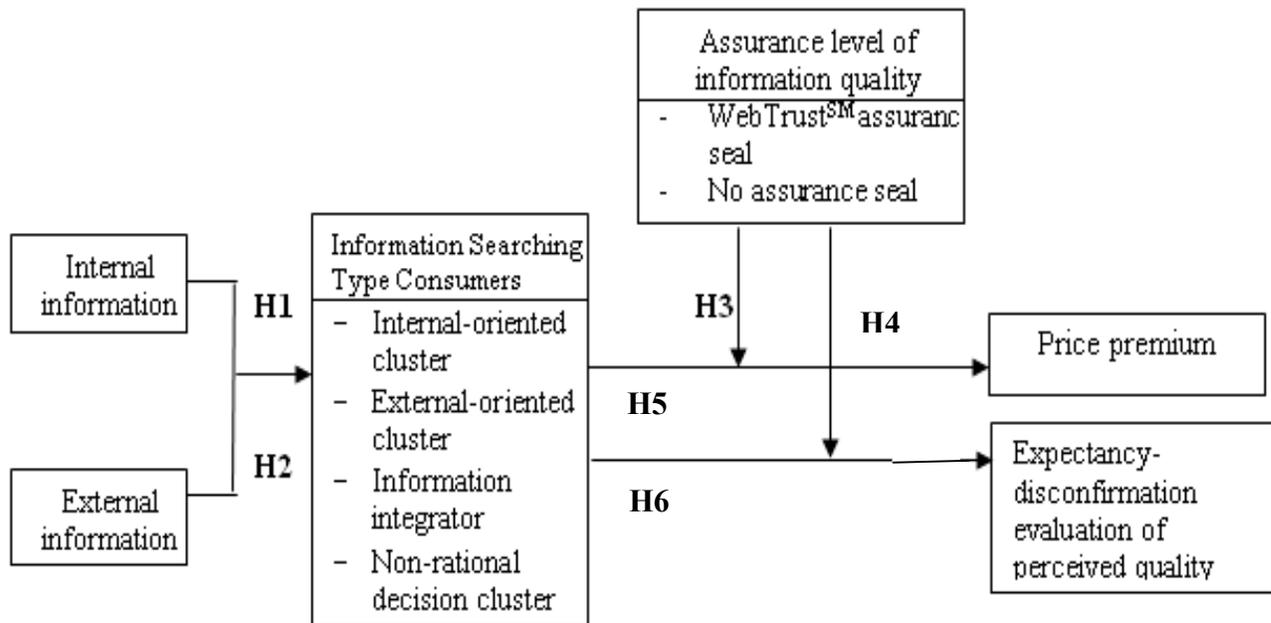
Figure 3 Research model

By concluding the above literature review of assurance information quality, WebTrust[SM] includes assurance for website safety mechanism, the disclosure of product information and consumer protection policy, website infrastructure, and compliance with related regulations [1,7]. Besides, the web assurance seal is a marketing tool in nature, and the website firms could highlight excellence, safety, and difference [7, 28]. Therefore, when different types of information searching consumers browsing or shopping on websites, they might make use of internal information searching, such as personal consumption habit (firstly examine whether the website has assurance seal), knowledge (what type of the web assurance seal), memory (whether this website has been reported negative incidents), to make judgment of consumption decision. Then, they might click assurance report directly to look up the external information. In a website with high assurance level of information quality (WebTrust[SM]), the consumers with higher level of

information searching would have lower "price premium" and "expectancy-disconfirmation evaluation of perceived quality" on product. This study formulates the hypotheses as follows:

H3: On the website with CPA assurance seal, the consumers with higher level of information searching would have lower "price premium" on product.

H4: On the website with CPA assurance seal, the consumers with higher level of information searching would have lower "expectancy-disconfirmation evaluation of perceived quality" on product.

This study infers that **information integrator** before conducting purchase on a shopping website would examine the reasonability of price through the process of price comparison, including searching for price offered by similar shopping websites, or figuring out its price in physical stores [27]. Finally, this type of consumer would consider reasonably whether the product is valuable to purchase by taking his/her knowledge and experience on this product. In comparison with consumers of the other three types, information integrator has the lowest price premium. **External-oriented cluster** concerns about the objective information from internet, media, opinion leaders, newspaper and magazines. As they make low use of their consumption experience, memory, knowledge, so they rely on external information in making judgment of product price without taking their own judgment on product attributes into account. This type of consumers may even believe in exaggerating or false internet information and do not generate results based on personal memory, knowledge, and subjective judgment [29]. Even if the website has CPA assurance seal, negative expectancy-disconfirmation between commodity price and subjective cognitive value would occur, when they receive the physical product.

For **internal-oriented cluster**, confidence and subjective personality usually lead to consumption behaviors largely relying on former shopping experience, memory, and existing knowledge. Hence they take less instant information from external media or CPA assurance seal into consideration. And their impression on the product is limited to past consumption memory and judgment. So ones who are excessively subjective and do not have sufficient instant external information would have higher price premium than information integrator and external-oriented cluster. Besides, **non-rational decision cluster** do not put emphasis on the process of information searching. They often actively purchased online at sight of fond products, impulsive type of purchasers. This type of consumers less compares prices, and they also lack of willpower to inhibit desire [30]. Hence, their consumption decision are easily influenced and changed by impression and mood [25]. This study formulates the hypotheses as follows:

H5a: On the website with CPA assurance seal, information integrator has lower price premium on product than external-oriented cluster.

H5b: On the website with CPA assurance seal, external-oriented cluster has lower price premium on product than internal-oriented cluster.

H5c: On the website with CPA assurance seal, internal-oriented cluster has lower price premium on product than non-rational decision cluster.

In addition, this study also analyzes if expectancy-disconfirmation of perceived quality in different types of consumers is significantly different. **Information integrator** often browses "consumers' discussion area" additionally to see public praise and comments on the product before purchase [31]. Then information integrator combines both internal information to make purchase decision, including personal knowledge, consumption habit or preference. Therefore in comparison with the other three types of consumers, information integrator has the lowest level of expectancy-disconfirmation of perceived quality. In spite of introduction and evaluation on the product from media, **external-oriented cluster** does not have enough internal information to make integral judgment. As a result, the product they purchased might not have attributes and functions they actually need but was just a commodity strongly recommended by media. This study infers that external-oriented cluster's expectancy-disconfirmation of perceived quality is significantly higher than information integrator. In comparison, **internal-oriented cluster** makes low use of external information, and they make purchase decision based on knowledge and consumption habit but ignore objective evaluation on the product proposed by other media. Under this condition, subjective ones excessively make use of internal information have higher level of expectancy-disconfirmation of perceived quality than external-oriented cluster. Finally, **non-rational decision cluster** are consumers making shopping decision based on personal preference completely, and so would immediately purchase a product at sight of beautiful commodity picture posted on the website. Hence, the reasonability of price and the consistence of appearance with expectation are not factors affecting purchase. This study formulates the hypotheses as follows:

H6a: On the website with CPA assurance seal, information integrator has lower "expectancy-disconfirmation of perceived quality" on product than external-oriented cluster.

H6b: On the website with CPA assurance seal, external-oriented cluster has lower "expectancy-disconfirmation of perceived quality" on product than internal-oriented cluster.

H6c: On the website with CPA assurance seal, internal-oriented cluster has lower "expectancy-disconfirmation of perceived quality" on product than non-rational decision cluster.

C. Research Design

(1) Pretest

This study employed experiment design to verify research issue. Experiment design relied on a 4 (information searching type consumers: information integrator, external-oriented cluster, internal-oriented cluster and non-rational decision cluster) × 2 (assurance level of information quality: WebTrust[SM] assurance seal vs. no assurance seal) randomized-block design. Before the formal experiment procedure, 100 students who had experience of online consumption and had learned

auditing were enrolled as subjects of pre-test. Students who attended this course had basic concept on WebTrust[SM] assurance seal, which also agreed with the concept of educational intervention [28]. Cluster analysis was employed to classified different consuming groups. Because the F-value was significantly (P-value < 0.01), it was reasonable to categorize the customers into four types. As described above, two virtual shopping websites were established for testing the degree of difference in assurance information quality. Result of pre-test showed that subjects represented significantly higher agreement with assurance information quality of virtual website A (simulating Yahoo! shopping store) （X=5.33） than that of virtual website B （X = 4.69）. Therefore, result of pre-test supported that fairness of experimental context was sufficient and reasonable basis for formal experiment.

(2) Formal Experiment Design

In the formal experiment, this study enrolled another 272 students of accounting department, who had experience of online consumption and had learned auditing. The reason why students served as samples was that: (1) Calder et al. [32] propose that theoretical research must use homogeneous samples in order to reduce the interference caused by difference between heterogeneous groups, including occupation, age, consumption habit, and income. Furthermore, the web assurance service of Taiwan CPA firms were still at the stage of planning, so this paper attributed to a theoretical research. (2) Kim et al. [28] indicate that online consumer groups display a declining trend in age and at least have education of high school. Therefore, college students of this study met such characteristics. Taking students as research samples did not prejudice reliability of source.

This research was composed of two stages. In first stage, 272 subjects were classified. One week later, they were randomly assigned to the above 2 website assurance contexts based on their information searching groups. Subjects of each experimental group were tested in a professional computer classroom. All computers were already connected to virtual shopping websites by research staffs in order to reduce the inference by environment and computer equipments. Virtual website A had WebTrust[SM] assurance seal, while B not. By clicking the WebTrust[SM] seal on website A one could access CPA assurance report. Research staffs assigned subjects to 8 experimental contexts according to their information searching groups. Subsequently the research staffs distributed questionnaires and told the subjects to browse the virtual website. Then they followed instruction of the research staffs to browse the webpage of digital photo frame and assessed quality and price of the product. Finally, when the subjects completed the questionnaire, they had to return it in the next-door classroom. Another research staffs put physical digital photo frame in the next-door classroom to allow subjects undertake the secondary assessment for actual perceived quality and actual perceived price.

D. Measurement

The source of information searching was measured using a revised 8-item scale developed by Kotler [17], Engel et al. [23] and Kiel and Layton [24]. The response scale was a seven-point Likert-type scale ranging from 1 (little agree) to 7 (extremely agree). Besides, perceived quality

was modified using a revised 6-item scale developed by Dodds et al. [13]. First, when the subjects browsed the subject product on the shopping website, they had to assess the perceived quality immediately. Next, if subjects finished the questionnaire, they had to return it in the next-door classroom. Another research staffs put physical digital photo frame in the next-door classroom to allow subjects to touch, use, and look at the physical commodity. Then the subjects assessed perceived quality (same measurement items), and the staffs could evaluate the gap of expectancy-disconfirmation. Finally, Price premium was modified using a revised 2-item scale developed by Aaker [15].

RESULTS

A. Cluster Analysis and Descriptive Statistic Analysis

The purpose of the first stage experiment is to categorize the types of information searching consumers. This study adopts the K-means cluster analysis to derive the four types. Table 1 shows that the F-value is significant (P-value < 0.01), it is reasonable to categorize the consumers into four types. As a result of the clustering analysis, 109 consumers are categorized into information integrator, 60 consumers in external-oriented cluster, 57 consumers in internal-oriented cluster and 46 consumers in non-rational decision cluster. **Hypothesis H1 and H2 are supported**. In the second stage experiment, the research staffs randomly assign consumer groups to different experimental contexts. But check-in subjects of each group are slightly different, including 104 consumers of information integrator, 60 consumers of external-oriented cluster, 54 consumers of internal-oriented cluster and 46 consumers of non-rational decision cluster. On the other hand, Table 2 summarized the means of dependent variables in each experimental group. In order to test research hypotheses, this study investigates the interaction effect in the research model through Analysis of Variance (ANOVA), and also verifies the differences between experimental groups through t-test.

Table 1 Analysis of Cluster

Source of information searching	Cluster				F- test	P-value
	1. .Information integrator (n=109)	2. External-oriented cluster (n=60)	3. Internal-oriented cluster (n=57)	4. Non-rational decision cluster (n=46)		
Internal-information	5.51 (high)	4.44 (low)	4.90 (high)	4.15 (low)	306.774	0.000
External-information	5.31 (high)	5.66 (high)	4.53 (low)	4.62 (low)	169.844	0.000

B. The analysis of ANOVA and MANOVA

Table 3 shows the analysis of Multivariate Analysis of Variance (MANOVA) and ANOVA. The main effect of "the level of information searching" (Wilk's Lambda **=** 0.504, F-value=24.93***) and "assurance level of information quality" (Wilk's Lambda **=** 0.903, F-value=3.02**) are significantly. Therefore, this study should analyze the ANOVA of independent variable and dependent variable.

Table 2 The means of dependent variables in each experimental group

The level of information searching	Assurance level of information quality				
	WebTrust[SM]assurance seal		No assurance seal		Total means
Information integrator (N=104)	A	EDPQ＝0.33	B	EDPQ＝0.43	EDPQ＝0.38
		PP＝$535.74		PP＝$610.57	PP＝$573.16
External-oriented cluster (N=60)	C	EDPQ＝0.44	D	EDPQ＝0.58	EDPQ＝0.51
		PP＝$650.05		PP ＝$791.75	PP＝$720.90
Internal- oriented cluster (N=57)	E	EDPQ＝0.74	F	EDPQ＝0.73	EDPQ＝0.74
		PP＝$1094.56		PP＝$1236.17	PP＝$1164.12
Non-rational decision cluster (N=46)	G	EDPQ＝0.85	H	EDPQ＝0.87	EDPQ＝0.86
		PP＝$1260.07		PP＝$1294.73	PP＝$1277.40
Total means		EDPQ＝0.53		EDPQ＝0.60	
		PP＝$806.60		PP＝$901.46	

1. EDPQ : Expectancy-disconfirmation of perceived quality;   pp : Price premium

2. A ~ H : The code of each experimental group

(1) Test results of price premium

The empirical result shows that the main effect of the level of information searching on price premium is significant (F-value=23.78***), which means that different types of information searching consumers have significant difference in price premium of the purchased product. Table 3 also indicates that the main effect of "assurance level of information quality" on "price premium" of the product is significant (F-value=3.02**), which means different assurance level of information quality have significant difference on price premium of the purchased product. However with regard to evaluation of price premium, the interaction between "the level of information searching" and "assurance level of information quality" is not significant (F-value=0.09), indicating no matter the website has or has not WebTrust[SM] seal, different consumers' price premium does not show significant difference. For example, information integrator's price premium (X **=** $535.74) from the website with WebTrust[SM] seal is lower than

that from the website without WebTrust^{SM} seal (X = $610.57), which is consistent with the anticipated result of hypotheses but is not significant (t-value=-0.96). **Hypothesis H3 is not supported.**

However, the analysis on price premium obtained from different consumers towards the website with WebTrust^{SM} seal shows that information integrator is $535.74 and external-oriented cluster is $650.05 (t-value=-2.11**), indicating information integrator has lower price premium than external-oriented cluster on the website with CPA assurance seal. Besides, external-oriented cluster's price premium is $ 650.05 and internal-oriented cluster is $1094.56 (t-value=-5.98***); Internal-oriented cluster's price premium is $ 1094.56 and non-rational decision cluster is $1260.07 (t-value=-3.46***). In another word, when purchasing on a website with CPA assurance seal, the consumers with high level of information searching have the lower price premium. Therefore, **hypothesis H5a, H5b, and H5c are supported**.

(2) Test results of expectancy-disconfirmation of perceived quality

Table 3 shows that the main effect of "the level of information searching" on "expectancy-disconfirmation of perceived quality" is significant (F-value=19.68***), which means that different types of information searching consumers have significant difference in expectancy-disconfirmation of perceived quality of the purchased product. On the other side, Table 3 also indicates that the main effect of "assurance level of information quality" on "expectancy-disconfirmation of perceived quality" is not significant (F-value=1.79). Hence this study has to further investigate the interaction effect between "the level of information searching" and "assurance level of information quality". Overall, the interaction effect between these two variables is significant (F-value=2.10*). Independent-Sample T Test is used to analyze the expectancy-disconfirmation of perceived quality of each experimental group. Expectancy-disconfirmation of perceived quality of information integrator (X = 0.33) from the website with WebTrust^{SM} seal is lower than that from the website without WebTrust^{SM} seal (X = 0.43) (t-value=-1.88*), indicating information integrator has lower "expectancy-disconfirmation of perceived quality" on the website with CPA assurance seal. In external-oriented cluster's experimental context has similar result (t-value=-2.21**). However, expectancy-disconfirmation of perceived quality of internal-oriented cluster (X = 0.74) from the website with WebTrust^{SM} seal is similar to that from the website without WebTrust^{SM} seal (X = 0.73) (t-value=-1.22). In non-rational decision cluster's experimental context has similar result. The empirical result indicates that no matter the website has or has not WebTrust^{SM} seal, "expectancy-disconfirmation of perceived quality" of lower level of information searching consumers' does not show significant difference. It is inferred that the hypotheses are not supported because these two groups of consumers make low use of external information, including not reviewing CPA assurance report and ignoring relative information about the product from external source. **Hypothesis H4 is partially supported.**

However, the analysis on "expectancy-disconfirmation of perceived quality" obtained from different consumers towards the website with WebTrust^{SM} seal shows that information integrator is 0.33 and external-oriented cluster is 0.44 (t-value=-1.91**), indicating information integrator

has lower "expectancy-disconfirmation of perceived quality" than external-oriented cluster on the website with CPA assurance seal. Besides, external-oriented cluster's "expectancy-disconfirmation of perceived quality" is 0.44 and internal-oriented cluster is 0.74 (t-value=-3.87***); Internal-oriented cluster is 0.74 and non-rational decision cluster is 0.85 (t-value=-1.27*). In another word, when purchasing on a website with CPA assurance seal, the consumers with high level of information searching have the lower "expectancy-disconfirmation of perceived quality". Therefore, **hypothesis H6a, H6b, and H6c are supported**.

Table 3 The analysis of ANOVA and MANOVA

Source of Variation	MANOVA		ANOVA（F-values）	
	Wilk's Lambda	F-values	Price premium	Expectancy-disconfirmation of perceived quality
The level of information searching	0.504	24.93***	23.78***	19.68***
Assurance level of information quality	0.903	3.02**	3.53**	1.79
The level of information searching ×Assurance level of information quality	0.957	1.03	0.09	2.10*
*P<0.1, **P<0.05, ***P<0.01				

CONCLUSION AND IMPLICATIONS

The purpose of this study is to investigate the effect of web assurance level on consumers' expectancy disconfirmation. The empirical results show that consumers could be classified into four types according to the extent of internal and external information searching, including internal-oriented cluster, external-oriented cluster, information integrator and non-rational decision cluster. This classification is an innovative perspective in related studies, in order to complement consumers' information searching behaviors before shopping neglected by previous researches. Next, the empirical results show that consumers of different information searching levels have significant difference in "expectancy-disconfirmation of perceived quality" and "price premium" on the websites' products. It is found that consumers shopping on a website with CPA assurance seal have lower "expectancy-disconfirmation of perceived quality" than that on one without such

assurance seal. When shopping on a website with CPA assurance seal, information integrator has the lowest negative expectancy-disconfirmation, followed by external-oriented cluster. Internal-oriented cluster has higher level of negative expectancy-disconfirmation than external-oriented cluster; Non-rational decision cluster has the highest negative expectancy-disconfirmation, but the difference between internal-oriented cluster and non-rational decision cluster does not reach significant level. This finding not only complements the weakness of previous researches in not comparing shopping evaluation behavior of different information searching consumers, but also approves that consumers' level of information searching is the major factor influencing their expectancy-disconfirmation. Finally, the empirical result indicates that high or low assurance level of information quality do not seem a major factor evaluating the rationality of product price. No matter if the website has or has not the assurance seal, the gap of perceived price before and after consumers' purchasing would not show significant difference. Therefore, consumers' evaluation on product price before and after purchase is mainly affected by the level of information searching. This finding supports the viewpoint of Bolton et al. [34], that is, consumers' justice cognition on product price normally does not involve manufacturer's profit but directly judged its reasonable price based on its cost. This is a research issue rarely investigated by previous researches and is also another theoretical contribution of this study.

According to the above research findings, this study proposes management suggestion and academic implications to "CPA firms", "website owners", and "customers" respectively. From the standpoint of CPA firms, consumes' perceived quality towards website commodity would be affected by WebTrust^{SM} assurance seal. Therefore, consumers normally attach more importance to CPA assurance seal based on CPA's professional image and independent standpoint. The customers further reduce perceived risk [12] and enhanced trust [8, 9] over a website due to the concept of trust transfer. In other words, consumers' trust on the web platform is strengthened by the seal of high level of assurance information quality. Besides, high-quality perception on the commodity would also come to the customers. It is believed that in the booming e-commerce industry and the internet world flooded with frauds, the web assurance service provided by CPA would definitely become a trend of probity among consumers.

In addition, the website owners should also attach importance to safety of infrastructure and fairness of disclosed product information in addition to promotion of marketing strategies and systems. Herewith the suggestions for website owners are that e-commerce websites with assurance seal should pursue higher assurance level of information quality, while websites without assurance seal should aggressively seek for assurance from third parties. Besides, internal-oriented cluster and non-rational decision cluster reply too much on existing personal impression, preference, and knowledge in evaluating products of websites. So they arbitrarily engaged in purchase behavior which caused evaluation of purchased product lower than expectation. Therefore, consumers are suggested to act timely and proper internet browsing behaviors before shopping, such as evaluation posted in shopping forums. The most important thing is that they should be more concerned about comparison of attribute of physical commodity, in order to avoid from indulging in unreasonable shopping in the virtual internet world [25]. Finally, consumers could reduce the level of expectancy-disconfirmation by integrating assurance report of the websites.

However, some limitations of this study have to be recognized. First, for the sake of controlling homogeneity of subject samples, this study took students as subjects of the experimental design. However, the research conclusion might not be able to be generalized to as multiple consumer population on actual websites. This study suggests that future researches could extend the other research sample groups. Second, as this study is limited by subjects and budget, the subject product is digital photo frame. This study suggests that if the research is sufficient in budget, the researches could integrate internet shopping habits of various consumers to investigate the evaluation effect between luxury and rare articles. Third, large-scale analysis could not be conducted through questionnaire survey in this study because web assurance service of CPA firms in Asia countries are still at planning stage. This study suggests that future researches could take website owners as objects, and the researchers could investigate the factors influencing their intention in introducing WebTrust[SM] assurance seal through questionnaire survey.

REFERENCES

[1] Y. Gendron, and M. Barrett, "Professionalization in action: Accountants' attempt at building a network of support for the WebTrust seal of assurance," Contemporary Accounting Research, vol. 21 pp. 563-602, 2004.

[2] R. S. Kaplan, and D. P. Norton, "Strategy maps: Converting itangible assets into tangible outcomes," Boston: Harvard Business School Press, 2004.

[3] H. C. Huang, W. Chu, and W. K. Wang, "Strategic performance measurement and value drivers: Evidence from international tourist hotels in an emerging economy," The Service Industries Journal, vol.27, pp.1111–1128, 2007.

[4] O. Hinz, II. H Hann, and M. Spann, "Price discrimination in E-commerce? An examination of dynamic pricing in name-your-own-price markets ," MIS Quarterly, vol. 35, pp. 81-98, 2011.

[5] D. Gefen, E. Karahanna and D. W.Straub, Trust and TAM in online shopping: an integrated mode," MIS Quarterly, vol. 27(1), pp. 51-90, 2003.

[6] J. C. Zimmer, R. E. Arsal, M. A. Marzouq, and V. Grover, "Investigating online information disclosure: Effects of information relevance, trust and risk," Information & Management, vol. 47, pp. 115-123, 2010.

[7] V. Lala, A. Vicky, S. G. Sutton, and L. Guan, "The impact of relative information quality of e-commerce assurance seals on internet purchasing behavior," International Journal of Accounting Information Systems, vol. 3, pp. 237-253, 2002.

[8] S. E. Kaplan, and R. J. Nieschwietz, "A web assurance services model of trust for B2C e-commerce," International Journal of Accounting Information Systems, vol. 4, pp. 95-114.

[9] X. Hu, G. Wu, Y. Wu, and H Zhang, "The effects of Web assurance seals on consumers' initial trust in an online vendor: A functional perspective" Decision Support Systems, vol. 48, pp. 407-418, 2010.

[10] L. J. Kornish, and C. B. Levine, "Discipline with common agency: The case of audit and nonaudit services," The Accounting Review, vol. 79, pp. 173-200, 2004.

[11] R. W. Houston, and G. K. Taylor, "Consumer perceptions of CPA WebTrust[SM] assurances: Evidence on expectation gap," International Journal of Auditing, vol. 3, pp. 89–105, 1999.

[12] S. E. Kovar, K.G. Burke, and B. R. Kovar, "Consumer responses to the CPA WebTrust[SM] assurances," Journal *of Information Systems,* vol. 14, pp.17-35.

[13] W. B. Dodds, K. B. Monroe, and D. Grewa, "Effect of price, brand and store information on buyers' product evaluation," Journal of Marketing Research, vol. 28, pp. 307-319, 1991.

[14] E. M. Steenkamp, "Conceptual model of the quality perception process," Journal of Business Research, vol. 21, pp.309-325, 1990.

[15] D. A. Aaker, "Building strong brands," New York: The Free Press, 1996.

[16] R. L. Oliver, "Measurement and evaluation of satisfaction in retail settings," Journal of Retailing, vol. 57, pp. 25-48, 1981.

[17] P. Kotler, "Marketing management," NJ: Prentice-Hall, 2003.

[18] M. S. Lee, J. Choi, and S. G. Lee, "The impact of a third-party assurance seal in customer purchasing intention," Journal of Internet Commerce, vol. 3, pp. 33-51, 2004.

[19] B. Runyan, K. T. Smith, and L. M. Smith, "Implications of web assurances on e-commerce," Accounting Forum, vol. 32, pp. 46-61, 2008.

[20] V. M. Patrick, D. J. MacInnis, ,and C. W. Park,, "Not as happy as I thought I'd be? Affective misforecasting and product evaluations," *Journal of Consumer Research*, vol. 33, pp. 479-489, 2007.

[21] W. Jianan, and D. Padgett, "A direct comparative framework of customer satisfaction: An application to internet search engines," Journal of Interactive Marketing, vol. 18, 32-50, 2004.

[22] R. Law, and C. Ngai, "Usability of travel websites: A case study of the perceptions of Hong Kong travelers," Journal of Hospitality & Leisure Marketing, vol. 13, 19–31, 2005.

[23] Engel, J. F., D. T. Kollat, and R. D. Blackwell, "Consumer Behavior," New York: Prentice Hall, Inc, 1993.

[24] G. C. Kiel, andR. A. Layton, "Dimensions of consumer information seeking behavior," Journal of Marketing Research, vol. 18, 233-239, 1981.

[25] M. Koufaris, "Applying the technology acceptance model and flow theory to online consumer behavior," Information Systems Research, vol. 13, pp. 205-223, 2002.

[26] S. L. Wood, and J. G. Lynch, "Prior knowledge and complacency in new product learning," Journal of Consumer Research, vol. 29, pp. 416-426, 2002.

[27] S. L. Jarvenpaa, and P. A. Todd, "Consumer reactions to electronic shopping on the World Wide Web," International Journal of Electronic Commerce, vol. 1, pp. 59-88, 1997.

[28] D. J. Kim, C. Steinfield, , and Y. J. Lai, "Revisiting the role of web assurance seals in business-to-consumer electronic commerce," Decision Support Systems, vol. 44, pp. 1000-1015, 2008.

[29] S. M. Forsythe, and B. Shi, "Consumer patronage and risk perceptions in internet shopping," Journal of Business Research, vol. 56, pp. 867-875, 2003.

[30] R. E. Cole, and T. Matsumiya, "Too much of a good thing? Quality as an impediment to innovation," *California Management Review*, vol. 50, pp. 77-93, 2007.

[31] N. Amblee, and T. Bai, "Can brand reputation improve the odds of being reviewed on-line," International Journal of Information Management, vol. 12, 11-28, 2008.

[32] B. J. Calder, W. Philips, and A. M. Tybout, , "Designing research for application," Journal of Consumer Research, vol. 8, pp. 197-207, 1981.

[33] J. C. Nunnally, "Psychometric theory, " NY: McGraw-Hill, 1978.

[34] L. E. Bolton, L. Warlop, and J. W. Alba, "Consumer perceptions of price (un) fairness," Journal of Consumer Research, vol. 29, pp. 474-491, 2003.

[35] J. Kim, A. M. Fiore, and H. H. Lee, "Influences of online store perception, shopping enjoyment, and shopping involvement on consumer patronage behavior towards an online retailer," Journal of Retailing & Consumer Services, vol. 14, pp. 95-107, 2007.
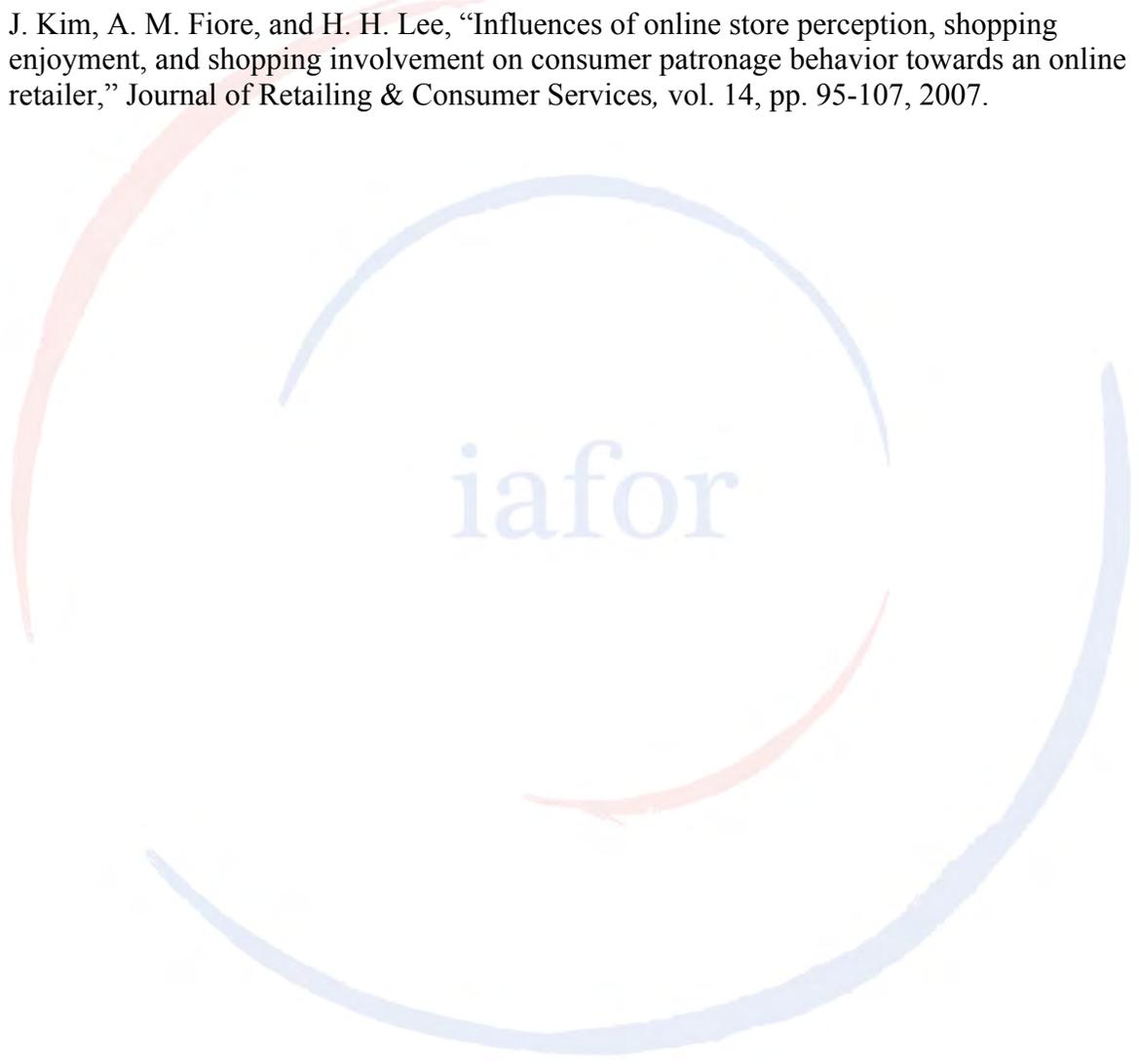
Three Aspects of Relationship-Focused Coping in Japanese Child-Rearing Couples

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Abstract:

Relationship-focused coping was defined as cognitive and behavioral efforts to manage and sustain social relationship during stressful episode (Coyne & Smith, 1991). Previous studies regarding relationship-focused coping mainly sampled couples with medical problems (e.g. heart failure, cancer) and found two important factors: (a) active engagement (e.g. involving the partner in discussion), (b) protective buffering (e.g. hiding their concerns). The present study applied their findings to couples in child-rearing which has daily stress in managing their life; it means that we sampled healthier couples than the previous studies have focused on. We accessed 117 parents   (53 husbands, 64 wives) in two Japanese kindergartens. The 117 parents completed questionnaires assessing their relationship-focused coping, empathy, marital satisfaction and well-being. Factor analysis confirmed three aspects, escape-avoidance (e.g. I try to avoid talking with my spouse to cool us down), active engagement (e.g. I try to discuss it with my partner openly), and protective buffering (e.g. I deny or hide my worry). Correlation patterns between husbands and wives were similar. The frequency of escape-avoidance was negatively related to marital satisfaction. On the other hand, the frequency of active engagement was positively related to empathy, marital satisfaction, and well-being. The results as follows were different between husbands and wives. Husbands' well-being was negatively related to the frequency of escape-avoidance. Wives' marital satisfaction was positively related to the frequency of active engagement. The present study added "avoidant aspects" for the concept of relationship-focused coping and our results suggest that necessity to take gender in account.

Marital theorists, behavioral theorists, and system theorists pay attention to marital communication (Christensen & Shenk, 1991). For example, Christensen and Shenk (1991) compared communication patterns in nondistressed, clinic, and divorced couples. In their research, clinic couples and divorced couples, compared with nondistressed couples, had less mutual construction communication and more avoidance of communication. Stafford and Canary (1991) focused on the relational maintenance strategies used in romantic dyad, and they found five maintenance strategies: positivity, assurances, openness, sharing tasks and social network.

Among these research literature, relationship-focused coping is the concept that examines the coping behavior for maintaining relationship during the stressful periods, particularly when stressors have an impact on the family or another unit (O'Brien, DeLongis, Pomaki, Puterman, & Zwicker (2009). Relationship-focused coping is defined as "cognitive and behavioral efforts to manage and sustain social relationship during stressful episode" (Coyne & Smith, 1991, 1994; O'Brien et al., 2009). The previous studies of relationship-focused coping revealed that each spouse makes his/her effort to solve the stressful situation within a couple.

Previous studies regarding relationship-focused coping mainly sampled couples with medical problems: couples with the heart failure patients (Coyne & Smith, 1991), couples with the cancer patients (Hagedoorn, Kuijer, Buunk, DeJong, Wobbes & Sanderman, 2000; Kuijer, Ybema, Buunk, De Jong, Thijs-Boer & Sanderman, 2000). Furthermore, it generally reported two factors (Coyne & Smith, 1991; Hagedoorn et al., 2000; Kuijer et al., 2000). Active engagement is defined as "a matter of involving the partner in discussions, inquiring how the partner feels, and other constructive problem solving" (Coyne & Smith, 1991, p 405). Protective buffering is defined as "a matter of hiding concerns, denying worries, and yielding to the partner to avoid disagreements" (Coyne & Smith, 1991, p 405). In summary, the previous studies of relationship-focused coping sampled couples with medical problem and found two factors.

Aim of the Present Study

Nevertheless previous studies of relationship-focused coping focused on the stressful situation couples in medical condition, stressful situation exist in ordinary couples. Shoji (2009) conducted an e-mail survey and interviews for wives of newlyweds about their marital conflict, and revealed that conflicts repeatedly occur in the persistent relationship such as marital relationship.

Next, active engagement and protective buffering represented active aspects of relationship maintenance. In Morita (2008), escape-avoidance of undergraduate students was effective for diminishing their interpersonal conflict. Furthermore, 4.2 % of the individuals reported avoidance (topic avoidance, conflict avoidance, person avoidance) as their relationship maintenance behaviors (Dainton & Stafford, 1993). Based on these findings, the concept of the relationship-focused coping needs to add the avoidant aspect.

Our study aimed to develop the scale of relationship-focused coping in child-rearing couples and to examine the validity and test-retest reliability. In addition to this, we aimed to explore gender differences in the reported use of relationship-focused coping. Kato and Kanai (2006) showed the gender difference through coping behavior process in dual-earner couples. Dainton and Stafford (1993) reported significant gender differences in the relationship maintenance behaviors, and suggested that the frequency of use of various maintenance strategies may differ between men and women. These previous studies indicated the necessity to consider gender difference in the study of relationship-focused coping.

Method

Procedure

Questionnaire survey was conducted through two kindergartens. 443 questionnaires were delivered, and 154 questionnaires were collected. Collection rate was 34.8%. Participants answered questionnaire voluntarily, and their responses were anonymous.

Participants

We removed the missing data and insecure data (e.g. all answers were 3) from analysis. The participants were 117 Japanese parents (53 were husbands, 64 were wives). The mean age of participants was 35.84 years old (Range: 25-50, SD = 5.07 years old). The mean age of length of marriage was 106.14 months (range: 10-205, SD = 34.43). 65 Participants answered their employment status as full-time, 16 answered as part-time, 34 answered as homemaker, 1 answered as student, 1 did not answer. 16 answered their type of job as independent business, 10 answered as specialists, 18 answered as civil servant, 33 answered as company employee, 4 answered as others, 2 did not answer. 115 participants were living with their spouse, 2 were marital separation.

Measures

Relationship-Focused Coping We modified Kato (2002)'s instruction for marital relationships. Instruction was as follows:

You may experience stress (major or minor) in daily life with your spouse (partner). In this context, "stress" means that you felt tension or unpleasantness due to experiences such as "having a marital quarrel", "being misunderstood" "losing ways of talking about things",   and "disagreeing with your spouse in decision-making". Please indicate to what extent you do or do not behave in the ways described when you feel "stress". For the following questions, please circle your answer.

The participants reported relationship-maintenance strategies on a 5-point Likert scale from "never" to "always". First and second authors translated the items of the previous studies (Kuijer et al., 2000; Langer et al., 2009; Kato, 2000) with the permission of the authors (Dr. Kato, Dr. Trost, Dr. Suls, and Dr. Kuijer). In protective buffering, we translated 7 items from Langer et al. (2009). Scale of Langer et al. (2009) was used for cancer patients and their spouses. In active engagement, we translated 5 items from Kuijer et al. (2000). Also, the scale of Kuijer et al. (2000) was used for cancer patients and their spouse. In escape avoidance, we modified the 9 items of the Interpersonal Stress-Coping Inventory (Kato, 2000) for marital relationship. To examine validity, participants' marital satisfaction, well-being, and empathy was measured at the same time.

Marital Satisfaction Participants answered the Japanese version (Sugawara & Takuma, 1997) of the Kansas Marital Satisfaction Scale (Schumm et al., 1986). It was rated on a fully anchored 6-point Likert scale ranged from 1 (extremely dissatisfied) to 6 (extremely satisfied). Kansas Marital Satisfaction scale is consisted of 3 items (e.g., I am satisfied with my relationship with my partner). 3 items were averaged to produce a score that also ranged from 1 to 6. Item example was "I am satisfied with my relationship with my partner".

Well-Being We used WHO-Five Well-Being Index (WHO-5-J) as a measure of well-being. The scale has been translated into various languages (see http://www.who-5.org/). In Japanese version of WHO-5 was translated by (Awata, Bech, Koizumi et al., 2007; Awata, Bech, Yoshida et al., 2007) and confirmed sufficient internal (high score of Cronbach's alpha) and external validity (WHO-5 was significantly correlated with a number of major diabetic complications, depression, anxiety, and subjective quality of life). 5 items (e.g. I have felt cheerful and in good spirits) were summed to produce a score that ranged from 0 to 25. As a brief and trustful well-being scale, we used this scale.

Empathy We used the selected 5 items of Chiba-University Personality Inventory (Yanai, Kashiwagi, Kokusho, 1987). It was rated on a fully anchored 4-point Likert Scale 1(not at all descriptive) to 4(extremely descriptive). 4 items were averaged to produce a score that also ranged from 1 to 4. Item example was "I feel for doing something for someone".

Result

Factor analysis

Factor patterns of relationship-focused coping We conducted an exploratory factor analysis with summing up husbands' data and wives' data (c.f. Hirayama & Kashiwagi, 2001). This analysis aimed to clarify the common attributes within a couple. There was no item which showing the floor or ceiling effect. Judging the screen plot and accumulative contribution, we conducted factor analysis under 3 factor model, unweighted least-squares, promax rotations. We removed the items which had multiple factor loading, and small factor loading (less or equal .40). After removing 4 items, we conducted an exploratory factor analysis with same condition again.

First Factor ($M = 2.79$, Range: 1.17-5.00, $SD = 0.79$) was consisted by the items such as "I try to avoid talking with my spouse to cool us down" "I stay by myself until both feel calm". Therefore, we named it "escape-avoidance". Second Factor ($M = 3.54$, Range: 1.80-5.00, $SD = 0.76$) was consisted by the items such as "I am full of understanding towards my partner" "I try to discuss it with my partner openly". Therefore, we named it "active engagement". Third Factor ($M = 2.65$, Range: 1.17-5.00, $SD = 0.75$) was consisted by the items such as "I deny or hide my worry" "I do not disagree with my spouse". Therefore, we named it "protective buffering".

Next, we examined factor correlation. Result showed that escape-avoidance was positively correlated with protective buffering($r = .42$). Escape-avoidance was negatively correlated with active engagement($r = -.29$). On the other hand, score of factor correlation between active engagement and protective buffering was .06.

Examination of concurrent validity We conducted analysis of correlation with demographic data, marital satisfaction, well-being, and empathy (See Table 1). Active engagement was significantly and negatively correlated to their age ($r = -.24, p < .05$). It means that the older they get, the less frequently they do active engagement. Escape-avoidance was negatively correlated with participants' marital satisfaction ($r = -.29, p < .01$). Active engagement was positively correlated with participants' empathy($r = .32, p < .001$), marital satisfaction ($r = .34, p < 001$), and well-being (r

= .32, *p* < .001). Protective buffering was not significantly correlated with other variables.

Table 1

Means, Standard Deviations, and Intercorrelations for Dimensions of Relationship-Focused Coping Scale, Marital Satisfaction, Well-Being and Empathy

	M	SD	1	2	3	4	5	6
1. escape- avoidance	2.79	0.79	1	- .22 *	.40 ***	- .29 **	- .12	- .11
2. active engagement	3.54	0.76		1	- .06	.34 ***	.32 ***	.32 ***
3. protective buffering	2.65	0.75			1	.04	.06	.04
4. KMS	4.81	0.93				1	.40 **	.18 *
5. WHO-5	13.53	4.88					1	.31 **
6. Empatjhy	2.89	0.53						1

Note. * p < .05, ** p < .01, *** p < .001

KMS = Kansas Marital Satisfaction Scale, WHO-5 = WHO-Five Well-Being Index

Relationship-focused coping in gender We also examined the Pearson correlation within husbands and within wives (See Table 2). Husbands' frequency of escape-avoidance coping was negatively correlated with their well-being($r = -.33$, *p* < .05), but not wives' (r = -02, *n.s.*). Wives' frequency of active engagement coping was positively correlated with their marital satisfaction ($r = .47$, *p* < .001), but not husbands' ($r = .19$, *n.s.*).

Table 2

Intercorrelations for Dimensions of Relationship-Focused Coping Scale, Marital Satisfaction, Well-Being and Empathy within husbands and within wives

	escape-avoidance		active engagement		protective buffering		KMS		WHO-5		Empathy	
1. escape-avoidance	1		-0.213		0.347	*	-0.279	*	-0.330	*	-0.215	
2. active engagement	-0.245	†	1		-0.084		0.197		0.398	**	0.306	*
3. protective buffering	0.473	***	-0.044		1		-0.016		-0.158		-0.089	
4. KMS	-0.247	*	0.473	***	0.033		1		0.430	**	0.256	
5. WHO-5	-0.015		0.269	*	0.186		0.424	***	1		0.308	*
6. Empatjhy	-0.109		0.342	**	0.191		0.228		0.314	*	1	

Note. * p < .05, ** p < .01, *** p < .001

Interrcorrelation for husbands (n = 53) are presented above the diagonal, and Intercorrelation for wives (n = 64). KMS indicates Kansas Marital Satisfaction Scale; WHO-5 indicates WHO-Five Well-Being Index

Test-Retest Reliability We examined the test-retest reliability of the scale of relationship-focused coping. Two months after first distribution, we distributed revised the scale of relationship-focused coping for parents in kindergarten A. 47 data was collected and 30 data was analyzed (no missing at Time 1 and Time 2). We identified the participants by checking their phone number (last four digits) and their birthdays. Pearson correlation between T1 and T2 was calculated. There were significant and positive correlation in escape-avoidance ($r = .56$, *p* < .01), active engagement ($r = .48$ *p* < .01), and protective buffering ($r = .69$, *p* < .01), respectively.

Discussion

Our study developed the scale of relationship-focused coping in Japanese child-rearing couples. The three aspects (escape-avoidance, active engagement, protective buffering) of the relationship-focused coping was back up our assumption. Cronbach's alpha of these three sub scales were above .70, so, the scale had the enough internal consistency. In conclusion, the scale had enough reliability and revealed the coping effort by each spouse for marital conflicts. Next, we discuss each sub factor.

The frequency of escape-avoidance was related to lower marital satisfaction. This result was also supported by the finding of avoidant communication (Christensen & Shenk, 1991). Even the purpose of the behavior is to keep the relationship with their spouse during marital stressful events, avoidant style of relationship-focused coping is harmful for their marital satisfaction. Avoiding style of relationship-focused coping may keep complaint towards spouse, and may not solve their own disapproval.

The frequency of active engagement was positively related to their empathy, satisfaction, and well-being. The relationship with higher empathy was supported on theoretical ground (O'Brien & DeLongis, 1997) and higher marital satisfaction was supported on empirical ground (Hagedoorn et al., 2000). Langer et al., (2009) suggest that open communication with their spouse is adaptive in couples with cancer patient. Our findings supported their findings in child-rearing couples.

On the contrary, there were no significant correlation between the frequency of protective buffering and other variables. Hatanaka (2003) suggests that regulating emotion has various reasons. Someone regulate their emotion to protect themselves, others regulate their emotion to consider situation surrounding them (Hatanaka, 2003). Protective buffering did not include the reason to do protective buffering, so, there were various effects on actor of protective buffering.

The scale sampled child-rearing couples and does not limit specific situation of marital conflict. There are two possibilities for use the scale on future research. First, the scale may be used for couples in other situation: couples with no kids, dual-earner couples or couples who care of the elderly. Second, the scale may be used for specific marital conflict in child-rearing couples: child-caring arrangement, unexpected schedule change.

We found some gender difference about the effect of the relationship-focused coping. Husbands who did avoidant style for relationship maintenance might sacrifice their own well-being. Wives who did active engagement had high marital satisfaction. Gender role

or cultural norm might effect on this difference. For example, Wasti and Cortina (2002) reported cultural difference of the coping with sexual harassment; Turkish and Hispanic American women reported more avoidance than Anglo American women. However, our one research could not conclude the result. Future research that includes these variables (e.g. perception of gender role, cultural characteristics) is required. At least, our research showed that necessity to take gender difference in account.

Limitation and Future Directions

The previous studies showed the tradeoff effect of relationship-focused coping for actor and their spouse. For example, wives' protective buffering was negatively related to their own well-being (Coyne & Smith, 1991), but positively related to husbands' (patients') efficacy (Coyne & Smith, 1994). Relationship-focused coping is coping for the relationship, so, pair analysis is required for future research.

Acknowledgment

References

Awata, S., Bech, P., Koizumi, Y., Seki, T., Kuriyama, S., Hozawa, A., Ohmori, K., et al.
(2007). Validity and utility of the Japanese version of the WHO-Five Well-Being Index in the context of detecting suicidal ideation in elderly community residents. *International Psychogeriatrics*, **19**(1), 77-88.

Awata, S., Bech, P., Yoshida, S., Hirai, M., Suzuki, S., Yamashita, M., Ohara, A., et al.
(2007). Reliability and validity of the Japanese version of the World Health Organization-Five Well-Being Index in the context of detecting depression in diabetic
patients. *Psychiatry and Clinical Neurosciences*, **61**(1), 112-119.

Christensen, A., & Shenk, J. L. (1991). Communication, conflict, and psychological distance in nondistressed, clinic, and divorcing couples. *Journal of Consulting and Clinical Psychology*, **59**(3), 458-463.

Coyne, J. C., & Smith, D. A. (1991). Couples coping with a myocardial infarction: A contextual perspective on wives' distress. *Journal of Personality and Social*

Psychology, **61**(3), 404-412.

Coyne, J. C., & Smith, D. A. F. (1994). Couples coping with a myocardial infarction: Contextual perspective on patient self-efficacy. *Journal of Family Psychology*, **8**(1), 43-54.

Dainton, M., & Stafford, L. (1993). Routine Maintenance Behaviors: A Comparison of Relationship Type, Partner Similarity and Sex Differences. *Journal of Social and Personal Relationships*, **10**(2), 255-271.

Hagedoorn, M., Kuijer, R. G., Buunk, B. P., DeJong, G. M., Wobbes, T., & Sanderman, R. (2000). Marital satisfaction in patients with cancer: does support from intimate partners benefit those who need it the most? *Health Psychology*, **19**(3), 274-282.

Hatanaka, M. (2003). Conversational utterance inhibitions and mental health. *The Japanese Journal of Psychology*, **74**(2), 95-103. (In Japanese with English abstract).

Hirayama, J. & Kashiwagi, K. (2001). Attitudes of married couples toward communication: Husband/Wife Comparison. *The Japanese Journal of Developmental Psychology*, **12**(3), 216-227. (In Japanese with English abstract)

Kato, T. (2000). Construction of the interpersonal stress-coping inventory for undergraduates. *Japanese Journal of Educational Psychology*, **48**, 225-234. (In Japanese with English abstract)

Kato, T.(2002). The development of the empathic coping scale and an assessment of the relationship of empathic coping to psychological well-being. *Japanese Journal of Social Psychology*, **17**(2), 73-82. (In Japanese with English abstract)

Kato, Y. & Kanai, Y. (2006). The effect of coping behavior with work-family conflict in dual-career couples. *The Japanese Journal of Psychology*, **76**(6), 511-518. (In Japanese with English abstract)

Kuijer, R. G., Ybema, J. F., Buunk, B. P., De Jong, G. M., Thijs-Boer, F., & Sanderman, R. (2000). Active Engagement, Protective Buffering, and Overprotection: Three Ways of Giving Support by Intimate Partners of Patients with Cancer. *Journal of Social and Clinical Psychology*, **19**(2), 256-275.

Langer, S. L., Brown, J. D., & Syrjala, K. L. (2009). Intrapersonal and interpersonal consequences of protective buffering among cancer patients and caregivers. *Cancer*, **115**(18), 4311-4325.

Morita, M. (2008). How escape-avoidance coping can be used to prevent stress responses. *The Japanese journal of health psychology*, **21**(1), 21-30

(In Japanese with English abstract).

O'Brien, T., & DeLongis, A. (1997). Coping with chronic stress: An interpersonal perspective. In B. H. Gottlieb (Ed.), Coping with chronic stress (pp. 161-190). New York: Plenum Publishing Corporation.

O'Brien, T. B., DeLongis, A., Pomaki, G., Puterman, E., & Zwicker, A. (2009). Couples

coping with stress. *European Psychologist*, **14**(1), 18-28.

Schumm, W. R., Paff-Bergen, L. a., Hatch, R. C., Obiorah, F. C., Copeland, J. M., Meens, L. D., & Bugaighis, M. A. (1986). Concurrent and Discriminant Validity of the Kansas Marital Satisfaction Scale. *Journal of Marriage and the Family*, **48**(2), 381-387.

Shoji, R. (2009) The meaning-making process in repeated marital conflicts among newlywed couples. *The Japanese Journal of Developmental Psychology*, **20**(3), 299-310 (In Japanese with English abstract).

Stafford, L., & Canary, D. J. (1991). Maintenance Strategies and Romantic Relationship Type, Gender and Relational Characteristics. *Journal of Social and Personal Relationships*, **8**(2), 217-242.

Sugawara, M. & Takuma, N. (1997). Assessment of marital intimacy: A review of self-rating scales. *Archives of Psychiatric Diagnostics and Clinical Evaluation*, **8**(2), 155-166. (In Japanese with English abstract)

Yanai, H., Kashiwagi, S., Kokusho, R. (1987). Construction of a new personality inventory by means of factor analysis based on Promax rotation. *The Japanese Journal of Personality*, **58**(3), 158-165. (In Japanese with English abstract)

Wasti, S. A., & Cortina, L. M. (2002). Coping in context: Sociocultural determinants of responses to sexual harrassment. *Journal of Personality and Social Psychology*, **83**(2), 394-405.

Self-Concept In Portuguese Students: Implications for Learning cnd Career Education

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Abstract:

Self-concept is a core construct to be studied by psychologists because of its important and functional role in human development (English & Chen, 2011; Harter, 1999). Self-representations are an important basis for guiding personal behavior in adolescence, because it relates to the students' performance expectations as well as to the goals and objectives individuals aim to achieve in several developmental domains (Boucher, 2011; English & Chen, 2011; Harter, 1999). Moreover, self-concept has been associated to academic performance, attitudes towards school, adjustment in school transition and to motivation (Marsh & O'Mara, 2008; Marsh & Yeung, 1997; Möller, Retelsdorf, Köller, & Marsh, 2011; Skaalvik, Valåns, & Sletta, 1994). This study aims to characterize and evaluate gender and age differences in the self-concept of a sample of 8th grade Portuguese students [306 students, 163 boys (53.3%) and 143 girls (46.7%), aged between 12 and 16 years old (M=13.28, SD=0.590)]. Students were administered the Piers-Harris Children's Self-Concept Scale (PHCSCS-2 - Piers & Herzberg, 2002; adapted. Veiga, 2006), designed to assess self-perceptions in terms of behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, and satisfaction and happiness. Results are discussed concerning its implications for learning and career education in adolescence.

INTRODUCTION

The study of self-concept has a long life and is considered one of the oldest areas of research in social sciences and humanities (Marsh and Hattie, 1996). However, only with the works of William James (1890) we are witnessing a psychological approach to this concept. For this author, self- concept includes all attributes that the individual can refer to as part of himself from his body, skills, possessions, home and family.

The interest in studying the self-concept comes from the fact that the same constitute the core of personality and existence, and be instrumental in the decision of the thoughts, feelings and behaviors. In general, Self-concept refers to a student's perceptions of competence or adequacy in academic and nonacademic (e.g., social, behavioral, and athletic) domains and is best represented by a profile of self-perceptions across domains. Relates the perception that the individual has of himself, and in specific terms, the attitudes, feelings and self-awareness about their abilities, skills, physical appearance and social acceptability (Byrne, 1984; Faria, 2002; Faria and Fontaine, 1990; Marsh and Hattie, 1996).

The self concept is understood as a construct of what the individual perceives and values of itself and that conforms to the framework of various socio-cultural experiences throughout the entire life cycle (Thompson, 1998). Self-concept as a construct comprising cognitive, affective, and behavioral dimensions (Garcia and Sanchez, 2009). The same turn has relevance for understanding the individual's interaction with its environment, since it fulfills tasks relating to self-regulation of behavior, motivation, self-efficacy, and so on (Pienda, Pérez, Pumariega, and García, 1997).

The importance of studying self-concept in adolescence is related to its predictive capability for the conduct of individuals in different realms of existence (e.g., academic, physical, social) (Faria, 2005; Lassance, 2005). Thus, adolescents who underestimate their capabilities have negative expectations about their future achievements, and as such, tend to avoid the action, to think that others expect less of them and realize their efforts and their investments as less regular and effective. In this sense, overestimate the stringency of the tasks of accomplishment and feeling more negative pressure and demands of different contexts, as well as pressure from significant others (parents, teachers, coaches, and particularly of pairs). The evaluation of itself leads to an underutilization of the potential individual and, often, lowers expectations on the part of others toward the individual, leading to the award of goals less challenging (Faria, 2005). We can thus understand that developing a good intra-individual level of self-concept will be beneficial for interpersonal relationship, since as a mediator of information processing in this cultural and social context, self-concept refers to a perception of self to influence the behavior of specific situations (Markus and Kunda, 1986; Simões, 1997). Moreover, self-concept has been associated to academic performance, attitudes towards school, adjustment in school transition and to motivation (Marsh and O'Mara, 2008; Marsh and Yeung, 1998; Möller, Retelsdorf, Köller, and Marsh, 2011; Skaalvik, Valåns, and Sletta, 1994).

The relationship between gender and self concept, according to Bernardo and Matos (2003), in most cases is consistent both with regard to differences or similarities between the sexes. Gender differences consistent with gender stereotypes seem to occur in specific facets whose main pattern reveals that females consistently report more favorable perceptions of their appearance and their competence.

METHOD

Participants

Participated in the study 306 students, 163 boys (53.3%) and 143 girls (46.7%), aged between 12 and 16 years old (M=13.28, SD=0.590), from three public schools (Primary Schools in the 2nd and 3rd cycles) of north of Portugal, two belonging to the municipality of Braga, and the other to the municipality of Viana do Castelo. The subjects attended the 8th grade. Table 1 presents sample distribution by sex and age.

Table 1. Sample distribution by sex and age

SEX	Age					Total	Mean	SD
	12	13	14	15	16			
Girls	3	123	31	6	0	163	13.28	.590
Boys	3	99	33	7	1	143		
Total	6	222	64	13	1	306		

Measures

The Piers-Harris Children's Self-Concept Scale (PHCSCS-2 - Piers and Herzberg, 2002; adapted. Veiga, 2006) is a brief mean of self assessment which was created in order to help evaluate the meaning of 'I' in children and adolescents. The data on the scale are marked in a positive or negative wording so as to show the dimension of this self-evaluation. The version used in this study was adapted and validated for the Portuguese population by Veiga (2006). The scale comprises of 60 questions. A number of sentences which state how various people feel about themselves are given to the children and they are then asked to mark with a yes or no whether these sentences relate or not to how they feel about themselves.

The Piers -Harris scale measures the attitudes of evaluation and the child's behavior. The main purpose of the scale is usually to give a global index of self-concept, but it can also be used as a means of promoting formulation of hypothesis and wider fields of clinical research. More specifically, this scale checks whether the self-concept of the child is negative or positive. In addition, it provides the ability to measure the following factors: behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, and satisfaction and happiness.

Procedures

Attempted to control the variable motivation, with the collaboration of the subjects as being enrolled in a national study of students in primary and secondary education, which aimed to understand and act in ways that prepare young people for various life roles. Furthermore, it was indicated that the race was voluntary and informed if students complete confidentiality of the individual results. The administration of the Piers-Harris Children's Self-Concept Scale was collectively and made by specialists, graduates in psychology, research collaborators, who have agreed to uniform administration procedures. Each child of the sample answered with a yes or no to the 60 questions of the Piers-Harris scale.

The analysis of the effects of age and sex self concept was held from calculations of average, standard deviation and variance analysis (t test and ANOVA) for the six indices of Piers-Harris Children's Self-Concept Scale. Results were considered statistically significant when the value of the significance test was less than .05 (p <.05).

RESULTS

Table 1 shows the average results obtained in PHCSCS-2. The results are presented either to the total sample, in function of age.

Table 1. Means and standard deviations (SD), dimensions of PHCSCS-2 in the total sample and in function of age.

Dimensions Self concept	Total			F
	N	Mean	SD	
Behavior	300	22.31	1.73	3.524*
Intellectual and school status	292	18.60	1.76	.346
Physical appearance and attributes	301	11.52	2.03	.491
Anxiety	301	12.71	1.90	3.027*
Popularity	301	16.99	1.70	1.129
Satisfaction and happiness	302	10.25	.78	.967

*$p \le .05$

The distribution of the results the sample demonstrate that the values obtained in PHCSCS-2 oscillate between the values obtained in the dimension Behavior (M = 22.31, SD = 1.73) and the size achieved in the satisfaction and happiness (M = 10.25, SD = 78). There was also the existence of a statistically significant level of Behavior (F = 3.524, p <.05) and Anxiety (F = 3.027, p <.05) in function of age.

Table2. Means and standard deviations (SD), dimensions of PHCSCS-2 by sex

Dimensions Self concept	Grils			Boys			t
	N	Mean	SD	N	Mean	SD	
Behavior	161	22.44	1.73	139	22.15	1.72	1.479
Intellectual and school status	153	18.50	1.90	141	18.69	1.59	-.941
Physical appearance and attributes	159	11.71	1.71	139	11.30	2.31	1.774
Anxiety	160	12.11	1.89	141	13.39	1.67	-6.135**
Popularity	160	16.76	1.84	142	17.24	1.48	-2.461*
Satisfaction and happiness	160	10.23	.75	142	10.26	.81	-.402

*$p \le .05$ **$p \le .01$

The analysis of Table 2 and 3 indicates also that the results are above the midpoint on all subscales the total sample and in samples of boys and girls. Furthermore, as shown in Table 2, there is also the existence of a statistically significant level of Anxiety (t = -6.135, p <.01) and Popularity (t = -2.461, p <.05), in favor of boys.

Table 3 allows us to analyze the effect of interaction between sex and age ratios in the PHCSCS-2, combining these data with results of the descriptive statistics of the indices of PHCSCS-2 by age and sex, listed in Table 2.

Table 3. Means and standard deviations (SD), dimensions of PHCSCS-2 by sex, and in the total sample

Age	Sex	Dimensions Self concept	N	Mean	SD	t
<=13	Girls	Behavior	125	22.56	1.61	1.311
		Intellectual and school status	118	18.50	1.95	-.617
		Physical appearance and attributes	123	11.79	1.69	.355**
		Anxiety	124	12.33	1.79	-5.744**
		Popularity	125	16.71	1.75	-3.235**
		Satisfaction and happiness	124	10.18	.75	-.466
	Boys	Behavior	100	22.29	1.53	1.311
		Intellectual and school status	99	18.65	1.50	-.617
		Physical appearance and attributes	101	11.09	1.82	.355**
		Anxiety	101	13.64	1.59	-5.744**
		Popularity	101	17.41	1.44	-3.235**
		Satisfaction and happiness	102	10.23	.84	-.466
>=14	Girls	Behavior	36	22.02	2.07	.482
		Intellectual and school status	35	18.48	1.78	-.757
		Physical appearance and attributes	36	11.44	1.76	-.600
		Anxiety	36	11.38	2.07	-3.125**
		Popularity	35	16.97	2.14	.344
		Satisfaction and happiness	36	10.38	.72	.231
	Boys	Behavior	39	21.79	2.10	.482
		Intellectual and school status	40	18.80	1.80	-.757
		Physical appearance and attributes	41	11.80	3.20	-.600
		Anxiety	40	12.75	1.72	-3.125**
		Popularity	40	16.82	1.51	.344
		Satisfaction and happiness	40	10.35	.735	.231

The analysis of Table 3 indicates that girls aged less than or equal to 13 years old present values of physical appearance higher than boys the same age. In turn, the boys presented higher levels of anxiety and popularity. In other dimensions, there are no statistically significant differences. Aged greater than or equal to 14 years old boys also have higher levels of anxiety. In other dimensions, there are no statistically significant differences.

DISCUSSION AND CONCLUSION

This study aimed to analyze the main results of students from the 8th grade in PHCSCS-2 and the same test differences by gender and age of the participants.

Overall analyzing, these results demonstrate a positive adolescent's self-concept, no negative factors were found above the midpoint of the range. The study results confirm the existence of statistically significant differences between boys and girls with regard to self-concept, but with the boys to present significantly higher values those girls only with regard to the dimensions of Anxiety and Popularity.

The results of the popularity dimension will meet the published reports that indicate a greater acceptance in the peer group and popularity for boys (Craft, Pfeiffer, and Pivarnik, 2003). When you see the differences in popularity among boys and girls according to age, we find that there is an only statistically significant difference in younger individuals, in favor of boys.

Interestingly, at the age of the older, these differences exist in order to better results for girls, however, not statistically significantly. These results run counter to other findings in the literature showing that self-concept changes with the years, although there is need for longitudinal studies to confirm this change (Saldanha, Oliveira, and Azevedo, 2011).

For the anxiety dimension, contrary to what are expected, the boys showed higher levels in all age groups. These results may indicate a potential change in social stereotypes (Saldanha et al., 2011), with the boys to feel less secure.

There were also significant differences according to age, with younger to submit values higher Anxiety and Behavior. This trend with age may relate to the increase of experiences that allow gain greater security (Piaget, 1977). These results also seem consistent with those found by Marsh (1989) emphasizing that the early years of adolescence are characterized by more negativity than the later years.

The younger girls also seem to present higher values, statistically significant in the dimension physical appearance than younger boys. These results are contrary to the results of studies conducted in the Portuguese context showing that adolescent girls have lower physical self-concept than boys in the areas of physical appearance and athletic competence (Faria and Fontaine, 1995; Fontaine, 1991).

When we analyze this dimension at the age of 14 years found that there are differences in favor of better outcomes for boys, but these values are not statistically significant. What may be related to the fact that girls age 14 having higher probability of value more the dimension of physical appearance, and feel more dissatisfied with it, which shows the divergence or discrepancy between appearance and perceived value this is attributed (Harter, 1993), emphasizing that the female body undergoes more changes, which are both more salient and explicit, such as the onset of menarche or first menstruation, which marks the entry into puberty: and these more visible changes in female body lead to greater changes and fluctuations in physical self-concept.

We conclude, by calling attention, to the need for the school to provide conditions for development to adolescents, so that they develop confidence in themselves, their individual capacities, intellectual and social skills.

Some methodological limitations of this study should be taken into account in the discussion of the results. The fact that the sample was reduced and heterogeneous in terms of grade, or middle school age and provenance, as well as the fact that it was applied to a single instrument, and was not used external criterion for assessing the external validity, are some of the weaknesses that exist in generalizing the results.

REFERENCES

Bernardo, R.P.S., and Matos, M. G. 2003. Desporto aventura e auto-estima nos adolescentes, em meio escolar. *Revista Portuguesa de Ciências do Desporto, 3*, 33-46.

Boucher, H.C. 2011. The dialectical self-concept II: Cross-role and within-role consistency, well-being, self-certainty, and authenticity. *Journal of Cross-Cultural Psychology*, 42, 1251-1271.

Byrne, B. 1984. The general/academic self-concept nomological network: A review of construct validation research. *Review of Educational Research, 54*, 427-456

Craft, L.L., Pfeiffer, K.A., and Pivarnik, J.M. 2003. Predictors of physical competence in adolescent girls. *Journal of Youth and Adolescence, 32* (6), 431-438.

English, T., and Chen, S. 2011. Self-concept consistency and culture: The differential impact of two forms of consistency. *Personality and Social Psychology Bulletin*, 37, 838-849.

Faria, L., and Fontaine, A.M. 1990. Avaliação do conceito de si próprio de adolescentes: adaptação do SDQ I de Marsh à população portuguesa. *Cadernos de Consulta Psicológica, 6*, 97-105.

Faria, L., and Fontaine, A.M. 1995. Reflexões sobre a adaptação de um instrumento de auto-conceito a crianças e pré-adolescentes: *Self-Perception Profile for Children (SPPC)* de Harter. In L.S. Almeida, and I.S. Ribeiro (Eds.), *Avaliação Psicológica: Formas e Contextos* (Vol. III, pp. 323-330).Braga: APPORT.

Faria, L. 2002. A importância do auto-conceito em contexto escolar. In C.M. Lopes Pires, P.J. Costa, S. Brites, and S. Ferreira (Orgs.), *Psicologia, Sociedade & Bem-estar* (pp. 87-98). Leiria: Editorial Diferença.

Faria, L. 2005. Desenvolvimento do autoconceito físico nas crianças e nos adolescentes. *Análise Psicológica, 23*, 361-371.

Fontaine, A.M. 1991a. O conceito de si próprio no ensino secundário: Processo de desenvolvimento diferencial. *Cadernos de Consulta Psicológica, 7*, 33-54.

Fontaine, A.M. 1991b. Desenvolvimento do conceito de si próprio e realização escolar na adolescência. *Psychologica, 2*, 1-19.

Garcia, J.A. and Sanchez, D.T. 2009. Collective Self-Esteem (pgs. 194-196). In Lopez, S. J. (Ed). *Encyclopedia of Positive Psychology.* London: Blackwell Publishing.

Harter, S. 1993. Causes and consequences of low self-esteem in children and adolescents. In R. F. Baumeister (Ed.), S*elf-esteem: The puzzle of low self-regard* (pp. 87- 116). New York: Plenum Press.

Harter, S. 1999. *The construction of the self: A developmental perspective*. New York: The Guilford Press.

James, W. 1890. *Principles of psychology.* Chicago: Encyclopedia Britannica.

Lassance, M.C.P. 2005. Adultos com dificuldades de ajustamento ao trabalho: Ampliando o enquadre da orientação vocacional de abordagem evolutiva. *Revista Brasileira de Orientação Vocacional, 6*(1), 41-51.

Markus, H., and Kunda, Z. 1986. Stability and malleability of the self-concept. *Journal of Personality and Social Psychology, 51*, 858-866.

Marsh, H.W., and Hattie, J. 1996. Theoretical perspectives on the structure of self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept: Developmental, social and clinical considerations* (pp. 38-90). New York: John Wiley & Sons. Marsh, H. W., Hey, J., Johnson, S., & Perry,

Marsh, H.W., and O'Mara, A.J. 2008. Reciprocal effects between academic self-concept, self-esteem, achievement and attainment over seven adolescent-adult years: Unidimensional and multidimensional perspectives of self-concept. *Personality and Social Psychology Bulletin*, 34, 542-552

Marsh, H.W., and Yeung, A.S. 1998. Longitudinal structural equation models of academic self-concept and achievement: Gender differences in the development of math and english constructs. *American Educational Research Journal, 35*, 705-738.

Marsh, H. W. 1989a. Age and sex effects in multiple dimensions of self-concept: preadolescence to early adulthood. *Journal of Educational Psychology, 81*, 417-430.

Möller, J., Retelsdorf, J., Köller, O. and Marsh, H.W. 2011. The reciprocal I/E model: An integration of models of relations between academic achievement and self-concept. *American Educational Research Journal, 48,* 1315 - 1346.

Piaget, J. 1977. *O julgamento moral na criança.* São Paulo: Editora Mestre Jou.

Pienda, J.A., Pérez, J.C., Pumariega, S.G., and García, M.S. 1997. Autoconcepto, Autoestima Y Aprendizaje Escolar. *Psicothema,9(2), 271-289.*

Piers, E.V. and Herzberg, D.S. 2002. *Piers-Harris 2, Piers-Harris Children's Self- Concept Scale, Second Edition*. Los Angeles, CA: Western Psychological Services.

Saldanha, A.A., Oliveira, I. C., and Azevedo, R.L. 2011. O autoconceito de adolescentes escolares. *Paidéia, 21(*48), 9-19.

Simões, M.F.J. 1997. Auto-conceito e desenvolvimento pessoal em contexto escolar. *Revista Portuguesa de Pedagogia, 1,2,3,* 195-210.

Skaalvik, E.M., Valåns, H., and Sletta, O. 1994. Task involvement and ego involvement: relations with academic achievement, academic self-concept and self-esteem. *Scandinavian Journal of Educational Research, 38,* 231-243.

Thompson, R.A. 1998. Early sociopersonality development. In W. Damon (Ed.) and N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 25-104). New York: Wiley.

Veiga, F.H. 1989. Escala de autoconceito: Adaptação portuguesa do "Piers-Harris children's self-concept scale". *Psicologia, 7*, 275-284.

Veiga, F.H. 1992. Disrupção escolar dos jovens em função da idade e do autoconceito. *Revista de Educação, 2*, 23-33.

Veiga, F.H. 1995. *Transgressão e autoconceito dos jovens na escola*. Lisboa: Fim de Século Edições.

Veiga, F.H. 1996. Autoconceito e rendimento dos jovens em matemática e ciências: Análise por grupos com diferente valorização do sucesso. *Revista de Educação, 5*, 41-53.

Veiga, F.H. 2006. Uma nova versão da escala de autoconceito: Piers-Harris Children´s Self-concept Scale (PHCSCS-2). Poster apresentado na XI *Conferência Internacional Avaliação Psicológica: Formas e contextos*. Braga: Universidade do Minho.

Personal Qualities: A Facet toward Acquisition of Counseling Professional Identity

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0163

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Abstract:

The emergence of counseling in Malaysia as well as in worldwide illustrates the importance and strong wave of positive acceptance and development in the helping professions. It is pointless to deny the bright prospective of the counseling profession. However, sharing the unity of professional identity among counselors is an intricate process due to divergent of its main facets, yet possible to acquire through tactfully consideration. In response to various facets, this study intent to examine one of the facets of professional identification, namely, personal qualities. The data collected from four different categories of samples or stakeholders that involve directly with the counseling profession in practice, which includes 1) client, 2) counselor, 3) employer, and 4) counselor educator. A list of personal qualities were identified as consensus prominent among samples and were analyzed in relation to core counseling psychology theories, support with past researches. Implications of the findings are discussed for counseling development and research, as well as counselor training.

Counselors have been referred as professional individuals who undergo training in knowledge, skills and techniques in counseling field. Besides competence, counselors are expected to mirror the title that they assumed to personalize with. In reality, one has to admit that counselors are facing several issues too. It is widely accepted that counselor impairment presents a problem in the counseling profession (Young & Lambie, 2007). Studies cited in the literature indicate that there were many issues experienced by counselors such as psychological distress (Smith, Robinson & Young, 2007), malpractice (Granello & Witmer, 1998), and feeling of incompetence (Theriault & Gazzola, 2006). These issues not only have a negative impact towards counselors, but it can be detrimental to the counseling profession as well. According to Cashwell, Kleist and Scofield (2009), professional counselors must show the clarity of their profession identity and be able to communicate the identity with other helping professions, one selves and public including clients and legislators.

Gibson, Dollarhide and Moss (2010) stated, professional identity is at the forefront of national awareness within the counseling profession. It is clearly stated in the American Counseling Association's (2009) 20/20: A Vision for Future of Counseling pointed out "sharing a common professional identity is critical for counselors". Similarly, in Malaysia, counseling development reached its first major milestone toward professionalization and gaining legitimacy when the parliament enacted the Counselors Act 1998 (See & Ng, 2010). Based on literature, identity of professionalism emerges when one involves in professional career. The starting point begin when one is getting accepted by a graduate training program (in Malaysia, training program of counseling begin at undergraduate), followed by completing and graduating via individuation process (Auxier, Hughes & Kline, 2003; Howard, Inman & Altman, 2006; Skovholt & Ronnestad, 2001). Next, the identity of professionalism is continuously developed as one enters the professional job and pursuing for licensing or certification for professional practices (Cashwell, Kleist & Scofield, 2009; Skovholt & Ronnestad, 2001). Therefore, the earliest part of acquiring counseling professional identity occurs as soon as one enter the counseling profession, which is as counselor-in-training. This process continues as long as one still attached in counseling career path. This is consistent with Brott and Myers (1999), noted that professional identity development is not a final outcome; rather it is an evolving perspective that spans a practitioner's professional career.

Counselors' identities differ from identities formed in many other professions because, in addition to forming attitudes about their professional selves, counselors develop a therapeutic self that consists of a unique personal blend of the developed professional and personal selves (Skovholt & Ronnestad, 2001). According to Reisetter, Korcuska, Yexley, Bonds, Nikel and Henry (2004), identity professional is self-labelled as a professional who possessed competence in profession, which is in line between profession view and personal worldview. Hence, Nugent and Jones (2009) defined counselor professional identity as integration between professional training and personal attribute in context of professional community. As can be inferred from these definitions, counselor professional identity seem to revolve around four facets: the profession field, individual who received training in profession, personal characteristic which is parallel with profession characteristic, and professional unity.

Although Gazzola, Smith, King-Andrews and Kearney (2010) proclaimed that diversification in professional roles is a characteristic of profession, Hanna and Bemak (1997) argued that counselor effectiveness depends more on the personal characteristics of the counselor than on schools, training, and theory. Many research have been done by other researchers in the past regarding the core characteristic of being a counselor for example emotional intelligence (Martin, Easton, Wilson, Takemoto & Sullivan, 2004), counselor's personal wellness (Roach & Young, 2007; Smith, Robinson & Young, 2007) gender and ethnicity (Ang & Lay, 2004), state and trait (Theriault & Gazzola, 2006). Overall, these characteristics have been related with the counselor's empowerment as well as counseling professional identity.

As stated by Brott and Myers (1999) professional identity serves as a frame of reference from which one carries out a professional role, make significant professional decisions, and develops as a professional, Gibson, Dollarhide and Moss (2010), specify that professional identity development process is both intrapersonal and interpersonal. Thus, one facet that underpins this development is personal characteristic which parallel with profession characteristic, or in other term as personal qualities. Wampold (2001) in Eriksen andMcAuliffe (2006) stated that the personal characteristic of the counselor have been demonstrated to contribute to counseling outcomes more so than the use of any particular techniques.

The search for personality trait that might predict counselor's effectiveness has varied in focus and in promise (Eriksen &McAuliffe, 2006). Despite the list of counselor characteristic studies, no studies have directly examined counselor's personal qualities especially in Malaysia by integrating different views of stakeholders who involve with the counselors. Thus, the purpose of this study was to identify the list of counselor's personal qualities from four different categories of stakeholders. In particular, the counselor's personal qualities were examined in two sets of list, which were the characteristic of qualities that counselors should have and the contrary set of the list.

Method

Participants

A total of hundred and thirty six participants who involve directly with the counseling profession in practice in Malaysia participated in the study. In order to get a holistic view of the counselors' personal qualities, data were collected from four categories of stakeholders, namely; clients, counselors, employers and counselor educators by using convenience sampling procedures. Overall, there were 63 male participants (46.3%) and 73 female participants (53.7%). Among the participants, 54.4 percent were clients, 22.8 percent were counselors, 12.5 percent were employers and 10.3 percent were counselor educators. The participants work in organizations including schools, hospitals, higher education institutes, non-government organization, community centers, and others such as non-profitable organizations. The participants' age distribution ranged between (as the sequence order before) under 15 and 50 years; between 21 and 55 years; between 26 and 55 years; and between 21 and 55 years.

Measures

All participating stakeholders completed a set of questionnaires consisting a demographic sheet, and a number of counselor characteristics which include various range of personal qualities. The list of personal qualities was obtained from literature review. Then, via pre-survey method, which was distributed in a small sample for each group of stakeholders, the list was being short listed into a total of 118 personal qualities. Next, the survey was done by asking the participants to choose the most suitable characteristic that represent the personal qualities of the counselors by selecting either 'yes' or 'no' response options.

Results and Discussions

Based on one hundred and eighteen characteristics of personal qualities, the collected data were presented in three clusters of responses which is 'All Yes' (sample from each stakeholders had approved the characteristics that suited the counselors); "Yes/No" (samples from each stakeholders had different consensus regarding the characteristics); and "All No" (each participant from four stakeholders had approved the characteristics were not fit for the counselors). Figure 1 presents an overall result of personal qualities counts related with three clusters of responses. Only twenty out of one hundred and eighteen counselors' personal qualities were accepted by clients as suitable characteristics. Whereas, stakeholder of counselors (82 out of 118), employers (85 out of 118) and counselor educators (89 out of 118) all together had agree to quite a high number from the total characteristics of counselor personal qualities.
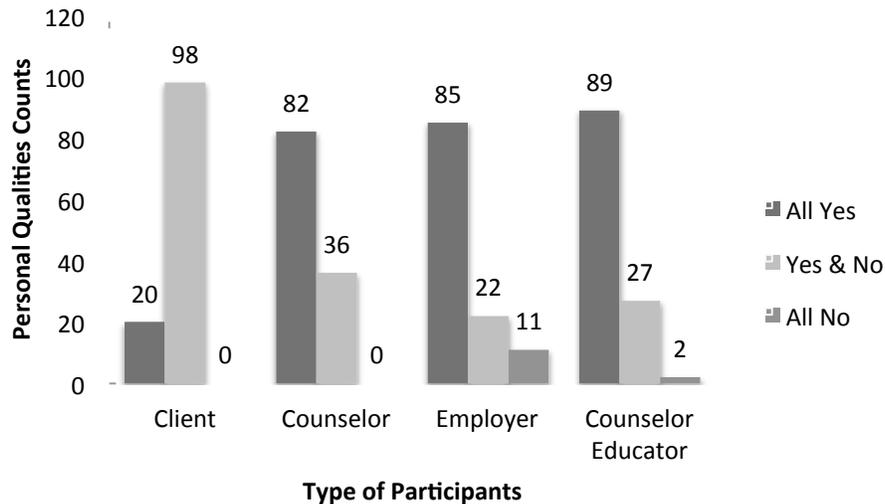
Figure 1: Overall result of personal qualities counts related with three cluster of response

Even though from the list, there is a number of negative qualities, neither from clients nor counselors perspective perceived them as bad qualities. According to Asma and Pederson (2003), Malaysia is a high context culture where people are less direct when they communicate with others. Malaysian believes that being too direct can be interpreted as rudeness and even offensive, particularly when they are stating a point of view which may not be well-received by others. This contextual culture paradigm may be imposed by clients and counselor stakeholders.

Unlike for the employers and counselor educators, the data showed that both had allocated some characteristics which were not appropriate for the counselors' personal qualities. The pattern of result may be due to position of the stakeholders. Both employers and counselor educators were someone who have higher rank in organizational status, compare with clients and counselors who were in subordinate status. This can be inferred that, both have an authority view about what was good or bad that may effect in their perception of counselors' personal qualities.

In view of counselor educator's stakeholders, two qualities that were not related with counselors' personality were extreme in action and neuroticism. Compare with the employers' stakeholder, besides those two characteristics, there were nine more additional inappropriate qualities, namely; dependent, bias, discrimination, gossiping, extreme criticism, rebellious, extreme in action, neuroticism, unsatisfied, and ego. Corey (2005) suggested that if counselors model incongruent behavior, low-risk activity, and remain hidden, counselors could expect their clients to imitate those behaviors. Apparently, Strong (1968) in Hagborg (1991) also stated that counselors are individuals who possess source characteristic which is a crucial element of client therapeutic progress. Therefore, those disapproval personal qualities may be viewed could give serious impact in counselors' services since counselors have been concede as significant person.

Table 1: Frequencies and Percentages of personal qualities that counselor should have

Personal Qualities	f	(%)
Believe that people can change; believe most people are basically good and striving for self improvement; respect and acceptance of others/ unconditional positive regard; helpful; empathy; self-acceptance; rational/ logic; resilience; mindfulness; positive; self-realization; self-compassion; stress management; self-discipline; warmth; openness; spirituality. [17]	136	(100.0)
Positive self-esteem; assertive; time management; honest; sincere; responsibility; willing to hear the difficulties of others; pleasant. [8]	135	(99.3)
Enjoy people; good decision making; maturity; relax; open to learning; courage to confront unavoidable difficulties; trustworthy; make honest assessment on self; flexible; fair; futuristic. [11]	134	(98.5)

Frequencies and associated percentages of prominent counselor characteristics which were agreed among participants are presented in Table 1. There were seventeen personal qualities that all stakeholders (100%) reported as the most significant characteristics that counselors should possess. Basically, from the list, one theme can be emerged as an anchor in counselors' selves was trust. According to Asma and Pederson (2003), Malaysians believe that trust is important for people to want to work together. This focus of trust can be seen in socializing especially when they share a task, function or responsibility. In line with this, undoubtedly was a counseling relationship, which is one of the core services in counseling profession.

One hundred and thirty five participants (99.3%) perceived that positive self-esteem, assertive, time management, honest, sincere, responsibility, willing to hear the difficulties of others, and pleasant were qualities that could be internalized in counselors. Less than two percent stated that another eleven personal criteria not suitable for the counselors' personalities. The collected data was supported with Eriksen and McAuliffe (2006) review, in which they noted counseling program admittees who demonstrate empathy, tolerance, a sense of well being, social intelligence, self-esteem, and psychological mindedness are more likely to become effective counselors.

Table 2: Frequencies and Percentages of personal qualities that counselor should not have

Personal Qualities	f	(%)
Rebellious	127	(93.4)
Discrimination	126	(92.6)
Extreme criticism	124	(91.2)
Gossiping; neuroticism; ego	123	(90.4)
Extreme in action	121	(89.0)
Bias	120	(88.2)

With respect to pre-assumption of negative characteristics, no prominent consensus was found. This can be explained in tentatively that each stakeholder may have different ways of connection with counselors causing their divergent view of counselors' negative quality. A majority of the participants (93.4%) perceived that rebellious was unsuitable characteristic, followed with discrimination (92.6%) and extreme criticism (91.2%). According to Perry (1999) in Eriksen and McAuliffe (2006), intellectual and ethical development has correlation to counseling characteristic. This means that, counselors who are able to perform well in profession do not demonstrate themselves with low level of intellectual and poor in ethical such as having a sense of grudge, show partiality or make harsh judgment.

Of the one hundred and thirty six participants who involved in this study, one hundred and twenty three participants had agreed equally in statistical on three personal qualities, namely; gossiping, neuroticism and ego. About 89.0 percent of the participants indicated that extreme in action was not an appropriate criterion for the counselors and 88.2 percent not agreed with the

bias characteristic underpin the same reason. Overall, all top ranking negative personal qualities showed the opposite continuum of good personal qualities as be affirmed by all stakeholders.

Implications and conclusion

Counselors need to understand the elements that contribute to their own professional growth and development (Skovholt & Ronnestad, 2001). Therefore, by understanding the main criteria for personal qualities of counselor from this study, counseling professional identity can be viewed in Malaysia's context. Although the approvable characteristics basically were positive intrinsic traits in which were quite similar in literature, yet it showed its own uniqueness. Therefore, through refinement and extended research, the data could be used as a guideline for future pre-screening of students in counseling program as well as part of the basic professional personality that can be nourished while in training program. Eriksen and McAuliffe (2006) noted that it is imperative for counselor educators to discover and nurture those characteristics that might be necessary both to learn and to practice good counseling. Furthermore, counselors who possessed the personal qualities needed in counseling program could be easily trained. Consequently, the counseling profession identity will be known ubiquitously through potential counselors who have those salient characteristics. In conclusion, although counselors' personal qualities are a facet toward acquisition of counseling professional identity, both are intertwine dynamically in lifelong process.

Acknowledgement

In memory of Prof. Dr. Suradi Salim (the third author), one of the early pioneers in the development of counseling psychology in Malaysia. He was a wonderful mentor and friend to so many people in helping services and will be greatly missed.

References

Ang, R. P., & Lay, S. Y. (2004). Asian Secondary School Students' Help-Seeking Behavior and Preferences for Counsellor Characteristic. *Pastoral Care*, 40-48.

Asma Abdullah & Pederson, P. B. (2003). *Understanding Multicultural Malaysia: Delights, Puzzles and Irritations.* Kuala Lumpur: Pearson Prentice Hall.

Auxier, C. R., Hughes, F. R., & Kline, W. B. (2003). Identity development in counselor-in Training. *Counselor education and Supervision*. 43, 25-38.

Brott, P. E., & Myers, J. E. (1999). Development of Professional School Counselor Identity: A Grounded Theory. *Professional School Counseling*, 2 (5), 339-349.

Cashwell, C. S., Kleist, D., & Scofield, T. (2009). A Call for Professional Unity. *Counseling Today*, 60-61.

Corey, G. (2005). *Theory and Practice of Counseling and Psychotherapy.* (7th Ed.). Belmont, CA: Thomson Brooks/Cole.

Eriksen, K. P. & McAuliffe, G. J. (2006). Constructive Development and Counselor Competence. *Counselor Education and Supervision*. 45, 180-192.

Gazzola, N., Smith, J. D., King-Andrews, H. L., & Kearney, M. K. (2010). Professional Characteristics of Canadian Counsellors: Result of National Survey. *Canadian Journal of Counseling*. 44 (2), 83-99.

Gibson, D. M., Collete, C. T., & Moss, J. M. (2010). Professional Identity Development: A Grounded Theory of Transformational Tasks of New Counselors. *Counselor Education and Supervision*. 50, 21-38.

Granello, P. F., & Witmer, J. M. (1998). Standards of Care: Potential Implications for the Counseling Profession. *Journal of Counseling and Development*. 76, 371-380.

Hagborg, W. J. (1991). Adolescent Clients and Perceived Counselor Characteristics: A Study of Background Characteristics, Therapeutic Progress, Psychological Distress, and Social Desirability. *Journal of Clinical Psychology*, 477 (1), 107-113.

Hanna, F. J., & Bemak, F. (1997). The Quest for Identity in the Counseling Profession. *Counselor Education and Supervision*, 36, 194-206.

Howard, E. E., Inman, A. G., & Altman, A. N. (2006). Critical Incidents among Novice Counselor Trainees. *Counselor Education and Supervision*. 40, 31-46.

Martin, W. E. Jr., Easton, C., Wilson, S. Takemoto, M., & Sullivan, S. (2004). Salience of Emotional Intelligence as a Core Characteristic of Being a Counselor. *Counselor Education and Supervision*, 44, 17-30.

Nugent, F. A., & Jones, K. D. (2009). *Introduction to the Profession of Counseling.* (5th Ed.) Upper Saddle River, NJ: Pearson.

Reisetter, M. , Korcuska, J. S., Yexley, M., Bonds, D., Nikels, H., & McHenry, W. (2004). Counselor Educators and Qualitative Research: Affirming a Research Identity. *Counselor Education and Supervision*. 44, 2-16.

Roach, L. F., & Young, M. E. (2007). Do Counselor Education Programs Promote Wellness in Their Students?. *Counselor Education and Supervision*, 47, 29-45.

See, C. M., & Ng, K. M. (2010). Counseling in Malaysia: History, Current Status, and Future Trends. *Journal of Counseling and Development*. 88, 18-22.

Skovholt, T. M. & Ronnestad, M. H. (2001). Themes in Therapist and Counselor Development.

Journal of Counseling and Development. 70, 505-515.

Smith, H/. L., Robinson, E. H. M. III, Young, M. E. (2007). The Relationship among Wellness, Psychological Distress, and Social Desirability of Entering Master's-Level Counselor Trainees. *Counselor education and Supervision*. 47, 96-109.

Theriault, A. & Gazzola, N. (2006). What are The Sources of Feelings of Incompetence in Experienced Therapist? *Counseling Psychology Quarterly*, 19 (4), 313-330.

Young, M. E., & Lambie, G. W. (2007). Wellness in School and Mental Health Settings. *Journal of Counseling & Development*, 71, 203-209.
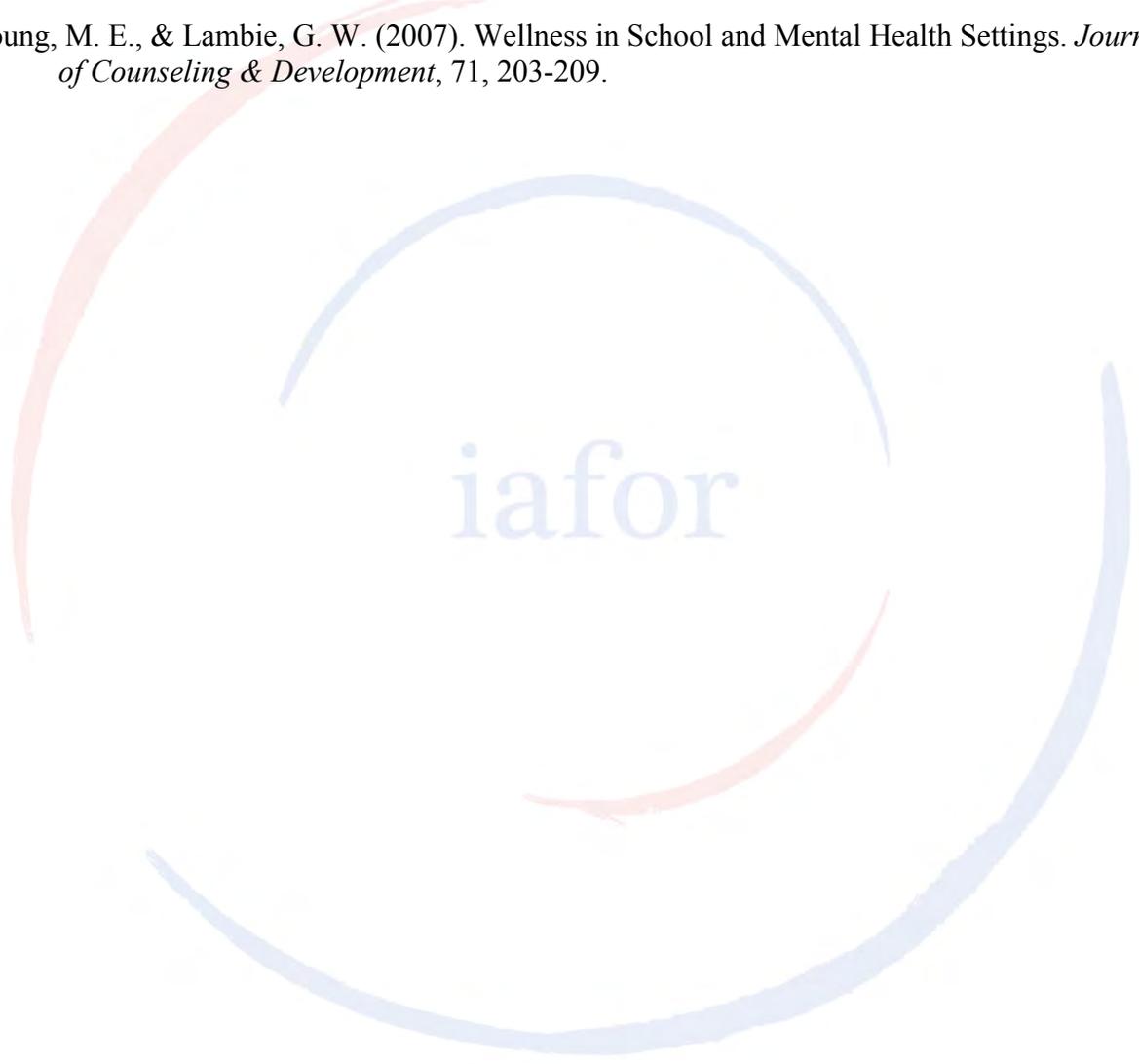
Effects of Classroom Teachers' Policies on Cyberbullying and School Bullying in Elementary, Junior High, and High Schools in Japan

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0183

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Abstract:

Introduction: In addition to the problem of school bullying, cyberbullying has become a topic of discussion in recent years. To prevent the problems of cyber and school bullying, the guidance of the classroom teacher is critical. This study examined the effects of the classroom teachers' policies on cyber and school bullying among elementary, junior high, and high schools in Japan by using a two-wave panel survey.

Method: Participants were classroom teachers (25 were 6th grade teachers, 58 were 8th grade, and 20 were 11th grade) and the students in their classes (6th grades, 8th grades, and 11th grades). The questionnaire was conducted in June and December 2010. The teachers were asked about their classroom policies using the scale (Suzuki et al., 2010). The students were asked about their ownership of personal computers (PCs) and mobile phones, and their cyber and school bullying experiences in the previous month using the scale (Suzuki et al., 2010). The class-wide average of that score was calculated for analysis.

Results: To conduct the ANCOVA analysis, the following factors were used: the teacher's policy in Session 1 was used as the independent variable, the class-wide cyberbullying score or the school bullying score in Session 2 was used as the dependent variable, as the covariate variables class-wide cyberbullying score or school bullying score in Session 1, and the ownership of a PC and a mobile phone were used. The results showed that some teaching policies reduced cyber and school bullying. However, there were fewer effective policies that decreased school bullying than that reduced cyberbullying, while certain policies increased school bullying.

Effects of Classroom Teachers' Policies on Cyber-bullying and School Bullying in Elementary, Junior High, and High Schools in Japan

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1. Introduction

The significance of the bullying problem in schools has been pointed out around the globe, with many research studies being conducted on the topic. Even in Japan, bullying has been viewed as a problem since the 1980's. The Ministry of Education, Culture, Sports, Science and Technology (MEXT; 2011) announced that out of the reported cases of bullying in 2010, there were 35,988 cases in elementary schools (36.6% of the elementary schools in Japan reported bullying), 32,348 cases in junior high schools (56.8% of schools), and 6,617 cases in high schools (40.6% of schools).

With the increasing use of the Internet, the problem of "cyber-bullying" has been increasing in every country, and researchers have investigated the characteristics of cyber-bully perpetrators and victims, as well as the incidence rate of cyber-bullying and victimization (Ybarra & Mitchell, 2004; Li, 2006; Juvonen & Gross, 2008). The rate of cyber-bullying and victimization reported varies among studies, but Mishna, Saini, and Solomon (2009) noted that many studies reported that 10–35% of students experience cyber-bullying. In addition to quantitative studies, qualitative investigations such as that of Mishna, Saini, and Solomon (2009) attempted to describe actual incidents of cyber-bullying.

In Japan, Utsumi (2010) found the experience rate of cyber-bullying to be 8% and that of victimization 7%. According to Suzuki et al. (2011), 0.8% of Japanese elementary school students, 3.4% of junior high school students, and 6.6% of high school students reported that they had experienced cyber-bullying within the past

month. In addition, according to Ministry of Education, Culture, Sports, Science, and Technology (2010), cyber-bullying increases with age, although cyber-bullying occurs less than do other forms of bullying, it is the third most frequent type at 16.8% for high school students.

In order to prevent cases of cyber-bullying, it is necessary to examine preventative factors. Kumazaki, Suzuki, Katsura, Sakamoto, and Kashibuchi (2011) focused on factors on the children's side. They indicated the preventative effect of netiquette, stating that when children had appropriate netiquette, cyber-bullying did not increase even when their media usage increased compared to when children did not have netiquette. Ybarra & Mitchell (2004), who studied parental upbringing, indicated that perpetrators of cyber-bullying had limited interaction with their guardians. Other studies such as Utsumi (2010), investigated the relationship between the children's parents' awareness of discipline and cyber-bullying. However, research studies on the preventative factors of cyber-bullying are still few. Furthermore, teacher's instruction could be considered as a preventative factor of cyber-bullying, in addition to netiquette – a factor on the children's side – and parents' upbringings.

In Japan, compulsory education is stipulated to be nine years; six years of elementary education in elementary schools and three years of secondary education in junior high schools are required by law. After the completion of the compulsory education, there are three years of higher education in high schools. As of 2010, 99% of students have progressed to high school (MEXT, 2011). The class system in Japan is developed, where children/students spend most of their day in classes with the members of each class more or less fixed during the year. Therefore, the roles demanded from the teachers in charge of these classes in bullying and cyber-bullying (hereinafter referred to as "classroom teacher") are large. Even in the Student Guidance Outline prepared by MEXT (2010), bullying is viewed as a significant issue and task for teaching students. Regarding the teaching staff's instruction methods, various measures for bullying and cyber-bullying have been proposed in addition to conventional bullying prevention (Kawamata, 2001; Yabe, 2008). However, there has been no examination of how teaching instruction by the classroom teachers relates to cyber-bullying or non-internet school bullying.

Therefore, this study will investigate the impact the instruction of classroom teachers has on cyber-bullying and school bullying using a

two-wave panel study. In a panel study (Finkel, 1995), the same subjects answer the same group of questions two or more times, with an interval between sessions. Performing the survey twice enables us to investigate the causal relationship of the influence exerted by independent variables in the first session on dependent variables in the second session.

This study investigated the impact the classroom teacher's policies made on their classes' cyber-bullying and school bullying by using a panel survey to investigate the causal relationship.

2.   Methods

2.1   Subjects

Using the city- and district-wise population information provided in Cities, Towns and Villages in Japan Handbook, 2008 Version (Cities, Towns and Villages Handbook editing committee, 2008), we divided the entire country into three population categories: cities with a population of (a) over 500,000, (b) 100,000–499,999, and (c) under 100,000. We randomly extracted 30 cities and districts at the upper limit of each category. From these cities and districts, we randomly extracted cities and districts for an elementary school, a secondary school, and a high school, totaling 175 cities and districts for elementary and secondary school (85 small cities, 57 midsize cities, and 33 big cities) and 123 cities and districts for high schools (60 small cities, 30 midsize cities, 33 big cities). Then, we randomly selected schools from cities and districts with a total of less than five schools and asked them to participate in our study. We sent information about the study to 690 elementary schools (202 in small cities, 220 in midsize cities, 268 in big cities), 812 secondary schools (295 in small cities, 222 in midsize cities, 295 in big cities), and 538 high schools (174 in small cities, 155 in midsize cities, 209 in big cities) in November 2009. This study involved surveys conducted with children and students as subjects (Suzuki & Sakamoto, 2011). At the same time as the children/students surveys were conducted,

randomly selected schools across Japan were asked to participate in this study.

Participants were classroom teachers (25 were 6th grade teachers, 58 were 8th grade, and 20 were 11th grade) in Session1 and 2. And 782 6th grade students, 1874 8th grade, 619 11th grade in Session1, and 697 6th grade students, 1814 8th grade, 630 11th grade in Session2 participated.

2.2 Questionnaires

2.2.1 Questionnaires with classroom teachers as subjects

The teachers were asked about their student instruction policies as classroom teachers in a format which required the subjects to select all the items that applied to them from 22 options, such as "when a child/student says something that is hurtful to other children/students within the class I'm in charge of, I try to reprimand the student immediately" (Chart 1). Question items were made by referencing literature by Yabe (2008), Yamawaki (2006), Mukouyama (2007), and Beane (2007).

2.2.2 Questionnaires with children/students as subjects

As a control factor, we asked whether they possessed a mobile phone and whether they lived in a house that has a computer connected to the Internet. Experience with cyber-bullying: Based on eight categories of cyber-bullying (Ono & Saito, 2008), 10 items were created for each category comprised of experiences as a bully (eight items) and encouraging cyber-bullying of someone from the same school (two items). Students were asked to choose all of those which they had experienced over the past month. "No experience at all" was included as an answer for those which had no experience with either.

After calculating the total points of cyber-bullying and bullying for each child/student respectively, the average value was calculated for each class. The result was then used as a cyber-bullying score and a school bullying score for that class. Experience with bullying as a

bully: Based on the items for experiences participating in cyber-bullying, 10 items were created for participation in bullying within the school, and one item each for both physical and indirect attacks were included for a total of 12 items. Instruction on choices for each item was the same as that for cyber-bullying experiences.

2.3   Procedure

The questionnaire was conducted in June and December 2010. Questionnaires for teachers and for students were enclosed in an envelope and sent to each school. Questionnaires for children/students were conducted during class. After the questionnaires were answered, they were put into an envelope and sealed tightly before being collected. The questionnaires for teachers were returned together with the ones for children/students.

3.   Results

3.1   The impact that the classroom teacher's teaching policy has on cyber-bullying and bullying in their class

An ANCOVA analysis was conducted in order to examine the influence of each teaching policy on cyber-bullying with each teaching policy of the teachers as the independent variable, the score for cyber-bullying in the class in the second survey as the dependent variable, and the PC and mobile phone possession rate as the covariate variables. The results are shown on Table 1.

The classes of teachers who responded that "they would immediately reprimand a child/student if they said something hurtful to other children/students within the class that the teacher is in charge of," had significantly fewer incidences of cyber-bullying in junior high school than in the classes of teachers who didn't respond so ($F = 6.10$, $p < .05$). The classes of teachers who responded that "they would try remind the entire class to be careful when a child/student said something hurtful to other children/students in the class that the teacher is in charge of," incidences of cyber-bullying were

significantly lower in elementary and high schools compared to the classes of teachers who didn't respond so ($F = 5.61$, $p < .05$; $F = 4.88$,

Table.1 Teaching policies for students (Classroom teacher)

	Elementary School		Junior high school		High school	
	Cyber-bullying	School bullying	Cyber-bullying	School bullying	Cyber-bullying	School bullying
When a child/student says something that is hurtful to other children/students in the class I'm in charge of, I try to reprimand the student immediately	.19	.36	6.10[*]	.22	.30	.45
When a child/student says something that is hurtful to other children/students in the class I'm in charge of, I try to remind the entire class to be careful.	5.61[*]	1.03	.00	2.26	4.88[*]	.18
I am often in the classroom that I am in charge of during recesses.	1.14	.51	1.91	1.87	.17	.14
During school lunch time (lunchtime), I try to be in the classroom that I'm in charge of until the end.	.49	8.09[*]	12.73[**]	3.76	-	-
I set out the food for school lunch with the children/students.	.39	7.54[*]	.23	1.11	-	-
When I am concerned about the state of a student of the class I'm in charge of, I try to	-	-	.30	.08	2.44	.03

talk to that student.						
I give support to children/students that are normally not active in class and school events (such as the athletic meet, cultural festivals, and choir competitions).	5.48*	10.06*	3.29	.28	.82	4.32
Even if there is trash on the floor of the class I'm in charge of, I do not call attention to it on the spot.	2.37	.14	.07	.22	-	-
Even if a child/student uses slightly strong language, I do not reprimand them at that particular moment.	.88	1.70	.07	.80	.01	1.14
When there is a dispute in the class, I try to oversee it in a way that children/students can resolve it themselves.	1.96	.04	.00	2.30	.45	.65
I tell guardians that if they notice that their children are behaving differently from usual, they should talk to their children's classroom teacher or their school.	.14	.84	.37	.07	.77	2.17
I tell children/students that if someone does something hurtful to them, they should talk to their classroom teacher or the school.	.08	1.88	.24	3.11	.08	.04
When there has been trouble between children/students of the class I'm in charge of, I try to liaise with the school nurse.	.03	2.01	.88	.01	7.51*	1.78
When there has been trouble between children/students of	.31	.70	.50	2.08	2.28	1.00

the class I'm in charge of, I try
to liaise with the school
counselor.

Table. 1 (Continued) Teaching policies for students (Classroom teacher)

	Elementary School		Junior high school		High school	
	Cyber-bullying	School bullying	Cyber-bullying	Cyber-bullying	School bullying	Cyber-bullying
When there has been trouble between children/students of the class I'm in charge of, I try to liaise with the educational guidance teacher.	2.76	.00	.00	.11	.49	.34
When there has been trouble between children/students of the class I'm in charge of, I try to liaise with other teachers from across different grades and subjects.	9.17**	14.33***	2.54	.30	2.73	.02
When there has been trouble between children/students of the class I'm in charge of, I try to liaise with other teachers from across different grades and subjects.	9.17**	14.33***	2.54	.30	2.73	.02
When there has been trouble between children/students of the class that I'm in charge of, I try to liaise with their guardians.	.00	.85	.02	.18	.51	3.23

I tell children/students on a regular basis that during classes I do not allow things such as repeatedly hurting specific students.	.08	7.80*	1.08	1.45	5.51*	2.58
By working together with teachers from the same grade, I come up with countermeasures against particular students getting hurt repeatedly.	1.27	.10	.91	.95	2.76	1.96
I conduct life questionnaires with children/students in the class or the entire class year at times.	.43	1.68	2.35	1.74	.01	.09
When deciding something in class, I ensure students won't get into groups only with other students they like.	.66	.00	.41	.34	4.27	.09
In the classroom, I try to incorporate as many group activities and learning tasks as I can.	.17	.14	.77	4.57*	10.56**	8.71**

Note 1: * represents p < .05, ** p < .01, and *** p <.001 respectively

$p < .05$).Concerning school lunch time, the classes of teachers who responded positively to the question of whether they stayed in the class that they are in charge of until the end had significantly lower incidences of bullying in elementary school ($F = 8.09$, $p < .05$), while incidences of cyber bullying were significantly lower in junior high schools ($F = 12.73$, $p < .01$). Concerning the responses to the question of whether the subjects set out the school lunches with their children/students, the classes of teachers who answered positively had significantly lower incidences of school bullying ($F = 7.54$, $p < .05$). The classes of teachers who answered that they try to support children/students who are normally not active to be active in class and at school events had significantly lower cyber-bullying and school-bullying in elementary school than in classes of teachers who didn't respond positively ($F = 5.48$, $p < .05$; $F = 10.06$, $p < .05$).

Concerning the responses to the question of whether the subjects tried to liaise with the school nurse when there was trouble between children/students of the class that they are in charge of, classes of teachers who answered positively had significantly lower cyber-bullying in high schools ($F = 7.54$, $p < .05$). Classes of teachers who replied that "they tried to liaise with other teachers across different grades and subjects when there was trouble between children/students of the class that they are in charge of," had lower incidences of cyber-bullying and school-bullying in elementary schools than in the classes of teachers who didn't respond so ($F = 7.54$, $p < .05$). The classes of teachers who responded by saying that "they aim to tell children/students during class on a regular basis that they do not allow repeatedly hurtful behavior to specific students," had significantly higher incidences of school bullying in elementary schools and cyber-bullying in high schools, compared to the classes of teachers who didn't respond so ($F = 7.80$, $p < .05$; $F = 5.51$, $p < .05$). Concerning classes, the classes of teachers who responded saying "they try to incorporate as much group activities/learning as possible," had significantly lower incidences of cyber-bullying in junior high school and cyber-bullying and school bullying in high school compared to classes of teachers who didn't do so ($F = 4.57$, $p < .05$; $F = 10.56$, $p < .05$; $F = 8.71$, $p < .01$).

4. Discussion

This study investigated the effects the homeroom teacher's teaching policies have on cyber-bullying and school bullying using a panel survey. The results showed that several teaching policies had the effect of decreasing cyber-bullying and school bullying. Although these effects differed depending on the school types, instruction methods that inhibited both cyber-bullying and school-bullying were that of supporting students who are usually not active during events and incorporating group studies. Other instruction, methods except for these two, suppressed either cyber-bullying or school bullying,

but not both. Instruction concerning bullying has been a vexing issue for teachers for over thirty years.

However, several teaching instruction methods were effective in decreasing bullying. These two teaching instruction policies are not often indicated in overseas bullying programs and these policies are seen as policies unique to the Japanese schooling system.

On the other hand, staying in the class during school lunch time till the end and telling classes that hurting specific children/students is not allowed had the inverse effect of increasing cyber-bullying and school bullying. Since the instruction method of staying in the class till the end of school lunch time had the effect of decreasing cyber-bullying in junior high school, further examination is necessary.

However, telling the class that hurting specific children/students on a regular basis is not acceptable had the effect of increasing cyber-bullying or school bullying in elementary and high schools. This result suggests the difficulty of classroom instruction. Expressing the attitude of not permitting bullying in order to educate an attitude of not allowing bullying is a method conducted in various bullying prevention programs, such as the Olweus Preventing Bullying Program (Olweus, 1993, 1999), and thus, is believed to be an important method. Furthermore, it was believed that telling the entire class "to be careful when the students/children of classes the teacher was in charge of say something hurtful to other children/students," was similar to the attitude of not permitting bullying; however, this instruction had the effect of decreasing cyber-bullying. Messages of not allowing bullying may generate a feeling of rebellion among children/students depending on the situation. Further examination is necessary. Moreover, even if a negative effect of instruction existed, it is extremely difficult for one classroom teacher, who is in charge of as many as 40 children/students, to tackle the issue of bullying and shoulder the responsibility of it alone. Adults who support classroom teachers are necessary. As indicated by researchers as Yabe (2008), an ideal structure is one in which guardians and the school tackles bullying as a whole.

For cyber-bullying, several types of instruction indicated having the effect of decreasing cyber-bullying regardless of the school types. However, for school bullying, although there was instruction that decreased school bullying in elementary schools, there were no instruction methods among junior high and high schools that decreased school bullying other than that of incorporating group learning. While cyber-bullying is a phenomenon that begins for the first time during junior high and high schools, when the possession of communication tools spreads, school bullying is a phenomenon that starts during elementary school, or even before elementary school. Therefore, intervention and guidance at an early stage have an effect. However, it is difficult to anticipate their effects in other instances. Therefore, early intervention is needed.

In this study, the subjects were each asked about their instruction through each question item. Although there are limitations, such as the considerable possibility of errors being generated and the number of samples for elementary and high school being small, this study is significant in the sense that the causal relationship with the effects of teaching policies was clarified using a longitudinal survey regarding the effects policies have on cyber-bullying and school bullying. Further research is needed in future.

References

Bean, A.L. (2007) Ueda, S. (trans), The Bully Free Classroom: Over 100 Tips and Strategies for Teachers K-8, Tokyo Shoseki

Handbook of Statistics on Education, Culture, Sports, Science and Technology (2011 Edition) (2011)http://www.mext.go.jp/b_menu/toukei/002/002b/1305705.htm

Kawamata, Y. (2001). The key points of bullying-intervention and instruction, Child Psychology, June special issue, 95-100.

Kumazaki (Yamaoka), A., Suzuki, K., Katsura(Akasaka), R.,Sakamoto,A. & Kashibuchi, M. (2011a). Children's net usage and bullying (4) – The impact ICT skills and

information moral have on the Internet and the bullying experience at school – The Japanese Psychological Association 75th meeting (Nihon University) Essays, 1121.

Mukouyama, Y. (2007). Bullying can definitely be resolved – Practices of teachers who battle in the field, Fusosha

Olweus, D. (1993). Bullying at School. What We Know and What We Can Do. Oxford: Black-well.

Olweus, D. (1999). Sweden, In. P. K. Smith, Morita, J. Junger-Tas, D. Olweus, R. Catalano, & P. Slee, (Eds)(1999). The Nature of School Bullying: A Cross-National Perspective, London & New York: Routledge.

Suzuki, K. and Sakamoto, A.(2011). 2011 Collaborative Research Report, Study on Internet Usage and its Relationship with Bullying, Mitsubishi Research Institute

The Ministry of Education, Culture, Sports, Science and Technology (2011), On "Research related to issues on instructing students such as school children's problematic behaviors" <http://www.mext.go.jp/b_menu/houdou/23/08/__icsFiles/afieldfile/2011/08/04/1309304_01.pdf> (2012. 2. 26)

Uchiyama, K. (2008). How to Deal with Bullying, Child Psychology, 62, 133-139.

Yabe, T.(2008). "Bullying" Countermeasures Full of Mistakes, PHP Institute

The Role of Body Image to Marital Satisfaction Mediated by Sexual Frequency and Sexual Satisfaction of Young Adult Women In Indonesia

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Abstract:

This study examined the role of body image on marital satisfaction in young adult women mediated by sexual frequency and sexual satisfaction in Indonesia. The current study is replicating Meltzer and McNulty's study (2010) about body image and marital satisfaction in women and their couple in USA. However, since in Indonesian culture men in general do not share sexual issues outside the household, this study only included women without their spouses. We predicted that body image would increase sexual frequency thus sexual satisfaction and marital satisfaction. Participants were 98 women age 20-40 years old (M=29.73 years). Data were collected using Body Esteem Scale (Franzoi & Shields 1984), Pinney Sexual Satisfaction Inventory (Pinney, Gerrard & Denny 1987) and Semantic Meaning Differential (Osgood, Suci, & Tannenbaum 1957). Results showed that body image variables (sexual attractiveness, weight concern, and physical condition) directly affected marital satisfaction (R^2= 0.205). There was no body esteem components that influenced sexual frequency. However, sexual attractiveness directly influenced sexual satisfaction and marital satisfaction. Weight concern directly influenced marital satisfaction but did not influence sexual satisfaction. Physical condition did not influence both sexual satisfaction and marital satisfaction. Body image variables did not affect marital satisfaction through sexual frequency, which is different from Meltzer and McNulty's study that American women's body image affected marital satisfaction through sexual frequency, and then sexual frequency affected sexual satisfaction.
Key words: Body image, marriage, sexual frequency, sexual satisfaction, marital satisfaction

THE ROLE OF BODY IMAGE TO MARITAL SATISFACTION MEDIATED BY SEXUAL FREQUENCY AND SEXUAL SATISFACTION OF YOUNG ADULT WOMEN IN INDONESIA

INTRODUCTION

Body image simply define as "*a person's perceptions, thoughts and feelings about his or her body* (Grogan 2008 p. 4). Striegel-Moore and Franko (2002, p. 183) added that people's feeling about their body affect their other aspects of life, "*body image is a multidimensional concept, disturbances may entail a negatively distorted view of one's appearance, body image dissatisfaction, or overevaluation of one's appearance in defining sense of self. Body image concern can adversely affect psychological well being and quality of life*". Furthermore   Pelusi (2006, p. 32) that said the body image also encompasses a person's feeling of "*wholeness, functionality, and ability to relate to others*". Therefore, body image is a complex issue, it is not only about a person's judgement about the body but also the connectivity between a person's body and the relation to others.

Body image issue is common in women (Shomaker & Furman 2007). Generally, women have more negative body image than men (Banfield & McCabe, 2002). Body image, especially body dissatisfaction in women is influenced by weight (Phillips & de Man 2010), media (Cheng & Mallinckrodt 2009; Stice & Shaw 1994), family (Pole, Crowther & Schell 2004), women in same age that criticised of not being thin (Shomaker & Furman, 2007; Kaschak 1992), evaluated more positive by men of having a slim body (Singh & Young 1995) and also partner in a close relationship (Tantleff-Dunn & Gokee 2002). All this pressure to women to become thin and slim has lead women to have "*a normative discontent*" about their body (Silberstein, Striegel-Moore & Rodin 1987).

The pressure towards women to be slim could affect them physically and mentally, like anxiety (Fredrickson & Roberts 1997) and depression (Thompson, Heinberg, Altabe & Tantleff-Dunn 1999), also low self-esteem (Olivardia, Pope, Borowiecki, & Cohane 2004). Then it also can lead women to have extreme diet (Stice, Mazotti, Krebs & Martin 1998), eating disorder (Stice, Chase, Stormer & Appel 2001) and also substance use that can help performance improvements (Olivardia, Pope, Borowiecki, & Cohane 2004).   Women's negative body image evaluations could also impact their marital satisfaction through decresing sexual frequency that connected to sexual satisfaction (Meltzer & McNulty 2010), sexual satisfaction it self (Pujols, Meston, & Seal 2010; Hoyt & Kogan 2001), and their interpersonal relationships (Feingold 1992).

In marital relationship, husband's evaluation in physical appearence is very important to women's body dissatisfaction (Pole, Crowther & Schell 2004). Women who dissatisfied with their body thought that their husbands felt more dissatisfied compared to the real evaluation from their husbands about their body (Markey, Markey & Birch 2004; Markey & Markey 2006). It seems women's evaluation about their own body and physical appearance determined by others especially by their closest persons such as their husbands and it becomes more important in young adult marriage women, because in this stage, their major developmental issue is making intimacy to their partner (Newman & Newman 2006).

Most cultural norms connect women's body with sexuality. Women's bodies are looked at, evaluated, and sexualized with greater frequency (Frederickson & Roberts 1997). In those cultures, attractive women is constructed as slim, not fat, and beautiful-bodied so women think that these images will please others and particularly men, women think that it

will increase men's sexual arousal to them and it will satisfy their partners sexually (Melliana 2006).

Furthermore, women with poor body image could withdraw from interpersonal relationship and activity that improve interpersonal closeness (Meltzer & McNulty 2010). There is positive significant relation between sexual function, sexual satisfaction and women's body image in age 18-49 years in Texas (Pujols, Meston & Seal 2010). Women with positive self-concept about their body tended to have sense of confidence that their partners would judge them as sexually attractive (Wade 2000) and they were sexually desirabled by their partners (Wiederman & Hurst 1998). Whereas women with negative feelings about their body would get anxious with their intimate relationships (Cash, The´riault & Annis 2004) and doubt that their partners wanted them sexually (Franzoi & Shields 1984). Further, poor body image was related with the declining of sexual satisfaction (Seal, Bradford, & Meston 2009), low sexual assertivity (Weaver & Byers 2006), and lack of sexual activity (Faith & Schare 1993), unsatisfying sexual life (Hoyt & Kogan 2001) and perceived themselves as unskilled sexual partners (Holmes, Chamberlin & Young 1994).

It is clear that body image is related to people's satisfaction in their sexuality and at the end could contribute to their marital satisfaction. Indeed, sex has two main issues: sexual satisfaction and sexual frequency. Sexual satisfaction was the most important aspect in marital satisfaction (Haavio-Mannila & Kontula 1997; Lawrence & Byers in Christopher & Sprecher 2000, Miracle, Miracle & Baumeister 2002). A happy marriage is often associated with fulfilling sexual activity (Laumann, Gagnon, Michael & Michaels, in Cheung, Wong, Liu *et al.* 2008). Holmberg, Blair, dan Phillips (2010) found that sexual satisfaction was a predictor of relationship well-being in women. Sexual satisfaction was one of specific aspects in marriage that contributed to happy marriage and also could predict the stability of the relationships (Sprecher & Cate 2004). Sprecher and Cate (2004) also said another aspect from sexuality in marriage that had a role in marital satisfaction was sexual frequency, a happy marriage was characterized with higher sexual frequency.

There are different views of sexuality in relation to gender in different cultures, it is called sexual script. Sexual script is a treatment, rule and expectation with some specific roles, particularly how people behave sexually according to their gender (Strong, *et al.* 2010). Barbach (in Strong, *et al.* 2010) mentioned some examples of women's sexual script, such as, women are expected to be passive, awaiting to be stimulated, could not say what they wanted in sexual activities, men take the lead, women should perform like a model with slim hips, beautiful breasts, do not have any fat or cellulite. Women's bodies are objectified to satisfy men. Brilianti's (2010) study with 10 women about the meaning of beautiful and sexy showed that women evaluated of their own body as beautiful and sexy but their purpose was to win their husbands' heart.

In general, Indonesia still follow patriarchy concept that men should be the leader in the household and in interpersonal relationships. Women are expected to be passive in their sexual life (Brilianti 2010). However, gender equality is widespread that enable the role equality in men and women, in Indonesia the expectation that men should be breadwinner and work outside their homes, and women should only take care for their children and domestic chores, slowly have replaced. It is common now that men take care of their children and do domestic works, and women also could work outside their homes. It seems that sexuality has moved far away from traditional to become modern. This is according to Adriana Venny (in Brilianti 2010) because of the fact that sexual information become more open. Now women are not passive anymore, there is mutual participation among women and

men in sexual activity, and sex is not only for reproduction but also for recreation and relation. The change of gender and sexuality is particularly seen in upper and middle class people. However, it is important to test the statement that the culture has changed to become modern in Indonesia, that women have equal role in sexual activity. Research about body satisfaction in relation to sexual satisfaction and marital satisfaction of Indonesian marriage women is important, for cross-cultural comparison.

The aim of this study is to examined the effect of body image towards marital satisfaction mediated by sexual frequency and sexual satisfaction in women age 20-40 years old (young adults). This study predicted that body image will increase sexual frequency then also increase sexual satisfaction and so marital satisfaction. The relation between variable explained in this framework:
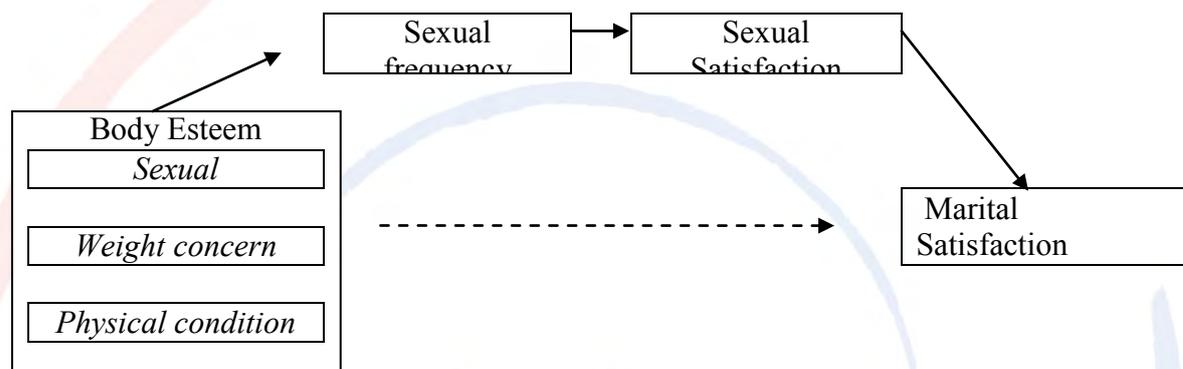
Picture 1. Frame work of the Role of Body Image to Marital Satisfaction Mediated by sexual Frequency and Sexual Satisfaction in Women Age 20-40

METHOD

Participants

Participants were recruited through non-random accidental sampling, ninety eight marriage women age 20-40 years (M= 29.73 years), had accomplished highschool, not pregnant (to avoid pregnancy problems that could affect sexual relationship and sexual frequency), and not in puerperium period because in this period they are forbidden to have sex.

Instruments

Body Image

Body Esteem scale from Franzoi and Shields (1984) was used to assess body image in 35 body parts and body functions. The questionnaire was translated into Indonesian language by two people with advanced English. Body esteem components in women were: (1) sexual attractiveness (body scent, nose and face), (2) weight concern (appetite, waist and weight), and (3) physical condition (physical stamina, physical coordination, health, and physical condition). The instrument use Likert Scale 1 (strongly dissatisfied) to 6 (strongly satisfied). The reliability for the body esteem scale was 0,901.

Sexual Frequency

Sexual frequency was assessed by one item question: How many times you do sexual intercourse in the last 30 days?

Sexual Satisfaction

Degree of sexual satisfaction was assessed by Pinney Sexual Satisfaction Inventory (Pinney, Gerrard, & Denny 1987) translated into Indonesian language by two people with advanced English. Originally the tools consist of 24 items (14 items about general sexual satisfaction, and eight items about sexual satisfaction with partner sense of sexual fulfillment). But in this study, the number of items used was only 13 that asking about general sexual satisfaction, 1 item was dropped ("I am satisfied with the frequency with which i have orgasms") because it seems too vulgar in Indonesian context. The example of the questions are " I feel satisfied with the frequency of sex with my partner", "I feel that there is nothing less in my sexual life" with scale 1 (strongly disagree) to 6 (strongly agree). Those items is cumulated so can make an index that showing higher result indicate higher sexual satisfaction. The reliability for the Pinney Sexual Satisfaction Index for this study was 0,946.

Marital Satisfaction

Marital satisfaction was assessed by modified Semantic Differential or SMD (Osgood, Suci, & Tannenbaum 1957), that was translated into Indonesian language by two people with advanced English. The original SMD consisted of 21 questions that asking participants to evaluate the relationships in marriage in pair of opposite adjectives (example: good-not good, satisfying-not satisfying) with range scale 1-6, higher score indicate higher degree of marital satisfaction. This study, only used 12 original questions from SMD, and 9 questions were modified from the original SMD due to language difficulties. The reliability for the SMD in this study was 0,972.

Demographic Data

Demographic data included   age, place of living, education level, work, weight, height, length of marriage, and whether they pregnant or not, and in puerperium period or not.

Procedure

Data were collected via printed and on line questionnaires. Data were analysed using multiple linier regression with significance $p \leq 0,05$.

RESULTS

Descriptive

Table 1. Descriptive Variable Statistics

Variable	Mean	Std. Deviasi	N
Participants Age	29,73	4,499	98
Length of marriage (in month)	56,72	58,690	98
Body Mass Index	23,045	3,8717	98
Marital satisfaction	108,09	18,391	98
Sexual frequency	8,31	6,057	98
Sexual satisfaction	61,03	10,727	98
Body esteem	162,96	19,161	98
Sexual Attractiveness	60,56	7,058	98
Weight Concern	40,04	8,244	98
Female Physical Condition	34,94	5,566	98

Regression

R	R^2	Adjusted R^2	Std. Error of the Estimate
0,453[a]	0,205	0,179	16,659

Table 2. showed that body esteem variables (*sexual attractiveness*, *weight concern* dan *physical condition)* affected marital satisfaction (R^2= 0. 205).

Table 3. Regression coefficient of Body Esteem, Sexual attractiveness, Weight concern and Physical Condition to Marital Satiscfaction

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Significance
	B	Std. Error	Beta		
Sexual attractiveness	0,954	0,268	0,366	3,557	0,001
Weight concern	0,454	0,239	0,204	1,897	0,061
Physical condition	-0,368	0,340	-0,111	-1,080	0,283

Table 3 showed that sexual attractiveness affected significantly marital satisfaction with (p= $\leq$ 0.05).

Table 4. The Influence of Body Esteem Components to Sexual Frequency, Sexual Satisfaction and Marital Satisfaction

	Sexual frequency		Sexual Satisfaction		Marital Satisfaction	
	ß	Sign	ß	Sign	ß	Sign
Sexual attractiveness	0,156	0,165	0,382	0,000	0,156	0,116
Weight concern	-0,118	0,310	0,067	0,512	0,203	0,035
Physical condition	0,215	0,056	-0,099	0,317	-0,120	0,199
Sexual frequency			0,350	0,000	0,090	0,322
Sexual satisfaction					0,448	0,000

Table 4. showed that there was no body esteem components that influenced sexual frequency. However, sexual attractiveness directly influenced sexual satisfaction and marital satisfaction. Weight concern influenced marital satisfaction but did not influence sexual satisfaction. Physical condition did not influence sexual satisfaction and marital satisfaction.

DISCUSSION

Body image in young adult Indonesian women in this study affected their marital satisfaction directly, the component was sexual attractiveness and weight concern. Sexual attractiveness was the body esteems's component that dealing with women's sense of attractiveness and own sexuality (Franzoi & Shields 1984). Moreover, Franzoi and Shields (1984) added that the sexual attractiveness components were the body parts related to sexual activity and frequently objectified from a women. The example of the body parts are lips, breasts, and genital. Those body parts have reproduction function and also have erotic role to attract partner (Strong, *et al.* 2005). If women do not feel confidence (shame and dissatisfaction) to their body, they report less secure in general attachment and more anxious about their romantic intimacy (Cash, Theriault and Annis 2004). Other research inline with the result of current study show that body image has important implications for multiple areas of psychological functioning and quality of life (Striegel-Moore & Franko 2002) and Pelusi (2006) said that body image also encompasses a person's feeling of wholeness and ability to relate to others. Nezlek (1999) found that women and men with more positive body image reported interactions that were more intimate with which they felt more confidence to have the relationships. Friedman, Dixon, Brownell, Whisman and Wilfley (1999) also said that marital dissatisfaction related to body dissatisfaction, they assume that a poor body image may result in avoidance in social situations that may put stress in marriage.

The second components of bode esteem that affected marital satisfaction was weight concern. This indicates that there is not only sexual other parts of women's body could affect relationship not only body part evaluated sexually but to the body part that can be changed by exercise and diet. Those body parts are appetite, waist, thigh, body shape, buttocks, hip, feet, posture, body size, appearance of stomach and weight (Franzoi & Shields 1984). According to Regan (2004) those body parts such as waist and hip are one of the feature of women's physical attractiveness. Nezlek's study (1999) also found that women body image, that is

social attractiveness (how attractive people believed others found them to be) were positively related to women's confidence in social interaction. It is inline with Cash,The´riault & Annis (2004) said that negative feelings about the body could make women anxious about the relationships particularly romantic relationships, moreover it could be the evidence that women's body are an important aspect for women to maintain their relationships to others.

The next finding in this study was body image affected marital satisfaction indirectly through sexual satisfaction but not sexual frequency. It was different with Meltzer and McNulty's study (2010), that body image affected marital satisfaction through sexual frequency then sexual satisfaction. It could be explain that in young adult women in Indonesia, their body image do not affected their sexual frequency. It is different with the previous studies that said, the positive body image in women could make them feel more confident that their partner will accepted them as sexually attractive (Wade 2000) and then sexually desirable (Wiederman & Hurst 1998), and women who reported negative feelings such as shame and dissatisfaction toward their body could make them doubts that their partners desired them sexually (Franzoi & Shields 1984) then could lead women to be less likely to desire, initiate, and engage in sex (Meltzer & McNulty 2010). There could be two possible explanations, first, it might be assumed that positive or negative body image do not highthened or weakened the frequency of sexual intercourse because it could be affected by traditional view of sexuality. Women with good body image could not initiate and women with poor body image could not less likely to engage the sexual intercourse because it still the men's role to decide. It could show us that the sexual script is still a strong believe that placing women in subordinate role. According to Brilianti (2010), even nowadays women in modern era, but based on her reserach, especially in sexuality women still put them self under their husband's concerns that willingness and desire in sexual activity is belong to them. Still from Brillianti's, the way women see and evaluate their body reflect that their position is still objects to serve their couples in sexual activity. The second explanation was for women in Indonesia, they put warmth, closeness, trust, affection and intimacy and also sexual outercourse like hugging, kissing, and touching some parts of the body more important than sexual intercourse in reaching sexual and relationship satisfaction (Melliana 2006). Melliana added that many women in Indonesia feel that emotional closeness (not necessary physical closeness through sexual intercourse) sometimes just enough to feel sexual satisfaction then after that they would feel tender and love their spouses and feel that their marriage was very happy.

Women's sexual satisfaction then affected to marital satisfaction. It is clear that sexual satisfaction in one of specific aspect in marriage that contribute to marital happiness and satisfaction, it is also supporting many research before that consistently showing positive significance relation between them (Sprecher & Cate 2004, Laumann, Gagnon, Michael & Michaels in Cheung, Wong, Liu *et al*. 2008; Haavio-Mannila & Kontula 1997; Purnine & Carey in Byers 2005). According to Brillianti's study (2010), women in Indonesia had feel the desire and sexual satisfaction in sexual activity. The desire and sexual satisfaction in sexual activity in women are the reflection of love and tender, it is for psychological need not physical (not like men goal in sexual activity that is for physical like orgasme), and women directed it for intimacy in the relationship to their couples. The body image component, the sexual attractiveness, which is affected sexual and marital satisfaction show us that women in Indonesia has great emphasis in determining their body in term of sexuality that is affected their sexual satisfaction and marital satisfaction.

STUDY LIMITATION

This research do not control other factors that can contribute to women's body image such as self esteem and neuroticism, that the results show here could be still affected by those variables. The use of on line research also have limitation for the women who fill the questionnaire, we do not really know how exactly the criteria of participants and the person meets in internet. The other limitation of current study is the limited number and regions of the participants that only from big cities and urban area.

FUTURE RESEACH

Some suggestions for future research that they should include other variables such as self esteem and neuroticism so stonger connection could be the results. Participants from other areas of Indonesia is needed to get a wider results about body image, sexuality and marital satisfaction issue. The use of internet in collecting data in next research would be a good option but with optimum control for the participants of the study.

References

Banfield, SS & McCabe, MP 2002,'An evaluation and clinical implications of the construct of body image', *Adolescence*, vol 37, 373–394.

Brilianti, RA 2010, 'Women Sexuality: Struling to Become Subject in Heterosexual Relationships', Post-Graduate Program Theses. Women Studies Program, Post-Graduate of University Indonesia, University of Indonesia, Depok

Byers, E Sandra 2005, 'Relationship Satisfaction: A Longitudinal Study of Individuals in Long Term Relationships', *Journal of Sex Research*, vol. 2, issue 2, 113-118

Cash, TF, Theriault, J, & Annis, NM 2004, 'Body Image in an Interpersonal Context: Adult Attachment, Fear of Intimacy and Social Anxiety', *Journal of Social and Clinical Psychology*, vol 23, Special issue, 89-103.

Cheng, HL, & Mallinckrodt, B 2009, 'Parental Bonds, Anxious Attachment, Media Internalization, and Body Image Dissatisfaction: Exploring a Mediation Model', *Journal of Counseling Psychology*. vol.56, no 3, 365-375.

Cheung, MW-L, Wong, PWC, Liu, Ka Y, Yip, PS-F, Fan, SY-S, & Lam T-H 2008, 'A Study of Sexual Satisfaction and Frequency of Sex Among Hong Kong Chinese Couples', *Journal of Sex Research*, vol45, no 2, 129-139.

Christopher, FS & Sprecher, S 2000, 'Sexuality in Marriage, Dating, and Other Relationship: A Decade Review', *Journal of Marriage and the Family*, vol. 62, no 4, 999-1017.

Faith, MS & Schare, ML 1993, 'The role of body image in sexually avoidant behavior. *Archives of Sexual Behavior'*, vol 22, 345–356.

Feingold, A 1992, 'Good-looking People Are Not What We Think'. *Psychological Bulletin*, vol 111, no 2, 304–341.

Franzoi, SL & Shields, SA 1984 'The Body Esteem Scale: Multidimensional Structure and Sex Differences in a College Population'. *Journal of Personality Assessment,* vol 48, 173-178

Frederickson, BL & Roberts, TA 1997, 'Objectification Theory: Toward understanding Women's Lived Experiences and Mental Health Risks', *Psychology of Women Quarterly*, vol 21, 173-206.

Friedman, MA, Dixon, AE, Brownell, KD, Whisman, MA, & Wilfley, DE 1999, 'Marital Status, Marital Satisfaction and Body Dissatisfaction', *Int J Eat Disord* , vol 26, 81–85

Grogan, S 2008, *Body Image Understanding Body Dissatisfaction in Men, Women, and Chidren,* Routledge, New York

Holmberg, D, Blair, KL, & Phillips, M 2010, 'Women's Sexual Satisfaction as a Predictor of Well being in Same-Sex Versus Mixed-Sex Relationships'. *Journal of Sex Research,* vol 47, no 1, 1-11.

Holmes, T, Chamberlin, P, & Young, M 1994, 'Relations of Exercise to Body Image and Sexual Desirability among a Sample of University Students', *Psychological Reports*, 74, 920–922.

Holt, A, & Lyness, KP 2007, 'Body Image and Sexual Satisfaction: Implications for Couple Therapy', *Journal of Couple & Relationship Therapy* , vol. 6. no 3, 45-68

Hoyt, WD & Kogan, LR 2001, 'Satisfaction with Body Image and Peer Relationships for Males and Females in a College Environment'. *Sex Roles*, vol 45, no 3-4, 199–215.

Kaschak, E 1992, *Engendered lives: A new psychology of women's experiences*, Basic Books, New York

Haavio-Mannila, E & Kontula, O 1997, 'What Increases Sexual Satisfaction?', *Archives of Sexual Behavior* , vol. 26, no 4, 1-31

Markey, CN & Markey, PM 2006, 'Romantic Relationships and Body Satisfaction Among Young Women', *Journal of Youth and Adolescence*, vol 35, no 2, 271-279.

Markey, CN & Markey, P & Birch, LL 2004, 'Understanding Women's Body Satisfaction: The Role of Husbands', *Sex Roles*. Vol 5, no 3-4, 209-216.

Melliana, A 2006, *Menjelajah Tubuh Perempuan dan Mitos Kecantikan*. LKiS, Jogyakarta

Meltzer, AL & McNulty, JK 2010, 'Body Image and Marital Satisfaction: Evidence for the Mediating Role of Sexual Frequency and Sexual Satisfaction', *Journal of Family Psychology*, vol 24, no 2, 156-164.

Miracle, A, Miracle, T, & Baumeister, RF 2002, *Human Sexuality: Meeting Your Basic Needs*. Prentice-Hall/Pearson, Upper Saddle River, NJ

Newman, BM, & Newman, PR 2006, *Development Through Life : A Psychosocial Approach*. Wadsworth, Belmont, California

Nezlek, JB 1999, 'Body Image and Day-to-Day Social Interaction', *Journal of Personality,*

vol 67, Issue 5, 793–817

Olivardia, R., Pope, HG, Borowiecki, JJ, & Cohane, GH 2004, 'Biceps and Body Image: the Relationships Between Muscularity and Self Esteem, Deppression, and Eating Disorder Symptoms. *Psychology of Men & Masculinity*, 5, no 2, 112-120.

Osgood, CE, Suci, GJ & Tannenbaum, PH 1957, *The Measurement of Meaning.* University of Illinois Press, Urbana   .

Pelusi, J 2006, 'Sexuality and Body Image: Research on Breast Cancer Survivors Documents Altered Body Image and Sexuality', *Cancer Nursing*. Vol. 29, suppl 2, 32-38.

Phillips, N & de Man, AF 2010, 'Weight Status and Body Image Satisfaction in Adult Men and Women', *North American Journal of Psychology*, vol 12, no 1, 171-184.

Pinney, EM, Gerrard, M & Denney, NW 1987, 'The Sexual Satisfaction Inventory'. *The Journal of Sex Research*, vol. 23, no 2, 233-251

Pole, M, Crowther, JH & Schell, J 2004, 'Body Dissatisfaction in Married Women; The Role of Spuasal Influence and Marital Communication Patterns', *Body Image.* Vol 1, no 3, 267-278.

Pujols, Y, Meston, CM, & Seal, BN 2010, 'The Association Between Sexual Satisfaction and Body Image in Women', *J Sex Med ,* vol. 7, 905-916.

Regan, PC 2004, 'Sex and the Attraction Process: Lessons from Science (and Shakespeare) on Lust, Love, Chastity, and Fidelity', in JH Harvey, A Wenzel & S Sprecher (ed.), *The Handbook of Sexuality in Close Relationships,* Lawrence Erlbaum, New Jersey, 115-134

Seal, BN, Bradford, A, Meston, Cindy, CM 2009, 'The Association Between Body Esteem and Sexual Desire Among College Women', *Arch Sex Behav,* viewed 03 February 2011,<http://homepage.psy.utexas.edu/homepage/group/mestonlab/Publications/Seal_esteem_09.pdf>

Silberstein, LR, Striegel-Moore, RH & Rodin, J 1987, 'Feeling fat: A Woman's shame', In H. B. Lewis (ed.), *The Role of Shame in Symptom Formation,* Erlbaum, Hillsdale, New Jersey, 89-108

Singh, D, & Young, RK 1995, 'Body Weight, Waist-to-hip ratio, Breasts and Hips: Role in Judgements of Female Attractiveness and Desirability for Relationships', *Ethology and Sociobiology*, vol 16, 483-507

Shomaker, LB, & Furman, W 2007, 'Same-Sex Peers' Influence on Young Women's Body Image: An Experimental Manipulation', *Journal of Social and Clinical Psychology*, vol 26, no 8, 871-895

Sprecher, S, & Cate, RM 2004, 'Sexual Satisfaction and Sexual Expression as Predictors of Relationship Satisfaction and Stability', In Harvey, JH, Wenzel, A & Sprecher, S (ed.) *The Handbook of Sexuality in Close Relationships,* Lawrence Erlbaum, New Jersey, 235-256

Stice, E & Chase, A, Stormer, S, & Appel, A 2001, 'A Randomized trial of a Dissonance-Based Eating Disorder Prevention Program, *International Journal of Eating Disorders,* vol 29, Issue 3, 247-262

Stice, E , Mazotti, L, Krebs, M, & Martin, S 1998, 'Predictors of Adolescent Dieting Behavoirs: A Longitudinal study. *Psychology of Addictive Behaviors*, vol 12, no 3, 195-205.

Stice, E, & Shaw, HE 1994, 'Adverse effects of the media portrayed thin-ideal on women and linkages to bulimic symptomatology'. *Journal of Social and Clinical Psychology*, vol, 13, no 3, 288-308.

Striegel-Moore, RH & Franko, DL 2002, 'Body Image Issues among Girls and Women', in TF Cash & T Pruzinsky (ed.), *Body Image A Handbook of Theory, Research and Clinical Practice.* Guilford, New York, 183-191

Strong, B, DeVault, C, Sayad. BW & Yarber, WL 2005, *Human Sexuality Diversity in Contemporary America*. McGrawHill, New York

Tantleff-Dunn, S & Gokee, JL, 2002, 'Interpersonal Influences on Body Image Development', In TF Cash & T Pruzinsky, *Body Image A Handbook of Theory, Research and Clinical Practice*, Guilford, New York, 108-124

Thompson, JK, Heinberg, LJ, Altabe, MN, & Tantleff-Dunn, S 1999, *Exacting beauty: Theory, assessment and treatment of body image disturbance.* American Psychological Association, Washington, DC

Wade, TJ 2000, 'Evolutionary theory and Self Perception: Sex differences in Body Esteem Predictors of Self-perceived Physical and Sexual Attractiveness and Self Esteem. *International Journal of Psychology*, vol 35, no 1, 36-45

Weaver, AD, & Byers, ES 2006, 'The Relationships Among Body Image, Body Mass Index, Exercise, and Sexual Functioning in Heterosexual Women. *Psychology of Women Quarterly,* vol 30, no 4, 333–339

Wiederman, M, & Hurst, S 1998, 'Body Size, Physical Attractiveness, and Body Image among Young Adult Women: Relationships to Sexual Experience and Sexual Esteem, *The Journal of Sex Research,* vol 35, no 3, 272-281.

Health Care Utilization cnd Psychosocial Behavior kn Oral Cancer Patients

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Abstract:

Introduction: This study investigates the relative factors of health care utilization and psychosocial behavior in oral cancer surgery patients for different illness stages.
Materials and Methods: Oral cancer patients treated at Taichung Veterans General Hospital from January 2003 to December 2010 were retrospectively reviewed based on their medical records against 374 valid questionnaires. Multivariate Cox regression analyses of overall survival were conducted which included socio-demographic and clinical parameters (tumor stage and site, radical surgical, metastasis, pathological stage). The health care utilization as defined by claim rate and group utilization rate, followed by perceived health status.
Results: Oral cancer remains a lethal disease with a survival rate no better than 87% of cases diagnosed. We found that survivability was dramatically influenced by emotions after treatment. Oral cancer patients' main concern is to survival. To some patients, Depression, pain, anxiety, uncertainty, and worry about recurrence may emerge from diagnosis throughout their lives. Post-surgery care involves not only pain relief, but also spiritual and psychosocial support to patients and their families from diagnosis, throughout the treatment course.Thus the assessment of psychosocial behavior is considered an essential component of an oral cancer patient as well as the survival, morbidity and years of free-of-disease.
Conclusion: There is evidence that psychosocial adaptive improvement may reduce the risk of recurrences and second tumors in existing oral cancer patients.

Pathological stage

1. Introduction

Recently, the incidence of oral cancer in population has risen in Western countries, still very low compare to south Asia. It is estimated that around 43% of cancer deaths are due to tobacco use, unhealthy diets, alcohol consumption, inactive lifestyles and infection. According to the 2006 census areca nut and betel quid chewing among South Asian community, i.e. India, Taiwan,…etc., are the largest and one of the fastest growing minority groups in Canada by immigrants [1]. The habit of chewing areca nut and betel quid is a known risk factor for oral cancer [2, 3, 4].

Psychosocial adaptation is used in the fields of psychology and rehabilitation involving or relating to both the social and psychological aspects of a patient's life. Oral cancer patients' main concern is to survive firstly, even over a possible inferior functional deficit due to treatment [5, 6]. The patients must learn to live with uncertainty and often worry about cancer recurrence. Surgery may have left them with physical deformities and they may experience remaining side effects from medications. Depression, pain and anxiety may persevere after treatment ends. Anesthetic care involves not only pain relief, but also spiritual and psychosocial support to patients and their families from diagnosis, throughout the course of the disease.

It improves the quality of life of patients and their families, regard of the relative magnitude of health care utilization and expenditures [7, 8, 9]. Thus the assessment of the production of health of people with oral cancer through health care utilization and health promotion behavior is considered an essential component as well as the survival, morbidity and years free of disease [10,11,12]. Our objective is to find that the poor health status and habits have been associated with increased utilization of health care resources. However, lower socioeconomic status and bad life habits may further limit access to primary care in oral cancer population and it may cause to increase utilization of other categories of health care resources, such as hospitals [11,12,13,14]. The main purpose of this study was to identify how the psychosocial behavior influents the oral patients and the health care claim rates spend on these patients.

2. Materials and Methods

This article surveyed that the oral cancer patients were treated at Taichung Veterans General Hospital from January 2003 to December 2010. There were retrospectively reviewed based on their medical records against 374 valid questionnaires. Combined with the data we surveyed from the National Health Interview Survey conduced by the Bureau of Health Promotion and National Health Research Institutes in 2003 to 2010.

Multivariate Cox regression overall survival were conducted which included socio-demographic and clinical parameters (tumor stage and site, radical surgical, metastasis, pathological stage). The health care utilization as defined by claim rate, followed by perceived health status. Health care utilization was measured by claim rate per oral cancer patient – the total number of claims amount in a year divided by the total of number of oral cancer patients.

3. Results

A total of 374 patients were included for assessment with a mean age of 53 years (range 23-101years). There were 341 (91.18%) male patients and 33 (8.82%) female patients with a male to female ratio of 10.33:1 of the oral cancer patients were treated at Taichung Veterans General Hospital from January 2003 to December 2010. The majority of patients were cigarette smoking 294 (78.61%), betel quid chewing 271 (72.46%) and alcohol drinking 270 (72.19%). Follow-up

data was available for 293 patients and these patients were used in the analysis in Table 1.

Table 1. Patient characteristics

Variable (N=374)	Category	Case number (%)
Gender	Male	341 (91.18%)
	Female	33 (8.82%)
Age (years)	Less than40	47 (12.56%)
	40-49	104 (27.81%)
	50-59	111 (29.68%)
	60-69	74 (19.79%)
	70-79	26 (06.95%)
	80-more	12 (03.21%)
Marital status	Married or cohabiting	344 (91.98%)
	Single/ Divorced	27 (07.22%)
	Unknown	3 (0.80%)
Cigarette smoking	Yes	294 (78.61%)
	No	78 (20.86%)
	Unknown	2 (0.53%)
Betel quid chewing	Yes	271 (72.46%)
	No	98 (26.20%)
	Unknown	5 (1.34%)
Alcohol drinking	Yes	270 (72.19%)
	No	102 (27.27%)
	Unknown	2 (0.54%)
Employment status	Employed	277 (74.06%)
	Unemployed	64 (17.11%)
	Retired	33 (08.83%)
Education	Elementary school	152 (40.64%)
	Junior	98 (26.20%)
	High School	94 (25.13%)
	More than Tertiary	28 (7.50%)
	Unknown	20 (0.53%)
Tumor size	Less than 2 cm	150 (40.11%)
	2 to 4 cm	167 (44.65%)
	Larger than 4 cm	49 (13.1%)
	Unknown	8 (2.14%)
Pathological tumor status	T1-2	181 (48.4%)
	T3-4	112 (29.94%)
	Unknown	81(21.66%)
Pathological nodal status	Nx (no neck dissection)	7 (1.87%)
	N0-1	246 (65.77%)
	N2-3	39 (10.43%)
	Unknown	82 (21.93%)
Recurrence	Yes	231(61.76%)
	No	143(38.24%)

From Table 1 displayed the most patients with tumor size from 2 to 4 cm and 65.77% patients with Pathological nodal status N0-1 stage. It implied that patients had less sense of alertness.

Two dependent variables: recurrences and second tumor occurrence were used to measure the psychopathological disorders in patients. The independent variables consist of demographic variables (age, gender, years of education, marital status), clinical variables (time interval since diagnosis, stage of cancer, surgery /adjuvant treatment) and psychosocial predictors (social support, stress group, social desirability, physical change) were found to have a significant impact on survival, whereas psychosocial predictors were not the significant factors in Table 2.

Table 2 The impacts of psychopathological disorders in patients examined with recurrences and second tumor occurrences

Variable	recurrences	second tumor occurrences
Demographic variables		
Age	.00***	.03*
Gender	.01**	.08
Years of education	.10	.10
Marital status	.25	.47
Clinical variables		
Time interval since diagnosis	.00***	.00***
Stage of cancer	.38	.48
Surgery /Adjuvant treatment	.00***	.00***
Psychosocial predictors		
Social support	.99*	.65*
Stress group	.91	.05*
Social desirability	.23	.11
Physical change	.99	.88

***p＜.001; ** p＜.01; *p＜.05

We found that social support, surgery or adjuvant treatment, time interval since diagnosis and age are the significant factors impact on recurrences and second tumor occurrences.

We estimate the average cost of medical expenses required hospitalization day on suffering from tumors in a calendar year, First of all, medical expenses is divided by hospitalization number. According to the average number of hospital days, we estimate the average medical expenses by length of stay day roughly, the formula is arranged for the average medical expenses = the medical costs of hospital days / times hospital days (average number of days).

Table 3 shows the verage cost of hospitalization and medical expenses per day of cancer patients in a calendar year.

Table 3   The cost of cancer patients to inpatient care over the years   unit：USD

Year	average cost of hospitalization and medical expenses per day				
	Daily costs of 1~3 days (Average = 2)	Daily costs of 4~7 days (Average = 5.5)	Daily costs of 8~14 days (Average = 11)	Daily costs of 15~30 days (Average =22.5	the medical costs of hospital days
2003	363	214	198	186	240
2004	391	229	211	193	256
2005	413	243	225	205	271
2006	417	242	228	207	273
2007	420	244	231	210	276
2008	434	252	239	217	285
2009	437	259	244	221	290
2010	448	262	247	219	294
平均	415	243	228	207	273

Source: Statistical bulletin of the Department of Health - National Health Insurance Statistical
          Yearbook

Thereafter we selected the data from the National Health Interview Survey conduced by the Bureau of Health Promotion and National Health Research Institutes in 2003 to 2010 with respect to health care utilization behavior and the claim rate. We defined claim rate per patient as the total number of claims in a year divided by the total number of patients. According to each variable, controlling for sociodemographic and clinic status by means of univariate analysis is shown in the left columns in Table 4.

Table 4. The claim rate according to each variable

Variables	Category	Claim rate (p)*
Cigarette smoking	Yes	7.4 (0.0001)
	No	5.6
Betel quid chewing	Yes	9.2 (0.0001)
	No	4.1
Alcohol drinking	Yes	7.0 (0.0025)
	No	6.8
	Unknown	5.4
Employment status	Employed	4.7 (0.0050)
	Unemployed	4.2
	Retired	3.4
Tumor size	Less than 2 cm	6.3 (0.0001)
	2 to 4 cm	7.5
	Larger than 4 cm	11.9
	Unknown	8.2
Pathological tumor status	T1-2	9.2
	T3-4	12.3 (0.0001)
	others	7.6
Pathological nodal status	Nx (no neck dissection)	6.7
	N0-1	8.9
	N2-3	9.3 (0.0001)
	others	8.7

Table 4 shows that the larger tumor size of 4 cm, T3-4 stage of pathological tumor status and N2-3 stage of pathological nodal status were associated with higher claim rates than whose tumor size are smaller than 4 cm, T1-2 of pathological tumor status and N0-1 of pathological nodal status. In the meanwhile cigarette smokers and betel quid chewers were significantly higher different with no these habits but alcohol drinkers were slight higher than no alcohol drinkers.

The explanatory variable of health-related emotional functioning was calculated by using the Kaplan-Meier analysis in Table 5. The median follow up period for emotional functioning from patients was 12-60 months. Personality disorders and sleep disturbance were independent emotional factors for survival rate significantly.

Table 5. Pearson's correlation among survival duration and emotional functioning after treatment

Emotional functioning (N=316)	Patients (%)		Survival rate %
Adjustment disorders			
anxiety	56	(20.9%)	17.7%
depression	64	(23.1%)	20.3%
mixed emotional features	156	(49.4%)	49.4%
Phobias	26	(7.6%)	8.2%
Personality disorders	8	(2.2%)	2.5%*
Generalized anxiety disorder	121	(51.6%)	38.3%
Major depression	2	(0.6%)	0.6%
disorientation	4	(1.3%)	1.3%
mood pattern change	194	(63.9%)	61.4%
Sleep disturbance	14	(4.4%)	4.4%*
Restless sleep	118	(37.3%)	37.3%
Medication to help sleep	49	(21.8%)	15.5%

* p-value<0.05

The survival rate of oral cancer is less than 87%, which still a lethal disease. We found that survivability was dramatically influenced by emotions after treatment. Survival is the main concern of oral cancer patients. Depression, pain, anxiety, uncertainty and worry about recurrence may emerge throughout their lives since the disease was diagnosed in some patients. Post-operative care should not only relieve pain, but also involves spiritual and psychosocial support to patients and their families throughout the treatment course. Thus the assessment of psychosocial behavior is considered an essential component of an oral cancer patient as well as the survival, morbidity and years of free-of-disease.

Conclusion

This study confirmed that emotional functioning and psychopathological disorders were predictive of health care utilization in oral patients. These tumors represent not only a difficult challenge to clinic problem but also heavily influencing emotion reaction and remaining great change in survival. Some researches discussed about that the 'worried well' syndrome has long been suspected to be associated with health care utilization [15, 16] but has rarely been further improved. Heavy smokers and betel quid chewing have constantly shown significantly higher incidence rate in past study therefore increasing the use of health care utilization [17,18]. This study found that changes in theoretical, clinical and psychosocial behavior after cancer diagnosis and treatment offers several finding relevant to understanding the incidence of these life alterations. We also found that the larger tumor size, late stage of pathological tumor status and late stage of pathological nodal status were associated with higher claim rates than smaller tumor size, early stage of pathological tumor status and early stage of pathological nodal status.

References:

1. A Auluck, G Hislop, C Poh, L Zhang, and MP Rosin "Areca nut and betel quid chewing among South Asian immigrants to Western countries and its implications for oral cancer screening" Rural Remote Health. 2009; 9(2): 1118.

2. Slaughter DP, Southwick HW, Smejkal W. ''Field cancerization'' in oral stratified squamous epithelium: clinical implications of multicentric origin. Cancer 1953;6:963–8.

3. Strong MS, Incze J, Vaughan CW. Field cancerization in the aerodigeative tract – its etiology, manifestation, and significance. J Otolaryngol 1984;13:1–6.

4. Day GL, Blot WJ, Shore RE, et al. Second cancers following oral and pharyngeal cancers: role of tobacco and alcohol. J Natl Cancer Inst 1994;86:131–7.

5. Bjordal K, Hammerlid E, Ahlner-Elmqvist M, De Graeff A, Boysen M, Evensen JF, et al. Quality of life in head and neck cancer patients: validation of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-H&N35. J Clin Oncol. 1999 Mar;17(3):1008-19.

6. Hassan SJ, Weymuller EA Jr. Assessment of quality of life in head and neck cancer patients. Head Neck. 1993 Nov-Dec;15(6):485-96.

7. Herbert TB, Cohen S. Stress and immunity in humans: a meta-analytic review. Psychosom Med 1993;55:354– 79.

8. Goodkin K, Antoni MH, Helder L, Sevin BU. Psychoneuroimmunological aspects of disease progression among women with human papillomavirus-associated cervical dysplasia and human immunodeficiency virus type 1 co-infection. Int J Psychiatry Med 1993;23: 119–48.

9. Walter-Ginzburg A, Chetrit A, Medina C, Blumstein T, Gindin J, Modan B: Physician visits, emergency room utilization, and overnight hospitalization in the old-old in Israel: the cross-sectional and longitudinal aging study (CALAS). J Am Geriatr Soc 2001, 49:549-556.

10. Veugelers PJ, Yip AM, Elliott DC: Geographic variation in health services use in Nova Scotia. Chronic Dis Can 2003, 24:116-123.

11. Shah BR, Gunraj N, Hux JE: Markers of access to and quality of primary care for aboriginal people in Ontario, Canada. Am J Public Health 2003, 93:798-802.

12. Webster D, Weerasinghe S, Stevens P: Morbidity and mortality rates in a NOVA SCOTIA First Nations Community, 1996-1999. Can J Public Health 2004, 95:369-374.

13. Korenbrot CC, Ehlers S, Crouch JA: Disparities in hospitalizations of rural American Indians. Med Care 2003, 41:626-636.

14. Wyke S, Hunt K, Walker J, Wilson P: Frequent attendance, socioeconomic status and burden of ill health. An investigation in the west of Scotland. Eur J Gen Pract 2003, 9:48-55.

15. The relationship of modern health worries to depression, symptom reporting and quality of life in a general population survey Winfried Rief, Heide Glaesmer b,1, Vera Baehr c, Elizabeth Broadbent c, Elmar Brähler b, Keith J. Petrie cJournal of Psychosomatic Research 72 (2012) 318–320

16. Living in the Context of Poverty and Trajectories of Breast Cancer Worry, Knowledge, and Perceived Risk after a Breast Cancer Risk Education Session, Suzanne Bartle-Haring, PhD*Women's Health Issues 20-6 (2010) 406–413

17. Factors Influencing the Intention to Utilize Out-of-Pocket Health Checkup Services:A Sample of Citizens From 12 Townships of Taichung County in Taiwan, Yuh-Shiow Lee1,2, Yen-Lin Chiu3*, Hui-Ling Liao4,5, Jin-Tang Chen6, Fu-Chun Lee7, J Chin Med Assoc. May 2010, Vol 73, No 5.

18. Health-related factors associated with hospitalization for old people: Comparisons of elderly aged 85 in a population cohort study, Archives of Gerontology and Geriatrics Volume: 54, Issue: 2, March - April, 2012, pp. 391-397, Nagga, K.; Dong, H.J.; Marcusson, J.; Skoglund, S.O.; Wressle, E.

Impact of Perceived Supervisor Support on Organizational Citizenship Behavior:
Mediating role of Trust

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Abstract:

Organizational citizenship behavior (OCB) is linked to overall organizational success. Every employee's efforts to become vital bring forward the organizational citizenship behavior. Perceived supervisor support is found to be linked with organizational citizenship behavior (OCB) but the link may not be direct. Our research aimed to investigate the mediating role of trust in supervisor in impact of perceived supervisor support on organizational citizenship behavior. The participants of the study were employees from the middle management of the multinational organizations of Lahore (N=60). Survey of Perceived Supervisor Support (Eisenberger, Huntington & Huchison, 1986), Trust in Supervisor Questionnaire (Paine, 2003) and Organizational Citizenship Behavior Questionnaire (Dick, Grojean, Christ and Wieseke, 2006) were administered to participants in organizational setting. Initial results indicated a significant correlation between the three study variables. Multiple hierarchical regression analysis controlling for all the demographic or job related variables was significant. Results indicated partial mediation of trust (β = .567, p < .001) in impact of perceived supervisor support on OCB (Sobel Statistic= 3.68, p < .001). One-way Analysis of variance (ANOVA) showed a significant difference in study variables between participants on top, middle and lower job ranks. Study has important implications as trust building can be used as a means to improve performance of the employees and consequently, of the organization.

Impact of Perceived Supervisor Support on Organizational Citizenship Behavior: Mediating role of Trust

Organizational citizenship behavior (OCB) is becoming increasingly important in multinational organizations. It has been linked to overall organizational success. No employee in any organization is indispensable, every employee's efforts to become vital brings foreword the organizational citizenship behavior. Two of the variables that have been linked with organizational citizenship behavior (OCB) are perceived supervisor support (PSS) and the trust in supervisor.

Perceived supervisor support (PSS) is described as common view of employees concerning the extent to which supervisors value their contributions and care about their well-being, interests and welfare (Kottke & Sharfinski, 1988). As supervisors are perceived as representatives of the organization, and have responsibility to direct and evaluate performance of subordinates, employees would view their supervisor's encouraging or critical orientation toward them as indicative of the organization's support (Eisenberger, Huntington &Huchison, 1986; Levinson, 1965; as cited in Eisenberger, Stinglehaumber, Vandenberghe, Sucharski& Rhoades, 2002). It indicates to the beliefs of the employees about the extent to which their supervisors care for their well-being (Eisenberger et al., 2002). The term perceived organizational support (POS) is often used with perceived supervisor support. Eisenberger and colleagues (1986) proposed that employees combine the treatment that they get from representatives of the organization and make general perceptions regarding how much the organization gives value to their contributions and takes care of their well-being and benefits (Eisenberger, Huntington & Huchison, 1986).

As supervisors are organizational agents while treating subordinates, perceived supervisor support may contribute to perceived support by the organization. The strength of the relationship would also depend on the level to which subordinates perceive supervisor's relation with their organization. Supervisors who are perceived as that the organization gives them value and treats well, would be thought more representing the organization and thus will have more effect on perceived organizational support or favor (Eisenberger et al., 2002).

Subordinates perception regarding status given to their immediate supervisor by the organization, as well as the belief of the employees that support of the supervisor represents support of organization, would increase when there is an increase in employees' perceptions that organization is concerned about well being, the supervisor has a role and authority in decisions taken by the organization. The supervisor's informal organizational status plays a mediating role in relationship between perceived supervisor support and support of the organization (Eisenberger et al., 2002).

Another variable that is found to be most related with the perceived supervisor support is trust in supervisor. When there is support of the supervisor then possibly there is trust in supervisor.

Trust can be defined as a readiness to depend on another party or person (Mayer, Devis & Schoorman, 1995) as well as an expectation that the other end will respond if one cooperates. The framework proposed by Lewicki and Bunker (1996; as cited in McAllister, lewicki & Chaturvedi, 2006) is founded upon a view of trust in supervisor as confident and positive expectations about another's intentions related to oneself in situations that involve risk.

According to Paine (2003) it is agreed upon universally that trust is a multi-dimensional concept. It is, (a) multi-level; (b) culturally-rooted; (c) communication-based; (d) dynamic; and (e) multi dimensional. She proposed the dimensions of trust in organizational context as competence, identification, integrity, dependability/reliability, openness and honesty, control mutuality, concern for employees, vulnerability, satisfaction and commitment. Commitment is one of the dimensions of trust that is of great importance in the present study. It has two dimensions that are continuance and affective. Thus trust can only be viewed in the broader context of the relationships an organization has with its various publics. It highlights the need to include different types of relationships.

In an exchange type relationship, one party provides benefits to the other just because the other has given benefits to that party in the past or one is expecting to gain such in the future. In an exchange relationship, a party gives benefits to the other because it expects to receive benefits of comparable value to the other. In a communal type relationship, both of the parties provide and ensure benefits to each other they want to ensure benefits of the other even though nothing is expected in return. Communal relationships are important in enhancing trust in an organization (Paine, 2003).

Mayer, Davis, and Schoorman (1995) provided a comprehensive definition of the trust as the willingness or readiness of a party to fulfill expectation irrespective of the ability to watch or control the other party. Several aspects of the definition of trust require elaboration such as willingness of the trustor to take risk, the expectation that the trustee will perform desired behaviors, etc. Alternatively, the employee expects to get economic and psychological rewards (Brockner, Siegel, Daly, Martin & Tyler, 1997).

According to the theory of leader member exchange (LMX), Sanders and Schyns (2006) pointed out that when supervisor trusts his/her subordinates, the subordinates will trust their supervisor, most probably, in the same way. Thus if the relationship and interaction between subordinate and supervisor is good, the trust of subordinate towards supervisor will be high and might promote behavior that is highly beneficial for the organization.

Organizational citizenship behavior (OCB) is closely related to the perceived supervisor support and trust in supervisor. It is argued that this behavior might be a product of employees' perceived supervisor support and resulting trust in supervisors. Organizational citizenship behavior was first demonstrated by Bateman and Organ (1983) twenty nine years ago and has recently been gaining power. It was first introduced by Smith, Organ and Near (1983), and they defined organizational citizenship behavior as optional behavior of individual, that might not fall into formal reward system but when accumulates, promotes effectiveness and success of the organization (Moorman, 1991). They are often described as performances that go beyond the call of duty (Bateman & Organ, 1983). It is agreed upon that organizational citizenship behavior is linked with silent behaviors for organizational enterprises (Barbuto, Brown, Wilhite, & Wheeler, 2001).

Dick, Grojean, Christ and Wieseke (2006) defined organizational citizenship behavior as any discretionary individual extra role behavior beneficial to the organization. Smith, Organ, and Near (1983) proposed a two-dimensional model of Organizational Citizenship Behavior; altruism and compliance. Altruism is being cooperative and helpful. Compliance is for e.g., taking only the stipulated lunch time, arriving on time, not taking many breaks, or completing duty hours. Organ (1988) proposed five specific categories of organizational citizenship behavior and explained how each helps to improve effectiveness in the organization.

- Altruism (helping behaviors, pro-social behaviors, and neighborliness).
- Courtesy which is strongly related to altruism, but is clearly different.
- Conscientiousness, including behaviors such as being on time; maintaining a better attendance record; and following an organization's rules, etc.
- Sportsmanship
- Civic virtue is the responsible contribution in the political life of the organization.

A lot of research work has been done on these study variables. Perceived supervisor support as well as trust have been found to be linked with organizational citizenship behavior (OCB) but the link may not be direct. Trust has been found as a mediator in the organizational context, it has been found that trust mediates the relationship between team identification and team conflict (Han & Harms, 2009). Doucet, Simard and Tremblay conducted a research in 2008. The research findings showed that charisma and contingent reward are positively related with perceived supervisor support and support and trust was found as mediators between leadership and commitment, other mediators could still account for this relationship.

Past research has demonstrated that in general higher supervisor support can enhance employees' displays of OCB (Podsakoff et al. 2000; as cited in Chen & Chiu, 2008). Chen, Chang and Hu conducted a research in 2007. They collected data from nurses (N=200) and head nurses (N=14) in six hospitals. They found that the leader member exchange affected trust of subordinates positively and increased perceived supervisor support in them. It also promoted organizational

citizenship behavior among nurses. Mayer and Gavin (2005) also found that trust in multiple levels of management had a positive relationship with employees' ability to focus on his/her performance, and consequently to greater organizational citizenship behaviors.

Another research was conducted by Wong, Wong and Ngo in 2002. They examined the relationships between perceived organizational trust, justice and organizational citizenship behavior (OCB) of the workers in China. Findings revealed that trust in organization affects organizational citizenship behavior in both state-owned enterprises and joint ventures, and trust in supervisor also affects organizational citizenship behavior but only in joint assignments.

To summarized the above discussion we reach to the conclusion that the research presented by Chen, Chang and Hu (2007) showed that a significant relationship was found between perceived supervisor support; trust in supervisor which consequently promotes organizational citizenship behavior. These findings are also consistent with other various researches. Trust in the leader is positively correlated with organizational citizenship behaviors, satisfaction and performance (Jung &Avolio, 2000; Pillai et al., 1999). So it is confirmed that trust in leaders predict the organizational citizenship behavior. Moreover, when mutual trust is fostered between employees and supervisors, employees are more likely to exhibit organizational citizenship behavior (OCB) (Wat& Shaffer, 2005). Thus, In the context of previous researches the hypothesis was formulated as; Perceived supervisor support (PSS) will predict greater organizational citizenship behavior (OCB) through the mediating role of trust in supervisor.

PSS ⟶ Trust ⟶ OCB

Method

Sample

Purposive sampling technique was used to collect samples from the organizations.
The participants of this study were employees from the middle management of the multinational organization. Middle management was divided into three ranks that are, high rank, middle rank and lower rank on the basis of their salary. The minimum years of education of the participants were 14 and the maximum years of education of the participants were 20. It includes school, college, university education and some engineering diplomas. The sample size was 60. They varied in ages between 23-40 years. The participants were only males. The characteristics of the sample differed on the part where educational qualification, monthly income, and occupational experience were concerned.
An inclusion and exclusion criterion for the participants is as follows:

- Only males working under the supervision of their immediate supervisors at least for one year.
- Employees from the middle management were included.
- The subordinates who were about to retire were not included.

Table 1
Demographic Characteristics of the Sample (N=60)

Variables	M (SD)	f %
Age of participant	29.20 (4.266)	
Educational Qualification (in years)		
14		5 (8.3)
16		28 (46.7)
18		27 (45.0)
Marital Status		
Married		32 (53.3)
Unmarried		28 (46.7)
Ranking of Designations		
High Rank		15 (25)
Middle Rank		27 (45)
Lower rank		18 (30)
Duration of job in this organization	2.27 (.930)	
Duration of work under the supervision	1.67 (.629)	
Total duration of Job	4.70 (2.566)	

- *SD* = Standard Deviation, *M* = Mean, *f* = frequency, % = percentage

Assessment Measures

The assessment measures for measuring perceived support by the supervisor, trust in supervisor and organizational citizenship behavior were Survey of Perceived Supervisor Support (SPSS), Trust in Supervisor Questionnaire and Organizational Citizenship Behavior scale (OCB) respectively. Survey of perceived supervisor support (SPSS) containing 36 items was used to measure perception of the employees about their supervisor; the Survey of Perceived

Organizational Support (SPOS) of 36 items developed by Eisenberger, Huntington and Huchison (1986) was used by replacing the term organization with the word supervisor. The Cronbach's Alpha reliability for the present sample was 0.88. Paine (2003) developed the guidelines for measuring trust in the organization. The 20-item questionnaire of Trust developed by Paine (2003) was adopted for this study again by replacing the 'organization' with the 'supervisor'. The Cronbach's Alpha reliability for the present sample was 0.81.The 18-item questionnaire was used in this study. It is self constructed questionnaire by taking guideline from the questionnaire of Dick, Grojean, Christ and Wieseke (2006). The Cronbach's Alpha reliability for the present sample was 0.89.

Procedure

Permission to use the scales was taken from the authors of the scales. Only after taking the permission their questionnaires were used in the study. After that, permission was taken from the concerned multinational organizations. Then the participants for the study were selected according to the criteria. The sample of employees was drawn from multinational organizations. A pilot study was conducted to determine the validity and reliability of the scale for present sample. (N=20). A consent form was given to the participants and ensured that the information acquired from them will be held confidential.

Analysis and Results

Correlation Analysis

Table 2
Correlation between Demographic Characteristics of Participants and Study Variables (N=60)

Variables						
1.Organizational citizenship behavior	.819**	.862**	.226	.044	.146	.242
2. Perceived supervisor support	-	.769**	.140	.020	-.171	.331**
3. Trust in supervisor	-	-	.338**	.128	-.017	.232
4.Age of the participant	-	-	-	.419**	.019	.197
5.Duration of job in current organization	-	-	-	-	.506**	.305*

6. Duration of working in the supervision	-	-	-	-	-	-.028
7. Years of education of participant	-	-	-	-	-	-.

**$p<.01$, *$p<.05$

The findings indicate that perceived supervisor support and trust in supervisor are positively related to organizational citizenship behavior. The age of the participant is significantly positively correlated with trust in supervisor. The relation of duration of job with study variables is not significant. A significant positive relationship was found between educational qualification and perceived supervisor support.

Multiple Regression Analysis

Table 3
Hierarchical Linear Regression Analysis for Study Variables predicting Organizational Citizenship Behavior

Variables	B	SE B	β
Step 1			
Perceived supervisor support	.865	.080	.819*
Step 2			
Perceived supervisor support	.404	.097	.383*
Trust in supervisor	.666	.108	.567

$R^2=.665$ *for model 1; .796* for model 2, R^2 *Change=.132,* **$p<.01$

Perceived supervisor support significantly predicted the organizational citizenship behavior. When trust was entered in the model, a significant decrease in the beta value for perceived supervisor support occurred (Sobel Statistic= 3.68, $p < .001$) suggesting partial mediation of trust in the relationship of study variables. The beta value indicates that trust in supervisor makes the strongest contribution to explaining the dependent variable

One-Way Analysis of Variance (ANOVA)

Table 4

One-Way analysis of the Variance (ANOVA) for Study Variables with Job Ranking of Participants

Source	df	F	η^2	p
Perceived supervisor support				
Between	2	7.0	0.2	.002
Within	57			
Trust in supervisor				
Between	2	8.8	0.2	.000
Within	57			
Organizational citizenship Behavior				
Between	2	4.9	0.1	.010
Within	57			

Analysis of the variance showed that there is significant difference in perceived supervisor support , trust in supervisor and organizational citizenship behavior for job ranking of participants. Post-hoc analysis indicated that the mean score of perceived supervisor support for lower job rank (*M*=4.12, *SD*=.80) was significantly different from middle ranks (*M*=4.62, *SD*=.26) and high ranks (*M*=4.66, *SD*=.22). It showed that employees with lower job rank scored less on perceived supervisor support as compared to other two groups. Similarly, on the dimension of trust in supervisor, employees on lower job rank (*M*=4.48, *SD*=.58) scored less than middle ranks (*M*=5.03, *SD*=.34) and high ranks (*M*=4.85, *SD*=.32). The mean score of organizational citizenship behavior, again, was lower for lower job rank (*M*=4.16, *SD*=.76) as compared to middle ranks (*M*=4.66, *SD*=.39) and high ranks (*M*=4.55, *SD*=.37). Overall, perception of employees at lower job ranks about their supervisor and trust was lower; and consequently, they exhibited lower OCB. Other two groups were equal on all the three variables.

Discussion

The findings of the study indicated that both independent study variables predicted greater organizational citizenship behavior. Regression analysis showed that trust plays a partial mediating role in relationship of perceived supervisor support with organizational citizenship behavior. This study extends previous research findings by linking PSS and OCB with trust in supervisor. The study conducted by Chen and Chiu in 2008 also proposed an integrative model that examines the mediating processes underlying the relationship between leader support and employee OCB. Results showed that supervisor support influenced the employees' OCB indirectly through two cognitive processes (job satisfaction and person–organization fit) and one affective process (job tension); thus suggesting an indirect relation between both. Findings by

Han and Harms in 2009 also demonstrated that trust mediates the relationship between team identification and team conflict.

Doucet, Simard and Tremblay (2008) also support the current study findings in that charisma and contingent reward dimensions are positively related to employees' perceived supervisor support and trust in their supervisor. Secondly, they hypothesized that employees' perceived organizational support and trust in their organization act as mediating variables between perceived supervisor support and trust in their supervisor and affective commitment, respectively. Findings revealed that charisma and contingent reward are positively related with perceived supervisor support and support and trust was found as mediators between leadership and commitment, other mediators could still account for this relationship. These research findings are consistent with the research presented by Chen, Chang and Hu (2007) as well.

The literature on organizational support suggests positive relationships between supportive supervision and performance of the employee (Malatesta, 1995; Bhanthumnavin, 2003; Schaefer & Moos, 1993; as cited in Eisenberger &Rhoades, 2006). Thus, subordinates' perceived supervisor support (PSS) should enhance performance of the subordinate in job role or in extra assignments. (Rhoades &Eisenberger, 2002; Viswesvaran, Sanchez, & Fisher, 1999). The above discussed literature findings are also consistent with the current research results that supervisor support leads to the extra-role behavior of employees that is organizational citizenship behavior.

Leaders need to be trusted by their subordinates because trust is the mortar that binds the follower to the manager (Nanus, 1989). Trust in the supervisor has positive correlation with many outcomes for example organizational citizenship behaviors, satisfaction and performance (Jung &Avolio, 2000; Pillaiet al., 1999). So it is confirmed that trust in leaders predict the organizational citizenship behavior. Moreover, when mutual trust is promoted between employees and supervisors, employees are more likely to display organizational citizenship behavior (OCB) (Wat & Shaffer, 2005). Mayer and Gavin in 2005 found that trust in multiple management levels (e.g top management and/or plant managers) had positive relationship with the ability of the employees to focus on their performance, and consequently greater organizational citizenship behaviors and especially when workplace has an atmosphere of trust, this ability promotes organizational citizenship behaviors, and these ensure positive business outcomes.

Limitations, Suggestions and Implications

Only males were included in this study to control the confounding effect of gender of the participant with gender of the supervisor. It also leaves the specific issues of the females unexplored. So, any comparison of gender of participants with study variables could not be done. Future research should also focus on gender vise analysis; whether same gender or opposite gender moderates the relationship of study variables.

Another important aspect underlying the construct of PSS and Trust is the amount of contact at different positions. Amount of contact can be measured in future researches at different ranking levels and can be controlled and/or studied to check its role in perception of support and trust. .

There are some implications for practice to be drawn from the findings of present research. This study proposes a model of antecedents of OCB that can further be explored and verified. It can also be linked with the model of trust in other relationships. Understanding of these factors might help and enhance the productivity of the overall organization.

References

Barbuto, J., Brown, L., Wilhite, M., & Wheeler, D. (2001).*Justify the underlying motives of organizational citizenship behavior; A brief study of agricultural co -op workers.* 28th Annual National Agricultural Education Research Conference, 539. Available from http://www.au.af.mil/au/awc/awcgate/dau/barbuto.pdf

Bateman.T.S., & Organ, D.W. (1983). Job satisfaction and the good soldier: The relationship between affect and employee "citizenship." *Academy ofManagement Journal,* 26, 587- 595.

Brockner, J., Siegel, P.A., Daly, J.P., Martin, C., & Tyler, T. (1997).When trust matters: the moderating effect of outcome favorability.*Administrative Science Quarterly,42*. Available fromhttp://www.questia.com/googleScholar.qst;jsessionid=M6HfPGW7yYT1kLCplFkRnz5y5YRgLy2Y KVnkxTV5h3tlDyv2xY0J!1896127874!1380883283?docId=5000556825

Chen, C. & Chiu, S. (2008). An integrative model linking supervisor support and organizational citizenship behavior.*Journal of Business and Psychology, 23 (2),* 1-10.

Chen,C.V., Chang, W.C., & Hu, C.S. (2007). *The relationship between leader-member exchange, trust, supervisor support, and organizational citizenship behavior: A case study of nurses.*Proceedings of the 13th Asia Pacific Management Conference, Melbourne, Australia, 692-697. Availablefrom http://infotech.monash.edu.au/research/centres/cdsesr/papers-pdf/t036.pdf

Dick,R.V., Grojean, M.W., Christ, O.,&Wieseke,J. (2006). Identity and the extra mile: relationships between organizational identification and organizational citizenship behavior. *British Journal of Management,*17, 283–301.

Doucet, O., Simard, G., & Tremblay, M. (2008). Leadership and Commitment: The Mediating Role of Trust and Support. *Relations Industrielles/Industrial Relations, 63, (4)*. Availablefrom http://ssrn.com/abstract=1596046

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986).Perceived organizational support.*Journal of Applied Psychology, 71,* 500– 507.

Eisenberger, R., Stinglehaumber, F., Vandenberghe, C., Sucharski, I.L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology,* 87, 565-603.

Eisenberger, R., & Rhoades, L. (2006).When supervisors feel supported: relationships with subordinates'perceived supervisor support, perceived organizational support, and performance.*Journal of Applied Psychology 91(3),* 689–695.

Han, G., & Harms, P. D. (2009). Team identification, trust, and conflict: A mediation model. *International Journal of Conflict Management 21, (1),* 20–43. doi: 10.11081104440610

Jung, D. I., &Avolio, B. J., (2000).Opening the blackbox: an experimental investigation of the mediating effects of trust and value congruence on transformational and transactional leadership.*Journal of Organizational Behavior*, *21,* 949-964.

Kottke, J.L., &Sahrainski, C. (1988). Measurement perceived supervisor support and organizational support. *Educational and Psychology Measurement, 48,* 1075-1079.
Mayer, R. C., Davis, J. H., &Schoorman, F. D. (1995).An integrative model of organizational trust.*Academy of Management Review, 20,* 709-734.

Mayer, R., & Gavin, M. (2005). Trust in management and performance: Who minds the shop while the employees watch the boss? *Academy of Management Journal*, *48(5),* 874-888.

McAllister, D.J., lewicki, R.J., &Chaturvedi, S. (2006).*Trust in developing relationships: From theory to measurement.* Academy of Management Best Conference Paper. Availablefrom
  http://www.bschool.nus.edu.sg/Staff/bizdjm/McAllisterLewickiChaturvedi06.pdf

Moorman, R.H. (1991). Relationship between organizational justice and organizational citizenship behaviors: do fairness perceptions influence employee citizenship? *Journal of Applied Psychology, 76,* 845-855.

Nanus, B., 1989. *The leader's edge: The seven keys to leadership in a turbulent world.* Chicago, IL: Contemporary Books. Nunally, J. C., & Bernstein, I. H. 1994. Psychometric theory, (3rd ed.). New York: McGraw Hill.

Organ, D. W. (1988).*Organizational citizenship behavior: The good soldier syndrome.* Lexington, MA: Lexington Books. Chapters 1, 1-14.
Paine, K.D. (2003). *Guidelines for Measuring Trust in Organizations.*The Institute for Public Relations. Available from
www.instituteforpr.org/files/uploads/2003_MeasuringTrust.pdf

Rhoades, L., &Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology, 87,* 698–714.

Sanders, K., Schyns, B. (2006). Trust, conflict and cooperative behaviour. *Personnel Review, 35,* 508-518.

Schaefer, J. A., & Moos, R. H. (1993). Relationship, task, and system stressors in the health care workplace. *Journal of Community and Applied Social Psychology*, 3, 285–298.

Smith, C.A., Organ, D.W., & Near, J.P. (1983).Organizational citizenship behavior.*Journal of Applied Psychology, 68,* 653-663.

Viswesvaran, C., Sanchez, J. I., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior,54,* 314–334.

Wat, D., & Shaffer, M.A. (2005). Equity and relationship quality influences on organizational citizenship behaviors: the mediating role of trust in the supervisor and empowerment. *Personnel Review, 34,* 406- 512.

Trust kn Opposite Gender Friendship: A Comparative Analysis qf Male cnd Female University Students

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Abstract:

Friendships have limited formal societal status in Pakistan therefore insufficient research has been undertaken to explore the nature and level of trust in same and opposite gender friendships. Researchers carried out a cross sectional study (Study I) to infer gender differences in level of trust in same gender friendships in university students. Results of the study highlighted that female have more trust in their same sex friends as compared to males. Opposite gender friendships are more common in students; (Study 2) was undertaken with an objective to investigate gender differences in level of trust in opposite gender friendships in university students. Cross sectional research design was used to conduct the study. Multistage sampling technique was used to recruit participants who were willing to provide a written consent. To compute trust, Rempel and Holmes Trust scale (1985) was used. Results were analyzed by using SPSS (version 17). No significant gender differences were found on overall trust in opposite gender friendship as well as on three dimensions of trust. To further explore other factors contributing towards variability in level of trust, multiple regression analyses were carried out on these dimensions. Results revealed that same socio-economic status of both friends predicted two dimensions; predictability and dependability. Parent's acceptance was a unique predictor of dimension of predictability, whereas having opposite gender friendships not limited to university was unique predictor of dependability. Both dependability and faith were predicted by urban background and disclosure of friendship to same gender friend. This study has implications regarding dimensions underlying trust in opposite gender friendships. An initial model on dynamics of trust in Pakistani context is proposed for future research.

Introduction

Trust is the most integral component of all interpersonal relationships; it is the basis of relationships between family, friends and other social groups (Hardin, 2002: 73-89). Trust is an unquestioned belief or reliance on a person or situation, to achieve a goal that is uncertain and may involve a situation that is perilous (Griffin, 1967: 104-120). Importance of trust cannot be undermined as it influences in forming the basis for all intimate same and OGF's (Gamson, 1968: 208-214; Mellinger, 1956: 302-309; Zaud, 1972; Turner, 2002).

Social relationships such as friendships form a very important component of students' university experience. Friendships that are characterized by higher levels of mutual trust, caring, exchange of help and ease of conflict resolution have been found to be important factor in students' well being as well as academic success (Anderman & Anderman, 1999; Ryan et al., 1997; as cited in Levy-Tossman, Kaplan, & Assor, 2007: 231-252). Roy et al. (2000: 93-101) documented gender differences in level of trust in close friendships and reported that women have more trust in their friendships compared to men. However no gender differences have been observed in the level of impact of close friendships and the extent of magnitude of their close friends on well-being (Yaughn & Nowicki, 1999: 473-479). Elkins and Peterson (1993: 497- 509) documented that men express their cross-gender relations as closer than same-gender ones. Moreover these researchers found that women find greater therapeutic component in their same sex friendships, therefore they would have more trust (Turner, 2002). These differences have been explained by socialization processes and sex roles of both genders (Maccoby, 1990: 513-20).

In spite of centrality of trust in interpersonal relationships, this construct has not recognized much theoretical and empirical attention of researchers. Available research literature has primarily laid emphasis on studying gender differences in patterns of SGF's (Bell, 1981; Block, 1980; Fasteau, 1991) rather than investigating gender differences in level of trust in OGF's. Research highlighting gender differences in level of trust between opposite sex friendships is still lacking. One of the reasons is that OGF's compared to SGF's are less common (Bell, 1981; Rubin, 1985). Most of the opposite gender friendships involve romantic/ sexual relationships thus friendships without this type of relationship are not common. Rawlins (1982, 2000) argues that the concept of a man and a woman being 'just friends' connotes unclear associations. As society tends to reserve this kind of relationship for romance, love, and sex, a platonic association between a man and a woman frequently has to be explained, and there is a cultural propensity to construe this kind of relationship as something more intimate.

According to Bell (1981) men have closer friendships with women compared to other men (Bell, 1981, 112). Analogous patterns have been documented by Rubin (1985), she found that men find women friends as more nurturing and trusting compared to their male friends. Moreover women find their women friends more intimate and trusting, compared to their OGF's. The other factors that might affect students' trust in friendships have yet to be comprehensively spelled-out by research (Berndt, 2004). In recent years, studies have investigated such factors as age, family

structures, relationship with parents, and a variety of personality attributes (Noack, Kretterk, & Walper, 2001: 535–548; Weimer, Kerns, & Oldenburg, 2004: 102-120).

Conclusions drawn by researchers from the western cultures cannot be considered as conclusive for the indigenous population; as trust in interpersonal relationship can vary from culture to culture (Brewster, 1998.). Adams, Blieszner and Vries (2000:117-33) in a study of multicultural samples found that definitions of friendship differed across groups with respect to age and gender within each culture but most striking were cross-cultural variation. Moreover Brewster, (1998) documents that trust is determined by habits based on families' exclusiveness; whether families accept non-kinship interactions among various members of society. In Pakistan, kinship compared to non kinship interactions are promoted, and friendships acquire a marginal position compared to blood relationships. Friendships especially OGF's have no formal societal status, and usually confused with other types of social bonding. To wind up it can be understood that the significance of trust has been undermined and neglected area of research worldwide and especially in the east. Mostly empirical literature in this regard exists from researches undertaken in the west. This phenomenon has not been extensively explored by researchers from Asian countries including Pakistan. Thus a study (study 1; Warris & Rafique, 2009) was carried out with an objective to investigate gender differences in level of trust in SGF's. Results of the study acknowledged that women compared to men have greater level of trust in SGF's. This study, as a continuation of research on the theme of trust, was carried out keeping in view two objectives: Primary Objective: To find gender difference in level of trust in OGF.

Secondary Objective: To find other (than gender) factors responsible for variation in level of trust in OGF.

Methodology

Research Design: Cross sectional research design was employed in this study.

Sampling strategy

Multistage sampling technique was used. Six universities were randomly selected from the list of government and private universities in Pakistan. Further six departments were randomly drawn from these universities. A total of 153 students (57 female and 96 male students) of different government and private universities were recruited in the study through purposive sampling technique. Unmarried Muslim male and female university students with both parents living together in a matrimonial relationship, enrolled for bachelors or master program, aged between 18-25 years were included in the sample; monthly family income of the students (having a monthly family income of 35,000 Pakistani rupees) was controlled; as it is inferred that friendship patterns might change depending on social factors like socioeconomic status as well as religious beliefs, cultural norms and values.

Furthermore, to avoid other confounding, the following exclusion criteria was also applied:

Participants:

Who have had a breakup with a same gender or opposite gender friend during the last 6 months.

Having an OGF who is a romantic or sexual partner.

Having been diagnosed with a psychiatric disorder, or currently on any psychiatric medication.

Unable to provide a written consent.

Measures

Demographic and Study Information Sheet: The researcher designed a Demographic and Study Information Sheet to gather demographic information from the subjects. The first part of the sheet included demographic information as age, gender, education, type of living urban/rural living, government/ private university they and their friends are studying in, bachelors or masters program, father/mother's education and socioeconomic status. Second part of the sheet asked question on parental acceptance of OGF, personal acceptance of OGF, age of the friend (same age, or two years older or younger), OGF status (either limited to university or not) and disclosure of OGF to SGF.

Rempel, Holmes & Zanna Trust scale (1985): Trust was measured by using Rempel, Holmes and Zanna Trust scale (1985).It consists of 18 items that measure trust in friendships on a five point likert-type scale. The scale gives a sense of tendency to trust by adding scores from questions "1, 2, 4, 7, 9, 10, 11, 14, and17", and then adding the reversed scored items: "3, 5, 6, 8, 12, 13, 15, 16, and 18". The scale ranges from 1-5 for Strongly Agree to Strongly Disagree. Scoring is done by summing the ratings assigned to all the items after reverse scoring the mentioned items. It has three subscales: Predictability (items 4,5,6,8,14) , Dependability (items 4,5,6,8,14) , Faith (items 2,3,9,10,11,12,16). Cronbach's alpha of overall scale for this study sample was .81.

Procedure

Six universities were randomly selected from the list of government and private universities in Pakistan. Later six departments were randomly drawn from each of these universities. Institutional consent from the chairpersons /chairman's of these departments was sought before initiation of data collection. Male and female students, who met the criteria of inclusion and exclusion, were recruited from every department. Individual written consent was taken from students who showed their interest to participate in the study. Brief summary of the research project was explained to students along with terms of confidentiality and use of data. Each student completed the demographic information sheet and the trust scale individually. Questionnaire was quantitatively configured and scores were obtained. Independent sample *t*-test was used to find difference in trust in male and female OGF's. Multiple regression analyses (stepwise method) were employed to further explore the association of factors with three major dimensions of trust (predictability, dependability and faith).

Results

Figure 1
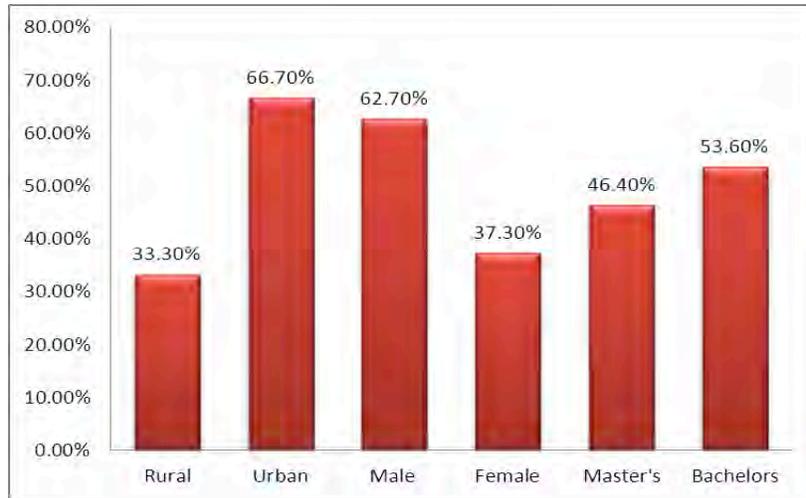
Table 1

Descriptive of the study sample (n=160)

Characteristics	Yes	No
Same age friend	122(79.7)	31(20.3)
Friend belonging to the same SES	106(69.3)	47(30.7)
Father's education up to matric?	130(85)	23(15)
Mother's education up to matric?	104(68)	49(32)
OGF limited to University?	63(41.2)	90(58.8)
Parents acceptance of OGF	97(63.4)	56(36.6)
Disclosure of OGF with SGF	116(75.8)	37(24.2)
Self-acceptance of OGF	120(78.4)	33(21.6)

Note. f = Frequency; % = Percentage

Table 2
Mean gender difference in level of trust among students

Variables	Males (n=96)		Females (n=57)		t(151)	p	95% CI	Cohen's d
	M	SD	M	SD				
Overall Trust	8.56	17.37	11.26	15.49	.97	.34	[-2.82, 8.22]	-.16
Predictability	-.03	4.95	.61	4.47	.81	.48	[-.93, 2.22]	-1.56
Dependability	2.61	6.63	3.18	6.09	.52	.25	[-1.57, 2.69]	-0.09
Faith	5.97	9.26	7.47	8.29	1.00	.23	[-1.45, 4.44]	-0.17

*Note. *p < .05. **p < .01. ***p < .00*

Table 3

Stepwise regression analysis for predictors of trust (Predictability)

Predictors	R^2	ΔR^2	F	β	t
Step 1	.05	.04	7.10		
Parental acceptance of OGF				2.12	2.66**
Step 2					
Parental acceptance of OGF	.08	.07	5.35		
				.23	2.88**
Same SES				-.18	-2.31*

Note. *p < .05. **p < .01.*

Table 4

Stepwise regression analysis for predictors of trust (Dependability)

Predictors	R^2	ΔR^2	F	β	*t*
Step 1	.08	.08	13.35		
Disclosure of OGF with SGF				-.29	-3.65**
Step 2	.12	.12	6.61		
Disclosure of OGF with SGF				-.25	-3.20**
OGF not limited to university				.20	2.57*
Step 3	.15	.15	4.87		
Disclosure of OGF with SGF				-.23	-2.93**
OGF limited to university				.18	2.33*
Urban background				.17	2.21*
Step 4	.18	.18	5.42		
Disclosure of OGF with SGF				-.19	-2.43**
OGF not limited to university				.19	2.51*
Urban background				.18	2.40*
Same SES				-.18	-2.33**

*Note.*SGF= same gender friend, OGF= Opposite gender friend, SES= same socioeconomic status
*p < .05. **p < .01*

Table 5

Stepwise regression analysis for predictors of trust (Faith)

| Predictors	R^2	ΔR^2	F	β	t
Step 1					
Urban background	.06	.06	9.29	.24	3.05
Step 2	.10	.09	6.96		
Urban Background				2.10	2.67**
Disclosure of OGF with SGF				-.21	-2.64**

*Note. **p < .01*
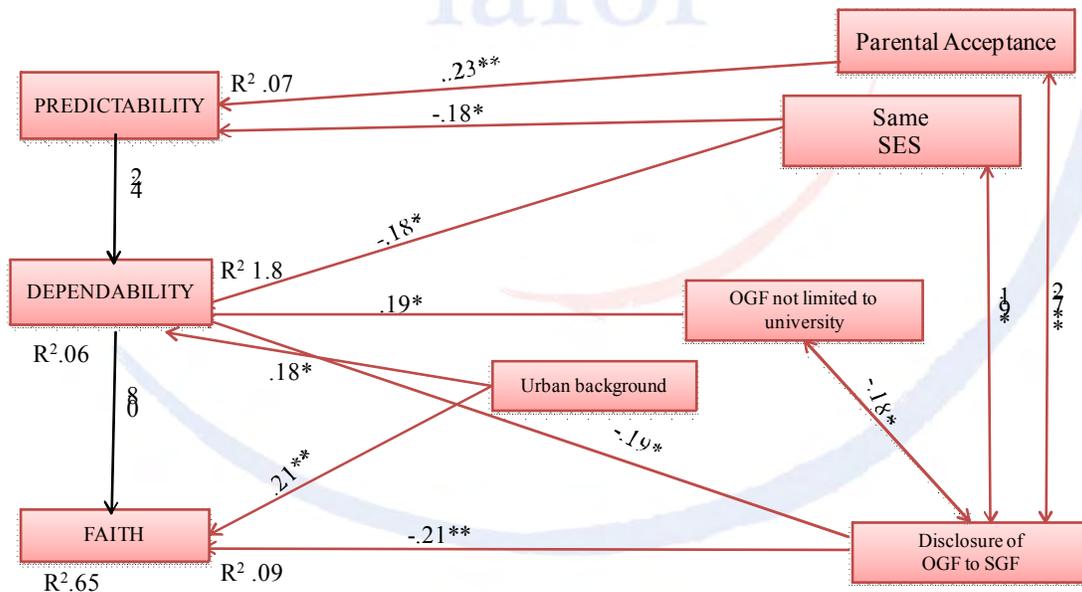
Figure 1 **:** Statistical Model of Trust in Pakistani sample based on Regression Analysis

*p<.05, **p<.01

Discussion

Research literature on cross-sex friendships is sparse and fragmented (Monsour, 1997) it is because cross gender friendships are less distinct, compared to SGF's (O' Meara, 1989: 525-543). A recent increase in the phenomena of cross gender friendships has been observed and it is predicted to continue in this century. However non romantic relationships between men and women still occupy an unusual place in the Pakistani society as they are considered less socially and culturally acceptable. This is why in spite of emphasis and suggestions by scholars and researchers limited research literature is documented in this regard (Bukowski et al., 1996. 189–202).

Current investigation was undertaken by recruiting a sample of student population from universities in Pakistan, as OGF friendships are more common in younger adults and college and university students (Fox et al., 1985: 1109−1120). Results of our study revealed no significant gender differences in level of trust as well as on all three dimensions (predictability, dependability and faith). These results are different from the earlier study (Warris & Rafique, 2009) highlighting that dynamics of OGFs are not the same as SGFs. Gender seems to be less important in explaining the construct of trust in OGF's. So to infer other than gender, factors associated with trust in cross gender friendships regression analyses were carried out on the three dimensions of trust outlined by Holmes & Rample (1989), namely predictability, dependability and trust.

 First regression analysis revealed that the three components of trust might be placed on a continuum. Predictability was found to be highly significant predictor of dependability which in turn significantly predicted faith. 65% of variance in faith was predicted by dependability whereas 6% of the variance in dependability was explained by predictability. It leads to the proposition that these three dimensions of trust might be three levels of trust, with faith at the highest level. Predictability emphasizes the consistency and stability of a partner's specific behavior based on past experience (Holmes & Rample, 1989). Trust blossoms from the general predictability (Grey & Garsten, 2001:229-250), and prevails where values are similar or comprehensible.

Further analysis on factors associated with trust was conducted. Parental acceptance of OGF came out to be a unique predictor of first level of trust (predictability). Thus revealing that parental acceptance plays a primary role in initiation of trust in OGF. Cooperation (coordination and helping) is frequently associated with trust (Mayer et al., 1995); and is increased when parents accept OGF. SES came out to be a predictor of both first and second level of trust. Predictability and dependability is learned through past experience and people form similar SES tend to share similar past experiences (Weisz, Lisa, & Wood, 2005:416-432). Trust development is influenced by similarity in social, cultural and economical status (Sato, 2002). A well-established finding in social sciences is that people who are friends exhibit a great deal of similarity in attitudes and behaviors (McPherson et al., 2001). So-called co-evolution studies that aimed to separate and to determine the relative importance of selection and influence found that selection rather than influence is the most important, or even only, process that leads to similarity

in attitudes and behaviors among friends (Mercken et al., 2007). Thus, it can be argued that development of friendship and consequently trust is to some extent based on similarities in backgrounds.

Likewise second and third levels of trust (dependability and faith) were predicted by urban background. A unique predictor of second level of trust (dependability) was, OGF not limited to university. Dependability involves a process in which both individuals are equally dependent on each other for unique outcomes (Holmes & Rampel, 1989) or have same level of vulnerability or commitment (Wieselquist, Rusbult, Foster, & Angnen, 1999). As this is comparatively a higher level of trust so OG friendships are carried outside the premises of the university (Rempel, Holmes, & Zanna, 1985).

Disclosure of OGF to SGF was a unique predictor for the highest level of trust (faith); faith is a feeling of confidence in relationships so disclosure at this stage is less risky and can be done with ease and confidence (Yaughn & Nowicki, 1999: 473-479). Better communication quality forms a basis for higher level of trust (Mohr & Spekman, 1994: 135-152). Openness and vulnerability (a basis of trust) in sharing information, based on the confidence that even the most sensitive information will not be exploited tends to develop at a higher level of trust. Rawlins (1992: 343-352) argues that while friends embrace honesty as a virtue, he argues that trust develops within friendships to the extent that the dialectic of expressiveness and protectiveness is appropriately managed.

Implications

This study highlights factors associated with three dimensions, infact levels of trust. Identified factors associated with trust can help towards building trust; a basis for all interpersonal relationships associated with therapeutic benefits: wellbeing and psychological support (Elkins & Peterson, 1993: 497- 509; Rook, 1995; 437-463). Friendships in which there is strong element of trust can enhance healthy personality functioning (Connor, 1992). In short, if trust could be enhanced in friendships; the friendships could be made more supportive, therapeutic and can inculcate healthy personality functioning as well as buffer the negative effects of every day hassles in a student's life.

Future research needs to focus on whether the factors associated with trust differ in male and females i.e. whether male and female OGFs have their own models of trust that differ from each other.. Moreover there remains need to investigate personality and further socio-cultural factors associated with trust. Only student population included in the study sample restricts the generalizability of the results to other populations like older, married male and female population, again highlighting need for further research.

References

Adams, RG, Blieszner, R & DeVires, B 2000. Definitions of Friendship in the Third Age: Age, Gender, and Study Location Effects. Journal of Aging Studies, V.14, pp117-33. doi:10.1016/S0890-4065(00)80019-5

Anderman, LH & Anderman, EM 1999. Social predictors of changes in students' achievement goal orientations. *Contemporary Educational Psychology,* Vol 25, pp. 21-37.

Bell, RR 1981. *Worlds of friendships.* Beverly Hills, CA: Sage Publications.

Block, JD 1980. *Friendship: How to give it, how to get it.* NewYork: Collier Books.

Brewster, DR 1998. *A Theory of Trust: An Exposition of Francis Fukuyama's "Trust".* http://webpages.charter.net/dbrews/trust.htm.

Bukowski, WM, Pizzamiglio, MT, Newcomb, AF & Hoza, B 1996. Popularity as an affordance of friendship: The link between group and dyadic experiences, *Social Development*, Vol.5, pp. 189–202

Thomas, JJ, Berndt, TJ 2004. *Friends similarity, friendship quality and academic and psychological adjustment.* Poster presented at the 10th Biennial meeting of the society for the research on adolescence. Baltimore, MD

Carroll, MN 2002. *Gender Differences in Trust and Loyalty within Single Gender Friendships.* Loyola University New Orleans. Retrieved from http://clearinghouse.missouriwestern.edu/manuscripts/397.asp

Connor, P 1992. *Friendships between Women: A critical Review*. New York, NY: The Guilford Press.

Elkins, L & Peterson, C 1993. Gender differences in best friendships [Electronic version]. Gender Roles: *A Journal of Research,* Vol.29, pp. 497- 509.

Fasteau, MF 1991. *Friendships among men.* In E. Ashton-Jones & G. A. Olson (Eds.) The gender reader. Boston: Allyn and Bacon.

Floyd, K 1995. Gender and closeness among friends and siblings. *The Journal of Psychology,* Vol. 129(2), pp.193- 199.

Fox, PT & Raichle, ME 1984. Stimulus rate dependence of regional blood flow in human striate cortex, demonstrated by positron emission tomography. *J Neurophysiol,* Vol 51: 1109−1120. https://www.google.com.pk/#hl=en&gs_nf=1&pq=(bukowski%20et%20al.%2C%201996).%20&cp=16&gs_id=2f&xhr=t&q=Fox%20et%20al.%2C%201985&pf=p&pwst=1&scli

ent=psy-
ab&oq=Fox+et+al.,+1985&aq=f&aqi=&aql=&gs_l=&pbx=1&bav=on.2,or.r_gc.r_pw.r_cp.r_qf.,
cf.osb&fp=41f8b226dbf57c15

Gamson, WA 1968. *Power and discontent. Thi5 Week's Citation Classic Homewood*, IL: Dorsey
P,. 208-214.
(Center for Research on Conflict Resolution. University of Michigan. Ann Arbor, MI]
http://garfield.library.upenn.edu/classics1987/A1987F862600001.pdf\

Griffin, K 1967. The contribution of studies of source credibility to a theory of interpersonal trust
in the communication process. *Psychological bulletin*, Vol.68, pp.104-120

Michener, A & Zeller, RA 2006. *Journal of Applied Social Psychology*, Vol.2, pp. 138–156
DOI: 10.1111/j.1559-1816.1972.tb01268.x

Hardin, R 2002. Liberal Distrust, *European Review*, Vol. 10 (1): pp. 73-89.

Holmes, G & Rempel, K 1986. *Trust and conflict in closerelationships.*
Invited address at the meeting of the American Psychological
Association, Washington, DC.

Holmes, G & Rempel, K 1989. *Trust in close relationships.*In C. Hendrick (Ed.)

Hyde, JS & Linn, MC 1988. Gender differences in verbal ability: A meta-analysis. *Psychological
Bulletin*, Vol.104, pp.53– 69
http://www.careerpioneernetwork.org/wwwroot/userfiles/files/the_gender_similarities_hypothesi
s.pdf

Jones, DC, Bloys, N & Wood M 1990. Gender roles and friendship patterns. *Journal of
Personality and Social Psychology*, Vol.49 pp. 95-112.

Levy-Tossman, I, Kaplan, A & Assor, A 2007. Academic goal orientations,multiple goal
profiles, and friendship intimacy among early adolescents. Contemporary Educational
Psychology, 32, 231-252.

Maccoby, EE 1990. Gender and relationships. A developmental account. *AM Psychology,*
Vol.45,pp.513-20 http://www.ncbi.nlm.nih.gov/pubmed/2186679

McGill, ME 1985. *The McGill report on male intimacy.*NewYork: Holt, Rinehart and Winston.

Mellinger, GD 1956. Interpersonal trust as a factor in communication, *Journal of abnormal and
social psychology*, Vol. 52, pp.302-309

Miller, S 1983. Men and friendship. Boston, MA: Houghton Mifflin Company. *Behavioral
science sex roles.* Vol.37, pp.825-845, doi: 10.1007/bf02936342

Mohr, Jakki, Spekman & Robert 1994. Characteristics of partnership success: Partnership

attributes, communication behavior, and conflict resolution techniques, *Strategic Management Journal*, Vol.15, pp.135-152

Monsour, M 1997 Women and Men As Friends: Relationships Across the Life Span in the 21st Century.http://books.google.com.pk/books/about/Women_and_Men_As_Friends.html?id=PiNvF IOK9n0C&redir_esc=y

Murray, B 1999. Boys to men: Emotional miseducation. APA Monitor Online. http://www.apa.org/monitor/julaug99/youth.html.

Noack, P. Kretterk, C. Walper, S 2001. Peer relations of adolescents from nuclear and separated families. Journal of Adolescence, 24 (2001), pp. 535–548

Reisman, JM 1990. Intimacy in same-gender friendships. *Journal Psychology,* Vol. 23,pp. 65-82 http://www.springerlink.com/content/pl4x083t46x568u1/pdf

Roy, R, Beneson, J & Lilly, F 2000. Beyond intimacy: Conceptualizing differences in same sex friendship. *Journal of psychology,* Vol. 134, pp.93-101.

Rubin, H 1985. Qualitative interviewing: The art of hearing data. Thousands Ooks, CA: Sage http://www.public.asu.edu/~ifmls/artinculturalcontextsfolder/qualintermeth.html

Turner, ER 2002. *The Differences in The Levels of Trust in Male and Female Same Gender Friendships.* Loyola University New Orleans. http://clearinghouse.missouriwestern.edu/manuscripts/384.asp

Waris, A & Rafique, R 2009. Trust in Friendship: A Comparative Analysis of Male and Female University Students, *Bulletin of Education & Research*. Vol.31, Institute of Education and Research, University of the Punjab, Lahore.

Wrightsman, LS 1974. *Assumptions about Human Nature: A social Psychological approach, Monterrey* :CA Brooks Cole.

Rawlins, WK 1982. Fall, Cross-sex friendship and the communicative management of sex-role expectations. *Communication Quarterly*, Vol30 (4), pp.343-352.

 Rempel, JK, Holmes, JG & Zanna, MP 1985. Trust in close relationships. *Journal of Personality and Social Psychology*, Vol.49(1), pp. 95-112.

Rawlins, WK 2000. Teaching as a mode of friendship. *Communication Theory,* Vol.10 (1), pp.5 26

Rubin, LB 1985. *Just friends: The role of friendship in our lives.* New York: Harper and Row.

Rook, KS 1995. *Support, companionship, and control in older adults' social networks: Implications for well-being.* In JF Nussbuam & J. Coupland (Eds.), Handbook of communication and aging research (pp. 437-463). Mahwah, NJ: Lawrence Erlbaum Associates

Weimer, BL, Kerns, KA & Oldenburg, CM. 2003. Adolescents' interactions with a best friends Associations with attachment style. *Journal of Experimental Child Psychology,*Vol. 88, pp.102-120.

Wieselquist, J, Rusbult, D, Foster, CA & Agnew, CR 1999. Commitment, Pro-Relationship Behavior, and Trust in Close Relationships http://faculty.wcas.northwestern.edu/eli-finkel/documents/65_WieselquistRusbultFosterAgnew1999_JournalOfPersonalityAndSocialPsychology.pdf

Weisz, C, Lisa, F & Wood, I 2005. Social identity support and friendship outcomes: A longitudinal study predicting who will be friends and best friends 4 years later. *Journal of Social and Personal Relationships*, Vol. 22, pp.416-432.

Yaughn, E & Nowicki, S 1999. Close relationships and complementary interpersonal styles among men and women. *Journal of Social Psychology,* Vol. 139, pp.473-479.
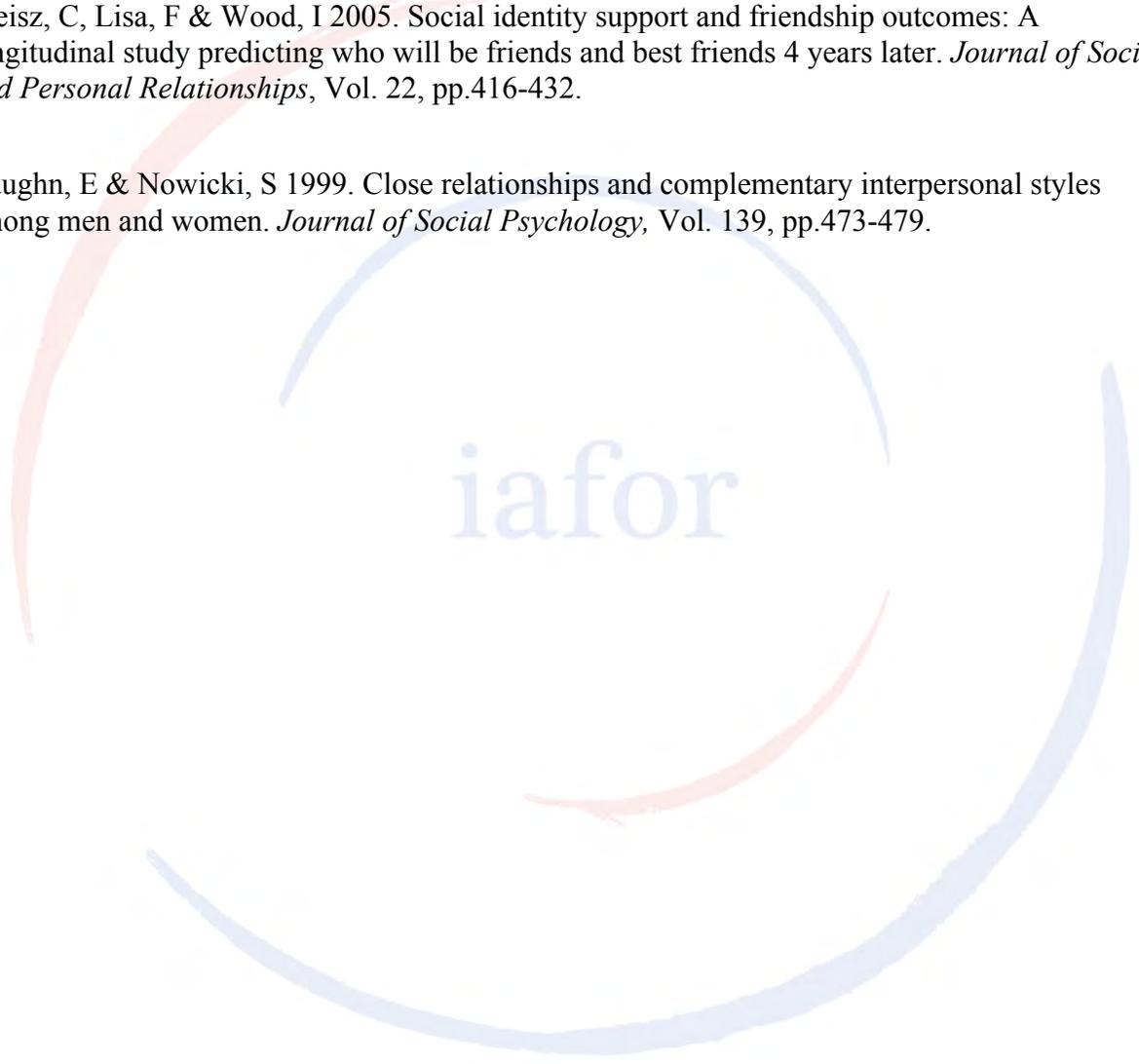
Evaluation qf vhe Graphic Symbols Used kn Taiwan High-Speed Rail

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0222

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Abstract:

Identification symbols enable us to understand clear and representative meaning. There were no studies on understanding ratio and meaning mixture of Taiwan High Speed Rail. To understand whether there is such a mixture becomes an important issue for further study. The research has questionnaires made on identification symbol of Taiwan High Speed Rail for study of understanding ratio. The findings show none of the variables have significant differences on the 40 symbols. There are, however, mixtures on the 11 identification figures.

1. Introduction

HSR (High Speed Rail) is planned to develop toward large-scale and diversification. It has a large capacity because of its multi-functions. However, as HSR terminal is at the center of Taiwan and has many exits, the direction is complex. Putting up signs will help passengers know the directions and arrive at their destinations rapidly.

Sign are public communication symbols, of which the terse images express specific meanings and important messages are communicated by the assistance of people's association. HSR has numerous graphic symbols, but as everyone has different recognition toward signs, they tend to be confusing and cause misunderstandings. The HSR System will also be built in central Taiwan, thus this study will discuss the recognition rate of the public in central Taiwan toward graphic symbols, and execute improvement practices.

2. Purpose of Study

A. Study the public's recognition of HSR graphic symbols.
B. Study the relationship between sex, age, education and occupation, experience in travelling by HSR and average frequency of travelling by HSR per year and the graphic symbols.
C. Improve those with low rate of graphic symbols recognition and high similarities, and analyze the results.

3. Literature Review

Institute of Transportation, MOTC (1986), states signs should have main functions of visibility, authoritativeness, understandability and acceptability. Their descriptions are as follows.
(1) Visibility
(2) Authoritativeness
(3) Understandability
(4) Acceptability

Signs are not accessories of HSR System but a part of its design, thus they cannot be planned and installed after construction of HSR System is finished. In other words, signs and HSR System should be coordinated together since the initial route design.

If proper signs can be planned in advance as guidance and warning for drivers and passengers, it may be possible to improve undesired HSR System routes. Therefore, in the initial design, the location of signs or the coordination between signs and structure should be planned thoroughly to achieve the expected effect. After the construction of HSR System is done, appropriate modifications should be applied based on the recognition level of passengers toward signs and the traffic conditions to increase control for promoting efficiency of use of HSR System.

Signs are easily damaged, broken or moved, and may be unidentifiable due to dust, smudges or damaged surface, thus the application is limited. For a sign to sustain its authority and effect in traffic control or guidance, how to systematically maintain the renewal, resupply and changing of paint and the development of new materials are very important.

4. Research Method
4.1 Design of Questionnaire

This study organized image files of pictures taken with a digital camera and redrew 27 HSR graphic symbols using 2D Photoshop. In the questionnaire are 33 questions of which 6 are about basic profile and 27 are on HSR graphic symbols. The questionnaire is color printed

so test subjects can understand more clearly the meaning expressed by signs.

The questionnaire contains 1 to 6 questions on basic profile. Questions 1 to 4 about the test subject's gender, age, education and occupation, of which no names are required; Questions 5 and 6 ask whether the test subject has ever travelled by HSR, if yes, how many times has he/she travelled by HSR. Questions 7 to 33 are guidance graphic symbols, each graphic symbol has 4 options, of which only 1 is correct.

Statistics on the recognition rate of the public toward HSR graphic symbols can be compiled from the questionnaire. If test subject selects more than two options in one question, it indicates the graphic symbol is confusing, causing people to misunderstand the message.

4.2 Distribution of Questionnaire

Based on whether there is significant relationship between HSR sign recognition rate and six variables, including gender, age, education, occupation, experience in travelling by HSR and average frequency of travelling by HSR, this study analyzes graphic symbols of HSR System. A total of 500 questionnaires were distributed, primarily to discuss whether age, education and experience in travelling by HSR affect symbols. 27 graphic symbols are used in the questionnaire, which was distributed in Taichung.

Among the 500 questionnaires distributed, 445 were actually collected, and 55 were invalid questionnaires, including those that were lost or invalid. It is observed from the questionnaire data that test subjects' recognition rate in 6 graphic symbols were lower, including Shin Kong Mitsukoshi, Contact station staff in case of lost items, Taiwan Railways Lobby, Do not lean on door, HSR commodity store, and Infants first.

It is observed from the questionnaire data that test subjects' recognition rate in 6 graphic symbols were lower, including Shin Kong Mitsukoshi, Falling objects, Contact station staff, Taiwan Railways Lobby, Do not lean on door, HSR commodity store, and Infants first. We suggest improvements for these six graphic symbols to increase recognition rate.

5. Data Statistics and Analysis

This study distributed 500 questionnaires and collected 445 valid questionnaires. The purpose is to study the recognition of the public toward HSR symbols. In the questionnaire are questions on gender, age, education, occupation, experience in travelling by HSR and average frequency of travelling by HSR per year, and 27 HSR graphic symbols, of which four options are provided for each symbol and only one is correct.

For each symbol, the test subject is to choose the most appropriate answer from a list of text meanings, and whether the answer chosen is correct determines the correct rate of each symbol.

In the answers by the subjects, if a certain symbol has more than two meanings, it indicates existence of confusion, thus a confusion matrix can be used to identify and improve the confusing graphic symbol. Whether there is significant relationship between HSR graphic symbol recognition rate and gender, age, education, occupation, experience in travelling by HSR, average frequency of travelling by HSR, and the 27 HSR graphic symbols, is determined by ANOVA.

In the confusion matrix, if the HSR graphic symbol recognition rate is lower than the standard 85% regulated by this study, the symbol is considered to be in need of improvement. According to this standard, it can be observed from the confusion matrix that the graphic symbols for【Shin Kong Mitsukoshi】,【Contact station staff in case of lost items】,【Taiwan Railways Lobby】,【Do not lean on door】,【HSR commodity store】, and 【Infants first】 should be further improved.

5.1 Questionnaire

In the questionnaire are questions on gender, age, education, occupation, experience in travelling by HSR, average frequency of travelling by HSR per year, and 27 public graphic symbols, of which four options are provided for each symbol and only one is correct. The correct rate of each HSR symbol is determined by whether the answers of test subjects are correct. ANOVA is used to determine whether the relationships between HSR symbol recognition rate and gender, age, education, occupation, experience in travelling by HSR and average frequency of travelling by HSR per year. The significance (p-value) and standard value (α=0.05) are compared. If p-value is greater than α=0.05, sign recognition rate has no significant effect; if p-value is lower than α=0.05, sign recognition rate has significant effect.

The results of average correct answers show that the correct rate sum of "Male" is 2335.00, average correct rate is 86.48; the correct rate sum of "Female" is 2482.45, average correct rate is 91.94. Thus, the average correct rate of "Female" is higher than "Male". Age: "40-49", education: "College", occupation: "Public servant", experience in travelling by HSR: "Yes", and average frequency of travelling by HSR per year: "4" have higher correct rates.

The results of one-way ANOVA show that, for gender, p-value 0.098>standard value 0.05 (α). In general, the correct rate of different genders is not significantly different. Thus, the impact of HSR graphic symbol recognition rate on gender is not of significance level. Age: p-value 0.000<standard value 0.05 (α), impact is of significance level; education: p-value 0.010<standard value 0.05 (α), impact is of significance level; occupation: p-value 0.057>standard value 0.05 (α), impact is not of significance level; experience in travelling by HSR: p-value 0.222>standard value 0.05 (α), impact if not of significance level; average frequency of travelling by HSR per year: p-value 0.007<standard value 0.05 (α), impact is of significance level.

6. Conclusion

The analysis results of the "questionnaire" filled out by the test subjects show that, among the recognition rates of the 27 graphic symbols, the correct rates of signs for "Shin Kong Mitsukoshi", "Contact station staff in case of lost items", "Taiwan Railways Lobby", "Do not lean on door", "HSR commodity store" and "Infants first" are lower than 85%, because test subjects have different recognition toward public graphic symbols or because of poor design. These six graphic symbols should be improved to increase to the standard value 85% set by this study.

This study found that, for HSR graphic symbols as a whole, impacts between "age", "education" and "average frequency of travelling by HSR per year" and public graphic symbol recognition rate are of significance level; impacts between "gender", "occupation" and "experience in travelling by HSR" and public graphic symbol recognition rate are not of significance level. However, when focused only on individual graphic symbols, the impacts between "gender", "age", "education", "occupation", "experience in travelling by HSR" and "average frequency of travelling by HSR per year" and public graphic symbol recognition rate are of significance level.

References:
Baber , J. & Wanking, H. (1992) An experimental comparison of text and symbols for in car reconfigurable displays. Applied Ergonomics, 23 (4), 255-262.
Ells, J. G. & Dewar, R. E. (1979) Rapid comprehension of verbal and symbolic traffic sign messages. Human Factors, 21, 161-168.
McCormick, E. J. & sanders, M. S. (1982) Human factors in engineering and design, 5th ed.,

McGraw-Hill, New York.

Zwaga & Boersema, (1983) Evaluation of a set of graphic symbols. Applied Ergonomics, 14, 43–54.

Zwaga, H. J. G. (1989) Pedestrian preferences for symbolic signal display. Traffic Engineering, 47 (6), 38-42.

Self-Trust cnd Positive Development

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Abstract:

Self-trust means "self-reliance" and "faith" in one's ability. Trust is a learned skill inculcated in early childhood to promote self confidence and courage against all odds. Studies have reported positive correlation between self- trust, positive health, spirituality and emotional stability. Under the domain of positive psychology human 'strengths' have been extensively explored by a variety of research studies. This literature offers rich insight into the understanding of self and positive human development. The fundamental tool for shaping positive values and self efficacy among children is self-trust. Parents and care-givers in early childhood play a significant role in promoting self confidence.The present research study was conducted on four hundred adolescent Indian students of two urban cities measuring the influence of early socialization and quality parenting on academic achievement, discipline and good health. Several characteristics of trust like optimism, honesty, integrity, team work, gratitude, hope, social intelligence and perseverance were measured. Findings suggest that early childhood socialization process, parental care and social influences are the key links in shaping of self- trust among children. Positive self values and humility are found to be correlated with self- trust and confidence.

What does self trust mean?

Self-trust appears to be the precursor to creativity and intuition. Creativity comes from trust reported by Mae Brown. It is believed to be true. A child's creative expression emerges when they trust their instincts and allow them an outlet. Carl Rogers, Father of Humanistic psychology, coined the concept of unconditional positive regard. It is where a child (or adult) is feeling completely accepted without any judgment or condition. Being raised in an environment where he is not doubted his self is an ideal place for the unfolding of self-trust. Recognizing Strengths it is discovered that every child needs a little guidance in helping understand, recognize and own his or her unique strengths (i.e. basketball, playing the piano, mathematics). For example, the more achieved is appreciated as a talented singer he develops a positive sense of her singing ability. She trusts her ability to sing well in front of others. It is a form of self-trust. Looking within - As Carl Jung so eloquently stated "Who looks outside, dreams. Who looks inside, awakens." Guiding children to look within themselves for answers is a process of teaching self-trust. Some lead-in questions may include: How do you feel? What do you think? What is your sense? A habit of internal searching forms, reliance on self develops and often trust ensues.

Creating the environmental, emotional and habitual inclinations for children to begin recognizing their selves as skillful is of enormous benefit. It stimulates their ability to extend smart self-trust.

Introduction

Human development is a continuous and complex process. It is influenced by personal, environmental and situational characteristics. Scientific understanding of those relationship helps to identify such factors that shape positive and negative influences on human behaviour. Many of the problems that arise later in life have their origins in the first years of the child's life. This means that parents are the main contributors to the child's genetic, psychological, emotional and intellectual resources. At the same time they are also the primary mediators of society's norms and demands which act as a filter for the effects of society on the child. All children are more than the sum of their parent's psychological and physiological characteristics. In addition to the genetic inheritance of their parents' physical emotional and overall psychological traits, they also inherit to a lesser extent the traits of a wider collective environmental influences including the child's own environmental influences. The development of human behaviour is a complex yet an interesting subject to study.

Building Self-efficacy and Resilience:

Human beings consist of positive and negative resources. Positive resources contribute greatly to the overall adjustment. These positive resources are satisfactions they derive from work, love and play, (Powell, 1982) and how they cope with negative influences. *Self efficacy* beliefs provide the foundation for motivation, well-being and personal accomplishment in all areas of life (Pajares 2005). Research studies have made

noteworthy contribution to the understanding of self-efficacy and its relation to motivation and achievement.

Defining Self-efficacy and Resilience

Human capabilities may be enhanced systematically by positive emotion and resilience. Human conduct is viewed to be the product of personal, behvioural and environmental influences. One's behaviour is constantly under reciprocal influence from cognitive and other personal factors, such as motivation and environmental influences. The growth and reduction of self-efficacy is influenced over time by social comparison with peers and it is more pronounced as one grows older. Resilience is bouncing back from challenging situations or in the face of adverse situation finding oneself overcome adversity.

Sex Difference

Boys and girls mature at different ages. It is found that boys mature later than girls. It is found that females are less likely to be involved in behaviour problems in school (Barnes and Farrel, 1994). Gender difference in thought process and emotion was found. (Gurian, 2004) It was found that boys reported lower levels of knowledge and different sources of stress than girls. Negative attitudes were more common among boys than girls. (Mukhopadhyay, 2008). The interacting perceptual influences of confidence and gender stereotyping are influential sources of self-efficacy information, but not determinants of beliefs about capabilities with regard to specific tasks.

Positive Adaptation

Positive adaptation is key to development. It has been defined in several ways, including absence of psychopathology, behavioral and cognitive competence (Kim-Cohen, Moffitt, Caspi, & Taylor, 2004), and mastery of appropriate developmental tasks. The importance of both external adaptation to the environment and internal sense of well being as part of a comprehensive assessment of resilience is emphasized. Moreover, resilience is better characterized as a dynamic process, because individuals can be resilient to specific environmental hazards or resilient at one time period but not another (Rutter,2006). Despite conceptual inconsistencies, research has reliably reported a number of characteristics associated with resilience like positive and supportive care, family relationship, competent parenting, child's temperament and higher cognitive ability (Masten et al., 1999; Wyman et al., 1999).

Review of literature

Emerging mounting literature on cross cultural researches made by social psychologists and others it seems paradigm shift is necessary with regard to constructs, methodology, procedures and interpretations. Asian values differ from Western values contextually and culturally. A holistic approach with scientific analysis may be focussed on global perspectives of cross cultural variations/similarities and assumptions to create a scientific data base for meaningful interaction and intervention.

Impacts of fast food, inactive and sedentary life style are alarming. In a recent study by department of medicine of All India Institute of Medical Sciences (Delhi)

conducted on 2000 adolescents of Delhi (14-24 years) reports one in 10 adolescents is clinically obese and five per cent have high blood pressure. The reason is cited as over 80 per cent are inactive. "The study confirms that current dietary trends combined with inactivity will expose this generation to hypertension, heart disease and diabetes by middle age" (Misra 2004).

Adolescence is the most critical age for development of moral values because of certain biological changes and increased influence on emotion, aspiration, rationality and judgement that are found during adolescence. It is critical because adolescence is a transitional period, a period of change, a dreaded age and a time of unrealism (Hurlock, 1975). There are four characteristics found universally. It is a transitional period, the adolescent is neither a child nor an adult. This ambiguous status contributes greatly to the adolescent "identity crisis" or the problem of ego-identity (Erikson, 1968).

With rapid biological changes in adolescence changes in attitudes and behaviour are also rapid which develop instability. This may be intensified by the ambiguous treatment he receives from both parents and teachers.

Adolescents characteristics

There are four universally found characteristics develop during adolescence:

1. The heightened emotionality.

2. Rapid biological changes.

3. Changes in the role expectation.

4. Changes in interest, behaviour patterns and values.

Cultural stereotypes of adolescence period puts a barrier in transition to adulthood. It is believed that adolescents are sloppy, irresponsible and unrealistic. This stereotype may lead to strict discipline, and vigilance of parents toward their children. Children on the other hand perceive this as lack of trust, respect and poor opinion of the parents. This conflicting attitudes lead to a barrier in communication between child and parents leading to emotional disturbance and lack of mutual confidence. Such situation prevents him to seek help from parents for solving his problems.

Unrealism in adolescence is due to heightened emotion. It is generally observed that the more unrealistic his aspiration, the more angry, hurt and disappointed he will be. With to increased social and personal experiences and with increased ability to think rationally, the older adolescent sees himself, his family and friends in a more realistic way. As a result he is happier and suffers less from disillusionment or disappointment than he did when he was younger. This transition period from young adolescence to maturity or adulthood is crucial.

Adolescents are likely to choose friends as attachment figures who fit with their existing working models. The central importance of peers in the lives of adolescents has received a great deal of attention (Allen, et. al. 1998; Csikszenthmihlayi & Larson, 1984).

In current thinking, the adolescent peer context is regarded as a prime instigator of new behaviors and lifestyles. A huge literature suggests that intimacy and empathy, self-disclosure, and mutual responsiveness emerge within these friendships. Friendships are self-initiated and are based on openness, affection, empathy, loyalty and reciprocity, and they make adolescents sensitive to others' perspectives, roles and feelings (Berndt, 1982; Marcus, 1996; Sullivan, 1953).

Adolescents have close relationships with parents and peers simultaneously, and certain aspects of both these relationships are linked to adjustment. In Seligman's learned-helplessness study (overmier & Seligman, 1967) dogs who could not control the end of an electrical shock by jumping out of the cage eventually exhibited behavior similar to that of depressed people. The same lack of control over one's circumstances seems to underlie some forms of depression (Klein & Seligman, 1976; Peterson & Seligman, 1984, Seligman, 1975). Interactions with others, then, can evoke emotions that have obvious implications for people's psychological well- being and feelings such as being overly controlled that also have strong implications for well-being. Parents' trust or mistrust will affect the way they relate to and communicate with the adolescent.

Relationship with Parents

The research on risk behaviours among certain individual and contextual characteristics with adolescent's involvement in risk behaviours suggests that the need to be close to parents in times of distress - and for parents to respond to their children's distress- are biologically based to promote survival of the species. Adolescents continue to use parents as a secure base for exploration, using temporary returns to the safe haven

of parents to help them, particularly in times of distress, illness, fear, or stress (Marvin & Britner, 1999).

Data support the idea that low child disclosure, negative feelings toward parents, and feelings of being overly controlled by parents are all concurrently linked to higher delinquency, to belonging to deviant peer groups, and to doing poorly in school both socially and academically (Kerr & Stattin, 2000; Stattin & Kerr, 2000). After the child has joined a group of peers who have had bad feelings about authority, rules and structure, and adult contact, these peers might coax or reinforce each other into more and more deviant activities.

Development of social esteem and self-esteem

Social psychological theory has long assumed that individuals are inherently motivated to maintain a consistent view of the self- and that such consistency is integral to psychological well-being. Self-esteem is universally fundamental to psychological well being is challenged by researchers. Social scientists are of the opinion that lower in the various status, hierarchies would have lower self-esteem than the more favoured members of the society (Hodge, Siegel and Rossi,1964). It is found that "people derive much of their knowledge (about themselves) from direct experience of the effects produced by their actions" (Bandura, 1978). The evidence strongly suggests that children and adolescents, particularly, tend to compare themselves with those in their immediate interpersonal environments.

Open-ended attributional research on self-description, for example, has documented that whereas the open-ended self-descriptions of American adults emphasize positive attributes (Herzog, Franks, Markus & Holmberg, 1998), those of Japanese adults

emphasize either weakness or the absence of negative self-characteristics (e.g., *I' m poor at math, I' m not selfish).*

Poor self-esteem and aspirations are linked with maladjustment. Adolescents who perform poorly in school and who possess low educational aspirations are more likely to become involved in alcohol and substance use/abuse (Dryfoos, 1990).

Parental communication with adolescent is characterized by negative patterns (criticism and lack of praise) has been linked with adolescent engagement in alcohol and drug use/abuse (Barnes & Farrell, 1994; Hawkins et al., 1992). In addition, lack of Parental monitoring and discipline are related to an increased likelihood of adolescent alcohol and substance use (Dryfoos, 1990; Hawkins et al., 1992; Scheer, Borden, & Donnermeyer, 2000).

Low family support, as measured by low warmth and affection among family members, has been linked with antisocial behaviors during adolescence (Farrington, 1998; Hawkins et al., 2000; Henggeler, 1989; Herrenkhol et al., 2001).

Social values of Indian and American female students were measured on the Rokeach Value Survey (1973). Seventy five percent Indian sample was selected from institute of higher education, Coimbatore (South India) and 75 students from Mid-western public university, USA. Results showed difference between the groups. Indian students gave higher rank to *friendship and eternal life/salvation* as important than U.S. students, while *mature love* and national security were of higher importance for students from the U.S,. (Canabal, M.E., 2004).

It is reported by Ching (1982) that "the major task which Chinese Psychologists have faced was to emancipate it from bourgeo's ideological influence and to make the

science capable of service to China's socialist construction". He said that mind is a reflection of social environment in which one lives.

Values are abstract concepts that play a significant role in determining how individuals act in situations that involve evaluative judgements. Therefore, understanding the importance of specific values to individuals can help social scientists make sense of how people make decisions and interact with one another.

Work in the area of morality, relationships, and attachment highlights the need to expand current conceptualization of motivation. For example, research in the domain of morality with both Hindu Indian populations (Shweder, Mahapatra, & Miller, 1990), as well as with orthodox religious communities within the United States (Jensen, 1997) has documented forms of morality based on concerns with divinity that are not encompassed in existing psychological theories of morality, with their exclusive stress on issues of justice, individual rights, and community. Cross- cultural work conducted on the morality of caring among Hindu Indian populations and cross-cultural work conducted utilizing Kohlbergian methodology have uncovered the existence of forms of duty-based moralities of caring that although fully moral in character, differ qualitatively in key respects from those explained within Gilligan's framework (J.G. Miller, 1994, 2001 b; Snarey & Keljo, 1991).

School Environment

School climate has been found to be associated with maladjustment. Schools that emphasize competition, testing, and tracking and have low expectations have a higher number of school failures and dropouts than do schools that have high expectations,

encourage cooperation, and have teachers who are supportive (Powell-Cope & Eggert, 1994; Rumberger & Thomas, 2000; Rutter, 1979).

The constructs of individualism-collectivism have been invoked in explaining such diverse phenomena such as values (Hofstede, 1980; S.H. Schwartz, 1994), cognitive differentiation (Witkin & Berry, 1975), and modernity (Inkeles, 1974). Collectivism is seen as encompassing such core ideas as an emphasis on the views, needs, and goals of one's in-group as having priority over one's own personal views, needs, and goals and a readiness to cooperate with in-group members. In recent years, researchers have shown increased interest in the constructs of individualism and collectivism as a consequence of these constructs being linked to the distinction drawn by Markus and Kitayama (1991) between independent versus interdependent modes of self-construal.

Human strengths differ across cultures. Achievement of personal happiness and well- being and enhancement of the self is likely to be viewed more positively in individualistic cultures than in collective cultures (Diener et al., 1999; Kitayama, Markus, Matsumoto, and Norasakkunkit, 1997). Similarly, valuing of pro-social behaviour may differ across cultures. Hindu Indians, school-aged and adult, tend to focus more than Americans on the importance of responsiveness to others' needs in discussing moral conflicts (Miller & Bersoff 1992).

Objectives of the Study:

- To identify values among Adolescents in two metropolitan cities.
- To understand the link between values and human development.
- To know the influencing factors in development of adolescence values.
- To create opportunities that will foster positive growth in young people across the world.

Methodology

The present study makes a modest attempt to understand how different cultures and institutional environments influence in shaping human virtues among adolescents. This is a part of an on - going mega research project undertaken to explore the influences of educational institutions in the development of positive values in young children. The study is spread over two major metropolitan cities in India. A sample of 400 students of XII grade (secondary school) from Delhi (North India) and Kolkata (East India) were administered a questionnaire measuring 24 characteristics of human strengths adapted from Seligman's signature strengths. According to Seligman, a virtuous person usually displays all or most of these traits through various actions. He claims that each of these virtues is measurable and acquirable. 24 values appear in cluster of six core virtues mentioned below.

Core values	Cluster Values
1. Wisdom:	Curiosity, Love of learning, Judgement, Ingenuity, Social intelligence, Perspective
2. Courage:	Valor, Perseverance, Integrity
3. Humanity and Love:	Kindness, Loving
4. Justice:	Citizenship, Fairness, Leadership
5. Temperance:	Self-control, Prudence, Humility
6. Transcendence:	Appreciation of beauty, Gratitude, Hope, Spiritually, Forgiveness, Humor, Zest

Source: Martin E.P. Seligman, Authentic Happiness, 2002.

We selected fifteen `virtues' randomly out of the 24 `signature strengths' mentioned above. Items selected from original questionnaire available in the website at www.authentichappiness.org from VIA Strengths Survey*. We selected 100 items only. The measure includes fifteen virtues: Love of learning/curiosity/general awareness, perseverance, perspective/worldly, social intelligence/emotional intelligence, courage/integrity/honesty, humanity/love/kindness, teamwork/sense of duty, self control/prudence, humility/modesty, gratitude, hope/optimism, judgement, spirituality, humour, forgiveness.

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* The questionnaire is the work of the Values-In-Action (VIA) Institute under the direction of Christopher Peterson and Martin Seligman.

The scale has five response categories, 1 to 5. The score 5 represents the highest positive value and 1 the least. Students were asked to tick in one of the five response categories out of 100 items that described them the best.

Sample

400 students of XII grade from Delhi and Kolkata were selected. Two prominent schools (one coeducation, one Christian Missionary School for girls) were chosen from Delhi and Kolkata with similar background in terms of school's status, English medium, parents' education, occupation, income and overall performance. Christian Missionary Schools were selected with a view to observe if there is any influences of Christian education and disciplines on `values' among students. The questionnaire was administered to XII grade students only keeping the age (17 +) as important factor of

sample selection. A total of 400 students were selected out of which 200 were males and

200 were females in Delhi and Kolkata respectively.

Hypotheses:

Hypothesis – 1

Male and female students will have different character

strengths and virtues.

Hypothesis -2

There will be difference in values between Delhi and

Kolkata students.

Hypothesis -3

Difference in values will be shown by Christian

Missionary Schools over co-education schools.

Hypothesis – 4

The Major Source of Adolescence values are – Parents, Teachers and Peers.

Limitations

The test has varied items measuring virtues under specific cluster. Some of the

items were very general that was not measuring any unique virtue. For example,

"I dread getting up in the morning",

"If candy or cookies are around, I usually eat them"

These statements are very common and most children do sometimes feel dread in getting

up in the morning. Similarly, "Candy" or "Cookies" are meant for children – they may

not be able to control their temptations. These are culture specific and more of a general nature than of specific "core value".

Sample from missionary schools involved only girls. No Christian missionary school for boys or coeducation school was chosen. So comparison between schools, specially from Christian culture and discipline is not possible. However, analysis of missionary girl schools of Delhi and Kolkata is not yet complete. Another limitation we observed that school teachers and parents of the respondents were not included in this study which would have been a substantial resources for understanding the variations in results. The distinct characteristics within each cluster (domain) got merged in some of the items showing little difference. Therefore, some `values' found to be similar in all the cases. This is, why difference between values found in Mean scores could not be stated significant as there was no `variance test' applied. However this result shows general trend only.

Analysis and discussion

As hypothesized values are developed in the family and further influenced by school, peers and others. India being a democratic country with multi-ethnic groups students are found to have positive values – such as optimism, curiosity of learning, honesty, citizenship, gratitude, perseverance and a sense of belonging as major traits. When compared with regional cultural variance it is found to be different as expected. Delhi being the most cosmopolitan capital city with multi-ethnic groups values are rightly different than Kolkata i.e. eastern part of India as collectivist. It is known as the *City of Joy*. Adolescents in Delhi have optimism, curiosity of learning, gratitude, perseverance and citizenship as major values.

Data analysis was made on the basis of Mean Scores on each of the 15 "virtues" mentioned above. Female students of Christian missionary and coeducation schools scored higher on **humility** and **forgiveness** (M = 4.50, 3.85) while male students from Kolkata were higher on courage (M= 4.81) and team work (3.83). A comparison between female students from Delhi and Kolkata showed higher score on **integrity** and **humanity** (Kindness and love) by female students of Delhi with a Mean score of 4.85. `Love of learning' and `curiosity' were found to be dominating virtues among male students of Delhi with Mean scores of 4.60 and 3.90 respectively. **Self control, hope** and **optimism** were dominating among females compared to males. Males of Delhi school showed higher strengths in **gratitude, humility** and **modesty** compared to females from both Delhi and Kolkata. With regard to **practical knowledge** and **perspectives** male students of Delhi showed higher strengths. Some major strengths and their rank order is given below.

Rank order of major values between Male and Female Students (Mean score)

Rank	Virtue	Male	Female
1.	Humanity		4.85
2.	Courage	4.81	
3.	Love of Learning	4.60	
4.	Humility		4.50
5.	Curiosity	3.90	
6.	Forgiveness		3.85
7.	Team work	3.83	

Major findings:

- Adolescence is a critical stage of human development.

- Psychological factors are important determinants of coping with internal and external diversity.

- Childhood experiences and exposure of positive and negative values help in developing adolescence moral values.

- Values are culture specific and parents are instrumental in helping develop right values of their children.

- School environment, teachers' behaviour, pattern of reward and punishment do help in developing self- esteem, self-confidence, security, positive and negative emotions among adolescents.

- Regional cultural diversity and lifestyle influences moral values.

It is important to understand first, the influencing factors of positive and negative values and their impacts on human development. The necessary steps to control negative forces at home and school environment are required. As far as possible family and school jointly help in shaping positive values among adolescents. It is imperative to control adverse conditions to control for inculcating the desirable positive values among younger students.

In summing up I wish every teacher, every parent, every person who works with adolescents would note this and get themselves trained in shaping positive values in Adolescents to pursue positive self development.

Conclusion

This study provides an insight how to inculcate more positive strengths and prevent maladjustment. Overall comparison of two regions (Delhi and Kolkata) shows

interesting results. Subjects from Kolkata have greater character strengths in courage, integration and teamwork while respondents of Delhi were found higher on love of learning and humanity. Indian cultural diversities in relation to survival strategies need to be understood going beyond the cause and effect study. Our collective efforts in mutual growth and competence building should be explored through interdisciplinary research with indigenous methodology. Asian Social Psychology has crucial role in regional and inter sectoral development in positive social development. How can psychology be the effective tool to understand and foster positive values in young minds is the prime aim of this research? It is a continuous process. These results are only an indication of cultural diversity and gender stereotypes.

References:

Allen, J.P., Moore, C., Kuperminc, G., & Bell, K. (1998). Attachment and adolescent psychosocial functioning. *Child Development.* 69 (5), 1406-1419.

Barnes & Farrell, M.P. (1994). Parental support and control as predictors of adolescent drinking, delinquency, and related problem behaviours. *Journal of Marriage and the Family,* 54, 763-776.

Bandura, A. 1978, The self system in reciprocal determinism. *American Psychologist* 33:344-58.

Berndt, T.J. (1982). The features and effects of friendship in early adolescence. *Child Development,* 53, 1447-1460.

Barnes and Farrel, (1994). *Handbook of Psychology, Development Psychology, books.google.co.in/books?isbn=0471384054.*

Brown, Rita Mae (1996) "Creativity Comes from trust, Trust Your instincts". www. Amazon.com.

Ching, C.C., *Psychology and the four modernization in China*. IUPS Conference on Impact of psychology on the third world development, Edinburgh, Scotland, July 24-25, 1982.

Canabal, M. E., (2004). Social Values of Indian and United States Female University Students: Implications for Exchange Programs, *Journal of College and Character,* Volume, 2.

Dryfoos, J. (*1990). Adolescents at Risk Prevalence and Prevention,*

Farington, D.P. (1998). Predictors, causes and correlates of male youth violence. In M. Tonry & M.H. Moore (Eds.) *Youth violence, crime, and justice* (Vol. 24: pp 421-475). Chicago, IL: University of Chicago Press.

Gurian, Michael. *What could he be thinking? How a man's mind really works.* Reported in Times of India September, 2, 2004.

Hofstede. G. (1980) *Culture's consequences.* Baverly Hills, CA: Sage.

Hurlock, E.B., American Adolescents of today: A new species. *Adolescence,* 1975, 1, 7-21.

Inkeles, A., and Smith, D. 1974. Becoming Modern: Individual change in Six Developing Countries, Cambridge, Mass: Harvard University Press.

Jensen, L.A. (1997), Difference worldviews, different morals: America's culture war divide. *Human Development,* 40(6), 325-344.

Jung, Justav Jung (1970) *Collected Works*, Vol. 10, Routledge.

Kim-Cohen, J., Moffitt, T.E., Caspi, A. & Taylor, A. (2004). *Genetic and environmental processes in young children's resilience and risk to socio economic deprivation.* Child Development, 75, 651-668.

Kerr, M. & Stattin, H. (2000). What parents know, how they have it, and several forms of adolescent adjustment: further evidence for a reinterpretation of monitoring. *Development Psychology, 36,* 366-380.

Kitayama, S. (2000), S., Markus, H.R. & Kurokawa, M. (2000). Culture, emotion and well-being: Good feelings in Japan and the United States, *Cognition & Emotion,* 14(1), 93-124.

Mukhopadhyay, Lipi (2008). *Character Strengths of School Children*; Research Report under publication.

Masten, A.S. & Coatsworth, J.D. (1999). The development of competence in favorable and unfavourable enviornments: Lessons from research on successful children, *American Psychologist,* 53, 205-220.

Marvin, R.S., & Britner, P.A. (1999). Normative development: The ontogeny of attachment. In J. Cassidy & P.R. Shaver (Eds,), Handbook of attachment theory, research and clinical applications (pp. 44-67). New York: Guilford Press.

Miller, J.G., Bersoff, D.M. (1992). Culture and moral judgement: How are conflicts between justice and interpersonal responsibilities resolved? *Journal of Personality and Social Psychology,* 62, 541-554.

Misra, Anoop,   Gen X eating dangerously, Time of India, 2004.

Pajaras, F.& Urdan.T.(eds.) (2005). *Self-efficacy and Adolescence*. Greenwich, CT: Information Age.

Powell-cope   &   Eggert,   (1994).   *Handbook   of   Psychology*. *books.google.co.in/books?isbn=0471176699..*

Powell, D.H. *Understanding Human Adjustment* (1982).

Rutter, M. (2006) Implications of resilience concepts for scientific understanding. Annals of the New York Academy of Sciences, 1094, 1-12.

Rokeach, M. 1973, The Nature of Human Values. New York: Free Press.

Rogers, Carl (1977) *On Personal Power* : *Inner Strengths and Its Revolutionary Impact.*

Shweder, R.A., Mahapatra, M., & Miller J. (1990). Culture and moral development. In J.W. stigler, R.A. Shweder, & G. Herdt (Eds.) *Cultural psychology: Essays on comparative human development* (pp. 130-204). New York: Cambridge University Press.

Witkin, H.A., & Berry, J.W. (1975), Psychological differentiation in cross-cultural perspective: *Journal of Cross- cultural Psychology*, 6, 4-87.

Wyman, P.A., Cowen, E.L., Work, W.C., Hoyt-Meyers, L., Magnus, K.B. & Fagen, D.B. (1999). Caregiving and developmental factors differentiating young at-risk urban children showing resilient versus stress-affected outcomes: A replication and extension. *Child Development,* 70, 645-659.

Zimmermen,   Bandura,   and   martinez-pons,   (1992).   *Self   Efficacy* linkinghub.elsevier.com/retrieve/pii/S0361476X99910160.

The Study of Footwear Optimization Design in Cognition for Pregnant Women

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Abstract:

Pregnant women go through dramatic mental changes due to physical changes. To reduce their feet discomfort caused by pregnancy, we have to take into accounts both their physical and mental cognition when designing their shoes. This research not only surveys the pregnant women's basic needs for shoes, but makes an orthogonal array table to conduct the experimental design based on the combinations of different shoe parameters (heel height, shoe surface cover style, shoe fastened type, sole form and heel form) and the pregnant women's cognition toward shoe styles. By doing so we find the ideal parameters for those women and the weight of their shoe cognition. Through the improved back-propagation neural network, we build the forecast model for the pregnant women's shoe cognition. At last, we combine the forecast model and the needs of weight measures to establish the optimal shoe objective function. Result that the most commonly-worn shoes for the pregnant women are sandals, while in the subjective shoe cognition survey, they have 10 demands for the sandals: comfortable, safe, skid-proof, balanced, easily-wear, fit, stable, adjustable, easily-match and walkable . In different periods of pregnancy, there is diversity in these 6 demands: safe, skid-proof, balanced, adjustable, easily-match and walkable. The shoe parameters that affect safety cognition are heel height, shoe surface cover style and heel form, while the heel height and heel form affect the cognition of skid-proof, balanced and walkable. There is also diversity in the cognition of adjustable because of different shoe surface cover styles and shoe fastened type. Besides, the parameters affecting the cognition of easily-match are heel height and shoe surface cover style. The error in the sandal forecast model built by the improved back-propagation neural network for the pregnant women is less than 3%, which has high credibility and usability.

1. Introduction

1.1. Backgrounds and motivation

Chih - Fu Wu group (2000) researched the optimization design for the pregnant women's shoes based on the plantar pressure, compared the differences between the non-pregnant and pregnant women's and gained the optimal parameter combinations for different pregnancy periods. Haas's research (1991) shows that the pregnant women's anxiety is related to their gaining weight, So pregnant women's emotions and cognition will be affected by the physical changes. (Grinun , 1961)

However, to understand which shoes satisfy their mental demands in each period, we hope by comparing and combining the physical analysis, we can to provide them a safe walk.

1.2. Research purpose

This research focuses on the combination of shoe shape parameters (heel height, shoe top style, sole form, heel form and shoe fastened type) and the pregnant women's cognition for the shoe styles. We hope we can find answers for the following questions as reference for shoe designing, reduce the pregnant women's anxiety and meet their demands for shoes :

A. What are the pregnant women's needs and expectations to shoes?

B. What affects the pregnant women's choice for shoe styles?

C. Different cognition for shoe styles in different pregnancy periods , and the shoe parameters
   that affect the cognition.

D. The forecast model for the pregnant women's shoe cognition designed by the improved back -
   propagation neural network.

E. The establishment of objective function for demands and cognition to reach the optimal shoe
   analysis.

1.3. Limitation and research scope

Research scope ;This research divides the pregnancy into 3 periods based on the obvious body changes described in the research (kwan Da - shen, 1994 ; Fast, 1987). The first period is from the 12th to 19th week；the second is from the 20th to 28th week，and the third is from the 29th to 40th week.

Research Limitation; Because of the feasibility of the experiment and the restriction of shoe production, the experimental shoes samples in the final cognition evaluation of the research are all 3D computer models. They test the testees cognition, and the shoe images are presented with gray scaling. The research is done by shoe - design experts and shoe sales with more than 15 years' experiences. They choose the shoe shapes, and collect data from the questionnaires.

2. Experiment Planning

2.1. Orthogonal array table

To explore the relation between shoe parameters and cognition systematically, and reduce the group numbers and cost or the experiment, this research uses L_{16} (2^{15}) orthogonal array table to give the most efficient distribution of experiment standards. The results of the experiment distribution are shown as table 2-1 and 2-2, the total number of experiment groups is 16. We use the 16 shoe parameter combinations to build the shoe 3D model, and proceed the cognition experiment with the model . Then we analyze the result by ANOVA and T-test to explore the factors that influence the cognition.

According to the research, this experiment builds 16 groups of shoe 3D models as samples to evaluate the shoe-style cognition. The shoe size is No.24, the standard Japanese lady shoes size in the "Footwear Size Table" edition by Taiwan Footwear Manufactures Association, Therefore, all shoe-style parameters are set based on this standard model.

Table2-1. Parameters distribution of experiment

Level Parameter	Symbol	Level			
		1	2	3	4
Heel height	X1	18mm	28mm	38mm	48mm
Uppers form	X2				
Sole form	X3	Lopsided	Square		
Heel form	X4				
Fastened type	X5	velcro	elastic		

Table2-2. Experiment planning

No.	X 1 1,2,3	X 2 4,8,12	X 3 9	X 4 10	X 5 11	5,6,7,13,14,15
1	1	1	1	1	1	
2	1	2	2	2	2	
3	1	3	1	1	1	
4	1	4	2	2	2	
5	2	1	1	2	2	
6	2	2	2	1	1	
7	2	3	1	2	2	
8	2	4	2	1	1	
9	3	1	2	1	2	
10	3	2	1	2	1	
11	3	3	2	1	2	
12	3	4	1	2	1	
13	4	1	2	2	1	
14	4	2	1	1	2	
15	4	3	2	2	1	
16	4	4	1	1	2	

2.2. Exploration for lady sandal terms

The purpose of this survey is to understand the pregnant women's concerns and expectations when choosing sandals. The result as the reference for building the optimal objective function of sandals.

2.2.1. Selection of representative terms

We select 30 pregnant women participate in this experiment (average age: 25.77; average pregnancy weeks: 25.2). Then choose among the 30 terms based on their demands for sandals. The result is shown as table 2-3. Terms with the Point more than the average 0.5 are: comfortable, safe, skid-proof, balanced, easily-worn, fit, stable, adjustable, easily-match and walkable.

Table 2-3.Terms for the pregnant women's shoe

Terms	Average Point	Terms	Average Point	Terms	Average Point
comfortable	0.97	no-friction	0.43	flexible	0.13
safe	0.83	good-looking	0.40	bendable	0.10
skid-proof	0.80	well ventilated	0.30	long-lasting	0.03
balanced	0.73	easy and convenient	0.30	damp proof	0.03
easily-worn	0.70	dirt-proof	0.23	shock-proof	0.03
fit	0.63	Fixed	0.23	sweat-excreting	0.07
stable	0.60	light	0.20	fashionable	0.07
adjustable	0.60	casual	0.17	wear-resisting	0
easily-match	0.53	stress-reduction	0.17	repairable	0
walkable	0.53	non-squeeze	0.17	still-holding	0

2.2.2. Shoe demands survey for women in different pregnancy periods

To understand the pregnant women's demands for sandals in different periods, we match the selected terms with a chart with 7 criteria, and ask them to make evaluation based on their demands. The result will be the reference for building the optimal objective function of sandals in different pregnancy periods.

60 testees participate in the survey with 20 from each period. The average pregnancy weeks, age and result are shown as table 2-4. Women in the first period have higher demands for "easily-match" than those from other periods. The result shows that pregnant women's demands for shoes differ with the increase of pregnancy weeks, and when it comes to the third period, all demands except for the "easily-match" one.

Table 2-4.Shoe demands survey for women in different pregnancy periods

Demands		First period （n＝20） Mean16.02weeks Mean 29.32years	Second period （n＝20） Mean25.13weeks Mean 27.08years	third period （n＝20） Mean34.76weeks Mean 31.35years
y1	comfortable	6.90	6.90	6.95
y2	safe	6.35	6.80	6.95
y3	skid-proof	3.70	5.60	6.05
y4	balanced	4.95	5.15	6.40
y5	easily-worn	3.25	6.40	6.75
y6	fit	3.60	4.15	5.55
y7	stable	2.95	4.30	5.10
y8	adjustable	2.80	4.30	5.30
y9	easily-match	5.55	4.75	4.90
y10	walkable	4.95	5.10	5.60

3. Result and Discussion

3.1. Survey result of the demands for shoe styles

3.1.1. Different cognition of shoe styles in each pregnancy period

We use one way ANOVA to examine the different cognition for shoe styles in each period. The obvious standard is $\alpha = 0.05$, and the result is shown as table 3-1.

Table 3-1.One way ANOVA of shoe style demands in each pregnancy period

		Sum of Squares	df	Mean Square	F	Sig.
comfortable	Between Groups	5.625	2	2.813	.971	.379
	Within Groups	2771.038	957	2.896		
	Total	2776.663	959			
safe	Between Groups	152.658	2	76.329	21.145	.000
	Within Groups	3454.525	957	3.610		
	Total	3607.183	959			
skid-proof	Between Groups	90.356	2	45.178	14.363	.000
	Within Groups	3010.294	957	3.146		
	Total	3100.650	959			
balanced	Between Groups	139.069	2	69.534	19.603	.000
	Within Groups	3394.547	957	3.547		
	Total	3533.616	959			
easily-worn	Between Groups	8.556	2	4.278	1.343	.261
	Within Groups	3048.044	957	3.185		
	Total	3056.600	959			
fit	Between Groups	3.006	2	1.503	.570	.566
	Within Groups	2522.394	957	2.636		
	Total	2525.400	959			
stable	Between Groups	1.952	2	.976	.313	.731
	Within Groups	2983.781	957	3.118		
	Total	2985.733	959			
adjustable	Between Groups	19.481	2	9.741	3.049	.048
	Within Groups	3056.909	957	3.194		
	Total	3076.391	959			
easily-match	Between Groups	22.158	2	11.079	4.021	.018
	Within Groups	2636.566	957	2.755		
	Total	2658.724	959			
walkable	Between Groups	140.575	2	70.288	19.583	.000
	Within Groups	3434.941	957	3.589		
	Total	3575.516	959			

$P<0.05$

We find out from the one way ANOVA of shoe style demands that women in different pregnancy period reach the obvious diversity standard in cognitions like safe (F = 2 1.145 , P = 0 < 0.05) , skid-proof (F = 14.363 , P = 0 < 0.05) , balanced (F = 19.603 , P = 0 < 0.05) , adjustable (F = 3. 049 , P = 0.048 < 0.05) , easily-match (F = 4.021 , P = 0.018 < 0.05) and walkable (F = 19.583 , P = 0 < 0.05) . Their cognition about styles changes as well .

To further understand the differences in each period , we proceed the Post Hoc Tests . This research adopts Least-significant difference, and the result is shown as tables 3-2.

In "safe" ,"skid-proof" , and "balanced" cognitions , pregnant women in the first and second periods do not have obvious diversity , while women in the third period do . It is because women in the third period not only go through dramatic body changes , but suffer from the most serious feet discomfort . Obvious differences easily occur when their mind is affected by physical status . Besides , in "adjustable" cognition , obvious differences exist among women in the first two periods . Women in the second period gain most weight (about 6 kilos / 12 pounds).

The expanding womb changes the center of their body and therefore affects their walking postures . So it is more difficult for women in the first period to wear or take off shoes , and causes diversity in "adjustable" cognition. In "easily-match" cognition , there is obvious diversity among women in the second period and those in the first and third periods . While in "walkable" cognition , there is obvious diversity in all 3 periods .

Table 3-2. LSD of shoe style demands in each period

Dependent Variable	(I) Pregnancy	(J) Pregnancy	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Comfortable	First	2th	-9.3750E-02	.1345	.486	-.3577	.1702
		3th	9.375E-02	.1345	.486	-.1702	.3577
	Second	1th	9.375E-02	.1345	.486	-.1702	.3577
		3th	.1875	.1345	.164	-7.6E-02	.4515
	Third	1th	-9.3750E-02	.1345	.486	-.3577	.1702
		2th	-.1875	.1345	.164	-.4515	7.650E-02
Safe	First	2th	.2313	.1502	.124	-6.4E-02	.5260
		3th	.9375*	.1502	.000	.6427	1.2323
	Second	1th	-.2313	.1502	.124	-.5260	6.351E-02
		3th	.7062*	.1502	.000	.4115	1.0010
	Third	1th	-.9375*	.1502	.000	-1.2323	-.6427
		2th	-.7062*	.1502	.000	-1.0010	-.4115
Skid-proof	First	2th	.1219	.1402	.385	-.1533	.3970
		3th	.7031*	.1402	.000	.4280	.9783
	Second	1th	-.1219	.1402	.385	-.3970	.1533
		3th	.5812*	.1402	.000	.3061	.8564
	Third	1th	-.7031*	.1402	.000	-.9783	-.4280
		2th	-.5812*	.1402	.000	-.8564	-.3061
Balanced	First	2th	.1500	.1489	.314	-.1422	.4422
		3th	.8719*	.1489	.000	.5797	1.1641
	Second	1th	-.1500	.1489	.314	-.4422	.1422
		3th	.7219*	.1489	.000	.4297	1.0141
	Third	1th	-.8719*	.1489	.000	-1.1641	-.5797
		2th	-.7219*	.1489	.000	-1.0141	-.4297
Easily-wear	First	2th	-.2313	.1411	.102	-.5081	4.563E-02
		3th	-.1156	.1411	.413	-.3925	.1613
	Second	1th	.2313	.1411	.102	-4.6E-02	.5081

		3th	.1156	.1411	.413	-.1613	.3925
	Third	1th	.1156	.1411	.413	-.1613	.3925
		2th	-.1156	.1411	.413	-.3925	.1613
Fit	First	2th	-.1281	.1283	.318	-.3800	.1238
		3th	-2.1875E-02	.1283	.865	-.2738	.2300
	Second	1th	.1281	.1283	.318	-.1238	.3800
		3th	.1062	.1283	.408	-.1456	.3581
	Third	1th	2.188E-02	.1283	.865	-.2300	.2738
		2th	-.1062	.1283	.408	-.3581	.1456
Stable	First	2th	-9.0625E-02	.1396	.516	-.3643	.1833
		3th	-.1000	.1396	.474	-.3739	.1739
	Second	1th	9.063E-02	.1396	.516	-.1833	.3646
		3th	-9.375E-03	.1396	.946	-.2833	.2646
	Third	1th	.1000	.1396	.474	-.1739	.3739
		2th	9.375E-03	.1396	.946	-.2646	.2833
Adjustable	First	2th	-.3469*	.1413	.014	-.6242	-6.96E-02
		3th	-.2062	.1413	.145	-.4835	7.103E-02
	Second	1th	.3469*	.1413	.014	6.959E-02	.6242
		3th	.1406	.1413	.320	-.1367	.4179
	Third	1th	.2062	.1413	.145	-7.1E-02	.4835
		2th	-.1406	.1413	.320	-.4179	.1367
Easily-match	First	2th	-.3312*	.1312	.012	-.5888	-7.37E-02
		3th	-1.8750E-02	.1312	.886	-.2763	.2388
	Second	1th	.3312*	.1312	.012	7.374E-02	.5888
		3th	.3125	.1312	.017	5.499E-02	.5700
	Third	1th	1.875E-02	.1312	.886	-.2388	.2763
		2th	-.3125*	.1312	.017	-.5700	-5.50E-02
Walkable	First	2th	.3312*	.1498	.027	3.732E-02	.6252
		3th	.9250*	.1498	.000	.6311	1.2189
	Second	1th	-.3312*	.1498	.027	-.6252	-3.73E-02
		3th	.5938*	.1498	.000	.2998	.8877
	Third	1th	-.9250*	.1498	.000	-1.2189	-.6311
		2th	-.5938*	.1498	.000	-.8877	-.2998

*.The mean difference is significant at the .05 level.

3.2. The influences different shoe parameters have on pregnant women's demands in each period

To further study the pregnant women's different cognition in "safe" , "skid-proof", "balanced", "adjustable", "easily-match" and "walkable", and what shoe parameters affect them, we operate one way ANOVA and Independent Sample Test analysis based on the 6 terms in this research. The obvious standard is α= 0.05. The shoe parameters affecting the cognition are shown as table 3   -   3   :

Table3-3. Interaction between shoe cognition and shoe parameters in each pregnancy period

pregnancy period	shoe parameters	cognition					
		safe	skid-proof	balanced	adjustable	easily-match	walkable
1th	Heel height	※	※	※			※
	Uppers form	※				※	
	Sole form						
	Heel form	※	※	※			※
	Fastened type				※		
2th	Heel height	※	※	※		※	※
	Uppers form				※	※	
	Sole form						
	Heel form	※	※	※			※
	Fastened type				※		
3th	Heel height	※	※	※	※	※	※
	Uppers form					※	
	Sole form						
	Heel form	※	※	※			※
	Fastened type						

※P＜0.05

3.4. Forecast model establishment and the optimal shoe parameter combinations

3.4.1. Result of the forecast model establishment

First, we use the 5 shoe parameters (heel height, uppers style, sole form, heel form, fastened style) as inputs in the improved back-propagation neural network, while the cognition evaluation (comfortable, safe, skid-proof, balanced, easily-worn, fit, stable, adjustable, easily-match, walkable) as outputs. Then we proceed the back-propagation neural network studies. Therefore, the neuron number in input layer is 5, output layer is 11, and numbers in hidden layer are 5,6 or 7.

There are 14 groups as one cycle. By finding the average error in each cycle we draw the error curved line, as picture 3-1. The table shows that error in 800cycles has refrained to less than 3%, we input again 128 groups of shoe parameters (4 heel heights x 4 uppers styles x 2 sole forms x 2 heel forms x 2 fastened forms) in the forecast model in each period, then we predict the demands evaluation of 3 periods. We gain the cognition result of 128 shoe styles in each period.
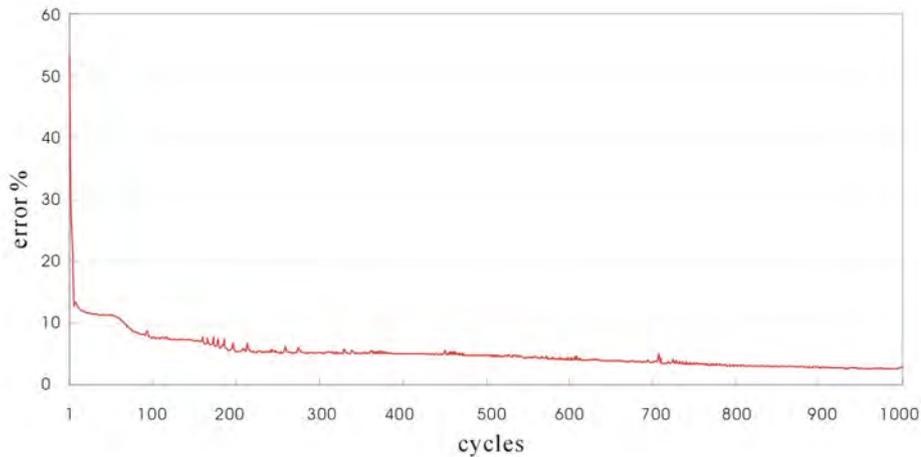
Picture 3-1. Refrain process of the improved back-propagation neural network studies in the first pregnancy period

3.4.2. Mentally optimal shoe parameters in each period

We combine the results of pregnant women's term cognition in each period to figure out the mentally optimal shoe objective function:

First period = $(6.90 \times y1) + (6.35 \times y2) + (3.70 \times y3) + (4.95 \times y4) + (3.25 \times y5) + (3.60 \times y6) + (2.95 \times y7) + (2.80 \times y8) + (5.55 \times y9) + (4.95 \times y10)$ . . . . (5.1)

Second period = $(6.90 \times y1) + (6.80 \times y2) + (5.60 \times y3) + (5.15 \times y4) + (6.40 \times y5) + (4.15 \times y6) + (4.30 \times y7) + (4.30 \times y8) + (4.75 \times y9) + (5.10 \times y10)$ . . . .(5.2)

Third period = $(6.95 \times y1) + (6.95 \times y2) + (6.05 \times y3) + (6.40 \times y4) + (6.75 \times y5) + (5.55 \times y6) + (5.10 \times y7) + (5.30 \times y8) + (4.90 \times y9) + (5.60 \times y10)$ . . . .(5.3)

Annotate:
y1-comfortable、y2-safe、y3-skid-proof、y4-balanced、y5-easily-worn、y6-fit、y7-stable、y8-adjustable、y9-easily-match、y10- walkable.

Table 3-4. Optimal shoe style parameters in each period

Pregnancy	X 1 Heel height	X 2 Uppers form	X3 Sole form	X4 Heel form	X5 Fastened type
First	18mm				velcro
Second	18mm				elastic
Third	18mm				velcro

3.5. Validation of the forecast model

To examine if the results predicted by improved back-propagation neural network fit the pregnant women's cognition, and confirm the feasibility of this model, we randomly choose 2 shoe sample results as the validation number among the original 16 samples. We choose Shoe_5 and Shoe_15 a   s validation samples.

The improved back-propagation neural network predicts the women's cognition for 128 shoe styles, and their cognition for Shoes_5 and Shoes_15 is shown as table 3-5. We make Independent Sample Test analysis for the neural network prediction and original numbers, and compare if there is diversity. The result is shown as table 3-6. there is no obvious diversity between them in each pregnancy period.

Table 3-5. Women's demand cognition for Shoes_5 and Shoes_15 in each period

Pregnancy	Shoes	y1	y2	y3	y4	y5	y6	y7	y8	y9	y10
First	5	4.60	4.20	4.45	4.60	5.30	5.00	4.00	4.15	5.15	3.95
	5	5.00	3.79	4.11	4.70	4.70	5.22	3.73	3.89	5.64	4.73
	15	4.55	4.15	3.85	4.00	5.05	5.15	5.15	4.90	4.95	4.05

	15	4.19	3.89	3.93	4.21	4.22	4.43	4.15	5.19	4.88	3.83
	5	4.65	3.85	4.15	4.00	4.90	5.00	4.35	4.80	5.50	3.90
Second	5	4.98	4.11	4.30	4.24	5.00	5.53	4.24	4.21	5.40	3.62
	15	4.40	3.40	3.55	3.75	5.15	4.95	5.10	5.15	5.55	3.75
	15	3.84	3.39	3.56	3.37	4.63	4.52	4.00	5.06	5.08	2.99
	5	4.80	3.05	3.40	3.65	5.25	5.00	4.60	4.85	5.25	3.15
Third	5	4.67	3.29	3.44	3.54	4.77	4.95	4.63	4.70	4.82	3.14
	15	4.40	2.45	2.90	2.50	4.50	4.50	4.45	4.70	4.75	2.70
	15	4.14	2.24	2.36	2.46	4.53	4.44	4.07	4.33	4.70	2.50

Annotations： original [ ]   forecast [ ]

Table 3-6. Comparison between the neural network prediction and validation number

	First		Second		Third	
	t	P	t	P	t	P
comfortable	-.049	.969	.197	.874	.587	.620
safe	5.993	.052	-.294	.801	-.025	.983
skid-proof	.415	.741	-.168	.883	.420	.729
balanced	-.400	.729	.155	.899	.095	.933
easily-worn	2.642	.157	.941	.458	.571	.656
fit	.622	.640	-.099	.937	.154	.892
stable	1.037	.458	1.537	.336	.604	.644
adjustable	-.020	.986	.740	.568	1.302	.375
easily-match	-.534	.679	1.760	.320	.933	.509
walkable	-.618	.645	1.606	.336	.268	.816

4. Conclusion and Suggestion

4.1. Conclusion

A. During pregnancy, most women wear sandals, and they have higher demands in "comfortable", "safe", "balanced", "easily-worm", "fit" , "stable", "adjustable", "easily-match", and "walkable".

B. The higher the heel, the more uncomfortable and unsafe the pregnant women feel. They cannot balance well, and they cannot walk comfortably. Besides, shoes with heel height between 18-28mm are easier for women to wear or take off, and they fit better. Shoes with 28mm heel height can be matched easier.

C. The forecast model made by this research in each period shows high credibility and feasibility. from the optimal result of the experiment we know besides the slight differences in uppers style, heel form and fasten form, heel heights are all 18mm.

4.2. Suggestion

This research is only focuses on the most commonly-worn shoes for the pregnant women, sandals. Now more than 75% women still work when pregnant. But due to the working environment (such as nurse, department store sales women), the chance for them to wear sandals reduces. Therefore, it is possible for us to focus on other shoes, like court shoes. And this model only researches the shoe styles. In the future, we can add the combination of colors and materials researches to make the cognition experiment more realistic.

References

Bordelon, RL. , 1983, Subcalcaneal, pain, Clin Orthop, Vol. 177 , pp. 49~53.

Chesley, I.C., 1944 , "Weight changes and water balance in normal and trime pregnancy", Am. J. Obstet Gynecol 48, pp. 565.

Condon, J.T., 1987, "Altered congnitive functioning in pregnant Women: A shift towards primary process thinking". Brit J Medical Psychol 60, pp. 329~334.

Crip, W.E. and DeFrancesco A, 1964, "The hand syndrome of pregnancy", Obstet Gynecol 23, pp. 443.

D. Chester, 1990,"Why tow hidden layers are better than one", In Prx. Int. Joint Conf. Neural Networks, Washington, DC, IEEE, I-265-I-68.

Fuh, Kuang-Hua and Chih-Fu Wu, 1995, "A Proposed Statistical Model For Surface Quality Prediction In End-Milling of Al Alloy," Int. J. Mach. Tools Manufacture, Vol.35, No.8, pp. 1187~1200.

Grimm, E.R., 1961, "Psychological tension in pregnancy". Psychosomatic Medicine 23, pp. 520~527.

Haas, J.D., 1991, "Weight gain in pregnancy in: Krasovec K. and Anderson, M.A.(eds)". Maternal Nutrition and Pregnancy Outcomes, Pan American Health Organisation, Washington, D.C.

Hartigan, John A., 1975, *Clustering algoritbms*, New York：Wiley.

Jain, Anil K., and Dubes Richard C., 1988, *Algoritbms for Clustering Data*, Prentice-Hall Inc.,

New Jersey, pp. 55~142.

Jobson, D., 1992, *Applied Multivariate Data Analysis Volume II：Categorical and Multivariate Metbods*, Springer-Verlag.

Leach, RE. and E. Dilorio and RA. Harney, 1983, "Pathologic hindfoot conditions in the athlete", Clin Orthop, Vol.177, pp. 116~121.

Lubin, B., S.H. Gardener, A. Roth, 1975, "Mood and somatic symptoms during pregnancy". Psychosomatic Medicine 37, pp. 136~146.

Wolkind, S. and E. Zajicek, 1981, *Pregnancy: A Psychological and a Social Academic Press*, London.

Wu, Chih Fu and Chung-Lin Heieh, 2000, "The Optimization of Design and Research on Shoes for Long-Time Standing Working Women", Journal of the Chinese Institute of Industrial Engineers Vol.17,No3, pp. 249~256.
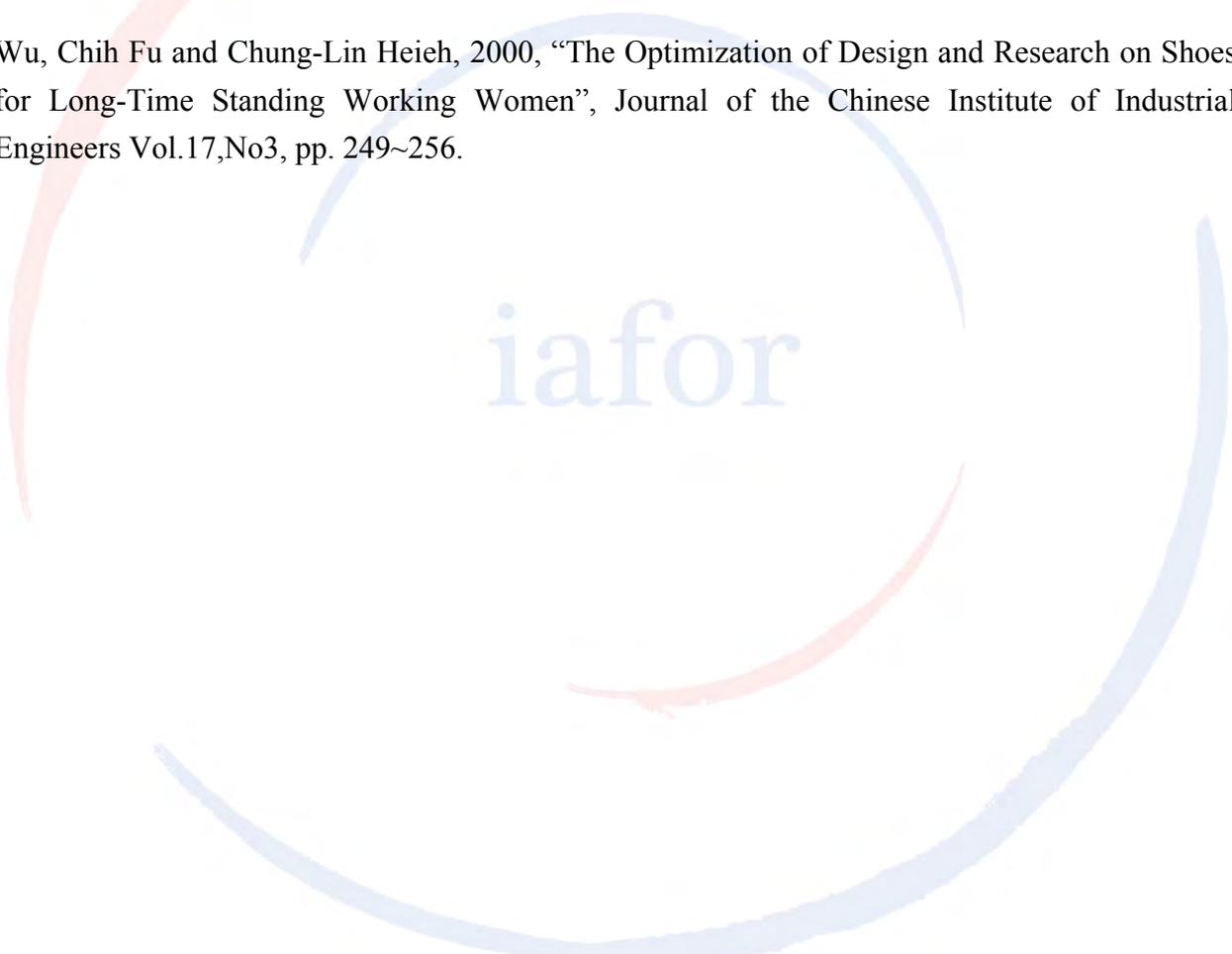
Optimism cnd Coping cmong Women Who Survived Breast Cancer

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Abstract:

Abstract: This is a quantitative-qualitative research which aims to investigate the relationship of Optimism and Coping behaviours among women who have survived breast cancer. Participants were 47 breast cancer survivors who were all members of the Breast Care Center Support Group of the Philippine General Hospital. Standardized instruments as well as interviews were used as means of gathering data. Result of Life Orientation Test (LOT) reveal that the highest score (97.9%) was registered by the item "I am always optimistic about my future." This clearly shows that despite their present negative health conditions, the women still believe that things will work out positively in their lives. On Problem- focused Coping the higher percentage was recorded on Planning while on Emotion-Focused Coping, the highest score was recorded by the Turning to Religion. This only shows that among Filipinas, their faith proved to be very important in their coping regardless of the type of personality that they possess.

Introduction

"Why Me?" is the initial question asked by many women diagnosed with breast cancer. It is clear that the diagnosis of breast cancer constitutes a serious crisis in women's lives (Carver, et al: 1993). Hearing the word "cancer" is like hearing an alarm bell or a death knell, because for most women having cancer is the same as dying (Ayers: 1994). The combination of such a life-threatening disease, the often radical series of treatments as well as the uncertainty of survival and the lifelong fear of recurrence all contribute to stress that the breast cancer patients have to cope with.

Breast cancer is Filipino women's number one killer (as cited in Aguilar, 2002). In recent years, cancer has struck millions of lives and has always evoked fear and dread among women. Breast cancer is the second leading site for both sexes combined (13.1%) and ranks first among women (25.6%). From 1983 to 1987, there were 4649 cases of breast cancer and in 1990, this figure rose to 6325.   By 1993, 8321 cases were reported by the Philippine Cancer Society (PCS). And in 1998, an estimated 9,325 new cases were seen and an estimated 3,057 deaths have occurred. In 2005, an estimated 14,043 new cases have occurred among women and 6,375 deaths were predicted. The 2005 Philippine Cancer Facts and Estimates also reported that in the Philippines, median survival among female is 60 months. Survival at the 5th year is 50.10% and 32.38% at the 10th year. For both sexes, estimated leading cancer site in 2005 had lung cancer as the first (17,238 or 16.1%), while breast cancer placed second (14,043 or 13.3 %.).

It is indeed a chronic disease that requires constant attention, one that a patient, even if she has been declared a survivor, has to contend with the rest of her life. Indeed among these women, survival may not be the only important objective, but also the quality of their lives and relationships. For them, coping becomes a lifetime task.

Disruptions in life fall along a continuum, ranging from minor frustrations to devastating losses. All disruptions raise issues that need to be solved by the people involved. The persons' effort to dissolve the adversity, to dampen its subjective impact or to accommodate to new life situations that the adversity brings with it, are the very essence of coping (Scheier and Carver:1993). When a woman had cancer fifty years ago, there was little discussion on how she was coping. The person just dealt with it (Kneier et.al:2000). In the last 25 years, however, cancer has become a chronic rather than a terminal illness. The notion that patients have to continuously cope with their illness has received enormous attention from both health care professionals and behavioural scientists as well. Coping with cancer is now viewed as a process that goes on over a period of months or even years. Coping is not a unitary, single event, but rather a series of ongoing responses to this life-threatening illness. There are coping strategies however that work best for one person but may not work well for another.

The general problem of the study is to identify the relationship of Optimism with the Coping behaviours adopted by the breast cancer survivors.

Review of Literature and Studies

Optimism

Another personality variable to be examined is optimism. It is a characteristic people possess to varying degrees and researches have shown that it is linked to desirable characteristics such as happiness, perseverance, achievement, health and even long life. Theorists like Scheier and Carver (1985) have defined optimism as a " *generalized expectancy that good, as opposed to bad outcomes will generally occur when confronted with problems across important life domains*" (Franken, 1994).

Coping

Years ago, most researchers who were interested in stress and coping would probably not have seriously questioned the assumption that coping is an important determinant of people's emotional well-being during a stressful transaction. Lately (Scheier et al: 1993), the issue that has been raised is whether coping helps or even interferes with outcome such as good adjustment. When impediments are encountered (and the experience of stress commences), what happens next depends on whether the person feels the obstacle can be overcome, or the problems solved or circumvented. Coping strategies, according to Scheier and Carver (as cited in Tennen and Affleck: 1987) are adopted when people are confronted with life-threatening events such as a serious illness. Some people directly deal with the source of stress and engage in *problem-focused coping strategies* while those who feel relatively invulnerable may adapt poorly to misfortune and employ the *emotion-focused coping*; a strategy used when they already feel helpless, embracing the fact that nothing can be done to alleviate the stress and that the situation is one that must be endured.

The coping styles that patients generally employ are the common, more frequent and longer-term style of coping that an individual tends to use across a variety of life situations and these are often closely related to one's overall disposition and personality (Folkman and Greer: 2000 as cited in National Cancer Institute). Today, there is every reason to believe that differences in personality and coping play a crucial role in the success with which patients adapt to/cope with the experience (Andersen: 1992).

When people confront adversity such as a life-threatening illness, one's personality plays an important role in a wide range of behavioural and psychological outcomes that they have to adapt (Carver: 1993). Tennen and Affleck (1987) argued that personality variables such as explanatory style and optimism appear to account for significant variance in subsequent health. Therefore, a complete understanding of what appears to be health-enhancing personality factors may require a thorough investigation.

Over the years, a great deal of research and theory has focused on the ways people deal with difficulties they encounter in their day to day lives. Among women, the diagnosis of breast cancer is threatening on any level. Most obvious is the fact that the patient's life is placed in jeopardy. The medical field has certainly progressed in improving the chance of survival among cancer patients, yet a lot of women still die of breast cancer (Gomez:2001). Considering that there is no absolute survivorship of any type of cancer, breast cancer becomes a chronic disease that requires constant attention, one that a patient, even if she has already been declared a survivor, has to cope with the rest of her life.

Bergado (1993) hypothesized that some personal factors like age, educational attainment, income and marital status may be associated with positive coping. Findings showed interesting results such as: a) the older the patients, the better is their coping ability b) the greater number of children living with the client, the better they cope and c) the less the client is satisfied with the support from significant others, the better he or she copes. Apparently, when patients feel that the support they are receiving is lacking, the more they are motivated to rely on themselves and they resort to more effective coping.

Among local studies, there are findings that women's coping is related to some socio-demographic variables. One such variable is *age*. In both Bergado's (1993) and Caronan's (2001) studies which both dealt with adult respondents , findings showed that the older the patients are, the better their coping ability become. This is contrary to a foreign study conducted by Halperin (1999) which revealed that among adolescent cancer survivors, older adolescents were relatively more distressed than their younger counterparts. Besides the *age*, the number of children the women have also determined better coping ability among patients (Bergado: 1993); while (Palma: 1997) averred that successful coping also depended on the availability of over-all support network. Gomez (1999) has identified that one's family is the main source of

spiritual, financial, physical support needed by women. The personality traits of Filipina women which are necessary for successful coping were being prayerful and having faith in God; as well as possessing positive traits of optimism, bravery and hopeful attitude (Bergado, 1993; Palma:1997) and resiliency (Yap:1999).

Problem-Focused/Emotion-Focused Coping

In coping with a disease such as cancer, the strategies used by women are vital components in their adjustment to and management of the disease (Henderson, et al: 2003). Coping is personality in action   in the face of a stressful event (Bolger: 1990). Lazarus argued that stress consists of three processes (Carver et al, 1989). *Primary appraisal,* the process of perceiving a threat to oneself, s*econdary appraisal,* the process of bringing to mind a potential response to the threat and *COPING,* the process of executing that response. Lazaruz and Folkman (1985) have defined appraisal as the personal evaluation of particular conditions as stressful (i.e. harmful, threatening or challenging). Appraisal then acts as a mediating variable that is positioned between influencing factors and coping responses; while stressors are the specific person/environmental inputs that are evaluated during the appraisal process. Folk man and Lazarus (1988) have classified coping mechanisms as either behavioural (i.e. problem-focused) or emotional (emotion-focused) responses that are enacted to mitigate sources of stress.

Optimism and Coping

The main purpose of the present study is to examine individual differences on Optimism and how it relates to breast cancer survival. *Optimism* is a characteristic people possess to varying degrees and researches have shown that if measured, it is linked to desirable characteristics such as happiness, perseverance, achievement, health and even long life. Theorists like Scheier and Carver (1985) have defined optimism "*as a generalized expectancy that good, as opposed to bad outcomes will generally occur when confronted with problems across important life domains*" (Franken, 1994). In general, optimism is used to denote a positive attitude or disposition that good things will happen independent of one's ability.

Participants of the Study

Participants were 47 active members of the Breast *Care Center Support Group* of the Philippine General Hospital at the time of the study. This support-group holds weekly activities and workshops and has about 40-50 breast cancer survivors as its regular members. Its regular activity is held every Wednesday at the Cancer Institute of the Philippine General Hospital located at Padre Faura, Manila.

Setting of the Study

The Cancer Institute of the UP-PGH

Created by Commonwealth Act 398 in 1938, The Cancer Institute of the University of the Philippines-Philippine General Hospital (UP-PGH) today remains the country's sole medical establishment which integrates the academic, clinical, and multidisciplinary approach to screening, diagnosis, and treatment of cancer.

Instruments

1. Optimism-Pessimism. The LOT (Life Orientation Test: Scheier and Carver, 1985

2. Coping. Coping was assessed by COPE (Carver et al., 1985) which was an inventory of coping responses. In this study, responses were assessed by COPE on five aspects of problem-focused coping (e.g. *use of instrumental social support, active coping, restraint, suppression of competing activities and planning*). Emotion- focused coping, on the other hand, included five specific scales (e.g. *positive reinterpretation and growth, denial, religious coping, use of emotional support and acceptance*). Internal reliability of most COPE scales was adequate ranging from .65 to .90.

Results

Profile of Respondents

Out of the 47 respondents, 13 women were aged 41-50 years old, 22 women were in the range of ages 51-60, six women fell in the range of 61-70 years old and another 6 women aged 71 years and above. On the educational attainment of the respondents, 24 have only reached elementary and high school. Sixteen had reached the college level, and at least two respondents had reached graduate school level.

Likewise, almost half of the total number of respondents were married while 25.5% were widows and 10.6% were separated. Another 10.6 percent represents other descriptions of civil status such as single, or being in a live-in set up.

Regarding their monthly income of the total 47 respondents, 28 of them declared that they are jobless and therefore they do not have any income**.** Fifteen had a monthly income of P5000 below. Only one respondent had an income of P5, 000-P7499, another one P7, 500 to P10, 499 monthly incomes, another one P10, 500-P14, 499 monthly income and only one as P15, 000 and above income. Offhand, it can be deduced that since the PGH is a government hospital, most of its patient came from low to no-income groups.

When asked on the number of years that they had been survivors, 11 women had been cancer survivors for two years now and another 11 women for three years. One of the respondents had been a survivor for 20 years now and one only for the past 9 months. It is to be noted that the women count the length of their survival starting from the time their mastectomy or major treatment was done.

Level of Optimism

Optimism is a personality disposition that is deemed beneficial to health (Scheier and Carver, 1981) because people's actions were greatly affected by their beliefs about the probable outcomes of these actions. Results of Life Orientation Test (LOT) reveal that the highest score (97.9%) registered by the 47 cancer survivors is on item 3 which states "I am always optimistic about my future". This clearly shows that despite their present negative health conditions, the women still believe that things will work out positively in their lives. Although the diagnosis of cancer is considered a blow in their lives, they still believe that this situation can be dealt with and that a good outcome awaits them (Carver, et al, 1993). A survivor of 12 years said, "ang *cancer na ito ay blessing, hindi sumpa, dahil dito sa sakit ko, nakapag inspire ako ng maraming tao at ng maraming babaeng may sakit na gaya ko"* (my cancer is more of a blessing than a curse, because of this, I was able to inspire a lot of people, a lot of women who are sick just like me).

Another respondent answered *nung nagka-cancer ako, natuto kong magbago ng frame of mind, naging positive thinker ako ngayon; saka dati sobrang tipid ko pero ngayon ok lang lalo na sa mga bata, sige enjoy ka lang kaysa sa kung patay na 'ko, paano pa 'ko mag-eenjoy. Dati pessimistic ako, laging negatibo, pero this time positive na ang pananaw ko kahit saang bagay." (*When I acquired cancer, I've learned to shift my frame of mind, I became a positive thinker , before, I was so stingy but not anymore, especially if it is for

my children. I just enjoy my life now, because when I'm dead, I cannot do it anymore. I was pessimistic before, I'm always negative. But this time my perspective is positive in all areas.)

Coping Behaviours

Among the Problem-Focused Categories, it was the Planning Scale which received the highest score (97.8%). This was followed by Active Coping which was a close second at 95.8%. On the other hand, Suppression of Competing Activities ranked the lowest with a percentage of 87.3%.

On Emotion-Focused Coping. The results display that Religion scored an overwhelming perfect percentage of 100%. A tie follows between the two scales: Emotional Support and Positive Coping which both registered a percentage of 97.9%. Consistent with the high score on Acceptance is the lowest score on Denial which is 72.3%. The final scale Turning to Religion only proves that such a coping tactic may really be important to many people. Filipinas are known to be religious people and the scores prove it correct. Seeking emotional support is also present among the respondents when they turned to somebody who can be source of sympathy, moral support and can be used more as an outlet for the ventilation of one's feelings.

Relationship Between Optimism and Coping Behaviors

This shows that optimists do not only hope for the better but they work for it too. Indeed, optimists have favourable expectations of the future, which they associate with active coping efforts and with making the best of whatever is encountered (Scheier, et al, 1986).

The respondents always have pleasant views of the future because they adopt concrete steps and measures to solve their present problem. Towards the end, the women admitted that they are already used to the situation they are in, and in fact have already accepted it.

This further proves that the women may at times think that things may not turn out the way they want them to, and yet still remain in control by not entertaining thoughts and ideas which might confuse them further and lose focus along the way.

Lastly, Optimism in congruence with the result of Scheir and Carver's (1987) assertion that rather than engaging in denial, optimists tend to accept the problems at hand and see the best in situations they confront. Likewise, Caronan (2001) asserted that among optimistic Filipina cancer patients, acceptance and coping with illness can easily be achieved while Yap (1999) found that optimism is a very evident factor in the resiliency of Filipina cancer survivors.

Conclusion

The findings complement and extend a small literature concerning the impact of personality on coping behaviours among women who survived breast cancer. Taking into consideration the level of optimism among the cancer survivors, it is important to note that there is indeed a need for cancer patients to train themselves to have a bright and optimistic outlook instead of victimizing themselves. Dr Simonton (in Backus, 1996) asserted that people who change their doom-laden thoughts about cancer recover while those who hold to their negative thoughts become worse.

What is perhaps most striking is the prominent role played by Turning to Religion which has consistently received the highest scores. This only shows that among Filipinas, their faith proved to be very important in their coping regardless of the type of personality that they possess.

It is hoped that through the findings of this research, a psycho-social intervention program for the care of the cancer patients (breasts cancer and other cases) can be devised. This will focus on how cancer patients' behaviours and cognition can be modified in order to influence their subsequent coping, to prolong their survival and eventually to promote a higher quality of life.

REFERENCES

Adler, N. and Matthews, K. (1994). Health Psychology: Why do people get sick and some stay well? *Annual Reviews of Psychology*. 45:22-259.

Aguilar, MV. (2001). Breast cancer: Shattering the Myth. De La Salle University. Dasmarinas.

Antaki, C. and Brewin, C. (1982). Attributions and Psychological Change. Academic Press.

Ayers, L.K. (1994). The Answer is Within You. Psychology, Women's Connections and Breast Cancer. The Crossroad Publishing Company.

Ayers, L.K. (1994). The Answer is Within You. Psychology, Women's Connections and Breast Cancer. The Crossroad Publishing Company.

Bolger, N. (1990). Coping as a Personality Process: A Prospective Study. J*ournal of Personality and Social Psychology*. Vol. 59, No.3, 525-537.

Ben-Zur, H., Gilbar, O. and Lev, S.,(2001). Coping With Breast Cancer . Patient, Spouse, and Dyad Models, *Psychosomatic Medicine 63:32-39 (2001)*

Carver, C., Pozo,C., Harris, S., Victoria, Sheier, M., Robinson, D., Ketcham. A., Moffat, F., and Clark, K. (1993). How Coping Mediates the Effect of Optimism on Distress: A Study of Women with early stage Breast Cancer. *Journal of Personality and Social Psychology.* Vol.65, 2,375-390.

Carver, C. and Scheier, M. (1999). Stress, Coping and Self-Regulatory Processes. *Handbook of Personality Theory and Research*. 2nd Edition. Edited by Pervin, L. and John, O. The Guilford Press NY.

Carver, C. Scheier, M. and Weintraub, J. (1989) Assessing Coping Strategies: A Theoretically Based Approach. *Journal of Personality and Social Psychology*. Vol.56. No.2, 267-283.

Folkman, S. (1984). Personal Control and Stress and Coping Processes: A Theoretical Analysis. *Journal of Personality and Social Psychology*, 46, 839-852.

Folkman, S. and Lazarus, R. (1988). Coping as a Mediator of Emotion. *Journal of Personality and Social Psychology*. Vol. 54, No. 3, 466-

Halperin, J.C. (1999). The influence of causal attributions on the psychological adjustment of post adolescent cancer survivors. Columbia University.

Henderson, P., Fogel, J., and Edwards, Q. (2003). Coping Strategies Among African American Women with Breast Cancer. *Southern Online Journal of Nursing* Research. Issue 3, Vol. 4.

Kneier, A.(2002). The Psychological Challenges Facing Melanoma Patients. UCSF Melanoma Center

McConnel, H. (2000). Dealing with False Optimism in Terminal Cancer. *DG Review*. 321,1376-1381.

Nezu, A., Nezu, C. and Lombardo, E. (2001). Managing Stress through Problem-Solving. *Stress News*. Vol. 13, N0. 3.

Pervin. L. and John, O. (1997). Personality Theory and Research,. 7th Edition. John Wiley and Sons, Inc.

Petticrew, M. Bell, R and D. Hunter. (2002). Influence of Psychological Coping on survival and recurrence of cancer: Systematic view. *BMJ*. Vol, 325, (7372).

Scheier, M., Weintraub, J.K. and Carver, C. (1986). Coping With Stress. Divergent Strategies of Optimists and Pessimists. *Journal of Personality and Social Psychology*. Vol. 51, No. 6, 1257-1264.

Scheier ,M. and Carver, C. (1992). Effects of Optimism on psychological and well-being: Theoretical Overview and Empirical Update. *Cognitive Therapy and Research*. 16, 201-208.

Scheier, M. and Carver, C. (1987). Dispositional Optimism and Physical Well-being: The Influence of Generalized Outcome Expectancies on Health. *Journal of Personality and Social Psychology*. Vol. 55, No.2 169-209.

Stanton, A., Danoff-Burg, S., Cameron, C., Bishop, M, Collins, C., Kirk, S. and Sworowski, L. (2000). Emotionally Expressive Coping Predicts Psychological and Physical Adjustment to Breast Cancer. *Journal of Consulting and Clinical Psychology*. Vol. 68. No. 5., 875-882.

Taylor, Lichtman and Wood (1984) . Attributions, Beliefs About Control, and Adjustment to Breast Cancer. *Journal of Personality and Social Psychology* Vol. 46, No. 3, pp. 489-502

Tennen, H. and Affleck, G. (1987). The Costs and Benefits of Optimistic Explanations and Dispositional Optimism. *Journal of Personality*. 55:2. Duke University Press.

Unpublished Theses/Dissertations:

Bergado, F. (1996). Coping Strategies of Filipina Women with Breast Cancer. UP College of Nursing. MA Thesis.

Caronan, M. (2001). The Filipino Cancer Patients' Grief Responses. UP College of Nursing. Ma Thesis.

Gomez, M.V. (1999). Life after Diagnosis social support among women with breast cancer. MA Thesis. De La Salle University.

Palma, E. (1997). Factors Influencing the Coping behaviour of Terminally-ill women with Cancer of Reproductive Organs. Master Thesis. De La Salle University.

Pastor-Ugto, C (1998). Perceived Ability to Cope of CAPD and Haemodialysis Patients. UP College of Nursing. MA Thesis.

Yap, T.L. (1999). "Resiliency among Filipino Cancer Survivors". Unpublished Thesis. Ateneo de manila University.

Electronic Materials:

Virginia Anderson International Nursing Library. (2004). Illness Attribution in Midwestern Women with Breast Cancer.
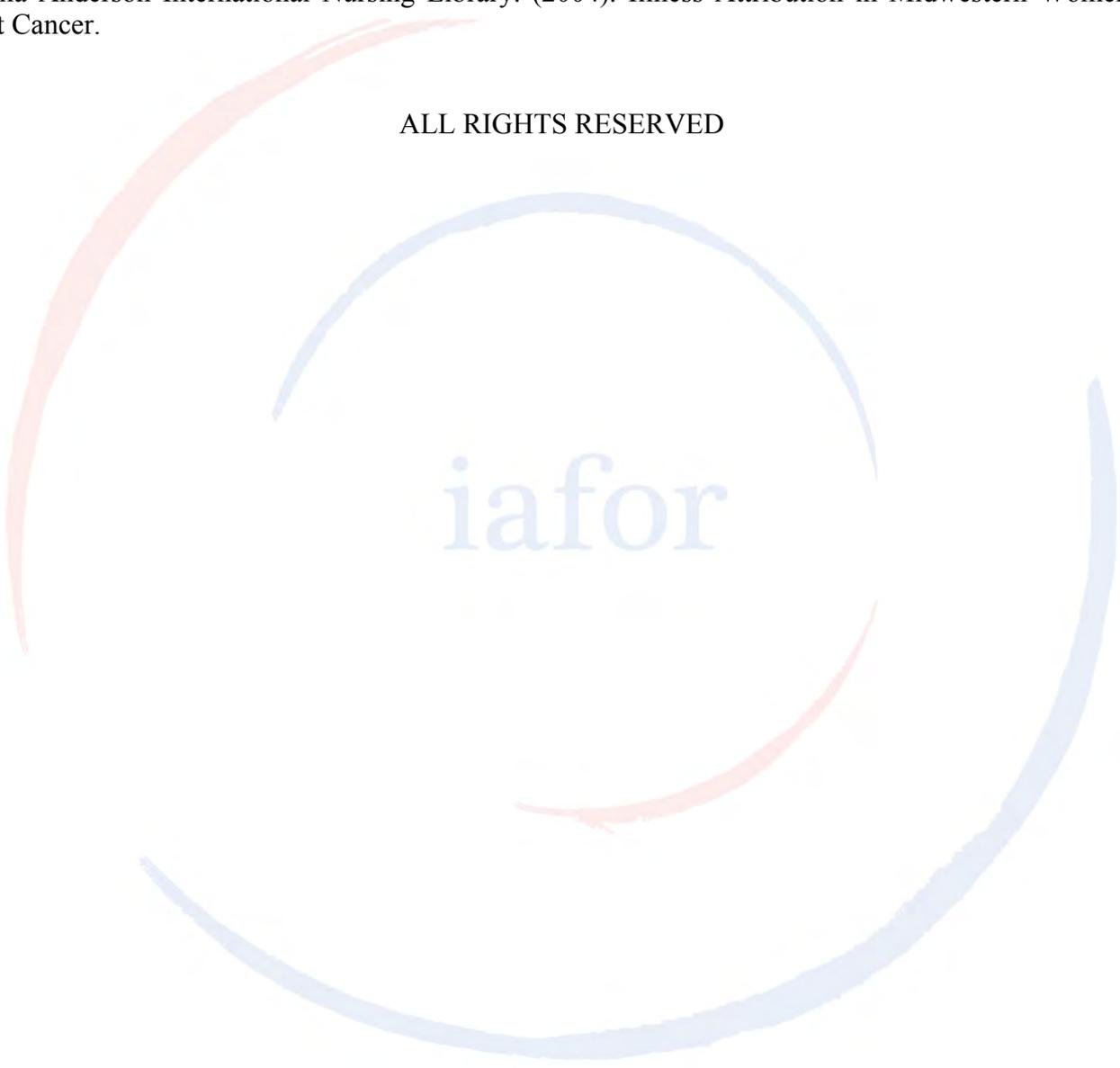
A Study qf Stress Improvement dy Listening ʋo Personalized Music

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0326

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Abstract:

With advances in technology and the rapid pace of modern life, people are constantly working overtime and under stress to maintain high performance. A high-speed life produces stress and causes health problems, e.g. chronic fatigue syndrome, autonomic nervous system disorders, sleep disorders, depression, and so on. Stress results from the accumulation of negative emotions. Humans may reduce or avoid stress by maintaining a comfortable environment that can improve emotional state by implementing controls that prevent the accumulation of negative emotions. Many people like to listen to music for relaxation, but few understand its physiological effects. This investigation designs a system to assess the degree of relaxation of humans when listening to music. This study measures multiple physiological parameters (such as Electrocardiogram, Heart rate and Heart rate variability) to evaluate the effect of music on human relaxation. The experimental results presented in this study adopt a fuzzy theorem to integrate physiological parameters and personal preferences. This study helps users select appropriate music to improve imbalances in the nervous system arising from mental stress.

I. INTRODUCTION

In modern society, stressful life events may lead to negative emotions, such as anxiety and fear. The autonomic nervous system (ANS) reflects negative emotions in terms of physiological parameters, such as heart rate, respirations and body temperature(Kreibig, 2010). Therefore, physiological responses of the ANS are indicators used to tell if a person is under stress or relaxation.

Most people like to listen to music to help relax on their own, but little was known its psychological and physiological effect. Recently, music was used as a therapy to relieve negative emotions under stress(Sokhadze, 2007). A study attempted to develop a context-aware system to measure heart rate and respirations while listening to personalized music and thus it can suggest users music based on the previous physiological data(Su et al., 2010). The major purpose of the study was to design a system to measure the participant's physiological reactions while listening to personalized music that they felt relaxed with an aim to test the claim that music associates with reduced stress.

Stress is a psychological defense mechanism under control of the sympathetic nervous system (SNS)(Burns et al., 2001, Hasegawa et al., 2004, Hebert et al., 2005, Nater et al., 2006, Whitehead-Pleaux et al., 2006). Therefore, stress can be presented by certain patterns of physiological and psychological responses. Under psychological stress, people's respirations, heart rate and shell temperature produced significant changes(Pagani et al., 1991). Since these physiological responses are mainly controlled by humans' nervous system and ANS, it is logic to decide see if participants' changes in the ANS under stress. Long-term stress of ANS resulted in ANS disorders (McEwen, 2002) and was inclined to cause cardiovascular diseases. The balancing status of ANS can be used as one of the good indicators to evaluate a person's stress.

In the field of psychophysiology, heart rate variability (HRV) is widely considered as a physiological response related to emotional arousal. A lot of literature reveals that there are changes in index parameters for frequency domain analysis of HRV under enormous psychological stress and anxiety(Cohen et al., 2000a, Cohen et al., 2000b, Narita et al., 2007, Pieper et al., 2007). We might be able to sort out corresponding undulatory changes in physiological signals when psychological stress affects physiological ANS.

Thus, we can know if a person is in a state of stress or relaxation via measure the activity of his or her body's sympathetic and parasympathetic nerves. As sympathetic and parasympathetic nerves function in opposition to each other, when the stress increases, the activity of sympathetic nerves increase and result in autonomic nerve disorders; when stress is relieved, parasympathetic nerves are activated, making the autonomic nerves restore to its original level. However, if people are experiencing stress without proper relaxation, long-term autonomic nerve imbalances will lead to ANS disorders. A response to listening to music is a complex one involving changes in emotion, nervous, respiratory and cardiovascular systems. The music therapy has been used for many years with its advantage in achieving therapeutic effect on patients in a non-invasive way. Listening to music reduced anxiety and stress effectively. There are many examples of applying music in medical processes to help patients home and abroad(Hanser et al., 1983, Thaut and Davis, 1993), e.g. assisting with parturient mothers in reduction of anxiety in delivery rooms or helping dental patients to reduce anxiety at time of diagnosis and treatment, or exploring the effect of listening to music prior to operation on patients of extracorporeal shock wave lithotripsy.

The physiological effect of music is obviously seen on cardiovascular and respiratory systems. Specific music episodes adjusted cardiovascular rhythm. Classical music was helpful to the cardiovascular system(Trappe, 2010).

Some types of music had effect on reducing negative emotions, but listening to heavy metal music caused increased anxiety(Labbe et al., 2007). Standards of measurement and analysis criteria and physiological interpretation for HRV were published by European Society of Cardiology and

North American Society of Pacing and Electrophysiology in 1996(Camm et al., 1996). Since then, a set of international standards was established for HRV measurement and evaluation. The methods for HRV analysis mainly include those of time domain analysis, frequency domain analysis, nonlinear analysis and geometrical analysis. Depending on duration of measurement time, HRV analysis includes two types of analysis of entire 24 hours and analysis of short-term recordings. For analysis of short-term recordings, it is necessary to take full control of the experimental environment in order to prevent participants' ANS from being affected by other environmental factors, which was considered in the study.

In HRV domain analysis, LF serves as an index for activity of sympathetic nerves. Severe hypertension patients' LF and HF are much lower than those of healthy persons, indicating that the function of the sympathetic and parasympathetic nervous systems of hypertension patients is worse than that of healthy people. Changes in HRV with relaxation under repeated stimulating and soothing music were a long period of time(Iwanaga et al., 2005). Soothing music produced higher HF is than stimulating music did showing that activity of parasympathetic nerves increased when listening to soothing music. Musicians and naïve participants who did not have any musical training both had increased respirations and LF/HF ration when listening to fast-paced music. But the musicians had greater respirations and LF/HF than the naïve participants.

Accordingly, this study was to integrate two kinds of analysis methods to evaluate the degree of relaxation of participants' autonomic nerves when they listened to music based on objective physiological parametric analysis and to compare physiological reactions with their personal preferences, and then proposed a new method of personalizing music to help users to find suitable music and help themselves to reduce stress.

II. TESTING METHODS

Based on analysis of physiological parameters and comprehensive evaluation of psychological questionnaire scale, this experiment used multiple physiological parameters and the STAI anxiety scale to evaluate the participants' relaxation by listening to the music they selected following stress test.

A. Research Framework

In order to make sure if the music selected by the participants was applicable for relaxing, the participants were required to bring three pieces of music they liked and felt helpful for relaxation. The pieces of music involved in the experiment contained detailed information on personal preferences of the s participants, rhythms and style of the music, etc. Following stress test, music was used in the experiment for relaxation, and changes in physiological parameters of the participants and anxiety scale were measured.

1) Subjects

12 healthy male participants, aged from 20 to 25, who are students, were recruited for this experiment. All of them had no bad habit, such as smoking or drinking alcohol, nor did they have diseases that affect ANS, including cardiovascular, pulmonary and tracheal diseases. During the experiment, the participants did not take any drug, drink alcohol or beverages that contain caffeine, and the testing time last from 9:00 to 12:00 am.

2) STAI Scale

This scale of measuring anxiety was developed by Spielberger in 1970 and redeveloped in 1983, and is currently a highly reliable and widely accepted scale for measuring the degree of a person's anxiety. STAI (State-Trait Anxiety Inventory) consists of 40 self-rating items, 20 of which involve state anxiety and the remaining items involve trait anxiety; state anxiety is used to measure the temporary feelings of participants at a time and reflect temporary emotional responses. Trait anxiety is used to measure general feelings of participants and represents long-term emotional reactions.

3) Psychological Stimuli

The psychological stress stimuli adopted in the experiment is as follows:

a) Mental Arithmetic:

Currently, mental arithmetic tests are the commonly used method of producing stress to participants adopted in the psychology(AlAbsi et al., 1997, Falkner et al., 1979). Its advantage lies in the ability to make participants feel stressful and anxiety in a short period of time. The mental arithmetic test in this experiment is to subtract 13 continuously from 2000.

b) Chief Examiner:

The chief examiner was aimed to make the participants have experiences of taking an examination and to increase the pressure over participants. During the experiment, the chief examiner sat face to face with participants and asked questions. If the answer to the mental arithmetic test was wrong, the chief examiner told the participants that the answer was wrong and asked them to restart calculating from 2000 again.

c) Metronome:

A metronome was used during the experiment, whose speed is 120bmp. Before the experiment, participants were informed that they were required to give answers in every four beats with the view to carrying out acoustic interference and put pressure on the participants with respect to time.

B. Poincare' Plot Analysis

Poincare' plot analysis is a nonlinear method often used to analyze HRV in recent years. It plots the time-domain R-R intervals in a two-dimensional figure in a scattered way, and then analyzes the figure in a geometrical way, as shown in Fig. 1.
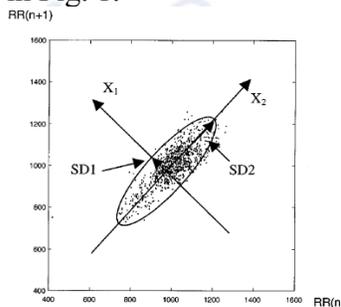
Figure 1. Poincare' plot(Brennan et al., 2001).

In these figures, X coordinates stand for R-R intervals (n) known as RR (n), representing the R-R intervals that have been analyzed currently; Y coordinates stand for R-R intervals (n+1), called RR (n+1), representing the next R-R interval of the heart beat interval. Thus, X and Y coordinates at any point represent the correlation between the R-R interval and the next R-R interval.

Following coordinate transformation, SD1 represents the standard difference of points around the x1 axis and can be interpreted clinically and physiologically as short-term HRV. The parameter SD2 represents the standard difference of points around the x2 axis, which may be clinically and physiologically interpreted as long-term HRV.

Based on current literature of Poincare' plot and HRV analysis, some scholars believe that SD1 in the Poincare' plot analysis reflects activity of parasympathetic nerves. In his study about correlation of HRV frequency-domain parameters and Poincare' plot analysis parameters, Brennan found out in 2002 that the tendency of SD1 changes has extremely positive relevance to HF of HRV, and that SD1/SD2 also has the similar relevance to the tendency of LF/HF changes.

The Poincare' plot analysis module includes lagged1 to lagged6 Poincare' plot figures and ellipse width SD 1, ellipse length SD2 and SD1/SD2 ratio as shown in Fig 2.
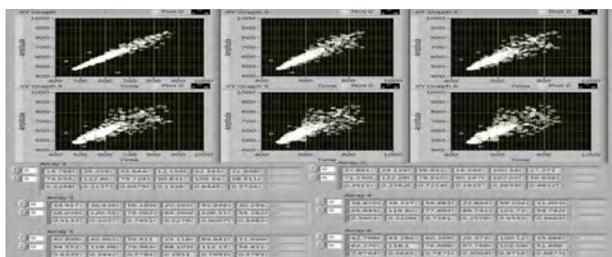
Figure 2.   The analysis module of Poincare' plot.

C. *Fuzzy Set*

The Fuzzy theory is intended to quantitatively handle concepts that are humans' subjective manifestations based on incomplete or ambiguous data, in order to reduce complexity of questions by using human reasoning. In the past, sets are binary and differentiate between true or false, often valued as 1 and 0. However, human reasoning is often found to cover Fuzzy and ambiguous ranges, for example, rating and definition between love and hatred depends on different persons.

Since peoples' preferences for music are also an ambiguous concept, the Fuzzy theory is adopted in this experiment to integrate subjective preferences and objective physiological parameters and develop a music rating system on this basis. In analysis, Fuzzy values of LF/HF, HR and personal preferences are used as three input variables for preliminary Fuzzy calculation, and each membership function has three states (low, medium and high), totally 27 Fuzzy reasoning rules are required. Results from Fuzzy calculations are used as a reference for rating of overall state of listening to music for relaxation, as shown in Fig. 3.
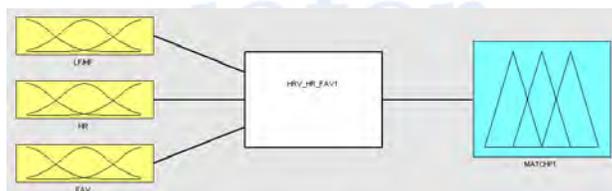
Figure 3.   The flow chart of the Fuzzy set.

D. *Experiment Process and Methodology*

To understand the effect of music that one likes on the degree of relaxation, we asked the participants to bring to the experiment three pieces of music they liked and felt helpful to relax, and they gave detailed recordings of related information, including degree of participants' preferences for personal music, music rhythm and style

During the mental arithmetic test in the experiment process, the chief examiner asked the participants some questions involving the STAI scale. This was to continue the psychological pressure on the participants and prevented them from relaxing when they filled in the questionnaires following the mental arithmetic test (as the participants may feel relieved when free from test pressure, which may further affect the results of subsequent music tests).

The experiment process was described as follows:
1. Participants brought music they selected to the experiment.
2. Start the Equivital process to carry out instrument tests and check if instruments are ready.
3. Start acquiring physiological signals.
4. Participants relaxed quietly for ten minutes.
5. Participants received mental arithmetic stimuli of ten minutes, and answered the questions involving STAI scale from the chief examiner.
6. Participants listened to music for five minutes for relaxation.
7. Participants filled in the STAI scale.

8. Stop acquiring physiological signals.
9. Sort out the acquired physiological signals for analysis.

III.   RESULTS

A. Electrocardiogram Analysis

Following HRV time- and frequency-domain analysis of the electrocardiogram (ECG) physiological parameters obtained from the experiment, the results are as follows:

Fig. 4(A) shows changes in participants' HR, which is closely related to physical state stability of participants. Slow HR indicates participants in a peaceful and stable state, while fast HR shows that participants are anxious and unstable. The experiment results show that the participants' HR increases at time of stress test and decreases at time of music relaxation following the stress test.

Fig. 4(B) shows changes in participants' LFn. LF may be considered as an index for activity regulation of sympathetic nerves. When LF increases, it means that the sympathetic nerves are activated and a person's stress is reinforced. LFn stands for a normalized parametric value of LF. The results show that LFn increases at time of stress test and decreases at time of music relaxation after the test.

Fig. 4(C) shows changes in participants' HFn. HF may be considered as an index for activity of parasympathetic nerves, so larger HF can be interpreted as more relaxed and more stable in physiological condition, while smaller HF indicates more anxious and excited state of a person. HFn represents the normalized parametric value of HF. The experiment results show that participants' HFn decreases at time of stress test and increases at time of music relaxation.

Fig. 4(D) shows changes in LFn/HFn of participants. LFn/HFn can be considered as an index for activity regulation of sympathetic and parasympathetic nerves, and the most desirable value is the balance between sympathetic and parasympathetic nerves, i.e. LFn/HFn = 1. Thus, the smaller LFn/HFn indicates that a person is more relaxed and stable in physiological state, while larger LFn/HFn reflects a more anxious and excited state of the person. Based on the experiment results, LFn/HFn increases at time of stress test, indicating ANS imbalances of the participants, while LFn/HFn decreases to nearly 1 at time of music relaxation.

(A)
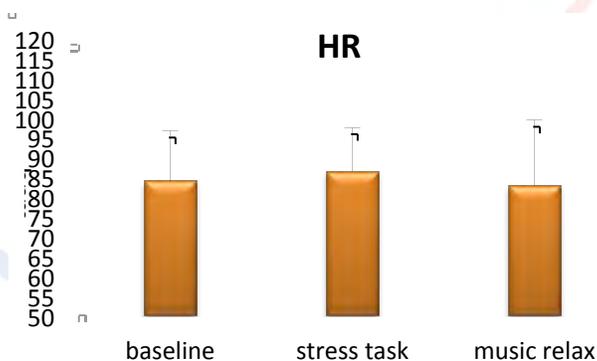
(B)
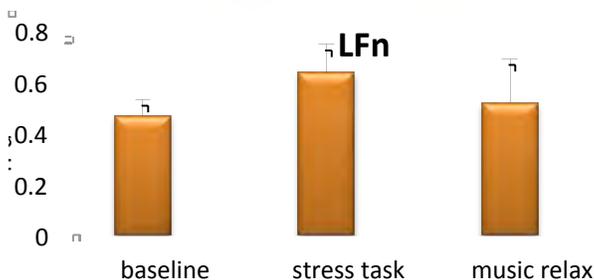
(C)
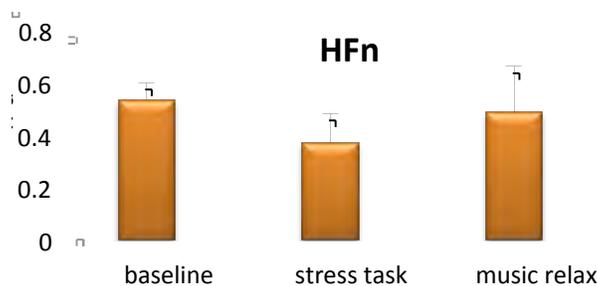
(D)
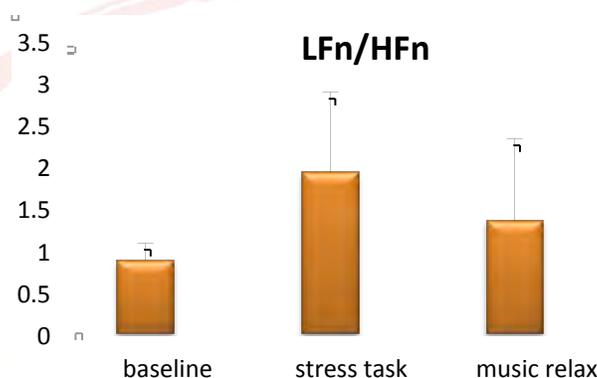


Figure 4.   (A) The variations in participants' HR. (B) The variations in participants' LFn. (C) The variations in participants' HFn. (D) The variations in participants' LFn/HFn.

B. Poincare' Plot Analysis

R-R intervals are calculated through ECG time domain analysis and plotted in the figure, and the parameters including SD1, SD2 and SD1/SD2 can be derived from coordinate transformation.

As shown in Fig. 5(A), which reveals changes in participants' SD1 (representing short-term HRV), the participants' SD1 decreases at time of stress test and increases when the participants listen to music for relaxation. Just as the experimental data show, the tendency of changes in SD1 as a Poincare' plot analysis parameter is similar to that of HF as an HRV frequency domain analysis parameter, both at time of stress test and of music relaxation.

Fig. 5(B) shows changes in participants' SD2 that represents long-term HRV. And the experiment results show that the participants' SD2 decreases at time of stress test and increases at time of music relaxation.

Fig. 5(C) shows changes in participants' SD1/SD2. According to this figure, the participants' SD1/SD2 increases at time of stress test and decreases at time of music relaxation. The experiment data show that the tendency of changes in SD1/SD2 of Poincare' plot analysis parameters is also similar to that in LF/HF of HRV frequency domain analysis.

(A)

(B)

SD2

(C)
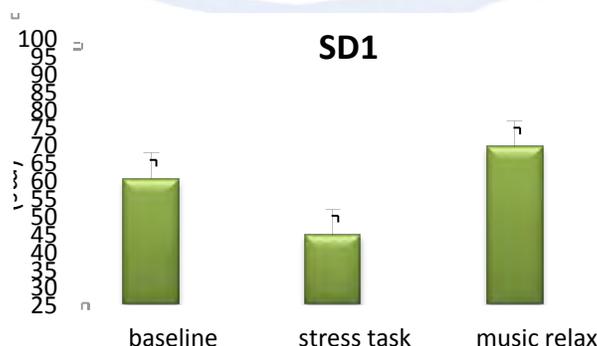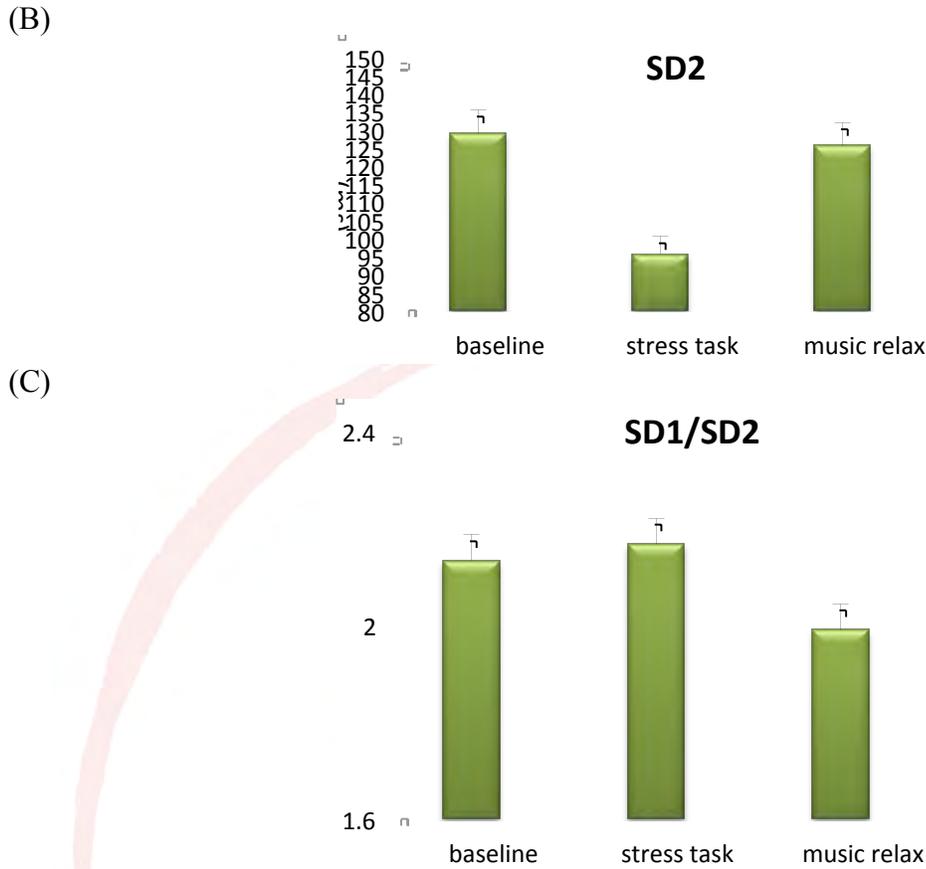
SD1/SD2

Figure 5.   (A) The variations in participants' SD1. (B) The variations in participants' SD2. (C) The variations in participants' SD1/SD2.

C. STAI Scale

The STAI scale is a self-rating measuring scale to evaluate degrees of a person's anxiety. The chief examiner asks participants the scale items in oral when the participants receive stress test, and the participants fill in these items by their own following music relaxation. Table 1 shows the average manifestations.

Tab. 1 The STAI scale evaluate degrees of anxiety.

	State anxiety	Trait anxiety
Stress task	54.6	53.8
Music relax	39.8	46

State anxiety reflects the temporary experience of participants and represents short-term emotional responses; while trait anxiety reflects general experience of participants and represents long-term emotional manifestations. The data comparisons show that both state anxiety and trait anxiety will decrease after the participants listen to music, and that state anxiety decreases to a larger extent that trait anxiety decreases.

D. Fuzzy Output Value

We used the Fuzzy function of Matlab for Fuzzy analysis, develop our Fuzzy rules according to the rule table, and enter the values of LFn/HFn, HR and the participants' preference rating, then we get a Fuzzy output value which integrates physiological parameters and degree of preferences to evaluate the degree of the participants' relaxation by listening to music.

To discuss if the music preferred by participants can apply to relaxation effectively, we invite a participant to receive a stress test and then relax by listening to music, and record values of LFn/HFn, HR and music preference rating during music relaxation. Then, we input these parameters into the Fuzzy system and work out state evaluation ratings. The experiment results are as follows in Table 2.

Tab. 2 The relaxing music results are evaluating by using Fuzzy analysis.

Relaxing Music	LFn/HFn	HR (bpm)	Music preference rating	Fuzzy analysis
Music 1	0.81	98	9	5.8
Music 2	1.57	93	8	4.1
Music 3	0.65	91	6	6.4

As the experiment results show, the overall state evaluation ratings of Relaxing Music 1 and Relaxing Music 3 both exceed 5 scores, indicating that these pieces of music have relaxing effect and thus are recommended by the system as relaxing music; the overall state rating of Relaxing Music 2 is below 5 scores, indicating that this music does not have satisfactory relaxing effect. Even if the preference rating score of Music 2 is higher than that of Music 3, listening to this music under stress may not achieve the relaxing effect in a short period of time.

By integrating physiological parameter analysis method and STAI scale method, based on objective physiological parameter analysis and users' subjective emotional response, this study tries to evaluate participants' physio-psychological changes after they receive the stress test and listen to music they prefer for relaxation.

Following stress test, we find changes in physiological parameters and anxiety after music relaxation as follows:

With regard to ECG analysis, during the stress test, participants' HR, LFn and LFn/HFn will increase, but their HFn will decrease, and rating scores of state anxiety and trait anxiety are relatively high, showing that the participants are under stress. During music relaxation, HR decreases but HFn increases, and LFn and LFn/HFn also decrease, and rating score of state anxiety and trait anxiety drop.

As for Poincare' plot analysis, during stress test, participants' SD1 and SD2 decrease, compared to SD1/SD2 that increases; during music relaxation, participants' SD1 and SD2 increase, but SD1/SD2 decreases.

Compare the participants' HRV frequency domain analysis parameters that result from measurement with Poincare' plot analysis parameters, and we will get the findings as follows:

1. The tendency of change in HF is similar to that in SD1.
2. The tendency of change in LFn/HFn is similar to that in SD1/SD2.

As shown in Figs. 6(A) and 6(B), Poincare' plot analysis parameters have a similar tendency of change to HF and LFn/HFn parameters for HRV frequency domain analysis. HF is interpreted physiologically as an index for activity of humans' parasympathetic nerves, and HF will increase when humans stay in a relaxed state, while HF will decrease when humans stay under stress. So HF may be a parameter applicable in measuring the degree of music relaxation. LFn/HFn reflects the balanced state of a person' ANS. It will increase when the person are under stress and will decrease when he is in a relaxed state.

   Poincare' plot analysis method has advantages of quick calculation and simple algorithm, etc. and allows for continuous updating of SD1 and SD2 values if data of continuous R-R intervals are available. Compared to traditional short-term HRV analysis method that requires at least five minutes of ECG data, Poincare' plot analysis method can update analysis parameters at any time, making ECG analysis be conducted in a near real-time way and thus making it possible to measure the effect of special episodes of music on human bodies.

(A)

HFn

baseline   stress task   music relax

SD1

baseline   stress task   music relax

(B)

LFn/HFn

baseline   stress task   music relax

SD2/SD1

2.4

2

1.6

| baseline | stress task | music relax |
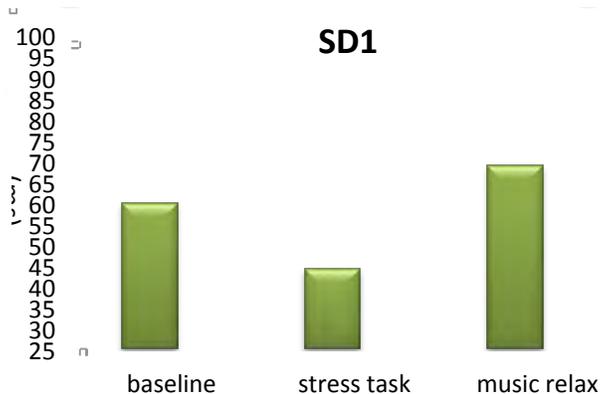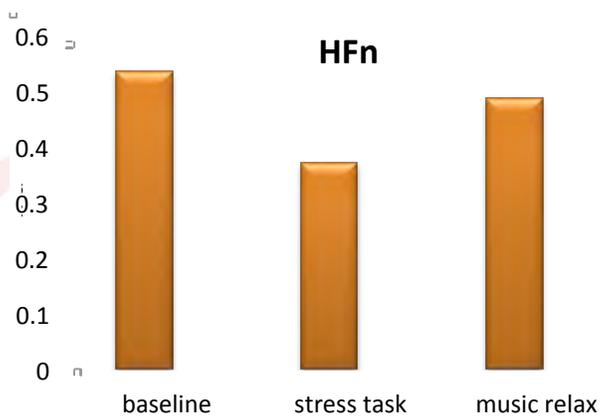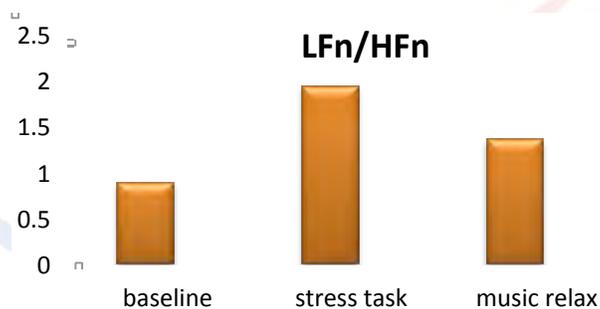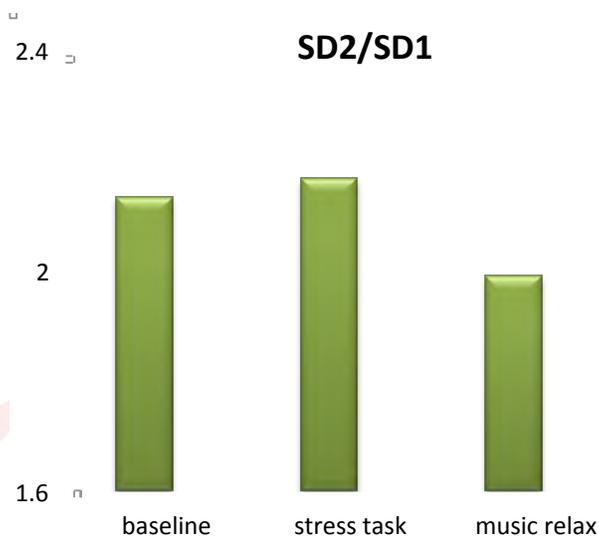
Figure 6. (A) The histograms show the differences between HF and SD1. (B) The histograms show the differences between LFn/HFn and SD1/SD2.

IV. DISCUSSION

It was difficult to maintain a state of stress over participants in a short period of time. Originally, our experiments were designed to have participants fill in the STAI anxiety scale just after mental arithmetic tests and to measure participants' anxiety state. But we found out in experiments that as mental arithmetic tests just were finished, the participants seemed to feel free from pressure and relax. These changes were manifested by physiological parameters in the stage of scale filling and affected the degree of music relaxation afterwards. In light of this, we arranged STAI scale questions into stress test and instructed the chief examiner to ask participants these questions in oral. Such improvement helped to continue the phychological stress on participants and prevented them from relaxing due to reduction of phychological stress, which may affect participants' physiological state in the stage of music relaxation. Besides, such improvement made it easier to take control of experimental process.

When the participants in the experiment listened to the music they like after stress test, physiological and emotional changes were not consistent when it cames to the music of high preference degrees.The participants' self-rated emotional experience following music relaxation in anxiety was reduced, and rating scores in state anxiety and trait anxiety both hada tendency to decline. However, the participants did not present the relaxing effect in terms of pshysiological parameters during music relaxation. Following music relaxation, ratings of participants' STAI scale anxiety declined, but HFn of HRV decreased and LFn/HFn increased. It indicates that even though participants thought that listening to the music they liked helped to reduce their psychological anxiety, but their physiological parameters did show any relaxation and remained in a stress state . The possible reasons for such phenomenon may include:

1. Rhythms of the music participants selected are somewhat fast. Listening to music of fast rhythms may cause increased HR and RR, and is may make it rather difficult to achieve relaxation in a short period of time.

2. Music contents were stimulating. Though participants were asked to bring three pieces of music,the participants could select any music they like. The style, lyric, tune or rhythm of a song may affect participants' emotion and further affect their physiological changes. For example, some participants prefered stimulating music. But as noted previously such type of music could not help them to relax.

In sum, to solve the problem of inconsisteny in physiological and emotional changes during music relaxation, we focused our attention on participants' health and developed a new music rating system based on the Fuzzy theory. The new system builded on three Fuzzy values of LF/HF, HR and personal preferences as input variables to conduct initial Fuzzy calculation and then measures degrees of music relaxation for reference according to results of Fuzzy calculation, with the purpose of helping participants to select proper music and achieve self-relaxation smoothly in a short period of time in the future by referring to ratings of the system on music when they experience stress.

REFERENCES

ALABSI, M., BONGARD, S., BUCHANAN, T., PINCOMB, G. A., LICINIO, J. & LOVALLO, W. R. 1997. Cardiovascular and neuroendocrine adjustment to public speaking and mental arithmetic stressors. *Psychophysiology,* 34**,** 266-275.

BRENNAN, M., PALANISWAMI, M. & KAMEN, P. 2001. Do existing measures of Poincare plot geometry reflect nonlinear features of heart rate variability? *Ieee Transactions on Biomedical Engineering,* 48**,** 1342-1347.

BURNS, S. J. I., HARBUZ, M. S., HUCKLEBRIDGE, F. & BUNT, L. 2001. A pilot study into the therapeutic effects of music therapy at a cancer help center. *Alternative Therapies in Health and Medicine,* 7**,** 48-56.

CAMM, A. J., MALIK, M., BIGGER, J. T., BREITHARDT, G., CERUTTI, S., COHEN, R. J., COUMEL, P., FALLEN, E. L., KENNEDY, H. L., KLEIGER, R. E., LOMBARDI, F., MALLIANI, A., MOSS, A. J., ROTTMAN, J. N., SCHMIDT, G., SCHWARTZ, P. J. & SINGER, D. 1996. Heart rate variability - Standards of measurement, physiological interpretation, and clinical use. *Circulation,* 93**,** 1043-1065.

COHEN, H., BENJAMIN, J., GEVA, A. B., MATAR, M. A., KAPLAN, Z. & KOTLER, M. 2000a. Autonomic dysregulation in panic disorder and in post-traumatic stress disorder: application of power spectrum analysis of heart rate variability at rest and in response to recollection of trauma or panic attacks. *Psychiatry Research,* 96**,** 1-13.

COHEN, H., NEUMANN, L., SHORE, M., AMIR, M., CASSUTO, Y. & BUSKILA, D. 2000b. Autonomic dysfunction in patients with fibromyalgia: Application of power spectral analysis of heart rate variability. *Seminars in Arthritis and Rheumatism,* 29**,** 217-227.

FALKNER, B., ONESTI, G., ANGELAKOS, E. T., FERNANDES, M. & LANGMAN, C. 1979. CARDIOVASCULAR-RESPONSE TO MENTAL STRESS IN NORMAL ADOLESCENTS WITH HYPERTENSIVE PARENTS - HEMODYNAMICS AND MENTAL STRESS IN ADOLESCENTS. *Hypertension,* 1**,** 23-30.

HANSER, S. B., LARSON, S. C. & OCONNELL, A. S. 1983. THE EFFECT OF MUSIC ON RELAXATION OF EXPECTANT MOTHERS DURING LABOR. *Journal of Music Therapy,* 20**,** 50-58.

HASEGAWA, H., UOZUMI, T. & ONO, K. 2004. Psychological and physiological evaluations of music listening for mental stress. *Hokkaido Journal of Medical Science,* 79**,** 225-235.

HEBERT, S., BELAND, R., DIONNE-FOURNELLE, O., CRETE, M. & LUPIEN, S. J. 2005. Physiological stress response to video-game playing: the contribution of built-in music. *Life Sciences,* 76**,** 2371-2380.

IWANAGA, M., KOBAYASHI, A. & KAWASAKI, C. 2005. Heart rate variability with repetitive exposure to music. *Biological Psychology,* 70**,** 61-66.

KREIBIG, S. D. 2010. Autonomic nervous system activity in emotion: A review. *Biological Psychology,* 84**,** 394-421.

LABBE, E., SCHMIDT, N., BABIN, J. & PHARR, M. 2007. Coping with stress: The effectiveness of different types of music. *Applied Psychophysiology and Biofeedback,* 32**,** 163-168.

MCEWEN, B. S. 2002. Sex, stress and the hippocampus: allostasis, allostatic load and the aging process. *Neurobiology of Aging,* 23**,** 921-939.

NARITA, K., MURATA, T., HAMADA, T., TAKAHASHI, T., MORI, M., SUGANUMA, N., YOSHIDA, H. & WADA, Y. 2007. Interactions among higher trait anxiety, sympathetic activity, and endothelial function in the elderly. *Journal of Psychiatric Research,* 41**,** 418-427.

NATER, U. M., ABBRUZZESE, E., KREBS, M. & EHLERT, U. 2006. Sex differences in emotional and psychophysiological responses to musical stimuli. *International Journal of Psychophysiology,* 62**,** 300-308.

PAGANI, M., MAZZUERO, G., FERRARI, A., LIBERATI, D., CERUTTI, S., VAITL, D., TAVAZZI, L. & MALLIANI, A. 1991. SYMPATHOVAGAL INTERACTION DURING MENTAL STRESS - A STUDY USING SPECTRAL-ANALYSIS OF HEART-RATE-VARIABILITY IN HEALTHY CONTROL SUBJECTS AND PATIENTS WITH A PRIOR MYOCARDIAL-INFARCTION. *Circulation,* 83**,** 43-51.

PIEPER, S., BROSSCHOT, J. F., VAN DER LEEDEN, R. & THAYER, J. F. 2007. Cardiac effects of momentary assessed worry episodes and stressful events. *Psychosomatic Medicine,* 69**,** 901-909.

SOKHADZE, E. M. 2007. Effects of music on the recovery of autonomic and electrocortical activity after stress induced by aversive visual stimuli. *Applied Psychophysiology and Biofeedback,* 32**,** 31-50.

SU, J. H., YEH, H. H., YU, P. S. & TSENG, V. S. 2010. Music Recommendation Using Content and Context Information Mining. *Ieee Intelligent Systems,* 25**,** 16-26.

THAUT, M. H. & DAVIS, W. B. 1993. THE INFLUENCE OF SUBJECT-SELECTED VERSUS EXPERIMENTER-CHOSEN MUSIC ON AFFECT, ANXIETY, AND RELAXATION. *Journal of Music Therapy,* 30**,** 210-223.

TRAPPE, H. J. 2010. The effects of music on the cardiovascular system and cardiovascular health. *Heart,* 96**,** 1868-1871.

WHITEHEAD-PLEAUX, A. M., BARYZA, M. J. & SHERIDAN, R. L. 2006. The effects of music therapy on pediatric patients' pain and anxiety during donor site dressing change. *Journal of Music Therapy,* 43**,** 136-153.

A Knowledge Sharing Perspective qn ᴠhe Transformation qf Individual-Level Relationships ᴋnto Interorganizational Structures: The Case qf Taiwan'u Hospitals

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Abstract:

The objectives of this study are to understand the inter-organizational networks of Taiwan's hospitals and explore the hospital accreditation knowledge sharing in information networks and non-official networks. A self-designed questionnaire was applied to collect data. The human resource chief of medical centers, regional hospitals and district hospitals were invited to nominate up to 5 hospitals in which they have interactions with the chief. And then for each nominated hospital they answered some questions. The social network analysis software, UCINET 6 for window was applied to analyze data, and NetDraw to draw the social network graph. The results show that there is more hospital accreditation knowledge sharing in information networks than non-official networks. The density of information network is higher than non-official network. The structure of information networks signified the hierarchy of hospitals. Some items of hospital accreditation work were discussed in the non-official networks. The structure of non-official network is decentralized. It is concluded that the information network structure of core or peripheral positions represents the size of the hospital and the amount of resources. Hospitals share hospital accreditation knowledge through the inter-organizational networks to meet accreditation standards. When the new public-oriented accreditation system is implemented, the hospitals can quickly adapt to the new system through inter-organizational   networks.

Introduction

In Taiwan, hospitals are stratified as academic medical centers, regional hospitals, district hospitals, and psychiatric hospitals by Taiwan Joint Commission on Hospital Accreditation (TJCHA). So far approximately 30 countries in the world have developed on the hospital accreditation. Taiwan is the fourth country that started the accreditation project in the world and the first one in Asia [1].

According to the recently announced list, there are 19 academic medical hospitals, 105 regional hospitals, 326 district hospitals, and 41 psychiatric hospitals. The most important task of hospital is providing health care. Besides, academic medical center has further tasks to provide holistic medical education and research, R & D of medical and health technology, enhancing the international status of medical achievements. Some of the regional hospitals are qualified for education and research. The staffs are the most valued assets who can accomplish these tasks. And the chief of human resource department has strategies to develop the capacities, utilize, maintain and compensate their services in tune with the job and organizational requirement. According to the embeddedness argument, work-related transactions tend to overlap with patterns of social relations [2]. Thus, information and technology exchange between hospitals is embedded in social networks of the chief. And the referral system will enhance the embeddedness. Further, human resource training project will increase the familiarity among chiefs. The profile of chief's social network will helpful for understanding the inter-organizational networks of hospitals.

The hospitals are beginning to feel new pressure from the internal dynamics of decentralization as well as the forces of hospital accreditation in Taiwan. They have to develop inter-organizational networks for survival. The resource dependence perspective [3] emphasizes the influence of organizations' environments on their survival, but argues that organizations can enhance their survival chances through relations with organizations in their environments that control important resources. The exchange perspective [4-6] views inter-organizational network as comprised of relationships between actors pursuing different interests whose ability to derive benefit from the exchanges is a function of their dependence upon and power over other organizations in the network. These theories enlighten the importance of hospitals' cooperation and interdependence.

Organizations have a number of recurring non-pecuniary transactions across their boundaries that link them to other organizations. Podolny and Page [7] indicated that network forms of organization foster learning, represent a mechanism for the attainment of status or legitimacy, provide a variety of economic benefits, facilitate the management of resource dependencies, and provide considerable autonomy for employees. A direct positive effect of network ties was proved on performance [8-11], and survival [12-13]. Others have found that networks and/or network positions have a positive effect on political influence [14], strategic alliance formation [15-17], learning [18-23], and innovation [24-27].

An organizational field is a community of organizations that engage in common activities and are subject to similar reputation and regulatory pressures [28]. Such fields have been defined as a network, or a configuration, of relations between positions and as centers of debates in which competing interests negotiate over the interpretation of key issues [29]. Ritter & Gemunden [30] offered a framework of studying inter-organizational networks and posited that relationships and networks are the results of activities of human beings, because neither brig of a firm are collaborating with the other party, but human beings do. However, most of the studies focus only on inter-organizational network ties and do not incorporate into their research on inter-organizational ties consideration of interpersonal relationships, which can also facilitate the economic interactions of organizations [31].

One reason that networks are so effective is that they can provide access to information that can help organizations overcome environmental uncertainty and gain control over their

environment [32]. Another reason is that networks can facilitate the transfer of capital, customers, facilities, and other material resources across organizational boundaries. Human services agencies create ties among themselves to facilitate the flow of clients and patients [33-34]. Networks can be used to access information and material resources, Lin [35] discussed the process of mobilizing the resources embedded in one's networks. Recently, Rodan [36] suggested that there were five different theoretical mechanisms: autonomy, competition, information, brokering, opportunity recognition and innovativeness.

As knowledge begins to supplant land, labor, and capital as the primary source of competitive advantage in the marketplace, the ability to create new knowledge, share existing knowledge, and apply organizational knowledge to new situations becomes critical [37]. Nahapiet and Ghoshal [38] have developed a conceptual model that illustrates the linkage between social capital and organizational knowledge. This model illustrates how social capital influences four variables that mediate the creation and sharing of organizational knowledge. These four variables include: access to parties for combining/exchanging intellectual capital, the anticipation of value through combining/exchanging intellectual capital, the motivation of individuals to combine/share intellectual capital, and the ability for the organization to change according to the needs of its outside environment. In the context of the exploration of the role of social capital in the creation of intellectual capital, Nahapiet and Ghoshal suggested three dimensions of social capital: the structural, the relational, and the cognitive dimensions. The structural dimension concerns the properties of the network of relations as a whole. The relational dimension describes the kind of personal relationships people have developed with each other. The cognitive dimension refers to those resources providing shared representations, interpretations, and systems of meaning among parties.

Based on this model, this study visualizes the whole network structure of information sharing relation and non-official relation of Taiwan's hospitals from the viewpoint of human resource managers and compares the differences of the hospital accreditation information exchange in these two types of networks.

1. Method

Name generator was used to collect social network data. The respondents were asked to nominate the hospitals up to five in which he/she had communication with the human resource chief. After nomination, the respondents were asked whether he/she goes to the nominated hospitals' chief for information, or non-official interaction. Then, two collaborate networks data were revealed.

All the hospitals' human resource chiefs were invited to participate in this study during 2010. There were 18 academic medical hospitals, 49 regional hospitals, and 141 district hospitals whose chief completed the questionnaire. The response rates are 94.7%, 46.7%, and 43.3% for academic medical hospital, regional hospital, and district hospital respectively. After nomination, the participants increased to 20, 49, and 182 respectively. These nominated hospitals are all included in the graph of networks.

A self-designed questionnaire was applied to collect data. The chief of human resource department of medical centers, regional hospitals and district hospitals were invited to nominate up to 5 hospitals in which they have interactions with the chief. And then for each nominated hospital answer the following questions: (1) Is there any information sharing with the hospital? (2) Is there any non-official interaction with the hospital? (3) Do you discuss the following hospital accreditation work? After this question, the participant was asked to check a list of 15 hospital accreditation works. These 15 accreditation works included the department for coordinating, division of work, planning of accreditation work, table filling, contents and pages of folders, core contents of a folder, evidence of contents, preparation for

provisions, specific practices for improvement, staffing, personnel qualification, guide manual, preparation for presentation, percentage of self-assessment as A, and writing of hundred-word motto.

The main goal is detecting and interpreting patterns of social ties among hospitals. UCINET 6 for window [39] was used to analyze ego-centered network variables. SPSS was used to compare the difference between two networks. NetDraw [40] was used to map the networks. In social network figure, a circle represents a hospital. The biggest red circle is academic medical center, the smaller blue circle regional hospital, and the smallest black circle district hospital. The analytic unit is dyad. A dyad is formed if one participant nominates the other one. Each dyad represents information sharing or non-official interaction.

2. Result

To understand the inter-organizational networks of Taiwan's hospitals, the graph of information sharing network and non-official network are presented as figure 1 and 2. And for exploring the hospital accreditation knowledge sharing in information networks and non-official networks, the frequency of interaction is calculated.

2.1 The whole network of academic medical centers, regional hospitals, and district hospitals

Information sharing and non-official networks are presented in Fig. 1 and 2. The largest red circles represent the academic medical centers, the middle blue circles represent the regional hospitals, and the little black circles represent the district hospitals.

There are 19 medical centers, 47 regional hospitals, and 144 district hospitals in the information sharing network. And there are 15 medical centers, 37 regional hospitals, and 82 district hospitals in the non-official network.

Obviously, there are more hospitals in the information sharing network than the non-official network. The network densities are 0.91% and 0.85% for these two networks. The network density is defined as the number of links in a graph, expressed as a proportion of the maximum possible links [41]. The equation is as below where l is the number of links and n is number of participants.

$$density = \frac{l}{n(n-1)/2}$$

In addition, in the information sharing network, the medical centers are located in the center, only two medical centers located in the periphery. District hospitals located in the border position, or several local hospitals gathered and formed a cluster. The location of regional hospitals was between medical centers and district hospitals. Their location was either close to the medical centers or form cluster with the district hospitals.

In contrast, non-official network showed different structure. It is hard to distinguish medical centers, regional hospitals, and district hospitals among the relationship of hospitals if not distinguished by size or color. The medical centers are not located in the center as in the information sharing network. All the hospital linked but more dispersed. Through non-official network all the hospitals can be connected to each other.

2.2 The difference of accreditation knowledge sharing in the information sharing network and non-official network

There were 523 dyads among all the medical centers, regional hospitals, and district hospitals, as table 1. The medical centers had more interaction with medical centers than with others.

And the regional hospitals had more interaction with regional hospitals than with others. So did the district hospitals. More than half of the dyads were formed in the same level of hospitals.

The frequency nominated by the medical centers was decreasing as the sequence of medical centers, regional hospitals, and then the district hospitals. The regional hospitals had more interaction with the district hospitals than with the medical centers.

The dyad was formed by non-official interaction, information sharing, or the accreditation knowledge sharing. If any dyad was formed by accreditation knowledge, it would be included in the analysis. The highest frequency of the dyads was formed by the knowledge exchange about the preparation for provisions, then about the evidence of contents. There were more than 200 dyads. The frequency of specific practices for improvement is 191. These 3 items were basic accreditation works. In contrast, there were also 3 items with frequency less than 100. These 3 items were personnel qualification, percentage of self-assessment as A, and writing of a hundred-word motto.

Comparing the accreditation knowledge sharing in information sharing dyads and non-official dyads, it was found that most of the accreditation knowledge sharing was occurred in information sharing dyads. There was not any knowledge sharing about staffing, percentage of self-assessment as A, and writing of hundred-word motto in non-official dyads.
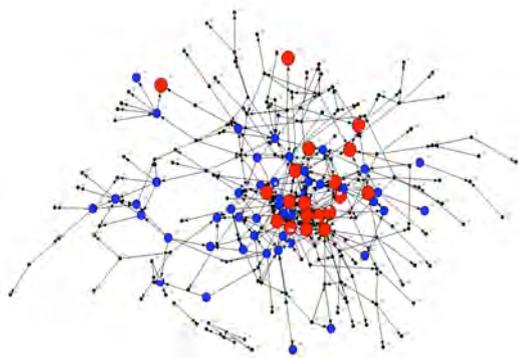
Fig. 1 Information sharing network   Fig. 2 Non-official network
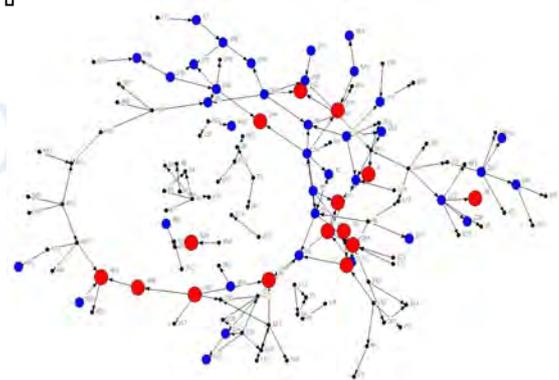
Table 1. Dyads between hospitals

Nominated \ Nominee	Academic medical center	Regional hospital	District hospital	Total
Academic medical center	39 (7.5%)	13 (2.5%)	4 (0.8%)	56(10.7%)
Regional hospital	38 (7.3%)	93 (17.8%)	47 (9.0%)	178(34.0%)
District hospital	51 (9.8%)	87 (16.6%)	151 (28.9%)	289(55.3%)
Total	128 (24.5%)	193 (36.9%)	202 (38.6%)	523(100%)

Table 2. Accreditation knowledge sharing

Accreditation knowledge	Dyads	Information sharing dyads	Non-official dyads
department for coordinating	150	122(81.3%)	5(3.3%)
division of work	150	123(82.0%)	5(3.3%)
planning of accreditation work	166	127(76.5%)	2(1.2%)
table filling	169	137(81.1%)	4(2.4%)
contents and pages of folders	119	103(86.6%)	1(0.8%)
core contents of a folder	108	96(88.9%)	1(0.9%)
evidence of contents	202	172(85.1%)	2(1.0%)
preparation for provisions	221	189(85.5%)	1(0.5%)
specific practices for improvement	191	164(85.9%)	1(0.5%)
staffing	169	141(83.4%)	0
personnel qualification	81	66(81.5%)	1(1.2%)
guide manual	108	93(86.1%)	1(0.9%)
preparation for presentation	111	94(84.7%)	1(0.9%)
percentage of self-assessment as A	68	60(88.2%)	0
writing of hundred-word motto	45	40(88.9%)	0

3. Discussion and conclusion

Social capital resides in relationships, and relationships are created through exchange [42]. The profile of linkages and the relationship built by hospitals' chiefs are the foundation of social capital. Through information sharing and non-official interaction, network ties are formed. And the network ties provide access to resources. That is "who you know affects what you know". Through the networks ties, they can receive valuable accreditation information. Since more than half of the dyads were formed by hospitals in the same level, it identified the function of network ties in providing efficient information for accreditation.

The whole configuration of network ties constitutes an important facet of social capital. The information sharing network had higher density, and significant hierarchical structure. Obviously, the structure is suitable for official communication. The finding of more accreditation knowledge sharing in the information sharing network supported this inference. In contrast, the non-official network had lower density, and the structure was decentralized. Although there was less accreditation knowledge sharing in the non-official network, the chief could link with others through non-official relations. Social capital theory [43] posits that the resources are embedded in a social structure and can be accessed and mobilized in purposive actions. Investment in both networks can bring expected returns.

However, Burt [15] argued that the sparse networks with few redundant contacts provide more information benefits, and the dense network is inefficient that it returns less diverse information. In this study, the hospitals have linkage to others for accessing accreditation information. They do not need diversified information. The dense network providing the same information would strengthen the usefulness of knowledge sharing.

From social network lens, the focus is on the opportunities or constraint of actors in the network, rather on the individual characteristics. The purposes of inter-organizational networking are access to resources, reduce uncertainty, increase legitimacy, and reach common goals [44]. Facing the competition, the chiefs of hospitals have to share implicit knowledge through non-official network for survival.

The hospitals obtain important information for accreditation. They share accreditation knowledge in the inter-organizational network and strive to meet the accreditation criteria. The observed structure of inter-hospitals network was formed by the core and the peripheral which represented the size of the hospitals, the amount of resources. The impact of accreditation system and health insurance reform on the hospitals will generate the overall ecological environment and change the inter-organizational networks. Further research is needed.

References

[1] Taiwan Joint Commission on Hospital Accreditation, Division of Hospital Accreditation (2011, Feb 4). http://www.tjcha.org.tw/S_english.asp?catid=3

[2] M. S. Granovetter, Economic action and social structure: The problem of embeddedness, American Journal of Sociology, vol. 91, pp. 481-510, 1985.

[3] J. Pfeffer, G. R. Salancik, The External Control of Organizations, New York, NY: Harper and Row, 1978.

[4] J. K. Benson, The interorganizational network as political economy, Administrative Science Quarterly, vol. 2 (June), pp. 229-249, 1975.

[5] K. S. Cook, Exchange and power in networks of interorganizational relations, The Sociological Quarterly, vol. 1 (Winter), pp. 62-82, 1977.

[6] K. S. Cook, R. Emerson, Power, equity and commitment in exchange networks, American Sociological Review, vol. 6 (December), pp. 721-739, 1978.

[7] J. M. Podolny, K. L. Page, Network forms of organization, *Annuual Review of Sociology,* vol. 24, pp. 57-76, 1998.

[8] W. W. Powell, K. W. Koput, L. Smith-Doerr, Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology, *Administrative Science Quarterly*, vol. 41, pp. 116-145, 1996.

[9] J. M. Podolny, A status-based model of market competition, *American Journal of Sociology*, vol. 98, pp. 829-871, 1993.

[10] T. E. Stuart, H. Hoang, and R. C. Hybels, Interorganizational endorsements and the performance of entrepreneurial ventures, *Administrative Science Quarterly*, vol. 44, pp. 315-349, 1999.

[11] J. A. C. Baum, T. Calabrese, and B. S. Silverman, Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology, *Strategic Management Journal*, vol. 21, pp. 267-294, 2000.

[12] J. A. C. Baum, C. Oliver, Institutional linkages and organizational mortality, *Administrative Science Quarterly*, vol. 36, pp. 187-218, 1991.

[13] J. A. C. Baum, and C. Oliver, Toward an institutional ecology of organizational foundings, *Academy of Management Journal,* vol. 39, pp. 1378-1427, 1996.

[14] R. M. Fernandez, and R. V. Gould, A dilemma of state power: Brokerage and influence in the national health policy domain, *American Journal of Sociology,* vol. 99, pp. 1455-1491, 1994.

[15] R. S. Burt, *Structural Holes: The Social Structure of Competition*, Cambridge, MA: Harvard University Press, 1992.

[16] R. Gulati, Social structure and alliance formation patterns: A longitudinal analysis, *Administrative Science Quarterly*, vol. 40, pp. 619-652, 1995.

[17] R. Gulati, M. Gargiulo, Where do interorganizational networks come from?, *American Journal of Sociology*, vol. 104, pp. 1439-1493, 1999.

[18] P. R. Haunschild, A. S. Miner, Modes of interorganizational imitation: The effects of outcome salience and uncertainty, *Administrative Science Quarterly*, vol. 42, pp. 472-500, 1997.

[19] P. R. Haunschild, C. M. Beckman, When do interlocks matters?: Alternate sources of information and interlock influence, *Administrative Science Quarterly*, vol. 43, pp. 815-844, 1998.

[20] G. Davis, H. R. Greve, Corporate elite networks and governance changes in the 1980s, *American Journal of Sociology*, vol. 103, pp. 1-37, 1997.

[21] M. S. Kraatz, Learning by association? Interorganizational networks and adaptation to environmental change, *Academy of Management Journal*. vol. 41, pp. 621-643, 1998.

[22] P. Kale, H. Singh, H. Perlmutter, Learning and protection of proprietary assets in strategic alliances: Building relational capital, *Strategic Management Journal*, vol. 21, pp. 217-237, 2000.

[23] B. N. Anand, and T. Khanna, Do firms learn to create value? The case of alliances, *Strategic Management Journal*, vol. 21, pp. 295-315, 2000.

[24] J. Hagedoorn, J. Schakenraad, Leading companies and networks of strategic alliance in information technologies, *Research Policy*, vol. 21, pp. 163-190, 1992.

[25] G. Ahuja, Collaboration networks, structural holes, and innovation: A longitudinal study, *Administrative Science Quarterly*, vol. 45, pp. 425-455, 2000.

[26] M. Ruef, Strong ties, weak ties and islands: Structural and cultural predictors of organizational innovation, *Industrial and Corporate Change*, vol. 11, pp. 427-449, 2002.

[27] K. B. Whittington, J. Owen-Smith, W. W. Powell, Networks, propinquity, and innovation in knowledge-intensive industries, *Administrative Science Quarterly*, vol. 54, pp. 90-122, 2009.

[28] P. J. DiMaggio, W. W. Powell, The iron cage revisited: institutional isomorphism and collectivity rationality in organizational fields, *American Sociological Review,* vol. 48, pp. 147-160, 1983.

[29] A. J. Hoffman, Institutional evolution and change: environmentalism and the U.S. chemical industry, *Academy of Management Journal*, vol. 42, No. 4, pp. 351-371, 1999.

[30] T. Ritter, H. G. Gemunden, Interorganizational relationships and networks: An overview, *Journal of Business Research*, vol. 56, pp. 691-697, 2003.

[31] P. Ingram, and P. W. Roberts, Friendships among competitors in the Syndey hotel industry, *American Journal of Sociology*, vol. 106, pp. 387-423, 2000.

[32] R. S. Burt, *Corporate Profits and Cooptation,* New York: Academic Press, 1983.

[33] K. G. Provan, H. B. Milward, A preliminary theory of network effectiveness: A comparative study of four community mental health systems, *Administrative Science Quarterly*, vol. 40, pp. 1-33, 1995.

[34] K. G. Provan, K. R. Isett, H. B. Milward, Cooperation and compromise: A network response to conflicting institutional pressures in community mental health, *Nonprofit and Voluntary Sector Quarterly*, vol. 33, pp. 489-514, 2004.

[35] N. Lin, *Social Capital: A Theory of Social Structure and Action*. New York: Cambridge University Press, 2001.

[36] S. Rodan, Structural holes and managerial performance: Identifying the underlying mechanisms, *Social Networks*, vol. 32, pp. 168-17, 2010.

[37] E. L. Lesser, *Knowledge and Social Capital: Foundations and Applications*, Boston: Butterworth Heinemann, 2000.

[38] J. Nahapiet, S. Ghoshal, Social capital, intellectual capital, and the organizational advantage, In E. L. Lesser (Ed.), *Knowledge and Social Capital: Foundations and Applications*: 119-157. Boston: Butterworth Heinemann, 2000.

[39] S. P. Borgatti, M. G. Everett, L. C. Freeman, *Ucinet 6 for Windows: Software for Social Network Analysis*, Harvard: Analytic Technologies, 2002.

[40] S. P. Borgatti, *NetDraw: Graph Visualization Software*, Harvard: Analytic Technologies, 2002.

[41] J. Scott, *Social Network Analysis: A Handbook,* London: Sage Publications, 1991.

[42] P. Bourdieu, The forms of capital. In J. G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education*: 241-258. New York: Greenwood.

[43] N. Lin, K. Cook, R. S. Burt, *Social Capital: Theory and Research,* New York: Aldine de Gruyter, 2001.

[44] C. Oliver, Determinants of interorganizational relations: integration and future directions, Academy of Management Review, vol. 2 (April), pp. 241-265, 1990.

Javanese Child'u Reports qf Hope: Boys Versus Girls

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Abstract:

The research conducted in Java - Indonesia at Semarang and Kudus. The research aim to knowing the difference level of Javanese children's hope between boys and girls, 1295 children 6-12 years old were studied. The conception of hope I defined as a "positives motivational state that is based on interactively derived sense of successful (a) agency (goal-directed energy) and (b) pathways (planning to meet goals). In this research, the level of hope measured by Children Hope Scale from Snyders et al (1997). The hypothesis that used is F-test. The result of Levene's test showed that F= 8.981 and p= 0.003 (p<0.05) which means that the hypothesis stated before that there are differences level of Javanese Children's Hope between boys and girls are accepted. Girls' level of hope is higher compared to boys. The data result is in line with the theoretical studies in Javanese family, father educates their daughters and sons in different way. Those make a difference in the level of hope of girls and boys. Children in sixth grade (age 12 years) has decreased the level of hope when compared to children in first grade (age 6 years). Parents and teachers should consider the age and gender when planning interventions to foster hope in children.Keywords: hope, gender, age.

Introduction

The research aim is a preliminary assumption test to show the differences in the level of hope between boys and girls who come from Java. Theoretically, the hope, the emergent ego strength from the trust, is fundamental to life and living, and provides the individual with an instinctive feeling of certainty in his or her social context (Erikson, 1968). The child's relative understanding of world and society come from the parents and their interaction with the child. If parents expose the child to warmth, regularity, and dependable affection, an infant learns trust that others are dependable and reliable. If they are neglectful, abusive or perhaps even, the infant learns mistrust instead-that the world is in an undependable, unpredictable, and possibly dangerous place.

The role of fathers and mothers are different, but the important thing is how father can perform the role as a father very well. The willingness of fathers involved in parenting is influenced by cultural background. Hariyono (1993) states that there is value in the Javanese people about child care that distinguishes the role of fathers and mothers in child care. Javanese culture in Indonesia tends to form a paternalistic family in which makes fathers less involved in childcare. Fathers involve in rearing boys and girls in different ways.

In this study designed to determine differences in the level of hope between Javanese's boys and girls who come from Java. Research by Fry and Scher (1984) showed that boys and girls changed differently in psychosocial dimensions over time and father absence had more adverse effects on boys than girls.

Theory of Hope

Snyder (1995) developed a cognitive motivational model of Hope that is based in goal-directed thinking. Snyder (2000) argued that theory of hope involves a person's ability conceptualized goals and develop strategies to achieve those goals (pathways), in addition initiate and sustain motivation in using this strategy (agency).

Snyder (2002) stated that we are constantly linking past experiences to imagined future goals. Individuals who can develop well articulated pathways towards reaching their goals are more likely to be successful and, therefore, are likely to display higher levels of hope than others (Snyder, 2002). Individuals with low hope are likely to be less confident in their pathways than those high in hope. Furthermore, individuals high in hope have been found to be more likely to be flexible with pathways when faced with hurdles than those low in hope (Snyder, 2002).

Individuals who have the motivation to set their pathways thinking in motion are high in agency thinking. Also, agency thinking has been linked to using alternative paths and to using self-talk to provide self-encouragement when faced with barriers (Snyder, 2002).

Individuals with high levels of hope have more positive thoughts than negative thoughts in the face of his days (Snyder et al., 1996). Hope was found to be positively correlated with positive affection, life satisfaction, support from family and friends, and optimism, and across gender (Valle et al, 2004).

Javanese Child's Hope from the Child Gender Point of View

Child development theorists have purported that parents are vital to children's hope development (Erikson, 1985) and serve as "role models for hope in their children" (McDermott & Hasting, 2000). Parents play an important role for the development of the child's hope. Parental role in child care is applied differently in each culture.

Java is one of the areas in Indonesia which has a certain culture, especially in terms of parenting. One of the values of child rearing, paternalistic culture, that's influences willingness of fathers to engage in parenting. In addition, the child gender preference as a determinant of father involvement in parenting.

Father involvements in parenting depend on how father interpret the children presence. The child point of view who is believed by someone would affect everything related to the child, for instance the willingness or unwillingness to have children, the number of children expected, children treatment, and the parent expectations on the child (Arnold & Fawcett, 1957). Furthermore, Fawcett, Arnold, Bulatao, Buripakdi, Chung, Iritani, Lee, and Wu (1974) emphasizing on giving meaning universally to children, meanwhile the other way that need to emphasize is more specific according to culture, social group or individual.

Anthony and Benedeck (1970) stated that mother and father have satisfaction of having baby that based on child' gender, it will clearly be seen in father reaction. Most fathers showed satisfaction in the first child especially for baby boy compared to baby girl. Moreover, father needed more emotional adjustment if the first baby that born is a girl. The example above showed that gender preference means more to father. In Javanese family there are paradigm exist that father will proud for having a baby boy due to safety in economy point of view in the future. On contrary, parents that want to have a baby girl, expected psychologically and practically to help the housework. The baby that born with unwanted gender, could influence father in parenting and even trigger fathers' way of treating their child. Javanese fathers usually educate their son harder than their daughter. It possible happen due to father has more expectation to boys to be a man.

Hypothesis

Based on statement above, researcher formulate hypothesis as follows: there are differentiation of hope's level between boys and girls.

Research Method

Variable Identification

Independent variable is child's hope. Child's hope is the child's ability conceptualized goals and develops strategies to achieve those goals (pathways), in addition initiate and sustain motivation in using this strategy (agency).

The level of hope is measured by The Children's Hope Scale (The CHS) (Snyder et al. Journal of Pediatric Psychology 22 (3): 399-421, 1997). The CHS is a six-item self report scale that ask questions about how children think and about their goals and the steps they take to reach them. Answer on this scale range from none of the time to all of the time on 6-point Likert scale. Three of the six items (items 2, 4, and 6) can be summed to form a pathways subscale (e.g., I can think many of ways to get the things in life that are most important to me) and the other three (items 1, 3, and 5) sum to form an agency subscale (e.g. I think I am doing pretty well).

Research Subject

The research did in Semarang and Kudus (Java). It based on several considerations that there are Javanese people on that area. The participants included 614 boys and 681 girls (1295 children), 6 through 12 year old whose parents are Javanese, active using Javanese language and eat Javanese food.

Test Scale Result

Cronbach alphas for the CHS scores in each of the samples ranged from a low of .70 to a high of .86, with a median alpha of .77. Item-remainder coefficients ranged from .27 to .68, with a median of .54 (all ps < .01) (Snyder et al, 1997).

Here, scale test re done with the consideration that this study used the CHS are adapted and represented to the conditions of research subjects, especially in terms of language use. The result shows that Cronbach Alphas is .773 and item validity by corrected item-total correlation ranged from .594 to .640.

The research using three categories for each research variable, there are low, middle, and high. The categorization based on assumption that score distributed normally (Azwar, 2002).

Result

The hypothesis test shows that there are differentiation level of hope between boys and girls. The hypothesis test proves by F-test. The Levene's Test showed that F= 8.981 and p=0.003 (p<0.05) that means that level of hope between boys and girls are different. Furthermore, the result of t-test showed that F= 8.981 and if compare with F table = F > F table, could be conclude that the result of the data is significant, means there are differentiation level of hope between boys and girls. Could be concluding that there is differentiation level of hope between boys and girls are accepted.

The results of further analysis, there are different levels of agency in boys and girls. The Levene's Test showed that F= 7.257 and p=0,007 (p<0.05) that means that level of hope between boys and girls are different. Furthermore, the result of t-test showed that F= 7.257, and if compare with F table = F > F table, could be conclude that the result of the data is significant.

Similarly, there are different level of pathways between boys and girls. The Levene's Test showed that F= 7.141 and p= 0.008 (p< 0.05) that means that level of hope between boys and girls are different. Furthermore, the result of t-test showed that F= 7.141 and if compare with F table = F > F table, could be conclude that the result of the data is significant.

Table.1
Descriptive Statistic

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Boys	614	21.07	5.931	.239	4	30
Girls	681	22.03	5.513	.211	2	30
Summary	1295	21.57	5.732	.159	2	30

Table 2
The categorization of hope

Low 244 child	Middle 688 child	High 363 child
16.72	**25.28**	

Based on the table above could be said that Javanese children's level of hope is in the middle category, on range from 16.72 to 25.28 are 688 people, 53.13% from the whole subject 1295.

Discussion

The hypothesis test showed that there are differentiation level of hope between boys and girls. The level of hope average in girls is higher 22.03 compared with the average of boys' level

of hope 21.07, the level of hope between boys and girls are different. This is consistent with results of previous studies by Hendricks-Ferguson (2006) that girls were more hopeful than boys.

This difference happened because of the child rearing in Java differentiates boys and girls. This is mainly done by the father. Fathers treat boys and girls in different ways. The willingness of fathers involved in parenting is influenced by cultural background. Hariyono (1993) states that there is value in the Javanese people about child care that distinguishes the role of fathers and mothers in child care.

The things are suitable with the theoretical investigation that in Javanese family, father rear their son and daughter in different way. Snow, Jacklyn, and Maccoby (1983) research showed that father interaction with their pre-school children influenced by gender and how father interact with are started while their children 1 years old.

On several cases in Javanese family, father is closer to their daughter due to emotionally involve compared with their son. The individual behavior be based on their values they convinced, Javanese father tend to behave based on Javanese values so. The stern values that convinced could evaluate father behave due to value is the firm believes that hold socially and personally (Rokeach, 1968). The Javanese culture values that put forward the gender as basic in parenting, makes boy and girl differently demand by father.

A boy, for whole time in their early age has been prepared psychologically, to be able to understand the values even he could not know the meaning and concept yet. In the early age, parents spoiled them until the early childhood. On the first year after he born, the relation between father and his boy are close. Slowly but sure, in line with his grown up, father stated to strive his boy become well mannered, quietly, and become an obedient person.

The crucial part of this period is the fathers' role shifting, from warmth friend become an honorable person. As a boy, father strive them to enter the awkward restrain and respect system in the relationship between them that has been lasted since 5 years old. In Javanese family, the father rearing more showed to their son. A conclusion could be drawing that how father involve in rearing his child are different between boys and girls especially while their children are on the offspring stage.

The role of father in parenting boys in the first years of his birth was great, but along with increasing age boys, great expectations and demands imposed on him. Therefore fathers treat boys tend to be hard. Differences in treatment will caused the different levels of hope.

The demands of fathers in boys which are too hard along with the increasing age of the child make the relationship between father and son was not emotionally warm. Warmth and affection from parents is important in the formation of basic trust which will increase the level of hope. Children who grow up in home which tend to judge the behavior and accomplishments of their children by an 'absolute standard' and respond in punitive and forceful manner in an attempt to shape children's behavior, have been found to be less optimistic and to manifest high levels of internalized distress, relative to other children (Baumrind, 1991).

The boy who was burdened with the demands of parents, especially fathers would feel uncomfortable and depressed. This is actually lowering the boys' level of hope. More, when the demand could not be met by boys, boys will be dissatisfied with life because they do not have the full support of his parents. Results of previous studies showed that children with high hope were more satisfied with their life and had higher self-esteem when compared to children with low hope. Additionally, children with high hope, when compared to children with low hope, reported greater support from others and higher level of family cohesion (Merkas et al, 2011).

In addition, the family circumstances of Java, where not only the father is less involved in child rearing but also differentiate boys and girls in child rearing, will affects the development of child' ego strength, then will caused a different level of hope. The results study by Fry and Scher (1984) showed that father-absent subjects, compared to father-present subjects, declined in achievement motivation dimensions of competitiveness, desire for mastery, perseverance and willingness to endure negative consequences. They showed a corresponding increase in negative

ego-strength. The results indicated that father-absent, boys and girls changed differently in psychosocial dimensions over time and father absence had more adverse effects on boys than girls.

Children need support from parents and the environment to develop the ego strength. In the Javanese family, father often gives over control for his son. Low support from father will cause low level of hope. The previous study by Hodgkins (2001) showed that children's higher Children's Hope Scale scores also have correlated significantly with greater parental support.

The further results indicate that there are differences in the agency, one of the hope components, between boys and girls. The Levene's Test showed that F= 7.257 and p= 0.007 (p<0.05) that means that level of agency between boys and girls are different. Furthermore, the result of F-test showed that F= 7.257 and if compare with F table = F > F table, could be conclude that the result of the data is significant. The level of agency average in girls is higher 11.27 compared with the average of boys' level of agency which is 10.82.

Similarly, there are different level of pathways between boys and girls. The Levene's Test showed that F= 7.141 and p= 0.008 (p<0.05) that means that level of pathways between boys and girls are different. Furthermore, the result of F-test showed that F= 7.141 and if compare with F table = F > F table, could be conclude that the result of the data is significant. The level of pathways average in girls is higher 10.75 compared with the average of boys' level of agency which is 10.26.

As it is known that the theory of hope state that hope is the ability of children conceptualized goals and develop strategies to achieve those goals (pathways), in addition initiate and sustain motivation in using this strategy (agency). These two components of hope are different between boys and girls. In girls showed a higher level when compared to the boys on both the component level (agency and pathways). These data result in line with the research before by Wells (2005) showed that women scored higher on the agency component of hope than did men. Women also made more attempts at anagram solutions than did men.

In girls showed a higher level in both pathways and agency components when compared to boys. Individuals who have the motivation to set their pathways thinking in motion are high in agency thinking. Also, agency thinking has been linked to using alternative paths and to using self-talk to provide self-encouragement when faced with barriers (Snyder, 2002).

This research results also showed that Javanese children's level of hope is in the middle category on range from 16.72 to 25.28 is 688 people, 53.13% from the whole subject 1295. This means that it still needs some intervention and prevention program to promote child's level of hope. The previously discussed studies show that hope is related to many positive constructs and outcomes; thus it follows that cultivating and enhancing hope in early age may improve current and future functioning (Pedrotti et al, 2008).

An additional research results show that there are differences in level of hope when viewed from the child's age group. The Levene's Test showed that F= 10.190 and p= 0.000 (p<0.05) that means that level of hope between age are different. Furthermore, the result of F-test showed that F= 10.190 and if compare with F table = F > F table, could be conclude that the result of the data is significant, means there are differentiation level of hope between age.

The level of hope average on first grade (6 years old) is higher 23.58 compared with the average of level of hope on sixth grade (12 years old) which is 20.00. Levels of hope decreased. Some researchers have alluded to the fact that the early adolescent years bring about new and sometimes stressful challenges for the individual (Steinberg & Morris, 2001; Smetana et al, 2006). The study is demonstrating a significant decline in trait hope during early years of adolescence with the effect being greater for those low on hope. The decline in hope is may be reflective of the various challenges associated with this period of lifespan.

Under conditions in Java-Indonesia, is made possible because of the higher age means burdens of school are also getting heavier. Children need to be able to follow the applicable curriculum. In addition, in recent years, precisely year 2006 enacted new curriculum. Some

sources say that the current elementary school curriculum provides a burden for the children at the primary level.

Some facts become the reason for decreasing the level of hope from first grade to sixth grade. Children to be pessimistic when faced with the burden of the curriculum and the demands to get good grades by parents. There are many parents who believe that children's achievement is shown by getting first rank in class rather than other aspects. Children with pessimism will turn in to low level of hope. This is showed in a study by Ey et al. (2005) reported that high levels of optimism were related with high levels of hope and high levels of pessimism were related with low levels of hope in children.

In addition, there is heavy curriculum that makes the child stress. This is evidenced by the fact that some sixth grade who face national exam (Ujian Nasional) are stress as reported by the independent voices online, 189 students of South Lamper 02 Semarang doing hypnotherapy to reduce the stress level. Stress conditions experienced by children will result in decreased levels of hope. This is in line with the previous study by Kazdin et al. (1986) found that children who scored high in hopelessness were significantly higher in depression.

Later study by Snyder et al.'s (1997) showed that high hope was related to low levels of depression in children. Another study by Valle et al.'s (2006), the result show a significant positive correlation between hope and life satisfaction, means hope is negatively correlated with the total depression.

Further analysis is trying to measure the difference in the level of agency and pathways components as part of hope. The results indicate that there are differences in these two components when viewed from the age group.

At the component pathways, the Levene's Test showed that F= 5.194 and p= 0,000 (p<0.05) that means that level of pathways between age are different. Furthermore, the result of F-test showed that F= 5.194 and if compare with F table = F > F table, could be conclude that the result of the data is significant, means there are differentiation level of pathways between age. The level of pathways average in first grade (6 years old) is higher 11.47 compared with the average of level of hope at sixth grade which is 9.96.

Similarly, the Levene's Test showed that F= 12.32 and p=0,000 (p<0.05) that means that level of pathways between age are different. Furthermore, the result of F-test showed that F= 12.32 and if compare with F table = F > F table, could be conclude that the result of the data is significant, means there are differentiation level of pathways between age. The level of pathways average in first grade I (6 years old) is higher 12.11 compared with the average of level of hope at sixth grade which is 10.04.

Research Limitation

The research has limitations. First, this research only relies on the children self report and not fully use teacher's perspective or any family member. It needed because one of ways to get data accuracy about the child's level of hope. Besides, there are further intense observation on child in their daily life and child on school.

Second, the scale of this research is adopted the Children's Hope Scale from Snyder (Snyder et al, 1997). This brings some consequences among the children in Java especially children at age 6-7 years who are still sitting on first grade had difficulty understanding the statement in the scale. It is also recognized by Berkich (1996) that the children asked during testing of children under age 8 did not understand the concepts on the scale.

Conclusion

Based on the statements before, researcher concludes there are difference level of hope between boys and girls. Girls show the level of hope is higher than boys' level of hope. Strengthened by the further results, there are difference levels of agency and pathways as hope's components. Girls show higher level of hope, both agency and pathways.

A decline in the level of hope is happen while the child gets older, both at the agency and pathways components.

Suggestion

Researcher hopefully considers another factor that influences level of child's hope. The factors are positive affection, life satisfaction, support from family and friends, and optimism (Valle et al, 2004). Future studies are expected to develop an indigenous concept of hope.

Next, parents and teachers should consider the age and gender when planning prevention and interventions to foster hope in children.

References:

Anthony, E.J., & Benedek, T. (1970). *Parenthood: Its Psychology and Psychopathology*. Boston: Little, Brown and Company (Inc.).

Arnold, F. & Fawcett, J.T. (1975). *The values of children: A Cross-national Study*. Volume 1. Honolulu: East-West Population Institute.

Azwar, S. (2002). *Penyusunan Skala Psikologi*. Yogyakarta: Pustaka Pelajar Offset.

Baumrind, D. (1991). The influence of parenting styles on adolescent competence and substance use. *Journal of Early Adolescence*, 11, 56-95.

Berkich, C.D. (1996). Development and validation of a scale to measure hope in preschool and primary age children. *Dissertation Abstract International*, 57(3), 2213B.

Erikson, E.H. (1968). *Identity: Youth and Crisis*. New York: W.W Norton.

Erikson, E.H. (1985). *The Life Cycle Completed*. New York: W.W Norton.

Ey, S., Hadley, W., Allen, D. N., Palmer, S., Klosky, J., Deptula, D., et al. (2005). A new measure of children's optimism and pessimism: The youth life orientation test. *Journal of Child Psychology and Psychiatry, 46*, 548-558.

Fawcett, J.T., Arnold, F., Bulatao, R.A., Buripakdi, C., Chung, B.J., Iritani, T., Lee, S.J., Wu, T. (1974). The value of children in Asia and the United States: comparative perspectives. *Papers of the East West Population Institute*, 3, 1-69.

Fry, P.S., & Scher, A. (1984). The effects of father absence on children's achievement motivation, ego-strength, and locus-of-control orientation: A five-year longitudinal assessment. *British Journal of Developmental Psychology*, 2(2), pp. 167-178.

Hariyono, P. (1993). *Kultur Cina dan Jawa: Pemahaman Menuju Asimilasi Kultural*. Jakarta: Suara Harapan.

Hendricks-Ferguson, Verna. (2006). Relationships of age and gender to hope and spritual well-being among adolescence with cancer. *Journal of Pediatric Oncology Nursing*, 23 (4), 189-199.

Hodgkins, N. M. (2001). The relationship of parental acceptance/rejection to hope and shame in adolescents. *Dissertation-Abstracts-International: Section B: The Sciences-and-Engineering. July; Vol 62* (1-B): 550.

Kazdin, A.E., Rodgers, A., & Colbus, D. (1986). The hopelessness scale for children: Psychometric characteristics and concurrent validity. *Journal of Consulting and Clinical Psychology, 54*, 241-245.

McDermott, D., & Hastings, S. (2000). Children: Raising Future Hope. In C.R. Snyder, & S.J. Lopez (eds.), *Handbook of Positive Psychology* (pp. 185-199). New York: Oxford University Press.

Merkaš, Marina; Brajša-Žganec, & Andreja. (2011). Children with different levels of hope: are there differences in their self-esteem, life satisfaction, social support, and family cohesion?. *Child Indicators Research*, 4(3), pp. 499-514(16).

Pedrotti, J.T., Edwards, L., & Lopez, S.J. (2008). Promoting hope: suggestion for school counselors. *Professional School Counseling*, 12(2), pp. 100-107.

Rokeach, M. (1968). *Belief, Attitude, and Values*. San Fransisco: Jossey-Bass, Inc.

Smetana, J.G., Campione-Barr, N., & Metzger, A. (2006). Adolescent development in international and societal context. *Annual Review of Psychology*, 57, 255-284.

Snow, M.E., Jacklyn, C.N., & Maccoby, E.E. (1983). Sex-of-child differences in father-child interaction at one year of age. *Child Development*, *54* (1), 227-232.

Snyder, C.R. (2000). Hypothesis: There is hope. In C.R. Snyder (Ed), *Handbook of hope: Theory, measures, and applications* (pp.25-38). San Diego: Academic Press.

Snyder, C.R. (1995).conceptualising, measuring, and nurturing hope. *Journal of Counseling and Development*, 73, 355-360.

Snyder, C.R., Symspson, S.C., Ybasco, F.C., Borders, T.F., babyak, M.A., & Higgins, R.L. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology*, 2, 321-335.

Snyder, C.R., Hoza, B., Pelham, W.E., Rapoff, M., Ware, L., Danovsky, M., et al. (1997). The Development and validation of the children's hope scale. *Journal of Pediatric Psychology*, 22 (3), 399-421.

Steinberg, L., & Morris, A.S. (2001). Adolescent development. *Annual Review of Psychology*, 52, 83-110.

Snyder, C. R. (2002). Hope theory: Rainbows of the mind. *Psychological Inquiry, 13*, 249-275.

Valle, M.F., Huebner, E.S., & Suldo, S.M. (2004). Further evaluation of the children's hope scale. *Journal of Psychoeducational Assessment*, 22, 320-337.

Valle, M. F., Huebner, E. S., & Suldo, S. M. (2006). An analysis of hope as a psychological strength. *Journal of School Psychology, 44*, 393-406.

Wells, M. (2005). The effects of gender, age, and anxiety on hope: Differences in the expression of pathways and agency thought. *Dissertation*. Texas A&M University.

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Association qf Cognitrone, Visual Pursuit Abilities cnd Tachistoscopic Traffic Responses cmong Ages lʋr Bus Drivers

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Abstract:

Present study was to investigate the cognition and reaction abilities of the bus drivers by Vienna psychological tests. Eighteen bus drivers were recruited for study involving cognitrone test, visual pursuit test, tachistoscopic traffic test. Present study applied mainly by Vienna Test System which is a computerized psychological assessment tool (Schuhfried GmbH, Austria). The cognitrone test, which is to diagnose attention and concentration through comparing figures and to see if they are consistent. Visual pursuit test measures the visual orientation performance for simple structures in a complex environment and is characterized by a high reliability and numerous criterion-related proofs of validity. Tachistoscopic traffic test is to test the drivers' visual perception based on the traffic conditions. The test includes twenty-two pictures of traffic condition, in which the first two are samples, and the rest is for test shown randomly. Each picture is shown for one second, with five options: 1) pedestrian/child, 2) automobile, 3) bicycle/ scooter/ motorcycle, 4) traffic sign, and 5) traffic light. Results of ANOVA showed that these were significant differences between ages in mean correct rejection time, mean hit time, and mean working time for cognitrone test. The mean correct rejection time were 3.5 sec, 2.5 sec and 1.8 sec for high group (more than 50 years old), middle group (40-49 years old) and younger group (less than 39 years old) respectively. There were also significant differences in mean time of correct answer for visual pursuit test between ages. For tachistoscopic traffic test, the mean number of correct answers were 4.7, 7 and 8 for high age group (more than 50 years old), middle age group (40-49 years old) and younger group (less than 39 years old) respectively. Results of this study could be used in evaluated and trained of visual detection abilities for professinal drivers.

1 Introduction

Driving can be viewed as the activityof an individual driver to fulfill special requirements with respect to reactive capacity under conditions of stress, visual structuring ability, concentration, visual perception performance and reaction time (Neuwirth, 1999). Research has shown that test performance on visual, attentional, perceptual, cognitive and psychomotor tasks has an association with ability to drive (McKnight & McKnight, 1999; Lundberg et al., 1998). The on-road driving is a commonly used "criterion standard" for licensing new drivers and has been the most widely accepted method for determining driving competency (Odenheimer et al., 1994). On-road driving assessment usually takes less than an hour to complete. Because it usually takes place in good weather conditions during daytime, it does not necessarily reveal the subjects' ability to react adequately in a sudden and stressful traffic situation. It is also difficult to draw any conclusions about the individual drivers' ability to sustain attention for longer periods of time which is often a requirement for professional drivers. The present study examines the association of cognitrone, visual pursuit abilities and tachistoscopic traffic responses of professional drivers.

According to the data from 1993 to 2003, (NHTSA, 2003), there were 19.9 million older licensed drivers in 2002, a 29 percent increase from the number in 1992. It has been reported that age-related changes in sensory abilities, such as visual impairment, can potentially influence the ability of visual tasks and simultaneous dual tasks not directly related to vision, such as walking through the environment and driving (Wood et al., 2009). Visual impairment has been shown to contribute to the driving difficulties of older adults. Indices of unsafe driving performance, including increased crash risk and impaired on-road driving performance, have been reported in older drivers with cataracts (Wood and Carberry, 2006) and in those drivers with reductions in specific visual functions including visual fields, motion sensitivity, contrast sensitivity and visual attention (Owsley and McGwin, 1999; Wood, 2002).

The visual sense provides most of the information used by vehicle driver. Statistic reports showed the 3620 people are killed on United Kingdom roads each year (DOT, 1996) and these road accidents might be linked with defects in vision (Charman, 1997). Many studies have attempted to identify the contributing causes of automobile crashes among older drivers and the majority have focused on medical conditions and visual and cognitive impairments (Owslet et al., 1998; McGwin et al.,

2000).

Visual search operation can be used to assess the three basic and necessary capabilities for all the drivers including visual ability, cognitive ability, and limb ability to act. The visual ability collects the environmental information to the brain in the driving process, and through brain's awareness, treatment and making appropriate decision, the body moves to perform the necessary driving behavior. The human visual experience deeply depends on visual attention, and must deal with certain reactions from limited resources and time. Visual attention is associated with the length of the individual reaction time and correct response rate in many tasks related to visual search operations such as driving.

The concept of cognitrone is based on the theoretical model of Reulecke (1991), which views concentration as a state that can in principle be described by three variables: first, energy, the concentrative state that demands and consumes energy; second, function, the function of concentration in performing a task; and third. pPrecision, the quality of task performance. In the test forms with unlimited working time the variable "Energy" as defined by Reulecke (1991) is measured by the time taken at a pre-set level of precision and function.

A tachistoscope is a device which presents short-term optical stimuli, pictures for example, to the participants being tested. As early as 1960, the German Traffic Board (TÜV) in Rheinland began with the development of a tachistoscope test (Benschop, 1998). This consisted of a test series of 22 slides which showed traffic situations with various traffic participants. Calé (1992) demonstrated that the test results of the Visual Pursuit Test could be used to predict driver typologies. Working with a sample of N=72 drivers who had been involved in more than one accident within a short period of time, Calé found significant correlations between test result and accident frequency. Geometric figures of various colors were presented in combination with pictures of traffic in big cities. The respondent specified how many signs he/she recognized, and how he/she rated the situation shown. The test was evaluated according to speed, breadth and depth of attention.

A study by Neuwirth (2000) showed that the Tachistoscopic Traffic Test Manheim for Screen (TAVTMB) distinguishes between the norm group and each of the groups that were sent to undergo traffic psychological examinations. Karner and Neuwirth (2001) proved a significant correlation between the general assessment of the driving behavior in a standardized driving test and the test results in the TAVTMB.

Furthermore, a test battery including the TAVTMB was made possible to predict the general assessment of driving behavior in a standardized driving test. (Karner & Biehl, 2000).

In recent years, the study of driving focus moved from the interactive relationship between driving skills, driving behavior and the accident to the relationship between mental mechanism and driving performance. The purpose of present study was to examine the association of cognitrone, visual pursuit abilities and tachistoscopic traffic responses with gender and driving experience. In addition, present study attempted to establish bus drivers appropriate assessment mechanism to promote safer driving.

2. Methods

2.1 Participants

This research recruited 18 bus drivers in the experiments including 11 males and 7 females. The age of the male drivers is 40 to 49 years old; the average height is 170.5cm (SD = 6.5), and the average weight is 73.9 kg (SD = 8.8). The age of female drivers is 40 to 49 years old; the average height is 159.5cm (SD = 2.1), and the average weight of 63.9 kg (SD = 10.4).

2.2 Experimental trials

The study used the Vienna Test System which was a computerized psychological assessment tool (Schuhfried GmbH, Austria). The test trials involved the Cognitrone test, Visual Pursuit Test and Tachistoscopic Traffic Test.

There are three stages in the experiment. The first step is the Cognitrone test, which is to diagnose attention and concentration through comparing figures and to see if they are consistent, as shown in Figure 2. The animation introduction and the exercise of identifying errors guide the participants to perform the tasks. Participants are required to compare the abstract figure with a specific model, and to justify if these two are the same, in unconstrained testing time. Once the answer is entered, the next question will display automatically; no questions can be skipped as well as no returns to the previous page are allowed. There are a total of sixty questions.

The second stage is Visual Pursuit Test: This test measures the visual orientation performance for simple structures in a complex environment and is characterized by a high reliability and numerous criterion-related proofs of validity. There is an arrow above, and the participants are required to answer the connection number, a total of nine numbers. If they make more than three mistakes, the system

will terminate this stage of test automatically. The purpose is to track the time and the ratio of mistake for assessing their visual pursuit performance, as shown in Figure 3, a total of forty questions.

The third stage is the Tachistoscopic Traffic Test. It is used to test the drivers' visual perception based on traffic conditions. The test includes twenty-two pictures of traffic condition, in which the first two are samples, and the rest is shown randomly for the test. Each picture is shown for one second, with five options: 1) pedestrian/child, 2) automobile, 3) bicycle/ scooter/ motorcycle, 4) traffic sign, and 5) traffic light. Participants answer the questions according to the pictures seen.
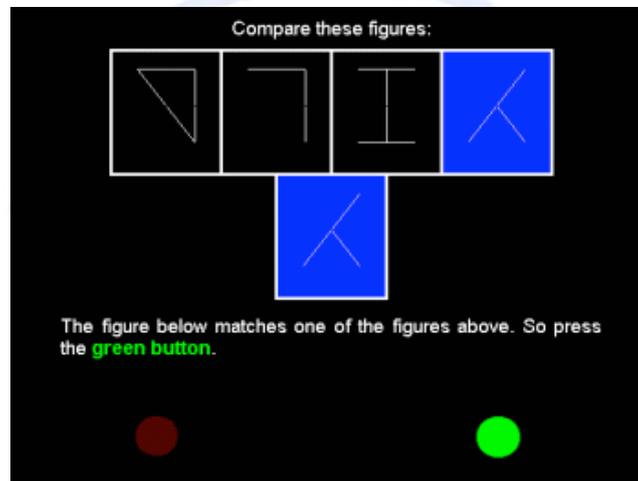
Figure 1 Cognitrone test
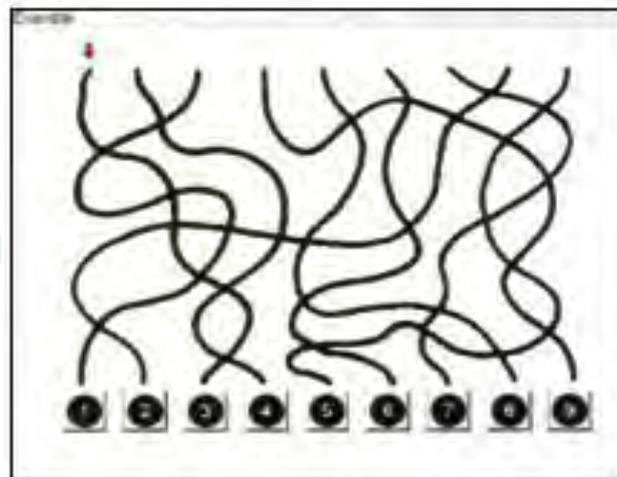
Figure 2 Visual Pursuit Test

Figure 3 Tachistoscopic Traffic Test
(i.e. motor vehicles, bikes, traffic signs and traffic lights)

2.4 Procedures of experiment

Before the experiment began, participants adjusted the chairs to be suitable for the heights of the tables and themselves, so that they can sit straight up during the tests. Respondents viewed the screen in an angle of 30 degrees; the lighting was also considered for preventing the reflections or dazzling. The participants were free from the noise disturbance as the noise was controlled to be below 50 dBA. A minimum rest period of 10 min or more, if required, was provided between trials. During the rest periods, participants were asked to stay seated, relaxed and remain silent.

2.5 Data analysis

A randomized complete design with between-subject factors (gender and driving experience) was used for this study. In addition, driving experience could be divided into two groups, i.e. subjects with driving license and without driving license. Further, the analysis of variance (ANOVA) was utilized to identify significant differences between conditions for dependent variables. Statistical significance was set at a significace level of 0.05.

3. Results

3.1 Cognitrone test

The results of ANOVA showed that there were significant differences in hit

time and working time of cognitrone test between age groups. The mean hit time were shorter in 39-39 years old (1.6 sec,), 40-49 years old (1.8 sec) than in older drivers (2.5 sec). In addition, the mean working time increased significantly with their age. They were 104.5 sec, 135 sec and 189.7 sec for 30-39, 40-49 and 50-59 years old, respectively. For gender effect, there were not significant differences in cognitrone test. The mean hit time and working time for male and female were 2.0 sec, 1.9 sec and 144.8 sec, 145 sec, respectively.
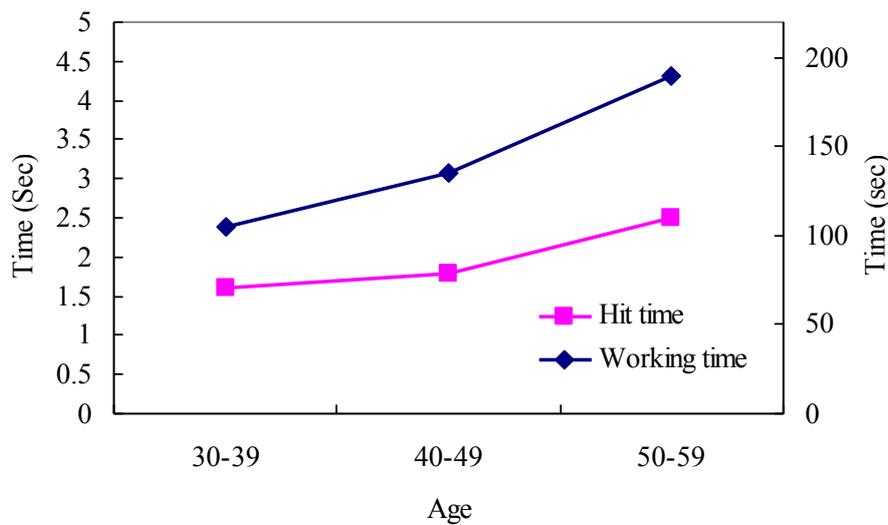
Figure 4 Hit time and working time of Cognitrone test between ages

3.2 Visual pursuit test

Results of analysis revealed that working time were longer in older (81.7 sec) and median age drivers (82.2 sec) than in younger drivers (58.5 sec). However, the numbers of view were not significant differences between age groups. In addition, Gender effect was found in the visual pursuit test. Females needed more time to view the pictures (85 sec) than males (75.6 sec) and there were also more numbers of view (19) then males (18.1).
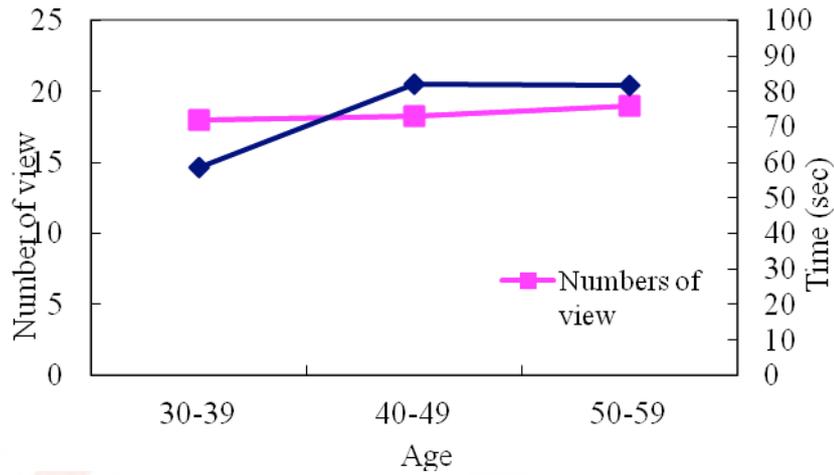
Figure 5 Number of view and working time of visual pursuit between ages

3.3 Tachistoscopic Traffic Test

From the results of analysis, the ages affected significantly numbers of correct answer and working time. The younger drivers have better performance than the older drivers. The mean correct answers are eight by the younger and seven by the median age group. In contrast, the older have higher frequency of wrong answer.
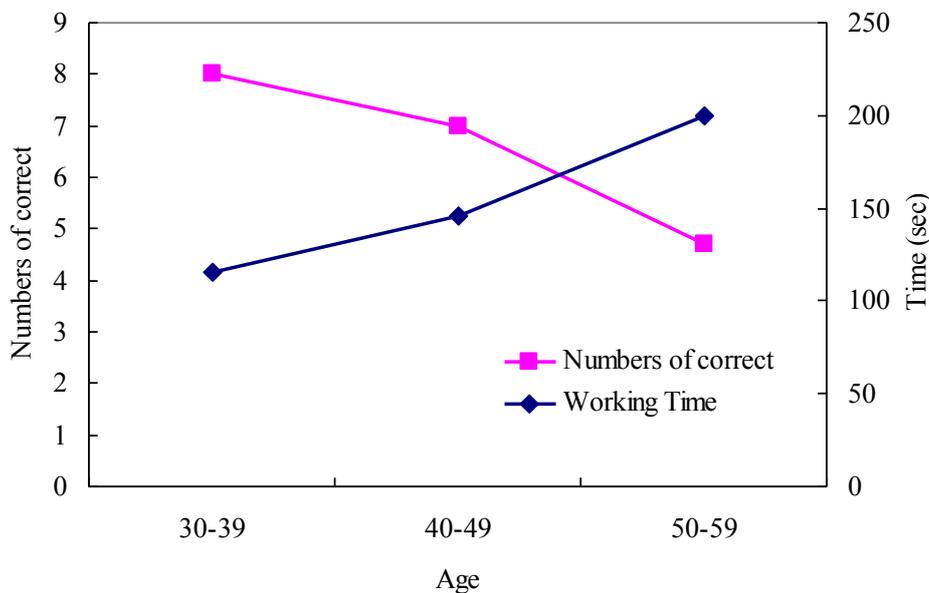
Figure 6 Number of view and working time of visual pursuit between ages

The experiment analysis shows that the age has a significant impact. The

cognitrone test shows the higher age spends longer time. The visual persuit test shows the female spends more time and checks the test questions more often than the male. It also shows the older spends more time.   The traffic conditions test shows the older spends more time and more errors. In this stud, age and gender was found to affect visual ability significantly. It is suggested that it might be useful for the driving license test of professional drivers to consider the gender and the range of age of the drivers in designing the test to more   accurately assess the drivers' visual ability to check if they match the jobs. Beside, we also suggest the professional drivers should take similar tests and training courses regularly.   In summary, we find that the gender and age have significant effects on their cognitive responses and visual tracking capabilities in the three tests used in the study despite a relatively few sample sizes were involved.   A full set of data is being collected for future analysis.

References

Bartone, P. T. (1989). Predictors of stress-related illness in city bus drivers, Journal of Occupational Medicine, 31(8), 657-663.

Benschop, R. (1998).What Is a Tachistoscope? Historical Explorations of an Instrument. Science in Context, vol. 11, pp. 23-50, 1998

Biehl, B. (2000). Tachistoscopic Traffic Test Mannheim for Screen Moedling: Dr. G. Schuhfried GmbH.

Biehl, B. (2000). Visual Pursuit Test. Moedling: Dr. G. Schuhfried GmbH.

Brown, I. D. (1982). Exposure and experience are a confounded nuisance in research on driver behavior. Accident Analysis and Prevention, 14, pp. 345-352.

Calé, M. (1992). Theory and practice of evaluating elderly drivers with ART90. Paper presented at the 13th National Conference on Specialised Transportation. Tampa, October.

Charman, W.N., "Vision and driving – a literature review and commentary", Ophthalmic & physiological optics, Vol. 17, No. 5, pp. 371-391, 1997

DOT, *Department of Transport Road Accidents Great Britain: 1995.* The Casualty Report, Her Majesty's Stationery Office, London, 1996.

Duffy, C. A. and McGoldrick, A. E. (1990). Stress and the bus driver in the UK

transport industry, Work & Stress, 4(1), 17-27.

Gregersen, N. P. (1996). Young drivers' overestimation of their own skill–An experiment on the relation between training strategy and skill. Accident Analysis and Prevention, 28, pp. 243-250.

Groeger, J. A. and Brown, I. D. (1989). Assessing one's own and others' driving ability: Influences of sex, age, and experience, Accident Analysis & Prevention, 21(2), 155-168.

Hoark, F. B. (1987). Clinical measurement of postural control in adult. Physical Therapy, 67, pp. 1881-1885.

Lundberg, C., Hakamies-Blomqvist, L., Almqvist, O., Johansson, K. (1998). Impairments of some cognitive functions are common in crash-involved older drivers. Accident Analysis and Prevention, 30(3), 371-377.

McGee, et. al. (1983). Highway design and operation standards affected by driver characteristics. Final Technical Report, l2, No.FHWA-RD-83-015.

McGwin, G. Jr., V. Chapman, C. Owsley, "Visual risk factors for driving difficulty among older drivers", Accident Analysis and Prevention, Vol. 32, pp. 735-744, 2000

McKnight, A. J. & McKnight, A. S. (1999). Multivariate analysis of age-related driver ability and performance deficits. Accident Analysis and Prevention, Accident Analysis and Prevention, 31, 445-454.

Nashner, L. M. (1993). Chapter12: Practical Biomechanics and Physiology of Balance, In G. Jacobsen, C. Newman, & J. Kartush (eds.). Handbook of balance function and testing. pp. 261-279.

Neuwirth, W. (1999). Verkehrspsychologische Testbatterie zur Untersuchung laut FEV. Mödling, Mai.

Odenheimer, G. L., Beauder, M., Jette, A. M., Albert, M. S., Grande, L., Minaker, K.. L. (1994). Performance-based driving evaluation of the elderly driver: safety, reliability, and validity. Journal of Gerontology, 49(4), 153-159.

Owsley et al. "Visual processing impairments and risk of motor vehicle crash among older adults", Journal of the American Medical Association, Vol. 279, pp. 1083-1088, 1998

Owsley, C., G. Jr., McGwin, K. Ball, "Vision impairment, eye disease, and injuries motor vehicle crashes in the elderly", Ophthalmic Epidemiology, Vol. 5, pp. 101-113, 1999

Reulecke, W. (1991). Konzentration als trivalente Performanzvariable - theoretische Prämissen, Rastermodell und empirisches Umsetzungsbeispiel. In: J.Janssen, E.Hahn & Strang (eds.), Konzentration und Leistung (pp. 63 –73). Göttingen: Hogrefe, 1991.

Stutts, J.C., "Do older drivers with visual and cognitive impairments drive less?" *Journal of the American Geriatric Society*, Vol. 46, pp. 854-861

Summala, H., (1988). Risk Control Not Risk Adjustment: The Zero-Risk Theory of Driver Behaviour and it's Implication. Ergonomics, 31, (4), pp. 491-506.

Tallberg, B. (2002). Neuropsychological driving ability assessment of elderly male drivers, Unpublished master's thesis, Jyväskylä University.

Wood, J., A. Chaparro, L., Hickson, "Interaction between visual status, driver age and distracters on daytime driving performance", Vision Research, Vol 49, pp.2225-2231, 2009.

Wood, J., T.P. Carberry, "Bilateral cataract surgery and driving performance", *British Journal of Ophthalmology*, Vol. 90, pp.1277-1280, 2006

The Color Association qn Pharmaceutical Package

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Abstract:

In the open shelf, package appearance determines the customer purchase. The most important thing for pharmaceutical packaging is to obtain the trust from customers at the first sight. Color is the most efficient design element for attracting people's eye. Hence, the current study intended to understand the relationship between color and pharmaceutical package. To do this, two investigations were carried out. Investigation I asked 34 participants to provide the image of pharmaceutical packages in their home, aiming to see what kind of medication people prepared in their medicine cabinets.

In Investigation II, thirty-four participants took part in this investigation. Each participant was asked to point out the colors associated with drug function. In terms of color selection, the colors were selected from 11 basic color terms (red, orange, yellow, green, blue, brown, purple, pink, white, black and gray colors) together with 2-step variation on lightness and chroma axis. All the colors were presented in front of participants and displayed in a viewing cabinet under D65 simulator with 0/45 Illuminating/viewing geometry. The distance between observers' eye and color samples is around 45 cm.

The results showed that menstrual pain medication and flu medication had significant difference between the color on existing pharmaceutical package and the color association. The existing packages of pain medication, throat medication, abdominal pain medication, and fever medication were found to have consistent color with those associated with the drug function. The color association on gender difference was found to be insignificant.

Introduction

Ten of thousands of different medicines can be bought in the open shelf. This makes pharmaceutical companies face strong competition and begin to think how to make their own products recognizable, intending to increase consumers' desire to buy.

Color is the one which can produce the greatest effect of visual senses, implying that good color design can attract people's eye in the first sight. However, in comparison with product package, pharmaceutical package not only focus on customers' sight but also on their trust.

Festini *et al*(Festini et al., 2008) found out that children preferred the nurse who wearing multi-colored clothes. This increased the reliability of the nurses. Dalke(Dalke et al., 2006) proposed the appropriate color in hospital interior increased the friendliness of the hospital. Medley(Medley, 2009) compared two different pharmaceutical packaging but with same drug function, the results showed people preferred "friendly", "funny" and "easy to understand" one. These studies tell us that color design can increase patients' trust.

In term of "trust", Plutchik's emotion model(Robert Plutchik, 2001; R. Plutchik, 2002) showed that "trust" is one of the primary emotional response. These primary emotions include "anger", "fear", "sadness", "joy", "disgust", "trust", "surprise," and "anticipation," as shown in Figure 1. This model tells us that "trust" is evoked by "acceptance", contrasting with "disgust."

When people meet a new thing, we always make a judgment by our experience. If the judgment matches with our experience, it will be easy to accept. For example, if now asked you to do a association on blood you may think about red color, but if someone thinks about green or blue color, the answer would make people feel doubts and unacceptable, because it's contrary to our experience. Thus, the choice of colors in the color design is often made through association and experience (Lechner, Jeffrey, Simonoff, & Harrington, 2012). Hence, how to use color design to enhance the trust of pharmaceutical packaging is a major issue for package designers.The aim of this paper is to understand the relationship between color association and drug function on pharmaceutical packaging.
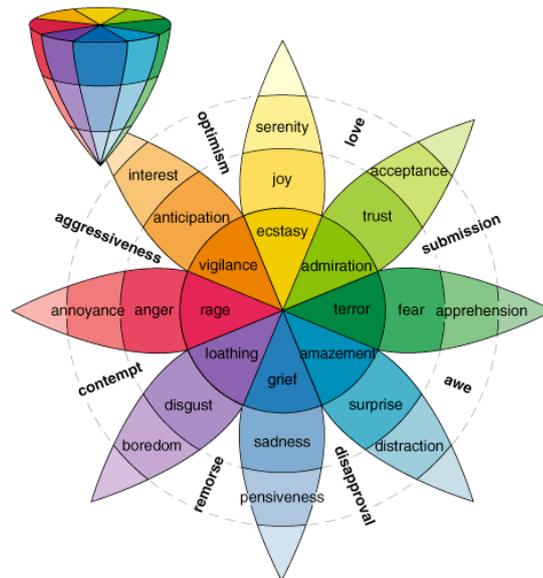
Figure 1 A multidimensional model of the emotions. The vertical dimension represents intensity. The eight primary emotions are arranged in order of degree of similarity. (Plutchik, 2001)

Investigation

To understand the relationship between color association and pharmaceutical package, two investigations were carried out.

Investigation I asked 34 participants to provide the digital image of pharmaceutical packages in their home, aiming to see what kind of medication people prepared in their medicine cabinet and to understand the color usage on existing pharmaceutical packaging. The samples that we want to collect are those consumers can buy at the general pharmacy.

Investigation II invited 34 participants to point out 3 colors from 77 color chips presented, aiming to understand how people associate drug function with colors.

In terms of color selection, Seventy-seven color chips were selected, including 11 basic color terms (red, orange, yellow, green, blue, brown, purple, pink, white, black and gray colors)(Berlin & Kay, 1969) together with 2-step variation on lightness and chroma axis. These 11 colors were produced according to *Lin et al(L. M. Lin H, MacDonald LW, Tarrant AWS., 2001; L. M. Lin H, Tarrant AWS, MacDonald LW, 2001; L. M. Lin H, Tarrant AWS, MacDonald LW. , 2001).*'s basic color boundaries. Each color was measured by a GretagMacbeth® Eye-One. The CIELAB values were calculated under CIE D65 and 1931 standard colorimetric observers, as illustrated in CIELab space in Figure 2.
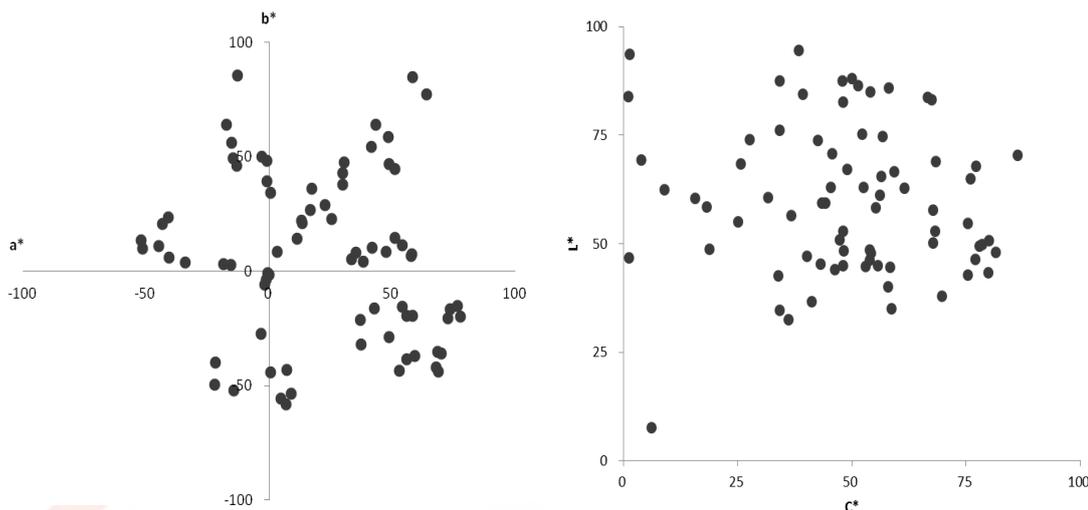
Figure 2: The CIELAB values of the 77 color samples

These 77 color chips were presented in front of each participant and displayed in a viewing cabinet under D65 simulator with 0/45 Illuminating/viewing geometry. The distance between observers' eye and color samples is around 45 cm, as shows in Figure 3.

Figure 3: The experimental setting

Results

Sixty pharmaceutical packages were obtained from Investigation I, as shown in Figure 4. According to the drug function, these 60 packages were divided into 6 groups, including pain medication, fever medication, throat medication, flu medication, abdominal pain medication, as well as the dysmenorrheal medication. Note that the 7th group contained four packages that cannot be categorized. The main color of the package is also shown in Figure 4.

In Figure 4, it can be seen that the pain and fever medications tended to use blue color to be the main color. The throat medication usually used orange and white colors as

main color. The flu medication is likely to use green and yellow colors. Dysmenorrheal medication tended to be purple color. The main color for abdominal pain medication is more varied in comparison with other packages.

In order to see the color association with drug function, the color distribution with the bubble was illustrated in CIELab color space, as shown in

Figure **5**. In these diagrams, L* indicates lightness, C* chroma, a* redness-greenness, b* yellowness-blueness, and h hue angle. The location of the bubble shows the color coordinates on CIELab space. The size of bubble indicates the frequency of the color association with drug function obtained from Investigation II. The bigger bubble shows more often the color was associated with.


(a) Pain medication

(b) Throat medication

(c) Abdominal pain medication

(d) Fever medication

(e) Flu medication

(f) Dysmenorrheal medication

(g) Others
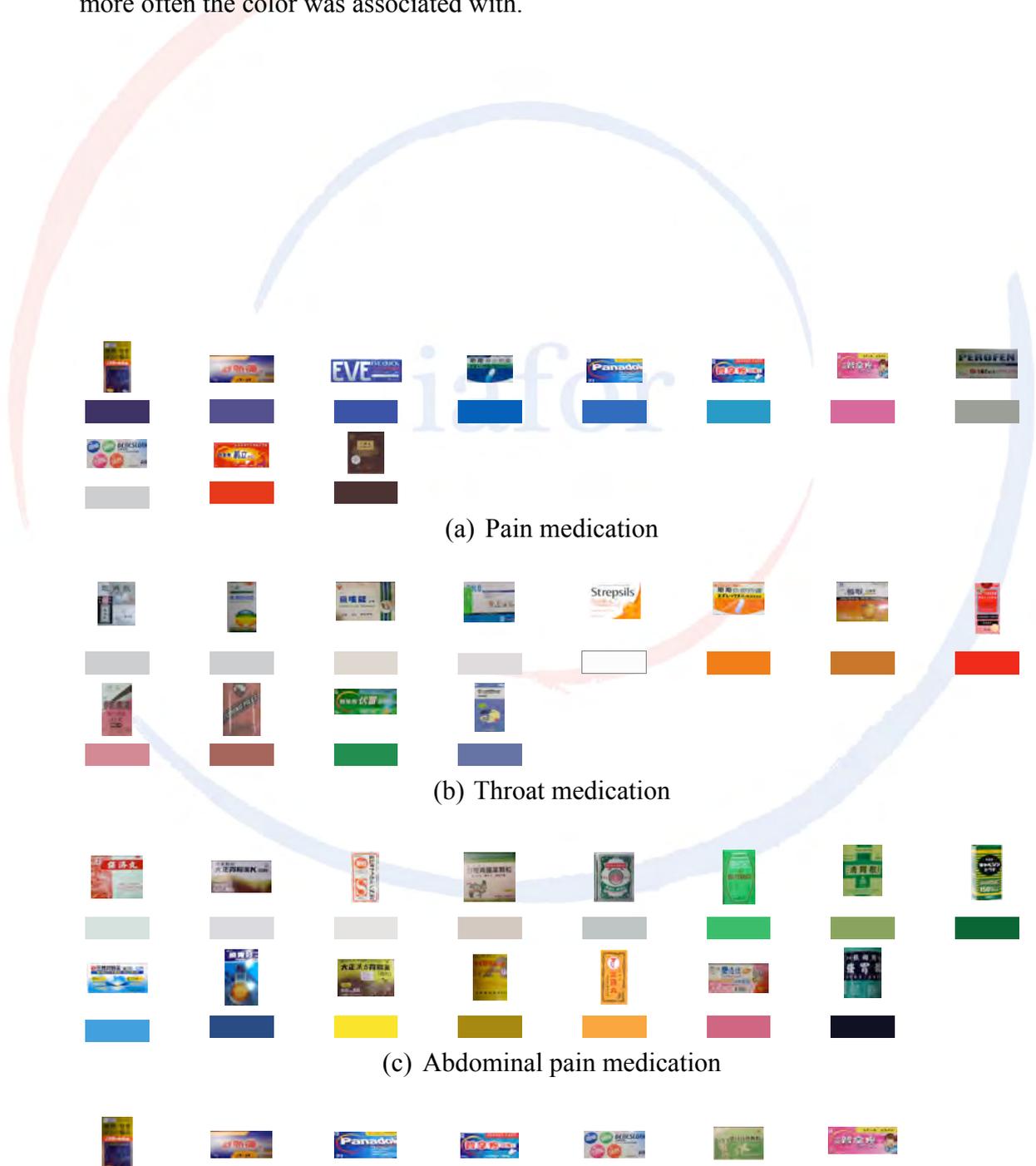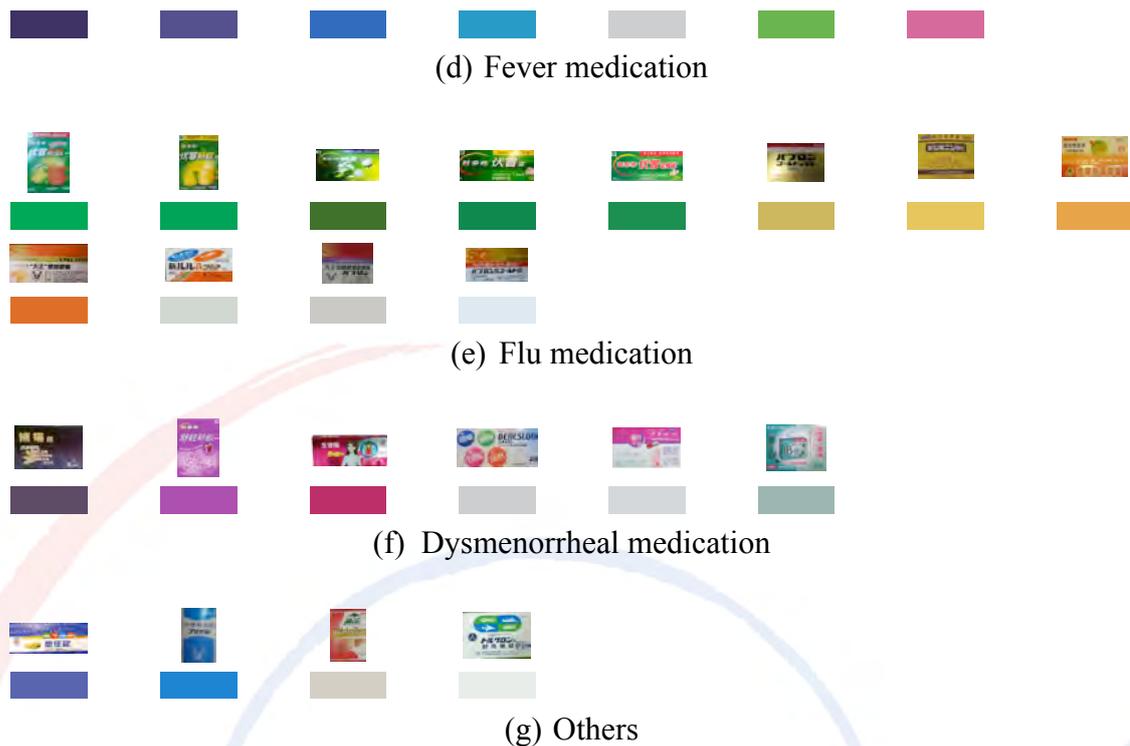
Figure 4: The 60 samples collected form Investigation I

The findings were summarized below.

1.

2. Figure **5**(a) shows the bigger bubbles are distributed at the region between hue angle of 248° and 293° with middle lightness and chroma, indicating that the observers associated pain medications with a bluish color with middle lightness and chroma.

3. The bigger bubbles are located at the first quadrant of a*-b* diagram, as shown in

4. Figure **5**(b). This reflected that throat medications are association with orange color.

5. It can be seen that bigger bubbles are close to the origin point in a*-b* diagram, indicating that abdominal pain medications are associated with the colors having middle chroma.

6.

7. Figure **5**(d) shows bigger bubbles are located on the –b* axes, reflecting a strong connection between bluish colors and fever medication.

8. Bigger bubbles in

9. Figure **5**(e) are located on the origin point and –b* axes in a*-b* diagram. This indicated that achromatic and bluish colors are correlated to flu medication.

10. The bigger bubbles are near +a* axes, as shown in

11. Figure **5**(f). This reflected that observers associated reddish color with dysmenorrheal medications.
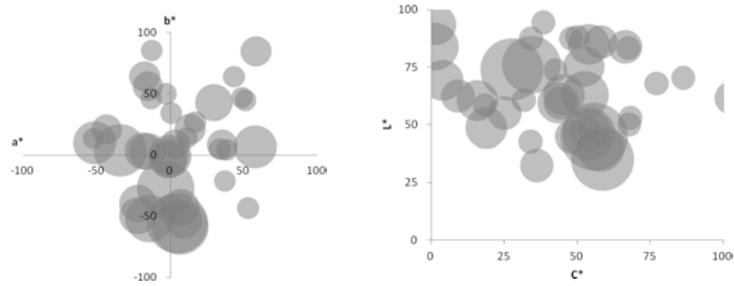
(a) Pain medication
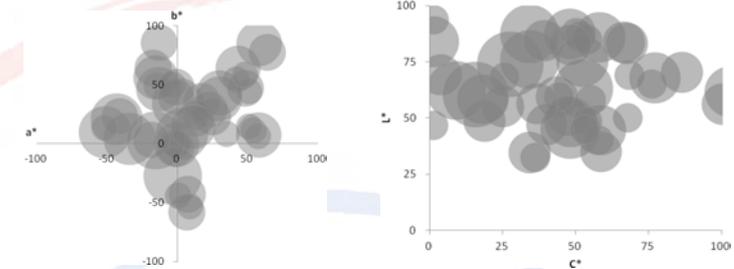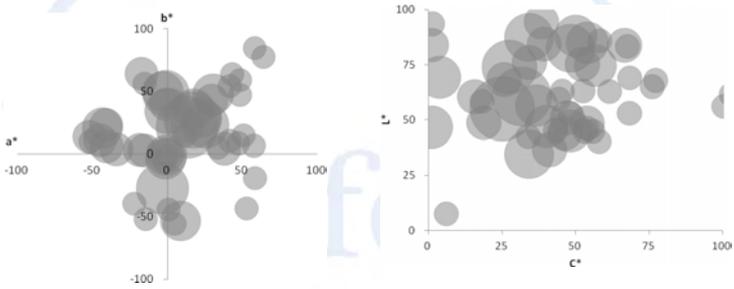
(b) Throat medication

(c) Abdominal pain medication
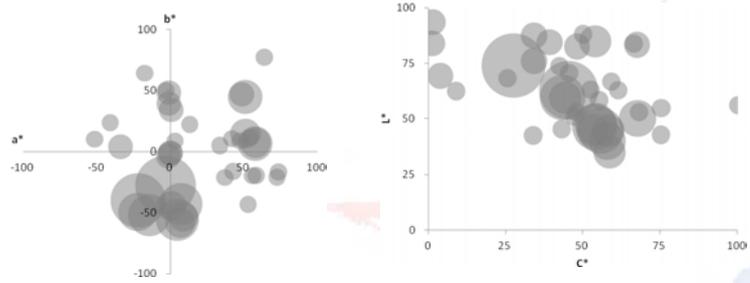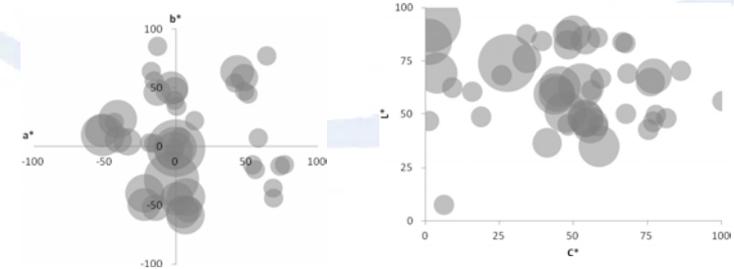
(d) Fever medication
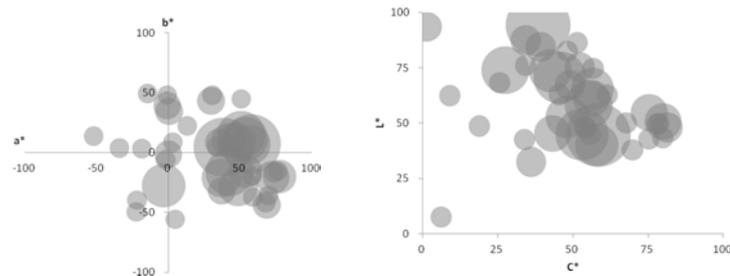
(e) Flu medication

(f) Dysmenorrheal medication

Figure 5: The bubble chart of color association. The figure at left is *a*-b** diagram, right is *L*-C** diagram (a) Pain medication (b) Throat medication (c) Abdominal pain medication (d) Fever medication (e) Flu medication (f) Dysmenorrheal medication

Furthermore, to see the difference between the existing colors on pharmaceutical packaging and the color association, a comparison was made using the line chat, as shows in

Figure 6.

The findings are summarized below.

The color associations for throat and fever medications were found to be consistent with with the existing color appeared on their packages, as shown in

(1) Figure 6 (b) and (d.)

The color association of pain medications was found to be different from the existing existing package colors at the region of low chroma, as indicated by

(2) Figure 6 (a.) This reflected that some existing package of pain medications used the colors with low chroma as main color, but it is hard for observers to associate pain medication with the colors having low chroma.

The difference between color association and abdominal pain medication was found on found on chroma attributes, as shown in

(3) Figure 6 (c.) The existing pharmaceutical packaging of abdominal pain medication tended to use the colors with low chroma, but the color association for abdominal pain medication tended to be the colors with middle chroma.

For flu medication, the color use on existing package was found to be different from the from the color association on hue attributes, as shown in

(4) Figure 6 (e.) The existing pharmaceutical packaging of flu medication used greenish colors, but the observers associated the flu medication with bluish colors.

For dysmenorrheal medication, the difference was found on hue attributes, as shown in

(5) Figure 6 (f.) The existing package color of dysmenorrheal medication tended to be purplish colors with low chroma, but the observers associated this medication with reddish colors of middle chroma.

- - ■ - - existing color   — ◆ — color association
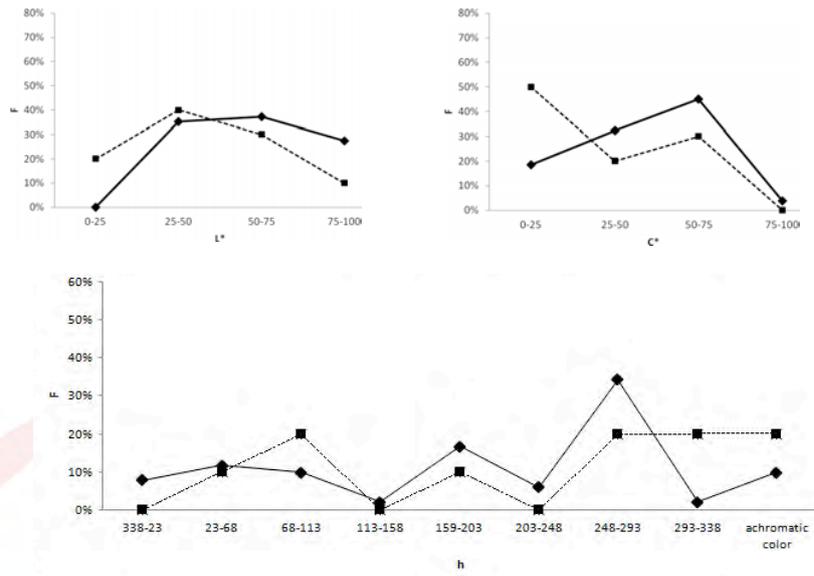
(a)Pain medication
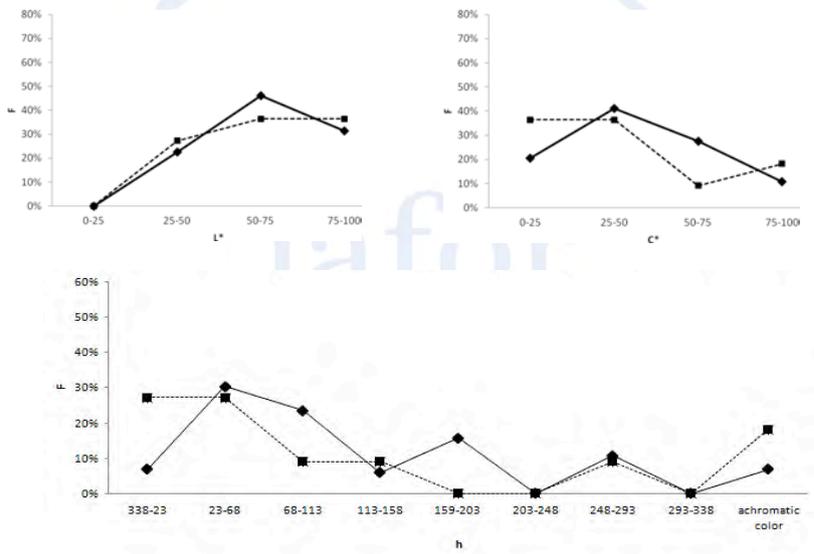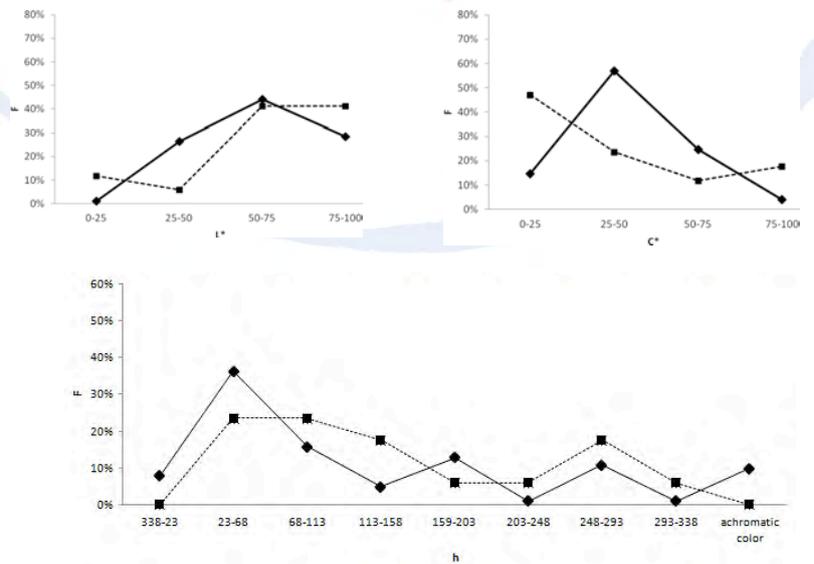

(b) Throat medication

(c) Abdominal pain medication
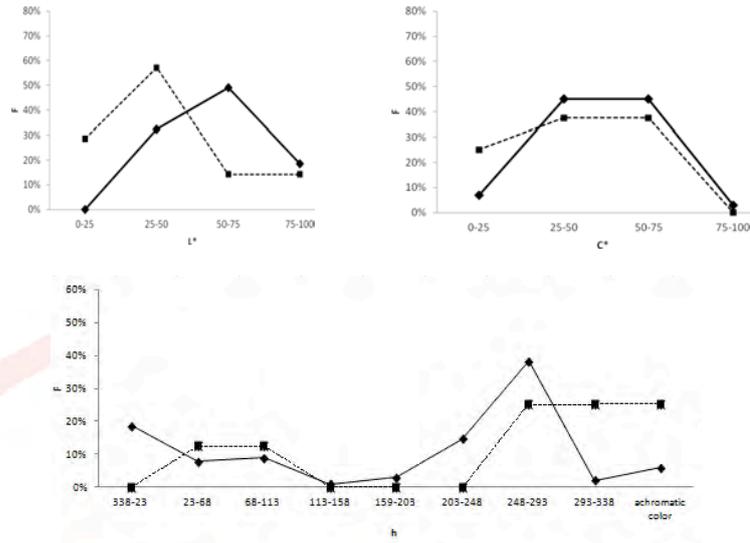
(d) Fever medication
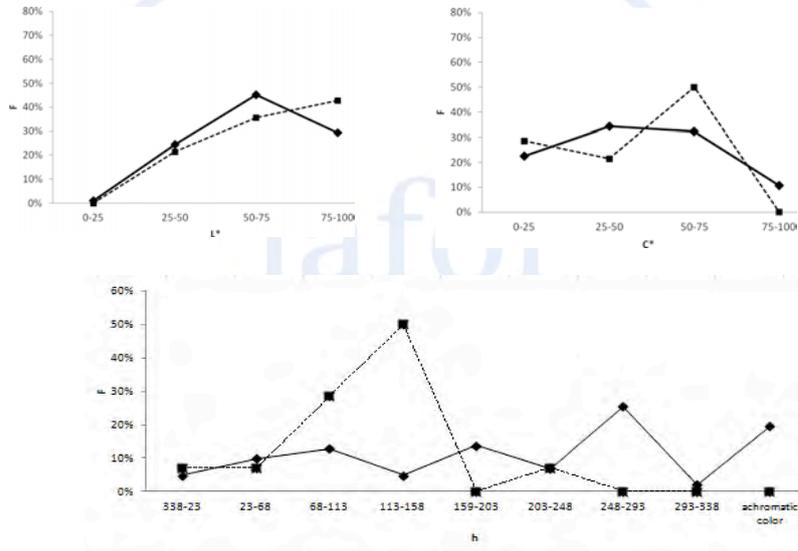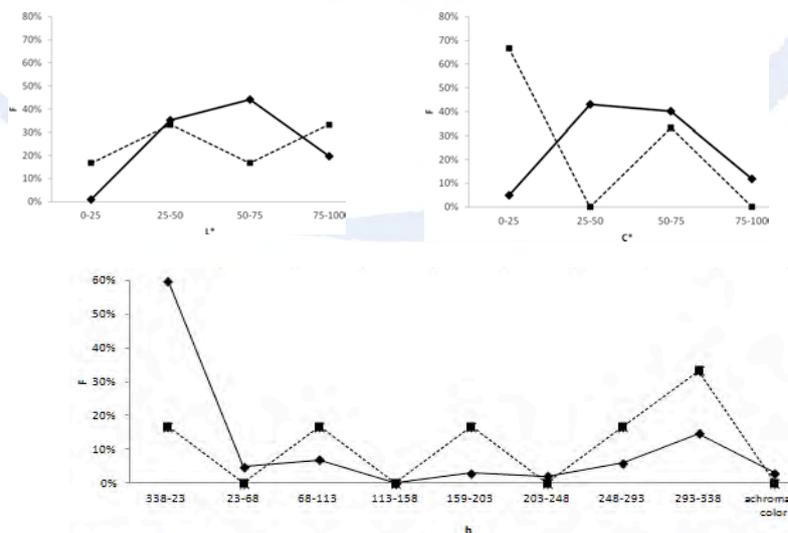
(e) Flu medication

(f) Dysmenorrheal medication

Figure 6: Comparison between the existing colors on pharmaceutical packaging and the color association.

Conclusion

The purpose of this study is to understand the color association of pharmaceutical packaging. Two investigations were carried out.

The major findings are summarized below.

1. The observers associated pain medications with a bluish color with middle lightness and chroma. The color association of pain medications was found to be different from the existing package colors at the region of low chroma.

2. Throat medications were found to correlate with orange colors. The color associations for throat medications were consistent with the existing color appeared on the packages.

3. Abdominal pain medications were found to correlate with orange colors with middle lightness. The color associations for abdominal pain medications were found to be different from the exiting package colors at the region of low chroma.

4. The observers associated fever medications with bluish colors with middle lightness and chroma. The color association of fever medications was found to be consistent with the existing package colors.

5. Flu medications were found to correlate with bluish colors. The color associations for flu medications were found to be different with the existing color appeared on the packages which use greenish colors.

6. The color associations of dysmenorrheal medication tended to be reddish colors with middle chroma, but the exiting package colors appeared on the packages tended to be purplish colors with low chroma.

In this research we only considered the main color on pharmaceutical packaging, but the color combination also can affect our association and emotional feelings, if the future studies can include the color combination, the results would be very useful for package designers to do the color design for pharmaceutical packaging.

References
Berlin, B., & Kay, P. (1969). *Basic Colour Terms: Their Universality and Evolution.* . *Berkeley and Los Angeles: University of California Press.*

Dalke, H., Little, J., Niemann, E., Camgoz, N., Steadman, G., Hill, S., et al. (2006). Colour and lighting in hospital design. *Optics & Laser Technology, 38,* 343-365.

Festini, F., Occhipinti, V., Cocco, M., Biermann, K., Neri, S., Giannini, C., et al. (2008). Use of non-conventional nurses' attire in a paediatric hospital: a quasi-experimental study. *Journal of Clinical Nursing, 18*(7), 1018-1026.

Lechner, A., Jeffrey, S., Simonoff, & Harrington, L. (2012). Color-Emotion Associations in the Pharmaceutical Industry: Understanding Universal and Local Themes. *COLOR research and application, 37.*

Lin H, L. M., MacDonald LW, Tarrant AWS. (2001). A Cross-Cultural Colour-Naming Study. Part III -- A Colour-Naming Model. . *Color Research and Application, 26*(270-277).

Lin H, L. M., Tarrant AWS, MacDonald LW. (2001). A Cross-Cultural Colour-Naming Study: Part I-Using An Unconstrained Method. *Color Research and Application 26,* 40-60.

Lin H, L. M., Tarrant AWS, MacDonald LW. . (2001). A Cross-Cultural Colour-Naming Study: Part II-Using a Constrained Method. . *Color Research and Application 26,* 193-208.

Medley, S. (2009). The feeling's neutral for pharmaceutical packaging:how the pharmaceutical aesthetic equals the Modernist aesthetic. *Australasian Medical Journal,* 146-151.

Plutchik, R. (2001). SocietyThe Nature of Emotions: Human emotions have deep evolutionary roots, a fact that mayexplain their complexity and provide tools for clinical practice. Paper presented at the American Scientist.

Plutchik, R. (2002). Emotion and life: perspectives from psychology, biology, and evolution. Paper presented at the American Psychological Association.

Exploring the Impression Induced dy Nail Polish Color

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Abstract:

The purpose of the current study is to explore the impression induced by nail polish color. To do this, a psychophysical experiment was carried out. The observers were asked to assess the 20 nail colors on 8 four-step impression scales. The scales used were "trust", "disgust", "surprise", "appreciation", "acceptance", "interest", "sexy", and "frivolity".

In terms of color selection, eleven basic color terms purposed by Berlin and Kay were used. These colors were selected according to the basic color boundaries purposed by Lin *et al*. Additionally, nine top sale nail colors from high street were involved. In total, 20 colors were used in the experiment. The image of each nail color applied onto left hand was displayed on monitor. In prior to the experiment, the monitor was calibrated by a GretagMacbeth® Eye-One with D65 light source and the white level of monitor was 210 cd/m2. Each color was measured from monitor. The CIELab values of each color were calculated under D65 and CIE 1931 standard colorimetric.

The images of nail color were presented in random order. Two nail colors were replicated in order to examine whether the observers provide consistent judgment. Additionally, observer accuracy was examined, aiming to see the agreement between observers.

The results showed the correlation between "trust" and other scales was insignificant. The correlation between "surprise" and "interest" was found to be significant (r=0.76). The appreciation of nail color was found to correlate with "acceptance", "interest" and "sexy".

Introduction

Females love to dress and takes care their outward appearance more than male. They take care of anything affecting their outward appearance, including their clothes, shoes, jewelry, hair style, make-up, and nail polish, seeking a perfect outward appearance. However, besides the great effort on outward appearance, the most important issue is how people perceived the outward appearance. Moreover, how to use the outward appearance to win people's trust is worthy to explore. In this study, the nail polish colors were studied to see the influence of nail color upon people's trust and other emotion response.

Experimental plan

The purpose of the current study is to explore the relationship between the emotional response of trust and nail polish colors. To do this, a psychophysical experiment was carried out. Thirty-one observers were invited to take part, including 15 males and 16 females with an average age of 24.9 years old. The observers were asked to assess the 20 nail colors on 8 emotion scales. Eight emotional scale were used, i.e., "trust", "disgust", "surprise", "appreciation", "acceptance", "interest", and "frivolity", according to Plutchik's emotion model[1-2] together with "sexy" scale. Each scale had four intensity steps, i.e., "extremely strong", "strong", "a little strong", and "not at all."

In terms of color selection, eleven basic color terms purposed by Berlin and Kay[3] were used, including red, orange, yellow, green, blue, brown, purple, pink, white, black, and gray colors. These 11 colors were produced according to *Lin et al*[4-6].'s basic color boundaries. Additionally, nine top sale nail colors from high street were involved. In total, 20 nail colors were used in the experiment, as shown in Figure 1. Each color was measured from monitor by a GretagMacbeth® Eye-One. The CIELab values of each color were calculated under D65 and CIE 1931 standard colorimetric. The distribution of color samples on CIELab space are illustrated in Figure 2. In Figure 2(a), a^*-axis and b^*-axis represent the redness-greenness and yellowness-blueness attributes, respectively. In Figure 2(b), L-axis and C^*-axis represent the lightness and chroma attributes, respectively.

During the experiment, the observers were invited to a dark room to assess 20 nail color samples on 8 scales. The illuminating/viewing geometry is 0/0, as shown in Figure 3. The image of each nail color applied onto left hand was displayed on 19-inch monitor. The resolution was set in 1440 pixels by 900 pixels. The size of each image is 900 pixels by 900 pixels. The experimental samples were presented in a random order. Two nail colors were replicated in order to examine if the observers provide consistent judgments. Additionally, observer accuracy was examined, aiming to see the agreement between observers. In prior to the experiment, the monitor was calibrated by a GretagMacbeth® Eye-One with D65 light source and the white level of monitor was 210 cd/m^2.

Figure 1: The color samples used in the experiment.
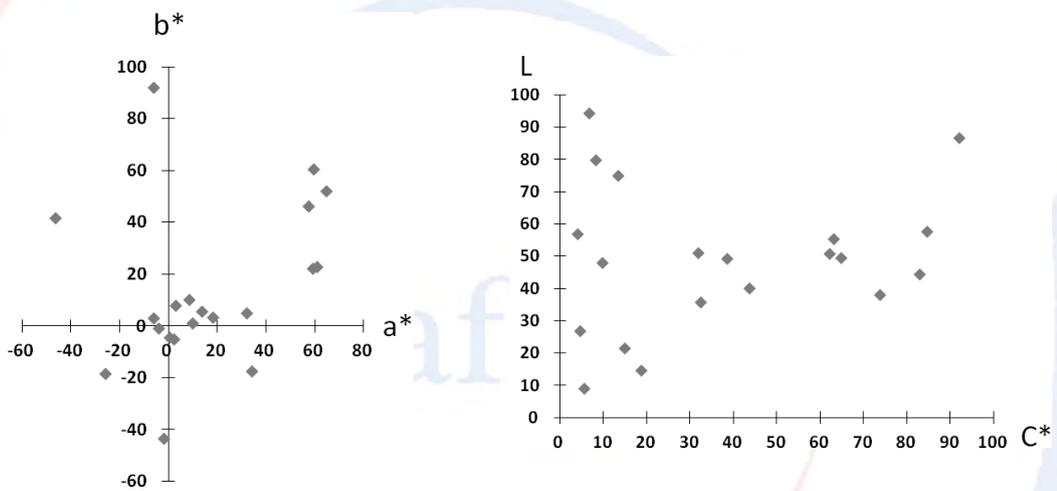
(a) CIELab a*-b* diagram   (b) CIELab L*-C* diagram

Figure 2: The 20 colors in CIELab (a) *a*-b** and (b) *L*-C** diagram
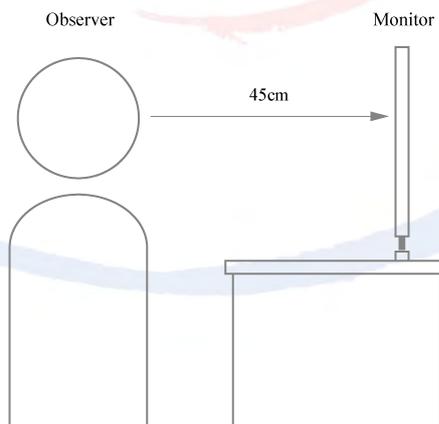

Figure 3: Experimental situation

Results
3.1 Observer repeatability and accuracy

The data collected from four-step categories on each scale were converted into numbers, the step of "extremely strong" was given 3, "strong" 2, "a little strong" 1, and "not at all" 0.

In prior to analysis, the observer repeatability and accuracy were examined by RMS (root mean square). The former is to see whether the observers can repeat their judgment or not. The latter is to examine how well the individual observer agrees with the mean results. The RMS equation is give below：

$$RMS = \sqrt{\frac{\sum (X_i - Y_i)^2}{n}}$$

For observer repeatability, Xi and Yi are initial data and replicated data, respectively. For observer accuracy, Xi and Yi are individual data and all observers average, respectively. n is the number of data.

For RMS of 0, it represents a perfect agreement between two data array.

(a) Observer repeatability   (b) Observer accuracy
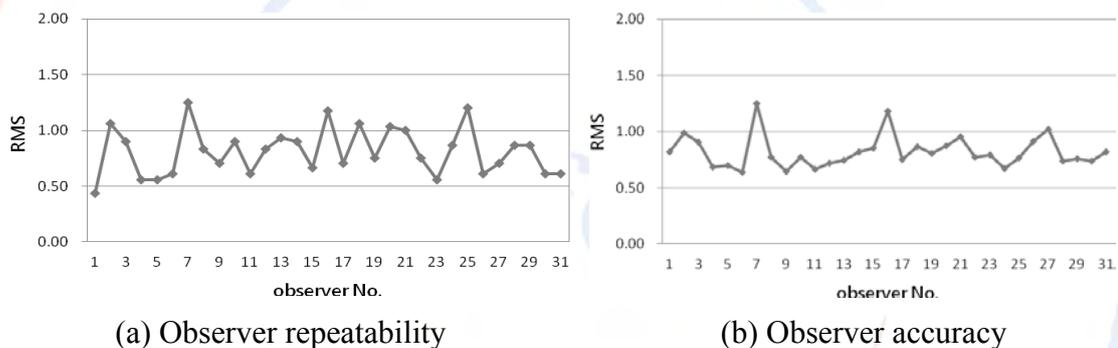
Figure 4: RMS for observer repeatability and accuracy

The results are illustrated in Figure 4. It can be seen that the observer repeatability was ranged between RMS of 0.43 and 1.25, as shown in Figure 4(a). And the observer accuracy was ranged between RMS of 0.64 and 1.25, as shown in Figure 4(b). This indicated that the observers in the experiment can provide consistent judgment and all the observers agree the mean results.

3.2 The relationship between emotions and colors

To see the relationship between emotions and colors, the nail polish colors were arranged in order along each emotional scale, as shown in Figure 5. In this diagram, from left to right is respectively for "trust", "disgust", "surprise", "appreciation", "acceptance", "interest", "sexy", and "frivolity" scales.

The findings were summarized below.
(1) Except "sexy" scale, pink and nude colors were found to be the most distinguishing colors on all the scales, i.e., both colors were "trusted", "appreciated", and "accepted" together with "not disgusted", "not surprised", "not interesting", and "not frivolous."

(2) For "trust" emotion, nude color was appeared to be the most trusted color, followed by light pink, pale pinkish grey, and pink colors. Green color was found to be the most distrusted color, followed by yellow, purple, and black colors.

(3) On "disgust" scale, dark gray color was appeared to be the most disgusted color, followed by black, yellow, and green colors. On the contrary, light pink, pink, nude, and orange colors were not disgusted.

(4) For "surprise" emotion, yellow color was appeared to be the most surprised color, followed by green, blue, and orange colors. On the contrary, nude color, light pink, pale pinkish grey, and magenta colors were not surprised.

(5) On "appreciation" scale, pink color was the most appreciated color, followed by nude, light pink and magenta colors. On the contrary, burgundy, dark gray, and black colors were not appreciated.

(6) For "acceptance" scale, light pink color was the most accepted color, followed by nude, pink, and pale pinkish grey colors. On the contrary, green, dark gray, and yellow colors were not accepted.

(7) For "interesting" emotion, green color was the most interesting color, followed by yellow, light blue and orange colors. The most uninteresting color was nude color, followed by light pink, dark purple and black colors.

(8) On "sexy" scale, vivid red color was the sexiest color, followed by red, magenta, and pink colors. On the contrary, green, dark gray, white, and yellow colors were not sexy.

(9) For "frivolity" emotion, yellow color was the most frivolous color, followed by vivid red, green, and orange colors. On the contrary, light pink, nude, pale pinkish grey, and brown colors were not frivolous.

Figure 5: The nail polish colors are ranked along affective feelings.

3.3 The correlation between emotions

In order to understand the correlation between scales, the coefficient of correlation (r) was calculated. The results are given in

Figure 6. In each diagram, each data point represents a nail polish color, The correlation coefficient and 45∘line are also given in these diagrams to see how well they correlate with each other.

The results showed that the highest correlation coefficient (-0.93) was found between "disgust" and "appreciation" emotions, as well as between "disgust" and "acceptance" emotions. Note that the correlation coefficients for these two pairs of emotions were negative, implying that the "disgusted" emotion are highly correlated with "not appreciated" and "not accepted."

It was also found that the emotions of "surprise" and "interest" are positively correlated with each other, the r value is 0.88. This implied that the influences of nail polish colors on the emotion of "surprise" were similar with those on "interest." The same results were also found between the emotions of "appreciation" and "acceptance."

The emotion of "acceptance" was found to be the most positively correlated emotion with "trust" (r=0.85), followed by "appreciation" (r=0.66.) On the contrary, the emotion of "frivolity" was found to be the most negatively correlated emotion with "trust" (r=-0.82), followed by "disgust" (r=-0.81) and "surprise" (-0.77.)

Furthermore, to see the relationship between the emotion of "trust" and other emotions, the multiple regression analysis was used. The emotion of "trust" was used as the dependent variable, other emotions as independent variables. The results are given in Eq 1. The correlation coefficient between predicted values and the "trust" emotion is also given in Eq 1.

Trust   Eq 1:
=0.551 + 0.57Acceptance - 0.463Frivolity   **R=0.92**

The results showed the performance of this regression model is well, indicated by the r value of 0.92. The emotion of "trust" can be modeled by "acceptance" and "frivolity" emotions. This model tell us that the "trusted" nail polish colors should be accepted and not to be frivolous.

3.4 The relationship between trust and color attributes

As mentioned in previous section, the emotion of "trust" was evoked by "acceptance" and "not frivolous." In this section, to see the relationship between trust and nail polish colors, the emotions of "trust", "acceptance", and "frivolity" were used as dependent variable. The color attributes were used as independent variables. The multiple regression analysis was used again. The color attributes used here included CIELab L^*, C^*, a^*, b^*, and h, representing lightness, chroma, redness-greenness, yellowness-blueness, and hue angle, respectively. The results were shown in Eq 2 to 4.

Trust   Eq 2
= 0.476 + 0.012L - 0.009C + 0.427cos (h)*   **R = 0.83**

The predictive performance of Eq 2 calculated by correlation coefficient (R) of 0.83 indicated this model can predict the results well. This model tells us that reddish colors

with high lightness and low chroma can produced "trusted" colors, indicating a pink color.

Acceptance   Eq 3
$$= 0.744 + 0.012 L* + 0.001 a* - 0.002b* - 0.004C + 0.402\cos(h)$$ **R = 0.77**

The correlation coefficient of 0.77 in Eq 3 indicates this model can predict the results well. This model tells us that a purplish color with high lightness tended to be "accepted", indicating a light purple color.

Frivolity   Eq 4
$$= 0.511 + 0.001L* - 0.003a* + 0.006b* + 0.011 C - 0.459 \sin(h)$$ **R = 0.90**

The correlation coefficient of 0.90 in Eq 4 indicates this model can predict the results very well. This model shows that olive and bluish colors with high lightness and high chroma tended to be "frivolous", indicating a vivid olive or a vivid blue color.
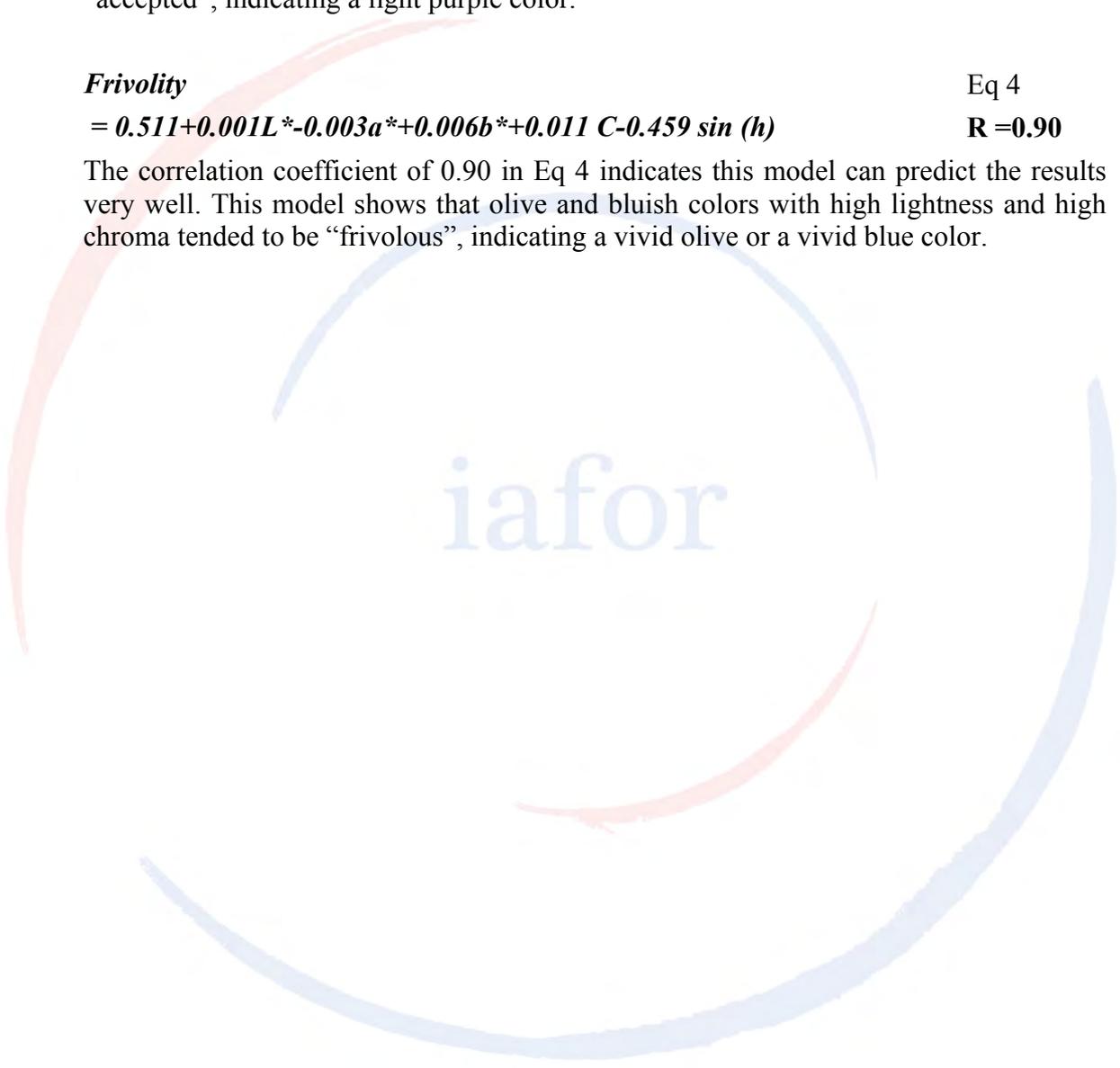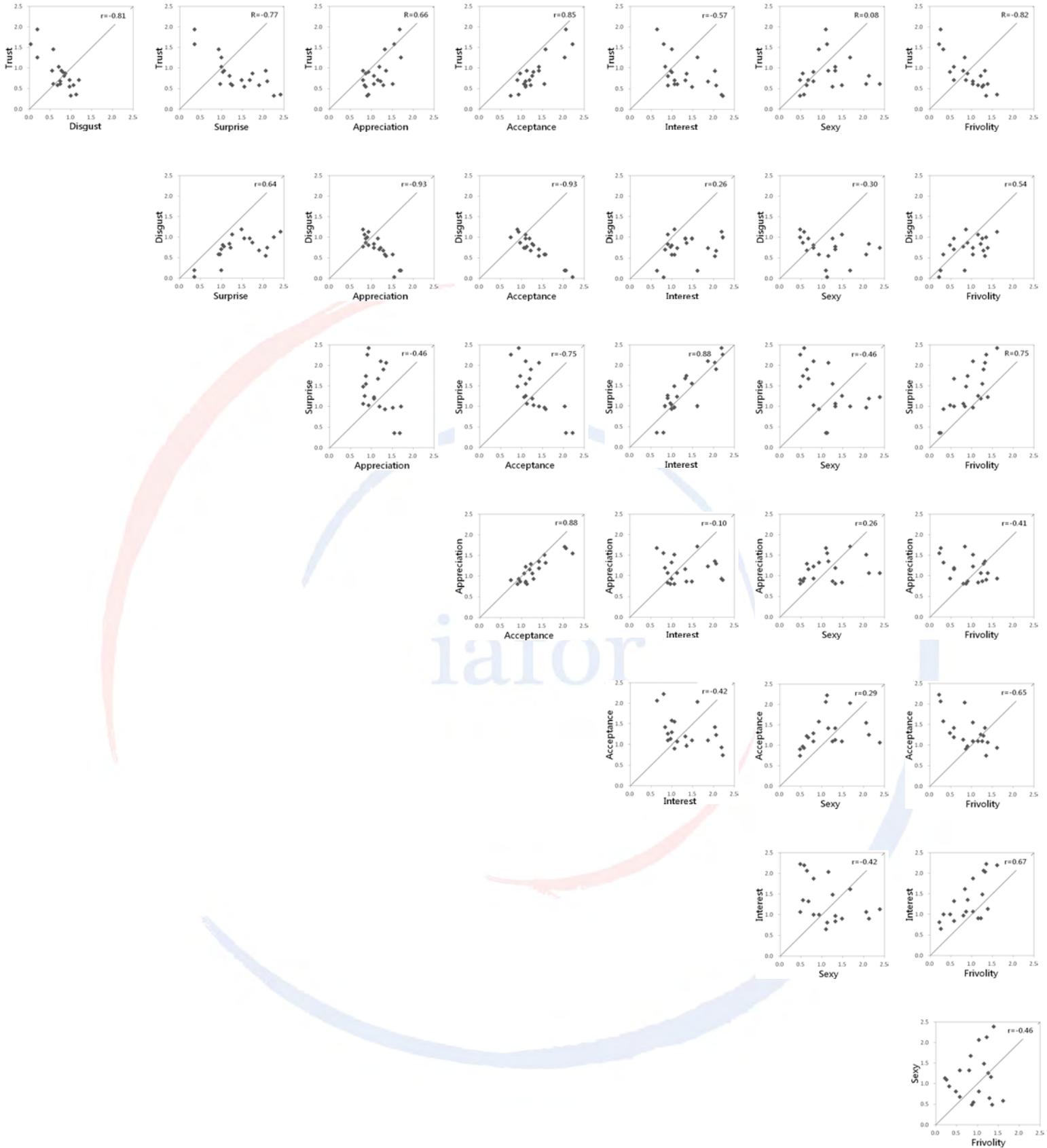
Figure 6: The correlation between emotion scales.

Conclusion

The aim of current study is to explore the relationship between nail polish colors and the emotion of "trust". A psychophysical experiment was carried out. Twenty nail polish colors were assessed on 8 emotion scale by 31 observers. The results showed that the "trusted" nail polish colors should be "accepted" and "not frivolous." The models showed that reddish colors with high lightness and low chroma produced "trusted" colors. A purplish color with high lightness tended to be "accepted" colors. Olive and bluish colors with high lightness and high chroma were "frivolous."

The results assist us to understand the influence of appearance upon people. However, how person looks involve several attributes, such as skin color, clothes, shoes, and accessories. These appearance attributes are suggested to be involved in the future study to see the influence of total appearance.

Acknowledgements

References

1.   Plutchik R. Human emotions have deep evolutionary roots, a fact that may explain their complexity and provide tools for clinical practice. American Scientist, 2012;89:344-350.
2.   Plutchik R. Emotion and life: perspectives from psychology, biology, and evolution. Washington, DC: American Psychological Association.; 2002.
3.   Berlin B, Kay P. Basic Colour Terms: Their Universality and Evolution.: Basic Colour Terms: Their Universality and Evolution.; 1969.
4.   Lin H, Luo M, LW M, AWS T. A Cross-Cultural Colour-Naming Study. Part III -- A Colour-Naming Model. Color Research and Application 2001;26:270-277.
5.   Lin H, MR L, AWS T, LW M. A Cross-Cultural Colour-Naming Study: Part I-Using An Unconstrained Method. . Color Research and Application 2001;26:40-60.
6.   Lin H, MR L, AWS T, LW M. A Cross-Cultural Colour-Naming Study: Part II-Using a Constrained Method. . Color Research and Application 2001;26:193-208.

The Difference qf Impression detween Eco-Friendly cnd Non-Eco-Friendly Materials

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Abstract:

In nowadays, human realize how important the earth means to us. The natural resource had used is gone. However, people's living quality cannot go back. How to keep a balance between eco-friendly and living quality becomes the core value of product design. Nevertheless going green is not only the designers' responsibility, but also each one of customer.

If the product can be recognized as eco-friendly, it is not only the benefit for our earth but also for manufacturer. Moreover the customer can show their support for our earth. Hence, this study intended to understand the difference of impression between eco-friendly and non-eco-friendly materials.

A three-step investigation was carried out. In Step I, the participants were asked to write down the adjectives describing the eco-friendly materials, aiming to see how people expect the eco-friendly materials. In Step II, five eco-friendly materials together with 21 non-eco-friendly materials pieces were presented. Each material was assessed by visual and tactile, aiming to collect the possible adjectives describing materials. In Step III, the participants were asked to point out the eco-friendly and non-eco-friendly materials, respectively.

The recycled paper material was the only material recognized as eco-friendly material. The other four eco-friendly materials even were recognized as non-eco-friendly materials. The current study summarized the adjective for the impression of eco- and non-eco- friendly materials. The results obtained here can be used for producers to meet not only the design strategy, but also product identity.

Introduction

Nowadays, human realize how important the earth means to us. The natural resource had used is gone. However, people's living quality cannot go back. How to keep a balance between eco-friendly and living quality becomes the core value of product design.

For manufacturing product, replacing the original non-eco-friendly materials with eco-friendly materials is easy, but the eco-friendly materials usually cost higher than non-eco-friendly materials. This reduces the manufacturers' willingness to go with eco-friendly. In addition, the products made by eco-friendly materials appear the same with those made by original materials, so that the customers cannot tell the difference between eco-friendly and non-eco-friendly materials. Even worse, there is less and less incentive for producers to go green.

If the materials used in products can be made by eco-friendly materials and be recognized as eco-friendly by customers, it is not only the benefit for our mother earth but also for manufacturer. Moreover the customer can show their support for our earth. Hence, this study intended to understand the difference of affective feelings between eco-friendly and non-eco-friendly materials.

First of all, we have to inquire into the affective feelings of materials. Hollins et al. (Hollins, Bemsmaia, Karlof, & Young, 2000; Hollins, Faldowski, Rao, & Young, 1993) used seventeen different materials to classify the affective feelings of materials. The materials used included corduroy, wood, sandpaper, etc. Their results showed five pairs of affective feelings were significant for tactile materials. They were "hard-soft", "cool-warm", "flat-bumpy", "smooth-rough", and "slippery-sticky" feelings. These five affective feelings were found to have inter-correlation, i.e., "flat-bumpy", "slippery-sticky", and "smooth-rough" had high correlation with each other. The same results were also found on "cool-warm", "smooth-rough", and "cool-warm" feelings.

Picard et al. (Picard, Dacremont, Valentin, & Giboreau, 2003) explored a little further into the relationship between occurrence frequencies of adjectives and emergence sequence. In their experiment, the participants were asked to list the adjectives describing the surface of materials in order of these adjective emerged in their mind. The aim of their experiment was to reveal the relationship between occurrence frequencies of adjectives and emergence sequence. Their results showed that the relationship is positive, i.e., the adjectives more frequently occurred, the earlier they emerged. The adjectives emerged with high frequency and early emerging order can be called 'generic' feeling. By contrast, the adjectives with low frequency and later emerging order can be called "peripheral" feelings of materials.

Unlike Hollins's and Picard's investigation based on tactile perception characterized by Choo and Kim (Choo & Kim, 2003) and Lee and Sato (Lee & Sato, 2001). Both conducted experiments by visual assessment; The former study identified five factors for describing materials, i.e., "elegant", "comfortable", "characteristic", "light", and "simple"; The latter found three factors for describing material texture, i.e., "voluminous and warm", "glossy", and "fine".

All these studies make it clear that the affective feelings for describing surface of materials can be assessed through both visual and tactile. Additionally, the affective feelings were found to vary from material to material.

In order to suggest product designers how to use eco-friendly materials to enhance the product appearance, the affective feelings of eco-friendly materials need to be studied.

Investigation

To understand and clarify the affective feelings evoked by eco-friendly and non-eco-friendly materials, a three-step questionnaire was used.

Thirty participants took part in this investigation. They are postgraduates and undergraduate students in the Department of Design Engineering and Management at Kyoto Institute of Technology, including 19 male student and 11 female students, aged between 19 and 28 years.

In Step I, each participant was required to report what could be associated with eco-friendly materials and what adjective could be used to describe eco-friendly materials.

In Step II, twenty-six materials were displayed. These materials included eco-friendly and non-eco-friendly materials. The eco-friendly material is defined as the materials made by recycled resource. Those materials made by raw or natural resource are defined as non-eco-friendly materials.

Each participant in Step II was required to write down the adjectives describing each material based on their vision and tactile evaluation. In Step III, each participant was asked to point out which materials were eco-friendly materials from the 26 displayed materials.

In terms of materials selection, five eco-friendly materials together with 21 non-eco-friendly materials were selected. In total, twenty-six physical materials were used in this investigation, as shown in

Figure 1.

In

Figure 1, these 26 materials are (a) Acrylonitrile Butadiene Styrene Copolymer (ABS), (b) recycled paper, (c) common paper, (d) nylon taffeta, (e) the vital granule T-Blend®SEBS foaming material, (f) denim, (g) Polyurethane(PU), (h) eco-denim by recycled Polyethylene Terephthalate (PET), (i) eco-nylon taffeta by recycled PET, (j) Polylactide (PLA), (k) a block of scouring pad, (l) pasteboard, (m) a block of corrugated carton, (n) lumber core board, (o) PolyVinyl Chloride (PVC), (p) cork wood pad, (q) gypsum board, (r) silicone, (s) polishing acrylic fabric, (t) sandblasting acrylic fabric, (u) sponge, (v) gloss black painted plastic, (w) matte black painted plastic, (x) smooth aluminum, (y) brushed aluminum, and (z) cotton.

The materials shown in

Figure 1 with "*" mark are eco-friendly materials, including recycled paper, eco-nylon taffeta, eco-denim by recycled PET, PLA, and the vital granule T-Blend®SEBS foaming material. Additionally, five non-eco-friendly materials similar with these five eco-friendly materials were also involved, including common paper, nylon taffeta, denim, ABS, and PU.

These 26 materials were produced as 10 x 10 cm square. During the Step II investigation, these 26 physical material samples were displayed in the viewing cabinet under D65 simulator with 80 cd/m2 luminance level. Each material sample was evaluated one by one in a random order. The viewing distance was approximately 45 cm with a 0/45 illuminating/viewing geometry.
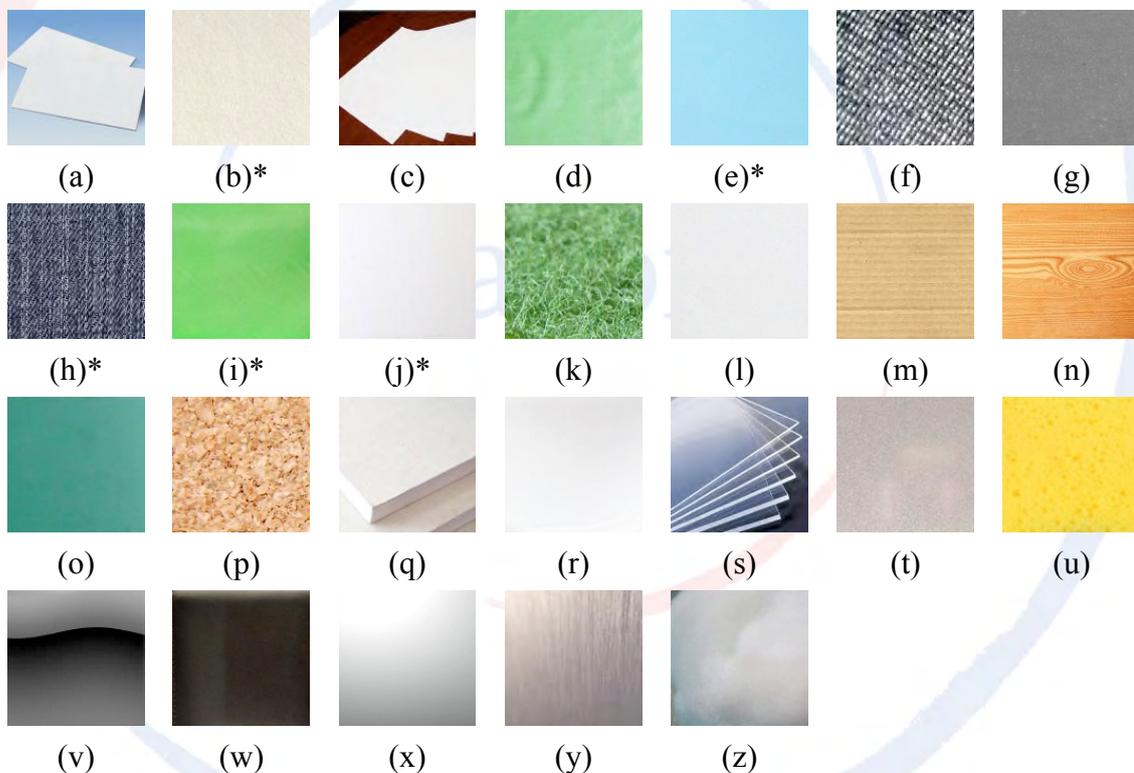

Figure 1: Twenty-six materials used in this study. Note that the materials with "*" mark are eco-friendly materials.

Results

In order to see the association of eco-friendly materials, the data obtained from Step I were summarized. The results of frequency are illustrated using histogram, as given in Figure 2 and Figure 3.

In Figure 2, recycled paper has the highest frequency of eco-friendly association, followed by PET bottle, milk box, wood, and hemp.

In Figure 3, the feeling of "rough" appears highest frequency of eco-friendly materials, followed by "brown", "soft", "warm", "light", "coarse", "dull", and "gentle."
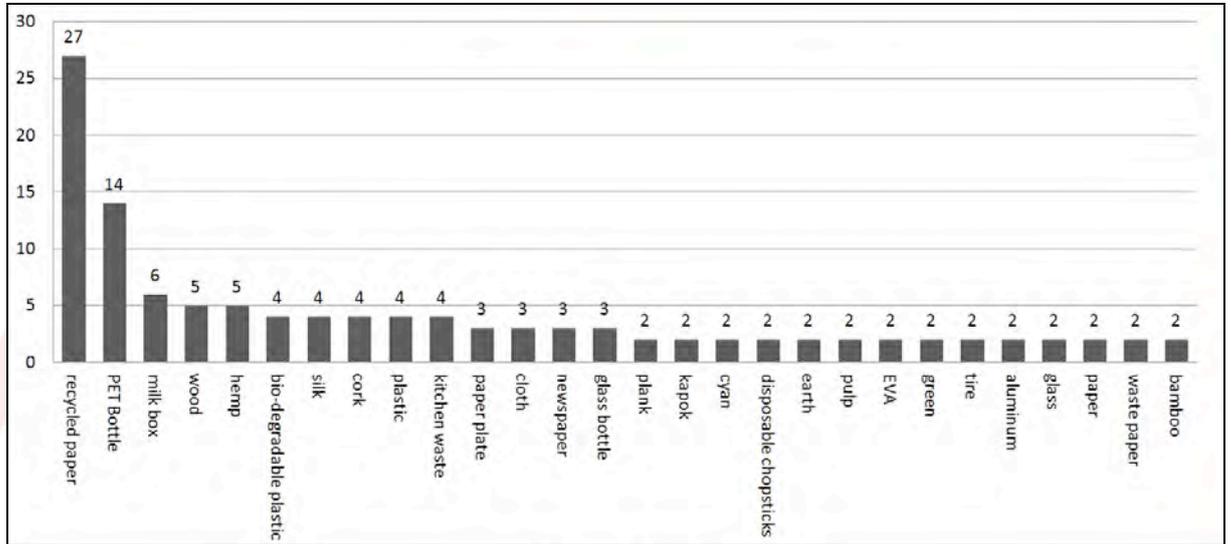

Figure 2: The association of eco-friendly materials.
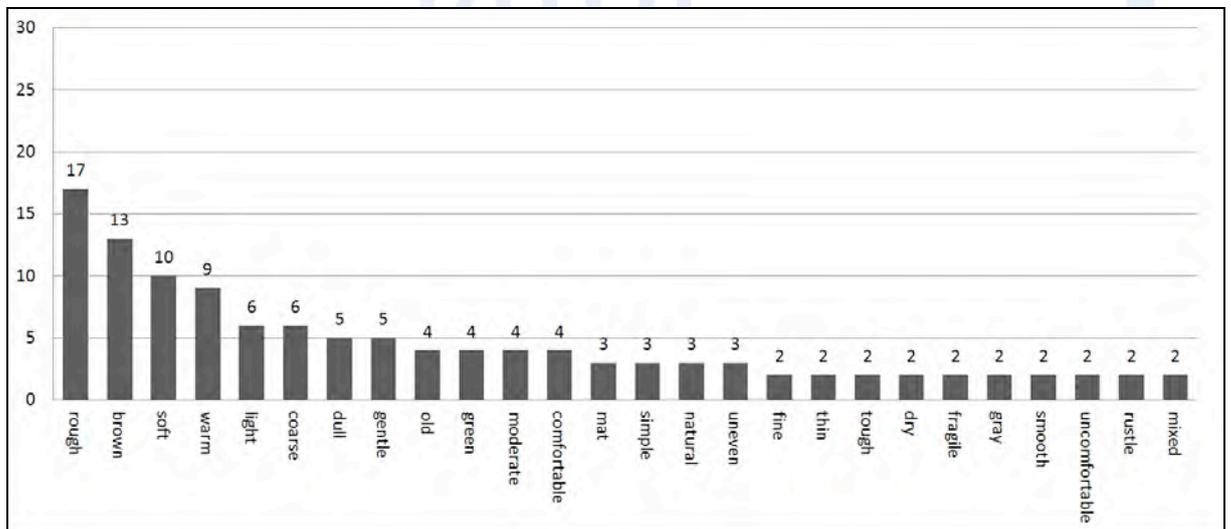
Figure 3: The affective feelings of eco-friendly materials.

Table 1: The affective feelings of materials obtained from Step II

| Materials	Affective feelings
(a) ABS	Smooth, hard, ice-cold, tough, white, glossy, slick, light, bright, new, inorganic, mat, fragile, thin, cool, solid, thick, slippery, shine, dark, dazzling, blue, simple, pale, cheap, plastic, weak, rough, modern, rational, clean, durable, soft, water-proof, quiet, heavy, even, gray, dim, shiny, reflective, chemical, dull, stick, sharp, refreshing
(b)* recycled paper	Thin, white, slick, light, flimsy, rough, paper, smooth, simple, hard, mat, warm, fragile, cheap, weak, tough, soft, thick, organic, tensional, ice-cold, quiet, dull, dirty, memorable, turbid, yellow, inorganic, fine, coarse, dry, durable, beautiful, gentle, moderate, bright, fragile, kind, high quality, skid proof, dark
(c) common paper	Thin, slick, white, bright, smooth, paper, thick, light, hard, soft, tough, new, rough, fragile, ice-cold, flimsy, coarse, fine, weak, cheap, breakable, tensional, good-looking, cool, pale, bleaching, warm, comfortable, solid, rational, dry, pastel, foldable, heavy, gentle, blue, gray, flexible, calm, quiet, reflective, female, man-made, sharp
(d) nylon taffeta	Thin, rough, slick, soft, glossy, light, fine, dark, smooth, green, coarse, flexible, flimsy, solid, hard, tensional, man-made, fragile, moderate, tough, dazzling, quiet, disagreeable, different, unnatural, opaque, dull, rare, nylon, mat, vivid, comfortable, dirty, inflexible, inorganic, childlike, new, paper, female, good-looking, interesting, functional, even, water-proof, bright, dim, cheap, gentle, shiny, beautiful, heavy, powdery, disagreeable, rustle
(e)* eco- foaming material	Soft, slick, thick, flexible, quiet, mat, warm, bright, light, gentle, comfortable, blue, moderate, fine, heavy, hard, floppy, dented, weak, smooth, light blue , skid proof, pliable, airy, good-looking, rebounded, rough, tough, fragile, memorable, simple, circular, expensive, cheerful, thick, dazzling, refreshing, insipid, sponge, durable, even, interesting, high quality, ice-cold, white, cute, square, dull, vesicant, man-made, clammy
(f) denim	Soft, rough, thick, tough, slick, old, coarse, fine, heavy, stiff, dark, fibered, dirty, thin, simple, light, tight, comfortable, hard, mat, flimsy, high quality, gentle, insipid, bi-color, blue, complicated, cool, cloth, yellow, inflexible, spotted, rugged, bedazzled, turbid, irregular, durable, cheap, bright, male, firm, organic, smooth, flexible, uneven, strangeness, soil

(g) PU	Soft, slick, light, rough, mat, gray, thick, ice-cold, hard, dark, fine, simple, warm, solid, coarse, gentle, quiet, floppy, fragile, sponge, rebounded, flexible, smooth, skid proof, disorderly, airy, moderate, circular, comfortable, lifeless, supple, grained, modern, deep, tough, dry, heavy, durable, tawdry, high quality, safe, cute, opaque, strangeness, unshapely, man-made, sharp, clammy
(h)* eco-denim	Rough, hard, tough, thin, soft, light, black, heavy, dark, thick, glossy, smooth, coarse, dry, brittle, ice-cold, static, inflexible, steady, deep, strong, fragile, tensional, good-looking, quiet, man-made, fibered, fine, memorable, blue, old, simple, paper, warm, expensive, solid, flimsy, dazzling, navy blue, irregular, twinkling, organic, high quality, flexible, uneven, skid proof, asymmetrical, stiff
(i)* eco-nylon taffeta	Thin, soft, smooth, bright, slick, glossy, light, fine, green, rough, comfortable, shiny, rustle, tensional, vivid, fragile, tawdry, water-proof, flexible, good-looking, ice-cold, fibered, dazzling, beautiful, warm, chartreuse, inflexible, cheerful, supple, refreshing, dry, weak, cheap, mat, quiet, spirited, childlike, man-made, gentle
(j)* PLA	Smooth, hard, tough, white, light, thick, slick, cheap, glossy, soft, heavy, ice-cold, plastic, warm, uneven, durable, clean, mat, new, quiet, bright, inorganic, solid, expensive, circular, cracked, fashionable, high-class, rough, ceramic, man-made, rare, quiet, gentle, refined, simple, old, good-looking, flexible, slippery
(k) scouring pad	Light, soft, rough, hard, thick, tough, stiff, hurt, disorderly, green, fragile, airy, dirty, dark, flexible, stinging, coarse, cheap, durable, dry, refreshing, complicated, old, fluffy, man-made, ice-cold, good-looking, glossy, frictional, interesting, natural, strange, clean, deep, cheerful, warm, floppy, heavy
(l) pasteboard	Slick, light, white, hard, mat, rough, warm, tough, weak, smooth, fragile, soft, old, thick, simple, bright, dull, thin, coarse, durable, paper, dry, quiet, clean, dark, gentle, female, asymmetrical, strangeness, turbid, dirty, noble, turbid, frictional, high quality, natural, cheap
(m) corrugated carton	Light, soft, rough, cheap, thick, warm, fragile, slick, brown, dry, hard, corrugated, tough, durable, familiar, old, mat, smooth, coarse, paper, kindly, dirty, man-made, unshapely, dull, plebeian, quiet, flexible, organic, fond, simple, solid, memorable, thin
(n) lumber core board	Rough, warm, light, hard, thick, tough, natural, heavy, slick, woody, gentle, safe, durable, fragile, fine, quiet, smooth, organic, brown, bright, soft, high-class, simple, moderate, coarse, new, good-looking, high quality, familiar, relaxed, fond, comfortable, dry, healthy, memorable
(o) PVC	Heavy, thick, mat, rough, tough, soft, hard, slick, durable, green, quiet, ice-cold, dark, dark, glossy, solid, light, old, fragile, pliable, gentle, dull, moist, skid proof, smooth, good-looking, flexible, natural, familiar, cutting, bright, tawdry, expensive, cool,

|	
	frictional, simple, rubber, clammy, dirty, fine, clean
(p) cork wood pad	Rough, soft, light, warm, fragile, natural, brown, coarse, fine, quiet, gentle, cheap, tough, granulous, slick, interesting, uneven, bright, thin, woody, cork, stiff, skid proof, pliable, spirited, flexible, high quality, thick, mat, simple, delicious, heavy, fashionable, dry, dazzling
(q) gypsum board	Hard, white, heavy, slick, thick, fragile, tough, rough, light, mat, smooth, ice-cold, powdery, soft, new, high-class, bright, quiet, gentle, granulous, cute, good-looking, high quality, organic, natural, cheap, simple, fine, fond, durable, clean, luxurious
(r) silicone	Soft, mat, smooth, light, clammy, bright, flexible, quiet, fragile, skid proof, heavy, interesting, warm, thin, breakable, extended, gentle, cute, white, hard, solid, rubber, cheerful, safe, fluffy, man-made, aqueous, pliable, slick, quiet, comfortable, unusual, stubborn, pale, linear, simple, fine, durable, clean, tough, rough, fond, good-looking, glossy, marvelous, cheap, thick
(s) polishing acrylic fabric	Smooth, transparent, light, tough, hard, ice-cold, heavy, glossy, good-looking, bright, cool, fragile, durable, thick, slick, expensive, smart, warm, plastic, solid, inorganic, clean, high-class, popular, breakable, useless, white, man-made, sharp, soft, rough, refreshing
(t) sandblasting acrylic fabric	Tough, transparent, slick, rough, light, smooth, hard, quiet, fragile, thick, translucent, high-class, heavy, beautiful, turbid, mat, warm, thin, soft, good-looking, cheap, neutral, dirty, weak, white, ice-cold, high quality, natural, firm, bright, durable, clean, refreshing, limpid, fashionable, solid, blurred, simple, fine, expensive, plastic, gentle, plain, dull, cute
(u) sponge	Soft, light, bright, airy, thick, yellow, comfortable, gentle, cheap, coarse, warm, weak, rough, flexible, smooth, floppy, stiff, cute, slick, spongy, cheerful, fine, hard, solid, happy, high quality, interesting, kindly, spirited, safe, useful, chemical
(v) gloss black painted plastic	Smooth, tough, hard, black, glossy, ice-cold, high-class, heavy, light, good-looking, thick, dark, durable, mature, soft, new, quiet, heavy, sharp, slick, quiet, interesting, damp, male, bright, fragile, glittery, expensive, cool, simple, deep, cheerful, mat
(w) matte black painted plastic	Hard, mat, light, smooth, tough, slick, black, heavy, dark, quiet, ice-cold, thick, warm, dull, tranquil, soft, solid, new, man-made, deep, durable, disagreeable, male, rough, coarse, inorganic, expensive, good-looking, high-class, high quality, gentle, simple
(x) smooth aluminum	Smooth, ice-cold, hard, glossy, tough, heavy, good-looking, slick, thick, beautiful, durable, twinkling, sharp, bright, hurt, expensive, new, mirrorlike, weak, metallic, high-class, light, silver, modern, strangeness, reflective, lifeless, mat, dazzling, fine, breakable
(y) brushed aluminum	Ice-cold, heavy, hard, tough, rough, smooth, glossy, good-looking, high-class, durable, slick, dazzling, bright, metallic, beautiful, hurt, twinkling, light, simple, thick, cool, new, fine, quiet, dangerous, cheap, expensive, high quality, clean, silver,

|	gentle, sharp, man-made, uneven, soft, fast, sophisticated, thin
(z) cotton	Soft, light, airy, warm, white, gentle, rough, slick, weak, comfortable, fine, fluffy, loose, good-looking, bright, cheap, coarse, cloudy, floppy, shaggy, stiff, wealthy, man-made, unstable, cute, smooth, interesting, flexible, quiet, thick, beautiful, heavy, tough, deep, fond, cheerful, unorderly, hard, circular, sleepy, ultra, pale, hot, bulgy, disorderly, disagreeable, swollen
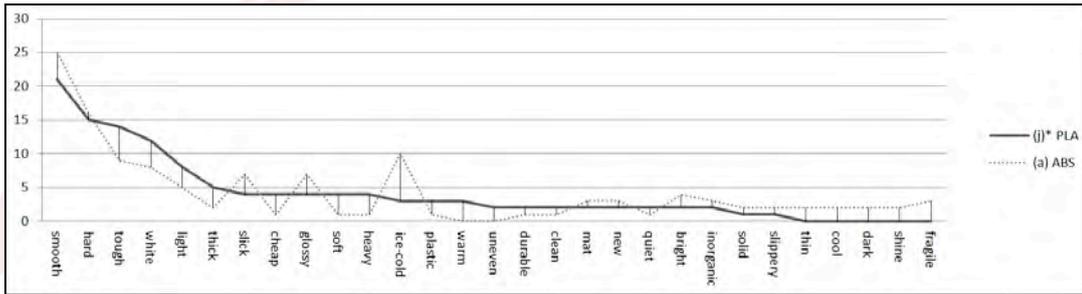
(a) Comparison of affective feelings between PLA and ABS.
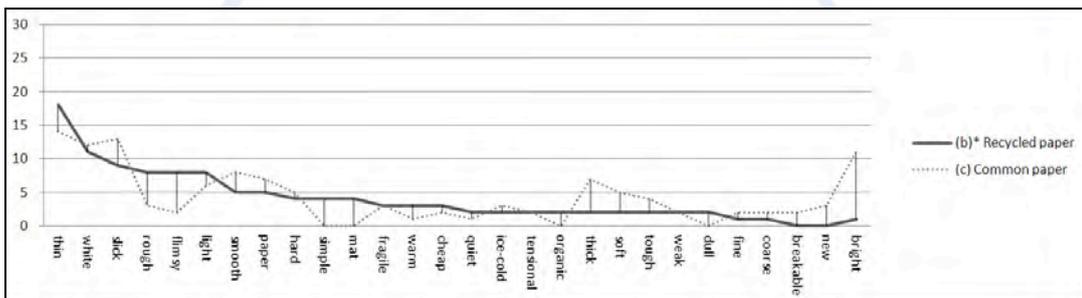
(b) Comparison of affective feelings between recycled paper and common paper.
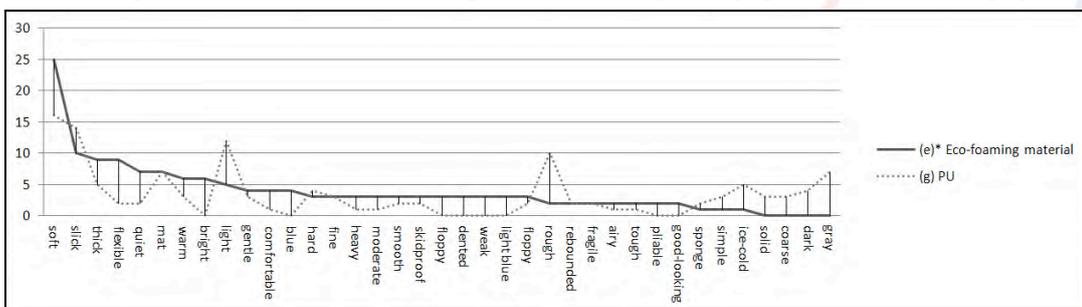
(c) Comparison of affective feelings between eco-foaming material and PU.
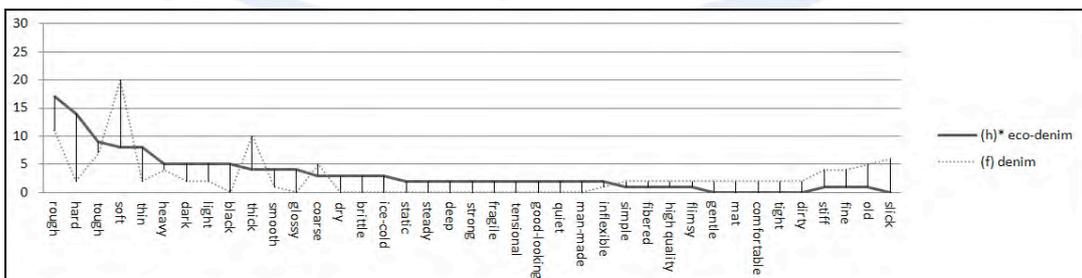
(d) Comparison of affective feelings between eco-denim and denim.
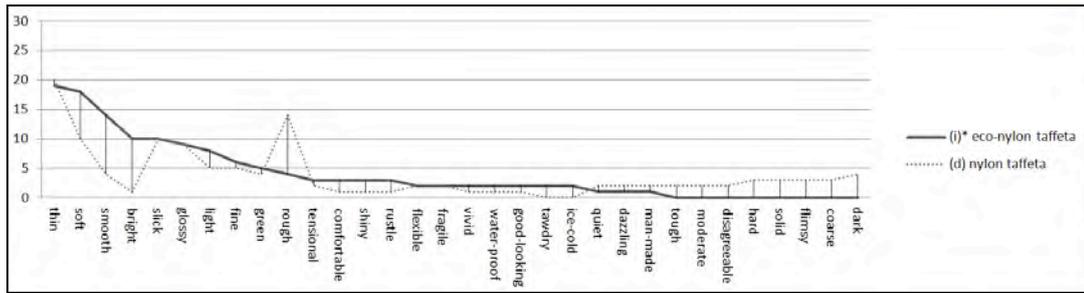
(e) Comparison of affective feelings between eco-nylon taffeta and nylon taffeta

Figure 4: Comparison of affective feelings between eco-friendly and non-eco-friendly materials. "*" mark indicates the eco-friendly materials
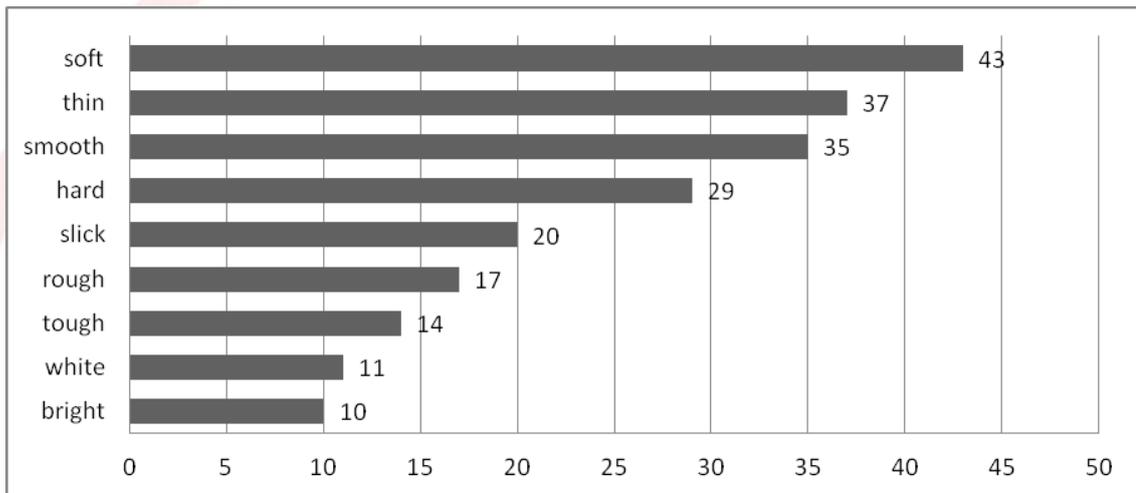

Figure 5: The frequency of affective feeling evoked by eco-friendly materials.
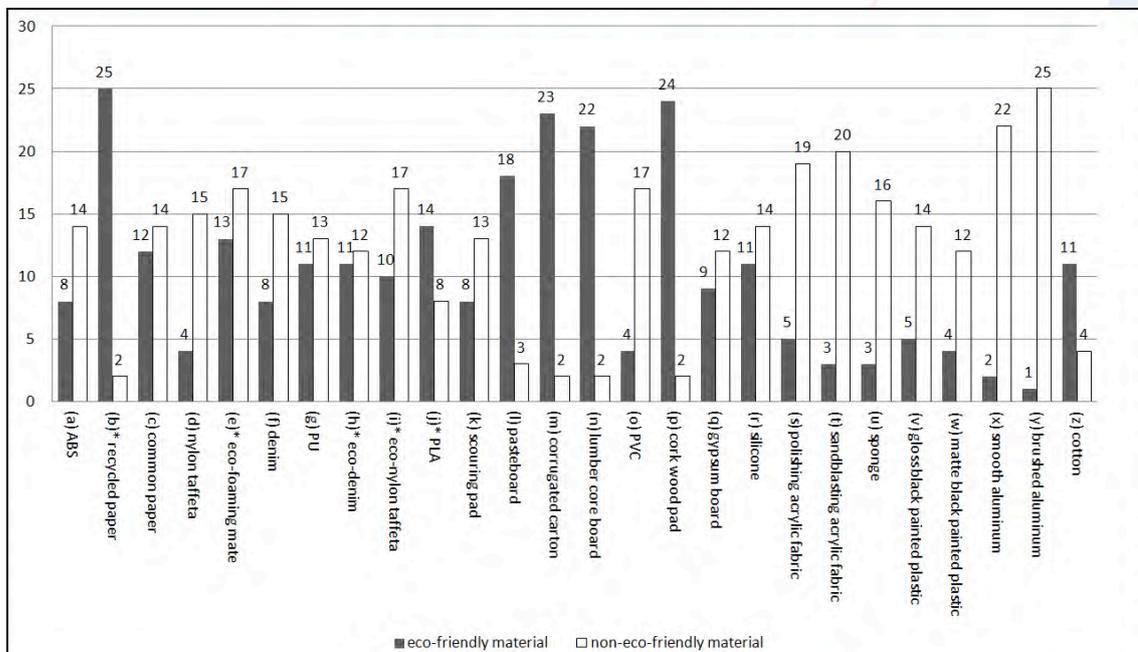

Figure 6: comparison of the frequency between eco- and non-eco-friendly materials recognized.

To see how participants describe the materials provided, the adjectives obtained from Step II were collected, as given in Table 1.

Furthermore, to see the difference between eco-friendly and non-eco-friendly materials, five materials similar with eco-friendly materials were used to make comparison, i.e., PLA vs. ABS, recycled paper vs. common paper, eco-foaming material vs. PU, eco-denim vs. denim, and eco-nylon taffeta vs. nylon taffeta. The frequency of each adjective for materials was illustrated using line chart, as shown in Figure 4.

In Figure 4, it can be seen that the affective feelings describing eco-friendly materials agree with those describing non-eco-friendly materials. A little exception was found, as summarized below.

(1) "ice-cold" feeling was used to describe ABS, rather than PLA materials,

(2) "rough" and "flimsy" feelings were used for recycled paper; "thick" and "bright" for common paper,

(3) "soft", "flexible", and "bright" feeling were used to describe eco-foaming material, "light" and "rough" for PU,

(4) "rough", "hard", and "thin" feelings were used for eco-denim; "soft", "thick", and "slick" for denim,

(5) "soft", "smooth", and "bright" feeling were used to describe eco-nylon taffeta, "rough" for nylon taffeta,

Moreover, the affective feelings evoked by eco-friendly materials were summarized, as given in Figure 5. The affective feelings included "soft", "thin", "smooth", "hard", "slick", "rough", tough", "white", "bright".

To see which material will be recognized as eco-friendly materials, the data obtained from Step III were illustrated using histogram, as shown in Figure 6 In this diagram, black bar indicates how many time the material is recognized as eco-friendly materials, white bar non-eco-friendly materials.

The results showed that the material of recycled paper, paste board, corrugated carton, lumber core board, cork wood pad, and cotton were recognized as eco-friendly materials. However, as the definition of eco-friendly materials mentioned before, only recycled paper is eco-friendly, others are non-eco-friendly materials.

On the contrary, the materials of ABS, nylon taffeta, eco-nylon taffeta, PVC, polishing acrylic fabric, sandblasting acrylic fabric, sponge, gloss black painted plastic, matte black painted plastic, smooth aluminum, and brushed aluminum were recognized as non-eco-friendly materials.

Conclusion

The current study is a fundamental study to understand how people describe the materials, especially eco-friendly materials. This study reveals the fundamental problem

that people cannot distinguish the eco-friendly from non-eco-friendly materials. Even worse, people misrecognized the eco-friendly materials. As the current study pointed out the affective feelings describing eco-friendly materials agree with those describing non-eco-friendly materials. If people cannot tell the difference, what's point for product designers, manufacturers and customers to go green?

Making the products appearing eco-friendly is more likely the way to encourage customer to purchase the green product, push product designers to think in green way and lead the manufacturers to use eco-friendly materials. In order to make product appear eco-friendly, the affective feelings obtained in the current study are suggested to use in design works. For example, the affective feelings of the eco-friendly products should appear "soft", "thin", "smooth" and "hard" feeling, so that the product can be recognized as green products.

Acknowledgements

References

Choo, S., & Kim, Y. (2003). Effect of Color on Fashion Fabric Image. Color Research and Application, 28, No. 3, 221-226.

Hollins, M., Bemsmaia, S., Karlof, K., & Young, F. (2000). Individual differences in perceptual space for tactile textures: Evidence from multidimensional scaling. Perception &Psychophysics, 62, 1534-1544.

Hollins, M., Faldowski, R., Rao, S., & Young, F. (1993). Perceptual dimensions of tactile surface texture: A multidimensional scaling analysis. Perception &Psychophysics, 54, 697-705.

Lee, W., & Sato, M. (2001). Visual Perception of Texture of Textiles. Color Research and Application, 26(6), 469-477.

Picard, D., Dacremont, C., Valentin, D., & Giboreau, A. (2003). Perceptual dimensions of tactile textures. Acta Psychologica, 114, 165-184.

Guided Device Design Based on Universal Design of Transportation Environments

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Abstract:

Nowadays people use pedestrian guide system to recognize locations and directions in strange environment, the pedestrian guide enables make users have quicker access to roads and reduces time and energy on searching information, planning routes and getting lost. But Guide system's complicated software operations and unfriendly interfaces of such products trouble users. This study aims at design of pedestrian guide devices in transportation under universal design after exploration of questions on way-finding of different groups of pedestrians in stations. The pedestrian guide devices in this study are a solution to problems of way-finding in stations. We observe behaviors of way-finding of pedestrians through interviews with users at Banqiao Station and record the problems. The way-finding problems are made into structure with cluster analysis into 6 groups, including: (1)Cannot recognize location and directions;(2) Insufficient guide information and discontinuity;(3) Poor assistance guide;(4) Poor indicator design resulting poor recognition;(5) Construction structure and exhibition space at the station affecting indicator recognition;(6) Obstructions in walking; The 6 problem groups on way-finding are transferred to design standard to have specific design objectives. The drafted design guide device in this study is a new portable one. In addition to meeting design standards against 6 problem groups on way-finding, 3 design standards, "Mobility," "Usability" and "intuitive Operation" are added. Subject to partial solutions of design standard expanded guide device in 1 user interface and 4 devices.After universal evaluation on traffic transportation environment, achievement rates of 4 concept design cases are slightly different due to different styles; all of them meet universal design ideas and solve current problems as feasible solutions to future problems on way-finding.
Key words: Traffic Transportation Environment, Universal Design, Pedestrian Guide Devices

1. Introduction

Traffic transportation environment involves a great number of users and a wide range of groups. Thus, design of traffic transportation environment, in the maximum possibility, shall facilitate everyone, regardless of genders, ages and capabilities. In realistic environment, the greatest problem is doubts on positions and directions in a strange environment.

Nowadays people use pedestrian guide system to recognize locations and directions in strange environment, the pedestrian guide enables make users have quicker access to roads and reduces time and energy on searching information, planning routes and getting lost. But Guide system's complicated software operations and unfriendly interfaces of such products trouble users. This study aims to understand problems and needs on way-finding of different kinds of pedestrians in traffic transportation environment, and to arrange users' problems and needs to explore traffic information and technology application of pedestrian guide devices in light of universal design and traffic transportation environment convenience

The study scope is mobility needs in 3 major system of traffic transportation environment (Roads, Vehicles, Stations), aiming at Banqiao Station that features MRT, train and high speed rail for survey of problems and needs on way-finding.

2. Method

2.1. Identify the Problems on Way-finding in Stations.

We observed the pedestrians' behaviors of way-finding and interview the users at Banqiao Station, The pedestrians' groups include: (1) Without special considerations (2) Elderly (3) Wheeled users (4) Hearing disability (5) Visual impaired (6) Color blindness (7) Pregnant women (8) Users using stroller (9) Users carrying heavy objects (10) Foreigners. Problems are made into structure with cluster analysis as in
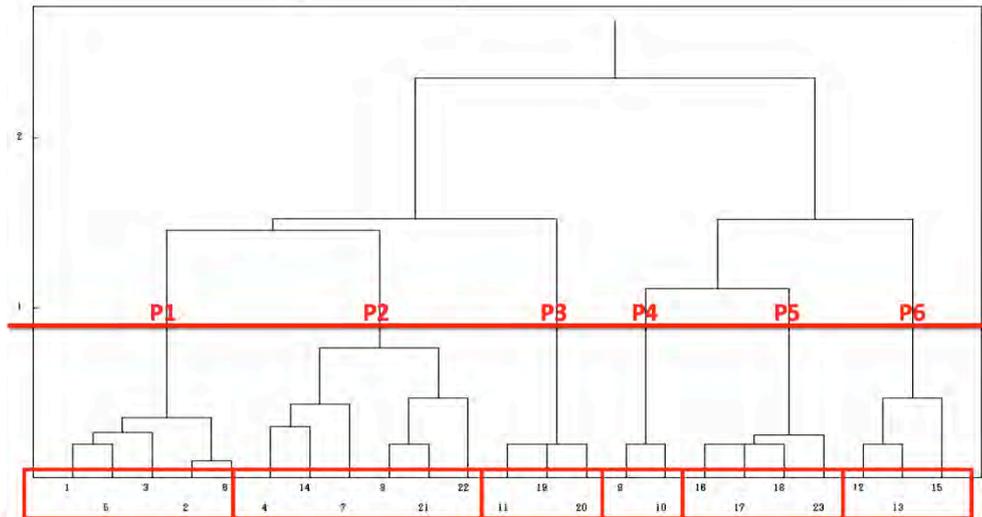
Figure 2- 1
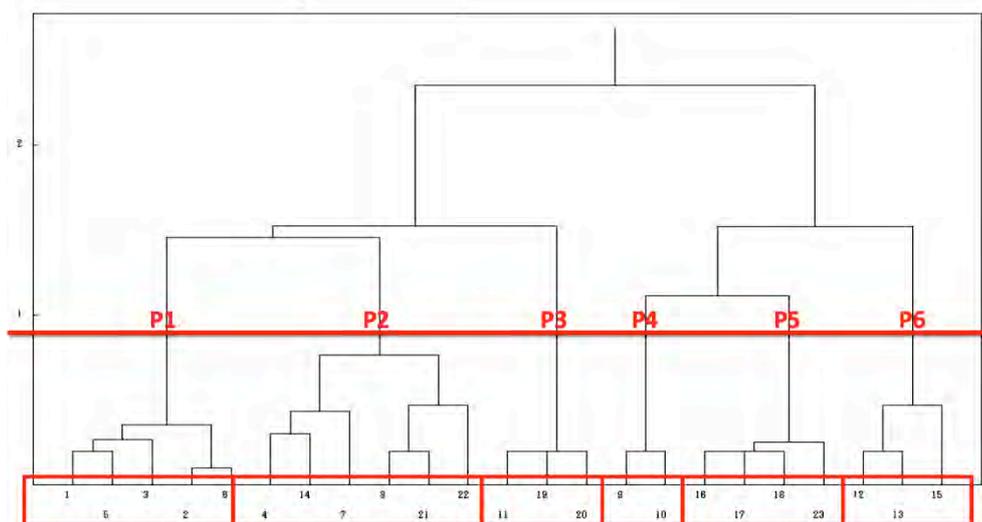
Figure 2- 1 Cluster Analysis of Problems on Way-finding

Table 2- 1 Groups of Problems on Way-finding in Station

P1	**Not knowing where I am and where to go**	1	I am not sure of my current position.
		5	I do not know where to take shuttle bus after getting out of MRT.
		3	I am not sure the exact location of the station.
		2	I am not sure if I am on the right path.
		6	The visually impaired can't find guide facilities at the station.
P2	**Insufficient guide information and discontinuity**	4	I still do not know where facilities are after following the guide.
		14	I get lost due to not knowing which floor I am on when moving between floors.
		7	Foreign travelers do not understand guide contents.
		8	Repeated indicators mix directions, preventing form quick arrival at the destinations.
		21	Destination guide information is not sufficient and I am not sure if I am on the right path.
		22	The physically disabled are unable to know where access free facilities are.
P3	**Poor assistance**	11	The visually impaired can't find facilities on their own.

	guide	19	Poor broadcasting sound quality
		20	Noise in environment affects listening to broadcasting.
P4	**Poor indicator design resulting poor recognition**	9	Words on indicators too small to recognize
		10	Contrast of words and background on indicators is too small and difficult for the visually impaired to distinguish.
P5	**Construction structure and exhibition space at the station affecting indicator recognition**	16	Too many pillars in the station that cover signs
		17	Device art affects travelers' vision to indicators.
		18	Exhibitions block vision to indicators.
		23	Indicators are too high for wheeled people to recognize.
P6	**Obstructions in walking**	12	The visually impaired often get tumbled by raised objects (vases, luggage) on sidewalks.
		13	The visually impaired often tumble on stairs.
		15	Objects on the sidewalks hinder walking.

2.2.   Design the Pedestrian Guided Device.

Design the guided device and guided interface by using morphological analysis. Main problem groups on way-finding are transferred into design principles to define acceptable design projects.   An acceptable partial solution is selected in each design principles.

The 6 problem groups on way-finding are transferred to design principles to have specific design objectives as Table 2- 2. The drafted design guide device in this study is a new portable one. In addition to meeting design principles against 6 problem groups on way-finding, 3 design principles, "Mobility," "Usability" and "Intuitive Operation" are added.

Table 2- 2 Define the Guided Device Design Principles

	Main Problems			Design Principles
P1	Not knowing where I am and where to go	A	Information on positioning and guide
P2	Insufficient guide information and discontinuity	B	Guide information with continuity and universality
P3	Poor assistance guide	C	Facilities with voice assistance and guide
P4	Poor indicator design resulting poor recognition	D	Indicator design with good recognition and guide device correspondence
P5	Construction structure and exhibition space at the station affecting indicator recognition	E	Information in consideration of station space layout and user guide needs
P6	Obstructions in walking	F	Prevention from obstruction due to objects and terrain
		M	Mobility
		U	Usability
		I	Intuitive Operation

s

Setting of design principle shall meet traffic transportation environment universal design principles, results show as Table 2- 3.

Table 2- 3 The relationship between design principles and UD principles

Design principle \ Universal Design Principles	1 Equality	2 Tolerance	3 Operative	4 Information	5 Facilities easily located	6 Error tolerance and safety	7 Force saving	8 Assurance	9 Reasonable planning	10 Durability	11 Economy	12 Maintenance status	13 Comfort	14 Appearance	15 Environmentally friendly and energy saving
A Information on positioning and guide	◎		◎	◎	◎			◎							
B Guide information with continuity and universality		◎		◎	◎	◎		◎			◎				
C Facilities with voice assistance and guide	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎
D Indicator design with good recognition and guide device correspondence				◎	◎		◎							◎	
E Information in consideration of station space layout and user guide needs		◎		◎	◎				◎						
F Prevention from obstruction due to objects and terrain	◎		◎	◎		◎	◎	◎	◎						
M Mobility	◎	◎					◎	◎	◎						
U Usability	◎		◎				◎	◎	◎					◎	
I Intuitive Operation			◎	◎		◎	◎	◎						◎	

Subject to partial solutions of design principle expanded guide device in software and hardware, results of morphological analysis show as Table 2- 4

Table 2- 4 Partial Solutions Transferred from Design Principle

	Design Principle	Assistive Guide Device Partial Solutions	
		Hardware	Interface
A	Information on positioning and guide	AS: High resolution cameras accessing QR code positioning and guide Information, built-in Bluetooth to receive station guide information	Built-in e-compass, e-map, 3D holograph guide system
B	Guide information with continuity and universality	BS: QR code accesses information; wireless connection updates latest information.	Real time update and display of indicator and guide information
C	Facilities with voice assistance and guide	CS: voice receipt recognition and voice prompt	Voice guide, enlarged application programs on screen
D	Indicator design with good recognition and guide device correspondence		Guide interface principle same as indicator design in coordination with gravity sensor gyration display
E	Information in consideration of station space layout and user guide needs		Guide information of 2D and 3D holograph interface with voice system transmission
F	Prevention from obstruction due to objects and terrain		Various model route guide subject to needs
M	Mobility	MS1: change of carrying of alternative device spare parts MS2: external module	
U	Usability	US1: slippery proof material, stable holding US2: addable holding device	
I	Intuitive Operation	IS: easily recognized io allocation, shapes, colors and icons	

2.3.   Pedestrian guide devices interface design

On top of shape design, one shall continue with users interface planning and design in guide device. Contents of interface information shall be in coordination with property data of facilities (including space property, facilities purposes) in combination of different guide assistance devices (e.g. QR Code) to design pedestrian guide assistance interface.   Explanations will be given on pedestrian guide device interface features and design.   In consideration of rejection of users' digital chasm, besides in reference of universal design principles expanded design, learning habits and acceptance are included to ensure a friendly and convenient interface.

3.   Evaluate Guided Device Design.

Evaluate achievement rate of pedestrian guide devices design by universal design evaluation system. Evaluation in five levels (disagree very much, disagree, O.K. agree and agree very much) on product hardware and interface based on evaluation principles and actual description of traffic transportation environment evaluation table. A total of 19 participants show as Table 2- 5; results of evaluate achievement rate show as Table 2- 6

Table 2- 5 Participants Information

	Name	Age	Pedestrian Group	Experience of using touch screen
1	Mr. Chen	23	No special concern	Yes
2	Mr. Tang	45	Physically disabled	Yes
3	Mr. Lin	45	No special concern	Yes
4	Ms. Hong	24	No special concern	Yes
5	Mr. Lee	22	No special concern	Yes
6	Mr. Zhang	27	No special concern	Yes
7	Ms. Huang	26	No special concern	Yes
8	Ms. Sher	23	No special concern	Yes
9	Ms. Liao	52	No special concern	No
10	Mr. Chang	68	Elderly	Yes
11	Ms. Chu	66	Elderly	Yes
12	Mr. Chang	41	No special concern	Yes
13	Mr. Chuech	62	Elderly/Visual Impaired	Yes
14	Ms. Chu	60	Elderly	No
15	Mr. Chu	58	No special concern	No
16	Ms. Chin	56	No special concern	Yes
17	Mr. Chu	63	Elderly	Yes
18	Mr. Chu	57	No special concern	Yes
19	Mr. Wu	24	Color Blindness	Yes

Table 2- 6 Results of Evaluations

	Concept Design (1)	Concept Design (2)	Concept Design (3)	Concept Design (4)	Guide Interface
1. Facilities easily found	0	0	0	0	74
2. Equality	73	76	73	73	72
3. Tolerance	73	74	74	73	74
4. Operative	73	73	73	73	74
5. Information	74	77	74	74	74
6. Error tolerance and safety	77	77	77	77	83
7. Strength saving	73	74	73	73	76
8. Assurance	75	75	75	75	76
9. Reasonable planning	75	76	75	75	77
10. maintenance status	0	0	0	0	0
11. Comfort	74	75	74	75	73
12. appearance	75	77	75	75	68
13. environment friendly and energy saving (by facility administrator)	0	0	0	0	0
14. durability (by facility administrator)	0	0	0	0	0
15. economy (by facility administrator)	0	0	0	0	0

4. Conclusions

1. This study identifies the 6 main groups of problems on way-finding from interviews with users with site investigation at Banqiao Station.

2. Solution scope is expanded with morphological method to select partial solutions with universal design. Under matrix, combination of different solution is available to offer a universal design in concept design expansion.

3. After universal design evaluation on traffic transportation environment, achievement rates of 4 concept design cases are slightly different due to different styles; all of guided device design achieve universal design ideas and solve current problems as feasible solutions to future problems on way-finding.

5. Discussion

1. Most of problems on way-finding are resulted from insufficient or interrupted guide information. In light of system, in addition to supplement of guide information, pedestrian guide device guide information in this study shall be integrated with station guide information to provide a complete guide system.

2. Universal design evaluation system requires constant modification. In addition to help examine whether design does meet universal design, design cases required repetition in evaluation and review to meet optimal universal design.

Reference

The Ministry of Transportation and Communications(2009),Literature Review of Universal Design in Transportation Environment

The Ministry of Transportation and Communications(2010),The development and application of universal design methods for transportation environments

Hsueh-Cin Fan, Po-Chuan Chen, Ching-Huei Lai, Wei-Shin Huang, and Yung-Chin Tsao (2011)"Research on the Application of User Interface Design of Pedestrian Mobile Guide Devices – a Case Study for the Visually Impaired", The 4th International Conference On Accessible Tourism

Hsueh-Cin Fan, Po-Chuan Chen, Ching-Huei Lai, Wei-Shin Huang, and Yung-Chin Tsao, "Research on the Application of User Interface Design of Pedestrian Mobile Guide Devices – a Case Study for the Visually Impaired", The 4th International Conference On Accessible Tourism(ICAT) 2011(2011/4)

The Research qn Design qf Bus Stops cnd kts Peripheral Facilities kn Taipei

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Abstract:

The research is taking those facilities around Taipei Main Station for a target for improvement. We try to analyze those people who use those facilities around the bus stop to find out most useful design for improvement. Research is divided into three phases:

Firstly, physically investigate the problems of bus peripheral facilities and bus stop sign happened to the six groups of passengers of the regular people, the disables, the elderly, the children, the foreigners and the people with less experience of bus riding while waiting for bus, boarding bus and disembarking bus. Secondly, Hayashi's quantification method of the fourth type and Aggregated Analysis are employed to analyze the problem's structure. As a result, we found the reasons to make those facilities to be used are "Information Display" and "Space Design", and there are 3 groups of the problems including "inside instruction", "stop sign facility" and "space allocation". Thirdly, use model analysis method to develop the design concept. Finally find out four designs to improve the facilities of bus stop.

Introduction

Nowadays duo to growing environmental awareness as well as rising world oil prices, many places in the world positively impel energy saving and low carbon energy generation, and reduce loss to the environment by using public transportation. However, plenty of cars and motorcycles are running on the street of Taipei every day. It is not just a primary cause of energy consumption, but also causes heavy traffic clogging up the road and air pollution. Therefore how to improve public transportation system has become an urgent issue need to be solved. Currently public bus and rapid transit is the most common mode of transport. Many people have to establish a network for commuting to work by means of bus stops and rapid transit stations. In order to make public transport more accessible and more convenient to use and catch, the local authority has introduced low-floor bus and implemented many benefit plans, moreover also created bus-only lanes for the people waiting for bus. But these measures cause many new problems. Because it is public transport, its users include various age groups and the disables. Besides in different period of time, for example peak hours or off-peak hours, different problems will also arise. The current public bus facilities (including the environment around bus stop) still don't meet the requirements of universal design.

Research and Survey Analysis

The flow and construction of this research is as shown in Figure 1.
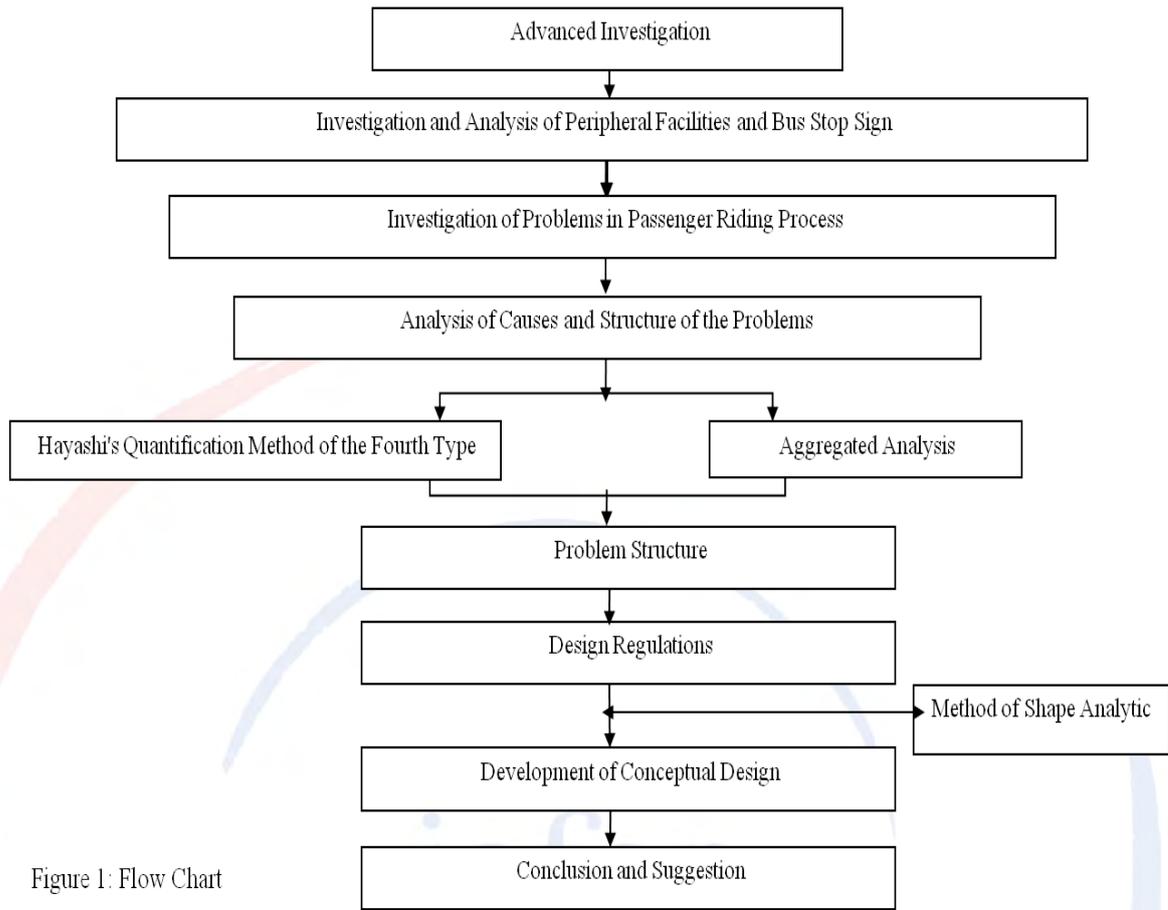
Figure 1: Flow Chart

• Investigation Objects

This research invites 10 regular people and 9 blind people to participate in the research. The blind people have to meet the standards of blindness specified in the domestic disability handbook (mild, moderate or severe).

• Investigation Measures

This research uses the questionnaire survey. Based on the view from a passenger looking up streets, we design a questionnaire with open question style to investigate the problems met by passengers in the process of street lookup. There are 2 parts in the questionnaire. The first part is an investigation of the basic information of

passenger to investigate his/her sex, age, occupation, education level and residential situation. The second part is an investigation of street lookup.

.. Bus Type Classification

This research physically interviewed and took photos for the whole process from waiting for the bus, boarding the bus, moving in bus to find a position and disembarking the bus, and then classify the problems have been observed.

While trying to catch bus, the first action is waiting for the bus at the bus stop sign. Accordingly we classify the bus stop sign firstly, and there are 4 types of bus stop - A, B, C, D classified in this research.

The models are sorted upon complexity. Type A is the simplest design of bus stop providing with the simplest information of bus route. Type B adds a light box to bus stop sign. Type C provides with additional chairs as well as sun & rain shelter. Type D is the most complicated, having advertisement boards. (Please refer to Table 1)

Table 1: Classification and Explanation of Bus Stop

Characteristic explanation of type A bus stop The simplest design of bus stop, only a pole with a board.	
Characteristic explanation of type B bus stop Bus stop sign combined with light box.	

| Characteristic explanation of type C bus stop

Add a simple sun & rain shelter and chairs. | |
| Characteristic explanation of type D bus stop
The most complicated bus stop, besides sun & rain shelter and chairs, combining with the function of advertisement boards. | |

There are good and bad points for various bus stop. We will list out the good and bad points for respective bus stop.

Table 2: Good and Bad Points for Respective Bus Stop

Type of Bus Stop	Bad Points	Good Points
Type A	*Fonts are too small and there are no facilities for sun shade and rain protection. * The bus stop is too close to the road and will block the sight of passengers. * There are no chairs and the elderly will feel tired while waiting. * Bus stop sign doesn't have English subtitles. * Bus route map is not consolidated. * Route direction is not clear. * Route map is not clear. * Bus stop doesn't show the current place	* Save space. * The cost is cheap.

	where the bus is approaching.	
Type B	*No facilities for sun shade and rain protection. * The bus stop is too close to the road and will block the sight of passengers. * There are no chairs and the elderly will feel tired while waiting. * Bus stop sign doesn't have English subtitles. * Bus route map is not consolidated. * Route direction is not clear. * Route map is not clear. * Bus stop doesn't show the current place where the bus is approaching.	* With illumination.
Type C	* The bus stop is too close to the road and will block the sight of passengers. * Bus stop sign doesn't have English subtitles. * Bus route map is not consolidated. * Route direction is not clear. * Route map is not clear. * Bus stop doesn't show the current place where the bus is approaching.	* Rainy days are still from the storm. * Chair design, thoughtful, long standing or need the rest of the passengers
Type D	* The position of the route map is too low and is easy to be blocked.	* Rainy days are still from the

	* The bus stop sign itself and the side advertisement boards will block the sight of passengers watching the running cars. * Bus stop sign doesn't have English subtitles. * Bus route map is not consolidated. * Route direction is not clear. * Route map is not clear. * Bus stop doesn't show the current place where the bus is approaching.	storm. * Chair design, thoughtful, long standing or need the rest of the passengers

.. Investigation of Problems in Passenger Riding Process

The bus taken as an example is a new type of low-floor bus "Red 32". We took photos for the all problems arising in the process of bus riding (as shown in Table 3), and divide the passengers into 6 groups including the regular people, the elderly, the children, the disables, the people with less experience of bus riding and the other passengers. We found the problems arising in the process of each group riding in bus, and integrate table 1 – table 3 into table 4.

Table 3: Records of Problems in the Process of Bus Riding

*Bus hand grips are lack of stability. * The gray color of hand grips is similar to the interior of the bus. Passengers are hard to recognize.	

* The seats in the back are not convenient for getting in/out.	
* There is not enough or even no route map in bus. Sometimes it has only running message display. * The display panel for stop is too close to the left side. * The color of the display panel for stop is too monotonous to be recognized. * The font size of the display panel is too small for the elderly. * Foreign passengers don't understand Chinese display.	
* Bus doesn't pull over to the roadside to load or unload passengers. It is very dangerous.	
* The mark on the fare box is not clear. * There is only Chinese explanation on the fare box. Foreign passengers don't understand how much the fare is. * It is hard to identify the position of the coin slot.	

* The floor of the bus is very wet in the rainy days.	
* Passengers need to extend their heads to check if bus is coming.	
* The color of priority seat is the same as regular seat. Passenger can not identify easily. * Priority seat mark is only shown on the side wall next to priority seat. There is no mark on the seat itself.	
* Face-to-face seating makes passenger feel uncomfortable and embarrassed.	
* There are no English subtitles on bus display panel. Foreign passengers can not identify if it is the right bus he'd like to catch.	

Table 4: Problems Arising in the Process of Passenger Riding in Bus

Problem factors and structural analysis

In order to understand the problem factors and its structural relationship, we analyze the data by using the "Aggregated Analysis" and "Hayashi's Quantification Method of the Fourth Type".

．Hayashi's Quantification Method of the Forth Type

According to Table 4: Problems Arising in the Process of the Passenger Riding in Bus, 15 most controversial issues were raised.

Table 5: The 15 Issues

1	ABCD bus stop signs do not have unified route map format.
2	ABCD bus stop signs have unclear bus route map. (Ex. Same bus numbers but different colors or different destinations without clear instruction)
3	No verbal guidance or clear icons for illiterate elderly.
4	The progressing direction of the bus was unclearly shown on the ABCD bus stop signs.
5	There is not enough or even no bus route map on the bus.
6	The barrier-free facility is not flexible and cannot be easily adjusted to the distance between the sidewalk and the bus.
7	The seats at the back of the bus are inconvenient for getting in/out.
8	For D type bus stop signs, the bus route map is too low and will likely be blocked by the seated passengers.
9	ABC type bus stop signs are positioned too close to the street and will likely block passengers' sight.
10	ABCD bus stop signs do not have English subtitles.

11	The font size is too small and characters are overly crowded on A type bus stop signs. And the sign itself is too high for most passengers.
12	The D type bus stop sign itself and the side advertisement boards will block the sight of the passengers, who are looking out for the coming buses.
13	The drivers of bus on ABC type bus stop signs cannot identify which passenger wants to ride which bus, and the passengers don't know how to express their demand when both buses approach the bus stop at the same time.
14	The bus driver cannot look after the safety of the passengers coming on from the back entrance.
15	Bus fare for 1section and 2 sections are unclearly shown.

By using the EXCEL matrix, we asked 20 students to evaluate the correlation between these 15 issues, ranging from 1 to 10. (1 for non related and 10 for closely related) the result as shown on Table 6.

Table 6

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	10	5	3	1	1	1	3	1	1	4	3	4	2	1	2
2	5	10	2	6	6	1	4	1	2	5	1	3	1	6	2
3	3	2	10	8	3	7	2	1	1	5	3	2	10	1	1
4	1	6	8	10	9	5	7	5	2	6	3	2	2	1	1
5	1	6	3	9	10	2	4	2	3	7	2	2	2	2	2
6	1	1	7	5	2	10	7	2	2	2	3	1	1	1	1
7	3	4	2	7	4	7	10	4	4	7	6	4	3	1	1
8	1	1	1	5	2	2	4	10	5	2	2	2	1	1	1
9	1	2	1	2	3	2	4	5	10	5	4	2	3	6	2
10	4	5	5	6	7	2	7	2	5	10	7	8	6	7	2
11	3	1	3	3	2	3	6	2	4	7	10	9	8	4	1
12	4	3	2	2	2	1	4	2	2	8	9	10	2	3	2
13	2	1	10	2	2	1	3	1	3	6	8	2	10	5	3
14	1	6	1	1	2	1	1	1	6	7	4	3	5	10	8
15	2	2	1	1	2	1	1	1	2	2	1	2	3	8	10

Figure 3 Tree Graph is plotted based on the data gathered from Table 6, therefore, X-axis is for "Information Displayed" and Y-axis is for "Space Design". On X-axis, inclined to the left means information displayed clear and right means unclear; and on Y-axis, inclined to the top means space poorly designed and bottom means well designed.
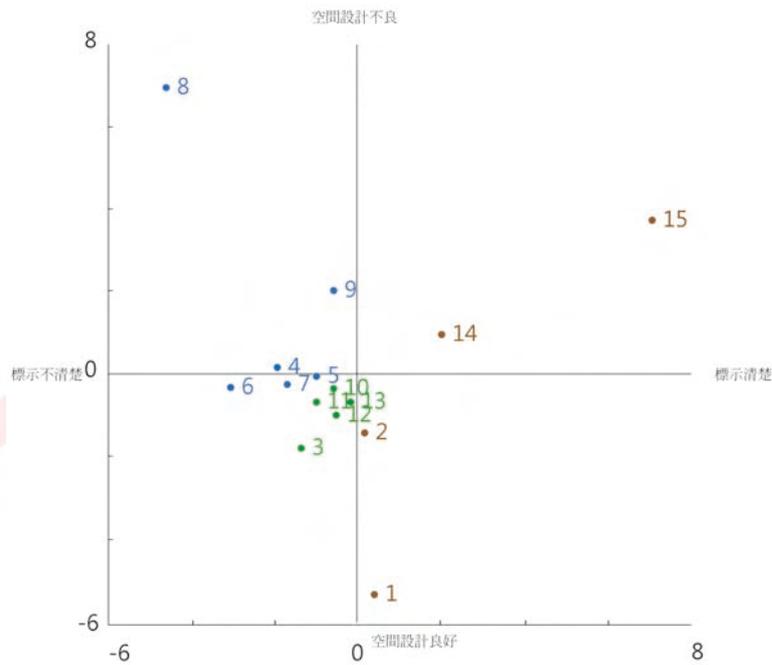
Figure 2: Space Distribution of Problem Issues

- Aggregated Analysis

By using aggregated analysis to analyze the 15 issues and express the result in the form of Tree Graph, we've divided these issues into 3 groups, 1. Information Issues, 2. Bus Stop Sign Issues, 3. Space Allocation Issues
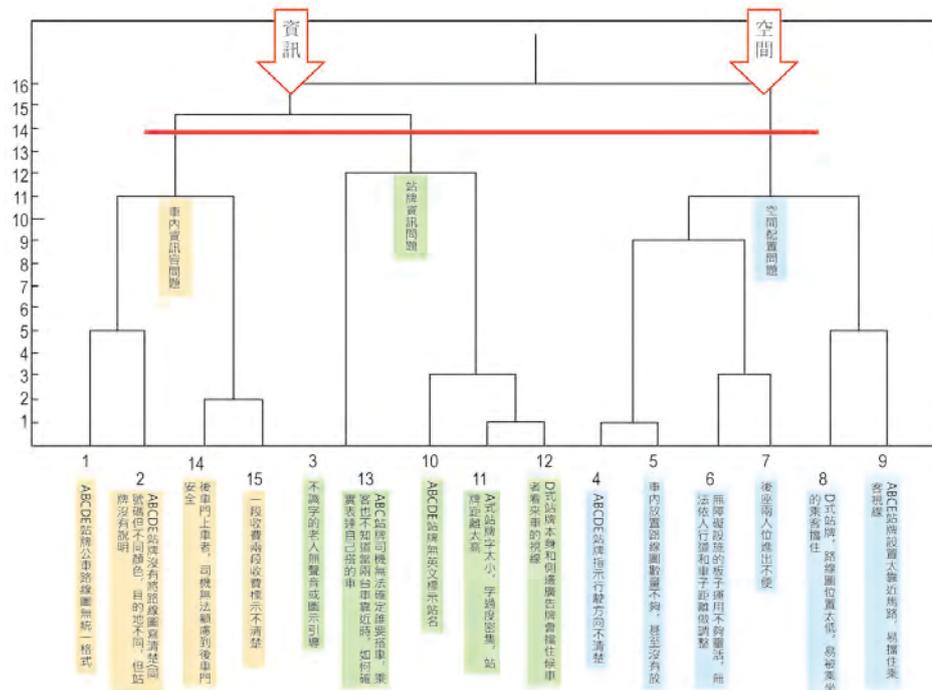
Figure 3. Tree Graph of Aggregated Analysis

Group 1: Information Issues

1. ABCD bus stop signs do not have unified route map format.

2. ABCD bus stop signs have unclear bus route map. (Ex. Same bus numbers but different colors or different destinations without clear instruction)

14. The bus driver cannot look after the safety of the passengers coming on from the back entrance.

15. Bus fare for 1section and 2 sections are unclearly shown.

Group 2: Bus Stop Sign Issues

3. No verbal guidance or clear icons for illiterate elderly.

10. ABCD bus stop signs do not have English subtitles.

12. The D type bus stop sign itself and the side advertisement boards will block the sight of the passengers, who are looking out for the coming buses.

11. The font size is too small and characters are overly crowded on A type bus stop signs. And the sign itself is too high for most passengers.

13. The drivers of bus on ABC type bus stop signs cannot identify which passenger wants to ride which bus, and the passengers don't know how to express their demand when both buses approach the bus stop at the same time.

Group 3: Space Allocation Issues

4. The progressing direction of the bus was unclearly shown on the ABCD bus stop signs.

5. There is not enough or even no bus route map on the bus.

6. The barrier-free facility is not flexible, and cannot be easily adjusted to the distance between the sidewalk and the bus.

7. The seats at the back of the bus are inconvenient for getting in/out.

8. For D type bus signs, the route map is too low and will likely be blocked by the seated passengers.

9. ABC type bus signs are positioned too close to the street and will likely block

passengers' sight.

- Analyze the Problems for Each Group
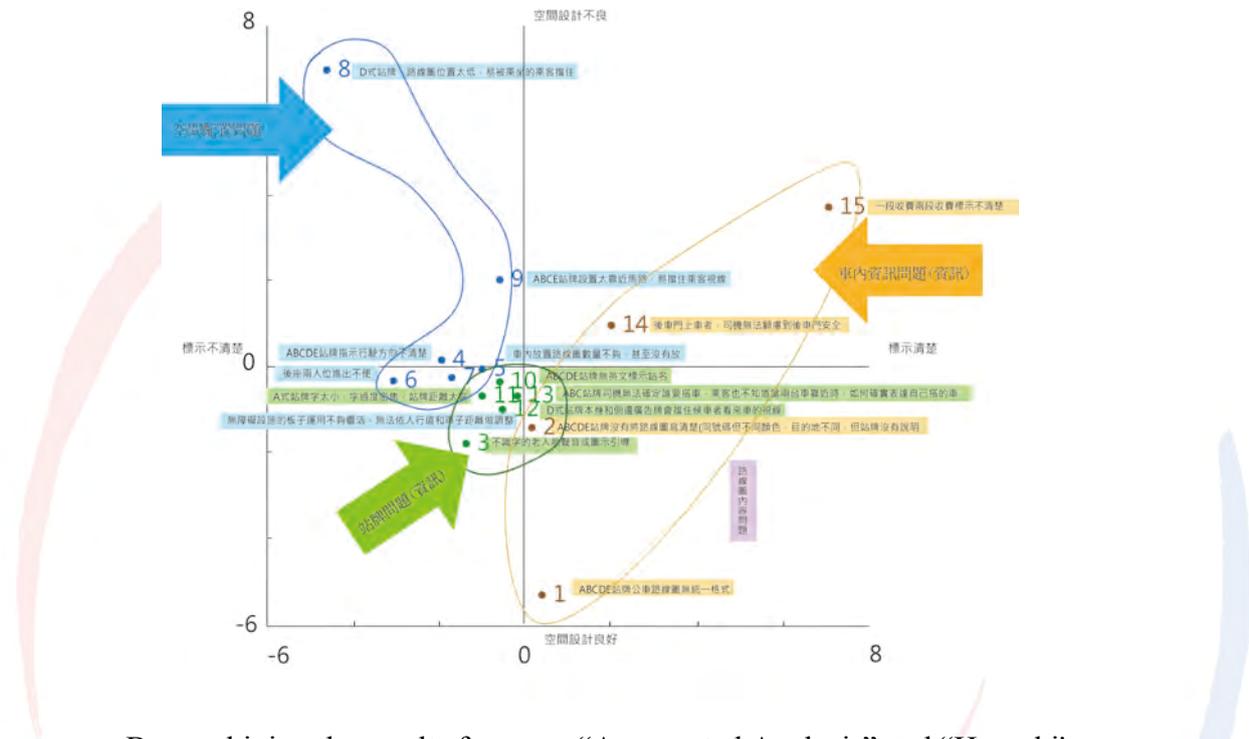
By combining the results from our "Aggregated Analysis" and "Hayashi's

Quantification Method of the Fourth Type", we are able to see the distribution of the 3

groups in the 3-dimensional space.

Figure 4: The Situation of Problem distribution within the Problem Space

Definition

- Design Specification

Based on the problem analysis, this research has generalized all the problem

issues into 3 major problem groups. First group is regarding the lack of information

provided inside the bus. Second and third groups are more related to the design of the

bus stop sign itself.   Therefore, for this research, we have decided to eliminate the

first problem group and focus on solving the problems of the second and third group,

by proposing a new bus stop design.

At this stage, we have convert the second and third problem group into

prospective goal and by using the Type chart method to develop a conceptual design

plan. Patterns in Figure can be used to expand the range of problem solving method,

and to stimulate the diverted thoughts. The specific method used is first, to set two

prospective goals and then, to list the accomplishable plans by means of Patterns in

Figure chart. After that, to choose a set of acceptable solution from each function plan

and last, to select an appropriate combination. Types of charts refer to chart 7.

Problem	Solving Proposal:	
Bus Stop Information	(1-1) Increase of illumination	(1-2) To lower the position of route map
Space Allocation	(2-1) The angle of the bus stop placement	(2-2) Avoid side ad board to prevent blind spot for passengers

. Development of Conceptual Design

Based on the above 2 requirements (1) Bus Stop Information issue and (2) Space

Allocation issue, we came up with 4 New Bus Stop design proposals

Combine (1-1) increase of illumination and (2-1) the angle of the bus stop placement

Combine (1-1) increase of illumination and (2-2) avoid side ad board to prevent blind

spot for passengers

Combine (1-2) to lower the position of the route map and (2-1) the angle of the bus stop placement

Combine (1-2) to lower the position of the route map and (2-2) avoid side ad board to prevent blind spot for passengers Proposal A

Combine (1-1) increase of illumination and (2-1) the angle of the bus stop placement

Using wing style and extend the top roof to provide more sun/rain shade. Raise the route map and time table position for better viewing and increase LED light on both sides for nighttime illumination.

Figure 6: Schematic plan of the bus stop in relation to the side walk
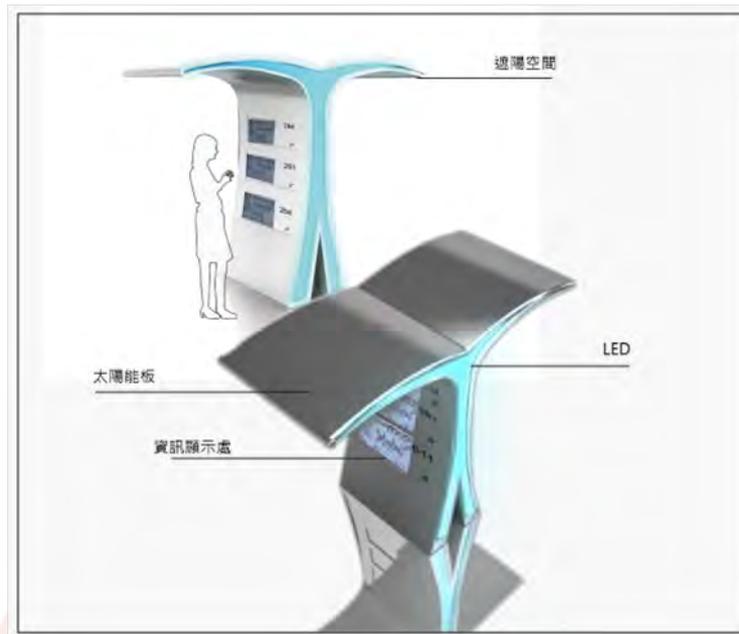
Figure 7: Design plan of Proposal A

Proposal B

Combine (1-1) increase of illumination and (2-2) avoid side ad board to prevent blind

spot for passengers

First, to enlarge the information board and then lower the route map position and raise

the bus timetable position for better viewing

Figure 8: Schematic plan of the bus stop in relation to the side walk.
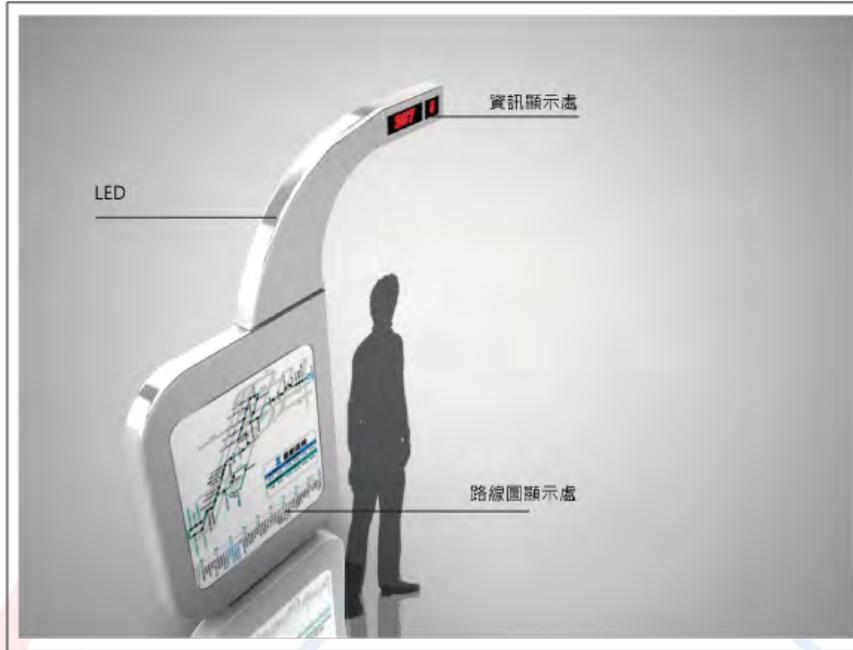
Figure 9: Design plan of Proposal B

Proposal C

Combine (1-2) to lower the position of the route map and (2-1) the angle of the bus stop placement

To create an open-space style bus stop with seating area and avoid ad boards to prevent blind spot the passengers. Also, to lower the route map for better viewing.
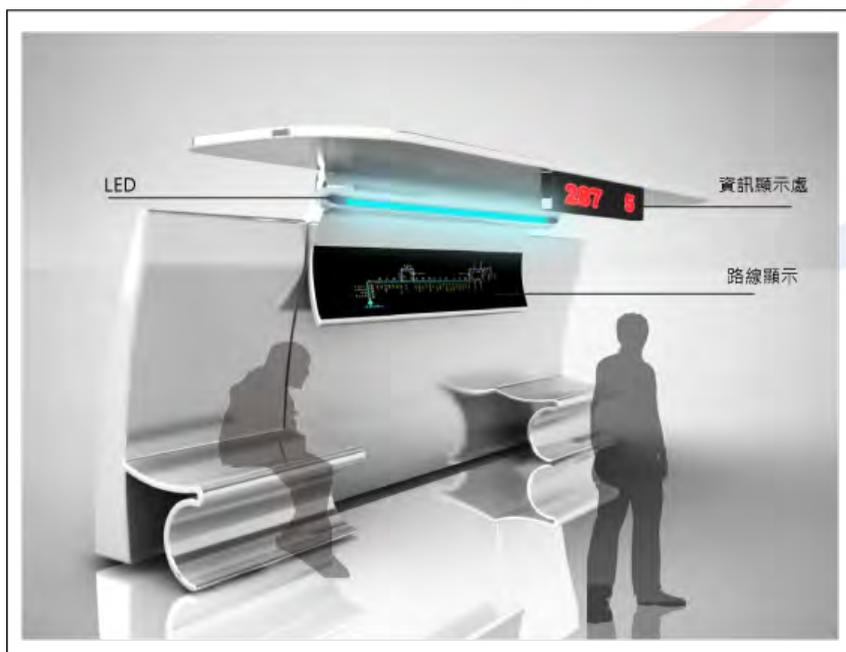
Figure 10: Design plan for Proposal C

Proposal D

Combine (1-2) to lower the position of the route map and (2-2) avoid side ad board to

prevent blind spot for passengers First, to replace the information board with

electronicdisplay panel, which will increase the quantity of advertisement and adds

night time lighting. The side of the bus stop will show the bus stop name so the

passengers know exactly where they are. Also, the bus stop will use clear or

transparent material which will prevent blind spot for the passengers waiting inside

Figure 11: Design plan for proposal D

Conclusion and Suggestion

This research using the design specifications set based on the result of "Aggregated Analysis" and "Hayashi's Quantification Method of the Fourth Type", to come up with ABCD four bus stop design proposals, which will greatly improve the problems of the existing bus stops.

Convenience: The position of the route map is lowered to passengers' eye level for convenient viewing. And the illumination facility will provide lighting for night reading.

Safety: The illumination facility installed on the bus stop can provide security for the female passengers waiting at night.

Openness: The bus stop eliminates the side advertisement board to avoid blind spot for the waiting passengers or to use clear or transparent material for the same purpose. In conclusion, this research evaluates the distinguished features of the ABCD proposals and decided that proposal C is the most appropriate bus stop design which also conform with the above 3 suggestions.

References

1.日本人間工學會編(2007)，《通用設計實踐方針》(ユニバーサルデザイン実践 ガイドライン）

2.田中直人(2009)，《通用設計圖像設計之手法和實踐》(ユニバーサルデザイン デザイ ンの手法と實踐)，学芸出版社

3.西村性格(2006)《日本的都市及路面公共交通》(日本の都市と路面公共交通) ， 学芸出版社

4. 樗木武(2004)，《通用設計的街道》 (ユニバーサルデザインのまちづくり)，
森林出版社

5.国土交通省，2003，高齢社会における公共空間の色彩計画調査報告書。ランドブレイン株式会社，p.15。

6.Wycoff， J. Mindmapping: Your Personal Guide to Exploring Creativity and
Problem-Solving. New York: Berkley Books,199
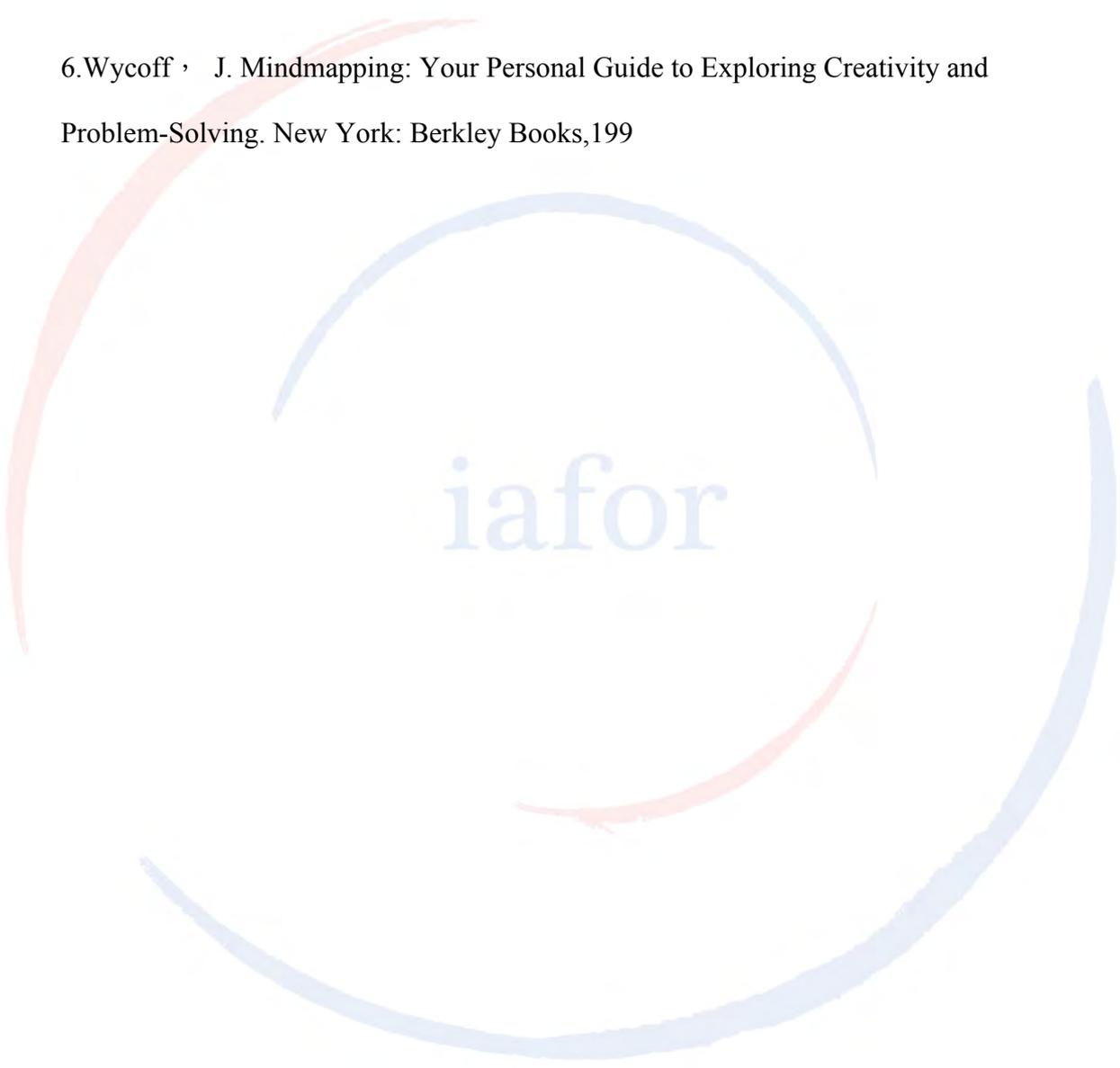
Universal Design y ith Cognitive Psychology Applied qn Sign cnd Guidance Information Systems qf Transport Public Station

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Abstract:

Universal Design is the "Human - Centered" idea, the universal design concept is "in the maximum possibility, shall facilitate everyone, regardless of genders, ages and capabilities". Traffic transportation environment involves a great number of users and a wide range of groups, to comply with the spirit of universal design.

The research is aim at the Banqiao station, proposed the design case to improve the signs and guidance information. Analysis problems, can be divided into "information content", "Visual interference" and "sign design" and "sign system integration" and " light" and "direction" 6 Class indicates that the information group. The research is plane the terms, symbols, text and layout of the configuration in order to comply with most of people used to target, use universal design principle to conform elements, delimit the design standard for the sign layout.

The research use virtual reality to building 3D scene of Banqiao station, for the testees can assess the new design sign system and layout, continuous to improve the guidance information system.

After the evaluation, significant improvement in new guidance sign, the item "fault tolerance and safety" and "assurance" get higher degree. According to the problem of passenger find their target facility and use sign, planning and design the sign and guidance information system, content the universal design principles, the project is also can applied on another transport station.

Keyword: universal design, cognitive psychology, user behavior, guidance sign

1. Motivation

Universal design (Universal Design, UD) Design is centred consider the idea for "in the context of maximum possible, regardless of gender, age and ability, easy for everyone to use the design of products and environments". Transport characteristics of the facility have a wide range of large users, groups, and transportation for all environments should be designed to maximize the easy to use, and to comply with the spirit of universal design.

On the practice of universal design, established a comprehensive solution and ex-post evaluation is extremely important. Individual parts of the solution for the traffic environment improvement can be considered a universal design, but what system is used in the so-called systemic universal design perspective cannot be ignored. As far as the practice, systemic elements and analysis facilities into facilities of user behavior, giving priority to build an objectively reflect transportation facilities "generic" design features and to review pointer to General design of transportation facilities and systems are necessary.

2.   Status sign system problem

This research for Banqiao station text exports to express South line via route existing pointer Problems and guidance information gathering and investigation, the pointer problem summarizing tables. As shown, can be divided into the "information content", "Visual interference" and "pointer design" and "pointer integration" and "pointer light" and "direction" 6 Group for the great class instructions.

Sign and setting planning

Outside the landmark five-sign system planning (Tables 4-3) , Respectively, for the top hanging light box (7) , Post post (4) , Wall light box (3) , Wall stickers (2) And position the sign (4)   , QR CODE Planning at the wall, such as light boxes, pillar post office, set the sign position as in Figure 4-3 As shown in. Landmarks are not provided for the following reasons :(1) to stick to supporting signs, when limited space conditions cannot be set hanging or wall type sign to adequately convey the information helps. (2) landmark does not like a hanging sign or large wall can be seen from a distance, vulnerable to stand still for a long while the foot of pedestrians watched, delay the speed led the crowd blocking traffic. Especially the programme set by the "tiexi export - Banqiao MRT station" in line, too close to existing landmarks from tiexi outlet problem. (3) passenger travelling to different purposes in the station, passenger of a destination may have come from many directions, if they appear one by one mark to put the "a" complex marking, easy to form Visual interference, influence field stood disadvantages such as beautiful and difficult to maintain.

Pursuant to issue findings and plan sign to set the location of the following:
(1)Reduction is set:
l Released affect the pedestrian route of the original iron bar
l Exports out of the station with his West
l Posted without finishing column
(2)Shift:
l Is it near the exit leading to high elevation, as well as top of the line to a halt hanging light box, move on to a better identification of the central channel
(3)Additional:
l Wall stickers - Indicates the main facilities and directions

l Wall light boxes - Within the station provided around the floor plan and guidance
   map
l Pillar post - Located in the important interchange facilities display position and
   channel.

   Hanging light box

(1)Size and set the height

   Banqiao station spacious channel space, high and low, in line with the spatial
differences in the height of, top hanging light box set height to be adjusted, top-hung
set the height of the light box at the high 3000mm (4-4) In the new municipal
government, leading to the rapid transit system in the North channel at the lower due
to high, set the height set to 2700mm (4-5) , Passers-by a clear for easy reading.
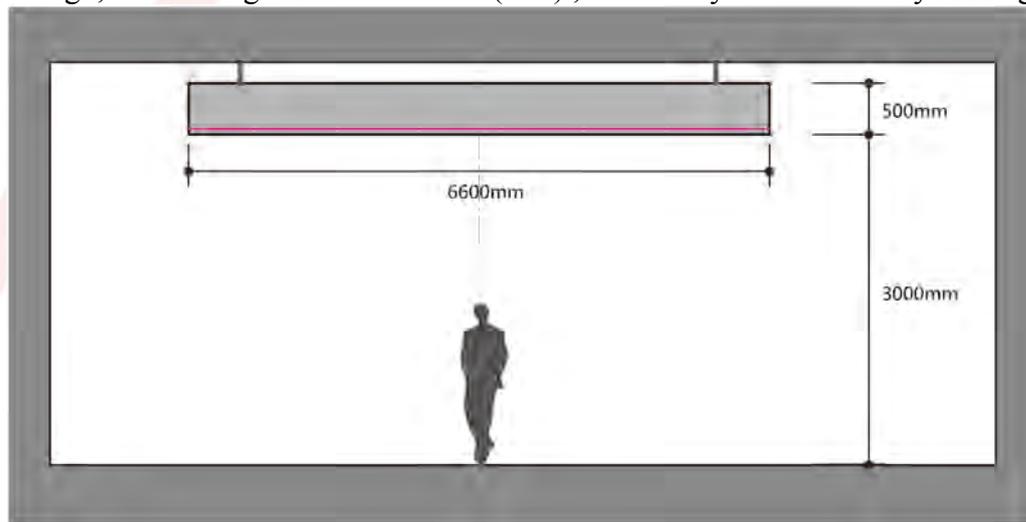
High hanging light box size and set the height
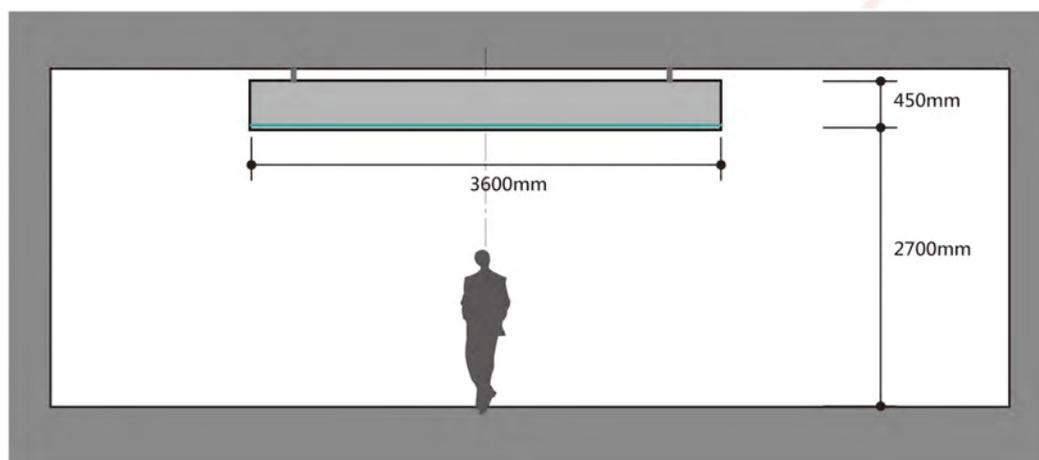
North-South channel top hanging light box size and set the height

Corresponding to the actual space of the sort

   Top hanging sign design information to correspond to the actual space layout
(Picture 4-6) , Center point directly in front of the sign, sign side reverse direction
read, respectively, between character codes for appropriate facilities in the Middle,
from the symbols of the arrows on either side near the far.

Text

Text selection criteria based on the size of Japan Ministry of land, infrastructure and transport "for public transport passenger facilities move smooth conditioning guidelines", and China's Ministry of railways authority of "provisional norm of universal design" (this specification to refer to Japan specifications, content the same) the specifications under different Visual identification of effective text size (Tables 4-6) 。 Top hanging light box between the distance of the current planning for the 23m, large in English and Chinese respectively to 95mm , and 60 mm (4-21), in line with the norms of a valid type size, in small letters respectively 65mm and the 50mm (4-22), for the secondary text of the code, distinguished scope to hang from the top light box 15m . English font specifications for the identification of high Gothic type in table 4-7 below.

Table 4- 6 Japan Ministry of land, infrastructure and transport standard effective text size

Depending on distance	Japanese text high	English text high
30m	120mm Above	90mm Above
20m	80mm Above	60mm Above
10m	40mm Above	30mm Above
4~5m	20mm Above	15mm Above
1~2m	9mm Above	7mm Above

Color specifications

Japan Ministry of land, infrastructure and transport "for public transport passenger facilities move smooth art preparation guidelines" to color combinations of specifications are summarized as follows:

Taking into account the number of cataract of old age, combinations of black and blue, yellow and white is not used as much as possible. Choose a color combination for easy recognition, through the combination of the color contrast between increasing comprehension of. Select text color combo and end of easy to read text, blue and white or black and white black and white words easier to read, but need to pay attention to text size and weight balance. Combinations of color, make sure that the civilization of the poor in 5 above, is easier to see.

Design specifications reference above, sign background should remain as a black or dark gray. Mark text on the use of contrasting colors, can be more floating display of information content, improve identification, enhance memory, so inbound information set text color to yellow and white, compared with deep black background to achieve the best results. Flag background with an image of public facilities should have a clear contrast to ensure good readability of code with a white background, dark blue mix images, improve comprehension of, and background color and there is a clear distinction. In addition, the new pink line as a sign to something to the bottom line color schemes, and field stations in the East-West channel installation art with continuity of color, blue to sign bottom line color scheme for the North-South, and South line close to, hinted to the South.

Table 4- 8 List of color specification

Color	Use
C:0 M:0 Y:0 K:85	Black for light background
C:0 M:10 Y:100 K:0	Yellow indicates the station information
C:0 M:0 Y:0 K:0	White said the station information
C:100 M:100 Y:40 K:0	Dark blue symbols used
C:20 M:90 Y:40 K:0	Bottom line color pink things to sign, and field stations in the East-West channel installation art with continuity of color.
C:80 M:35 Y:35 K:0	Bottom line color blue for North-South sign, and South line close to, hinted to the South.

This test to 3D Max Software build Banqiao station virtual reality projector projection on the curtain, pedestrian simulation field stations at the actual Visual angle to watch the sign and use the pedestrian guidance devices looking for destinations , Projection height is set to the scope 380cm , Set the height of the actual current sign

When testing, in order to avoid users are seeking the road during learning effect, affecting experimental results, in a three-stage test for different users. This experiment is in line with the measure to move direction, controlled by the operator to assist screen picture move forward and objective record, shooting people in road tests of the homing procedure and reaction conditions.

Experimental side view
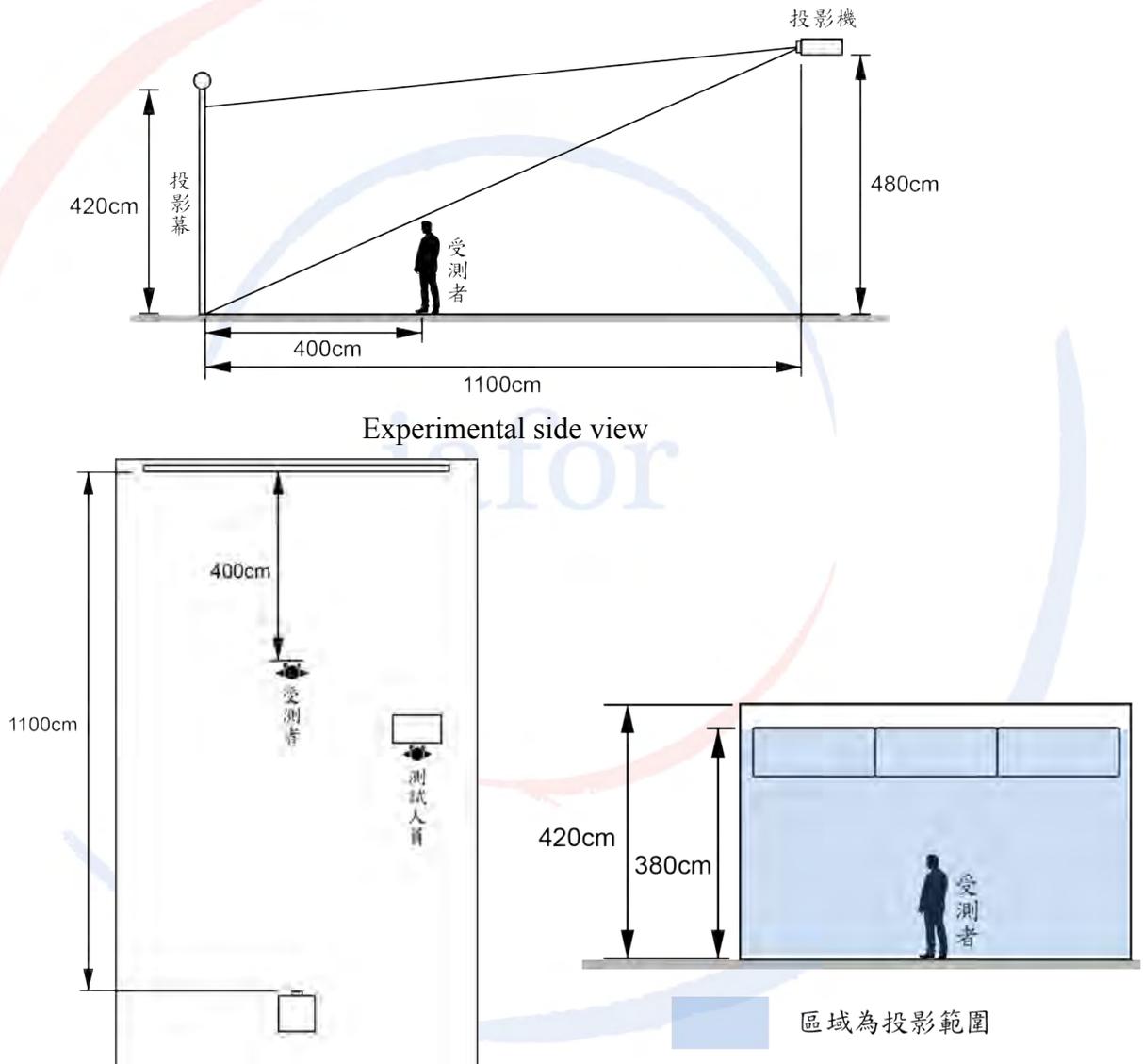
Conclusion

This stage for Banqiao station existing signs and sign of the new planning system and the system design of the pedestrian guidance, implement universal design evaluation, result arrangement are as follows:

1. After evaluation tests, the new plan sign system, than many existing signs to improve significantly, 「 Fault tolerance and security 」 「 Sense of peace of mind 」 Higher satisfaction on the project, but also has a measured response : Column-like sign to new planning system light box white background, easily allow users to glare, or area-wide floor plan color luminosity too low issue response in evaluation of projects 「 Of accommodation 」 「 Aesthetics 」 On. Points and opinions on all issues, the design revised in the next stage.
2. Sign systems and environmental orientation of distinct color lines as a guide, you can guide the user in the right direction.

Continuous improvement is the spirit of universal design, this section is based on the former stage of the pointing system and pedestrian guidance system of evaluation of universal design, sustainable design of the correction, and make proposals for improvement. To apply universal design method of perfecting the practical case.

Reference

The Application qf Modularization Technique kn Universal Design —A Case Study qn Guided Device

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0430

The Asian Conference on Psychology & the Behavioral Sciences

Official Conference Proceedings 2012

Abstract:

This study aims to inquire the possibility of converting modularization into a design technique and application to a universal design process. The study has 5 parts in sequence as process. In part 1, the generalization of strengths and challenges of modular design and universal design in terms of literature review embodies the value of this study. Part 2, presents a proper universal design process obtained by comparison and generalization of various design process; moreover, through case collection and investigation and focus interviews with experts, 3 structure elements and 5 combinations were generalized. Part 3, the modular design process was exerted through integrating applicable to universal design. Part 4, employed the design process to guided device design to conform universal design scope. Part 5, through the different groups assessed the conceptual programs. The final outcomes, the technique conform to university design development, which allowed users to participate in design process and share experiences.

Keyword: Design technique, modularization, universal design, cognitive psychology

1. Motivation and background

Universal design (UD) valued as a key trend helps advance advantages and profits for users and designers via good interactions. Despite UD introduced to infrastructure, design methods are left untouched but some items of design or draft are mentioned in the literature. Most studies focus on the human-related data analysis and design evaluation or even narrow mechanical modularization.

This study aims to find a technique adequate to UD and focuses on the core design phase, design process between situation-specific requirements and design evaluation in particular, i.e. proceedings of the phase *from concept to design*.

In general, design flow demands much time and money; on the other hand, UD cannot fulfill the minor users. However, modular strengths and principles along with a flexible design technique can save time, power and money as well as satisfy all users. The objectives are as follows: (1) the application of modular design (MD) technique in UD; (2) relations between MD models and corresponding UD demands; and (3) MD techniques.

2. Framework

In the first place, the variance of design process was obtained by comparison and survey and focus interviews with experts. 3 forms and 5 models were generalized thereby. Then, clusters were categorized by matching said forms and models against 10 UD principles. A 6-step modular design (MD) flow was exerted through 3 MD steps and adequate UD steps. Finally, a MD matrix developed thereby served as the tool.

Motivation & background

▼

Literature

▼

Collection of design flow	Collection of cases	Interviews with experts
▼	▼	▼
Variance	Generalization	Outcomes

▼

Modularization

▼

Deployment

▼

Evaluation   Verificatio

▼

Concluding remarks
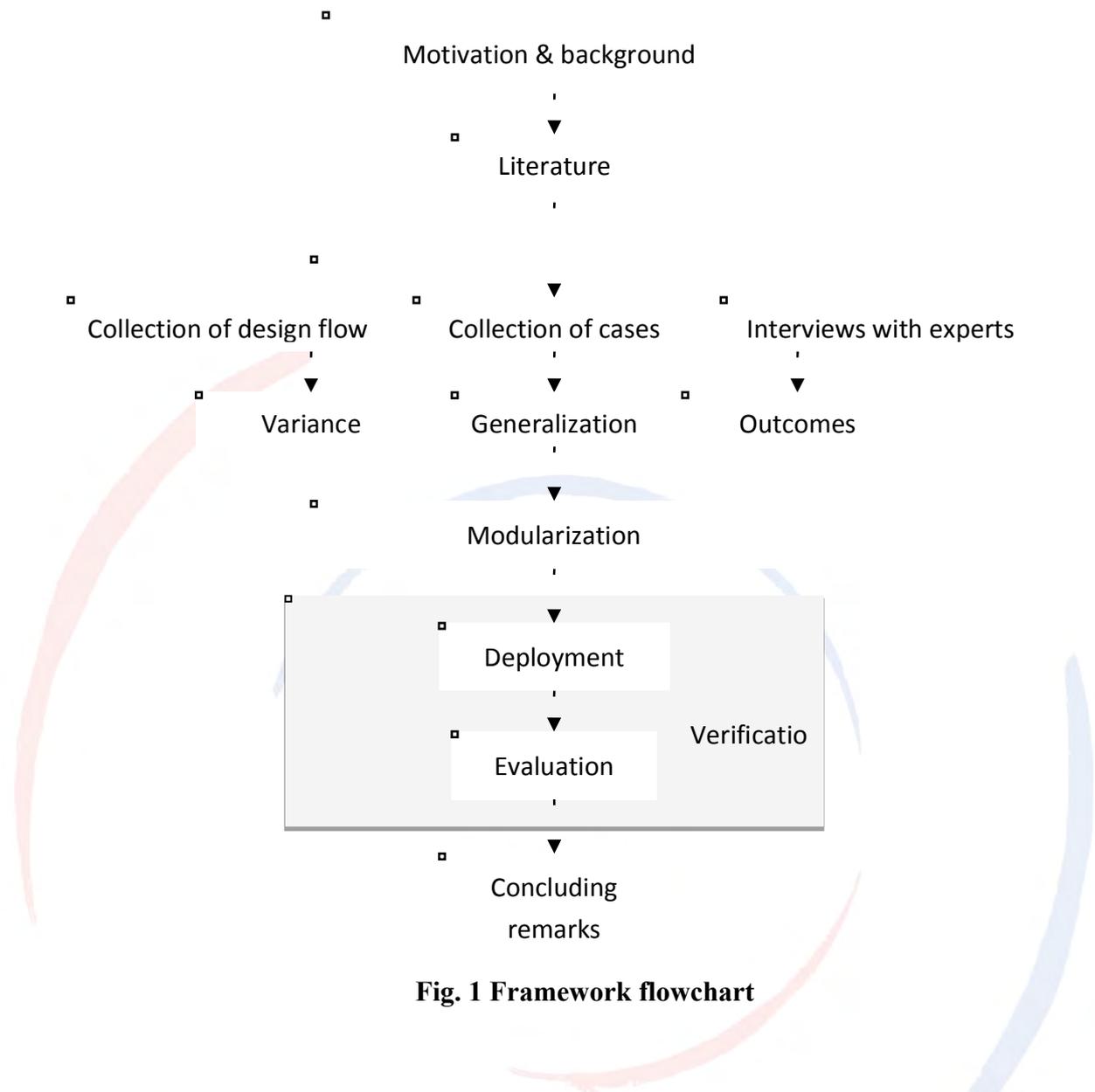
Fig. 1 Framework flowchart

3. Strengths of UD

Table 2-1 shows the comparison of common, UD and disability specific items in terms of user-based perspectives. By cross analysis, UD contributes to the society because UD items with low price, handy availability and **more options advance dignity and acceptance** of those with disabilities in a social setting. On the contrary, disability specific ones render the inferiority. The price of UD items might be lowered by mass production that reduces cost of development and marketing.

Table 1 Comparison of UD effects

	Good or bad	
Common	Good	* More options * Easy to get by low price
	Bad	* Hard to use for people with disabilities
UD	Good	* Easy to use for people with disabilities * Easy to get * Low price * More options * Happy to use for people without disabilities * **Advanced dignity of people with disabilities**
	Bad	* High price
Specific	Good	* Easy to use for people with disabilities
	Bad	* **Hard to buy** * **Few options** * **High price** * **Inferiority of people with disabilities**

In terms of the literature, modularization characterized by flexibility to divide time, space and system thus has potential to fulfill the broad sophisticated UD demands; moreover, it is possible to become a design technique adequate to infrastructure design. From Nakagawa (2006), UD is defined as a Design for All (DfA) providing satisfactory design of items, services, circumstances and information that fulfills diversified demands of respective users.

The principles include: (1) equitable use, (2) flexibility in use, (3) simple and intuitive, (4) perceptible information, (5) tolerance for error, (6) low physical effort, (7) size and space for approach and use, (8) economical and endurable, (9) aesthetic with quality, and (10) carefree and hazardless. In fact, it is hard to meet all of said principles.

According to the Universal Design Guideline by the Japan Ergonomics Society (JES), the challenges of UD include: (1) insufficient understanding, competitive price and investment for users from makers, (2) incorrect items for self-tolerance and insufficient recognition of users' demands, and (3) inadequate design technique due

to insufficient information unable to fulfill users' demands.

Amidst, insufficiency of understanding and competitive price along with inadequate design technique urges the researcher to conduct this study. Therefore, it is necessary to resolve such challenges via a more practical design technique that includes both aesthetic and cost structures in association with interaction with users during design development for authentic fulfillment of users' demands.

4. Operations

The operational procedures of modular operations contain 3 basic steps a.k.a. disassembly, classification and reassembly referring to division in terms of analytic demands and limits, clustering a homogenous body or accessories and integrated design after matching connected manners, respectively.

Disassembly divides a main body and changeable parts precisely in terms of structural patterns or functionalities. Classification clusters main or side structures in terms of attributes. Reassembly renders the arrangement of necessary units and standardized specifications in terms of users' demands.

During the commercialization, it is necessary to take into account how many options are kept for users in the reassembly phase besides design planning. In other words, the key for a UD item to be accepted by users is determined by time and manner for modularization since users evolve faster than the evolutionary cycle of an item at times. Thereupon, it is mutually beneficial to reserve adequate room for DIY.

Table 2 Time and manner for modularization

Time	Manner	Operation	Effectiveness
Pre purchase	Photo	Store or website	Low
During purchase	Sample	Testing at a store	High
Post purchase	Accessory (photo)	Shopping at a website	Mid
Post purchase	Sample + accessory	Testing at a store	High

5. Modularization Technique of Design

This sector proposed 3 forms and 10 UD principles via generalization and clusters thereby. A new MD flow matrix obtained via integrating 3 operational steps of modularization and developmental flows adequate to UD served as the tool.

Forms and 10 UD principles

The following clusters were generalized by 3 forms and 10 UD principles in **3.2**:

A. Pattern (system and manner): (1) equitable use, (2) flexibility in use, (5) tolerance for error, and (10) carefree and hazardless;

B. Location (space and size): (3) simple and intuitive, (4) perceptible information, (6) low physical effort, (7) size and space for approach and use, and (9) aesthetic with quality; and

C. Time (flow and frequency): (8) economical and endurable.

Design flow obtainment

An MD flow was acquired by integrating parts of design flows in 3.1 adequate to UD and 3 operational steps of MD in 3.4 as fig 3:

Planning   Proposal

Mechanical
and design   Synchronous
                 conceptual
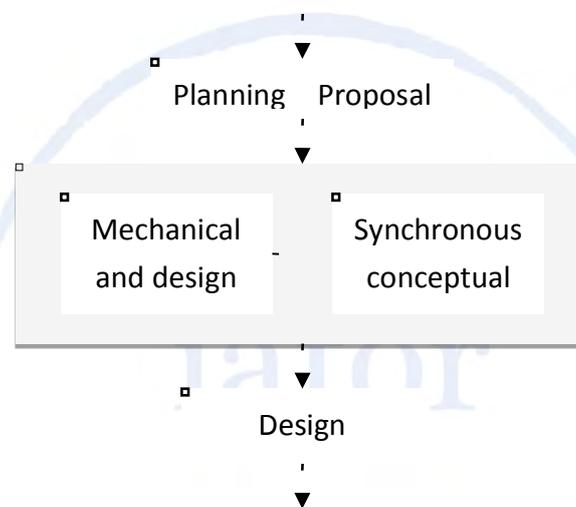
Design

Fig. 3 Design flowchart

Design flow deployment

See fig 4 This is MD technical deployment.

```
                    ▼
┌────────────────────────────────────────┐
│  □                                      │
│    ┌──────────────────────────┐         │
│    │  Identification of primary│         │
│    └──────────────────────────┘         │
│                    ▼                     │
│        □  ┌──────────────┐               │
│           │  Disassembly │       MD      │
│           └──────────────┘   deploymen   │
│                    ▼                     │
│         □ ┌──────────────┐               │
│           │ Classificatio│               │
│           └──────────────┘               │
│                    ▼                     │
│      □ ┌──────────────┐                  │
│        │ Reassembly of│                  │
│        └──────────────┘                  │
│                    ▼                     │
│      □ ┌──────────────┐                  │
│        │Integrated design│               │
│        └──────────────┘                  │
└────────────────────────────────────────┘
                    ▼
```
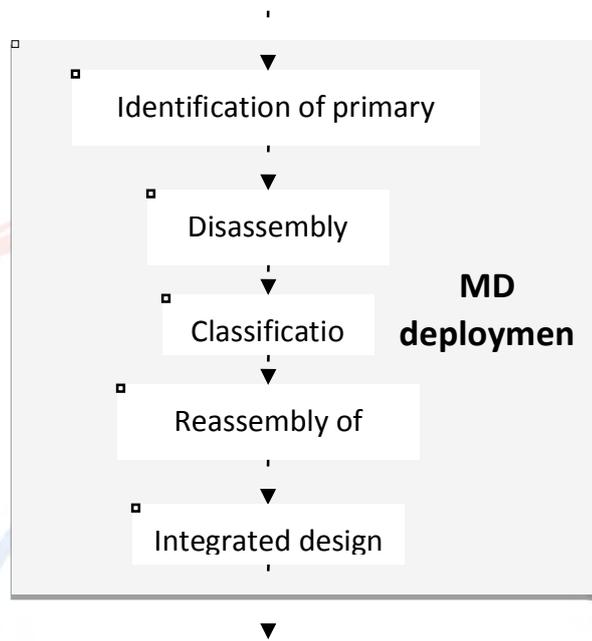
Fig 4 Modified design flowchart

Design flow

   As aforementioned, all concerns as well scope shall be defined in the beginning of design. See fig 5-3.

Situation

Situation extracted by

Planning Proposal

Identification of primary

Disassembly

Classificatio   **MD Deploymen**

Reassembly of main

Integrated design

Evaluation of
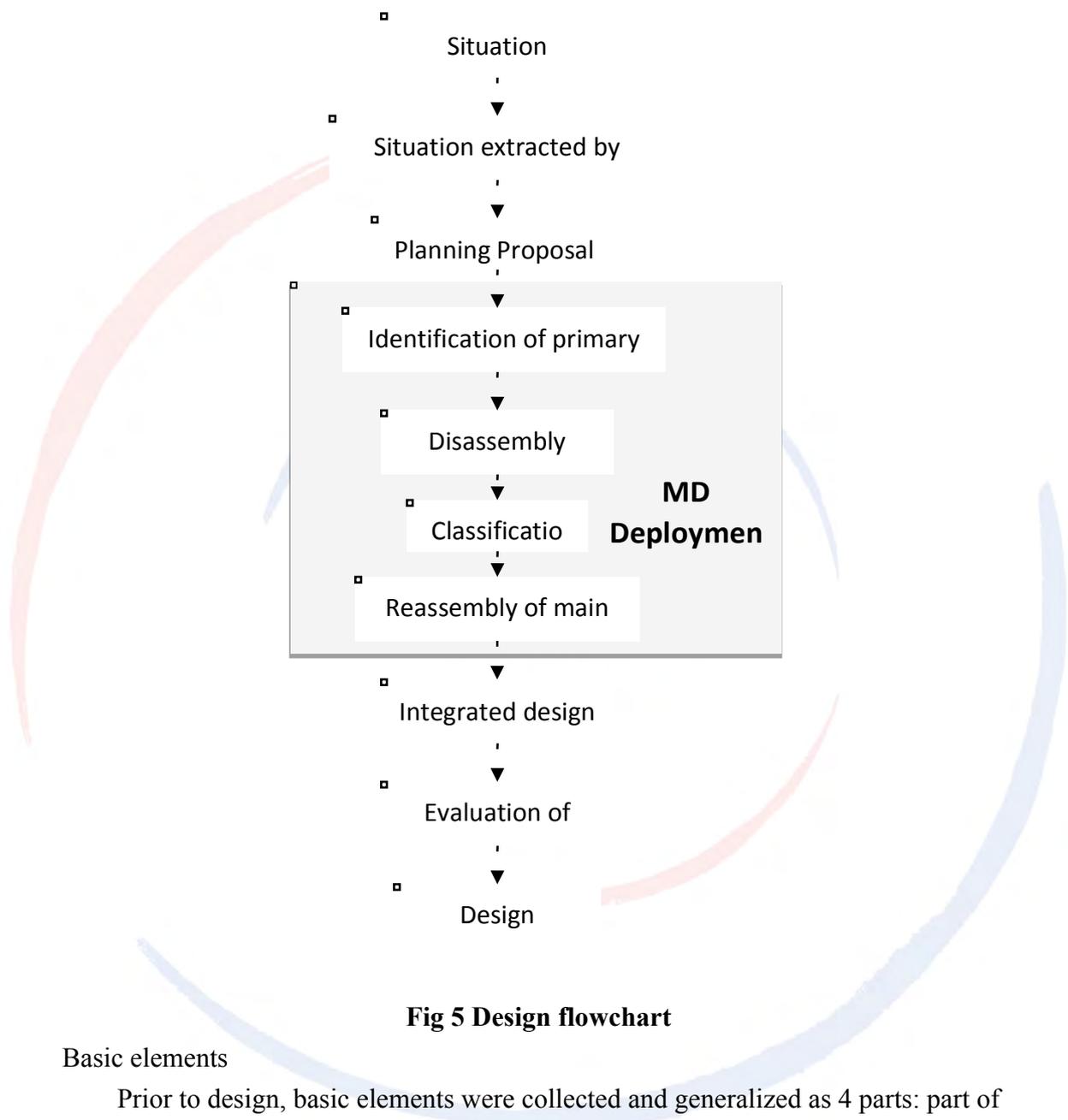
Design

Fig 5 Design flowchart

Basic elements

   Prior to design, basic elements were collected and generalized as 4 parts: part of functions: 1. message of direction, 2. voice output, 3. sensor; part of operating interfaces: inclusion of user-based experience, 2. portable and handy to use, 3. easy to operate and good feedback of interface, 4. communicative interfaces applicable to common users; part of style: 1. compliance with ergonomics, 2. not apt to get lost or to slip, 3. minor-friendly shape, texture and touch, 4. fashionable design; and part of structure: handy to keep and use, 2. ability to fold, rotate or push, 3. slim and small.

Table 3 MD variation

Modular Types	Model				
	Fixed main body + changeable side part	**Standardization + changeable linked manner**	**Change composition of functional units**	**Change material, shape, size, color and texture**	**Change time and frequency to use**
Modular Pattern	A1 Input manner & wireless AP/QR CODE + voice +3D	B1 Wireless AP/QR CODE + voice Input channels increased for information obtainment	C1 Options upon entry (interface)	D1 Form under users (English) or high contrast color and size of words (interface)	E1 Wireless AP/QR CODE Common / minors
Location Modular	A2 Main + outer	B2 Change portable way	C2 English or Voice	D2 Ergonomic or foldable	E2 Priority of location Button frequently used in the handy area
Time Modular	A3 Change the outer shape by time to use Change material, place, color of interface at respective points	B3 Change linked manner at peak time	C3 Flow queuing	D3 Change colors during service, material under seasons, outfit under places	E3 Simplified process for increasing service rate at peak time
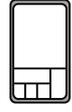
Integration

In the phase of integration, it was essential to maximize the possibility of holistic compositions and simplify the individuals. Via integration, table 5-9 and fig 5-13 show reference of MD integration and 4 proposals, respectively. Outcomes tell that a group with variation is better than a single choice of the best.

Table 4 MD integration

Proposal / Function Item	A	B	C	D
Mainframe		+ outer	Functional modules	Touch compass + voice
Linked manner	Flexible tape wrist	Card hopper neckband waist belt	Magic tape neckband and waist belt	Clip neckband and waist belt
Click way	Touch screen + real button			
Horn, headphone, voice system	Common headphone	Neckband headphone		
Specific item Point Accessory				

6. Concluding

3 forms and 5 models were generalized by outcomes. A 6-step MD flow was exerted through 3 MD steps and adequate UD steps. Finally, a MD matrix developed thereby served as the tool.

In terms of observation, said technique with great inspiration for creativity rendered more opportunities of participation in an initial design phase that impacted the subsequent operating process if the quality of an item and its design framework overlapped.

The author also found out that a. the interviewees affected the outcomes, b. unsatisfactory decisive process was influential to time, c. how to accumulate experiences, d. authentic models of samples were absent, and e. interface design is inevitable in the society full of technology.

Reference

李勇; 釜池光夫; 上田 Edilson，2009，乗用車におけるデザイン要件の評価構造の把握，日本設計學会研究論文集

蘆澤雄亮; 森行浩人，2009，デザインプロセス理論による FASE モデルの構築, 日本設計學会研究論文集

靜岡縣生活文化，2010，ユニバーサルデザイン実践マニュアル

日本人間工學会，2003，ユニバーサルデザイン実践ガイドライン共立出版株式会社

中山聰，2006，ユニバーサルデザインのる教科書，日経 BP

E&C プロジェクト編，1996， バリアフリーの商品開発 2，日本経済新聞社

清水敏成，2009，目と手で考えるデザイン，東京図書出版会

栄久庵憲司; 野口瑠璃 (株)GK，1997，かたちの構想力，鹿島出版会

Car Styling，2009.JLY，株式会社三栄書房

川内 美彦，2001，ユニバーサルデザイン−バリアフリーへの問いかけ，学芸出版社

Stuart Macey with Geoff Wardle; Art Center College of Design，2009，H-POINT， Design studio press

Stuart Macey with Geoff Wardle; Art Center College of Design，2009，H-POINT， Design studio press

Transportation Research Board，2006，Transit Cooperative Research Program Synthesis 68 ,Methods of Rider Communication, A Synthesis of Transit Practice, Appendix C Finland - HEILI good practice card 19.

The Relation between Cognitive Function and Simulating the Future in Middle-and Elderly Adults

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Abstract:

【Introduction】 Recent studies indicated that extremely long-lived persons such as centenarians had high levels of happiness. Especially, basic resources such as job training, cognition, health, social network, extraversion explained a substantial proportion of variance in happiness. Moreover, some resource effects were mediated through self-efficacy and attitudes toward life such as optimistic outlook. By the way, recently, neuropsychological evidence reveals that amnesic patients exhibit deficits in imagining future, as do patients with mild Alzheimer's disease. 【Aim】 These findings suggest that imaging future happening would be related to person's happiness and basic resources such as social network and cognitive functioning. However, it is not known because until recently, it has been largely overlooked the role allowing individuals to imagine possible future events. So, we examined whether the older adults simulating and predicting positively possible future events was related to the effects of resources such as memory performance and verbal fluency. 【Methods】 This study used a subsample of the population-based Y-town cohort study. On the basis of data from the Y-town registries, 398 individuals aged between 40 and 90. They were asked to take cognitive task (NU-CAB; Hatta, 2003) contained such as MMSE, verbal fluency et al. and fill out questionnaire related to social life. Finally, they were asked to circle on a scale from -5(completely live in misery) to 5 (fully live in happy) for their future of 1, 3, 5, and 10 year later?" 【Results and Discussion】 The results showed that older adults imaging positively the future, compared to negatively, had high level of cognitive function (especially, verbal fluency task) and multi social network. More importantly, this trend seems to be exaggerated with ages. Thus, it seems that psychological resilience depends on the adaptation to social and cognitive strains.

The relation between cognitive function and simulating the future in middle- and elderly adults

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As we grow older, some cognitive abilities decline, such as attention, information speed, memory, and so on, whereas others ability remains stable or improve (e.g., Mather & Carstensen, 2005) Especially, aged adults (over 60 years old) appear to increase positive affect and decrease negative affect (e.g., Diehl & Hay, 2007) (positivity effect; Mather & Carstensen, 2005). More interestingly, drawing on the Socioemotional Selective Theory (Carstensen, 2006), the perception of limited time arrears to lead to changing the priorities. Younger adults focus on optimizing the future, whereas older adults focus on the maximization of meaningful activities in the present (Carstensen, 2006; Fung & Cartensen, 2004; Lockenhoff & Carstensen, 2004; Charles & Cartensen, 2010). SST is a life-span theory of motivation that predicts enhanced emotion regulation with age (Cartensen, Fung, & Charles, 2003). Following the SST theory, it assumed that near future imagination to the present was positive in the older adults, whereas in the younger adults, the far future would image more positively.

Moreover, the evidence of positivity effect was obtained in attention and memory studies such as goal-directed selective processing, memory for words, pictures, faces (e.g., Mather, 2006). For example, Kennedy, Mather, and Carstensen (2004) showed that autobiographical memory in older adults could be likely to be distorted more positively.   Moreover, Nicole, Kryla-Lighthall, & Mather (2008) postulated that cognitive control might make it possible to lead to positivity effect. For example, compared to younger adults, older adults less recalled from a picture slide consisted of the negative pictures (Charles, Mather, & Cartensen, 2003). Also, in the older adults, autobiographical memories are more likely to be distorted in a positive direction (Kennedy, et al., 2004). Thus, older adults less report unhappiness events in their lives and would enhance well-being.   Specifically, they emphasized it is necessary for positivity effect to pass through the following three steps;   (1) emotional regulation goals likely to be activated in older adults, (2) the availability of cognitive processes and (3) memory and attention tasks is likely to be influenced by (2).   They emphasize that successful emotion regulation depends on active use of cognitive control.   Conversely, if cognitive function decreases, older adults are likely to less positivity bias and more negativity one.

Combined to the findings of SST theory and positivity effect, we could propose the below hypothesis. First, Middle, elderly, and older adults had high cognitive function could image positively the future on their lives, compared to those had low cognitive function. Second, elderly and older adults over 60 years old had the high cognitive function could lead to positivity bias in the future imagination, which was limited to near future to the present, such as 1 and 3 years later. On the other hand, elderly and

older adults over 60 years old with cognitive impairment could lead to less positive future imagination, compared to the high cognitive function, while keeping the same pattern that older adults could image more positively near future to the present, such as 1 and 3 years later.   Also, middle adults below 60 years old had the high cognitive function could do far future to the present, such as 5 and 10 years later, compared to the low cognitive function.

Thus, we examined the high level of cognitive function have influence on positive future imagination.   Few previous studies related to positivity bias in older adults have shown the direct relation between cognitive ability and positivity effect. For example, older adults participated in some previous studies of positivity effect were restricted with some degree of educational status (Kennedy et al., 2004), recognition (Spaniol, Voss, & Grady, 2008), whereas it remains unclear how those in the other previous studies have cognitive ability (Fung, Isaacowitz, Lu, & Li, 2010; Petrican, Moscovitch, & Schimack, 2008; Sullivan, Mikels, & Carstensen, 2010).   Therefore, here, we address the cognitive ability such as MMSE and Logical Memory test have influence on future imagination of middle, elderly, and older adults.

Moreover, Japan was one of the countries with long living people and especially, superiority of female longevity over male.   So, we examined the difference of future imagination between female and male for high vs. low cognitive function.

2. Methods

2.1   Participants

Two-hundred ninety six adults who participated in 2011 Nagoya University of Y-town cohort study were enrolled. They were selected according to the following criteria; those who answered the questionnaire of future imagination without voluntarily clinical examination, who were given MMSE, Logical memory test, and Stroop test. Participants in this study showed no sign of serious frailty syndrome such as metastasized neoplastic.   Informed consent was obtained from participants, and the study was approved by the Ethical Committee of Nagoya University Medical School (No.643).   Also, we divided participants into three age groups because we wanted to avoid the bias of number of participants, especially, few numbers of 40's and 80's. The basic characteristic of participants is shown in Table 1.

Table 1
Basic characteristics of participants in this study (n= 296)

		Age group		
		middle	elderly	old
Number of participants	female	60	56	56
	male	31	52	41
Mean age (years)	female	51.18	64.13	76.13
	male	51.13	63.38	76.32
Educational Status (years)	female	12.47	11.11	9.81
	male	12.39	11.33	10.73
Educational range (years)	female	9,16	9,14	9,14
	male	9,16	9,16	9,16

Note. Middle-aged group means the participants of 40 to 59 years old, elderly groups does the participants of 60 to 69 years old, and old group does the participants of 70 to 87 years old.

2.2   Questionnaire of near and far future imagination

Future imagination on their lives was measured based on the following question. "How will you image your life, compared to the present life? We assumed the present as a criterion "zero", +5 means that you will fully live in happy and -5 does that you will completely live in unhappy. You can circle the preferred number for 1, 3, 5, and 10 years later, respectively.   Please be careful that the criterion is the present (0).   Once again, we assumed the present ("0") as a criterion, you must image your live for each of 1, 3, 5, and 10 years later.   For example, you should not image your life after 3 years, compared to 1 year later. Similarly, you should not image your life after 5 or 10 years, compared to 3 years later."   Thus, participants were asked to circle the appropriate number (-5 to +5) for each four question (1, 3, 5, and 10 years later). We exaggerated that criterion was the present, but not last year.

2.3   The assessment of cognitive function

MMSE (mini-mental state examination; Folstein, Folstein, & McHugh, 1975) and Logical memory test (LMT) (Japanese short version of Wechsler memory scale) was employed to assess participants' cognitive abilities as a part of medical examination. The test was given individually according to the time required by the participants.   In the LMT, the examiner read a short story, consisting of 25 segments, twice, and each participant was asked to recall the story immediately. Usually the LMT takes into consideration both immediate and delayed conditions, but in our medical checkup on, since previous examination of the correlation coefficient between the score of immediate and delayed recall conditions was sufficiently high ($r = .92$) (Hatta, Nagagara, Iwahara, & Ito, 2005). Each segment that was correctly recalled by the participant was assigned a score of 1 point, therefore the total score ranged from 0 to 25

points. This method was employed to examine the memory function.

Results

Future imagination
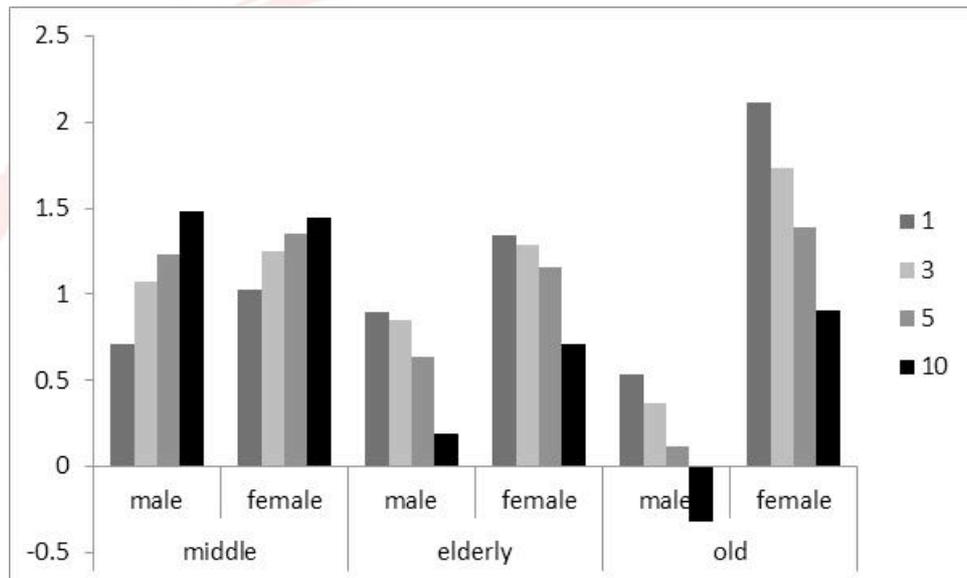
Figure 1 Mean score of future span (1 to 10 years) as a function of age and sex. The vertical axis indicated the score that fully live in happy (+5) to unhappy (-5). Middle-aged group means the participants of 40 to 59 years old, elderly groups does the participants of 60 to 69 years old, and old group does the participants of 70 to 87 years old.

The results of a 3 (Age: middle vs. elderly vs. old) × 2 (Sex: female vs. male) × 4 (Future span: 1, 3, 5 or 10 years later) ANOVA indicated that there was a significant main effect of Sex (F (1, 290) = 7.48, MSe = 123.44, $p < .01$), with female participants being significantly more positive than male participants.   Also, there was a significant main effect of Future span (F (1, 290) = 7.48, MSe = 123.44, $p < .01$), with 10 years

later being significantly less positive than 1 (t (870) = 4.77, MSe = .87, $p < .001$), 3 (t (870) = 4.58, MSe = .87, $p < .001$), and 5 (t (870) = 3.15, MSe = .87, $p < .01$) years later, but did not differ among 1,3, and 5 years later (respectively, $t < 2$, ns).

Also, the interaction, Age × Future span was significant (F (6, 870) = 14.00, MSe = 12.21, $p < .001$).

In the middle aged group, the effect of Future span was significant (F (3, 870) = 6.75, MSe = 5.88, $p < .001$). Future imagination score in the 10 years later was positive than that in the 1 (t (870) = 4.30, MSe = .87, $p < .001$) and 3 (t (870) = 2.24, MSe = .87, $p < .05$) years later, but not differed from the 5 years later (t (870) = 1.29, ns).   Also, 5 (t (870) = 3.01, MSe = .87, $p < .01$) and 3 (t (870) = 2.06, MSe = .87, $p < .05$) years later were positive than that in the 1 year later, but no difference between the 5 and 3 years later ($t < 1$, ns).   Middle aged adults seem to image their lives more positively as future span was far.

Also, in the elderly (F (3, 870) = 9.84, MSe = 8.58, $p < .001$) and old (F (3, 870) = 20.63, MSe = 17.98, $p < .001$) groups, the effect of Future span was significant.   Both in the elderly and old groups, future imagination score in the 10 years later was less positive than that 1 (elderly; t (870) = 5.26, MSe = .87, $p < .001$, old: t (870) = 7.65, MSe = .87, $p < .001$),3 (elderly: t (870) = 4.82, MSe = .87, $p < .001$; old: t (870) = 5.61, MSe = .87, $p < .001$), and 5 (elderly: t (870) = 3.50, MSe = .87, $p < .001$; old: t (870) = 3.44, MSe = .87, $p < .001$) years later.   In the elderly group, the difference among 1, 3, and 5 years later was not significant (1 and 3 years later: $t < 1$, ns; 1 and 5 years later: t

< 1.77, $p < .08$; 3 and 5 years later: $t < 1.32$, ns).   In the old group, future imagination score in the 5 years later was less positive than that in the 3 ($t(870) = 2.18$, $MSe = .87$, $p < .05$) and 1 ($t(870) = 4.21$, $MSe = .87$, $p < .001$) years later, and that in the 3 years later was less positive than that in the 1 year later ($t(870) = 2.04$, $MSe = .87$, $p < .05$).

The influence of cognitive function on near and far future imagination

High vs. Low groups on MMSE score
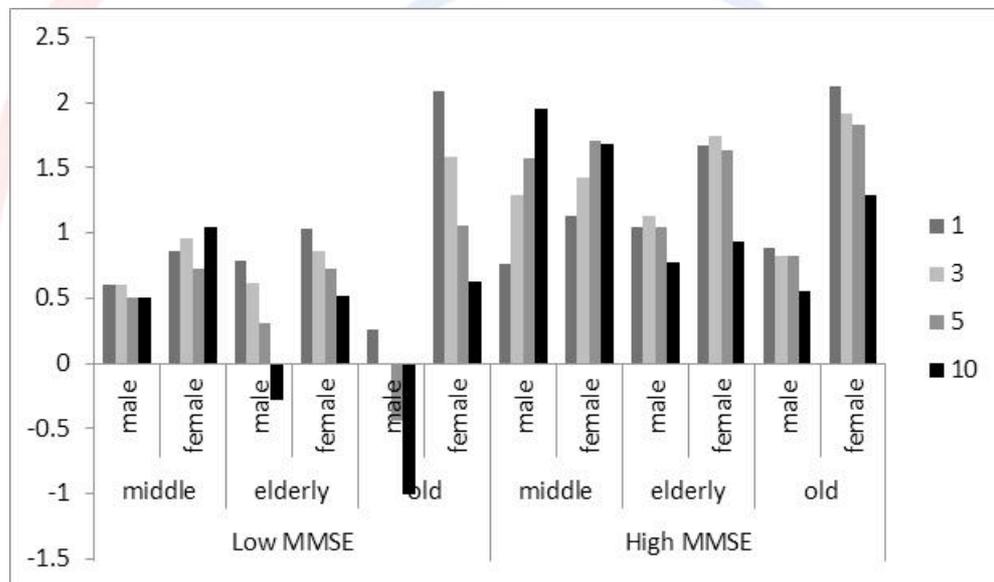
Figure 2   Mean score of future span (1 to 10 years) in Low vs. High MMSE group as a function of age and sex.   The vertical axis indicated the score that fully live in happy (+5) to unhappy (-5).

A 2 (MMSE: High vs. Low) × 3 (Age: middle vs. elderly vs. old) × 2 (Sex: female vs. male) × 4 (Future Span: 1, 3, 5 or 10 years later) ANOVA revealed a main effect of MMSE ($F(1, 284) = 8.25$, $MSe = 136.46$, $p < .01$), Sex ($F(1, 284) = 7.27$, $MSe =$

118.69, $p < .01$), and Future span (F (3, 852) = 9.76, MSe = 8.38, $p < .001$).   The future imagination score of high MMSE group was more positive than that of low group. Also, the future imagination score of female was more positive than that of male. Moreover, they could image more positively the future after 1 (t (852) = 5.10, MSe = .86, $p < .001$), 3 (t (852) = 4.76, MSe = .86, $p < .001$) and 5 (t (852) = 3.18, MSe = .86, $p < .01$) years, compared to 10 years later, but no difference between 1 and 3 years later ($t < 1$, ns) and the future imagination score of 1 years later was marginally positive than that of 5 years later (t (852) = 1.92, MSe = .86, $p < .06$).

Moreover, the interaction, MMSE X Future span was significant (F (3, 852) = 7.20, MSe = 6.18, $p < .001$).   In the high MMSE group, there was no difference among the future imagination score of 1, 3, 5, and 10 years later ($F < 2$, ns).   On the other hand, in the MMSE low performance group, there was the difference among the future imagination (F (3, 852) = 15.12, MSe = .86, $p < .001$).   Especially, the future imagination after 10 years was less positive than that after 5 (t (852) = 2.26, MSe = .86, $p < .05$), 3(t (852) = 4.93, MSe = .86, $p < .001$), and 1 (t (852) = 6.48, MSe = .86, $p < .001$)years, and that after 5 years later was less positive than that after 3(t (852) = 2.67, MSe = .86, $p < .01$) and 1 (t (852) = 4.22, MSe = .86, $p < .001$)years, but no difference between 1 and 3 years later ($t < 2$, ns.).   The future imagination score of low group decreased gradually as a function of Future span, whereas that of high group was more positive consistently, irrespective of Future span.   Actually, in the 1 year later future span, the future imagination score of the high MMSE group did not differed from that of the low MMSE group ($F < 1.52$, ns), whereas in the 3 (F (1, 1136) = 5.35, MSe = 25.27, $p < .05$), 5 (F (1, 1136) = 12.85, MSe = 60.76, $p < .001$), and 10 (F (1, 1136) =

13.07, $MSe = 61.78$, $p < .001$) years later, that of the high MMSE group was more positive than that of the low MMSE group.   The cognitive assessment such as MMSE had influence on the difference of far future imagination, which the low MMSE group seemed to change in the direction to the negative imagination.

Moreover, the interaction, Age X Future span, was significant ($F (6, 852) = 10.39$, $MSe = 8.93$, $p < .001$).   In the middle ($F (3, 852) = 3.68$, $MSe = 3.16$, $p < .05$), elderly ($F (3, 852) = 7.72$, $MSe = 7.72$, $p < .001$), and old ($F (3, 852) = 17.87$, $MSe = 15.35$, $p < .001$) age groups of each, the effect of Future span was significant. In the middle aged group, the future imagination score after 10 ($t (852) = 3.32$, $MSe = .86$, $p < .001$) and 5 ($t (852) = 2.10$, $MSe = .86$, $p < .05$) years was more positive than that after 1 year, whereas that after 10 years marginally positive than that after 3 years ($t (852) = 1.68$, $MSe = .86$, $p < .10$) and that after 5 years did not differed from that after 3 years ($t < 1$, ns).   Also, there was no difference between 1 and 3 years later ($t < 1.70$, ns), 3 and 5 years later ($t < 1$, ns), and 5 and 10 years later ($t < 1.30$, ns).   In the elderly aged group, the future imagination score after 10 years was less positive than that after 1($t (852) = 5.13$, $MSe = .86$, $p < .001$), 3($t (852) = 4.77$, $MSe = .86$, $p < .001$), and 5 ($t (852) = 3.48$, $MSe = .86$, $p < .001$)years, but no difference among 1, 3, and 5 years later ($t < 1.70$, ns).   In the old aged group, the future imagination score after 10 years was less positive than that after1($t (852) = 7.32$, $MSe = .86$, $p < .001$),3($t (852) = 5.39$, $MSe = .86$, $p < .001$), and 5 ($t (852) = 3.42$, $MSe = .86$, $p < .001$)years, and that after 5 years was less positive than that after 3 ($t (852) = 1.97$, $MSe = .86$, $p < .05$)and 1 ($t (852) = 3.90$, $MSe = .86$, $p < .001$)years, and that after 3 years was marginally less positive than that after 1 year($t (852) = 1.93$, $MSe = .86$, $p < .06$).   Especially, the future imagination after 10 years,

elderly(t (1136) = 2.61, MSe = 4.73, p < .01) and old aged groups (t (1136) = 2.92, MSe

= 4.73, p < .01)was less positive than middle aged group (F (2, 1136) = 4.78, MSe =

22.59, p < .01), but not for 1(F < 2, ns),3(F < 1, ns), and 5 (F < 1, ns)years later.
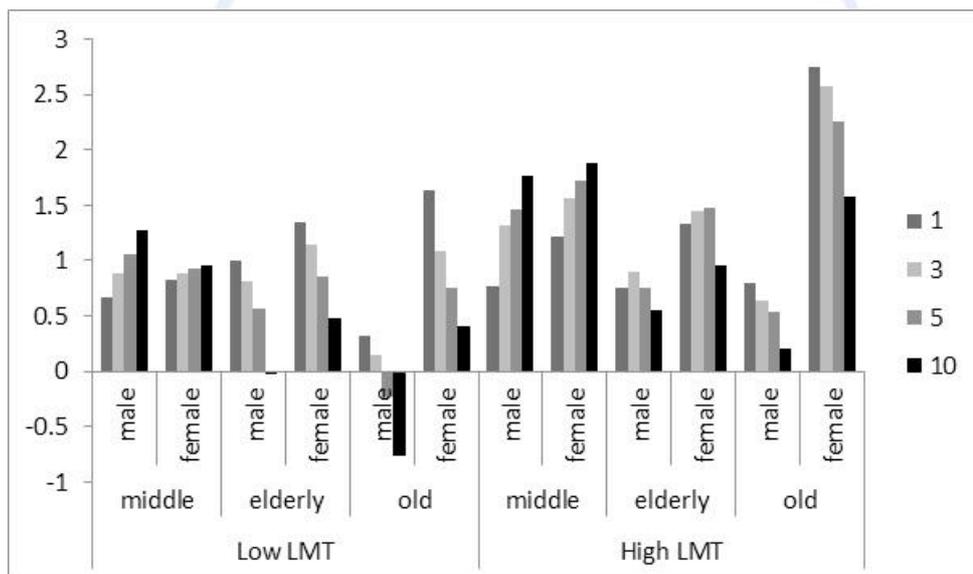

Figure 3   Mean score of future span (1 to 10 years) in Low vs. High LMT group as a

function of age and sex.   The vertical axis indicated the score that fully live in happy

(+5) to unhappy (-5).

High vs. Low groups on LMT score

A 2 (LMT: High vs. Low) × 3 (Age: middle vs. elderly vs. old) × 2 (Sex: female vs.

male) ×4 (Future Span: 1, 3, 5 or 10 years later) ANOVA revealed a main effect of LMT (F (1, 284) = 5.90, MSe = 96.11, p < .05), with the future imagination score of high LMT group being more positive than that of low LMT group and Sex (F (3, 852) = 7.48, MSe = 121.88, p < .01) with being the future imagination score of female being more positive than that of male. Also, the main effect of Future Span (F (3, 852) = 8.22, MSe = 7.18, p < .001) was significant.   The future imagination score after 10 years was less positive than that after 1 (t (852) = 4.46, MSe = .87, p < .001), 3 (t (852) = 4.46, MSe = .87, p < .001), and 5 (t (852) = 3.08, MSe = .87, p < .01) years, but no difference among 1, 3, and 5 years later (1 and 3 years later; t = .05, 3 and 5 years later; t = 1.38, 1 and 5 years later; t = 1.37, ns).

Also, the interaction, LMT X Future Span was significant (F (3, 852) = 3.53, MSe = 2.93, p < .05).   In the low LMT group, the effect of Future Span was significant (F (3, 852) = 9.67, MSe = 8.45, p < .001), but not in the high LMT group (F (3, 852) =1.90, ns).   In the low LMT group, the future imagination score after 10 years was less positive than that after 1 (t (852) = 5.52, MSe = .87, p < .001), 3 (t (852) = 4.21, MSe = .87, p < .001), and 5 (t (852) = 2.57, MSe = .87, p < .05) years.   Also, the future imagination score after 5 years was less than that after 1 year and marginally less than that after 3 years, but no difference between 1 and 3 years later (t (852) =1.30, ns). Moreover, the future imagination score in the low LMT group was less positive than that in the high LMT group for 3 (F (1, 1136) = 4.86, MSe = .22, p < .05), 5 (F (3, 852) = 7.32, MSe = 34.63, p < .01), and 10 (F (3, 852) = 8.64, MSe = 40.86, p < .01) years later, but not for 1 year later (F = 1.36, ns) .

Furthermore, the interaction, Age X Sex was marginally significant (F (2, 284) = 2.65, MSe = 43.24, p < .10).   With age, the future imagination of male participants was marginally less positive (F (2, 284) = 2.53, MSe = 41.24, p < .09), but not for female participants (F (2, 284) = .77, ns). Especially, the future imagination score of male participants of the old aged group was less positive than that of the middle aged group (t (284) = 1.97, MSe = 16.30, p < .05), but not for elderly aged group (t < 1.1, ns) . Moreover, in the old aged group, the future imagination score of female participants was more positive than that of male participants (F (1, 284) = 11.49, MSe =187.25, p < .001), but not for the middle (F < 1, ns) and elderly (F < 1.25, ns) aged groups.

Moreover, the interaction, Age X Future span was significant (F (6, 852) = 13.37, MSe = 11.69, p < .001).   In the aged group of each, Future span effect was significant (middle; F (3, 852) = 6.75, MSe = 5.90, p < .001, elderly; F (3, 852) = 8.41, MSe = 7.35, p < .001, old; F (3, 852) = 19.79, MSe = 17.30, p < .001).   In the middle aged group, the future imagination after 10 years was more positive than that after 1 (t (852) = 3.97, MSe = .87, p < .001), 3 (t (852) = 3.97, MSe = .87, p < .001) years, but not after 5 years (t < 1.30, ns).   Also, the future imagination after 3 (t (852) = 2.12, MSe = .87, p < .05) and 5 (t (852) = 3.05, MSe = .87, p < .01) years was more positive than that after 1 year, but no difference between 5 and 10 years later (t < 1.30, ns), 3 and 5 years later (t < 1, ns).   In the elderly group, the future imagination after 10 years was less positive than that after 1 (t (852) = 4.84, MSe = .87, p < .001), 3, (t (852) = 4.58, MSe = .87, p < .001) and 5 (t (852) = 3.32, MSe = .87, p < .001) years.   Also, in the old aged group, the future imagination after 10 years was less positive than that after 1 (t (852) = 7.55, MSe = .87, p < .001), 3 (t (852) = 5.62, MSe = .87, p < .001), and 5 (t (852) = 3.49, MSe = .87,

$p < .001$) years.   Moreover, the future imagination after 5 years was less positive than that after 3 (t (852) = 2.13, $MSe = .87, p < .05$) and 1 (t (852) = 4.07, $MSe = .87, p < .001$) years and that after 3 years was marginally less positive than that after 1 years (t (852) = 1.93, $MSe = .87, p < .06$).   Thus, the future imagination after 10 years of the middle aged group was more positive than that of elderly (t (852) = 3.17, $MSe = 4.73, p < .01$) and old (t (852) = 3.51, $MSe = 4.73, p < .001$) aged groups, but no difference between elderly and old groups ($t < 1, ns$).

To summarize, the above analysis indicated first, that for all indices, a significant sex difference was shown that female participants could image positive their future than male; second, that Age X Future Span was shown that the middle aged group was more positive for far future span such as 10 years later, whereas the elderly and older aged group was more positive for near future span such as 1 and 3 years later; third, that a significant cognitive function difference was shown for all indices, where the high MMSE and LMT groups could image positively their future than the low MMSE and LMT groups, respectively; fourth, that a significant Age X Sex was shown for LMT indices except for MMSE, where male participants in elderly and older aged group was less positive future imagination than that in middle aged group, but not for female participants, ; Fifth, that the interaction between two indices of each and Future span was significant, where the low cognitive function group was gradually less positive future imagination near to far future span, whereas the high cognitive function group did not change.

Discussion

This study was not to discuss older adults could positively image their future but rather to examine whether cognitive function had influence on the future imagination on their lives as a function of near vs. far future span.   This study was based on two premises. The first was that the findings of Kryla-Lighthall & Mather (2008), the positivity effect have influence on cognitive control, whereas few studies have been examined the direct relation between cognitive function and positivity bias.   The second was that drawing on the SST (Cartensen, 2006), older adults arrears to lead to focusing the maximization of meaningful activities in the present, whereas middle aged adults does in the future because of the perception of limited time arrears to lead to changing the priorities, described earlier.

This study showed consistently that the relation between positive future imagination and cognitive indices in this study.   Therefore, as predicted, middle, elderly and older adults had the high cognitive function could positively image the future on their live. Thus, following to the positivity effect, cognitive control had influence on the positive imagination of future.   Moreover, following to the SST, middle aged adults could image positively their future for far future span such as 10 years later, whereas elderly and older adults could do for near future span such as 1 and 3 years later.

In this study, we employed the MMSE, Logical Memory Test to examine the relations between future imagination and cognitive function.   Three indices used in this study were to assess cognitive abilities as a part of medical check-up in the Nagoya University Y-Town cohort study. MMSE is famous screening test for cognitive impairment. Moreover, the validity examination by means of NIRS (Near-InfraRed Spectroscopy)

indicated the temporal plus frontal cortex activation in the LMT (Hatta, Kanari, Mase, Nagano, Shirataki, & Hibino, 2009). According to the findings of Mather (2006), positivity bias related to updating negative information to the positive one, which the inhibition of negative information. In the future direction, we need to the relation between any other cognitive control and future imagination, in order to specify the relation between a kind of cognitive function and future imagination.

More importantly, we obtained mainly two new findings. The first was that middle, elderly and older adults who had high cognitive function of MMSE and LMT indices could image consistently and positively their future for coming decade, whereas those had low cognitive function could not image gradually positively near to the distant future, such as 10 years. According to the SST, older adults focused on the meaningfulness for the present as described earlier. Therefore, near future rather than far future to the present should be imaged positively, but this study did not so. We should examine whether the positive imagination of near future span to the present can expand to that of far future span.

The second was that sex difference had robust influence on future imagination, which female could image positively their future than male. Also, for LMT, male in elderly and older over 60 years old was less positive future imagination than that in middle aged group below 60 years old, but not for female participants. To our knowledge, no studies focused on sex difference in the future imagination. Especially, in Japan, female lives for long period than male. It can be conceivable that there was the relation between longevity and positive future imagination driven by cognitive control. Researchers

should consider the sex difference's future imagination.

In this study, age related to near vs. far future imagination, which middle aged group had positive imagination to far future, whereas elderly and older aged group did to near future.   Recent study showed that irrespective of age, with the perception that future time is limited, the experience of positive affect seems to become increasingly associated with the experience of meaning in life (Hicks, Trent, Davis, & King, 2012). It suggests that how time is left have influence on future imagination, as well as the present, irrespective of age.   Related studies showed that mild depressed people could not image positively their future than non-depressed people (Dickson & Bates, 2006; MacLeod & Cropley, 1995). Positive future emotional experiences would be an important of aspect of mental health, well-being and quality of life.

Acknowledgments

Reference

Role of Trust and its implications in an online Distance Learning Context

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Abstract:

Trust is an essential component of human relationships and a fundamental building block of knowledge societies. The present research paper contends that trust is a vital element of a healthy relationship in a collaborative work environment, and especially more so where human beings are not able to meet and interact with each other physically. Trust serves as a platform to strengthen and reinforce an organization's cultural value system, build effective group work norms and provide a method for inclusion and transparency in the work culture. In a dynamic and uncertain environment, the capability of any organization is to manage and implement trust This paper argues and emphasizes that trust is one of the most important variables especially in an online academic work environment with team members dispersed all over the globe. The need of the hour is to lay down a solid theoretical research foundation for the relationship between trust and team effectiveness in an academic online/virtual environment.

This paper is organized as follows. First, conceptualization of trust in the context of effective team work at a virtual platform will be reviewed and integrated. In the next section the role of TORI theory conceptualized by Jack Gibbs, will be explained and discussed for the effective implementation of trust in organizations. We then emphasize upon theoretical evidence for a relationship between trust and key determinants of team effectiveness including organizational design, psychosocial factors of teams, task interdependence, team composition (including the team leader) and team processes to name a few. Next we accentuate the impact of training on trust development of academic members working in a virtual environment. In the final section the role of trust will be critiqued along with future guidelines for research and its impact in the educational context of on line distance learning.

Introduction

Trust is a property of both organizational members and abstract structures or systems of organizations (Nandhakumar and Baskerville, 2001:192). According to Smith (2008)," Trust represents one of the most critical issues facing groups. The need to work with others through text-based online environments can make trust issues more salient. The diminished physical cues provide limited information for learners to use to assess trust. As the use of online collaborative groups (OCG) increases, the need to understand trust issues becomes vital. Yet, it is difficult to answer the question of how trust is developed and maintained within these groups and how trust issues influence collaborative processes and outcomes". Trust issues become much more salient in the online collaborative work environment, thanks to the diminished physical signs, which reduces the regular continuous assessment of the co-workers. Honesty is the foundation upon which trust is built, without it any relationship will not be supported and eventually crumble. Trust plays a crucial role in the success of online distance learning, since the interaction of the professors and the students are through online mode only.

Trust is difficult because it's one of the fundamental things in life that has to be mastered. People need to learn not only who to trust, but who not to trust, and how much and in what areas to trust those they do. Trust is important because it is the essence of a harmonious relationship. Without harmony we are left with a competitive conflict of wills. With trust we are capable of transcending the notion that one can only prosper at the expense of the other. Building trust is not an easy task. It requires appliances and support from the organizational culture based proven practices and usually takes time. Trust can be learned over time once one adopts a state of reflection and the ability to trust the wisdom of the mind and the body. Reflection is not intellectualization, but the opposite. It involves self-examination and often a lot of waiting for insights. Insights, as 'truth-tellers' can come to a person if there is room, patience, self-respect, and acceptance (trust) of them. In an online interactive environment the concern for developing and having TRUST value is something which is challenging to cultivate and maintain because of the lack of the physical interaction. Developing trust in organizations' among the team members in an online environment is a crucial notion which demands time, patience, understanding and conscious and concerted efforts from the team members.

According to Beranek (2000)," Trust is a basic feature of social situations that require cooperation and interdependence (Jennings, 1971), and also plays a critical role in problem solving (Zand, 1972), organizational performance (Hart et al, 1986), organizational communication (Roberts & O'Reilley, 1974) and acceptance of feedback (Earley, 1986). In a dynamic and uncertain environment, the capability of any organization is to manage and implement trust This paper argues and emphasizes that trust is one of the most important variables especially in an online academic work environment with team members dispersed all over the globe. The need of the hour is to lay down a solid theoretical research foundation to understand the effective relationship between trust and team effectiveness in an academic online/virtual environment.

Social organizations, corporations, and government associations are increasingly turning to virtual groups to bridge the gap between face-to-face interactions and difficulties associated with temporal and geographical separation (Bradner, 2003). Proponents of group work purport that students can participate in the active construction of knowledge, enhance problem solving skills, share ideas and opinions, gain valuable experience (Haythornthwaite, 2006), and learn valuable lessons regarding group communication and problem solving that are easily transferable to the work environment (Becker & Dwyer, 1998; Black, 2002). Although online/distance education holds promising returns, there are challenges of acquiring a different kind of skill set on the part of the participants to make it a success.Keeping this in mind following structure of the present paper is being proposed

This paper is organized as follows. First, conceptualization of trust in the context of effective team work at a virtual platform will be reviewed and integrated. In the next section the role of TORI theory conceptualized by Jack R.Gibb, will be explained and discussed for the effective implementation of trust in organizations. We then emphasize upon theoretical evidence for a relationship between trust and key determinants of team effectiveness including organizational design, psychosocial factors of teams, task interdependence, team composition (including the team leader) and team processes to name a few. Next we accentuate the impact of training on trust development of academic members working in a virtual environment. In the final section the role of trust will be critiqued along with future guidelines for research and its impact in the educational context of on line distance learning.

TORI and its Applications

In the present paper a decision to use the theory of TORI acronym, a concept originated and coined by Jack.R.Gibb who talks about Trust, Openness, Realization and Interdependence, has been taken. Gibb's TORI theory based on the trust at a personal, group and an organizational level. Developing trust in an organization also start at the personal level, this further extends to group and organizational level. "TORI theory focuses on trust level as a primary determiner of the effectiveness and productivity of groups. Research indicates that trust level is correlated with productivity, creativity, personal growth, and other positive system outcomes. The theory has been applied to group and team training in industrial, educational, and religious systems" (Gibb, 1972). In this paper, we will like to extend upon the application of TORI theory in the educational settings. To extend it further," When the trust level is high, the behavior of members of the group becomes more personal, more open, more self-determining, and more interdependent. When the trust level is low, members' behavior becomes more impersonal, closed, "ought"-determined, and more dependent or counter dependent. According to Gibb,"Trust is the key variable in every system". Trust enables open communication, information sharing, and conflict management in a clear way, and also helps to speed up the contract process (Blomvist, 2002).

And without the continuous escalation in the trust factor at a group level –the other three remaining factors (openness, realization and interdependence) will not be able to propagate. Hence the question need to be answered is –how to develop and maintain the trust in an online/virtual academic environment? In this paper, an attempt has been made to link the trust notion with the TORI theory and in addition with the online educational system.

Jack Gibb's Theory of Group Development offers a sound paradigm for examining how groups work together. Gibb's (1967, 1972, 1978) group-development theory was chosen as the framework with which to investigate the processes at work in a virtual community of teacher-learners (Murphy & Laferriere, 2005). His premise is quite simple: as trust increases, defensive and unproductive behaviour decreases. The greater the degree of trust, the easier it is for people to shed outer roles and give up stances that inhibit the flow of vital information. As trust increases, people are freer to offer opinion, critique, and praise. Ironically, few work groups ever address the issue of trust in any direct way, and are condemned to hours of frustrating and non-productive meetings. Developing trust in a physical environment is challenging enough, whereas it becomes much more arduous in an online environment. The question of the hour is how to develop trust effectively for an effective and productive online work environment?

Effective continuous interaction in an online distance environment is between the professors and the students, between the students themselves and between the professor peers is profoundly reliant on the trust factor. The groups shared in this process can be dyad, triad or a larger group. Groups basically embody two lives: the life of the group itself, and the life of each individual within it. On a group level the concerns revolve around issues of *membership, decision-making, productivity, and organization*. The typical questions the group is concerned with are: Who will belong? What does it cost to belong? (Membership) How do we make decisions? Who has the power to make decisions in this group? (Decision-making) What can we do together? (Productivity) How will we structure ourselves to accomplish our goal? (Organization) (Brocklebank & Maurer, 1991). Though these questions are not easy to answer in a physical world –it becomes more so challenging in an online environment –where participants are dispersed all over the world in a diverse time line. From the TORI theory of Gibbs many remarkable and worthwhile wisdom's can be learned, transferred, shared and answered continuously throughout this paper with the learning and interaction in an online world with a special emphasis on education at its base.

Developing trust in a relationship (professional and personal) from the very start is not an easy task, but with the help of authentic communication among the participants is an incessant effort towards establishing an association of conviction and confidence among the group members. It was Gibbs' belief that for an honest and open communication initiative people needs to communicate with each other without judging them from a straitjacket professional role and rule tags. "Role- bound, we cardboardize ourselves, letting the role or the underlying rule talk in lieu of the sensitized inner self…….A Role might be considered to consist of those actions you have programmed and performed again and again in a relationship because of your expectations and /or the expectations of others"(Anderson,1979). Perceptions and opinions are formed quickly and we are ready with our opinion regarding other people's competence. Fear can be another crippling factor, which hinders the trust process at an individual and group level. Overcoming this fear factor and shedding one's outer defences can prepare the individuals and the group to face the unpredictable online situations in a smooth manner. We will be taking a closer look at these factors once again, when we are discussing about the implementation of these factors towards the closing end.

Key determinants of team effectiveness includes organizational structure and design, psychosocial factors of teams, task interdependence, team composition (including the team leader)

and team processes for the effective implementation of online learning and teaching an effective one will be discussed and elaborated.

Key Determinants of Virtual Organizational/Team Effectiveness-

A virtual organization is a collection of geographically distributed, functionally and/or culturally diverse entities that are linked by electronic forms of communication and rely on lateral, dynamic relationships for coordination (DeSanctis and Monge, 1998). The first key determinant is:

a) Organizational Design

Effective designing of organizational structure and design is significant in a virtual environment since it is uniquely accompanied with the location (cyberspace- anywhere, anyplace), class size (can be of significantly different no of batch sizes), type of interaction (impersonal), technology dependency (high), and communication/delivery(internet, computer based) to name a few variables among others, which effects the conducive work environment while achieving the satisfactory results for the stakeholders. "An organization is a deliberate arrangement of people to accomplish some specific purpose" (Robbins & Coulter, 2007, p. 17), and if it is a deliberate arrangement of people who through social interaction planned and designed it for specific purpose, then it needs the constant and adaptive teaching and learning practices of those people to expand its capacity for greater creativity – learning organizational conception (Senge, 1990), in order to grow, respond effectively to change, and survive. The essential requirement of the time is to continuously adapt the principles of learning organization –which is based upon the continuous adaptation of change. The redesigning of the work structure for a smooth flow of communication is necessary for the continuation of meaningful work among today's professionals, with a prominence on network/collaborative approach. The challenges and major issues are being faced while designing an organization structure of on line school is comprises of control, cooperation and autonomy, while taking into consideration the cultural and global perspectives. Trust is one of the prominent pillars of virtual work environment for the widely dispersed autonomous workforce. It is the ultimate backbone of continuous online learning as well. Technology is a powerful tool of change. "Although technology on its own is incapable of engendering significant educational change, when implemented in conjunction with progressive attitude, results can be profound…" (Wolfson & Willinsky, 1998, p. 109).In today's globally competitive environment it becomes crucial to understand the importance of continuous flow of information and the implementation of adaptable and flexible structure in the virtual environment. This is especially significant in the case of virtual working with a special emphasis on online/distance schools where the entire pedagogical systems and ability to educate depend on the ready adaption of emerging technological tools and concepts. The interaction is highly dependent on technology. An Adhocracy structure seems to be the most recommended one for an online interactive course. The term was first popularized in 1970 by Alvin Toffler, (Travica,1999) and has since become often used in the theory of management of organizations, which is further developed by academics such as Henry Mintzberg. Adhocracy structure is suitable for complex and unstable environment which is prevalent in online/virtual environment. Adhocracy structure has few rules and many plans, remains flexible to 'best fit' the working environment, power

is shifted to specialized teams with high performance based characteristics of team members with mutual adjustment, selective decentralization with the little formalization of behavior. Rigidity and dependency can lead to the unproductive outcome in the long run. Adhocracy structure when implemented in virtual/online environment supports the leadership qualities in participants at all levels. After deliberating the adaptive and agile culture necessary for the online environment, the psychosocial factors of teams and team composition with a special emphasis on distributive leadership will be discussed.

b) Psychosocial factors and Personality Traits of Team Members and Team Leader-

One of the crucial factors to consider when creating effective virtual teams is the psychosocial factors and personality characteristics of the team members. In order to be successful in the virtual/online environment, participants must possess patience, persistence, and perseverance along with a certain degree of tolerance, flexibility, and understanding (Warkentin et al, 1997). Patience as a personality trait to work in an unpredictable online work environment need to be learned just like participants learned to interact in a face to meet meeting with colleagues. The responsibility of sharing the information lies with all the participants of online work team. And every team member is encouraged to take the responsibility of their decisions.

Self- efficacy, hope and optimism, these three psychosocial factors were found to have a positive impact while functioning in an online environment. An increased self-efficacy in technology integration may bolster student confidence in utilizing computer software, online assignments, and online curriculum/electronic delivery (Wang, Ertmer, & Newby, 2004). Hope can also be identified as a cognitive strategy to meet and exceed personal goals (Gillham, 2000; Snyder, 1994; Snyder, Rand & Signom, 2002; Kramer & Conoley, 1992). Simmons et al., (2003) noted that hope reveals a beneficial feeling that produces an anticipated benefit from individual or group circumstances. Optimism factor is linked with positive expectations and outcomes, which helps in dealing with the unpredictable and stressful situations while dealing with the online, technology dependent environment.

According to Macfane (2011),"Leadership matters when it comes to shaping organizational contexts and future, and the types of teaching and learning systems that prevail in organizations. Dynamic and progressive leadership allows for innovation and strive to develop unique methods and approaches to services delivery or creation, and thus, promote a structure that allows for creative or transformative pedagogy. Leadership more than any factors will shape the pedagogical approaches of emerging virtual schools, especially as competition increases and these schools strive to develop competitive advantage". Effective accomplishment of task in an online environment needs a major amount of work with Interdependence is the demand of the virtual/online members of the team.

c) Impact of Training on Trust

Training is an ultimate solution to upgrade one's skills and competencies. According to Daniels, (2012), "Individuals do not automatically bring their individual strengths to the team and work collaboratively in an effective way. With intentionality a leader can develop a team by

addressing the predictable challenges of interpersonal dynamics**:** pecking order, various work styles, the conflict that becomes personal, etc. In the middle of this interpersonal messiness there are times and there are personalities that consistently derail the potential productivity of the team. That is when leaders earn their title and their pay! The timing is critical in deciding when to ***re-invest*** in a team member through a personal/professional development plan, ***re-assign*** a team member to another part of the organization, or ***release*** and ***replace*** the individual for the sake of the team". Working effectively online is quite different. Unlike traditional or on ground jobs members' working in online work environment takes some time to develop the desired working habits and also to get acquainted with the other team members to effectively collaborate to achieve the desired goals. Trust among team members can be developed gradually with the desired behaviors.Recent research on trust and virtual teams describes communication behaviors that might facilitate trust in global virtual teams and suggests that trust might be initially created, rather than imported, via communication behaviors in global virtual teams (jarvenapaa & Leidner (1998) & (Jarvenapaa & Leidner (1998). According to Warkentin, and Beranek (1999), teams given Virtual Team Communication (VTC) training may develop relational links faster than teams without VTC training. Hence emphasis on imparting effective communication practices among team members of online virtual environment between and among peers can help in promoting a favourable work environment.

Recent evidence suggests that when virtual teams are given sufficient time to develop strong intragroup relationships and to adapt to the communication medium, they may communicate as effectively as face-to-face groups (Chidambaram, 1996).Developing relational links involves performing activities related to the member support and group well-being functions. These activities include, for example, establishing position or group status of members, defining task roles of group members, and establishing norms for group interaction (Warkentin, Sayeed and Hightower, 1997). Positions of team members' with a clearly defined work objectives in an online work environment will not only support in developing an understanding of the work culture, which is gradually able to transcend into the trusting culture but also with clear communication channels to reach out to the members of the group.

Establishing protocols and ground rules by virtual team members regarding their availability, absences, giving due credit to the team members along with constructive feedback are few essential work practices needs to be developed by the virtual team members for communicating effectively with each other. Productive relational links are based upon the continuous imparting of information exchange in the group. Two factors that affect information exchange are opportunity and motivation to contribute information (Hightower & Sayeed, 1996). Freedom and opportunity to express the views by team members in the crucial working matters of participants in a project irrespective of their status in the team can be great motivating factors for the team members working in a virtual environment. Hence along with relational communication training, trust training among team members is also being proposed for the effective and smooth achievement of team members' desired objective of completing the targeted project without much hindrance. Frequent users of discussion forums on the Internet and online services develop ways to convey more meaning in their messages as a means of replacing paraverbal and nonverbal cues. The use of symbols called "emoticons" is one example (Mc Grath & Hollingshead, 1994). These emoticons and symbols helps in creating a light and positive environment of goodwill among the team members for whom the

physical cues are missing while interacting with each other. Designing and implementing effective strategies for the smooth online interactions will motivate the working of the team members in a positive direction.

Discussion and Conclusion

Since virtual teams are becoming necessary imperatives for organizations today it becomes obligatory for organizations to strive for their smooth and effective implementation. In depth understanding of issues like developing trust among team members, give them sufficient time to adapt to and get acquainted with one another, developed and shared desired strategies and ground rules will be able to develop the desired norms and cohesiveness among the team members. Continuous interaction among the team members, open environment and empowering of team members are the few pillars on whom the online/virtual members can build the solid foundation of work. Taking the cues from Gibbs advice of open and honest communication among team members can set a strong foundation of trust among the online virtual team members. Participants continuously need to be encouraged and trained to shed their outward pretensions and learn to develop to interact with others from their true self. One of the major problems with remote working is more of a human issue which because of absence of emotional bonding and physical interaction creates a vacuum in understanding others. With the continuous interaction this gap can be lessened in an online environment. According to Anderson (1979) "Teachers need to learn not to respond to students with closed expectations but with an opening receptivity to their needs". As a teacher of online learning other issues such as reliability of team members and work related communication can be easily overcome if the rules of engagement for communications, conflict and expectations can be chalked out. According to Jarvenpaa, and Leidner, (1998) and Jarvenpaa, Knoll & Leidner, (1998)" A number of strategies have been put forth that may serve to reinforce trust in teams. These strategies include proactive behaviour of participants, empathetic task communication, positive tone, task goal clarity, and frequent interaction with acknowledged and detailed responses to prior messages".Laying down ground rules and setting up communication criteria(s) are key sections of working meritoriously in any space - but especially in a virtual environment. Imparting effective VTC training for the online team members will help in developing continuous flow of information exchange. Setting up of simple ground rules early can save time in aligning group performance expectations with personal strengths and aptitudes. One key factor is also staying in touch just like you might around the office "water cooler". It's good to address each other from time to time and chill "virtually" – which will gradually add a bit of "warmth" and "human connection". Individuals are then inspired and usually thrive to offer their best.As Andy Grove, the famously paranoid chairman of Intel Corporation says, "You have no choice but to operate in a world shaped by globalization and the information revolution. There are two options: Adapt or die. You need to plan the way a fire department plans. It cannot anticipate fires, so it has to shape a flexible organization that is capable of responding to unpredictable events."(Harvard Management Communications letter, 2000).

Future Research- Researchers should conduct studies relentlessly in order to develop effective strategies to understand the successful implementation of various parameters to create an encouraging and trust worthy environment. It is critical in an online distance learning environment where the effectiveness of learning lies in smooth and continuous interaction.

References

Anderson, R., 1979. Students a real people: Interpersonal communication and education, *Transactions Publishers*, pp. 157-162.

Becker, D., & Dwyer, M., 1998. The impact of student verbal/ visual learning style preference on implementing groupware in the classroom *Journal of Asynchronous Learning Networks,* volume. 2(2), pp. 61-69. http://www.aln.org/publications/jaln/v2n2/v2n2_becker.asp

Beranek, P, M., 2000. The Impacts of Relational and Trust Development Training on Virtual Teams: An Exploratory Investigation, *Proceedings* of the 33rd Hawaii International Conference on System Sciences, pp.10.

Black, G., 2002. Student assessment of virtual teams in an online management course. *Journal of Business Administration Online.* 1(2).
. http://jbao.atu.edu/Fall2002/black.pdf

Blomvist, K., 2002. Partnering in the dynamic Environment: The role of trust in asymmetric technology partnership formation. PhD thesis, Lappeenrant University of Technology.

Bradner, E., 2003. Computer mediated communication among teams: What are "teams" and how are they "virtual"? In C. Lueg & D. Fisher (Eds.), *From usenet to cowebs: Interacting with social information spaces* pp. 135-154 London: Springer-Verlag.

Brocklebank, S and Maurer, R., 1991.”WORKINGEFFECTIVELY IN GROUPS AND TEAMS: A RESOURCE BOOK, MATC, Thomas Circle. Washington, D.C. 20005
(This article is based on Jack R. Gibb, "Climate for Trust Formation. " T-Group Theory and Laboratory Method. Wiley. New York. 1964. pp 279-309 (Accessed on 14th Feb 2012)

Chidambaram, L., 1996. Relational development in computer-supported groups. *MIS Quarterly,* vol**.**20(2), pp.143- 163.

Daniels, D., 2012. ‘How critical is Team Chemistry? Leadership Development group (Blog) http://theldg.org/?utm_source=Copy+of+How+Critical+is+Team+Chemistry&utm_campaign=The+Leadership+Development+eLetter&utm_medium=socialshare
 Accessed on 16th March 2012

De Sanctis,G & Monge, P., 1998. Communication Processes for Virtual Organizations *JCMC,* vol.3,no.4 June ohttp://jcmc.indiana.edu/vol3/issue4/desanctis.html#About,
Accessed on 9th March 2012

Gibb, J., & Gibb, L., 1967. Humanistic elements in group growth. In James Bugental (Ed.), *Challenges of humanistic psychology*. New York: McGraw-Hill. pp. 161-170.

Earley, P.C., 1986. Trust, perceived importance of praise and criticism, and work performance: An examination of feedback in the United States and England. *Journal of Management,*12, pp. 457-473.

Gibb, J., 1972. Tori theory and practice. In *The 1972 Annual Handbook For Group Facilitators: University Associates.*

Gibb, J., 1978. *Trust: A New Vision of Human Relationships for Business, Education, Family, and Personal Living.* California: Guild of Tutor's Press.

Gillham, J., 2000. *The science of optimism and hope*. Radnor, PA: Templeton Foundation Press.

Hart, K.M., Capps, H.R., Cangemi, J.P. & Caillouet, L.M., 1986. Exploring organizational trust and its multiple dimensions: A case study of General Motors. *Organization Development Journal*, Summer, pp. 31-39.

Harvard Management Communications letter., 2000. Communicating with Virtual Project Teams/Creating Successful Virtual Organizations - Virtual Communication. 3(12)

Haythornthwaite, C., 2006. Facilitating collaboration in online learning. *Journal of Asynchronous Learning Networks,* 10 (1) , pp.7-24.
 http://www.sloan-c.org/publications/jaln/v10n1/v10n1_2haythornthwaite.asp

Hightower, R. T., & Sayeed, L., 1996. Effects of communication mode and prediscussion information distribution characteristics on information exchange in groups. *Information Systems Research,*7 (4), pp. 451-465.

Jarvenpaa, S. L. and., Leidner, D. F., 1998. Communication and Trust in Global Virtual Teams, *Journal of Computer Mediated Communication*, 3(4), pp .1-36.

Jarvenpaa, S.L., Knoll, K. & Leidner, D.E., 1998. Is Anybody Out There? Antecedents of Trust in Global Virtual Teams, *Journal of Management Information Systems*, 14(4), pp.29-64.

Jennings, E.E., 1971. *Routes to the Executive Suite*, New York, McGraw-Hill.

Kramer, J., & Conoley, J. (eds.). 1992. 11th Mental Measurements Handbook.

Macfarlane, D, A., 2011. A comparison of Organizational structure and Pedagogical Approach: Online versus Face-to-face. *The Journals of Educators online*, 8(1), pp.1-43

McGrath, J. E., & Hollingshead, A. B., 1994**.** *Groups interacting with technology: Ideas, evidence, issues and an agenda.* London: Sage.

Murphy, E & Laferriere, T., 2005.Identifying and facilitating Group Development Processes in Virtual Communities of Teacher-Learners, *International Journal of Instructional Technology and Distance Learning*, 2(4) .pp 23-32.

Nandhakumar, J and Baskerville, R., 2001. Trusting Online: Nurturing Trust in Virtual Teams, Global Co-Operation in the New Millenium, the 9th European Conference on Information Systems,Bled,Slovenia.http://stff.cts.utu.fi/opinnot/kurssit/csw/papers/online trust.pdf

Robbins, S.P., & Coulter, M., 2007. *Management, 9th edition*. Upper Saddle River, NJ: Prentice Hall.

Roberts, K.H., & O'Reilly III, C.A., 1974b. Failures in Upward Communications in Organizations: Three Possible Culprits. *Academy of Management Journal,* vol. 17**,** pp. 205-215.

Senge, P.,1990. The art & practice of the learning organization in *The New Paradigm in Business: Emerging Strategies for Leadership and Organizational Change* (eds. Ray, M. and Rinzler, A.) 1993, by the World Business Academy. pp. 126-138. New York: Jeremy P. Tarcher

Simmons, B. L., Nelson, D. L., & Quick, J. C., 2003. Health for the hopeful: A study of attachment behavior in home health care nurses. *International Journal of Stress Management*, 10 (4), pp. 361-375.

Smith, R.O.,2008.The paradox of Trust in Online collaborative groups, Distance Education, 29(3) pp. 325-340.
http://www.informaworld.com/smpp/content~content=a903071561~db=all?alerttype=new_issue_alert,email&jumptype=alert

Snyder, C.R., 1994. *The Psychology of hope: You can get there from here.* New York: Free Press.

Snyder, C. R., Rand, D. L., & Sigmon, D. R., 2002. Hope theory: A member of the positive psychology family. In C. R. Snyder, & S. J. Lopez (Eds.), Handbook of positive psychology, pp. 257-276. New York, NY: Oxford University Press.

Travica, B., 1999. *New Organizational Designs: Information Aspects*, Ablex/Greenwood, 1999, ISBN 1567504035, Google Print (Accessed on 13th March 2012)

Wang, L., Ertmer, P. A, & Newby, T. J., 2004. Increasing pre-service teacher's self-efficacy beliefs for technology. *Journal of Research on Technology in Education*, 36 (3), pp. 231-250.

Warkentin,M.E, Sayeed L and Hightower, R.,1997.Virtual Teams versus Face- to- Face Teams: An Exploratory Study of a Web- Based conference System, *Decision Sciences,* 28(4), pp.975-996.

Warkentin, M., and Beranek, P.M., 1999. Training to improve virtual team communication *Information Systems Journal,* 9 (4), pp 271-289.

Wofson, L., & Willinksy, J., 1998. Situated Learning in High School Information Technology Management. *Journal of Research on Computing in Education*, 31, pp. 96-110.

Zand, D.E., 1972. Trust and managerial problem solving. *Administration Science Quarterly* 17(2), pp 229-239.

*Admission and Selection System to Study in Sirindhorn College of Pulbic Health,
Chonburi, Thailand*

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Abstract:

This study aimed to investigate opinions of applicants, parents, administrators, and teachers or officials responsible for the admission and selection. Samples were applicants, parents, teachers and officials, administrators and heads of curriculum. Research tool was an in-depth interview and rating questionnaire. Analysis tools were frequency, arithmetic mean, standard deviation, and content analysis. Results of the study revealed that applicants' opinions towards the admission and selection as overall were at the strongly agree level. Parents' opinions as overall and teachers and officials' opinions as overall were at the strongly agree level as well. More over there revealed that criteria for the admission and selection were suitable in every qualification provided. Parents concerned about their children and agreed with the quota distribution and the admission system. They also needed more chances and more seats to fulfill the quota and the students' knowledge and capability, scholarships, continued study, and public relations. Administrators agreed with the criteria of the applicants' grade point average of high school and quota distribution. They partly agreed and disagreed about the curriculum judgment for each applicant considered from scores, selection order, and domicile. Administrators disagreed with the GAT/PAT, and substitute's announcement.

Introduction

Student is an important element of the input factor in the education system. Although the other components such as curriculum, and teaching and learning process, are well-designed, but if the students are not prompt with knowledge and awareness of the profession, they may not successfully complete in their education. And this situation may affect the service quality for the public (Pattama Thongsome, et al, 2000: 1). The study on the attendants' qualification and the preparation of students after high schools before entering the university system found the difference of the admission system depended on the policy of the institutes summarized in two groups; the Asian country group and the European and American country group (Banjert Apiratanakul, 2002). For the Asian countries such as Japan, Singapore, and Thailand, they used the examination system to select students in the universities, essentially using standard tests. Public universities were recognized and popular standards. The high scores applicants would be eligible to study in the programs they liked before. And for the countries in Europe and America, like England, Australia, Canada and the United States, the decentralization of education was very high. Local organizations supported their schools for high standards education equivalent to the standards of professional associations in various fields. Each of the universities set criteria themselves, and might use the standard test for a complementary.

Praboromrajchanok Institute as a higher education institute under the Ministry of Public Health, Thailand has a crucial role to produce and develop health workforce for health service system throughout the country for more than 60 years, regarding a capability of health personnel production, more than 50 percent of the whole country production had undertaken by 37 colleges of nursing and public health located throughout the country. In academic year 1996 the selection system had adjust to the admission system of the Ministry of University Affairs, however, qualified students with University Affairs focused on the technical knowledge more than the professionals oriented qualifications, some students did not intend to study in nursing and public health professional, and some other students had poor attitudes toward the profession, causing of resign during the study period. While some students had successfully graduated but turned over for other occupations. Therefore, in academic year 2007 Praboromrajchanok Institute held the principle focused on educational opportunities for local people to study and returns to work for public health service in their homelands. This production method was to serve the shortage of health workforce for public health service under Ministry of Public Health. The applicants' areas were allocated to regional colleges in the provinces under Praboromrajchanok Institute to allow interested people to apply in the colleges in the local areas and peripheral provinces. In academic year 2010 the enrollment was provided in two systems: (1) the direct admission system was to enroll students from area quota schools allocated based on grade point average (GPAs) throughout the course and the average scores in the five-group of learning (GPAX) and (2) the general admission system was to enroll students from the admission criteria for university entrance examination with the results of O-NET, A-NET, cumulative GPAs throughout the program, and the average scores in five-group of learning (GPAX), by means of electronic web-

based technology through the internet network system or online admission system (Praboromrajchanok Institute, 2010: 2), or via the website of each college under Praboromrajchanok Institute (http://admission.pi.ac.th). Sirindhorn College of Public Health. Chonburi, is a higher education institute under Praboromrajchanok Institute, office of the Secretary of State, Ministry of Public Health, Thailand. The major role of the college is to educate and develop categories of health personnel. There are six curriculum handled by the college: Bachelor of Public Health (Community Health), Higher Professional Certificate of Public Health (Community Health), Higher Professional Certificate of Public Health (Dental Health), Higher Professional Certificate of Public Health (Pharmacy Technique), Higher Professional Certificate of Thai Traditional Medicine, and Diploma of Emergency Medical Technician. Qualified people who interest to study in the college must apply through the admission website (online admission) in the computer network of Praboromrajchanok Institute. Four curriculums are prioritized to their interests. The admission software will process all application forms and ranks orders of total scores of each applicant to publish for the interview and next process. Eligible students must pass an interview and physical examination from the hospital. The current admission system differs from the former recruitment system with a policy of centralized selection system. Therefore, this study had purposes (1) to explore opinions of the applicants, parents, staffs and administrators on the admission and selection to study in Sirindhorn College of Public Health, and (2) to measure the appropriateness of the admission and selection criteria, and the problems and difficulties in the recruitment process as well.

Methods and Materials

This research was a cross-sectional survey plus qualitative study. The population of the study encompassed 350 applicants, 350 parents, 73 staff, and 10 curriculum administrators. The sample size referred to Krejcie and Morgan's table (1970: 608), composted of 300 applicants, 300 parents, 60 staffs, and 10 curriculum administrators by simple random sampling. Data collecting tool was a questionnaire and a structured interview improved from the research promotion unit of Praboromrajchanok Institute in academic year 2009 to meet the admission and selection criteria. The questionnaire was classified in four series. Series 1 and series 3 for the applicants and the admission staffs, designed in a five levels rating scale with 45 items. Series 2 for their parents, the questionnaire was an optional answer and text adding format. Series 4 for the curriculum administrators, the research tool was a structured in-depth interview form covered every process of the admission system. The statistics used for data analysis were frequency, percentage, arithmetic mean, standard deviation, and content analysis for qualitative study. Research tool run through the try-out process with reliability of Cronbach's Alpha coefficient at 0.97 as overall. Mean scores interpretation referred to Bunchom Srisaard's criteria (2002) as shown: average 4.51-5.00 referred to strongly agree (most level), average 3.51-4.50 referred to agree (more level), average 2.51-3.50 referred to undecided (moderate level), average 1.51-2.50 referred to disagree (less level), and average 1.00-1.50 referred to strongly disagree (least level).

Research Results and Discussions

1. Most applicants had their grade point average (GPAX) 3.01-3.50 at 33 percent, 2.51-3.00 at 29.00 percent, and 1.51–2.50 at 20.00 percent. GPA of 3.51–4.00 for Thai language group at 48.30 percent, 3.01–3.50 for math group at 26.70 percent, 3.01–3.50 for social sciences group at 31.30 percent, 3.51–4.00 for social science at 50.70 percent, 3.01–3.50 for language group at 32.00 percent, O-NET scores of 51-75 at 52.70 percent for Thai language, 0-25 for English language at 62.30 percent, 26-50 for math at 54.70 percent, and 26-50 for science at 73.00 percent as shown in table 1. Most applicants graduated from government high schools at 95.00 percent. As overall, the opinions in the 8 of 10 areas were at the most level, considering for each area found that 36 of 45 items were at the more level. The highest score was the interview item (4.00), whereas the least score item was the curriculum publicity (2.94) as shown in Table 2. Therefore, it might be due to the recruitment and selection process in the year 2010 implemented through the systematic process; the enrollment board representatives of each college held the principles of justice, transparency, accountability, and the admission system was processed through electronic database online which stakeholders might check and complain for any error. The enrolled applicants preferred in public health profession at 50.30 percent, corresponding to the study on satisfaction to enroll in a nursing college by Wiparat Suwanwaipatana and others (2007: abstract) found that people who applied to study in nursing course at Boromrajchonnee Ratchasima College of Nursing had opinions at the more level (agree level).

Table 1 Some major education qualifications of the applicants to study in Sirindhorn College of Public Health, Chonburi, Thailand

Items Scores	N = 300		Items Scores	N = 300	
	$\overline{X}$	%		$\overline{X}$	%
Cumulative GPA (GPAX)			**GPA Thai Language**		
1.51-2.50	60	20.00	………	……	……
2.51-3.00	87	29.00	2.51-3.00	31	10.30
3.01-3.50	99	33.00	3.01-3.50	96	32.00
3.51-4.00	54	18.00	3.51-4.00	145	48.30
GPA Mathematics			**GPA Science**		
2.51-3.00	72	24.00	1.51-2.50	58	19.30
3.01-3.50	80	26.70	2.51-3.00	77	25.70

| 3.51-4.00 | 61 | 20.30 | 3.01-3.50 | 94 | 31.30 |

GPA Sociology			**GPA Language**		
2.51-3.00	21	7.00	2.51-3.00	70	23.30
3.01-3.50	97	32.30	3.01-3.50	96	32.00
3.51-4.00	152	50.70	3.51-4.00	64	21.30

O-NET Thai			**O-NET English**		
26-50	105	35.00	0-25	187	62.30
51-75	158	52.70	26-50	111	37.00

O-NET Mathematics			**O-NET Science**		
0-25	123	41.00	0-25	77	25.70
26-50	164	54.70	26-50	219	73.00

Table 1, most applicants had cumulative grade point average (GPAX) 3.01-3.50 at 33 percent, grade point average (GPA) 3.51-4.00 for Thai Language at 48.30 percent, 3.01-3.50 for Mathematics at 26.70 percent, 3.01–3.50 for Science at 31.30 percent, 3.51-4.00 for Sociology at 50.70 percent, 3.01–3.50 for Foreign Language at 32.00 percent, O-NET 51-75 at 52.7 percent for Thai Language,26-50 for Mathematics at 54.70 percent, and 26-50 for Science at 73.00 percent.

Table 2 Mean, standard deviation, and levels of the applicants opinions toward the admission and selection system to study in Sirindhorn College of Public Health, Chonburi, Thailand as overall and at each area.

Items	N = 300		Levels of Opinions
	$\overline{X}$	S.D.	
Curriculum publicity	2.94	.79	moderate
Quota allocation	3.53	.82	more
Applicant qualifications	3.93	.74	more
Admission	3.94	.57	more
Payment	3.97	.81	more
Allocating applicants to curriculum	3.84	.61	more
Interviewing	4.00	.63	more

Physical examination	3.49	.68	moderate
Announcement of eligible applicant	3.81	.68	more
Getting interview and physical examination	3.63	.72	more
Overall	**3.71**	**.45**	**more**

Table 2, the applicants' opinions on admission and selection system to study in Sirindhorn College of Public Health. Chonburi, Thailand, as overall, based on the more level. When considering each aspect found 8 in 10 aspects at the most level which the most score aspect was the interview, and the minimum score was to promote education curriculum.

2. The parents of the applicants mostly had professional as employees, agriculture and business at 73.30 percent. Family income average was more than Baht. 20,000 per month at 49.00 percent. Reasons to support their children/grandchildren for attending this college because their children/grandchildren loved in public health profession at 64.30 percent. They expected on the teacher's knowledge and ability at 42.30 percent, expected on student achievement and employment stability at 55.70 percent, and had been informed of the application from the internet network at 70.30 percent. Parents agreed with the quotas and admissions criteria. They wanted to get opportunities to learn more, scholarships, continuous study, and publicity focusing on education and the recruitment and admission in various courses with the expectation that their children/grandchildren to study until completion, facilities conducive to learning, and support costs. Parents concerned about the life safety and personal property in dormitory and a place to learn for self-adjustment to the environmental health, ease-difficulty of academics, and quality of teaching-learning to complete or fail according to the schedule. It might be due to all graduates would be employed when graduated, in accordance with a study of Rapeephan Pungma and others (2008: abstract) on the enrollment in Sirindhorn College of Public Health, Khonkaen found that most students had employed after finished at 84.94 percent. Also in accordance with the study on satisfaction to enroll in a nursing college by Wiparat Suwanwaipatana and others (2007: abstract) found that people who applied to study in nursing course at Boromrajchonnee Ratchasima College of Nursing had opinions at the more level, most parents got application information from nursing students or public health students who were the college's alumni at 37.9. Reasons to support their children/grandchildren to study in nursing because students would surely be employed after graduation at 79.2. Parents expected that teachers cared for children at 59.8 percent, they expected the students who graduated would have a solid percentage at 89.6, and in accordance with a study of Kawee Siripokapirom (2002) found that five factors that influenced the parent's decision to send their children to study in the extended schools, the Office of Education, Lopburi province, including the management and administration factors, academic reputation of schools, buildings and environments, student activities, and school's publicity. Student activities factor was the most important, while the school's publicity factor was at the least important.

3. The opinions of the admission staffs toward the admission and selection system as overall were at the more level. Considering every item found that 27 in 45 items were at the more level, and the first three items were that "the admission fee is paid through the bank", "the payment through bank facilitated the parents", and "applicants can select multiple payment channels". There were 18 items in the moderate level sorted ascending three orders from the ends found that "allocation of quotas to achieve justice", "understanding of the recruitment", and "the colleges nearer located interview all the courses". When considering in each item found 6 of 10 items at the more level. The payment was at the maximum (3.78), followed by the selection of candidates for the course (3.71), and the last was the course publicity (3.33) as shown in Table 3. This might be due to the staff recognized the importance of the recruitment and selection of students to achieve quality the standardized similar to other higher education institutes. While the payment was electronically transferred anywhere to go, but the curriculum publicity was not proactive, consistent with the study of the applicants for nursing curriculums (Wiparat Suwanwaipatana; 2007: abstract) found that teachers and admission staff had opinions that the recruitment and selection criteria for the direct enrollment quota covered all appropriate features. Application fees and tuition fees were appropriate to the current situation at the moderate level. All admission staffs had experienced with students information. Most of their fathers and mothers had no rights to ask for tuition reimbursement. The average revenue per month 10,000 to 20,000 Baht and less than at 51 percent, and students received average cost per month at 1,000 to 5,000 Baht, in line with the study on the applicants to study in the government high schools (Dolruedee Suwankiri, 1996) found that factors affecting the selection to study sorted in descending order found the tuition cost, reputation of the institutes, availability of educational facilities, utilization of knowledge, buildings, difficulty of entrance examination, course publicity, and faculty reputation.

Table 3   Mean, standard deviation, and levels of opinions of the admission staffs toward the admission and selection system to study in Sirindhorn College of Public Health, Chonburi, Thailand as overall and at each area

Items	N = 60		Level of Opinions
	$\overline{X}$	S.D.	
Curriculum publicity	3.33	.70	moderate
Quota allocation	3.51	.63	more
Applicant qualifications	3.69	.52	more
Admission	3.48	.56	moderate
Payment	3.78	.71	more
Allocating applicants to curriculum	3.71	.67	more
Interviewing	3.60	.66	more

Physical examination	3.48	.64	moderate
Announcement of eligible applicant	3.65	.50	more
Getting interview and physical examination	3.57	.64	moderate
Overall	**3.58**	**.42**	**more**

Table 3, the admission staffs opinions toward the admission and selection system to study in Sirindhorn College of Public Health. Chonburi, Thailand as overall, were at the more level. When considered on each area found 6 in 10 areas at the most level, whereas the payment area was at the most level, and the minimum score was the curriculum publicity.

4. The opinions of curriculum administrators for the recruitment and admission in academic year 2010 found that the direct admission and the general admission were appropriate and fair for the cumulative grade point average (GPAX) of high schools, but the GAT/PAT2 was too high. The criteria should correspond the real average scores of GAT/PAT2 in that year to provide more opportunity for applicants. Curriculum administrators agreed with the quotas classification, but they should make clear that the quotas for whom, numbers of quotas, they should increase quotas for the village communicators, their children, practice areas, district hospitals, dentist assistants, and community health employees. The recruitment for those people should be separated from the regular admission and the GAT/PAT2 should be cut off. Curriculum publicity should be operated early since the beginning of the academic year. Interviews and appearance of new students should be carried out before the announcement of the universities. Substitutes should be called upon to meet the target by shortening the process. The selection of candidates into the selected courses should determine by scores, choice orders, and domiciles. In case of no candidates or qualification not valid they should move or transfer candidates from the nearby provinces, and it must be stated clearly in the application regulation. The interviewer should record text remarks in a case that might have a problem, and the interviewing should be done at the colleges in which the students would study or in Prabomrajchanok Institute as the center of enrollment. Reasons for using GAT/PAT2 because they wanted to recruit high grade students to study, then several features and many criterions were combined such as GPA 2.50 or higher, O-NET scores, GAT/PAT2 test 120 scores from 300 total scores in each category, which was not consistent with the real scores of the GAT/PAT2 results. (GAT/PAT2 No.2/2009, average GAT score 84.82 points, PAT2 average scores 87.93 points (http://www.niets.or.th/upload-files/uploadfile/5/ f22ce9c1db18f16ba3d61f4159ab98e4.pdf). And GAT/PAT2 No.3/2009, average GAT score 94.04 points, PAT2 average score 80.00 points (http://www.niets.or.th/upload-files/uploadfile/ 7/76e9a8b323d686dfb6b83573 aadbe8bc.pdf).

Summary

1. The opinions of the applicants and staffs toward the admission and selection to attend Sirindhorn College of Public Health, Chonburi, Thailand in 2010 as overall were at a high level and all features provided were appropriate.

2. The parents had agreed to the quotas allocation and recruitment. They concerned about their children, and wanted more opportunity to study in order to comply with the quotas and knowledge. They expected their children/grandchildren to succeed in study and continue to graduate bachelor degree. They also requested for facilities conducive to learning such as scholarships, and other support costs.

3. The curriculum administrators had agreed with the results of the cumulative grade point average (GPA) in high schools, classification of quotas, selection of candidates for the courses considering their ranking scores, residences, and interview topics and physical examination. But they did not agree with the GAT/PAT 2, too many elements of scores, insufficient of curriculum publicity, application calendars inappropriate, and the declaration and substitution applicants calling process delayed and repeated several times.

Utilization of Research Results

The results of this research may be useful for the higher education institutes to apply in accordance with the institutional context for the candidate's setting of properties, timing, curriculum publicity, institution reputation, and expenditure, teaching and learning, and learning supports. High schools may use the research results as the guidance information to study in the higher education institutes such as nursing colleges and public health colleges under Praboromrajchanok Institute, Ministry of Public Health, Thailand.

Acknowledgments

References

Kawee Siripokapirom. 2002. *Factors affecting the decision to send children to study in extended schools*. Office of Education. Lopburi Province.

Dolrudee Suwankiri. 1996. *The comparative study of factors affecting the decision to study at vocational education institutions of the state and the private sector: a case study in Nakhon Pathom Province.*

Bunchom Srisaard. 2002. *The preliminary research. 7th.ed.* Bangkok: Suwiriya Sarn.

Pattama Thongsom and others. 2000. *The study of the admission to the Diploma of Nursing curriculum in the Ministry of Public Health with University Affairs in academic year 1996-1997,* (photocopy).

Rapee Pungma et al. 2008. *Opinions on the admission to Sirindhorn College of Public Health. Khon Kaen.* Sirindhorn College of Public Health. Khon Kaen.

Wiparat Suwanwaipatana. 2007. *Opinions on the admission and selection to the curriculums of nursing science. Praboromrajchonnee College of Nursing, Nakhon Ratchasima.*

National Institute of Education Testing. 2009. *Quality analysis test GAT/PAT at 3/2009.* [online] Available at: < http://www.niets.or.th/upload-files/uploadfile/7/76e9a8b323d 686dfb6b83573 aadbe8bc.pdf> [Accessed 10 October 2010].

National Institute of Education Testing. 2009. *Statistics based on the results of the GAT/PAT No.2/2009.* [online] Available at: < http://www.niets.or.th/upload-files/uploadfile/5/ f22ce9c1db18f16ba 3d61 f4159ab98e4.pdf.> [Accessed 10 October 2010].

Krejcie. R.V. and Morgan. D.W. 1970. "Determining sample size for research activities" *Educational and Psychological Measurement,* (30), 607-610.

Trust, Social Capital, and the Evolution of Human Sociality

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Abstract:

In this contribution we want to integrate conceptuals developments in Theoretical Biology, Sociology and Anthropology into an Evolutionary Psychology approach. Evolutionary Game Theory tries to model the evolution of human social behavior, of cooperation in particular. "Strong altruism" has been recently defended as the best model of such a process. According to this view, non-kin cooperate because they are afraid of retaliation by all group members, rather than just the exploited individual; in other words, altruistic punishment is the way to make sure nobody free-rides. This approach, though, is defective in two ways: at the theoretical level, it opens up the possibility of free-riders that get the benefit of general punishment, but avoid the costs of punishment. At the empirical level, the evidence that human groups effectively implement "strong altruism" is missing.

What we find at the empirical level is that cooperation is made possible by trust-building practices. In the anthropological literature, Mauss' classical "Essay on the gift" remains a milestone, but much work from "Social Network" theory also shows how trust is build, maintained and restored, so that delayed exchanges can continue. In Sociology, the notion of "Social Capital", despite its variety of meanings and uses, can also be understood as the resources an individual may have available through the valuable social relationships he developes through trust. Against this background, we will articulate our view of trust, as a complex attitude, that pressuposes affective links, cognitive tracking and moral emotions. We will argue that the complexity of human sociality, when compared to other species, has to do with the way Hominids developed the psychological scaffolding that made trust possible.

1. **Introduction**

Cooperation and the possible altruistic or selfish nature of social behaviour have been approached from an evolutionary perspective of human sociality.

Historically, the analysis of cooperation, at an individual level, started by looking into cooperation among related members -selection by kinship. This was called "biological altruism" (Trivers 1971; Dawkins 1976; Axelrod and Hamilton 1981), or "inclusive fitness", and showed a purely biological view of survival of "selfish" genes, over the individuals which carry them.

However, human social behaviour extends beyond relatives. In general, it seems to be driven by relations of "reciprocity", not just with relatives, and distinguishing between "direct" and "indirect" reciprocity. Direct reciprocity involves a cooperative answer from the same helped subject in a period of time that can vary, giving rise to reciprocal altruism (Trivers, 1971). Its most famous expression, "tit-for-tat", was evident in simulations with experimental games carried out by Axelrod (1984), where it was noted that the strategy followed when subjects interacted repeatedly in these games was imitation of game partner's behaviour.

In indirect reciprocity, though, assistance to a subject does not imply a direct compensation from the same helped subject to the helper, but to somebody else, thus generating a chain of cooperative interactions. One approach to make sense of indirect reciprocity has been "group selection" (Boyd and Richerson 1990; Wilson and Sober 1994; Bergstrom 2002). A greater degree of collaboration among members of a group ready to cooperate is expected, as a strategy that guarantees group survival and its evolutionary continuity.

On the other hand, a purely rationalist vision (Caporael et al. 1989), driven by a stream of economists and sociologists, considers that human beings are eminently rational, optimizers that take efficient decisions and look for the maximization of benefits at minimal costs. Following this idea, individuals would cooperate as little as possible and they would benefit as much as possible of others' help.

Against these set of views, "strong altruism" (Bowles, Gintis, Boyd & Richerson 2003; Fehr & Gachter 2002) proposes an alternative account of the evolution of cooperation. This proposal contends that cooperation (as indirect reciprocity) is made possible due to existence of individuals willing to cooperate in so called "third party games", willing to punish non-cooperative others, even if this amounts to incur in a cost.

Nevertheless, this view has to face criticism. In particular, about the real existence of individuals who practice strong altruism (Guala, 2012). The experimental works used to demonstrate such attitudes, carried out under conditions of laboratory, has been questioned because it is hardly transposable to real social contexts. On the other hand, the

ethnographic evidence provides scant examples of this kind of punishment at level of collective practices. The scarce examples identified rather suggest that "altruistic punishment", when it appears, does not involve a great effort at individual level.

In general, the "evolutionary game theory" approaches reviewed above seem to be too simplified, not taking into account the complexity of human cognitive functioning and the influence of cultural contexts in social activity. In order to go beyond this stage, trust could be a useful mediator element in the explanation of social cooperation. Trust offers a promising way to integrate psychological, sociological and anthropological notions in an evolutionary approach.

Thus, for instance, trust relates to the sociological notion of "social capital". "Social capital" (Coleman 1988; Putnam 1993) is a notion eminently economic, which is defined as "the investment in social connections of interest, with a view to future results". It emphasizes the idea that humans collaborate with each other, looking for some kind of support, exchange or reciprocity. However, authors using this term have based their analysis on very different notions and ways to measure it, in their attempts at explaining human social interactions, the elements that influence them, as well as its structure and dynamics through social networks. In addition, they have disregarded the evolutionary and psychological constraints that this notion has to satisfy.

To overcome this situation, this paper focusses on the mutual influence between cognitive skills and social behaviours. In this regard, it follows the path of Dunbar. Dunbar has worked in the search of this connection through his controversial hypothesis of social brain (Dunbar, 1998), carrying out comparative studies of sociality between species and its cognitive traits (Dunbar, 2007) and analysing possible cognitive limitations that reflect different types of interaction in human social networks (Dunbar, 2003). These works support the idea that socialization in small groups played a key role during most of human evolution. We want to go beyond this conclusion, arguing that this important footprint shows up in trust relationships in current human social relationships.

Hence, from this point of view, cooperation and altruism in human social interaction is mediated by variable trust relationships among the agents. This in turn implies an analysis in which subject are inevitably immersed in a context full of nuances related to a cultural and regulatory context of the society to which the individual belongs, and inside which structures and dynamics of trust are immersed, but keeping traces of the environment in which trust relationships emerged and developed during the greater part of evolutionary process.

2.   **The concept of trust**

The concept of trust has been considered from many points of view. Multiple disciplines, such as psychology or the social sciences have tried to give a definition of it based on their own perspectives. We propose to analyse trust from an anthropological and evolutionary perspective, because it provides the grounds to integrate different aspects of

this concept. Emotional, cognitive, psychological and cultural components in trust can be distinguished, taking the before-mentioned disciplines into account, in order to get a more integrative understanding.

Trust seems to answer the necessity to promote social action in risky contexts of creation of new relationships. Parsons' concept (1970) defines literally trust as *"... the attitudinal ground- in affectively motivated loyalty -for acceptance of solidary relationships"*. This concept highlights the idea of relevance of the emotional component which replaces the complex rational inversion in social relationships. From a purely rationalist perspective would be very difficult to process all necessary information from other's intention to make judgments about people's behaviour and take action accordingly. Lewis and Weigert (2001) claimed that it was not possible to develop plans of action which took into account all possible contingent futures. These cognitive biases were also pointed out by Yamagishi (2001). Consequently, from these points of view trust could emerge like an emotional predisposition based on limited cognitive abilities where emotions and cognitive mechanisms are constantly feeding back each other, to promote joint actions.

In this concept we can find some of the relevant aspects of trust. First the word "attitudinal" refers to a tendency to act of a certain way. This tendency could be supported by psychological and cultural aspects, reflecting the specific environment where trust arises and develops, as well as cognitive aspects involved in trust. The word "affectively" refers to the emotional aspect mentioned above. Finally, "solidarity relationships" refers to the result of trust, that is, cooperative relationships.

The predispositions that Uslaner (2002) called the "moral foundations of trust", involved a positive faithful attitude toward others when there is no information on which to build an action, which requires a collective context to emerge, providing a security sense, based on familiarity. But the psychological, cultural, emotional and cognitive elements pointed out would be implicit in this attitude. These elements could interact in several ways, resulting in different kinds of trust.

In its turn, different sorts of social relationships could emerge from these different types of trust. Therefore, it would be interesting to look for possible changes in trust types, to find out whether they go with simpler to more complex societies where there are more diverse social relationships.

In any case, it is important to distinguish the concept so far introduced, which refers to expectations of other subject's intentions, of trust generated through competency expectations (Barber, 1983), which have a clear understanding of its origin and it is closely related to specific individuals.

3.1. Emotional aspect

The emotional element is closely linked to the origin and dynamics of trust. This aspect as such motivates action to maintain or withdraw decision of trust towards others.

Regarding the origin of trust, this emotional aspect could be pertinent because trust arises as a way to face fear that creation and maintenance of risky social relations might cause by avoiding fear of uncertainty, and thus, providing a feeling of greater security.

Furthermore, there are relationships of trust with a great deal of affection implied. Normally, the level of affectivity is different in closer relationships of trust than in the weakest. Sometimes the level of affection could even be by itself a reason for the emergence of trust without considering another argument, as in case of love relationships, in which otherwise, not mediating this feeling, the same subject might be an unreliable individual.

In highly affective close relationships, betrayal can produce high doses of pain and resentment, while in case of weaker trust relationships, treason can provoke just anger.

On the other hand, the feeling of being reliable is used to promote satisfaction in the trustee, sometimes even pride. Especially the feeling that comes from being trustworthy –a sense of approval- is a strong motivator for actions that contribute to trust maintenance, helping to keep a trusting personality.

There are studies that have analysed more deeply the influence that emotions have to push or pull trust. For instance, according to work of Dunn and Schweitzer (2005), misattributions in judgments of others, that can elicit incidental emotions, may affect future chances of trust. In this kind of case, misattributions influence more the relation with unfamiliar trustees, which truster had less information on, than familiar ones. This is just an example of deep connection between emotions and trust relationships, and hence, to social relationships.

3.2. Cognitive aspect

Humans need some specific cognitive abilities to get possible their trust relationships, which make of trust in humans something so complex compared to other species.

The emergence of self-awareness is a necessary first step (Humphrey 1976; Crook 1980). Also, in the process of emergence of trust an expectation is generated about the trustee's attitude and conduct. This expectation is based first on attribution of a mental state to the trustee (theory of mind), expecting a pattern of behaviour based on an analysis carried out by his context. But this expectation also involves getting relevant information by truster about trustee to take the decision to trust him, which is an analysis of multiple

variables on which to infer a conclusion – a reasoning process which ends up formulating an appropriate judgment of the situation. In addition, the information collected also depends on how reality is perceived and interpreted by truster. The way we perceive what surrounds us is also part of the cognitive process implicit in trust (Good 1988).

This complex process could further include the use of schemas and stereotypes –as social categories- which sometimes support trust, as well as interpersonal attributions might be also important, about which roles people can influence the way of attributing certain characteristics in others. Also occasionally trust requires a long or medium term vision, sometimes about intentions, that may require even a future planning and also certain complex memory capabilities that enable the collection and processing of all this information.

3.3. Psychological and cultural aspects

The psychological aspect attempts to identify what psychological traits acquired during the development of the individual, from both genetics and family, inside the social context in the early years of life, could have influenced his general tendency to trust others. This aspect may refer to an individual's attitude towards others, sometimes strangers.

Many studies have attempted to identify psychological attitudes related to trust. Rotter (1980) found that the more trustful individuals usually were also the more trustworthy and more liked by friends. They are also less likely to lie, cheat or steal, to be unhappy or maladjusted. So, Uslaner (2002) claimed too that positive self-assessment was one of the strongest predictors of trust, and Freitag & Traunmüller (2009) thought that predisposition to general trust was closely related to psychological traits such as optimistic attitude.

In this regard, Wrightsman (1966) concluded that altruistic, honest and independent people were more trusting that people with hostile attitudes toward human nature. Moreover, being a trustworthy person implied according to Hardin (2006) a strong psychological motivation to maintain this attitude of approval.

As regards the cultural aspect, by culture we mean all those intangible constructs created by a society that are recognized, shared and internalized by its members, and which influence both their collective organization and individual action. This includes norms, beliefs, customs, practices, habits, values, experiences, etc…

Consequently, it is important to consider the cultural aspect as a factor affecting trust because the whole context of beliefs, norms and values shared by a social group can modulate trust interactions in a characteristic way. Thus, for example, Yamagishi (1998) appeals to differences in forms of trust between Japanese and American people.

Within this cultural aspect, there could be included, therefore, education systems which help to individual's development; the rules formally established by governmental institutions to create a collective atmosphere of greater or lesser trust and security; as well as the implicit rules culturally transmitted between individuals of a society that are internalized as a set of exemplar trust behaviours, which are shared and supported by all members of a community, and that are based on values transmitted by generations and consolidated by habits and daily routines of their cultural practices.

Religious beliefs can also be included under this dimension. They can also encourage or limit certain trust behaviours, and the proper set of legitimate recipients. Certain historical events that could have influenced dramatically the consolidation of certain attitudes of trust on the individuals of a population belong also to this category.

3. Types of trust

Interest on trust analysis comes from studies about social capital (Coleman 1990; Fukuyama 1995; Glaeser et al. 1999; Uslaner 2002). The most extended trust classification considers two types: the denominated particularised trust and generalised trust (Uslaner 2002; Yamagishi & Yamagishi 1994).

Origins of both of these two types of trust seem to be different. The former appears as a product of the more or less positive trustworthy experiences of an individual, while the later seems to be based on innate predispositions or psychological mechanisms learned in early ages of individual.

Particularised trust, called "knowledge-based trust" by Yamagishi (1998) and "thick trust" by Putnam (2000), refers to trust created between closer relationships, normally relatives, friends and acquaintances. This type seems to arise in a familiarity context of reiterated interactions where experience of daily practices can maintain or break the trust degree between people.

Generalised trust, "general trust" (Yamagishi 1998), or "thin trust" (Putnam 2000), rather refers to the "trust moral sense" of Uslaner, which is used with weaker and more distant relationships, even with strangers, and depends upon certain natural predispositions, based on faith acts towards the kind behaviour of others. According to Uslaner (1999), this type of trust would be more stable and more difficult to change due to every day experiences, a contention which is controversial.

Many have attempted to explain which elements have more influence on generalised trust. For example, Glanville & Paxton (2007) suggest that generalised trust is more influenced by the context than by psychological factors; in particular, they underline the remarkable influence of neighbours and people with whom individual interacts in

shops. Other studies (Delhey & Newton, 2010; Bjørnskov, 2006) also corroborate the influence of communitarian factors in generalized trust. Thus Delhey & Newton (2001) concluded that the elements that can influence the widespread of generalized trust vary depending on the specific circumstances of each country. According to Bjørnskov (2006) monarchy countries seem to show higher levels of generalized trust, and post-communist countries show higher levels of distrust. These same works, which use a sociological perspective based on statistical analysis of regressions correlating certain social indicators with trust generation, could be confusing because such indicators used to measure trust can rather be a reflection of its consequence. Also the categories chosen as explanatory variables could be implicitly interconnected, in which case they don't provide a clear argument to explain creation of trust.

From an evolutionary point of view, it could be more understandable the integration of both collective experiences and individual predispositions, admitting their interrelationship and constant feedback, to create a spectrum of trust forms, which would be linked to particular contexts.

Within these trust forms, different spheres could be distinguished that can contribute to a more sophisticated trust typology. This typology distinguishes different stages in trust formation, both throughout individual development in a given context, and also along the evolutionary process:

- The "*generalised trust*": corresponding to the generalised trust influenced by innate and learned elements in environments of close relationships in early ages and generating a general trust attitude toward others, that could be affected by other experiences in individual's life.
- The "*personalised trust*": corresponding to the particularised trust based on reiterated experiences with individuals forging el circle of closest relationships.
- The "*institutional trust*": influenced by institutional agencies, which establish policies that create a framework of norms and values as socialization mechanisms, that may affect to trust in the members of the society. Authors like Luhmann (1979) studied this influence.
- The "*identity trust*": that creates a tendency to rely on individuals with whom traits are shared, forming groups of trust. According to this view, Foddy, Platow & Yamagishi (2009) claim that "group-based trust" operates in the presence of mutual recognition of shared group membership, traits of identity, attribution of more favourable characteristics to in-group members, and the expectation of altruistic and fair behaviour from them.
- The "*contextual trust*": acquired through purely contextual features that may refer to the individual's age, sex, place of residence, origin, education, income level, etc..., circumstances that could influence individual trust degree.
- The "*weighted trust*": refers to the issue that raises the trust relationship. The truster may trust the trustee in relation to an issue but not equally in relation to another because the level of risk involved maybe differently pondered.

- The "*strategic trust*": refers to trust based in interests, that could be mutual or not, trusting others to obtain a goal. Even if it is not based on a real sense of trust, to take this risk could be considered necessary to reach a goal. Sometimes this type is based on knowledge that the trustee will respond according to expectations because he is also interested in the trust relationship – "encapsulated interest" of Hardin (2002). In addition, this kind of trust creates the necessary environment where social capital can emerge, increasing the chances of positive response from trustee. Accordingly, this type of trust, more than being based on real feelings of trust, would be based on a conscious intention of using this mechanism to obtain social capital.

These spheres of trust seem not be isolated, but interconnected, and influencing each other in shaping, not only a trusting personality, but also a trustworthy one.

Regarding interaction between spheres of trust, an example could be made with generalised trust. First, generalised trust can be influenced by personalised trust since the very close relationships left their mark on the social interactions during the first years of life. It may also be influenced by institutional trust since values disseminated by institutional agencies can be transmitted also in those early years, or by identity trust which can also be inculcated in behaviours during the earliest moments of life. Generalised trust could also feed itself in positive terms according to authors as Freitag M. & Traunmüller R. (2009), who claim that trust is influenced by positive experiences with strangers but not by negative experiences. Even generalised trust could be influenced by contextual, strategic, or weighted trust.

Another example of interaction with respect to *weighted trust* could be the work of Jones & George (1998) who distinguished between conditional and unconditional trust. The difference relates to attitudes of trust that do not involve a significant cost for truster from those trust attitudes that could require self-sacrifice at the limit, respectively. This study seems relevant because sometimes trust levels differ not just accordingly to trust objects but also because of attitudes and values promoted in certain environments to create relationships with more or less personal involvement. This case could be an example of institutional influences on weighted trust.

4. **Dynamics of trust**

5.1.   Creation and maintenance of trust

The most primary human needs - affectivity, help, support, company and security- can be seen as the primary urges towards sociality, and therefore, as prompting the need for trust.

Among the affective motivations to trust, there are those that come from family or friends relationships, people in love (Yamagishi 1998), or trust coming from strangers

with friendly traits. The "friendly traits", include certain facial features, gestures and attitudes can contribute to a sense of trust between strangers (Scharlemann et al. 2001; Tingley 2010).

But trust not always comes accompanied of a sentiment of affection. There may be other reasons for trust emergence separated from affective context, as we have seen above. This can be the case for "strategic trust" in the pursuit of different goals -what Hardin (2002) calls "encapsulated interest", and Yamagishi (1998), "assurance of security".

Among the motivations for strategic trust there can be the creation and maintenance of a reputation (Coleman 1990; Cook & Hardin 2001), the pursuit of mutual interests or shared goals (Conviser 1973), the establishment and expansion of social networks, the obtaining of help to cope with changes, etc... Trust can be purely based on moral influences from the context in which truster operates, and not on its genuine expectations; it may also be imposed by certain commitments (Hardin 2006). In these cases, trust does not imply a real feeling of positive expectation from the subject of trust.

Maintenance of trust could depend on kind of trust, being required in particularised trust a constant demonstration of trust in everyday experiences, building trust step by step and person to person. In a context of close intimacy between subjects, where emotions get more intensity, trust can be more vulnerable. Consequently, repetition of positive actions and experiences is required.

For generalised trust, on the other hand, a positive attitude towards others might be a more stable quality to maintain trust, although some authors consider that positive experiences might positively feedback this attitude.

And of course, as it has already been mentioned, cultural, institutional and contextual individual's environment may be other external influences in trust creation and maintenance.

5.2.   Obstacles to trust

Trust is often difficult to create and maintain due to multiple factors. One among them deserves special attention: the degree of asymmetry implicit in trust (Hardin 2002; Six 2005), which requires a few negative experiences to reduce it, and a set of reiterated positive experiences to keep it, which constitutes a constraint to its easy expansion.

Trust is also based on perceptions and predictions about the other's behaviour (Six 2005), which suppose a weak base for the creation and maintenance of trust, being very vulnerable to purely speculative factors at the time of taking trust decisions and sometimes may be too highly malleable by policy decisions, media, educational environments, etc...

A trusting decision involves a high risk, requires great deal of openness to others, and sometimes to be exposed to behaviour from subjects whose acts can produce a very intense emotional burden in truster. Trusting someone does not guarantee the certainty of that such person will respond to expectations. All these elements may cause reluctance in individuals to take such risks.

With regard to the resolution of potential conflicts of trust, the lack of a clear understanding of what trust is and how it works, as well as the multiple factors that can affect it, may make difficult its resolution.

6. Environments of emergence and evolution

6.1. Environment of emergence

Once identified the several aspects that have to be taken into account in modelling trust, it may be easier to recreate an environment in which this feature could have emerged and evolved.

In evolutionary terms, it seems reasonable to think about the emergence of trust at the closest relationships between relatives and in a family environment. These are personal relationships, created through the strong ties of basic emotions, when the individual is in a situation of dependency towards his parents during the long period of human maturation. In this period, attitudes are shaped, just as expectations about others, on the grounds of their compliance through experience. This type of relationships, which are shared by many others species, are transformed in the hominid lineage because of the new cognitive and cultural dimensions.

Thus, in more complex social environments, where trust relationships extend not just to kinship members, such behaviours require more complex cognitive capabilities, appearing as a result groups with dominant individuals, coalitions, hierarchies. These new type of relationships involve a higher social risk and consequently the need to track other's behaviour to establish closer contacts with some individuals than with others. To succeed at power struggles, domination or simply survival, the cognitive capacity to generate trust could be developed as a beneficial strategy. Trust recreates the sense of familiarity that provides security in insecure contexts and this familiarity can been used to facilitate action in more complex social contexts. Primates use grooming as a means of socialization (Dunbar 1998) creating closer relationships between group members to get certain aims -social capital. These could seem very primitive signals of trust relationships, generating that sense of familiarity.

In the human case, trust has adopted more complex features, consistent with the broader possibilities of human cognitive processing, diversifying forms of trust and gaining broader meanings. Survival in difficult environments where humans needed to acquire adaptive advantages, social bonding and cooperation made trust indispensable.

Instances of trust could help to create and improve ties; as Yamagishi (1998) claimed, "*under high social uncertainty and high opportunity cost, high trusters will have a better chance to make more profits than low trusters*" (pp. 56). Accordingly, individuals creating stronger and more diversified bonds of trust could be more likely to survive than those that limited trust to few people. This need to link with others for common purposes might have constituted the evolutionary pressure which encouraged the tendency to trust as a means to reduce anxiety caused by the need of taking large risks, sometimes leaving own life in hands of others. This new scenario of socialization in small groups during most of human evolution could have been the environment of emergence of other types of trust, for example, strategic or identity trust.

According to Uslaner (2002), creation of an environment based on trust could promote cohesion and a greater tendency to help others, solidarity and union. In the early days of human evolution, in which human groups were small and where initially there could not have existed large differences of power between individuals, a more or less egalitarian social organisation could have encouraged trust, benefiting of all its members.

6.2.   Evolution of trust

When members of group grew in number, trust relationships could change and adapt to social relations in more complex and diverse contexts. However, personal trust with closest subjects with whom individuals interacted was maintained, in relationships with a greater emotional charge, but also was needed a more flexible typology of trust to enable actions in common with lesser-known subjects. Being cognitively too costly to maintain a strong bond with an unlimited number of subjects, which could require long time and commitment in frequent meetings (Dunbar 2003), as well as treatment of excessive information, more flexibility in trust could be driven using other cultural resources in which humans had specialized.

In this way, in culturally and organizationally more complex societies, trust could have evolved in the forms of generalized, institutional, contextual and weighted trust, using in this process a range of emotions more complex too. Thus, for instance, generalised trust could have emerged, less based on interpersonal experience, which are impossible to extend to all known subjects, and more on a learned attitude toward others in general. In these cases, the emotional component lost intensity in affectivity but it was possible to extend the number of interactions and social capital contacts. Evolution of sociality involved the evolution of trust in a typology of more nuances and gradations.

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References

Axelrod, R. & Hamilton, WD 1981, 'The evolution of cooperation', *Science*, vol. 211, pp. 1390-1396.

Axelrod, R 1984, *The evolution of cooperation*, Penguin, New York.

Barber, B 1983, *The logic and limits of trust*, Rutgers University Press, New Brunswick, New Jersey.

Bergstrom, TC 2002, 'Evolution of social behaviour: Individual and group selection', *Journal of Economic Perspectives*, vol. 16, pp. 67-88.

Bjørnskov, C 2006, 'Determinants of generalized trust: a cross-country comparison', *Public Choice*, vol. 130, pp. 1-21.

Boyd, R, Gintis, H, Bowles, S & Richerson, P 2003, 'The evolution of altruistic punishment', *Proceedings of the National Academy of Sciences,* vol. 100, pp. 3531-3535.

Boyd, R & Richerson, P 1990, 'Group selection among alternative evolutionarily stable strategies', *Journal of Theoretical Biology*, vol. 145, pp. 331-342.

Caporael, LR, Dawes, RM, Orbell, JM, & Van de Kragt, AJC 1989, 'Selfishness examined: Cooperation in the absence of egoistic incentives', *Behavioral and Brain Sciences*, vol. 12, pp. 683-739.

Coleman, J 1988, 'Social capital in the creation of human capital', *The American Journal of Sociology*, vol. 94, Supplement: Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure, pp. S95-S120.

Coleman, J 1990, *Foundations of social theory*, Belknap Press, Cambridge.

Conviser, RH 1973, 'Toward a theory of interpersonal trust', *The Pacific Sociological Review*, vol. 16, no. 3, pp. 377-399.

Cook, KS & Hardin, R 2001, 'Norms of cooperativeness and networks of trust', in M. Hechter & K-D Opp (eds), *Social norms*, Russell Sage, New York, pp. 327-347.

Crook, JH 1980, *The evolution of human consciousness*, Oxford University Press, Oxford.

Dawkins, R 1976, *The selfish gene*, Oxford University Press, New York.

Delhey, J & Newton, K 2010, 'Who trusts? The origins of social trust in seven societies', *European Societies*, vol. 5, no. 2, pp. 93-137.

Dunbar, R 1998, 'The social brain hypothesis', *Evolutionary Anthropology*, vol. 6, pp. 178-190.

Dunbar, R 2003, 'Social network size in humans', *Human Nature*, vol. 14, no.1, pp. 53-72.

Dunbar, R 2007, 'The evolution of the social brain: anthropoid primates contrast with other vertebrates', *Proceedings The Royal Society B*, vol. 274, pp. 2429-2436.

Dunn, JR & Schweitzer, ME 2005, 'Feeling and believing: the influence of emotion on trust', *Journal of Personality and Social Psychology*, vol. 88, no. 5, pp. 736-748.

Fehr, E & Gachter, S 2002, 'Altruistic punishment in humans', Nature, vol. 415, pp. 137-140.

Foddy, M, Platow, MJ & Yamagishi, T 2009, 'Group-based trust in strangers', *Psychological Science*, vol. 20, no. 4, pp. 419-422.

Freitag, M & Traunmüller, R 2009, 'Spheres of trust: An empirical analysis of the foundations of particularised and generalised trust', *European Journal of Political Research*, vol. 48, pp. 782-803.

Fukuyama, F 1995, *Trust: the social virtues and creation of prosperity*, Free Press, New York.

Glaeser, E et al. 1999, *What is social capital? The determinants of trust and trustworthiness*. National Bureau of Economic Research, Cambridge.

Glanville, JL & Patxon, P 2007, 'How do we learn to trust? A confirmatory tetrad analysis of the sources of generalized trust', *Social Psychology Quarterly*, vol.70, no. 3, pp. 230-242.

Good, D 1988, 'Individuals, interpersonal relations, and trust, in DG Gambetta (ed.), *Trust*, Basil Blackwell, New York, pp. 131-185.

Guala, F 2012, 'Reciprocity: Weak or strong? What punishment experiments do (and do not) demonstrate', *Behavioral and Brain Sciences*, vol. 35, pp. 1-59.

Hardin, R 2002, *Trust and trustworthiness*, Russell Sage Foundation, New York.

Hardin, R 2006, *Trust*, Potity Press, Cambridge.

Henrich, J, Boyd, R, Bowles, S, Camerer, C, Fehr, E & Gintis, H (ed.) 2004, *Foundations of human sociality: economic experiments and ethnographic evidence from fifteen small-scale societies*, Oxford University Press, New York.

Humphrey, N 1976, 'The social function of intellect, in PPG Bateson & RA Hinde (ed.), *Growing points in ethology*, Cambridge University Press, Cambridge, pp. 303-317.

Jones, GR & George, JM 1998, 'The experience and evolution of trust: implications for cooperation and teamwork', *Academy of Management Review*, vol. 23, no. 3, pp. 531-546.

Lewis, JD & Weigert, A 2001, 'Trust as a social reality', *Social Forces*, vol. 63, no. 4, pp. 967-985.

Luhmann, N 1979, *Trust and power*, John Wiley and Sons, London.

Parsons, T 1970, 'Research with human subjects and the "professional complex" ', in Paul Freund (ed.), *Experimentation with human subjects*, Braziller, New York, pp. 116-151.

Putnam, RD 2000, *Bowling alone: the collapse and revival of american community*, Simon & Schuster, New York.

Rotter, JB 1980, 'Interpersonal trust, trustworthiness, and gullibility', *American Psychologist*, vol. 35, no. 1, pp. 1-7.

Scharlemann, JP, Eckel, CC, Kacelnik, A & Wilson, RK 2001, 'The value of a smile: Game theory with a human face', *Journal of Economic Psychology*, vol. 22, pp. 617-640.

Six, F 2005, *The trouble with trust. The dynamics of interpersonal trust building*. Edward Elgar Publishing Limited, Massachusetts.

Stolle, D 2002, 'Trusting strangers: the concept of generalized trust in perspective', *Österreichische Zeitschrift für Politikwissenschaft*, vol. 31, pp. 397-412.

Tingley, D 2010, 'Face-off: facial features and strategic choice', working paper, http://scholar.harvard.edu/dtingley/files/tingleytomzcondlcoop.pdf.

Trivers, RL 1971, 'The evolution of reciprocal altruism', *Quarterly Review of Biology*, vol. 46, pp. 35-57.

Uslaner, EM 1999, 'Democracy and social capital', in M.E. Warren (ed.), *Democracy and Trust*, Cambridge University Press, Cambridge.

Uslaner, EM 2002, *The moral foundations of trust*, Cambridge University Press, Cambridge.

Wilson, DS & Sober, E 1994, 'Reintroducing group selection to the human behavioural sciences', *Behavioral and Brain Sciences*, vol. 17, pp. 585-654.

Wrightsman, L 1966, 'Personality and attitudinal correlates of trusting and trustworthy behaviors in a two-person game', *Journal of Personality and Social Psychology*, vol. 4, no. 3, pp. 328-332.

Yamagishi, T 1998, *Trust. The evolutionary game of mind and society*, Springer, Tokyo (2nd ed., 2011)

Yamagishi, T 2001, 'Trust as a form of social intelligence', in K.S. Cook (ed.), *Trust in society*, Russell Sage Foundation, New York, pp. 121-147.

Yamagishi, T & Yamagishi, M 1994, 'Trust and commitment in the United States and Japan', *Motivation and Emotion,* vol. 18, pp. 53-111.
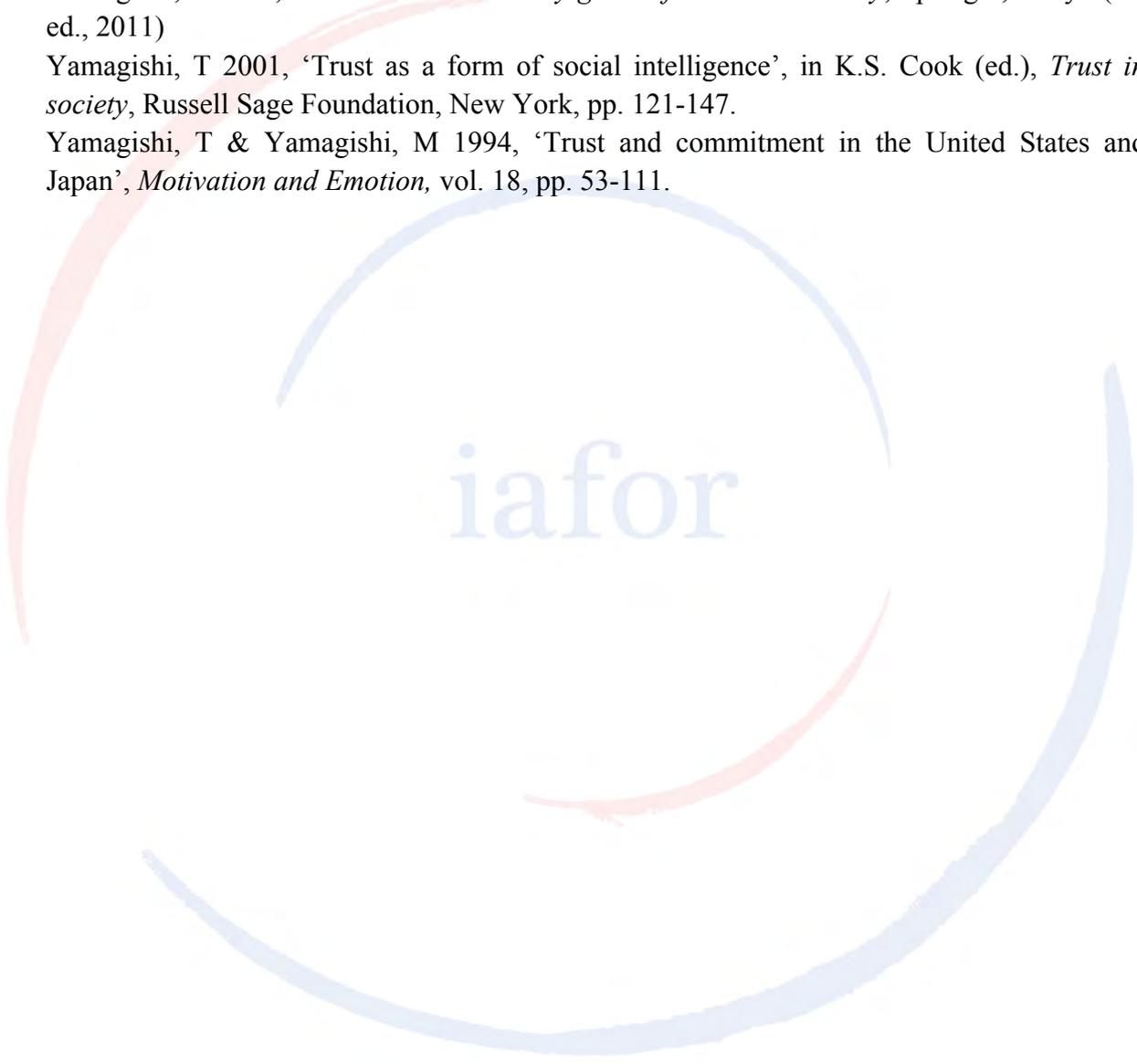
Development of Trust in T- Groups

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Abstract:

In a globalized world doing business means navigating through a complex process of transactions and rapidly fluctuating interests. T- Groups allow us to see the dynamics of trust and mistrust at a micro level and its presence or absence as a powerful factor in negotiation and growth.

A condition of "trust" is essential at the core of personal, group, and organizational development , (Gibb, 1972, 1978) where participants negotiate / invest / share or confront from positions of separate interest. This paper is an effort to understand the social psychological processes that take place in the interactions within T- groups and can in turn be applied to understand larger systems.

T- Group (Training Group) is a small unstructured group in which the participants learn from their own interactions and dynamics evolving around issues pertaining to interpersonal relations, group dynamics and leadership. The group evolves like a laboratory where learning takes place mainly through experiencing, reflecting, hypothesizing, experimenting and conceptualizing rather than through lectures. Kurt Lewin(1890-1947) the forerunner of the T- Group trainings started with the understanding of what he called "group dynamics".This kind of group work is used for sensitivity training and is based on experiential learning.

"Trust" is the prerequisite for group movement, group formation and group growth which is a dynamic process. "Sameness" and "otherness " are two factors that escalate or decrease trust in the initial stages of interpersonal transaction but as the group progresses towards maturity more unpredictable dynamics emerge.

This paper will draw on the data available from various T groups which I have experienced as a participant and also as a facilitator, and study the range of forces that play in the field of transactional behavior within a group that build trust applying the theories of Lewin, Carl Rogers and Kenneth Benne.

Purpose of the paper:

A condition of "trust" is essential at the core of personal, group, and organizational development , (Gibb, 1972, 1978) for that matter in all situations where the participants negotiate / invest / share or confront from positions of separate interest. This paper is an effort to understand the social psychological processes that come to play in the interactions within T-groups and can in turn be applied to understand larger systems.

Introduction:

In the psychological context trust can be attributed to relationships between people. It is also the basis of relationships within and between social groups. The dynamics of intergroup and intragroup interactions are often framed in terms of trust. According to Barbara Mistral there are three basic things that trust does to the lives of people. It makes social life predictable, it creates a sense of community,and it makes easier for people to work together. Trust may also be understood in relation to power, surveillance and accountability.

Trust building is a dynamic process and not a static one and thus can get created in some moments and lost in others. T- Groups allow us to see the dynamics of trust and mistrust at a micro level and its presence or absence as a powerful factor in group building and personal growth.The outcome of this trust building process is higher empathy, timely support, reduced stress and reduction and simplification of forms and procedures. In a globalized world doing business means navigating through a complex process of transactions and rapidly fluctuating interests. These transactions develop through trust .Hence such simplification is an indicator of trust in any group/organization and may be seen in the form of reduced paper work, effective delegation, higher productivity and effective negotiations.

This paper will draw on the data available from various T groups in which I have participated as a participant and as a facilitator to explore the range of forces that play in the field of transactional behavior within the group.

Structure of the paper:

The paper will be developed through the following sections:

What is a T- Group?

History of T Groups

Theories of Group Development (Tuckman ,Shultz and Susan Wheelman)

Understanding of Psychodynamics: what escalates conflicts: Skepticism, suspicion, doubt about intensions.

Value systems & Meta Goals in T groups (Authenticity openness and trust) (TORI)

Transfer of the learning from T group to larger systems.

What is a T- Group

T- Group (Training Group) is a small unstructured group in which the participants learn from their own interactions and dynamics evolving around issues pertaining to interpersonal relations, group dynamics and leadership in the presence of a facilitator who does not lead the group but intervenes to make process observations that help the group. . This kind of group work is used for "sensitivity training " and is based on experiential learning.

"The learner in the T group learns from his own and others' immediate experience by researching it , giving and gaining accurate and open information about it, and engaging in a shared process of making sense of events." Steve Potter

In a typical T Group setup (Basic Lab) 10 to 12 participants gather together for 5- 6 days (36-40 hrs) and work with a facilitator to discover something about themselves- their strengths styles , interpersonal relationships participation in the group, how they are perceived by others etc. ISABS states the purpose of a Basic T GROUP (BLHP)as follows.

- Become aware of their own patterns of behaviour
- Know the impact of their behaviour on others
- Know the impact of others' behaviour on themselves
- Improve their effectiveness in interpersonal interactions to derive greater mutual satisfaction from them
- Discover their potential to live more effectively and meaningfully

The group does not have any predetermined agenda and evolves its own agenda over the time. The participants act as a resource to each other and help in creating a climate which is conducive to discovery about self and others through data generated in the group. The group evolves like a laboratory where learning takes place mainly through experiencing , reflecting , hypothesizing , experimenting and conceptualizing rather than through lectures. The group evolves through feedback and self disclosure while moving through tasks

"Trust" is the prerequisite for group movement, group formation and group growth. "Sameness" and "otherness " are two factors that escalate or decrease trust in the initial stages of interpersonal transaction but as the group progresses towards maturity more unpredictable dynamics emerge.

History of T Groups:

Around 1947 , in the United states ,a group of Social Scientists who were seeking ways to translate theory and knowledge about human behavior into more effective group action ,

innovated a new educational method, known as sensitivity training. These scientists , were Kurt Lewin , Ronald Lippit , Ken Benne, Leland Bradford and their associates who were primarily working in the field of adult education, systematically observed and reacted to their own behaviours, primarily in small face to face groups, called training T groups. This process of generating data and learning therefrom has been called "Laboratory Method " or experience based learning. (Sinha.D 1986)

 The first T group was thus conducted by Kurt Lewin at the Massachusetts Institute of Technology , for training community leaders. The same year the National Training Laboratories was formed in Bethel (USA).In India the laboratory training was introduced in mid fifties by Udai Pareek and Stephen Corey. In 1962 the first formal T Group training was held in India and since then T Group has become one of the most effective OD intervention today.

What is it about T groups that it has gained such popularity?

The T groups focus on two directions.

1.To gain deeper understanding about self and personal growth.(Intra personal focus)

2. To explore group dynamics and relationship between members. This leads to team building interventions (Interpersonal and Organisational focus)

Theories of Group Development.

 There are various theories that describe group development, the most popular one being Tuckman's theory . In 1965 Bruce W.Tuckman hypothesized that groups go through the four stages of development during their formation, existence and dispersal. These are

1 Forming

2, Storming

3. Norming

4. Performing

On reviewing studies on his hypothesis in 1977, Tuckman decided to add the fifth and the final stage of group development : Adjourning.

Jones in 1974 developed a model to show the four typical stages in the evolution of groups in relation to two major dimensions of personal relations and task functions. The progress of these paths is parallel and interrelated and as shown in the figure.:
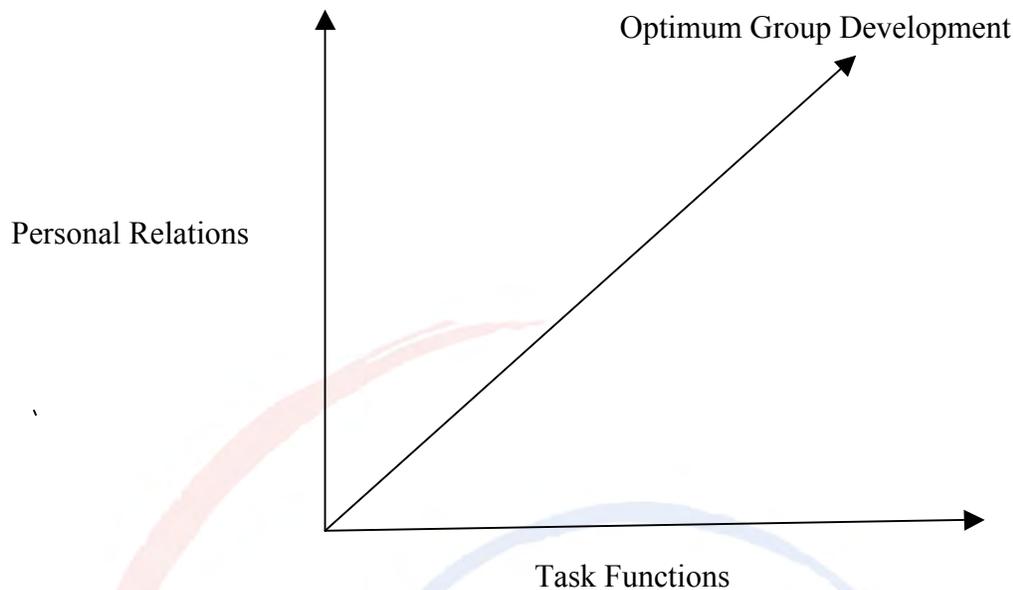
Bales(1950) model of group equilibrium is similar in the sense that it states that a group continuously divides its attention between instrumental (task related) and Expressive(Socio-emotional Needs)

The personal – relations dimension of the model encompasses all the interrelationships that people develop and sustain in the group- their feelings , expectations, commitments, assumptions, and problems with one another. The stages of personal relations correlate with the development of the identity and functions of a group from the personal orientations of the individual members. For the group to function cohesively the task functions must correlate with the progress of a group in understanding and accomplishing its work. Trust within the group plays a major role as the group moves through the personal relations and task functions stages simultaneously. Both progress and setbacks in one dimension influence the behavior and progress in the other.

The stages of group development are sequential and developmental. A group will proceed through the 5 stages only as far as its members are willing to grow. Group cohesiveness seems to depend on how well group members can relate in the same phase at the same time.

There are a few other Group development models like the follows

 Tubb's Systems model (Orientation,Conflict,Consensus,Closure)

McGarth's Time, Interaction and Performance (TIP)Theory

(Inception ,Technical Problem Solving,Conflict Resolution & Execution).

Susan Wheelman in 1990 based on Tuckman's model and the theories of Wilfred Bion proposed a integrated model of group development. According to this model a group moves in a linear

fashion towards maturity as it works through the stages on Dependency, counter-dependency, Trust and finally work stages of group life.

Stage 1- Dependency and Inclusion

Stage 2- Counter-dependency and Fight

Stage 3- Trust/ Structure

Stage 4.- Work / Productivity

Final - Termination separation anxiety.

The process of group development takes place through the development of personal relations and task functions. Thus openness, risk taking, self disclosure and helpful feedback amongst the participants help both the personal relations and the task functions thus helping group movement and group growth.

Development of Trust in T- Groups

Trust is a psychological construct that helps social interactions. According to Dr. Duane C. Tway, Jr" "trust" is a psychological construct and in his model trust is based on 3 components."

1. the capacity for trusting (the total life experiences that have developed ones current capacity and willingness to risk trusting others)

2. the perception of competence (ones perception of ones ability and the ability of others with whom one has to work)

3. the perception of intentions (ones perception that the actions, words, direction. Mission , or decisions are motivated by mutually serving rather than self serving motives) (A Construct of Trust ,1993) (link this with splitting and projecting)

Tway defines trust as "the state of readiness for unguarded interaction with someone or something".

In his work Rhetoric , Aristotle(384-322 BC) suggested that the trust of the speaker by the listener was based on the listener's perception of 3 characteristics of the speaker.

He believed that these three characteristics to be 1. the intelligence of the speaker(correctness of opinions, or competence),2. the character of the speaker (reliability- a competence factor, and honesty- a measure of intentions), and 3. the goodwill of the speaker (favourable intentions towards the listener)

In T groups these factors are tested out through interpersonal interactions and perceptions are formed.

In the first stage of the group ie the **forming stage** the members try to create or build the atmosphere wherein learning can take place. Hence after a usual round formal introduction (in case of a stranger group) done by 1 or 2 members who take up the leadership and decide on sharing names , or detailed introduction, as there is no fixed agenda or data available. The decision is made through seeking consensus (with their own reasons) or sometimes majority. Any confrontation at this juncture is not observed .There usually is an eagerness to perform as a group as members try to test the waters for further exploration.

Disagreements on tasks start to happen from after a couple of interactions. Leadership issues emerge. Trust is not questioned at such an early stage.

The group members remain dependent on each other. A few norms start to build up during this period. Interactions between the participants are mostly on the basis of   "what do we do next" what are we here for etc…(setting up of the purpose of the gathering/ meeting/ goal setting/ clarification of agenda.) while testing mutual likes and dislikes …commonalities seem to form the first basis of Trust in a group and the actual group formation starts to begin. (earlier it was more of a forced group working towards the common stated goal… we have to be here for the next 5 days and do something for ourselves). Members come in more to buy membership. At this stage trust is more contractual in the form of buying membership or lets say retaining membership in the group. In the initial stages the interest or initial process of trust is also parochial.

This is usually followed by the **storming stage** though there are no clear demarcations of the stages.This happens to be the most important stage of the group as this stage involves maximum risk taking. Difference based on values and experiences emerge although not all members are involved in this process. This leads to the starting of the formation of inner group and outer group. Interventions are made by leaders and facilitators to bring the outer group to the inner fold. Questions about Trust start to emerge and some participants take the risk of sharing that they don't trust the group enough. (Ironically this statement at his stage shows that the participant trusts the group enough to share this inner feeling of distrust) Dependence on the facilitator is seen in the form of anger towards him/her for not guiding and usually the most counter dependent takes to aggressive confrontation. (The facilitator becomes the repository of anger.) This usually leads to the dissolving of dependence issues and the level of trust rises in the group. The group starts to feel empowered in the group to deal with the emerging issues. This also happens to be the phase when the group members who have been in the outer group take a flight almost saying" I don't like such things… or I don't like such confrontations or I don't feel close to anybody …. I am not a part of this group" Such issues if articulated are often dealt with by the group and the members are able to move into the inner circle. But it also happens that they are not able to either articulate or resolve their issues.(remain rigid) and withdraw from the group. Like the FIRO theory they are not able to move from belonging stage to the role seeking stage and hence exit mentally from the group.

Inability to become a part of the process is often projected on to the group by statements like "I don't trust the group" What the participant is actually asking is can I create a space which I can trust? Deeper questions around authenticity are brought in and feedback is given more freely once a level of trust is established. Self disclosure and acceptability shift the group.

Melalnie Klein (1946)in her seminal work has talked about the splitting and projective identification that takes place in a group. In multicultural settings these projective identifications often form the root cause of conflict.

Splitting (DSM-IV, pg 757) The individual deals with emotional conflict or internal or external stressors by compartmentalizing opposite affect states and failing to integrate the positive and negative qualities of the self or others into cohesive images.Because ambivalent affects cannot be experienced simultaneously, more balanced views and expectations of self or others are excluded from emotional awareness. Self and object images tend to alternate between polar opposites: exclusively loving, powerful, worthy, nurturant, and kind- or exclusively bad, hateful, angry, destructive, rejecting or worthless.

Projective identification (DSM-IV, pg 756) The individual deals with emotional conflict or internal or external stressors by falsely attributing to another his her own unacceptable feelings, impulses, or thoughts. Unlike simple projection, the individual does not fully disavow what is projected,. Instead the individual remains aware of his her own affects or impulses but misattributes them as justifiable reactions to the other person. Not infrequently, the individual induces the very feelings in others that we were first mistakenly believed to be there , making it difficult to clarify ho did what to whom first.

In projective identification parts of the self and internal objects are split off and projected into the external, which then becomes possessed by , controlled and identified with the projected parts. Projective identification has manifold aims: it may be directed towards the ideal object to avoid separation, or it may be directed towards the bad object to gain control of the source of danger. Various parts of the self may be projected in order to get rid of them as well as to attack and destroy the object, good parts may be projected to avoid separation..

As the time progress the group forms and reforms with affiliations with different partners.

Silence is often observed in the group and it usually seems to be loaded with the projected anxieties of the participants. It depicts the lack of trust in the group.

Norming is usually not a stage that is clearly demarked by and time or activity but is continuous process that takes place from the first day. Norms constantly get built and rebuilt within the group and the group tends to hold to the ones that make them function well as a group.

High level of trust is observed in the **performing stage** with high risk taking behavior (confrontation, feedback, self disclosure). During all the 3 stages the group also moves through

lean periods. Such periods are characterized either by game playing or silence, Silence in T groups are usually very heavy with unsaid feelings. Like fear discomfort…and very often scapegoating happens during this process. Members sometimes carry the projections and do not confront them by verbalizing in the group. In order to remain active at the task front the group finds its own carrier within the group.

High level of transparency, valid and solicited feedback and self disclosure mark the groups performing stage.

If Trust does not develop in T groups the group does not move to the performing stage. In his dissertation <u>A Construct of Trust</u> Dr Tway says" There exists today , no practical construct of Trust that allows us to design and implement organizational interventions to significantly increase trust levels between people. We all think we know what Trust is from our own experience, but we don't know much about how to improve it. Why? I believe it is because we have been taught to look at Trust as if it were a single entity."

Surprisingly it is often seen that the closest bond is formed between members who have had the maximum interpersonal conflict. These members have worked through their conflicts with deep understanding of their own behavior and owning it up in the group. It is not to say that all conflicts result in the similar pattern but without exploration and owning up of responsibility often time conflicts go unresolved..

Projective identifications often leads to the denial of split off parts and once they find a repository in other participants or are identified in others, strong conflict situations arise or strong dislike for the 'other' happens severely damaging the trust.

Some of the questions/ statements made in the group that initiates thrust formation

1 . Can I trust this group?

What the participant means is that she is is seeking assurance and hesitating to take the risk. Such participants articulate in order to seek that assurance and eventually with or without assurance share their feelings.

2. I don't trust this group.

This statement means that the participant actually doesn't trust himself as to what will happen to him if he takes the risk. This is usually about lacking in trust within about his ability to take care of himself. Im other words I want to trust the group but I am not able to do so because I am unable to take that risk.

3. How can I trust this group?

This is again a question that when raised causes a lot of dialogueing around what trust means to each of the participants and leads to certain norm formation.

4. I don't feel close to anyone.

A statement that, not only talks about affiliation needs but also about lack of trust .

5. There is nothing meaningful happening in this group.

This statement is made when the participant wants to say things that will build higher trust. Confronting the group this way itself is high risk taking.

6. I don't trust you.

This interpersonal confrontation can lead to exploration that leads immense trust building in the group. This is considered as an authentic high risk statement in a T group, There is no sugarcoating and such openness and truthfullness is highly valued. .

7. Can I trust you?

 This is an invitation is when the participant actually wants to trust but puts it in the from of a question.

8. I have some friends/ people back home / relationships (all out of the lab) whom I trust.

I want to trust this group. I don't know what to do.

9. This group has no trust.

This statement leads to reflection and the building of trust.

10. How can we build trust?

 Initiation of trust building.

11. Are we a group yet?

They hope to experience some aspects of "group" which they have not experienced yet. It usually denotes the lack of trust within the group.

Open sharing and feedback results in the building of trust. The values of OCTAPACE help in building of trust in T groups.

The question is often asked how do we help to develop these aspects in an organization.

O - Openness,C - Confrontation,T- Trust, A - Autonomy,P - Proaction, A -Authenticity,

C - Collaboration E - Experimentation.

Transfer of the learning from T group to larger systems.

The T-Group system of learning rests on how the participants perceive and experience self and the other within the framework of a lab. The sense of otherness that escalates conflicts and decreases trust diminishes as the lab moves towards formation.

In a spectrum from fear to trust every group and organization operates within a particular band along the spectrum from high fear to high trust. The higher the levels of trust, the more creative, innovative, dynamic and effective the group or organization will be.

Since the core of T Group is learning about self through the group it raises the bar for developing

> ➤ risktaking .
> ➤ team building initiatives.
> ➤ self awareness amongst members
> ➤ interpersonal competence
> ➤ communication skills
> ➤ Problem solving and conflict management skills.

Understanding as to how trust develops in T Groups that are often formed with complete strangers may help in negotiation situations.` "Negotiators understand the value of trust. It may not be necessary to trust to negotiate, but negotiations proceed more readily under conditions of trust than of persistent skepticism, suspicion and doubt about the intensions and behavior of the other. It is easier to share information and jointly explore controversial issues, to understand interests, invent options, and create value, and to deliberate over criteria for distribution when we feel we can trust the other side , even if provisionally." In other words "higher the trust better the performance."

Lack of trust - lack of initiation - low risk taking behavior - no movement in the group.

In organizations trust forms the foundation for effective communication, motivated workers and happy work atmosphere which help the organizations to grow. Leadership plays a major role in bringing this up.

In group situations such questions and statements initiate the building of trust. Organizations thrive on trust. In T Groups the build up of trust happens when the question of trust is brought forth where as in organizations it is usually assumed that the departments will operate on trust. If this is not addressed or brought up it often gets projected on the leaders and the organizations fails to perform effectively. Similarly if leaders don't trust the groups they are working with, it results in their dysfunctional behavior, high anxiety, lack of delegation , and blaming of team as inefficient. Because these are trust issues, often interventions are designed by the trainers to raise the issue of trust. Leaders must bring forth the statement/question of trust while valuing the importance of truthfulness, transparency and inclusiveness in communication.

Bibliography & References

Barker, R.G. *The Stream of Behaviour*. New York: Appleton-Century,1963

Bolman, L. "Some Effects of Trainers on Their Groups" *Journal of Applied Behavioural Science,* 1971,

Carson, R.C. *Interaction Concepts of Personality*. Chicago : Aldine, 1969

Cooper, C.L. The Influence of Trainer on Participant Change in T-Groups. *Human Relations,*1969

Fiebert, M. "Sensitivity Training: An Analysis of Trainer Intervention and Group Process." *Psychological Reports*, 1968

French,T.M. *The Integration of Behaviour*, Chicago: University of Chicago Press, 1954 Vols I& II

Heliman,P. "Preliminary Notes on Some Defence Mechanisms in Paranoid States." *International Journal of Psychoanalysis*, 1952

Klein, E.B. and Astrachan, B.M. " Learning in Groups: A Comparison of Study Groups and T-Groups." *Journal of Applied Behavoural Science*, 1971

Klein, M *Our Adult World*, New York: Basic Books ,1963

Levinson,D.J. Role , Personality and Social Structure in the Organisational Setting." *Journal of Abnormal and Social Psychology*, 1959

Potter Steve, One of the pioneers of the Group Relations Training Association in the United Kingdom, wrote the original article for publication in that organization's *Bulletin* in 1978

Postman, N& Weingartner,C (1969) Teaching as a Subversive Activity. New York, Dell Publishing

Rice, A.K. Indivudual, Groups and Intergroup Processes" *Human Relations,*1969

Raising Grandchildren : What Grandchildren And Grandparent Says About Their Relationship

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Abstract:

Abstract

In Indonesia today, more and more young couples entrust their children to the grandparents because grandparents and parents have a close relationship so that the existence of grandparents cannot be separated from the development of a child. Grandmothers are perceived as providers of affection, care and affectionate relationships, and to act as substitute mothers when needed. That is why this research prefers to see the grandmothers and grandchildren relationship. It is important to make sure that relationship between grandmothers and grandchildren is in good condition and it could be known from the grandchildren's and grandmothers' perception about their relationship. The data analyzed through qualitative study with data collection methods i.e. interviewing grandparent-grandchildren in pair. The results of this preliminary study are in the younger grandchildren, grandmothers' existence are important even though their parents are also living in the same house. On the other hand, in the teenage grandchildren, grandmothers' existence is no longer as important regardless their parents' living together with them, they prefer to build a warm relationship with their parents rather than grandmothers.

INTRODUCTION

In Indonesia today, more and more young couples with one or two early childhood children, are required to work to meet the necessities of life. Mothers also work as fathers do. When the mother goes out from the domestic area into public area, there is a change in childcare responsibility. With both parents working and having less time with children, other caregivers are needed such as daycare, baby sitter or another extended family member. A lot of young couples entrust their children to the grandparents. One reason young couples leave the child to the grandparents as they work is because they trust grandparents more than a babysitter or day care centre.

Culture also becomes an influential factor because in Indonesia there are no specific rules about where the newly married couple will live after marriage (bilocal). They don't have to move form their parents' house, so that many young couples stay at their parents' home until they can afford to have their own house. In the villages, very few young couples usually move into one of the parents' houses, whoever has more rooms. If both parents can afford it, the couple move more often to the woman's parental home (matrilocal) or they live alternately in both parents' houses. That is why there are still many three-generation families. In the cities, young couples with independent incomes prefer to live in their own house at the onset of marriage, but even in these cases, young couples prefer to live near their parents' house. In these arrangements, the grandchildren are often entrusted to the care of the grandparents when their parents are working (Setiadi, 2006)

Living together makes grandparents and parents have a close relationship so that the existence of grandparents can not be separated from the development of a child. To form a positive development in children, a family needs a stable relationship. If the parents are often unable to accompany their children, the grandparents can be a figure that can be trusted by the child. Grandfather and/or grandmother figure can significantly provide parenting, promote their grandchildren's development, and manage their grandchildren's behaviour in a constructive and caring way. Grandparents are respected for their age and wisdom. They are expected to give advice in matters related to tradition and religious education as well as family matters. In many cases, there are strong bonds between the grandparents and their grandchildren because grandparents have more time for them and play with them but do not consider disciplining the grandchildren as their duty. One can only expect and demand the full support of members of the nuclear family. The grandparents in one study (Kataoka-Yahiro,et al., 2004) expect their grandchildren to be respectful, obedient and appreciative. But on the other hand, grandparenting is never easy, there are some difficulties related to parenting and disciplining i.e dealing with sibling fight, providing emotional support, finding time to satisfy the needs and completing all of the grandchildren's tasks, use of television, setting limits, handling the demanding behavior and delaying immediate gratification.

From grandchildren's perspective, their grandparents influence them in various ways. Grandparents participate in providing support and care, giving them information about the world, they are role models, and they are a source of ideas and reflection about human life (Tyszkowa, 1991). Grandfathers are perceived as providers of information and as guides. Grandfathers also frequently attributed in advice, education and reflection (Virguer, 2010). Grandmother often helps in supervising house chores and the children, especially when both parents are working. Grandmothers are perceived as providers of affection, care and affectionate relationships

(Setiadi,2006). Grandmothers also tend to be more involved, to have more intimate, warm relationships, and to act as substitute mothers when needed (Virguer, 2010). Strong evidence suggests that grandmothers are more likely to provide childcare to their grandchildren than grandfathers (Lee & Bauer, 2010). When it comes to the favorite grandparent figure's profile, grandsons and granddaughters alike prefer their grandmothers, especially the ones on their mother's side (Viguer., et al., 2010). That is why this research focuses in grandmothers and grandchildren relationship. It is important to make sure that relationship between grandmothers dan grandchildren is in good condition and it could be recognized from the grandchildren's dan grandmothers' perception about their relationship.

METHOD

Design

Like other relationships, grandparents-grandchildren bond is subjectively experienced by each participant. That is why this research used an in depth interview. The interview was done to 4 grandparents – grandchildren in pair. We collected the data by employing purposive sampling. This is a descriptive qualitative design to be considered as a preliminary study. This research used thematic analysis to analyze narrative data and identify themes and patterns in the data.

Subject

All of grandmothers and grandchildren in this study have a middle-up economic condition. Grandmothers interviewed in this research have such characteristics as 50 – 70 years old, female, having one or more grandchildren. All grandmothers were still living with their grandchildren i.e three of them were living together within 3 generations (grandmothers, mothers and grandchildren) and one of them was living with the grandchildren without the parents. Grandmother 1 was a widow, because her husband died over three years ago. She was 60 years old and working as a freelancer in an insurance company. Grandmother 2 was also a widow, because her husband died about two years ago. She was 59 years old and had a car rental. Grandmother 3 was 60 years old, still maried and living together with her husband, so she chose to be a housewife. Grandmother 4 was 64 years old, also still maried to her husband, so she also chose to be a housewife. In this research, grandfathers were not mentioned although they had significance in the family.

Table 1. Characteristics of Grandmothers

Category	Number of grandparents
Gender	
• Female	4
Marital Status	
• Married	2
• Widowed	2
Age	
• 50 – 70 y.o	4
Employed	
• Unemployed	2
• Working	2
Living with Grandchildren	
• Yes	4

Grandchildren interviewed in this research have characteristics i.e 5 – 16 years old, male and female, living with the grandparents. Grandchild 1 was a female, 5 years old and studied at preschool. Grandchild 2 was a male, 7 years old and studied at elementary school. Grandchild 3 was a male, 14 years old and studied at Junior High School. Grandchild 4 was a female, 16 years old and studied at Senior High School.

Table 2. Characteristics of Grandchildren

Category	Number of grandchildren
Gender	
• Female	2
• Male	2
Educational Status and Age	
• Pre School (5 y.o)	1
• Elementary School (7 y.o)	1
• Junior High School (14 y.o)	1
• Senior High School (16 y.o)	1
Living with Grandparent	
• Yes	2
• No	2

RESULT

Grandchildren in this study have different ages; therefore, the result of this study is also varied among the grandchildren and the role of grandmothers. The most interesting fact is sometimes, for the same question, what grandmothers said was different with what grandchildren said. They were interviewed personally, not at the same time so that bias could be minimized. The result of the interview is described in the following.

Table 3. Result of interview Grandmother 1 and Grandchild 1

Category	Grandmother 1 (60 y.o.,working part time)	Grandchild 1 (5 y.o., Kindergarten)
Reason of Living together	Grandchild wants to live together with grandmother because she is getting used to live together with her grandmother	Living together with her grandmother because her mother is working
Feeling of living together	Happy living together with her grandchild because she herself offers living together with grandchild because of the grandchild's health condition	Happy living together with grandmother because of grandmother's presence at home
Grandmother's role	Accompanying the grandchild when her mother is working (feeding, playing, drawing) and disciplining her\nEvery decision about the child's education and health is made by parents	Feeding her because she couldn't eat by herself
Activity	Playing with her grandchild	Playing together
Conflict	Grandchild disobey the rules	-

Grandmother 1 thinks that her grandchild is the most important person in her life and she is happy living together with her grandchild. The grandmother's role is to accompany her

grandchild when the parents are not around. She also feels lost when her grandchild leaves the house for some reason. She is so engaged emotionally with her grandchild. However, grandmother has no involvement in making decision about the grandchild. It could be seen from her statement,"I can not teach my grandchild academically, so her mother teaches her every noon". Grandchild was living with her mother in her first year, but because of her health, grandmother offers living together with grandmother, but without the mother because mother has a career in different city. A few years after that, the mother decides to go back to the grandmother's house. At this point, grandmother knows her grandchild well.

Grandchild 1 thinks that her grandmother is the most important person whom she cares about. She needs her grandmother to accompany her in playing and helps her when she needs it. The grandchild is also engaged emotionally with her grandmother. In other words, the grandmother's importance is her being around the grandchild.

The grandchild 1 is too young to be interviewed. She could not explain more about her relationship with her grandmother. When she was asked about "What do you do if you come home and your grandmother isn't at home?", she answered "I cried". On the other hand, she felt okay if her mother wasn't at home when she arrived from school.

Table 4. Result of interview Grandmother 2 and Grandchildren 2

Category	Grandmother 2 (59 y.o.,unemployed)	Grandchild 2 (6 y.o., Elementary School)
Reason of Living together	The grandchild lives together with her grandparent because the grandparent will inherit the house they currently live in to the parents	He has no idea of living separately from his grandparent
Feeling of living together	Happy living together with grandchild but not too deeply engaged with her grandchild	Happy living together with grandmother
Grandmother's role	Taking care of the grandchild because his parent is working (feeding, accompanying her grandchild sleeping at night), giving suggestion Every decision about the child's education and health is made by parents	Taking care of him while his parents are working
Activity	Going outside, sleeping together at night	Going outside, sleeping together at night
Conflict	No conflict because grandchild is always obeying the rules	No conflict

Grandmother 2 is happy living together with her grandchild just because her grandchild has been living with her since he was born. She has good communication and warm relationship with her grandchild. She doesn't mind living together with her grandchild, but she also doesn't want to be involved too much in parenting. She stated," I just take care of him while his parent is working. I feed him, because he doesnt want to eat by himself"

Grandchild 2 feels happy to live with his grandmother just because he has been living together with her since he was born. He said that her grandmother was upset because of his grandfather's death, so he was accompanying his grandmother sleeping at night. Grandchild 2 stated," I love my grandmother, I want to go to Mecca with her"

Table 5. Result of interview Grandmother 3 and Grandchildren 3

Category	Grandmother 3 (60 y.o.,unemployed)	Grandchild 3 (14 y.o., Junior High School)
Reason of Living together	Grandchild lives together with his grandparent because his parents are divorced	He never thinks to live separately from his grandparent
Feeling of living together	Happy living together with grandchild and not engaged emotionally with her grandchild	Happy living together with grandmother
Grandmother's role	Taking care of her grandchild because his mother is working. Every decision about the child's education and health is made by parents	Taking care of him when his parent is not at home
Activity	Eating together outside and shopping with other family members	Shopping together
Conflict	No conflict because grandchild is obeying the rules	Not doing what grandmother asks him to do

Grandmother 3 is happy living together with her grandchild just because her grandchild has been living together with her since he was born. She doesn't mind living together with her grandchild, but she also isn't involved too much in parenting. She thinks that her grandchild is making less communication with her. She said,"If I want to go, then I go. I never feel attached to my grandchild. My grandchild still has his mother"

Grandchild 3 feels happy to live with his grandmother just because he has been living together with his grandmother since he was born. He thinks that his grandmother is more disciplined than his mother and he feels more comfortable and has warm relationship with his mother rather than his grandmother. He stated," I am close to my grandmother because she is like my own parent. My grandmother only takes care of me when my mother is not around. However, I am going anywhere with my mother, so I am closer to her."

Table 6. Result of interview Grandmother 4 and Grandchildren 4

Category	Grandmother 4 (64 y.o.,unemployed)	Grandchildren 4 (16 y.o., Senior High School)
Reason of Living together	Grandchild wants to live together with her grandmother because she doesn't want to live in the city where her parents are working	She is used to living together with grandmother
Feeling of living together	Happy living together with grandchild and never feel s burdened with the grandchild's existence but sometimes grandmother feels relieved when her grandchild is not around	It doesn't matter to live together with her grandmother because at least her grandmother is around

Grandmother's role	Taking care of grandchild because her mother is working in a different city (cooking, cleaning the grandchild's room) Every decision about the child's education and health is made by parents	Taking care of her when her parent is not at home
Activity	Eating together outside	Watching television, eating out
Conflict	Different lifestyle with parent (mode)	Grandmother never explains why some things are not allowed to do

- Grandmother 4 feels that her grandchild is important and she is happy living together with her grandchild. Even though the grandchild has grown up, grandmother's role has never changed i.e cooking for grandchild, picking up the grandchild from the school and cleaning the grandchild's room. She is always worried about her grandchild, so she always takes care of her. On the other side, the grandmother has no role to make a decision related to her grandchild. She stated," there is a difference between me and her mother, especially about the clothes. I don't like a mini dress for example. I told her that she should wear a polite dress."

Grandchild 4 feels that her grandmother is the person who completes her. She thinks it doesn't matter to live with her grandmother because she realizes that her parents couldn't accompany her every time. But she doesn't like how her grandmother communicates with her. She thinks that her grandmother treats her like a child and gives too many rules, so she prefers to share her stories with her mother. The grandchild said, "Well, you know that old people are like my grandmother. She told me not to do this and that without giving any reasons why. So I think that my grandmother is just like my friends' parents. But my mother is different, she is like a friend to me."

DISCUSSION

As Viguer (2010) stated, the grandparent-grandchild relationship during socialization may vary; first, according to the child's developmental stage, and second, depending on whether he or she lives with their parents or grandparents. In this study, regarding developmental stage, while the grandchild is young, the grandmothers' main roles are helping with her care, developing play behaviors, and stimulating them both cognitively and emotionally, thus contributing to their affective, cognitive and social development. As we could see in grandchild 1, she feels comfortable if her grandmother is around her. She needs her grandmother to accompany her play and eat. It also happened to the relationship between grandmother and grandchild 2, that the grandchild also need his grandmother to accompany him at lunch.

As grandchildren become teenagers and gain their independence, the frequency of contact decreases and the expression of affection changes depending as much on their parents or the grandparents themselves, and starts becoming less frequent. As we could see in Granchild 3 and 4, they feel more comfortable with their parents depend on their grandparents. Grandchild 3 is living with her mother and grandmother, grandchild 4 is just living together with her grandmother. Between these two grandchildren, there are no differences in their reationship with their grandmothers. They prefer to go out with their parents and also share a story about their activities with their parents. It potentially leads to a conflict when the grandparent couldn't let their grandchild grow up. The grandparents must lead a new focus to this interaction such as

giving them company, advice, being supportive in parent-child relationships, and helping when they need it. The grandparent's role, then, may serve the function of friendship, companionship, solidarity (Ochaíta & Espinosa, 1995). That is why, grandparent 4 who still treats her grandchild as a child, becomes less favorable than her mother.

Relationship between grandmothers and grandchildren in this case, in which the grandchildren live with grandmothers even though the parents are alive and often visit, the grandmother's role is limited to accompanying and providing daily needs. Grandmothers in this research have no power in making decision related to the grandchildren especially when it comes to health and education. Therefore, they also do not have a fixed rule for the grandchildren. This idea is in line with the research by Rico, Serra & Viguer (Viguer, et al, 2010) which is regarding the issue of whether the child lives with his or her parents or grandparents, when the grandchild lives with either or both parents, the relationship with their grandparents tends to be more indulgent and complacent. This is because while the grandparent participates in socializing and caring for the child, he or she is not responsible for the child's upbringing.

CONCLUSION AND RECOMMENDATION

From the discussion above, it can be concluded that at present,
- In the younger grandchildren, grandmothers' existence are important even though their parents are also living in the same house.
- In the teenage grandchildren, grandmothers' existence is no longer as important regardless their parents' living together with them, they prefer to build a warm relationship with their parents rather than grandmothers.

The writer would like to offer some recommendations as follow :
- This preliminary study could be continued in the broader subjects and analyzed quantitatively
- The next research could be conducted to compare relationship between grandmothers and granchildren who are living together and not living together.
- The next research also could be explored deeply on the relationship between grandchildren and grandfathers as well as grandmothers.

REFERENCES

- Bernadette N. Setiadi. 2006. Indonesia : Traditional Family In A Changing Society. *Families Across Cultures : A 30 Nation Pscyhological Study*. Edited by James Georgas. UK : Cambridge University Press.
- Kataoka-Yahiro, Merle R;Ceria, Clementina;Yoder, Marian. 2004. Grandparent Caregiving Role In Filipino American Families. *Journal of Cultural Diversity;* Fall 2004; 11, 3; ProQuest. pg. 110
- Lee, Jaerim;Bauer, Jean W.(2010). Profiles of Grandmothers Providing Child Care to Their Grandchildren in South Korea. Journal of Comparative Family Studies; 2010; 41, 3; ProQuest Research Library pg. 455
- Tyszkowa, M. (1991). Grandparents and grandchildren: An often neglected relationship between significant others. *Journal of Counselling and Development, 65, 289-290.*
- Viguer, Paz., Juan Carlos Meléndez., Sandra Valencia., Mª José Cantero.,Esperanza Navarro. (2010). Grandparent-Grandchild Relationships from the Children's Perspective: Shared Activities and Socialization Styles. *The Spanish Journal of Psychology* 2010, Vol. 13 No. 2, 708-717

Exploring Individual Happiness And Work Related Trust As Predictors Of Work Engagement

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224

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Abstract:

Based on the assumption that a happy worker is productive worker, this study is set out to examine to what extent work related trust through its intermediary impact upon individual subjective well being may influence work engagement. Analyses were conducted on lecturers and administrative staff of FISIP Brawijaya University who were asked to fill in the SWB scale, Workplace Trust Scale and Work Engagement Scale. There were 74 participants consist of 42 women and 32 men; 44 lecturers & 30 administrative staff. The correlational analysis showed that subjective well being, trust at workplace and work engagement correlates significantly with each other. The Structural Equation Model (SEM) analysis indicated that subjective well being is a mediating variable between trust at workplace & work engagement. An additional finding is also discussed.

Introduction

Work engagement has been the recent focus of human resources practitioner and researchers studies, especially in the area of positive organizational behavior. Work engagement is considered as the most current business driver of organizational success (Lockwood, 2007 as cited in Chalofsky & Krishna, 2009). Research has revealed that engaged employees are highly energetic, self-efficacious individuals who exercise influence over events that affect their lives (Schaufeli et al., 2001). Because of their positive attitude and high activity level, engaged employees create their own positive feedback, in terms of appreciation, recognition, and success (Bakker, 2009). Engaged employees often indicate that their enthusiasm and energy also appears outside work, for example in sports, creative hobbies, and volunteer work. Engaged employees, like any other employee, do feel tired after a long day of hard work. However, they describe their tiredness as a rather pleasant state because it is associated with positive accomplishments. Finally, engaged employees are not addicted to their work. They enjoy other things outside work and, unlike workaholics, they do not work hard because of a strong and irresistible inner drive, but because for them working is fun (Schaufeli, Taris & Bakker, 2006). Engaged employees are characterized by high positive affect and to a somewhat lesser degree by low negative affect (Schaufeli et al., 2001).

The context of work and the organisation as a whole now accommodate notions of positive psychology and wellb eing studies (Money, Hillenbrand & Da Camara, 2008). They suggest that work, through a positive psychology lens, could cause people to lead more engaged, pleasurable and meaningful work lives. The belief that subjective well being acts as a causal mechanism that brings about many positive states within the workplace is at the heart of positive organisational psychology (Money et al., 2008). Subjective well being in the workplace includes many different aspects like work engagement and job satisfaction. These, in turn, lead to several positive organisational outcomes (Fisher, 2010). A study that Gavin and Mason (2004) conducted also shows that subjective well being and positive states of people at work contribute to increased organisational success and commitment. The literature suggests that subjective well being at work leads to various positive organisational outcomes (Fisher, 2010; Gavin & Mason, 2004; Money et al., 2008).

High trust at workplace has been reported to increase the work process performance of both the trustor and the trustee and resulted in higher output performance for both (Zolin, Fruchter & Hinds; 2003). Trust at workplace influences how motivation is converted into work group processes and performance (Dirks, 1999). Trust also has been reported mediating the impact of participative leadership on task performance and organizational citizen behavior (Huang et al, 2009)

Trust and subjective well being has been reported to have strong correlation in general life (Helliwell & Huang, 2010) as well as at the workplace (Helliwell & Huang, 2008). However, it is not generally explored the relationship nature of trust and subjective well being with work engagement.

An employee who has a high trust to the work environment (institution, management / leadership and co-workers) will develop a high work engagement. Trust to others at the workplace is likely to lead to increased general satisfaction of the individual of job and life in general and this will also result in positive work engagement.

The Research Question

As such the study intended to examine the following research question: Is subjective well being has a mediating role between trust at workplace and the work engagement?

Trust

Prior work has conceptualized trust as a product of two factors: an individual's propensity to trust and an individual's expectations about a trustee's future behavior (Mayer et al., 1995). An individual's propensity to trust is one's general willingness to rely on others in situations in which opportunism is possible. Individual characteristics, such as personality and developmental history, influence an individual's propensity to trust (Mayer et al., 1995; Rotter, 1971).

Trust can also be defined as confident positive expectations regarding another's conduct (Lewicki, McAllister & Bies; 1998). Another's conduct is addressing another's words, actions, and decisions (what another says and does and how he or she makes decisions). Confident positive expectations is a belief in, a propensity to attribute virtuous intentions to, and a willingness to act on the basis of another's conduct.

Most of the trust-related research appears to position trust as a variable that has direct (main) effects on work performance. In other words, when the level of trust is increased, individual is expected to experience higher performance; when trust is decreased, an individual is expected to experience lower performance.

Trust at Workplace and Subjective well being

The research result of Putnam (2000) suggested that several different sorts of trust have direct effects on well-being. A variety of domain-specific trust measures have even greater well-being effects than do responses to the general trust question. It gives the confidence that the large effects of trust at workplace on well-being are only due to influence of innate optimism on both trust and reported well-being.

Subjective well being

Few people have ever doubted that subjective well being is very important. In fact, starting at least with the Ancient Greeks, the concept has been subject of unremitting debate. Surely this would not have been the case if people generally felt it did not matter. Since subjective well being has captured, and continues to capture, the interest of so many people, it should not come as a surprise that philosophers and many others debating the concept have long yearned for a way to measure it. The breakthrough came in the 1950s. Psychologists – until then mainly interested in negative emotional states such as depression and anxiety – became interested in positive emotions and feelings of well-being. Within the discipline a consensus grew that self-reports on how well life is going, can convey important information on underlying emotional states, and so the field pushed ahead with measuring what is best referred to as subjective well-being (commonly abbreviated as SWB). SWB, we should immediately note, is not the same as happiness although the terms are often used synonymously. SWB, in fact, is 'a broad category of phenomena that includes people's emotional responses, domain satisfactions, and global judgements of life satisfaction' (Diener

et al., 1999). Specifically, reported SWB consists of two distinctive components (Diener, 1994) an *affective* part, which refers to both the presence of positive affect (PA) and the absence of negative affect (NA), and a *cognitive* part. The affective part is a hedonic evaluation guided by emotions and feelings, while the cognitive part is an information-based appraisal of one's life for which people judge the extent to which their life so far measures up to their expectations and resembles their envisioned 'ideal' life.

Since the emergence of the field over five decades ago, the SWB literature has progressed rapidly. First, as recent surveys show, psychologists and other social scientists have taken huge steps in their understanding of the factors influencing people's SWB. broad groups: (i) personality factors; (ii) contextual and situational factors; (iii) demographic factors; (iv) institutional factors; (v) environmental factors; and (vi) economic factors. Psychologists have deeply studied the influence of personality on SWB, and found it to be the strongest and most dependable factor underlying differences in SWB between persons.

In a famous study Tellegen et al. (1988) compared levels of SWB for monozygotic and dizygotic twins raised together and raised apart. Their study shows that 40% of the variance in positive emotionality and 55% of the variance in negative emotionality is attributable to genes, whereas shared familial circumstances account for only 22% and 2% of observed variance respectively. Much work has assessed the role of measured personality characteristics and these are also consistently found to be highly significant predictors of SWB. Notably neuroticism and extraversion go along way in accounting for differences in levels of SWB (Hayes and Joseph, 2003).

Although inherent factors play a fundamental role in SWB, individual, contextual and situational factors are also important sources of difference in SWB scores. Notably, a consistent finding across samples of individuals reporting on, amongst others, SWB is that better health is associated with higher SWB, and that married people report higher SWB than others, e.g. single people, divorced people et cetera. The third group of factors strongly associated with SWB concerns demography.

Gender and age in particular are robust determinants of SWB across samples. Generally, women report higher SWB scores than men do, and SWB is U-shaped with age: SWB is higher among young people, declines in middle age cohorts and increases again at older age. Institutional conditions constitute a fourth group of factors found to have a systematic relationship with SWB. For instance, the results of Frey and Stutzer (2000) study suggest that forms of direct democracy increase the level of SWB.

At a more abstract level, Radcliff (2001) finds a positive relation between the ideological complexion of governments and levels of SWB. He also reports a positive correlation between qualitative features of the welfare state and SWB. Veenhoven (1994) found that political and private freedom add to SWB but only in rich countries. Environmental conditions are an important factor in observed differences in SWB that operates strictly at a macro level. Rehdanz and Maddison (2005), using data on 67 countries between 1972 and 2000, find that climate variables have a highly significant effect on SWB and that climate changes due to global warming might reduce SWB around the world in the next decades. Becchetti et al. (2007) confirms the link between climate and SWB but indicates that global warming might, in contrast, lead to higher SWB worldwide. Individual and cross-country differences have roles in well-being, attributable to differences in economic circumstances. Unemployment and inflation play their roles in SWB as well. In particular, unemployment

affects SWB through two channels: it has a direct negative effect on people who lose their job (keeping income constant), and an indirect negative effect on the entire population (higher risk of losing a job).

Table 1. Components of subjective well-being

Cognitive component		Affective component	
Domain Satisfaction		Positive affect	Negative affect
Self	Significant others' view of one's life	Subjective well being	Depression
Family	Satisfaction with current life	Elation	Sadness
Peer Group	Significant others' view of one's life	Ecstasy	Envy
Health	Satisfaction with past	Pride	Anger
Finances	Satisfaction with future	Affection	Stress
Work	Desire to change life	Joy	Guilt or shame
Leisure	Satisfaction with current life	Contentment	Anxiety

Source: Adapted from Diener *et al.* (1999).

Subjective Well Being at Work

People's moods and emotions reflect on-line reactions to evens happening to them. Each individual also makes broader judgments about his or her life as a whole, as well as about domains such as marriage and work. Thus, there are a number of separable components of SWB: life satisfaction (global judgments of one's life), satisfaction with important domains (e.g., work satisfaction), positive affect (experiencing many pleasant emotions and moods), and low levels of negative affect (experiencing few unpleasant emotions and moods) (Diener, 2000).

People have placed significance importance of work in their life. Workplace is a major part of individual's life. The organizations in which people work affect their thoughts, feelings, and actions in the workplace and away from it. Likewise, people's thoughts, feelings, and actions affect the organizations in which they work (Brief & Weiss, 2002).

Subjective well being at work, therefore, must seen as relatively stable pleasant experience at work over time which includes work satisfaction in general.

Work Engagement

Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002). Vigor is characterized by high levels of energy and mental resilience while working. Dedication refers to being strongly involved in one's work and experiencing a sense of significance, enthusiasm, and challenge. Absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work (Schaufeli and Bakker, 2004). In short, engaged employees have high levels of energy and are enthusiastic about their work. Moreover, they are often fully immersed in their work so that time flies (May et al., 2004).

Griffin (1984) pointed that work setting (e.g., health and safety hazards) and occupational stress (e.g., factors intrinsic to the job, role in the organization, organizational structure and climate etc,) would be the antecedent factors of well-being. He also proposed that well-being

would lead to the organizational consequence such as productivity and absenteeism. Cropanzano, James and Konovsky (1993) and Wright & Hobfoll (2004) also supported this view. Thus, well-being is not only influenced by the job but also affecting the job performance.

Robinson et al. (2004) give a definition of engagement as a positive attitude held by the employee towards the organisation and its values. An engaged employee is aware of business context, and works with colleagues to improve performance within the job for the benefit of the organization. In general, the items in most engagement surveys focus on the aspects of engagement that are most obviously related to positive employee behavior, and cover established psychological concepts, such as organizational citizenship (Organ and Paine, 1999) and organizational commitment and attachment (Meyer, 1997).

The Utrecht Work Engagement Survey (Schaufeli et al., 2006) concentrates on three factors: vigour, dedication and absorption. The Gallup Workplace Audit (Harter et al., 2002) focuses on factors such as clarity – knowing what's expected and control (input and opportunity). By and large, practitioners and researchers views of engagement embody the three core concepts of attachment, commitment and organisational citizenship. These concepts reflect a focus on the aspects of engagement that are likely to be most directly involved in driving positive employee behaviour.

Trust and Work Engagement

Researches on trust at workplace and work engagement has indicated significant relationship between the two variables. Hassan and Ahmed (2011) have reported that trust predicted employees' work engagement as well as mediated the relationship between style of leadership and employees' work engagement.

Subjective Well Being and Work Engagement

Research evidence suggests that high levels of psychological well-being and employee engagement play a central role in delivering some of the important outcomes that are associated with successful, high performing organisations. Research has established that psychological well-being is directly correlated with performance. Cropanzano and Wright (2000) reported two field studies which both demonstrate positive relationships between levels of psychological well-being and job performance. These studies show that people with higher levels of psychological well-being perform better at work than those with lower psychological well-being; indeed, the results from Cropanzano and Wright (2000) show that well-being is a stronger predictor of job performance than job satisfaction.

As well as the research by Wright and Cropanzano, linking psychological well-being with performance, Donald et al. (2005) in a study of 16,000 employees found that almost 25 percent of the variance in reported levels of employee productivity was predicted by psychological well-being, the perceived commitment of the organisation to the employee and resources and communication. Harter et al. (2002) analysed data from nearly 8,000 separate business units in 36 companies and illustrated the potential relationships between psychological well-being and employee engagement.

For employees, psychological well-being is linked to important individual outcomes, with lower levels of psychological well-being linked to poorer health. The impact of job strain on

the individual has been heavily reported by researchers (Cooper and Quick, 1999). The research of Kuper and Marmot (2003) revealed that factors in the job, such as low levels of control and autonomy, were associated with an increased risk of serious illness. So, low psychological well-being caused by workplace factors is a major health risk for employees.

When workers experiencing poor health and well-being in the workplace may be less productive, make lower quality decisions, be more prone to be absent from work (Boyd, 1997)

THEORITICAL FRAMEWORK AND HYPOTHESES

Based on the literature review the following theoretical framework and hypotheses were developed:
H1 : Trust at workplace significantly correlates to Work Engagement
H2 : Trust at workplace significantly correlates to Subjective Well Being
H3 : Subjective Well Being significantly correlates to Work Engagement
H4 : Subjective Well Being has a significant mediating effect between trust at workplace and employee work engagement

Figure 1 Proposed Theoretical Framework
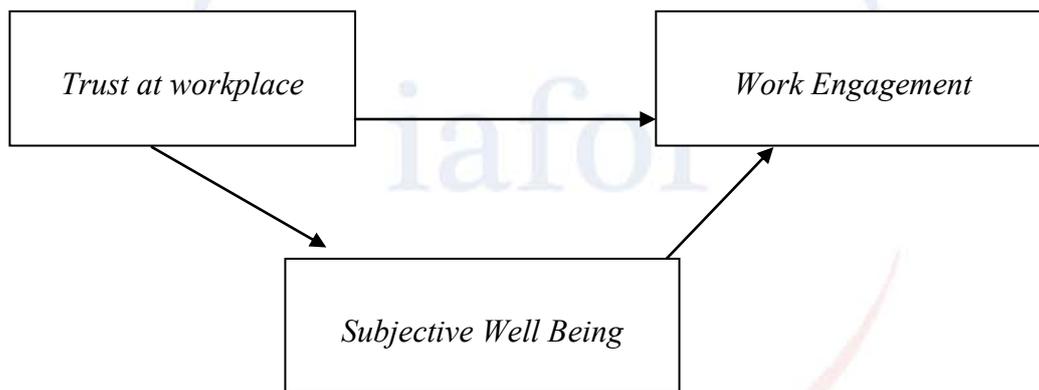
RESEARCH METHOD

Sample and Procedure

Analyses were conducted on a randomly selected administrative staff and lecturers of Social and Political Sciences Faculty in Brawijaya University who were asked to fill in the SWB scale, Trust at Workplace Scale and Work Engagement Scale.

Instrumentation

All measurement, the SWB scale, Trust at workplace Scale and Work Engagement Scale, were administered in self-report forms. The measurement of Subjective Well being will be utilizing the adapted version of SWB scale (Diener et al, 2009) and while Work Engagement Scale will be utilizing the adapted version of Utrecht Work Engagement Scale–9 [UWES-9] (Schaufeli and Bakker, 2003).

Using the definition of trust at workplace as confident positive expectations regarding another's conduct (Lewicki, McAllister & Bies; 1998), the Trust at Workplace Scale will be constructed based on the dimensions of trust for others at workplace: the institution in general, management / leadership and co-workers.

RESULTS

Sample Characteristics

There were 74 participants consist of 42 women and 32 men; 44 lecturers & 30 administrative staff. 43 participants have tenure between 0-5 years, 15 between 5-10 years and 16 of them has been working for more than 10 years in Brawijaya University.

Scale Adaptation & Construction

Table 2.Validity of the Measurement

Scales	Number of Items	r Product Moment (corrected item-total correlation)
Subjective Well Being	8	$.448 < r_{ix} < .661$
Trust at workplace	19	$.364 < r_{ix} < .760$ (from 20 items, item #19 is omitted because $r_{ix} < 0.3$)
Work Engagement	17	$.443 < r_{ix} < .793$

Table 3.Reliability of Measurement

Scales	Number of Items	*Cronbach's Alpha Correlation*
Subjective Well Being	8	.826
Trust at workplace	19	.930
Work Engagement	17	.919

Table 4. Descriptive Statistics
Means and Standard Deviations for SWB , Trust at workplace and Work Engagement

Variable	*Mean*	*SD*
Subjective Well being	48.67	4.45
Trust at workplace	51.85	9.25
Work Engagement	91.36	12.93

Table 5. Pearson Inter Correlation

	Subjective Well being	Trust at workplace	Work Engagement
Subjective Well being	-	.310**	.498**
Trust at workplace		-	.267*
Work Engagement			-

**. Correlation is significant at the 0.01 level (1-tailed).
*. Correlation is significant at the 0.05 level (1-tailed).

STRUCTURAL MODEL

The structural model analysis identifies how the latent variables in the model are related to each other. Therefore, in this study, three main variables: Trust at workplace, Subjective Well Being and Work Engagement constructs were used to investigate the direct and indirect relationships.

In the structural model the value of coefficient paths were statistically significant (p < 0.05). The equation indicates that trust at workplace has significant contribution on work engagement. However, when the Subjective well being is controlled the contribution of trust at workplace on work engagement is not significant. Therefore, there is a mediating role of subjective well being in the relationship of trust at workplace and work engagement. There is no modification was required in the theoretical model.

Figure 2. Structural Equation Model of Trust at Workplace, Subjective Well Being and Work Engagement
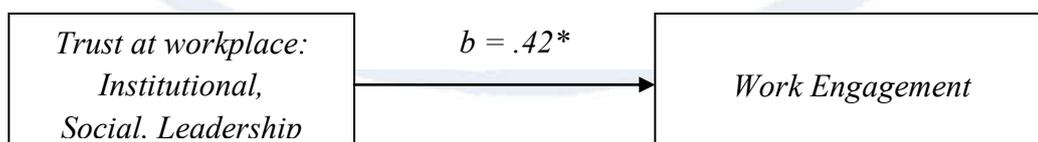
When Subjective Well being is controlled, the equation model is as follows:
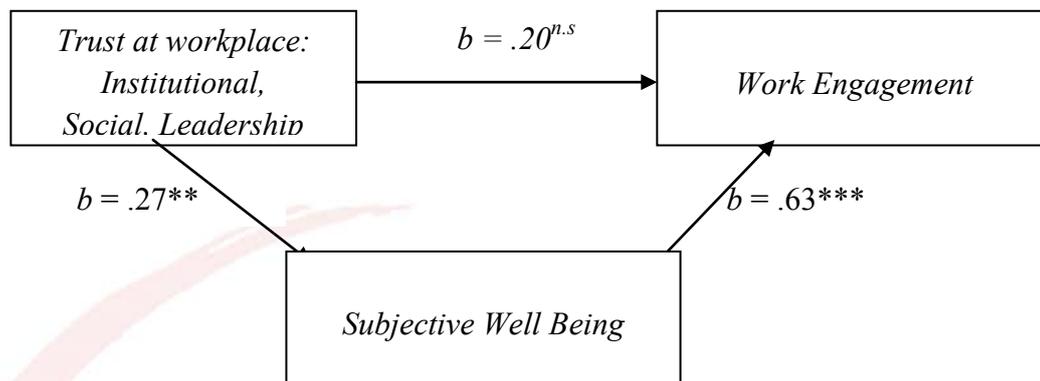
Using Sobel z test the above equation is analyzed for its significance and the result is p= 2.32, while p < .05 (= .02) indicating that the equation model is significant.

DISCUSSION

It is assumed that a great place to work is one where people trust the people they work for, take pride in what they do, and feel enthusiastic about the work they do. This study was conducted to investigate and confirm some such observations. Basically it aimed to examine the connection between trust at workplace, individual subjective well being and work engagement. Findings of the study supported all four hypotheses of the study. First, trust at workplace promotes work engagement (H1). Second, trust contributed to subjective well being (H2). Third, subjective well being contributes to work engagement (H3). Finally, trust at workplace is partially mediated by subjective well being in its relation with work engagement (H4).

Additional result indicates an interesting finding that gender has moderating effect on the relationship between subjective well being and work engagement. This means that the correlation between subjective well being and work engagement is more prominent among females. Other factors such as tenure and job distinction (lecturers and administrative staff) did not show similar effect to the relationship between subjective well being and work engagement.

To conclude, findings of the study supported the main idea that if an employee develop a trusting relationship with others at workplace then they will grow a positive level of well being which in turn contributes to positive employees work outcomes such as work engagement.

References

Anderson, N., Ones, D. S., Sinangil, H.K, and Viswesvaran, C.(2002) *Handbook of Industrial, Work & Organizational Psychology:* Organizational psychology, Volume 2. Sage Publication

Bakker, Arnold B. , Schaufeli, Wilmar B. , Leiter, Michael P. and Taris, Toon W.(2008) 'Work engagement: An emerging concept in occupational health psychology', *Work & Stress*, 22: 3, 187 — 200 DOI: 10.1080/02678370802393649

Barsade, Sigal G. (2002) The Ripple Effect: Emotional Contagion and Its Influence on Group Behavior. *Administrative Science Quarterly.*Vol. 47, No. 4 (Dec., 2002), pp. 644-675

Bledow, R., & Schmitt, A. (2008). *Work engagement as a dynamic process: The interplay between events, emotions, and resources*. Poster presented at the 2008 Conference of the Society of Industrial and Organizational Psychology, San Francisco, CA.

Boyd, A. 1997. Employee traps-corruption in the workplace. *Management Review,* 86(8), 9-9.

Cartwright, Susan & Holmes, Nicola (2006) The meaning of work: The challenge of regaining employee engagement and reducing cynicism. *Human Resource Management Review* 16 (2006) 199–208

Chalofsky, N and Krishna,V (2009) Meaningfulness, Commitment, and Engagement:The Intersection of a Deeper Level of Intrinsic Motivation. *Advances in Developing Human Resources* 2009; 11; 189 DOI: 10.1177/1523422309333147

Cropanzano, R., James, K. and Konovsky, M. A. (1993), Dispositional Affectivity as a Predictor of Work Attitudes and Job Performance. Journal of Organizational Behavior, 14: 595–606. DOI: 10.1002/job.4030140609

Demerouti, E., Bakker, A.B., Nachreiner, F., & Schaufeli, W., (2001). The Job Demand Resources Model of burnout. *Journal of Applied Psychology, 86(3),* 499-512.

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi. D., Oishi, S., & Biswas-Diener, R. (2009). New measures of well-being: Flourishing and positive and negative feelings. In E. Diener (Ed.), *The Collected Works of Ed Diener* (Vol. 3, pp. 247-266). Dordrecht, NL: Springer.

Dirks KT. (1999) The effects of interpersonal trust on work group performance. *Journal of Applied Psychology*, Jun;84(3):445-55.

Fisher, C.D. (2010). Happiness at Work. *International Journal of Management Reviews,12*, 384–412. doi:10.1111/j.1468-2370.2009.00270.x

Griffin, J. (1986). *Well-being: Its meaning, measurement, and moral importance.* Oxford: Clarendon Press.

Harter, J. K. Schmidt, F. L. & Hayes, T. L. (2002). Business-unit level relationship between employee satisfaction, employee engagement, and business outcomes: a meta-analysis. *Journal of Applied Psychology,* 87, 268-279.

Harter, J.K., Schmidt, F.L. and Keyes, C.L.M. (2003), "Well-being in the workplace and its relationship to business outcomes: a review of the Gallup studies", in Keyes, C.L.M. and Haidt, J. (Eds), *Flourishing, Positive Psychology and the Life Well-lived*, American Psychological Society, Washington, DC.

Helliwell, J. F. & Huang, H. (2011). Well-Being and Trust in the Workplace. *Journal of Happiness Studies*, DOI: 10.1007/s10902-010-9225-7.

Kuper, H. and Marmot, M. (2003), "Study of coronary heart disease within the Whitehall II Job strain, job demands, decision latitude, and risk", *Journal of Epidemiology and Community Health*, Vol. 57, pp. 147-53.

Hassan Arif & Forbis Ahmed (2011). Authentic Leadership, Trust and Work Engagement. *International Journal of Human and Social Sciences*. 6:3

Lewicki, R. J., & Wiethoff, C. (2000). Trust, trust development, and trust repair. In M. Deutsch & P. T. Coleman (Eds.), *Handbook of conflict resolution: Theory and practice* (pp. 86–107). San Francisco: Jossey- Bass.

May, D. R., Gilson, R. L., & Harter, L. M. 2004.The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational & Organizational Psychology*, 77: 11–37.
Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20,*709–734.

Meyer, J.P., & Gagné, M. (2008). Employee Engagement from a Self-Determination theory Perspective. *Industrial and Organisational Psychology, 1*, 60–62. doi:10.1111/j.1754-9434.2007.00010.x

Meyer, J.P., Stanley, J.S., Herscovitch, L., & Topolnytsky, L. (2002). Affective, Continuance, and Normative Commitment to the Organization: A Meta-analysis of Antecedents, Correlates, and Consequences. *Journal of Vocational Behaviour,16,* 20–52. doi:10.1006/jvbe.2001.1842

Money, K., Hillenbrand, C., & Da Camara, N. (2008). Putting Positive Psychology to Work in Organisations. *Journal of General Management, 34*, 21–36.

Organ, D.W. and Paine, J.B. (1999), "A new kind of performance for industrial and organizational psychology: recent contribution to the study of organizational citizenship behavior", in Cooper, C.L. and Robertson, I.T. (Eds), International *Review of Industrial and Organizational Psychology*, Vol. 14, pp. 337-68.

Schaufeli, W.B., & Bakker, A.B. (2006). The Measurement of Work Engagement with a short Questionnaire: A Cross-National Study. *Educational and PsychologicalMeasurement, 66*, 701–716. doi:10.1177/0013164405282471

Schaufeli, W.B., & Bakker, A.B. (2004). Job Demands, Job Resources, and their relationship with Burnout and Engagement: A Multi-Sample Study. *Journal of Organizational Behaviour, 25*, 293–315. doi:10.1002/job.248

Schaufeli, W.B., Salanova, M., Gonzalez-Roma, V., & Bakker, A.B. (2002). The measurement of Engagement and Burnout: A Two-Sample Confirmatory Factor Analytic Approach. *Journal of Happiness Studies, 3*, 71–92.doi:10.1023/A:1015630930326

Spence Laschinger, Heather K.; Finegan, Joan; Shamian, Judith (2001) The Impact of Workplace Empowerment, Organizational Trust on Staff Nurses' Work Satisfaction and Organizational Commitment. *Health Care Management Review:* Volume 26 - Issue 3 - pp 7-23

Tellegen, A., Lykken, D. T., Bouchard, T. J., Wilcox, K. J., Segal, N. L., & Rich, S. (1988). Personality similarity in twins reared apart and together. *Journal of Personality and Social Psychology, 54,* 1031-1039.

Veenhoven, R. (1994a). *Correlates of happiness: 7,836 findings from 603 studies in 69 nations: 1911-1994.* Unpublished manuscript, Erasmus University, Rotterdam, The Netherlands.

Veenhoven, R. (1994b). Is happiness a trait? *Social Indicators Research, 32,* 101-160.

Wright, T. A. (2003). Positive organizational behavior: An idea whose time has truly come. *Journal of Organizational Behavior*, 24, 437–442.

Wright, T. A. & Cropanzano, R. 2004. The Role of Psychological Well-Being in Job Performance: A Fresh Look at an Age-Old Quest. *Organizational Dynamics,* 33(4), 338-351.

Wright, T. A. & Hobfoll, S. E. 2004. Commitment, psychological well-being and job performance: An examination of conservation of resources (COR) theory and job burnout. *Journal of Business & Management,* 9(4), 389-406.

Xu Huang, Joyce Iun, Aili Liu & Yaping Gong (2010) Does participative leadership enhance work performance by inducing empowerment or trust? The differential effects on managerial and non-managerial subordinates. *Journal of Organizational Behavior.*31, 122–143. DOI: 10.1002/job.636

Zolin, Roxanne & Hinds, Pamela J., (2004) Trust in Context: The development of interpersonal trust in geographically distributed work, In *Trust and Distrust in Organizations*, Eds. Roderick M. Kramer, and Karen Cook for Russell Sage Foundation: New York.

Zolin R, Hinds P. J., Fruchter R., & Levitt R. E. (2004), Interpersonal trust in cross-functional, geographically distributed work: A longitudinal study. *Information and Organization,14*(1), 1-24.

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