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An Evaluation of Buying Behaviors and Perception of Organic Vegetable Consumer in Chiang Mai Province

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Abstract

This research investigates behaviors, perception, and attitudes of Chiang Mai consumers purchasing in respect to organic vegetables. The researchers used a questionnaire to elicit data from 500 subjects and found that 293 subjects had previously purchased organic vegetables while 207 had not done so. The most important motives influencing buying behavior are the concerns about healthy and environmentally-friendly of the products. Individuals having bought organic vegetables were more frequently elderly rather than young, as well as consumers whose average monthly familial income levels ranged from the low to the moderate level and most of them buy the products at supermarket. For those who had never purchased that these consumers did not understand the meaning of the term "organic". The differences in buying motives between eastern and western countries were because of the following reasons. In Asia, people in the lower levels of society are more individualistic. They are more concerned to buying in view of environmental-friendly of organic vegetables. In Europe, people at the higher levels of society are individualistic and exude high of social confidence. Therefore, these consumers are buying because they were products that were good for health and were tasty.

Key words: Organic vegetables, Attitudes, Consumers behaviors, and Buying motives.

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Introduction

The International trade Centre, the Worldwide demand for organic foods was estimated at $US45 billion in 2007 and growth at around 12.5% in the 2008 – 2010, with sales reaching $US60 billion in 2010 (KResarch, 2008). Worldwide consumers are looking for "cleaner", more natural products. During the last years, the organic agriculture market has expanded rapidly with about 15-20% of average growth rate per year. Consequently, organic agriculture is adjusting from a niche to a main stream market (Rojanasatian, 2003). Especially Europe is nowadays one of the biggest markets for organic food. The demand of organic foods worldwide is estimated to further grow, consumer fear over food scandals and certain technological advances such as food has generated serious concern about food safety issues (Urena et al., 2008) and are still interested in natural and healthy food (Thompson, 1998).

Therefore, the world population expansion will increase the food demand. Thailand is the top export country in agricultural products with potential in production and agricultural products transformational more than the other country, besides Thai agricultural products are will known and popular among foreign markets (Rojanasatina, 2003), thus agricultural products should be supported, especially organic agricultural marketing of Thailand should have quality and standards which are compatible with market demand. Agriculture goods such as vegetables were one of the products which made a lot of income for Thailand (Wannakasem, 2003). Therefore vegetable products must be qualified in safety consumption standard the same as the other types of agricultural products. But, they are taking care of vegetables without fertilizer utilization or known as organic vegetable.

From marketers perspective it is important to understand which factors makes the customer buy organic products. According to Johnson et al. (2008), the customer demand within the next years will become more differentiated in terms of variety, quality and safety; thus, understanding of the customers and factors impacting their choice becomes even more crucial for company success. In order to set a guideline in marketing of organic vegetables, which likely grows in the future, regardless of domestic market. Thereby, we intend to provide first insights into consumer's attitude about organic food in general as well as the factors that affected consumers satisfy decision to buying in the future and the perceived buying motives for organic vegetables in particular.

Consequently, the main purpose of this study is to explore the consumer behavior in Chiang Mai, an evaluation of consumer attitude and factors of consumer who buy organic food. Therefore, the objective of this study is to determine Chiang Mai consumers' perception and buying behaviors of organic vegetables. Specific objectives are:

1. To study consumer perception and buying behavior of organic vegetables.
2. To study factors affecting organic vegetables consumers' choosing the products.
3. To study buying motives for consuming organic food differ between Chiang Mai, Bangkok, and Western countries.

Literature review

The literature review on motives for buying organic products summarizes the already known motives which are recently examined in an international context and the overview also includes initial findings of studies being conducted in Thailand. Attitudes and lifestyle factors in addition to demographic factors such as gender, age, strongly affect the acceptability or intention to use functional foods (Urala, 2007). Consumer motivations to

purchase organic food include health concerns, more nutrition than conventional food, environmental concerns, food safety, sensory issues, ethical concerns (Baker et al., 2004). Table 1 shows the literature review summarizing buying motives and barriers of organic products in Western countries and Thailand.

For the buying motives of organic products identified in initial studies conducted in Thailand. To the best of our knowledge, these studies have exclusively been conducted in an urban context (Bangkok) ignoring potentially differing buying behavior of people living in rural areas (e.g., Chiang Mai). Most of the studies on organic food consumption have identified factors that impact consumers' decision by asking individuals how product related factors influenced their decision making. Hence, these products related factors are important buying motives to be considered in our study as well (Bunmark, 2003; Kullachai, 2006; Somsook et al, 2007; Kitboon, 2009).

Table 1

Literature Review on buying motives and barriers of organic products

Authors (year)	Buying motives and barriers	Study context	Country
Davies et al. (1995)	Organic foods are better for you, Worry about the future for children and the planet.	Northern Ireland	UK.
Schifferstein (1998)	Healthier, No colorants, No chemical pesticides, Environment friendliness, and better taste	Netherland	Netherland
Chinnici (2002)	Healthy, Nutritious, Tasty, and To help environment.	Italy	Italy
Saba (2003)	Healthy food, Environmentally friendliness, Better taste, and More nutritious.	The north, the centre, and the south of Italy	Italy

Tale 1 (Continued)

Literature Review on buying motives and barriers of organic products

Authors (year)	Buying motives and barriers	Study context	Country
Padel (2005)	No chemicals, Better for the environment and me/my family, Taste better and Higher animal welfare.	Wales, Norwich, Lancaster and London.	UK
Radman (2005)	Long shelf life, Nice Appearance, Tasty, Expensive, Good Quality and Healthy	Croatia	Croatia
Tsakiridou (2005)	Healthier, Quality, Taste, trust. For barrier, expensive, not special, safety product is enough.	Greece	Greece
Briz (2008)	Natural products, Healthy food or low fat food, and Cleaner	Spain	Spain
Idda et at. (2008)	Healthier, Tasteful, Environment, Help farm incomes, Traditional products, and Curiosity.	Sardinia	Italy
Michaelidou and Hassan (2008)	Health consciousness, Food safety concern and ethical self-identity or green consumer in the purchase of organic produce.	Island	UK

Zakowska-Biemans (2009)	Health, safety, good environment and too expensive, don't trust, and don't know what does it mean	Poland	Poland
Kullachai (2006)	Food safety, free chemical in product, and good health	Bangkok	Thailand
Somsook et al. (2007)	Health, Pesticide residues, Good for the environment, fresh, Better taste, and Just wanted to try.	Bangkok	Thailand
Kitboon (2009)	High quality, clean, certified label from government or private institute, and clear price tag.	Bangkok	Thailand

Research method

The questionnaire for collecting information from organic vegetables consumers by making the questionnaire compatible with the purpose and dividing it into four parts: the first section of questions aimed at collecting the socio-demographic of consumers interviewed; the second section aimed to identify the general attitude of organic food; the third assessed the respondent's motives and consumer purchasing behavior; the fourth section included items such as the demand of consumer or consumption satisfy decision buying in the further and the willingness to pay for these products. Table 2 shows the previous studies about research buying motives of organic food and list item for add the information what reasons do they buy in questionnaire. The research designs the new sentence for respondent in questionnaire.

Table 2

Author	**What reasons do you buy? (motives)**							
	Good Taste	Fresh	Good Health	For children and family	No pesticides/	Protect the environment	For diet	For fashion/trend
Baker et al, (2004)	X		X					
Chan, S, H. (2004)	X		X		X			
Lockie et al, (2004)	X		X					
Lea, E. (2005)	X		X		X	X		
Padel, S. (2005)	X			X	X	X		
Radman (2005)	X		X					
Chen, M. F. (2007)	X		X					
Somsook et al. (2007)	X		X		X			

Michaelidow et at. (2008)			X					
Kitboon (2009)		X						
Juhdi, N. (2010)		X	X	X	X	X		
Researcher							X	X
Total	**8**	**2**	**9**	**2**	**4**	**3**	**1**	**1**

Where the items motives in questionnaire come from?

The questions aimed at identifying the consumer satisfy and motives to buy organic vegetables were constructed using 5 point interval rating scales of Likert-type agreement scales. The questionnaire was initially designed in English and is based on items from previous research. Then, the questionnaire was translated into Thai language (Somsook, 2007), and later back translated to ensure accuracy of the translation. In total, we have collected 500 questionnaires and returned the questionnaire for a response 293 sample which is representative for the population in Chiang Mai in terms of the main socio-demographic characteristics.

Data analysis was carried out using SPSS package for the purpose of the paper were evaluated using descriptive statistics too such as ANOVA, t-test, correlation analysis, exploratory factor analysis, and multiple regression analysis to examine the differences in buying motives across consumer groups. The level of comparison was set at < 0.05.

Analysis of the results

Demographic of organic vegetables consumption

The profile of the interviewed individuals (see Table 3) showed that among our respondents 293 are organic vegetables buyers. The majority of the buyers were female (68.3%) with a age range between 31-60 years. The average education level was rather bachelor degree or higher, considering that more than 60 percent have at least a bachelor degree. Their household income is between 20,001-40,000 baths per month with 3-4 persons in household. Occupation of respondents is both of education professional and business/government employee.

Table 3
Interviewed consumers' demographic profile (n = 293)

Demographics	Buyers	
	Frequency	Percent
Sex		
Male	93	31.7
Female	200	68.3
Age		
Under 20 years	12	4.1
21-30 years	44	15.0
31-40 years	57	19.5
41-50 years	62	21.2
51-60 years	64	21.8
Above 61 years	54	18.4
Household Member		
1-2 persons	48	16.4
3-4 persons	182	62.1
Above 5 persons	63	21.5
Education		
High School	9	3.1
Diploma	30	10.2
Bachelor	166	56.7
Master	78	26.6
Doctorate	10	3.4
Occupation		
Education Professional	62	21.2
Business Owner	19	6.5
Officer	26	8.9
Business/Government Employee	62	21.2
Government official	32	10.9
Student	19	6.5
Bank Employee	23	7.8
Retire	31	10.6
Government Corporation	17	5.8
Housewife/housekeeper	2	0.7
Household Income		
< 10,000 Baht	19	6.5
10,001-20,000 Baht	76	25.9
20,001-40,000 Baht	106	36.2
> 40,000 Baht	92	31.4

Consumer perception of organic products

The results presented in Table 4 show that the 69.3% (203) of people know at least a little about what "organic" means, but they are not sure what it truly means. Most of the respondents have known organic food for 3-5 years. In addition, they are aware only a narrow concept about "organic" which means natural and healthy food, and partly free of chemicals.

Some people are unaware of the fact that organic food production is strictly controlled and more nutritious.

Table 4
Evaluation of organic perception (n = 293)

How do you evaluate your perception of organic food?	Frequency	Percent
I know a lot about organically produced food.	31	10.6%
I know a little about what "organic" means.	203	69.3%
I have heard of organic, but am not sure what it means.	57	19.5%
I don't know about what "organic" means at all.	2	0.7%

Buying Behaviors

The results of which for 293 respondents can be seen in Table 5. The interviewed consumers had obtained information regarding organic vegetables mainly from family members and friends and then watching television as well as newspaper/ magazine respectively. Organic products are mainly bought from the supermarket and healthy food stores. This is due to this products are considered as high quality products and difficulty to buy from fresh or open market like any other vegetables. The data also indicated that organic vegetables are usually bought once per week (28%), and more than once per week (26%). Which respect to customers spent approximately for organic vegetables 101-300 Baht per time (56.7%).

Table 5
Consumer of organic vegetables purchasing behavior (n=293)

Consumer purchase behavior				
How often do you purchase? (%)	Once/week 28.3%	More than once/week 26.6%	Monthly 24.9%	Few times 20.1%
How much do you spend per time? (%)	< 100฿ 33.4%	101-300฿ 56.7%	> 301฿ 9.9%	
Form where do you buy? (%)				
Supermarkets	Frequently	Rarely	Never	
Hypermarkets	45.5%	44.7%	9.9%	
Health food stores	20.5%	58.4%	21.2%	
Open markets	34.5%	48.8%	16.7%	
	21.8%	50.5%	21.8%	
Who influenced your purchasing decision? (%)		SoSo	Disagree	
My self	Agree			
Family members	78.5%	19.8%	1.7%	
Friends	76.5%	21.2%	2.4%	
Sale staff	36.2%	54.6%	9.2%	
	19.8%	51.9%	28.3%	

Willingness to pay intentions

The buyers were also asked whether they are willing to pay for organic vegetables in the future. Results indicate that the most respondents (over 80%) agreed on the question that they intend to buy organic vegetables in the futures they still concern about their health but organic products pries are quite expensive compared with other safety vegetables together with limited supply as well as inconvenience to buy. Meanwhile, our analysis indicated that 50% were not sure if they are willing to pay a higher price.

Table 6 *Willingness to pay intentions*

Consumer are willing to pay			
	Yes	Not sure	No
Willingness to pay more organic vegetables in the future	87.4%	11.3%	1.4%
Willingness to pay a higher price	34.1%	51.2%	14.7%

Consumer satisfaction

The survey was carried out to study the consumer satisfaction of organic vegetables that influence decision to purchase in the future is presented in Table 7. The data reveals that the average mean of consumer satisfaction are "Satisfaction" (M=4.05) with the quality of organic product that consumers are very satisfaction (M=4.34), the products fresh and good health are very satisfaction 4.22 mean and 4.26 mean. Consumers are satisfied with the variety of promotion and the place, it should convenient for buying products that the mean of consumer satisfaction are M=4.10 and M=4.11. Follow the consumers are "Satisfaction" with the logo's of product that they recognize (M=4.15) and the product should have event marketing and test foods (M=4.01).

Table 7
Means of consumer satisfaction (*n=293)*

Consumer Satisfaction	Mean[(a)]	Std. Deviation	Explanation of Mean Value
More Nutrition	4.08	.79	Satisfaction
Freshness	4.22	.72	Very Satisfaction
Good health	4.26	.75	Very Satisfaction
Quality	4.34	.73	Very satisfaction
Good packaging	3.43	.97	Satisfaction
Labels that explain benefits	3.92	.89	Satisfaction
Logo's that I recognize	4.15	.84	Satisfaction
Place is convenient for buying	4.11	.88	Satisfaction
Place is clean and modern	4.00	.82	Satisfaction
Promotional approach used	4.12	.91	Satisfaction
Event marketing etc, test	4.01	.94	Satisfaction
Average mean of consumer satisfaction	**4.05**	**.93**	**Satisfaction**

The main buying motives variables

In order to identify the main buying motives are influencing the consumption of organic vegetable an analysis of the main components was carried out. To explore the relationship among the 8 buying motives, principle component analysis was conducted to ensure that the variables are grouped properly. The varimax rotation procedure is used to produce an orthogonal transformation matrix yielding independent factors (Stevens, 2002). The KMO criteria of the buying motives is.771 and the extracted components are show in Table 8.

Table 8
Rotated component matrix[a] of buying motives

Buying Motives	Component		
	1	2	3
Good for my children and family	.814		
Not contain pesticides/have lower residues	.808		
Good for the environment	.643		
Good for my health	.620		
Better taste and flavor		.837	
Fresher than the other products		.826	
Eat for my diet			.863
Trend and Fashionable to buy organic vegetables			.591

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 7 iterations.

The first factor which is labeled as *"ecological motives"* contains items representing four original dimensions – good for my children and family, they do not contain pesticides/have lower residues, good for the environment, and good for health. The second factor which is labeled as *"attitude motive"* contains items representing two original dimensions – better taste and flavor and fresher than the other products. The third factor which is labeled as *"sociability motives"* contains items representing two original dimensions – eat for my diet and trendy/fashionable to buy organic vegetable.

Differences in buying motives

One- Way Analysis of Variance (ANOVA) and T-test to identify the effect of each of the buyers' demographic independent variables *gender, age, and education* on our dependent variables buying motives factors (see Table 9). Results of ANOVA and t-test indicate that age and education have no significant effect on means of buying motives factors since the p-values are greater than .05 (p>.05). Instead, we found a significant difference in the means of our dependent variables by gender since p is .02 which is lower than .05-level. More specifically, we found that females (M=.1228) have a higher mean in sociability motives than males (M= -.2641) which leads to a mean difference of .38695.

Table 9
Test using ANOVA and T-test

Buying Motives factors	Age	Education	Gender
Ecological motives	p=.251 not different	p=.136 not different	p=.224 not different
Attitude motive	p=.350 not different	p=.812 not different	p=.464 not different
Sociability motives	p=.546 not different	p=.647 not different	p=.02 different

Regression analysis

Additionally, the employed regression analysis showed that there were differences in buying motives depending on household income. Regression analysis was employed to measure the effect of household income (independent variable) on each of the 8 buying motives variable (dependent variables), which were assessed on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The buying motives were appraised in the third part of the questionnaire.

The results show that consumers with lower and medium incomes worry more about the better taste of the products and have positive attitudes towards organic vegetables as consumers with a high income level (b= -.123; t = -2.120; *p-value* = .035). For the fresh products (b= -.143; t = -2.470; *p-value* = .014) and trendy/fashionable (b= -.143; t = -2.460; *p-value* = .014) to buy of organic vegetables is the most factor on individuals' income with a lower and medium income worry about reason buying motives and have positives attitudes toward organic vegetables compared to high income level consumers (Table 10). Therefore, household income has a significant influence on the purchasing decision.

Table 10
Estimated parameters of the multiple regression analysis

Dependent Variables	Independent Household Income Variable		
	Standardized Beta Coefficients	*T*	*p-value*
Better taste	-.123	-2.120	.035
Fresh products	-.143	-2.470	.014
Good health	.022	.371	.711
Good children/family	-.024	-.417	.677
Lower residues	-.030	-.503	.615
Good for Environment	-.008	-.137	.891
For diet	-.001	-.020	.984
Trendy to buy	-.143	-2.460	.014

Comparison of finding with previous research

Based on the literature review (see Table 1 again) which included the most often identified buying motives in western studies, we compared the findings of our research in Bangkok and Chiang Mai, Thailand with that of prior studies. The tables 11 show the ranking of motives to buy organic vegetables by context (Thailand versus Western countries).
The results on motives in Thailand are included in table 10. The first motive in Chiang Mai and Bangkok is Health (M=4.17) and (M=4.56) which is also the first motive in Western countries. The second motive in Chiang Mai is that it is good for the environment (M=4.15) while it is good for children/family (M=4.35) and (M=4.48) in Bangkok and Western countries. The third motive in both of Chiang Mai and Western countries cultures is lower resides while it is fresher (M=4.12) in Bangkok.

With regard to motives of organic food consumption, as expected health factor became the first rank in both Thailand and Western countries. Most people believe that eating is not only for living but selecting quality choice of food will help keep the goodness of health. Therefore, it is believed that organic food is healthier and many consider organic consumption as a way to protect the environment and to live healthier with the children/family. With regard to the "low residues" factor, it came as the third rank in Chiang Mai and Western Countries. The reason is that vegetables and other products, with more develop technology, are nurtured with chemicals and fertilization to get best production. Daily food has contaminated and people may think is not good for long term health. Any free-of-chemical food becomes better choices nowadays. For consumption from Bangkok, as expected fresher factor become to the third rank. Because of middlemen transport vegetables from Northern and South, Thailand to central produce markets is Bangkok where agents of organic vegetables retailers will purchase to package in order to sell them to consumers in Bangkok. Thus, the consumers are considering decision of making about some fresh vegetables products.

Table 11
Ranking of motives to buy organic products (M= mean)

Rank	Motives in Chiang Mai	Motives in Bangkok	Motives in Western Countries
1	Health *(M=4.17)*	Health *(M=4.56)*	Health *(M=4.57)*
2	Good environment *(M=4.15)*	Good for children/family *(M=4.35)*	Good for children/family *(M=4.48)*
3	Lower residues *(M=4.05)*	Fresher *(M=4.12)*	Lower residues *(M=4.13)*
4	Good for children/family *(M=4.03)*	Lower residues *(M=3.96)*	Better Taste *(M=4.02)*
5	Fresher *(M=3.72)*	Good environment *(M=3.54)*	Good environment *(M=3.99)*
6	For diet *(M=3.44)*	Better Taste *(M=2.69)*	Animal welfare *(M=3.80)*

7	Better Taste *(M=3.43)*	Varying prices to match buying power *(M=2.85)*	Appearance *(M=3.29)*
8	Trendy/Fashionable *(M=3.14)*	Advertised on TV. *(M=2.15)*	Fresher *(M=3.00)*

Conclusion and Recommendation

The research project makes an important contribution since it is the first study attempting to propose a valid instrument for measuring the perception of organic vegetables in rural areas such as Chiang Mai (Thailand). One of the main problems to market organic food in that region is the lack of knowledge about organic food and organic production among potential consumers. Although most of those who have heard about organic hold positive attitudes towards organic products and think they are good for the environment and their health, they have limited understanding about what organic means.

Therefore, this study identified factors that influence the consumer decision to buy organic vegetables. We find that are three main motives to purchase organic food: the first important motive is "ecological motives" with the highest influence organic food decision making, the second important motives to purchase organic food is "attitude motives", and the third motive is related to the "sociability motives".

In summary, there are several obstacles influencing the purchase of organic in Chiang Mai, Thailand. The lack of knowledge about organic in general, the specifics of the production method and its distinction from other labeled products. Customers who have never heard of "organic" or who are not aware which labels truly indicate organic products are not likely to purchase them. Thus, there is a need for more and better information about the different hygienic/safe vegetables and organic vegetables, and different food labels, can be a key issue hampering the development of the demand for organic foods. The consumption interest to buy healthy food is high which indicates a market potential for organic products in Chiang Mai, but as long as people are not able to identify these products the market share remains low.
The researcher has the following recommendations to make for researchers and the government. In respect to organic vegetables as products, channels of distribution and public relations in marketing should be augmented and heightened. Public agencies concerned with this domain should provide information as to what is meant by "organic". In regard to future research, researchers should focus on consumer behavior, consumer motivation, and obstacles to the consumption of organic such as fruits, cosmetics, and food in respect to cost management, production, returns on investments, and profits from production.

Biographical notes

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Do Networking with Information Providers Lead to Export Performance: A Preliminary Analysis

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Abstract

Firm's external network can contribute to export performance. The finding shows that, Thai's firms invested resources towards building relationship with business networks. Government agency, financial institution, business association, and knowledge institution follow this. The regression analysis revealed that resources invested in networking explain the variations in three dimensions of export performance namely financial measure, export market penetration, and export success. The result found that the investment in developing of the business network and financial institution are statistically significant and positively related with two dimensions of export performance in term of financial measure and export success while only financial institution is statistically significant and positively related to export performance in term of export market penetration. On the other hand, investment of resources by government agencies negatively related to export performance in term of financial measure. However, investment of resources by business association and knowledge institution are not significant all of three dimensions of export performance.
Keywords: Networking Resources, Export Performance, Thai Exporters, Thailand.

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1. Introduction

The competitiveness and hence performance of a firm depends on its ability to mobilize available resources within the firm as well those available outside the firm. Almost every nation in the world provides infrastructure to facilitate the business operations to ensure economic growth. This is more so when the economy is dependent on external market. Therefore firm with limited resources can enhance their competency by soliciting resources made available through public programs and other services offered by external parties. It is contingent upon the firm to commit and invest resources to network with these service providers. This paper presents the finding of a survey on the extent of resources committed towards building relationship with various service providers among exporting firms in Thailand.

2. Literature Review

Networking Resources and Export Performance

Several scholars have conceptualized social capital as a set of social resources embedded in relationships (e.g., Burt, 1992; Loury, 1977). Other scholars, however, have espoused a broader definition of social capital, including not only social relationships, but also the norms and values associated with them (e.g., Coleman, 1990; Portes and Sensenbrenner, 1993; Putnam, 1995). Social capital encompasses many aspects of a social context, such as social ties, trusting relations, and value systems that facilitate actions of individuals located within the context (Tsai and Ghoshal, 1998). Social capital can be conceptualized and operationally defined at many different levels of analysis, including individuals (Belliveau, O'Reilly and Wade, 1996), organization (Burt, 1992), inter-organizational arrangements (Baker, 1990), and societies (Putnam, 1995). Social capital theory suggests that a firm's networks from a major contributor to its performance (Leenders and Gabbay, 1999).

Firms from newly industrializing nations lack the necessary resources to internally generate capabilities crucial to go international and succeed in the global markets. Accumulating knowledge about foreign markets will take time and require top management to commit resources (Johanson and Vahlne, 1977; Johanson and Mattsson, 1988). Firm specific advantages can be enhanced through networking with external organizations. According to Pfeffer and Salancik (1978), institutional networks ties relate to the linkages among various domestic institutions such as government officials and agencies, banks and financial institutions, universities, and trade association can help the firm to access to resources not available within the firm. Therefore the export performance of firms from newly industrializing nations is contingent upon their desire to learn and network. This argument is the core idea in the network approach to internationalization, which suggests that a firm's external network is important to its performance.

The previous study of Coviello and Munro (1995), identified that through the use of network relationship in overseas market were able to instigate rapid internationalization in diverse markets with major partners often guiding foreign market selection and providing the mechanism for market entry. According to Ghauri, Lutz and Tesfom (2003), explained that the network's success in penetrating foreign markets, access to foreign marketing experience and marketing knowledge and access to support infrastructure facilitate network development. Beside Liu and Beamish (2001), confirmed the importance of alliance partners with certain kinds of local knowledge for supporting successful overseas expansion. The previous study by Collinson and Houlden (2005), explained that network relationships are found to strongly influence managerial cognition and thereby internationalization decision-making.

Consequently, Guillen (2002), concluded that firms belonging to the same business network can gain precious information and experience, and the possession of network ties with business parties in the home country facilitates is important in international venturing activities.

The previous studies, evidence from New Zealand the study of Chetty and Holm (2000); Chetty (2003), found that that business networks is an important to internationalization, and also enable them to proceed faster with their international growth. Evidence from German the study of Ritter & Gemunden (2003), found that network competence has a strong positive influence on the extent of technological collaboration between organization and the firm's product and innovation process success. Evidence from Australia the study of Mort and Weerawardena (2006), found that networking capability a key role in internationalization of the born global firm, and facilitates the development of knowledge-intensive and innovative products, resulting in superior international market performance in term of rapid entry to multiple international markets. Evidence from China the study of Yiu, Lau and Burton (2007), found that business network ties (consists of customers and suppliers) and institutional network ties (consists of government agency, financial institutions and trade associations) is positively related with international venturing. While, evidence from Thai's firms by Pongpanich and Phitya-Isarakul (2008), found that business network include grower, exporters, and freight providers to importers are important for competitiveness and export performance of Thai fruit exports in Chinese market.

The relationship of networking is important to Thailand manufacturing exporting firm. In this study the organizations of networking consists of; Department of Export Promotion (DEP) Thai, The Broad of Investment of Thailand (BOI), Export-Import Bank of Thailand (EXIM Bank), Small and Medium Enterprise Development Bank (SME Bank), Commercial Bank, Insurance Company, Thai Chamber of Commerce, Thailand Exporter Association, and Thai Packaging Association etc.

Export Performance

This study export performance is the dependent variable in the simplified model and is defined as the outcome of a firm's activities in export market (Shoham, 1996). Matthyssens and Pauwels (1996), explained that there are two principle ways of measuring export performance: the first is economic which included financial measures such as sales, profits and market share and the second is non-economic which included non-financial measures relating to product, market, experience elements etc. Compared to financial measures, which are more objective, the non-financial measures of export performance are more subjective. The "success" category comprises measures such as the managers' belief that export contributes to a firm's overall profitability and reputation (Raven, McCullough and Tansuhaj, 1994), "satisfaction refers to the managers' overall satisfaction with the company's export performance, and "goal achievement" refers to managers' assessment of performance compared to objectives (e.g. Katsikeas, Piercy and Ioannidis, 1996). Finally, there is three principle ways of measuring export performance in term of financial measures, export market penetration, and export success (Cavusgil and Zou, 1994; Matthyssens and Pauwels, 1996; Zou and Stan, 1998; Katsikeas, Leonidou and Morgan, 2000).

In this study, export performance has a dependent variable is also more broadly specified including measures of export sales growth, export profit margin, perceived export success, achievement of export objective, export market penetration in current market, export market penetration in new market and satisfaction with overall export performance. Based on the

literature reviews, this study seeks to answer the following research questions: Which networking are resources contribute to export performance?

These relationships are presenting in Figure1.

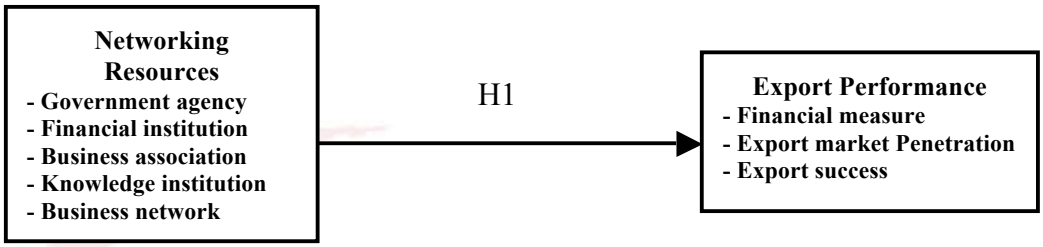

Figure 1 Conceptual Framework

Based on the conceptual framework, we lead to following hypothesis:

H1: Networking resources have a positive relationship with export performance.
H1a: Government agency has a positive relationship with export performance.
H1b: Financial institution has a positive relationship with export performance.
H1c: Business association has a positive relationship with export performance.
H1d: Knowledge institution has a positive relationship with export performance.
H1e: Business network has a positive relationship with export performance.

3. Methodology

This is a cross-sectional study using mail survey. The highly structured survey instruments were mailed to managers in the manufacturing exporting firm's form listed in directory of Department of Export Promotion (DEP) Thai. A total of 113 usable returns were received giving a response is 15.26 %. The profile of firms participating in this survey is presented in Table 1. A total of 15 organizations, which are thought to be capable of providing useful inputs to exporters, are identified. The respondents are requested to indicate to what extent their company has committed resources towards establishing relationship with listed organizations on a 5-point scale ranging from 1= not at all to 5= a great extent. As regards to performance, both economic and non-economic measures of export performance were used. The response to economic measures are solicited a 5-point scale from 1= much below expectation to 5= much above expectation, non-economic measures are solicited a 5-point scale from 1= not at all satisfied to 5= very satisfied.

Table 1 General Characteristics of the Respondents (n = 113)

Demographic	Categories	Number of Respondent	Percentage
Firm Size (Number of employee)	1. SMEs (1<=200 employees) 2. Large (> 200 employees)	89 22	80.2 19.8
Firm Age (Number of years operation)	1. Below 10 years 2. 11-20 years 3. More than 21 years	36 48 24	33.3 44.4 22.2
Export Experience (Number of years for exporting)	1. Below 10 years 2. 11 - 20 years 3. More than 21 years	69 32 9	62.7 29.1 8.2

Separate Export Department	1. Yes 2. No	86 27	76.1 23.9
Average Percentage of Export Sales	1. Below 25% 2. 26 – 50% 3. 51 – 75% 4. More than 76%	25 16 12 53	23.6 15.1 11.3 50.0

Data Analysis

Table 2 displays the mean and standard deviation the extent of networking resources by manufacturing exporting firms in Thailand. The ranking of the mean values shows that Thai's firms committed resources towards establishing relationship with business network (3.14) is higher compared to government agencies (2.82), financial institution (2.78), business association (2.54), and knowledge institution (2.04). On the ranking of all items measuring networking resources, it is noted the top three items that register the highest mean value are 1) Commercial Bank; 2) Department of Export Promotion: DEP Thai; and 3) Transportation & Logistics Companies. The findings show that Thai's exporters perceived they do not have the relationship with respect to 3 organizations they are 1) Thai Packaging Association (mean value = 2.08); 2) University Professor (mean value = 2.08); and 3) Media Organizations (mean value = 1.79).

Table 2 Networking Resources

Dimension of Networking Resources	Mean
Government Agencies	
1. Department of Export Promotion: DEP Thai	3.27
2. The Broad of Investment of Thailand: BOI	2.37
Overall Mean (Std. Div.)	2.82 (1.01)
Financial Institution	
1. Export-Import Bank of Thailand: EXIM-Bank	2.30
2. Small and Medium Enterprise Development Bank: SME Bank	2.15
3. Commercial Bank	3.76
4. Insurance Company	2.92
Overall Mean (Std. Div.)	2.78 (.89)
Business Association	
1. Thai Chamber of Commerce	2.88
2. Thailand Exporter Association	2.65
3. Thai Packaging Association	2.08
Overall Mean (Std. Div.)	2.54 (1.05)
Knowledge Institution	
1. University Professor	2.08
2. Research Institute	2.25
3. Media Organization	1.79
Overall Mean (Std. Div.)	2.04 (.89)
Business Network	
1. Transportation & Logistics Companies	3.25
2. Distributors & Export Trading Company	2.95
3. Raw Material Suppliers	3.23
Overall Mean (Std. Div.)	3.14 (1.02)

5-point scale ranging from 1= not at all to 5= a great extent

Export performance (refer Table 3). The pattern of mean values shows that Thai agro-based exporters invest resources more in developing export sales growth (mean value = 2.76), and export profitability (mean value = 2.38, export market penetration in current market (mean value = 2.54), and export market penetration in new market (mean value = 2.05), perceived export success (mean value = 2.58), achievement of export objectives (mean value = 2.56) and satisfaction with overall export performance (mean value = 2.50).

Table 3 Export Performances

Dimension of Export Performance	Mean
Financial Measure*	
1. Export sales growth	2.76
2. Export profitability	2.38
Overall Mean (Std. Div.)	2.57 (.86)
Export Market Penetration**	
1. Export market penetration in current market	2.54
2. Export market penetration in new market	2.05
Overall Mean (Std. Div.)	2.30 (.96)
Export Success**	
1. Perceived export success	2.58
2. Achievement of export objectives	2.56
3. Satisfaction with overall export performance	2.50
Overall Mean (Std. Div.)	2.55 (.97)

* 5-point scale 1= much below expectation to 5= much above expectation,
** 5-point scale 1= not at all satisfied to 5= very satisfied.

Correlation

Table 4 the correlations between dimensions of networking resources and export performance of financial measure show that financial institution ($r = .31$, $p < .01$), business association ($r = .23$, $p < .05$), knowledge institution ($r = .23$, $p < .05$), and business network ($r = .35$, $p < .01$) are positively and significantly correlated with financial measure. The correlations between dimensions of networking and export market penetration show that financial institution ($r = .37$, $p < .01$), business association ($r = .24$, $p < .05$), knowledge institution ($r = .19$, $p < .05$), and business network ($r = .33$, $p < .01$) are positively and significantly correlated with export market penetration. The correlations between dimensions of networking and export success show that government agencies ($r = .21$, $p < .05$), financial institution ($r = .36$, $p < .01$), business association ($r = .24$, $p <. 05$), and business network ($r = .35$, $p < .01$) are positively and significantly correlated with export success. On the other hand, the dimension of government agencies, is relationship, but not significant with export performance from financial measure and export penetration, and the dimension of knowledge institution, is relationship, but not significant with export success. The correlations among dimensions of networking resource and export performance are relatively low.

Table 4 Pearson's Correlation between Variables (n=113)

	GOV	FIN	BUSA	KNO	BUSN	EPFI	EPPEN	EPSUC
GOV	1							
FIN	.57**	1						
BUSA	.54**	.80**	1					
KNO	.46**	.49**	.47**	1				
BUSN	.47**	.68**	.66**	.40**	1			
EPFI	.06	.31**	.23*	.23*	.35**	1		

EPPEN	.18	.37**	.24*	.19*	.33**	.62**	1	
EPSUC	.21*	.36**	.24*	.14	.35**	.60**	.89**	1

GOV = Government Agencies, FIN = Financial Institution, BUSA = Business Association, KNO = Knowledge Institution, BUSN = Business Network, EPFI = Export Performance (Financial Measure), EPPEN = Export Performance (Export Market Penetration), EPSUC = Export Performance (Export Success).

4. The Study Findings

In order to determine if the investment of resources in networking contributes to the variations in export performance, a multiple regression analysis is conducted. The results of regressions analysis on the effect of networking resources on export performance are presented in Table 5.

Table 5 Multiple Regression Analysis (Networking Resources and Export Performance)

Variables	Financial Measure		Export Market Penetration		Export Success	
	Beta	t-value	Beta	t-value	Beta	t-value
Government Agencies	-.24**	-2.13	-.05	-.46	.01	.10
Financial Institution	.27*	1.70	.42**	2.60	.38**	2.36
Business Association	-.12	-.79	-.22	-1.40	-.20	-1.30
Knowledge Institution	.14	1.33	.03	.29	-.06	-.55
Business Network	.30**	2.39	.20	1.58	.24*	1.89
R^2	.18		.17		.17	
F-value	4.68***		4.28***		4.32***	

Note ***Sig p < .01, **Sig p < .05, *Sig p < .10

The dimension of export performance in tern of financial measure in Table 5 (Colum 2), the addition of the five networking resources has resulted in R^2 is .18 is significant ($p < .01$) which implies that the networking resources explained an additional 18% of the variation in financial measure. F-statistics ($p < .01$) is significant suggesting that the model is adequate. From the regression model, it can be observed that financial institution ($\beta = .27$, $p <. 10$), and business network ($\beta = .30$, $p < .05$) is statistically significant and has a positive relationship with financial measure. While, government agencies ($\beta = -.24$, $p < .05$) are statistically significant and have a negative relationship with financial measure. On the other hand, business association, and knowledge institution does not have a significant relationship with financial measure.

The dimension of export performance in tern of export market penetration in Table 5 (Colum 3), the addition of the five networking resources has resulted in R^2 is .17 is significant ($p < .01$) which implies that the networking resources explained an additional 17% of the variation in export market penetration. F-statistics ($p < .01$) is significant suggesting that the model is adequate. From the regression model, it can be observed that financial institution ($\beta = .42$, $p < .05$) is statistically significant and has a positive relationship with export penetration. On the other hand, government agencies, business association, knowledge institution, and business network does not have a significant relationship with export market penetration.

The dimension of export performance in tern of export success in Table 5 (Colum 4), the addition of the five networking resources has resulted in R^2 is .17 is significant ($p < .01$) which implies that the networking resources explained an additional 17% of the variation in export success. F-statistics ($p < .01$) is significant suggesting that the model is adequate. From the regression model, it can be observed that financial institution ($\beta = .38$, $p < .05$) and business network ($\beta = .24$, $p < .10$) are statistically significant and has a positive relationship with export success. On the other hand, government agencies, business association, and knowledge institution does not have a significant relationship with export success.

5. DISCUSSION

From the Social Capital Theory (SCT) is supported of this study, the previous study by Leenders and Gabbay (1999), explained that a firm's networks from a major contributor to its performance. However, resources to be invested in accumulating knowledge and managerial capability are crucial. The outcome of that investment can be a source of competitive advantage as the managerial talent, technology and knowledge as these resources. Opportunities are abound for a firm with limited resources to source information and knowledge from external organizations. The finding of this study shows that allocation of resources towards these activities explains the variation in export performance. This is particularly with respect to developing relationship and networks among business associates. This finding is consistent with Chetty and Holm (2000), explained that business networks is an important to internationalization, firms interact with their network partners to extend, penetrate and integrate their international markets. Networks can help firms expose themselves to new opportunities, obtain knowledge, learn from experiences, and benefit from the synergistic effect of pooled resources in engaging in international venturing activities.

In Thailand financial institution and business network are an important with Thai's exporters in international market. This finding supported by Yiu, Lau and Burton (2007), explained that business network ties (consists of customers and suppliers) and institutional network ties (consists of government agencies, financial institutions and trade associations) are positively related with international venturing. While the study of Pongpanich and Phitya-Isarakul (2008), explained that business network includes grower, exporters, and freight providers to importers are important for competitiveness and export performance of Thai fruit exports in Chinese market. However, evidence from Thailand is indicating that networking with knowledge institution is relatively weak. Managers should be encouraged to explore linkages with these knowledge resources. The insignificant of investing resources in building relationship with these institutions in explaining export performance is not surprising. Because the previous study found export promotion programs has produced mixed results. The kind of assistance needed by exporters differ across firms' level of export involvement (Kotabe and Czinkota, 1992). It appears that firms' own experiential knowledge and knowledge from parties closely associated with their business is more valued.

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Internationalization of Chinese Private Firms: The Effectof Family Involvement in Management and Family Ownership

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Abstract

This study examines how the degree of family control may affect a firm's decision to go international using a sample of Chinese private firms. We argue that family involvement in management and family ownership are two different aspects of family control which have independent and different effects on a firm's internationalization decision. Building on the socioemotional wealth (SEW) perspective and altruism perspective of family businesses, we argue that family involvement in management has an inverted-U-shape relationship with the likelihood of internationalization, while the percentage of family ownership has a U-shape relationship with the likelihood of internationalization.

Key words: Family business; Foreign direct investment; Exporting; China; Family involvement; Family ownership.

Introduction

While globalization has opened up tremendous opportunities for firms of all sizes and ownership types to go international for worldwide production and sales, one significant new trend is that increasing numbers of small- and medium-sized enterprises (SMEs) multinationals have emerged (Cerrato & Piva, in press; Fernandez & Nieto, 2006). Among these firms, many of them are businesses with significant family control, i.e., founding family members involved in management and/or the founding families owning a significant percentage of the firms (Anderson & Reeb, 2004; McConaughy, Matthews, & Fialko, 2001; Zahra, 2003). How does the degree of family control affect internationalization decisions of these firms?

While current literature has clearly shown that the degree of family control of a firm can affect its internationalization decision, empirical evidence is inconclusive on this question. Some studies have found a positive effect of family control on internationalization activities (Zahra, 2003), but others have found a negative relationship between family control and internationalization efforts of firms (Cerrato & Piva, in press; Fernandez & Nieto, 2006). We argue that one of the reasons that contradictory empirical results exist is that the current literature does not typically clearly distinguish between two aspects of family control, i.e., family involvement in management and family ownership, and often views them as interchangeable or inseparable when examining their effect on a firm's internationalization strategy (e.g., Fernandez & Nieto, 2006; Graves & Thomas, 2006; For an exception, see Zahra, 2003). We suggest that they are two different (though related) characteristics. First of all, we could easily observe that some firms with extensive family involvement in management may not necessarily have a very high percentage of family ownership. Take two manufacturing firms in our sample as examples. One of them has 25% family ownership, but a majority of the top managers are family members; in the other firm, the founding family owns only 3% of the share but over 50% of top management team members are from the family. Similarly, some firms with not much family involvement in management may have high percentage of ownership by a family. Many Germany family firms are controlled by family funds and managed by non-family professionals. For example, Bertelsmann fund established by the Mohn family controls 75% ownership of Bertelsmann but very few Mohn family members are involved in running Bertelsmann.

Second, while both family involvement in management and family ownership highlight the influence of family on the business, they emphasize different aspects of family influence and control. Family involvement in management highlights the role of the family in management and operation of a firm, while family ownership focuses on the family members' roles as owners. Because of these different roles performed by the family, the mechanisms through which they affect internationalization decisions of a firm might be different. While family involvement in management mostly affects the managerial resources and capabilities and decision making processes of a firm related to international expansion, family ownership affects the internationalization decision of a firm through its influence of the owners' risk preference and the long-term orientation of family owners. In this paper, we extend the

current literature by examining simultaneously the different effects of family involvement in management and family ownership on the internationalization decision of a firm.

We chose to study the effect of family control on the likelihood of a firm conducting export or foreign direct investment (FDI). Existing empirical studies typically use exporting as the outcome variable, arguing that this is the most common internationalization strategy used by SMEs (Cerrato & Piva, in press; Fernandez & Nieto, 2006; Westhead & Howorth, 2006). The empirical evidence on how family control can affect the tendency of a firm to conduct FDI is lacking. FDI is one of the major outward internationalization strategies used by many firms. While it is riskier than exporting, it can fulfill certain strategic needs that exporting cannot, such as overcoming trade barriers, utilizing the cheap labor of host countries, etc. Therefore, it is also essential to understand how the degree of family control may affect a firm's decision to conduct FDI.

Using a sample of 902 Chinese private firms, this study examines simultaneously the different effect of family involvement in management and family ownership on the firm's likelihood of conducting export and FDI. It was estimated that over 85% of Chinese private enterprises are family owned (i.e. individual or family owns more than 50% of the shareholding) (Chinese Private Economy Research Group, 2011). Chinese private firms have been a significant force in both exporting and FDI in China. They constitute an increasing proportion of all firms conducting export and FDI. The National Customs statistics reveal that, in 2010, private enterprises contributed 30.5% of the export volume, up from 17.6% in 2006. Based on the Statistical Bulletin of China's Outward Foreign Direct Investment, 83.5% of Chinese FDI firms were private firms in 2010, increased from 66% in 2006. Given the prevalence of family control in Chinese private firms and the increasing number of firms conducting export and FDI, it is important to study the effect of family control on the decisions of both exporting and FDI among Chinese private firms.

Literature and Hypotheses

The internationalization literature has long examined the antecedents of firms to go international in general. For example, the well-known Dunning's (1981) eclectic paradigm argues that firms go international for three main reasons: (1) to exploit their ownership-specific advantages in marketing, technology, financial resources, and other resources and capabilities; (2) to exploit the efficiency coming from the internalization and integration of world-wide operations; and (3) to take advantage of the potential host countries' comparative advantages such as cheap labor, abundance of financial or natural resources, or favorable government regulations. In addition, scholars have also argued that firms go international to overcome unfavorable competitive and institutional environments (Boisot & Meyer, 2008) or to upgrade their capabilities rather than to exploit their competitive advantages (Luo, 2000).

However, classic internationalization theory, as described above, does little to address how family control of a firm may affect its internationalization strategy (Filatotchev, Strange,

Piesse, & Lien, 2007; Zahra, 2003). A growing body of research, however, has found that a firm with significant family control is unique in its ownership and governance systems, and the resulting management practices and organizational culture, which may affect the process through which these firms make strategic decisions, including internationalization decisions (Cerrato & Piva, in press; Corbetta & Montemerlo, 1999; Erdener & Shapiro, 2005; Fernández & Nieto, 2006; Graves & Thomas, 2006; Sanders & Carpenter, 1998; Zahra, 2003; Zahra, Neubaum, & Naldi, 2007). While we start to see some empirical studies related to this issue in some developed economies, such as in the U.S. (Davis & Harveston, 2000; Zahra, 2003; Zahra, Neubaum, & Naldi, 2007), Spain (Gallo, Arino, Manez, & Cappuyns, 2004; Gallo & Garcia Pont, 1996), Australia (Fernández & Nieto, 2006; Graves & Thomas, 2006; Graves & Thomas, 2008; Thomas & Graves, 2005), and Italy (Cerrato & Piva, in press), we have seen very few studies examining the effect of family control on the internationalization of firms in emerging economies.

As an exception, Liu, Lin, and Cheng (2011) studied how family control and organizational slack independently and interactively affect international involvement among a sample of publicly listed firms in Taiwan. They found that family ownership and excess control have a negative relationship with international involvement of a firm. In addition, as high-discretional organizational slack increases, the negative relationship between excess family control and international involvement becomes stronger. Our study is different from Liu et al.'s (2011) in three notable ways. First, in Liu et al. (2011), family control was indicated by family ownership (ratio of number of shares held by the family over the total number of outstanding shares) and excessive family control (the difference between family voting rights and family cash flow rights). Family involvement in everyday management of the firm was not directly studied as an important factor for internationalization strategies. In our study, we study simultaneously both the effect of family involvement in management and family ownership on a firm's internationalization strategy. We emphasize that these two distinctive aspects of family control affect the internationalization decision of a firm differently. Second, Liu et al. (2011) used international involvement as the dependent variable, including foreign sales, foreign production, and geographic dispersion. We focus on the decision of conducting exporting and FDI and study how family control may affect the decision to go international, rather than the outcome of various international efforts. Finally, we study a sample of small-to-medium-sized private firms from a wide range of industries in mainland China, rather than publicly listed firms from high-tech industries in Taiwan.

Given these differences, we believe that our study can provide additional insights on how the degree of family control may affect the internationalization strategy of firms. In the following section, we develop hypotheses related to how family involvement in management and the percentage of family ownership may independently and differentially affect the likelihood of exporting and FDI.

Family Involvement in Management and the Likelihood of Internationalization

Family involvement in management refers to the extent to which the founding family exercises management control in daily operations. The current literature has examined how the involvement of family members in a family business may affect strategic decisions (Chrisman, Chua, & Sharma, 2005; Harris, Martinez, & Ward, 1994), organizational culture (Kets de Vries, 1993; Thomas & Graves, 2005), and organizational performance (Castillo & Wakefield, 2006; McConaughy, Matthews, & Fialko, 2001; Sciascia & Pietro, 2008). However, only recently have scholars started to explore specifically the relationship between family involvement in management and internationalization strategy (Zahra, 2003).

One important reason that a family would want to be involved in the management of a firm would be the family's desire to create and preserve the social-emotional wealth (SEW) of the family members. Social-emotional wealth refers to the utilities family owners derive from the non-economic aspects of the business (Gomez-Mejia, Takacs-Haynes, Nunez-Nickel, Jacobson, & Moyano-Fuentes, 2007). The noneconomic aspect of the business may include: (1) emotional connections family owners feel about the firm; (2) the importance of family values instilled in the culture of the family business and, (3) the altruistic behavior of the family owners that puts the welfare of the whole family above their own (Gomez-Mejia, Cruz, Berrone, & De Castro, 2011). According to the SEW perspective of family firms proposed by Gomez-Mejia et al. (2007), family owners' management decisions are driven by the preservation and enhancement of the SEW of the family. A series of empirical studies by Gomez-Mejia and his colleagues have shown that the preservation of SEW in family-controlled firms may motivate firms to make certain strategic decisions, even though such decisions may, in some cases, hurt firms economically. For example, Jones, Makri, and Gomez-Mejia (2008) found that family-controlled firms tend to appoint affiliate directors to the board, even though this limits the capabilities of the board to monitor management and to provide independent advice. Cruz, Gomez-Mejia, and Becerra (2010) showed that top management teams' contracts are more protective of their wealth if they are from the family. The desire for preservation of SEW in family-controlled firms also causes firms to make non-economic decisions such as polluting less (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010), being less likely to diversify (Gomez-Mejia, Makri, & Larraza-Kintana, 2010; Gomez-Mejia, Hoskinsson, Makri, Sirmon, & Campbell, 2012) , and putting more effort into conforming to industry norms (Miller, Le Breton-Miler, & Lester, 2011).

In our interviews with Chinese firms, we found similar decisions made by the firms to preserve wealth at the cost of short-term economic benefits. The CFO of one of the family firms we interviewed used the following example to describe their very conservative financial management:

> "We have very strict account receivable management policy which gives us very good cash flow position. We always buy all kinds of insurance to minimize the risk of potential loss, such as property insurance, trade insurance, credit insurance. Fuqing

(where the company headquarter is located) never had earthquake but we still buy earthquake insurance. Other family firms are as conservative as us…."

Firms with a high level of family involvement may view the preservation of family SEW as more important than firms with a low level of family involvement in management. We argue that the desire to preserve the family's SEW could produce two different effects on the decision to internationalize. On the one hand, the desire to preserve SEW may lead firms to minimize the hire of non-family members for top management positions, which restrains the development of managerial resources and capabilities that are needed for the challenging tasks of international expansion through exporting and FDI (Cerrato & Piva, in press; Habberson & Williams, 1999). In addition, the desire to preserve SEW also reduces the incentive for a firm to expand internationally if the SEW of the family will potentially be reduced through internationalization. On the other hand, the desire of preserving SEW means that firms with high levels of family involvement in management tend to make decisions that are beneficial for the firm in the long term (such as international expansion), even though that may mean that they have to sacrifice financially in the short term. In the following, we explain these two contrasting mechanisms.

The limitation of managerial resources and capabilities resulting from the desire to preserve SEW can be reflected in several ways. First, firms with high levels of family involvement in management tend to have a culture of hiring more family members in management positions, rather than recruiting the best candidates in the market. This is because these firms believe that hiring outside managers could unavoidably force the family to delegate authority to the outside managers, which could decrease the family's control in daily operations and management decisions and thus reduce the SEW of the family. In addition, hiring outside managers could reduce the cohesiveness of the top management team by diluting the influence of family value in the culture of the business and increasing conflicts among family managers and outside managers in career and personal goals. It may also increase the information asymmetry since outside managers may have the expertise that family managers don't have (Gomez-Mejia et al., 2012; Gersick, Davis, Hampton, & Lansberg, 1997). Because of the above reasons, firms with a high level of family involvement in management may prefer to hire family members for managerial positions, which limit the managerial resources and capabilities required for international expansion (Sciascia & Mazzola, 2008).

Second, highly qualified managers may avoid firms with heavy family involvement in management because of limited potential for professional growth, lack of professionalism, and limitations of wealth transfer (Sirmon & Hitt, 2003). As a result, firms with high levels of family involvement in management tend to have lower levels of managerial resources and capabilities.

Third, a firm with a high level of family involvement may lack diverse business information related to international business opportunities because family members in the management team tend to have redundant networks and connections. Conversely, firms with less family involvement and control tend to have richer social capital and managerial resources (Graves & Thomas, 2004; Portes, 1998). These firms can access new diverse information and

resources, bring fresh perspectives and new directions (Jain, 1980), establish new partnerships, and facilitate organizational changes (Mueller, 1988), all of which facilitate the recognition of opportunities in international markets and help firms to develop the skills required for international expansion. Therefore, firms with less family involvement may be more likely to take up international opportunities, such as exporting and FDI.

Consistent with the above arguments, there is empirical evidence showing that family involvement in management is negatively related to the international expansion of a firm. For example, Fernandez and Nieto (2006) found that family involvement in management is associated with a lower level of export intensity among a sample of Spanish SMEs. Cerrato and Piva's (In press) study of 1324 Italian SME manufacturing firms has suggested that family involvement in management is negatively associated with the export propensity of these firms. In addition, Westhead and Howorth (2006) found that a family CEO is negatively related to the likelihood of exporting.

However, as we mentioned earlier, there is also contrasting evidence concerning the relationship between family involvement in management and the internationalization strategies of firms (Aldrich & Cliff, 2003). For example, Zahra (2003), using a sample of 490 U.S. manufacturers, found that family involvement in management was positively related to internationalization of a firm. Several reasons may explain this result. First, family involvement in management minimizes the agency problem and aligns the interests of the owner-manager and those of the firm (Jensen, 1994). The owner-managers tend to use altruism to gain support for long-term growth strategy, such as international expansion. Altruism plays an important role in family firms (e.g., Dyer, 2003; Zahra, 2003). It is one important mechanism through which family members preserve their SEW in the family business (Gomez-Mejia et al., 2011). In the specific context of family firms, altruism refers to a utility function that maximizes the welfare of the entire family engaged in the family business (Gomez-Mejia et al., 2011). In a firm with a high level of family involvement, altruism encourages family members to be selfless with each other, promote a sense of collective ownership, and reduce information asymmetry (Karra, Tracey, & Philips, 2006). Altruism also helps create an organizational culture that is more willing to pursue international opportunities with lower reservation prices (Zahra, 2003). In other words, family firms may be willing to take up some international opportunities that other firms may consider not to be worthwhile (Eaton, Yuan, & Wu, 2002). In addition, altruism means that family members are also more willing to suffer from short-term deprivation for the long-term survival of the firm (Carney, 2005). Therefore, if internationalization is considered to be essential for the long-term development of the business, the family involved in the business would want to pursue this strategy even though it may be risky and/or it may hurt their short-term returns (Zahra, 2003).

In addition to altruism, firms with high levels of family involvement also tend to have a more speedy decision-making process due to a lower degree of bureaucratic control or external accountability and thus can take up the emerging international opportunities faster than firms with lower levels of family involvement in management (Chrisman, Chua, Pearson, &

Barnett, 2012). This argument is clearly shown in our interview with one of the Chinese private firms that have a high level of family involvement. The senior vice president of the firm illustrated this point with an example:

> "One day, I received a phone call from my relative in Shanghai who just attended a government policy-making meeting and told me that Shanghai government will initiate a long-term plan to build a 100 billion *yuan* (about US$17 billion) automobile manufacturing sector. The plan has huge implications for our firm's expansion. I reported this information to the founder CEO. He immediately called up a meeting with our CFO, general manager and made several phone calls. Then he flew over to Shanghai on that day and had already signed the contract of a 0.45 billion *yuan* (about US$450 million) investment to build a factory in Shanghai when he returned 3 days later. Such a lighting speed of decision-making can only happen in family firm with a dominant manager."

Given the above contrasting mechanisms, we posit that the relationship between family involvement in management and the likelihood of exporting and FDI is not simply a linear relationship (positive or negative). It is an inverted-U-shaped curvilinear relationship (see Figure 1 for an illustration). On the one hand, managerial capability constrained by family involvement in management suggests that a higher level of family involvement in management is associated with a lower likelihood of internationalization (exporting or FDI). However, such an effect may be stronger as the level of family involvement in management increases. For example, if the firm changed its top management team from 10 family members and 0 non-family members to 9 family members and 1 non-family member, there might be a dramatic increase in the managerial resources and capabilities provided by that non-family member. However, the marginal effect of introducing additional non-family members might decrease as the firm continued to add non-family members to the top management team.

Insert Figure 1 about here

On the other hand, the mechanisms of altruism and the speedy decision-making process suggests that there should be a positive relationship between family involvement in management and the likelihood of conducting export and FDI. Combining these two different logics, we should observe an inverted-U-shaped relationship between family involvement in management and the likelihood of exporting or FDI.

H1a. Family involvement in management has an inverted-U-shape relationship with the likelihood of exporting.

H1b. Family involvement in management has an inverted-U-shape relationship with the likelihood of FDI.

Family Ownership and the Likelihood of FDI

The decision to go international is related to a firm's decision makers' perception of opportunities and risks associated with such international expansion (Liu et al., 2011).

International expansion allows firms to leverage their domestic skills abroad and grow their market presence and profitability (Bartlett & Ghoshal, 1998). It may also allow firms to upgrade their resources and capabilities in the financial, technological, and marketing areas (Luo, 2000). In addition, expanding overseas provides opportunities for firms to learn from distant markets and promote innovations from diverse knowledge (Hill, Huang, & Kim, 1990).

However, expanding internationally is also challenging because of the diverse resources and skills required to deal with the complexity of coordinating and integrating domestic and foreign operations, the legal and cultural differences between the home country and foreign countries, and the diverse competitors in the foreign markets (Graves & Thomas, 2008; Hill et al., 1990). Going international, especially FDI, also requires significant resource commitment and may take years to generate profits (Zahra, 2003). In the process of accumulating international experience, a family firm may deprive its limited valuable resources. Therefore, the risks and uncertainties associated with internationalization are significant.

The risks and uncertainties associated with internationalization are especially high for emerging market private firms. These firms generally lack the experience of exporting to and operating in foreign countries. The capital markets in emerging markets are not well developed and thus it is in general challenging for these firms to secure financial resources required for internationalization.

The ownership stake is likely to affect the owner's risk preference (Eisenhardt, 1989; George, Wiklund, & Zahra, 2005; Liu et al., 2011). When the share of the family members is relatively small, the family owners tend to be more risk taking. This is because the risk of failure or loss is not likely to cause a tremendous loss of wealth for these family owners, while the benefits and opportunities associated with internationalization may outweigh the risks involved, leading to increased preference for internationalization.

However, when the share of the largest family owners reaches a certain level, the owners may become increasingly risk averse because a substantial portion of the wealth is tied to the firm and the outcome of a failed strategic move could be severe (Bianco, Bontempi, Golinelli, & Parigi, in press; Denis, Denis, & Sarin., 1999; George et al., 2005; Liu et al., 2011). Research in economics and finance has largely shown that founder-owner firms are less likely to pursue high-risk strategies than similar firms whose shareholders are more widely dispersed (Jensen & Meckling, 1976). Based on this consideration, a high percentage of family ownership makes owners reluctant to grow through internationalization, which is considered to be more risky than domestic growth. In other words, this risk preference consideration suggests that family ownership should have a negative relationship with the likelihood of exporting and FDI.

However, empirical evidence has shown that family firms are sometimes willing to take financial risks when making strategic decisions. The traditional agency theory prediction

above assumes that owners evaluate strategic decisions based on risks against financial returns and it ignores the risks of preserving versus losing the family's SEW (Gomez-Mejia et al., 2011). As the family ownership increases, the family could be more willing to take higher financial risks if taking risks prevented the potential loss of family SEW. For example, Gomez-Mejia et al. (2007) found that family-owned olive oil mills in Spain tend not to join cooperatives for fear of loss of family control and SEW, even though not joining cooperatives could increase the financial risks of these mills.

We suggest that for firms with high levels of family ownership, the preservation of SEW through passing the business to the next generation may encourage the owners to have a long-term growth strategy, which inevitably includes international growth strategies such as exporting and FDI. Such a desire may not be obvious for owners with minority stakes who do not have the absolute right to pass their businesses to the next generations. As the family has a higher ownership stake, such a desire for long-term survival as a family firm may eventually overwhelm risk averseness. Therefore, we should observe a U-shape relationship between the percentage of family ownership and a firm's likelihood of exporting and FDI. In other words, while a low level of ownership stake motivates owners to take risks to expand internationally for potential economic benefits, a high level of ownership stake eventually also motivates owners to expand internationally for the preservation of family SEW (see Figure 2 for a graphic illustration of this relationship).

Insert Figure 2 about here

H2a.Holding family involvement in management constant, the percentage of family ownership has a U-shape relationship with a firm's likelihood of pursuing exporting.
H2b. Holding family involvement in management constant, the percentage of family ownership has a U-shape relationship with a firm's likelihood of pursuing FDI.

Method

Sample and Data

The data for this study comes from a larger data collection effort related to Chinese private firms in the Pearl River delta region (PRD) and the Yangtze River delta region (YRD). We used the *2007 Statistics Yearbook of Private Enterprises* as our baseline to proportionally select target firms in terms of industry, scale, and geographic distributions. In order to reach an ample number of representative private enterprises in these two regions, we combined various publicly available directories and generated a list of 4,430 target private firms. Our original list consisted of a large number of firms with inaccurate contact information. We retained a short list of 1,150 target firms after excluding cases with undeliverable addresses and unreachable phone or fax numbers.

We used two methods to collect data from private entrepreneurs. We first mailed out surveys and then followed up with phone calls. We obtained 254 valid responses through mail and fax, yielding a response rate of 22% (254/1,150). We also hired a team of graduate assistants to

visit the firms and urge them to fill out the questionnaires. We collected another 816 responses. Together with the mail questionnaires, we obtained 1060 survey questionnaires. After excluding those unusable questionnaires (missing data on most of the major variables), we retained 902 firms in our sample.

About half of these firms were small enterprises with annual sales revenues less than 10 million RMB *yuan* (about US$1.7 million). Sample firms are, on average, 8.6 years in establishment. 70% of these firms were 10 years or younger. All the surveys were completed by CEOs or business founders, whose average management experience was about 12 years. About 48% of firms were from the manufacturing industry.

Because most of the variables are self-reported and collected through the same source, common method variance may cause systematic measurement error. We took several steps to make sure common method bias was not a major concern in our study. First, when we designed the survey, we asked questions about facts rather than perceptions whenever possible, reducing subjectivity in self-reporting. For example, we asked a series of questions about different aspects of the firm's outward internationalization activities such as projects, scopes, and locations. Second, to alleviate social desirability, we stressed to our respondents that the survey was only for research purposes and that all their responses would be kept strictly confidential. Third, our primary purpose in this study was to test quadratic effects which are unlikely to be artifacts of common method variance because common method variance does not create artificial quadratic effect but instead deflates the estimated effect (Siemsen, Roth, & Oliveira, 2009). Fourth, we ran Harman's one-factor test to check for potential bias. No single factor could be extracted from the data to explain a majority of the variance, suggesting no substantial threat of common method variance bias to our analysis (Podsakoff & Organ, 1986).

Measures

All the measures included in this study were initially written in English and then translated by professionals into Chinese for survey administration. We used standard back-translation procedure (Brislin, 1986) to check language consistency of our measures to ensure face validity.

Dependent variable. The dependent variables for this study were FDI propensity and exporting propensity. In the survey, we asked the respondents to select from a list of outward international activities in which their firms were currently involved. A firm is considered to be exporting if it is involved in either direct exporting or exporting through international trade agents. Exporting propensity was indicated by a dummy variable with a value of 1 if the firm reported that it was either engaged in direct exporting or exporting through international trade agents and 0 otherwise. To measure FDI propensity, we asked whether the firm had any FDI and we coded FDI propensity as 1 if the answer was yes. In the survey, the respondents reported in two other separate questions on their specific FDI activities (i.e., set up oversea joint venture, greenfield investment, or cross-border merger and acquisition) and detailed

information about their FDI projects (number, location, scale, etc.). We found 88.5% of the firms with self-identified FDI engagement also reported the type or scope of their FDI activities, providing additional validity check of the dichotomous measure.

Independent variables. Two independent variables were used in this study. The first independent variable, *family involvement in management,* was measured by the ratio of family members in top management teams. Five categories were specified in the survey (0%, below 20%, between 21%-50%, 51%-80%, and over 80%). The value of family involvement in management took values from 1 to 5 corresponding to these five categories. The second independent variable, *family ownership,* was measured by the percentage of total shares owned by the firm's largest individual shareholder and his/her close family members. In our sample, the ownership percentage ranged from 3% to 100%.

Control variables.

Firm age. Older firms are more likely to have established business models and more likely to go international by exploiting their resources and capabilities in foreign countries. In addition, firms with different ages may have different business goals (Sharma et al., 1997). Therefore, we included *firm age* in our analysis (Zahra, 2003). Firm age is measured by the number of years since a firm was founded.

Firm sales. We also included annual sales in 2007 as an indicator for *firm size* in the analysis, since larger firms are more likely to go international as natural steps of growth and also tend to have more resources needed to internationalize (Fernhaber, Gilbert, & McDougall, 2008; Thomas & Graves, 2005; Zahra, 2003).

Firm performance. Past studies have found a positive relationship between firm performance and internationalization (e.g., Zahra, Neubaum, & Huse, 1997). We controlled for firm performance in our analysis. Consistent with Basu and Palazzo (2008), we measured firm performance from three aspects: financial performance, sustainability, and reputation. To ensure reasonable performance comparison across the entire sample, we asked our respondents in the survey to rate aspects of their enterprises against their domestic competitors in the same industry in the past three years, using a five-point Likert scale ranging from 1 as the bottom 20% to 5 as the top 20%. Specific items included for the comparison were: return on investment, sales revenue, profit margin, sale growth rate, market share growth rate, cash inventory/balance, and reputation. The Cronbach alpha for this seven-item scale was .93.

Industry. Different industries have different globalization potentials (Yip, 1992). We used three different sources to determine the industry of the responding firms. First, the respondents were asked to select their main industry from the 18 industries classified by the Chinese Statistics Bureau. Second, we matched the self-reported industry with the industry reported in various directories we used to draw an initial sample. Third, we conducted an online search using full company names provided in the survey to check accuracy of

self-reported industry information. Based on the information, we classified the sample firms into five different industries: manufacturing, construction, wholesale and retail, IT service, and other industries. To control for industry effect, we included four dummy variables, with "other industries" as the default industry.

The founder's management experience. A founder's management experience, defined as the number of years a founder has been in top management positions, may be one of the factors that could affect the internationalization decision and the risk tendency of a firm because more experienced founders may be more capable of spotting and exploiting international business opportunities and more accurately assessing the risks and benefits involved in exporting and FDI. We therefore included the founder's management experience in our regression analysis.

Analysis

We used logistic regression with robust standard error to investigate how family involvement in management and family ownership may affect a firm's likelihood of exporting and FDI.

Results

Table 1 presents descriptive statistics and the pair-wise correlation matrix among main variables. We used the Belsley, Kuh, and Welsch (1980) approach to test the potential multicollinearity problems among major variables. These procedures examine the "conditioning" of the matrix of independent variables. It computes the condition number of the matrix, which is called singular value. If this number is "large" (Belsley et al. suggest 30 or higher), then there may be multicollinearity problems. If the number is small (below 10), then there is no multicollinearity problem. The conditioning number among our independent and control variables is 9.7, much lower than the threshold of 30. Therefore, multicollinearity is not likely to be a concern.

Shown in Table 1, the sample firms, on average, have low involvement in management (less than 20%) but their overall ownership control is high (mean = 74.88%). The correlation between family involvement in management and family ownership is moderate (r=0.21), demonstrating that they are empirically distinct from each other.

Insert Table 1 about here

Table 2 and Table 3 report the results of logistic regression models using exporting propensity and FDI propensity, respectively. Table 2 presents logistic regression results for testing Hypothesis H1a and H2a and Table 3 presents results to test Hypothesis H1b and H2b. H1a predicts an inverted-U-shape relationship between family involvement in management and exporting propensity. Model 1a is a baseline model with only control variables. Model 1a suggests that firm size is positively related to the firm's exporting propensity. Firms in manufacturing and wholesale and retailing industries have significantly higher likelihood of

exporting when compared with firms in other industries. Model 2a adds family involvement in management in the regression equation. The results show that family involvement in management has a significant positive effect on likelihood of exporting (b = 0.14, p < .10). To directly test H1a, Model 3a adds the square term of family ownership into regression equation. The regression coefficient is not significantly different from 0 (b = -0.00, *n.s.*), failing to support H1a.

Insert Table 2 and Table 3 about here

Hypothesis 2a suggests that family ownership has a U-shape relationship with a firm's likelihood of exporting. Model 4a and Model 5a in Table 2 test this hypothesis. In Model 4a, we include the control variables and family involvement in management, as well as family ownership in the regression equation. The coefficient of family ownership is not significant, indicating no direct linear relationship between family ownership and the likelihood of exporting. Model 5a adds the square term of family ownership into the regression equation. The coefficient of the square term is positive and significant (b = 4.89, p < .01), which supports Hypothesis 2a. We plotted this curvilinear relationship between family ownership and the likelihood of exporting in Figure 3. As shown in Figure 3, as the percentage of the largest shareholder's stake increases, the likelihood of exporting decreases sharply, but this likelihood starts to increase when the percentage of family stake reaches approximately 76%. These results support Hypothesis H2a.

Insert Figure 3 about here

Table 3 presents logistic regression results for testing hypothesis H1b and H2b. H1b predicts that family involvement in management has an inverted-U-shape relationship with FDI propensity. Model 1b is the baseline model with control variables only. It shows that firm size and firm age are both positively related to FDI propensity. Model 2b adds family involvement in management in the regression equation. The regression results indicate that family involvement in management is not significantly related to FDI propensity, showing no direct linear relationship between family involvement in management and FDI propensity. To directly test Hypothesis 1b, Model 3b adds the square term of family involvement in management. The square term of family involvement in management is negative and marginally significant (b = -.18, p < .10). Hypothesis 1b is marginally supported.

To facilitate the interpretation, we plotted the curvilinear relationship of family involvement in management and FDI propensity in Figure 4. As shown in Figure 4, the likelihood of FDI increases as the degree of family involvement in management increases to the point where family involvement in management value is about 2.61 (i.e., approximately 38% of top management team members are from the family), then further increase in family involvement in management leads to the decrease of FDI propensity.

Insert Figure 4 about here

H2b suggests a U-shape relationship between family ownership and FDI propensity after controlling the effect of family involvement in management. Model 4b to Model 6b test this hypothesis. In Model 4b, we include the control variables and family involvement in management, as well as family ownership in the regression equation. The coefficient of family ownership is not significant, suggesting no direct linear relationship between family ownership and FDI likelihood. When adding the square term of family ownership into the regression equation (Model 5b), both family ownership (b = 1.96, p < .05) and the square term of family ownership (b = 8.44, p < .001) have positive and statistically significant coefficients. Adding the square term of family involvement in management does not change the regression results, as shown in Model 6b.

Figure 5 depicts the quadratic effect of family ownership on FDI propensity. As family ownership stake increases, the likelihood of FDI decreases initially, but this likelihood starts to increase when the percentage of the largest shareholder's stake reaches 63.29%.

Insert Figure 5 about here

Discussion

Many SMEs in both developing and developed countries have significant family control. Yet we know very little about how family control may affect these firms' internationalization strategies (Zahra, 2003). The current literature on this issue does not typically distinguish between two aspects of family control: family involvement in management and family ownership. This may partially explain why we observe contradictory findings in the current literature. This study extends the current literature to examine how these two distinctive aspects of family control may differentially affect the propensity of a firm to go international through exporting and FDI in the context of Chinese private firms.

We suggest that family involvement in management affects the internationalization decision of a firm through two major mechanisms. On the one hand, family involvement in management may constrain resources and capabilities, leading to reduced likelihood of firms to go international. On the other hand, family involvement in management promotes altruistic behavior and the speedy decision making process, which increase the likelihood of a firm to go international. As a result, we propose the inverted-U-shape relationship between family involvement in management and the likelihood of exporting and FDI.

Our results support our prediction that family involvement in management has an inverted-U-shape relationship with the likelihood of FDI. However, inconsistent with our prediction, we found that family involvement in management has a positive relationship with the exporting propensity. This indicates that the resources and capability mechanism may not be operating strongly for exporting decisions. To test this possibility, we distinguished the

cases of direct exporting versus exporting through agents. Direct exporting requires more sophisticated internal knowledge, resources, and capabilities than exporting through agents. Therefore, the constrained resources and capabilities by family involvement in management may not affect exporting through agents but may affect direct exporting. We conducted additional analysis using the likelihood of direct exporting as the dependent variable (See Appendix A for the results). The results show that when excluding exporting through agents, family involvement in management has an inverted U-shape relationship with the likelihood of direct exporting, supporting hypothesis 1a.

Our study argues that family involvement in management and family ownership affect the decision of exporting and FDI through different mechanisms and thus it is necessary to separate the effect of these two aspects of family control. We argue that family ownership affects the internationalization decisions of a firm through two different mechanisms: risk perception of the owners and the long-term orientation of the owners related to preservation of SEW. With the operation of these two mechanisms, we predicted and found that the percentage of family ownership has a U-shape relationship with the propensity of internalization. While the initial increase in the ownership stake decreases the likelihood of FDI/exporting because of the owner's fear of potential economic loss, such a negative relationship reaches a threshold, after which the owners are more likely to take significant risks to explore the international opportunities due to the desire to preserve long-term SEW of family members, such as passing the business to the next generation.

This study contributes to current literature of family business internationalization in several ways. First, this study extends the current literature on family firm internationalization by clearly distinguishing the different effects of family involvement on management and family ownership on the internationalization decisions of firms. Existing studies typically do not distinguish between these two characteristics. Our study suggests that it might be important to separate these two characteristics to understand the different mechanisms through which they affect internationalization decisions of firms.

Second, this study also provides additional evidence on the SEW perspective of family firms and demonstrates how the preservation and enhancement of SEW of family members may drive a firm's strategic decisions (Gomez-Mejia et al., 2007).

Third, this study enriches our understanding of internationalization of family firms in the context of emerging economies. As Zahra (2003) has suggested, very limited research has dealt with how the governance characteristics of firms with significant family control may affect their internationalization strategies. When studies are conducted on family firms' internationalization decisions, they mostly focus on developed economies (e.g., Fernandez & Nieto, 2006). We therefore have a limited understanding of how private businesses with family control in emerging economies may undertake internationalization. This study provides valuable empirical evidence with a large sample of Chinese private firms. The results of this study should be applicable to firms in other economies because family involvement in management and family ownership are common characteristics of firms in

many economies and their effects on internationalization decisions of firms are not unique to firms in emerging economies.

Finally, this study provides rare evidence of how family control can affect firms' FDI decisions. The existing evidence on family control and internationalization strategies of firms focuses on exporting behavior instead. We believe our study is timely at a period when both exporting and FDI are becoming increasingly important internationalization strategies for firms.

This study has several limitations that may suggest future areas of research. First, the sample is from a single country. The risk preferences may be culture-specific (Perkins, 2000). This limits the generalization of the results. Future study could examine and compare firms from multiple countries with different uncertainty avoidance levels (Hofstede, 1980). It is also possible to measure directly the risk preferences of owners/managers and investigate whether owners/managers' risk preferences may mediate the relationship between family ownership and internationalization decisions.

Second, other factors may also affect the international strategies of firms, such as interpersonal dynamics of existing family members (Gundry & Ben-Yoseph, 1998; Simon, 1996) and family values (Pistrui, Huang, Oksoy, Jing, & Welsch, 2001). Future research could take these factors into consideration.

Conclusion

Building on the socio-emotional wealth (SEW) and altruism perspective of family businesses, this study provided some new insights on the strategic motives for outward internationalization by SMEs in an emerging economy. We differentiated between family ownership and family involvement in management, two related yet conceptually distinct aspects of family control, and clarified the mechanisms through which family involvement in management and family ownership may affect a firm's internationalization strategy. In addition, our results highlighted the importance of simultaneously considering multiple effects in nonlinear combination, providing a more realistic portrait of a firm's strategic motive for global expansion.

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TABLE 1
Descriptive Statistics and Pair-wise Correlations of Main Variables [a]

	N	Mean	S. D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Family Involvement in Management	880	2.12	1.21											
(2) Family Ownership	830	.75	.25	.21*										
(3) Firm Age	855	8.59	6.70	.01	-.06									
(4) Firm Sales [b]	863	3.06	1.91	.04	-.09*	.41*								
(5) Firm Performance	854	3.14	.95	-.12*	-.08*	.06	.09*							
(6) Industry: manufacturing	831	.48	.50	.11*	.06	.14*	.12*	-.02						
(7) Industry: construction	831	.04	.19	-.04	-.09*	-.02	.02	.01	-.19*					
(8) Industry: wholesale & retail	831	.11	.32	-.09*	-.00	-.04	-.02	.03	-.35*	-.07*				
(9) Industry: IT service	831	.10	.30	-.05	-.03	-.10*	-.11*	-.01	-.32*	-.07	-.12*			
(10) Founder's Management Experience	804	12.36	7.41	.03	-.04	.58*	.38*	.03	.17*	.00	.01	-.16*		
(11) Export Propensity	757	.43	.49	.10*	-.05	.20*	.29*	.01	.42*	-.07	-.05	-.18*	.24*	
(12) FDI Propensity	839	.07	.26	.01	.02	.16*	.30*	-.02	.01	.00	-.01	-.03	.09*	.12*

Notes:
[a] * $p < .05$
[b] Firm sales are coded as follows: 1: <1 million *yuan*; 2: 1 million to 10 million *yuan*; 3: 10 million to 50 million *yuan*; 4: 50 million to 100 million *yuan*; 5: 100 million to 200 million *yuan*; 6: 200 million to 300 million *yuan*; 7: 300 million to 1 billion *yuan*; 8: ≥1 billion *yuan*.

TABLE 2
Effect of Family Involvement in Management and Family Ownership on the Propensity of Exporting [a]

Variables	Model 1a		Model 2a		Model 3a		Model 4a		Model 5a	
Firm Age	.00	(.02)	.00	(.02)	.00	(.02)	.00	(.02)	.00	(.02)
Firm Size	.27***	(.06)	.26***	(.06)	.26***	(.06)	.25***	(.06)	.25***	(.06)
Firm Performance	-.12	(.10)	-.06	(.10)	-.06	(.10)	-.08	(.11)	-.08	(.11)
Industry: manufacturing	2.11***	(.26)	2.08***	(.26)	2.08***	(.26)	2.09***	(.27)	2.08***	(.27)
Industry: construction	.46	(.57)	.48	(.59)	.48	(.59)	.41	(.58)	.26	(.61)
Industry: wholesale & retail	1.01**	(.35)	1.09**	(.35)	1.09**	(.36)	1.07**	(.36)	1.08**	(.36)
Industry: IT service	.24	(.41)	.29	(.41)	.29	(.41)	.23	(.41)	.26	(.40)
Founder's mgmt experience	.03†	(.02)	.03†	(.02)	.03†	(.02)	.03†	(.02)	.03†	(.02)
Family Involvement in Mgmt			.14†	(.08)	.14	(.11)	.17*	(.08)	.16†	(.08)
Family Involvement in Mgmt^2					-.00	(.06)				
Family Ownership							-.68	(.43)	-.12	(.49)
Family Ownership^2									4.89**	(1.82)
Constant	-2.39***	(.44)	-2.59***	(.44)	-2.58***	(.44)	-2.48***	(.44)	-2.78***	(.46)
N	612		598		598		669		654	
Wald χ2	109.59		111.67		111.85		45.54		44.81	
Degree of Freedom	8		9		10		8		9	
Log Pseudo-likelihood	.20		.20		.20		.14		.14	

[a]Robust standard errors are in parentheses. Family involvement and family ownership are centered by subtracting mean values.
†$p < 0.10$; *$p < 0.05$; **$p < 0.01$, ***p<0.001

TABLE 3
Effect of Family Control on the Propensity of FDI [a]

Variables	Model 1b		Model 2b		Model 3b		Model 4b		Model 5b		Model 6b	
Firm Age	.06*	(.03)	.06*	(.03)	.06*	(.03)	.06*	(.03)	.07*	(.03)	.06*	(.03)
Firm Size	.41***	(.08)	.42***	(.08)	.43***	(.09)	.42***	(.08)	.41***	(.08)	.42***	(.08)
Firm Performance	-.27	(.17)	-.21	(.17)	-.22	(.17)	-.23	(.18)	-.25	(.17)	-.25	(.17)
Industry: manufacturing	-.35	(.37)	-.34	(.38)	-.33	(.38)	-.27	(.39)	-.44	(.41)	-.43	(.40)
Industry: construction	.26	(.81)	.23	(.80)	.28	(.77)	.22	(.80)	.24	(.73)	-.24	(.70)
Industry: wholesale & retail	-.07	(.55)	-.31	(.59)	-.27	(.59)	-.31	(.60)	-.28	(.62)	-.23	(.61)
Industry: IT service	.03	(.61)	-.00	(.61)	-.04	(.61)	-.04	(.61)	-.09	(.60)	.03	(.61)
Founder's Mgmt Experience	-.04	(.03)	-.05†	(.03)	-.05	(.03)	-.05†	(.03)	-.03	(.03)	-.03	(.03)
Family Involvement in Mgmt			-.02	(.13)	.18	(.20)	-.04	(.14)	-.02	(.14)	.26	(.24)
Family Involvement in Mgmt^2					-.18†	(.10)					-.22*	(.10)
Family Ownership							.22	(.78)	1.96*	(.86)	2.03*	(.86)
Family Ownership^2									8.44***	(2.37)	8.86***	(2.36)
Constant	-3.21***	(.63)	-3.30***	(.63)	-3.06***	(.47)	-3.22***	(.65)	-3.85***	(.66)	-3.62***	(.66)
N	669		654		654		617		617		617	
Wald χ2	45.54		44.81		44.81		44.37		53.43		54.17	
Degree of Freedom	8		9		9		10		11		12	
Log Pseudo-likelihood	.14		.14		.14		.14		.17		.19	

[a]Robust standard errors are in parentheses. Family involvement and family ownership are centered by subtracting mean values.
†$p < 0.10$; *$p < 0.05$; **$p < 0.01$, ***p<0.001

FIGURE 1
The Hypothesized Inverted U-relationship Between Family Involvement in Management and Internationalization Propensity

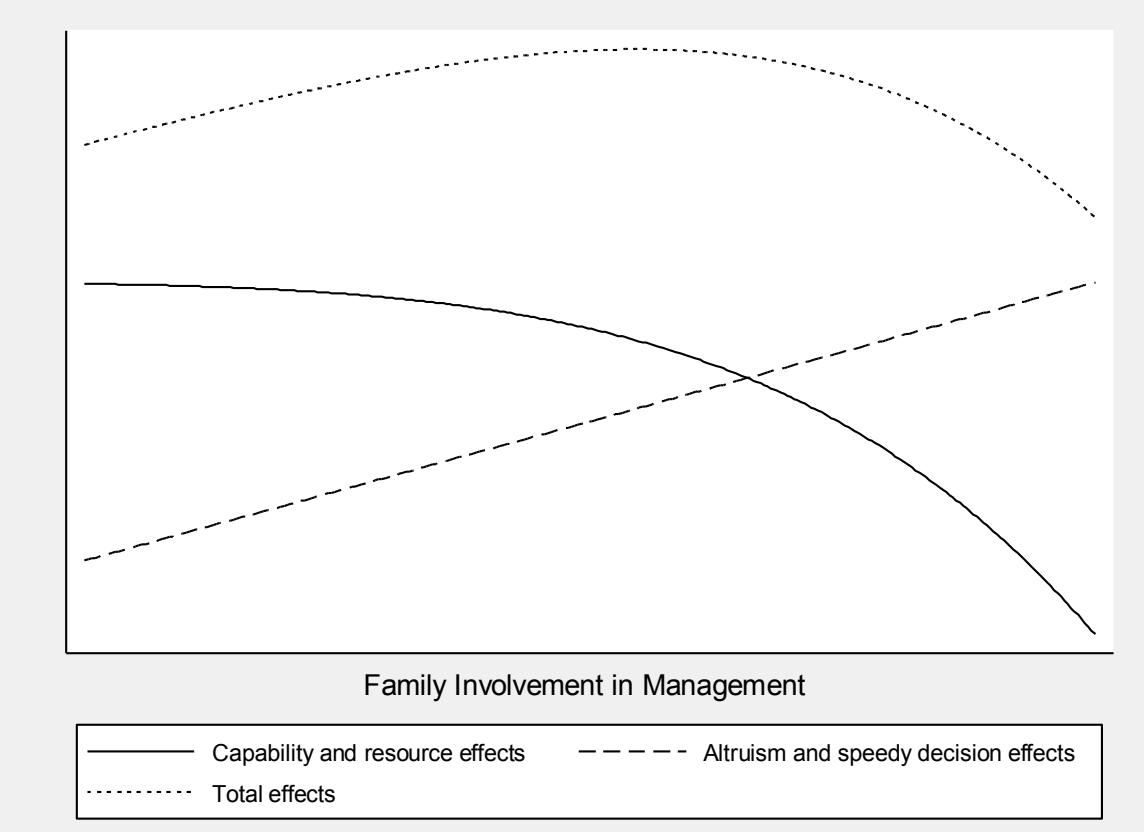


FIGURE 2
The Hypothesized U-relationship Between Family Ownership and Internationalization Propensity

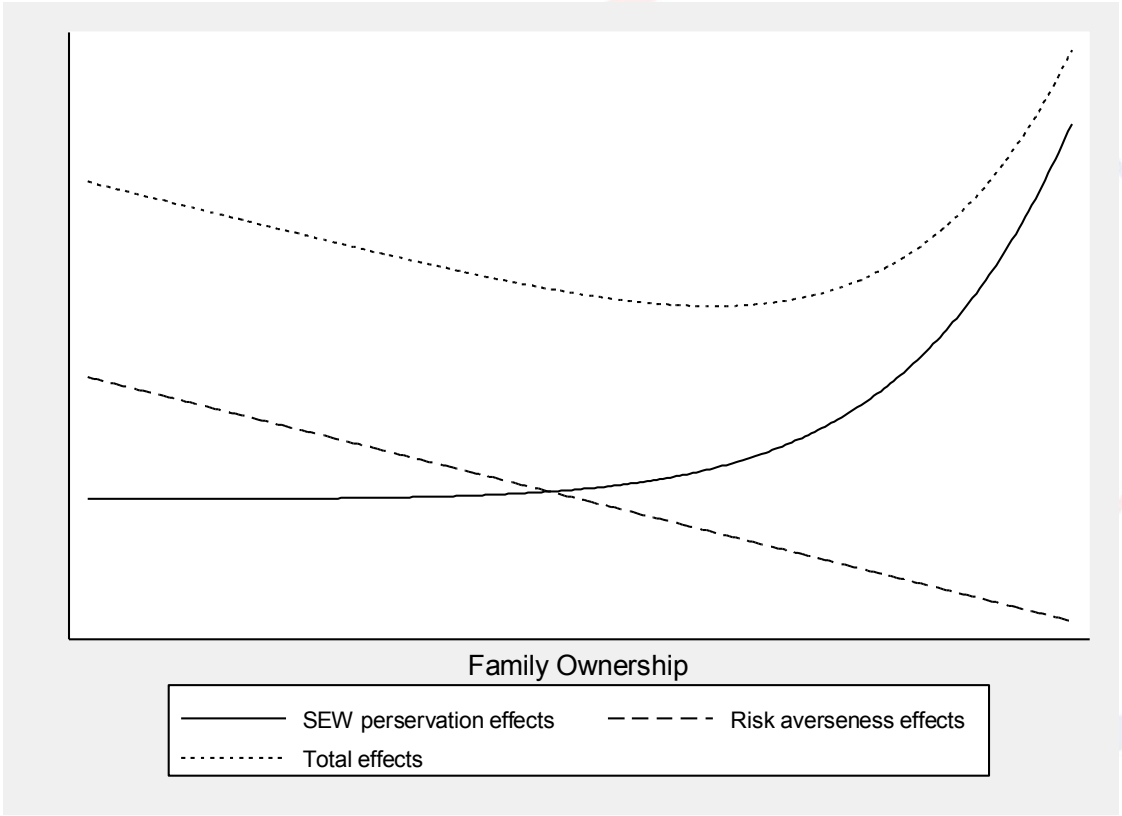


FIGURE 3
U-Curve Effect of Family Ownership on Exporting Propensity

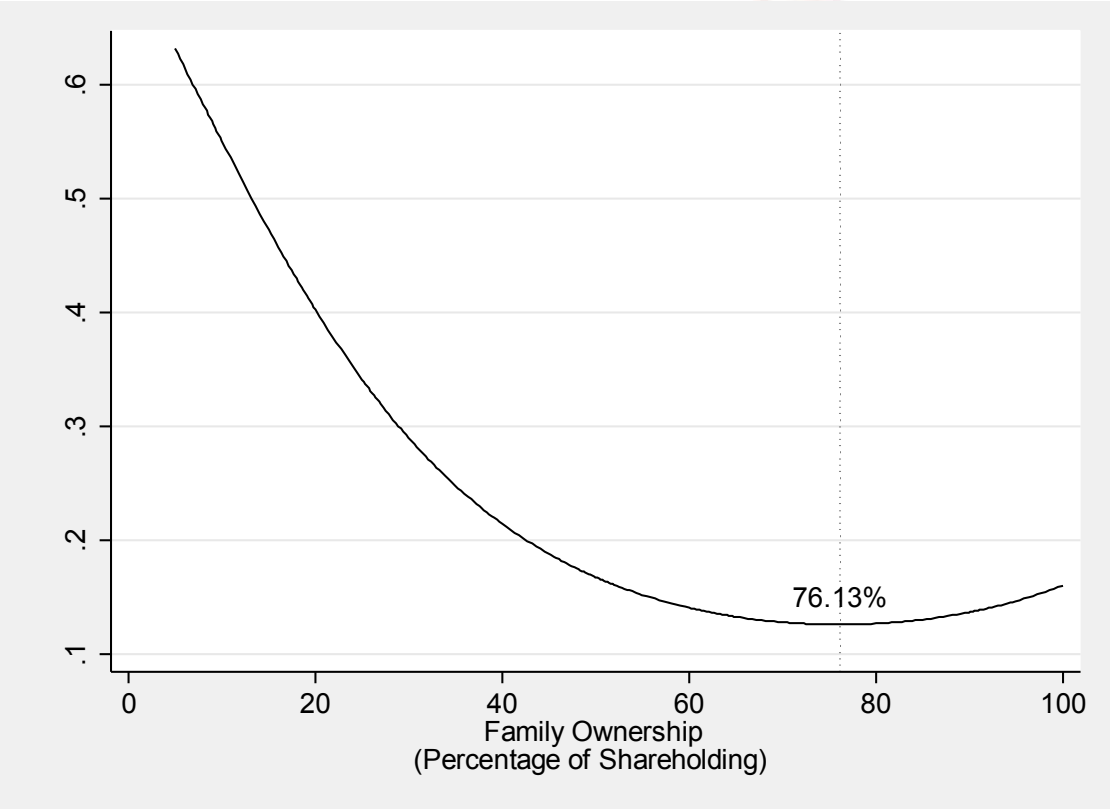


FIGURE 4

Inverted U-Curve Effect of Family Involvement in Management on FDI Propensity

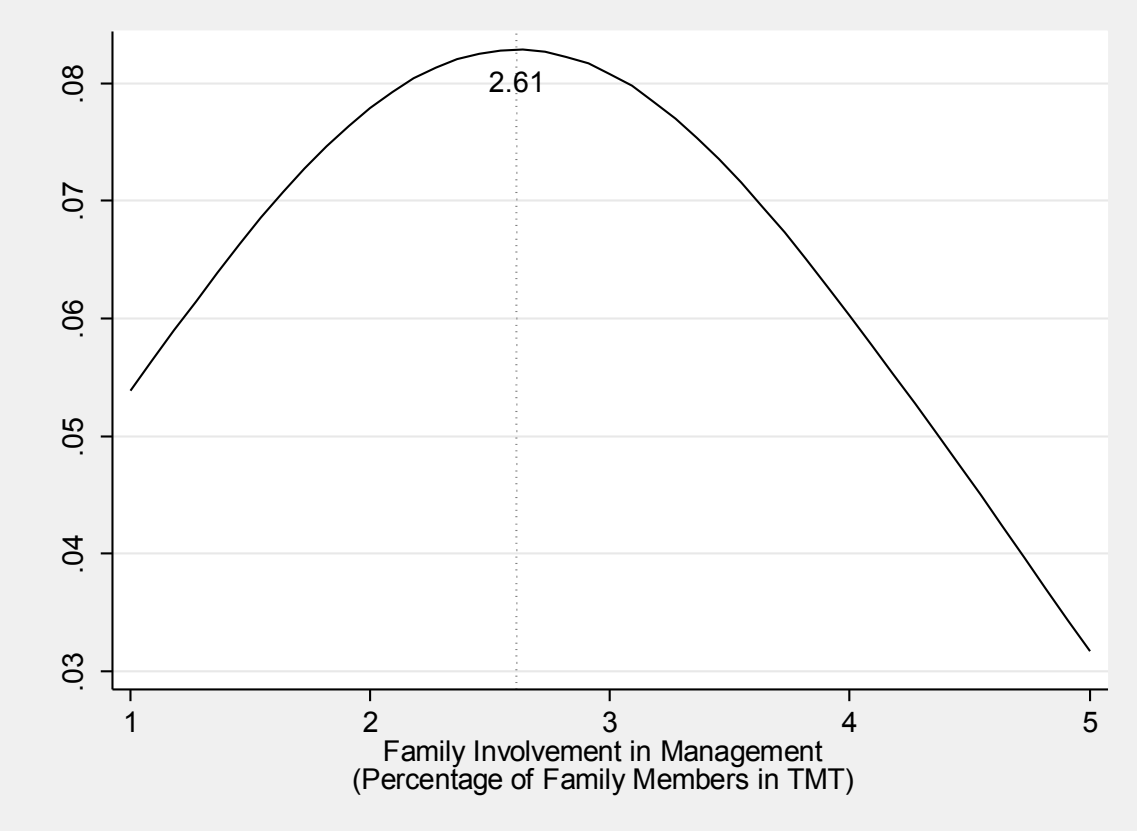
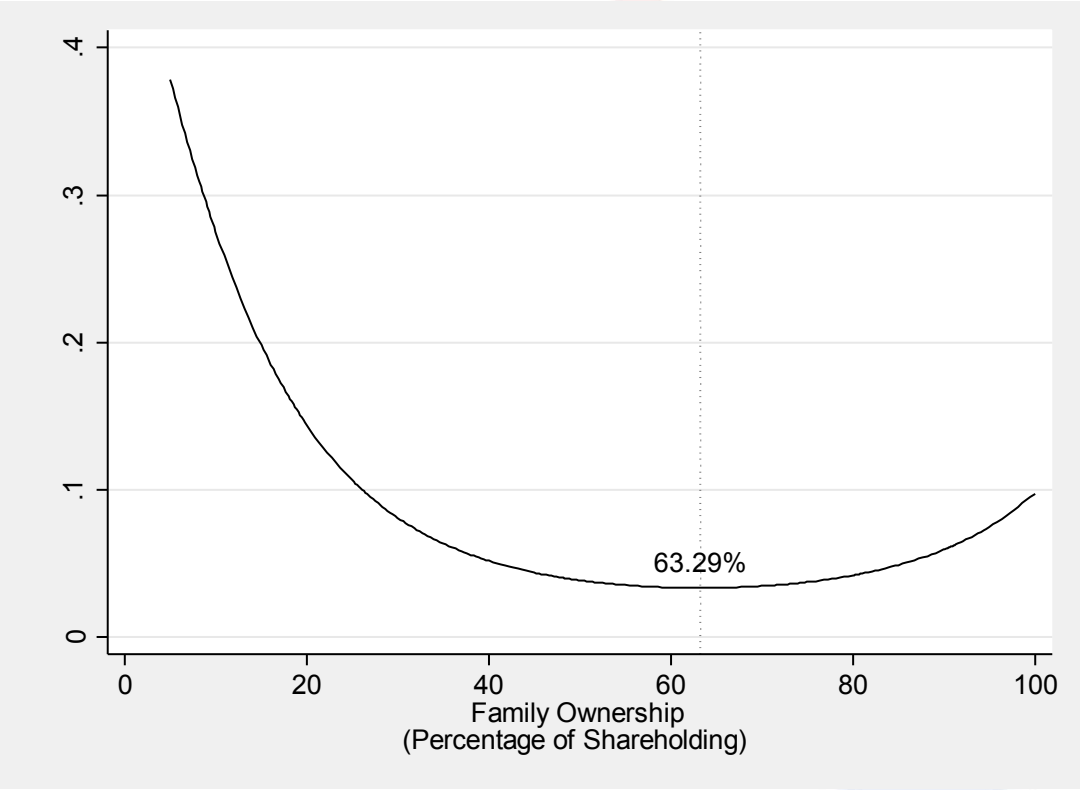


FIGURE 5
U-Curve Effect of Family Ownership on FDI Propensity



Appendix A
Effect of Family Involvement on the Likelihood of Direct Exporting [a]

Variables	Model 1		Model 2		Model 3		Model 4	
Firm Age	.00	(.02)	.00	(.02)	.00	(.02)	.00	(.02)
Firm Size	.34***	(.06)	.32***	(.06)	.34***	(.06)	.32***	(.06)
Firm Performance	-.16	(.10)	-.10	(.11)	-.10	(.10)	-.09	(.11)
Industry: manufacturing	1.64***	(.29)	1.62***	(.30)	1.69***	(.30)	1.61***	(.30)
Industry: construction	.99†	(.60)	.98†	(.59)	1.10†	(.60)	.93	(.61)
Industry: wholesale & retail	1.03*	(.40)	1.02*	(.41)	1.13**	(.41)	1.08**	(.41)
Industry: IT service	.63	(.45)	.63	(.45)	.68	(.45)	.63	(.45)
CEO's Management Experience	.02	(.02)	.02	(.02)	.02	(.02)	.02	(.02)
Family Involvement			.08	(.09)	.24*	(.12)	.30*	(.13)
Family Involvement^2					-.14*	(.07)	-.16*	(.07)
Family Ownership			-.85†	(.44)			-.40	(.52)
Family Ownership^2							3.17†	(1.85)
Constant	-2.90***	(.48)	-3.07***	(.49)	-2.94***	(.48)	-3.08***	(.50)
N	612		564		598		564	
Wald χ2	77.37		79.37		79.72		88.74	
Degree of Freedom	8		10		10		12	
Log Pseudo-likelihood	.15		.15		.15		.17	

[a]Robust standard errors are in parentheses. Family involvement and family ownership are centered by subtracting mean values.
†$p < 0.10$; *$p < 0.05$; **$p < 0.01$, ***p<0.001

Understanding the Psychological Traits Affecting Functioning in Foreign Cultures and Performance in Foreign Languages: Application of the Kozai Group's Global Competency Index

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Abstract

This ground-breaking empirical study involving the application of Kozai Group's Global Competency Index (GCI) with 86 Chinese Students in Japan elucidates the importance of certain personality traits that modulate one's ability to succeed in business and other goal-oriented activities in foreign cultures and one's success in performing in foreign languages. Fourteen of the 16 GCI dimensions were strong predictors of oral/aural performance in Japanese among the 86 Chinese subjects. The results indicate that the vast majority of the personality traits represented by the GCI, which have been validated in terms of enabling successful cultural adaption for optimal performance in global business, also facilitate oral/aural performance in foreign languages.

Adaptation to foreign cultures and acquisition of proficiency in foreign languages often prove to be key factors in determining the degree of success in a foreign assignment or long-term cross-cultural business relationship. Kozai Groups GCI has been widely used as a predictor of ability to function in foreign cultures and is especially applicable to screening candidates for long-term assignments abroad. This empirical study explains how the same psychological traits that facilitate cultural adaptation also modulate performance in foreign languages. This knowledge can form the basis for self-introspection and training programs for improving cross-cultural competences and cross-cultural communication. The key to understanding the reasons behind the sentiment "I am just not good at speaking foreign languages" and how to address this state of mind is provided.

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1) Introduction

For more than 36 years I have been travelling, study, working and living abroad acquiring new languages at increasingly higher speeds and efficiency to the point that recently I learn a new language every 12 to 18 months on average. In the process of acquiring more than 20 languages for conversation and more than 30 for basic comprehension, I have developed an understanding of the explicit and implicit of the factors that facilitate the acquisition of foreign languages through self observation and observation of others. I have always noted that assimilation of a foreign culture in terms of acceptance (not feeling awkward or estranged when function in a foreign culture) takes the study of a foreign language beyond meta-linguistic knowledge (conceptual understanding of semantics, grammatical rules, syntax, phonology, etc.) to the level of acquisition enabling a high level of performance in the target language. In other words, in such a state it does feel unnatural to participate in the culture and speak the language. There is no feeling of being a traitor to your identity associated with your mother tongue and the culture of your upbringing. Thus, I hypothesize the characteristics of individuals who demonstrate successful cultural adaptation (living, working or studying, and functioning in a foreign culture) may also correspond with acquiring a foreign language in the terms of high level performance defined as approximating a native speaker in oral communication performance.

2) Previous Research on Cultural Adaptation and Foreign Language Acquisition

Social, psychological, and affective (SPA) factors are important determinants of success or failure in foreign language acquisition (Brown, 1980; Schumann, 1975; Taylor, 1974). Since psychological and affective factors also play an important role in determining success of failure in adapting to and functioning in a foreign cultural environment, many of the SPA factors related to SLA potentially come together when examining individual differences in cultural adaptation. Schumann's (1986) acculturation model predicts that learners will acquire the target language to the degree they acculturate to the target language group. Schumann (1986: 379) stated: "I also propose that any learner can be placed on a continuum that ranges from social and psychological distance to social psychological proximity with speakers of the target

language, and that the learner will acquire the second language only to the degree that he acculturates."

Larsen-Freeman & Long (1991) argue that Schumann did not specify the combinations and/or levels of social and psychological factors to predict language outcomes and that Schumann did not explain how these factors affect the rate of attainment. This is a very empiricist-type remark, expecting definitiveness where it may not be available. The experiment presented in this research serves to partially address this concern, however, it must be understood that there is no one single recipe for success. The experiment in this research does not attempt to quantitatively verify Schumann's Acculturation Model, but the results do demonstrate the spirit of the model is very insightful and that any model attempting to explain individual differences will be more robust by incorporating these culture-language related factors.

According to Dörnyei (2005), inconclusive results in the literature concerning the relationship between psychological traits (personality variables) or SPA and SLA have been partly due to methodological limitations or inconsistencies. The main issues concerning reliable and meaningful results are: (1) the dependent variable – measures of individual differences in FLA, and (2) the independent variable(s) – measures of psychological traits (such at personality, attitudes, motivation, etc.) – and (3) the theoretical constructs tying together the measured independent variables.

The dependent variable SLA or foreign language acquisition (FLA) has often been language achievement in terms of academic success in foreign language study measured by such criteria as exam grades, grade point average, final degree results, and course-specific evaluations. All these are very indirect measurements of performance in the target language and would not capture the finer points of individual difference in oral/aural performance such as communication competence, accent, pronunciation, naturalness of speech, etc. compared to native speakers of the target language. Some studies (e.g. Naiman et al., 1978) that only examined criterion measured from written language found no relationships between these and extraversion-introversion.

There are also problems with consistency: akin to the proverbial comparison of apples and oranges. Are you comparing similar enough subjects in terms of their relevant

background factors (those that would affect FLA performance but are not psychological traits or SPA)? More reliable results for the dependent variable under consideration may be obtained by using subjects who have reached a certain high-level threshold in FLA attainment, such as becoming a student at a university where the target language (TL) is the language of instruction for non-language-related courses, share the same mother tongue, and are controlled for other potentially significant demographic variables. As demonstrated in the analysis of the subjects' demographics in this paper, these factors have been sufficiently considered and accounted for.

As for the independent variables, the approach of this study is to examine factors that have been proven to account for individual differences in successfully cultural adaptation. This approach addresses the need for more complex theoretical constructs. MacIntyre, Clément, Dörnyei, and Noels (1998) offer the Willingness to Communicate (WTC) model in which personality comprises an important part of the construct, with four further layers of variables conceptualized between personality traits and communicative behaviour (Dörnyei, 2005:23). However, there is still a need to follow a theoretical construct that takes into to consideration that actively functioning in a foreign language usually takes place in a foreign cultural environment. Thus, we must explore which psychological factors facilitate both cultural adaptation and foreign language acquisition.

3) Measuring Psychological Traits Facilitating Cultural Adaptation

After reviewing most of the questionnaires that are used to predict people's ability to function effectively in cross-cultural environments, Kozai Group's Global Competencies Index (GCI) was chosen as the most appropriate instrument based on my expertise and experience in the field of cross-cultural management. The Kozai Group kindly agreed to cooperate by offering the free use and analysis of the GCI in the experiment. Thus, the Kozai Group's GCI was employed as a validated instrument for measuring psychological traits affecting cultural adaptation (associated with effective behavior in a cross-cultural environment) to obtain rankings for the experimental subjects in 16 competencies to explore if relatively higher scores correspond with higher oral/aural performance in a foreign language. The 16 competencies of the GCI are associated with effective intercultural behavior and dynamic global managerial skill

acquisition and are grouped under three factors: *Perception Management* that deals with learning effectively and includes (1) Nonjudgmentalness, (2) Inquisitiveness, (3) Tolerance for Ambiguity, (4) Cosmopolitanism, and (5) Interest Flexibility; *Relationship Management* that focuses on managing relationships effectively and is comprised of (6) Relationship Interest, (7) Interpersonal Engagement, (8) Emotional Sensitivity, (9) Self Awareness, and (10) Social Flexibility; and *Self Management* that explores managing the self in challenging situations and is composed of (11) Optimism, (12) Self Confidence, (13) Self-Identity, (14) Emotional Resilience, (15) Non-Stress Tendency, and (16) Stress Management.

4) Experimental Methods

The GCI was administered as a validated measure of psychological traits facilitating cultural adaptation to 86 Chinese students studying at Kyushu Sangyo University where Japanese is the main medium of instruction. These scores functioned as the independent variables. In order to measure the dependent variable, foreign language ability, the 86 subjects participated in videotaped seven-minute semi-structured interviews with a Japanese native speaker who interviewed all the 86 subjects. Six native speakers of Japanese, with graduate degrees in various fields and ranging in age for 24 to 62, ranked the subjects independently (no consultation with one another) over a period of one month. The evaluation criterion was "how closely the Chinese students sounded like a Japanese native speaker." The judges were instructed to force-rank the participants' performance on a 1 (the lowest) to 5 (the highest) Likert scale assigning 18 participants with the score of 5, and the remaining four groups of participants (17 in each group) with rankings of 4, 3, 2, or 1 (18+17+17+17+17=86).

To reduce inter-rater variation the highest value and lowest value were discarded leaving 4 scores. The reliability of the measurement for "Japanese Ability" when using all 86 subjects was 0.594 in terms of average standard deviation as an indication of inter-rate variability, indicating high relatively inter-rater agreement. The reliability of the measurement for "Japanese Ability" when using sub-groups Top 17 and Bottom 17 is 0.315. The average rating of the Top 17 is 4.705 while that of the Bottom 17 is 1.617, yielding an average difference between the two groups of 3.08 in terms of their "Japanese Ability" ratings.

5) Demographics of Subjects

Detailed demographic information about the subjects that might potentially account for differences among the subjects in oral/aural performance (factors other than those measured by the GCI) was gathered and analyzed. The analysis revealed that only two motivational factors were associated with foreign language ability outcomes.

The mean age of all 86 subjects was 24.31 with a range of 19 to 32 years of age. There was no significant correlation between age and "Japanese Ability" as measured in the experiment (N = 34/86 Pearson Correlation: 0.116/0.089, Sig. 2-tialed: 0.512/0.415).

In light of the so-called "Critical or Sensitive Period" hypothesis, "Age Started to Study a Foreign Language" (ASSFL) was investigated. The variable ASSFL was created by re-coding the ages: age 9 and below = 4, age 10 ~13 = 3, age 14~17 = 2, and age 19 and above = 1. There is no correlation between the recoded variable and "Japanese Ability" (N = 34/86 Pearson Correlation: -0.018/-0.100, Sig. 2-tialed: 0.919/0.359).

As for gender, there were 30 male subjects (34.9%) and 56 female subjects (65.1%). There was no significant relationship between gender and "Japanese Ability" (N = 34/86 Pearson Correlation: -0.124/-0.045, Sig. 2-tialed: 0.484/0.678). If there were a correlation then a negative number would mean being male may be an advantage since Male = 1 and Female = 2.

The relationship between "age came to Japan" and "Japanese Ability" was also explored. There was no significant relationship between "age when came to Japan" and "Japanese Ability" (N = 34/86 Pearson Correlation: 0.089/0.116, Sig. 2-tialed: 0.415/0.512). However, on average the Top 17 came to Japan at a later age than the Bottom 17.

"Months residing in Japan" at the time of the experiment was also recorded and analyzed. There was no significant correlation between "Months residing in Japan" with "Japanese Ability" (N = 34/86 Pearson Correlation: 0.076/0.111, Sig. 2-tialed: 0.668/0.308). The lack of a significant correlation between "Months residing in Japan" and "Japanese Ability" coincides with my expectations. Almost all the subjects have been in Japan for at least 2 years. This is sufficient time for adept language learners to

acquire a high level of Japanese given sufficient motivation. Length of residence tends to decrease in importance as time passes and 2 out of the 7 longest residents (all subjects included) are in the Bottom 17.

The "number of countries visited besides Japan for at least one week" was also noted. The overall majority of the subjects (88.4%) have not been to a foreign country other than Japan. Three of the 10 people who have visited a foreign country besides Japan are in the Top 17 and one is in the Bottom 17 in terms of "Japanese Ability." Furthermore, only one subject had lived in another foreign country besides Japan (Russia) and the subject lived there for six months. This subject is not in the Top 17 in terms of Japanese Ability."

The number of languages spoken by the subjects was also analyzed. Though the correlations between "Japanese Ability" and "Numbers of Languages Spoken" are only significant at 0.112 (88%) for the Top/Bottom 17 and 0.074 (92%) for all subjects, in general, the author has experienced that learning languages gets easier as the number of languages spoken increases. One reason for the lack of a significant correlation may be the fact that all the subjects obviously spoke at least 2 languages (Chinese and Japanese) and the number of subjects who spoke 3 languages was only about 25% of the total number of subjects. Note that 35.3% of the Top 17 spoke 3 languages compared to only 1.2% of the total 86 subjects.

The "number of months spent studying in a Japanese languages school in Japan" was also investigated. There is not significant correlation among all subjects between months spent studying at a Japanese Language School in Japan with "Japanese Ability" (Pearson Correlations: -0.172, Sig. 2-tailed: 0.112); note that though it is not statistically significant it is slightly negative. Ironically, overall the subjects in the Top 17 have spent less time in a Japanese Language School in Japan that the subjects in the Bottom 17. This observation suggests autonomy and self-directed language learning may be a factor in determining the degree of success.

A number of motivational questions were included in the questionnaire. Among these questions, two demonstrated a significant relationship: "I wanted to learn Japanese in order to study at a Japanese University" (N = 34/86 Pearson Correlation: 0.407/0.220,

Sig. 2-tialed: 0.017/0.042) and "I wanted to learn Japanese because I like to learn foreign languages" (N = 34/86 Pearson Correlation: 0.444/0.291, Sig. 2-tialed: 0.009/0.007). In addition, ANOVA analysis for the Top/Bottom 17 yielded an F of 10.419 and an F of 2.992 for all 86 subjects. It is interesting to note that enjoying learning foreign languages was the most significant factor of the all the motivational factors investigated.

The number of hours the subjects watched TV programs in Japanese during their first year in Japan was also noted and analyzed in relation to differences in measured oral/aural Japanese performance. The main difference between the Top 17 compared to the Bottom 17 and all 86 subjects is that the percentage for zero hours and one hour is about half of the other two groups while the percentage for two hours is about double. In considering these results, keep in mind that watching TV in a foreign language, the target language, is challenging and requires persistence and strong motivation to learn. However, this factor was not significantly correlated with "Japanese Ability" (N = 34/86 Pearson Correlation: 0.202/0.174, Sig. 2-tialed: 0.253/0.110).

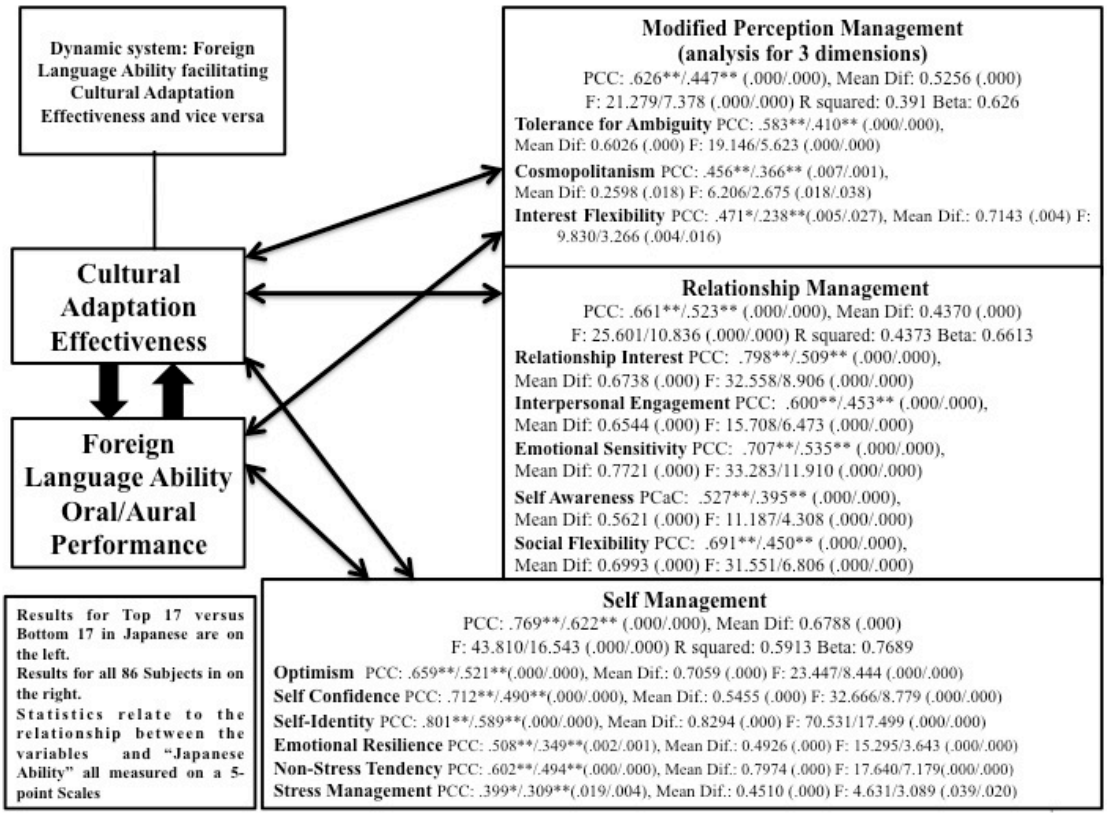
The self-reported ability in Japanese of the subjects was also analyzed. There is no significant correlation between the subjects' self-reported "Japanese Ability" when they first came to Japan and their present measured "Japanese Ability" (N = 34/86 Pearson Correlation: - 0.010/0.0.051, Sig. 2-tialed: 0.956/0.664).

6) Results of the Experiment and Model

The results clearly indicate that the GCI as a whole is a very powerful predictor of oral/aural performance in foreign languages. First, the analysis of variance of the GCI scores yielded an F Value of 51.648 (Sig.: = 0.000) for the Top 17 versus the Bottom 17 and an F Value of 16.967 (Sig.: = 0.000) for all five groups. There is a high significant positive correlation between Overall Global Competency scores and "Japanese Ability" in the case of the Top 17 versus the Bottom 17 (0.779, sig.: 0.000) as well as for all 86 subjects (0.624, sig.: 0.000). Furthermore, the Top 17 subgroup mean score for the Overall Global Competency (3.4687, std. dev.: 02812) is significantly greater (0.6412 std. error: 0.0892) than that of the Bottom 17 (2.8275, std. dev.: 0.2248).

Thus, it is clear that the GCI provides an excellent basis for a model for factors facilitating both cultural adaptation and foreign language acquisition in terms of oral/aural performance. After examining the results of ANOVA, correlations, and differences in the means between the Top 17 and the Bottom 17 for all of the 16 individual competencies that comprise the GCI, two competencies belonging to the *Perception Management* Factor, Nonjudgmentalness and Inquisitiveness, were excluded from the model due to a lack of significant results. The resulting model with the ANOVA, correlations, mean differences are given in Figure 1. The results of the regression analysis for each of the three factors (*Perception Management, Relationship Management, and Self Management*) are also provided.

Figure 1: Model for Factors Facilitating both Cultural Adaptation and Oral/Aural Performance in Foreign Languages



7) *Self Management* Factor

Among the three GCI factors, the *Self Management* dimension had the strongest association with foreign language ability. Mendenhall & Oddou (1985) concluded that a domain of variables existed in the cross-cultural adjustment literature that could be categorized as including "activities and attributes that serve to strengthen the expatriate's self-esteem, self-confidence, and mental hygiene (p. 40)." They labeled this domain, the *Self-Oriented* dimension of intercultural effectiveness. Subsequent reviews of both the global leadership and the expatriate literature support the validity of this dimension as an important contributor to intercultural effectiveness. The *Self Management* dimension takes into account people's strength of identity and their ability to effectively manage their emotions and stress. To be successful in intercultural situations, it is critical that people have a clear sense of themselves and a clear understanding of their fundamental values. To be effective in a global context, people must be able to understand, change and adapt appropriately to the foreign work and intercultural environment, yet at the same time, they must also have a stable sense of self in order to remain mentally and emotionally healthy. (Cited from Kozai Group Document)

The competencies that comprise the *Self Management* factor are also important attributes in foreign language acquisition, in particular Self-Identity which plays and important role in the development of the ability and willingness to mimic native speaker speak patterns, accents, and rhythm. In fact, Self-Identity was the strongest predictor of foreign language ability among all competencies. Language acquisition is also a process of identity construction and how a person sees himself/herself in relation to the language being acquired and to the speakers of that language along with their culture. Wegner (2000: 239) describes identity as: "As identity is not an abstract idea or label, such as a title, and ethnic category, or a personality trait. It is a lived experience of belonging (or not belonging). A strong identity involves deep connections with others through shared histories and experiences, reciprocity, affection, and mutual commitments."

The development of a strong core identity is a critical factor in gaining from the transformative process of acquiring a foreign language and relating to the culture in

which it is embedded. My own personal journey in learning languages as well as discussion with others has made me aware of the importance of the transformational experience brought on by the process of acquiring a new language. This transformational experience has been described in various ways in the SLA literature as well.

In "Never Quite a Native Speaker: Accent and Identity in L2 and L1", Nicole Marx (2002) states: "The desire to learn a new language can sometimes be an overwhelming influence on an individual's life. Even where the 'ultimate' acquisition of a foreign language is not essential for survival in a new cultural milieu, participation of any form in the culture and the intentional acquisition of a new linguistic identity can result in a 'seismic mental shift' (Hoffman, 1989:105) in a language learner's understanding and interpretation of the world around him. This is especially pertinent in the case of immigrants and other language learners who are immersed in the new language and culture and who intend to remain in that culture, at least for a significant amount of time."

8) *Relationship Management* Factor

The *Relationship Management* dimension had the second strongest association with foreign language ability. In their review of the research, Mendenhall & Oddou (1985: 41) concluded that a dimension was warranted that encompassed "the ability to develop long-lasting friendships with host-nationals," due to the fact that this ability "emerged as an important factor in successful overseas adjustment (Abe & Wiseman, 1983; Brein & David, 1971, 1973; Hammer, et. al., 1978; Harris, 1973; Hawes & Kealey, 1981; Ratiu, 1983), accounting for large portions of the variance in the factor analytic studies studying adjustment (Hammer, et. al., 1978; Harris, 1973)." The ability to create and maintain relationships with individuals in cross-cultural/global settings was found to be a key competency domain. The *GCI* dimension of *Relationship Management* assesses people's orientation toward the importance of relationships in general; how aware they are of others and their interaction styles, values, etc., and the level of awareness they have of themselves and their impact on others. Relationships also become a source of information to help people understand other cultures and may also be a source of social support. The development of positive relationships is a critical aspect of effective

intercultural job performance (Harrison & Shaffer, 2005; Mol et. al., 2005). (Cited from Kozai Group Document)

In language acquisition no man is an island and thus the factors comprising the GCI *Relationship Management* domain can play an important role in the foreign language process. Though it is true that language does function as a system of cognitive representation and manipulation within the human mind, most would argue that an equally important role is the social function as a means for communication. In the case of FLA the social aspect is almost always the central goal (rather than the desire to think in a foreign language). The desire to communicate and establish relationships with native speakers of the target language may serve as motivation for learning and facilitate conditions for acquisition.

9) *Perception Management* Factor

The *GCI* dimension of *Perception Management* examines how people cognitively approach cultural differences. It assesses people's mental flexibility when confronted with cultural differences, their tendency to make rapid judgments about those differences, their ability to manage their perceptions when confronted with situations that differ from what they expect, and finally, it also assesses people's innate interest in, and curiosity about, other cultures. In sum, our perceptions of people who are different from us will ultimately affect what and how we think about them, and very importantly, our behavior toward them. (Cited from Kozai Group Document)

The *GCI* dimension of *Perception Management* also appears to be related to how people cognitively approach a foreign language. People's mental flexibility when confronted with cultural differences also has parallels in their mental flexibility when confronted with different language constructs in relation to syntax, morphology, phonology, etc. Learners' ability to manage their perceptions when confronted with situations that differ from what they expect, may be related to how they react when confronting differences between their mother tongue and the language they are seeking to acquire. Interest in, and curiosity about, other cultures is often a trait of people who are enthusiastic about acquiring foreign languages. Actually, such a curiosity is often one of the main motivations for acquiring the foreign language. In sum, our perceptions of people, their

language and culture will ultimately affect the degree of motivation we have to acquire the language and interact with them.

10) Conclusion

The hypothesis that the psychological traits that facilitate cultural adaption and the ability to function in foreign cultures also facilitate foreign language acquisition, particularly in terms of oral/aural performance has been supported by the results of this study. This experiment has overcome weaknesses of past studies in terms of having a more accurate measurement of language acquisition by focusing on oral/aural performance of subjects who have all attained a level high enough to allow them to study in the target language. Additionally, multiple demographic and related factors, other than those in the GCI that might account for differences in oral/aural performance were also analyzed and shown not to be significant in the case of this group of subjects. Thus, it is not only possible to use Kozai Group's GCI to screen candidates for cross-cultural assignments in terms of predicting the probability of being able to function well in a cross-cultural environment, but also to predict their success in oral/aural performance in foreign languages if they seek to learn the language in question.

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What Can Benefit Organizational Citizenship Behavior to Job Performance? The Role of Human Capital

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Abstract

This study examines the generally accepted concept that human capital immediately relates to job performance, and also its role as a moderator in order to illustrate the positive relationship between organizational citizenship behavior directed to individuals (OCBI), those directed to the organization (OCBO), and job performance. Data was collected from 585 R&D engineer supervisor-subordinate dyads in Taiwanese high-tech companies. The results provided support for the hypothesis that engineers' experiential human capital would lessen the positive relationship between OCBI and job performance. In addition, OCBO would be a greater benefit to the less experienced employees than to the experienced ones. Finally, the current study also found that employees engaging in OCBO would have better job performance if they also had greater intelligential human capital.

Keywords:
Experiential human capital, intelligential human capital, organizational citizenship behavior, job performance

INTRODUCTION

Undoubtedly, organizational citizenship behavior (OCB) has been considered beneficial to individual, group, and organizational effectiveness (Podsakoff et al., 2009), and has even been regarded as a dimension of performance evaluation (Rotundo & Sackett, 2002; Viswesvaran & Ones, 2000). OCB is a type of extra-role behavior which is above the employees' stated job description and outside the organizational formal reward system; however, Podsakoff et al. (2000) observed and treated OCB as a substitute for contextual performance or extra role performance. Hence, OCB is obviously very closely related to the outcome of a firm's expectations and is desirable for an organization because it can increase emotional resources and decrease managerial cost. Therefore, I believe that additional research in this area is worthwhile and a deeper understanding of OCB can be obtained.

According to several meta-analyses and review articles (Ilies et al., 2007; LePine et al., 2002; Organ & Ryan, 1995; Podsakoff et al., 2009; Podsakoff et al., 2000), the majority of early OCB research has focused on the potential antecedents of OCB, including individual characteristics, task characteristics, organizational characteristics, and leadership behaviors (Podsakoff et al., 2000), but over the past decade, a growing number of studies have focused on the consequences of OCB, such as individuals' actual turnover (Chen et al., 1998; Chen, 2005), supervisor liking (Allen & Rush, 1998; Vilela et al., 2008), performance rating (Allen & Rush, 1998; Vilela et al., 2008), work performance record (Podsakoff et al., 1997), turnover rate (Sun et al., 2007), unit performance (Dunlop & Lee, 2004), productivity (Sun et al., 2007) and profitability (Koys, 2001).

Although OCB literature has proliferated since the 1980's and many researchers have demonstrated the relationship between OCB and individual job performance (e.g. Allen & Rush, 1998; Bachrach et al., 2006; MacKenzie et al., 1991; Podsakoff et al., 1993; Wang et al., 2005), the OCB-performance relationship is still insufficiently understood for moderators to examine whether the positive relationship would be different under different conditions. Most organizational behavior researchers agree that a work climate that encourages employees to engage in OCB is recommended; however, a recent article addresses the negative perspective of overloaded OCB. Since individuals have only a limited amount of time, spending time on OCB is costly and will diminish the time spent on their assigned tasks (Bergeron, 2007). In other words, the effect of OCB on job performance will vary according to the situation.

To follow Podsakoff et al.'s (2000) suggestion for future research investigating the potential moderating effects of individual factors, such as ability, this study proposes human capital as a variable to illustrate why OCB has a greater impact on job performance for some people

than for others. Consequently, the aim of the current study is to improve the understanding of being in specific condition, OCB can maximize an individuals' work effectiveness.

Human capital refers to the sum of knowledge, skill, and experience of an individual (Becker, 1964). It is composed of inherent intelligence and ability accumulated over time. Therefore, based on the definition, I have divided human capital into two sub-constructs: intelligential human capital, and experiential human capital. Knowledge obtained from formal education represents intelligential human capital, whereas skill and experience gained through the undertaking of projects and practical duties represents experiential human capital. Most previous research treated human capital as a composite latent construct and hence the researchers compiled all human capital-related indicators into an overall score for measuring human capital. This study considers human capital to be a two-dimensional construct. This argument can explain the insignificant relationships between all human capital indicators in Saks and Waldman's (1998) study.

In summary, the purpose of this study was to test predictions as to whether R&D engineers' OCB would be associated with greater job performance. Furthermore, I have also identified human capital as a variable that influences the effects of OCB on performance.

LITERATURE REVIEW AND HYPOTHESES

The literature on OCB during the past few decades can be divided broadly into two main categories. In the first category, OCB has been analyzed individually and collectively. OCB was originally conceived of and defined as an individual level construct that referred to employee behavior that goes above and beyond the call of duty, is discretionary and not explicitly recognized by the organization's formal reward system, and also contributes to organizational effectiveness (Organ, 1988; Smith et al., 1983). Afterwards, some researchers developed group level and organizational level OCB measurements or "aggregated OCB" to higher level for proving their theories (e.g. Bachrach et al., 2001; Koys, 2001; Lin & Peng, 2010; Podsakoff et al., 1997; Podsakoff & MacKenzie, 1997; Sun et al., 2007) .

In the second category, OCB has been categorized into several types. Most researchers focused on OCB by following Organ's (1988) categories, using altruism, civic virtue, and sportsmanship as their variables. In addition, an alternative two-category approach was provided by Williams and Anderson (1991) for measuring OCB. They suggested OCB could be divided into interpersonal OCB (OCBI), which primarily involves helping coworkers at work, and OCBO, which can benefit the organization in general. The reason for using the OCBI/OCBO approach in the current study is to understand clearly whether model behavior

toward organizations and individuals can provide mutual benefits. Using this approach is justifiable because the OCBI/OCBO categories can help to confirm whether human capital produces a catalytic affect for organization-oriented and interpersonal-oriented citizenship behaviors with regard to job performance.

OCB and Job Performance

OCB was expected to be positively related to an individual's work effectiveness for several reasons. A relational perspective can illustrate the relationship between OCB and organizational performance (Sun et al., 2007) and individual job performance (Chow, 2009). This perspective argues that employees engaging in OCB can create high quality ties among coworkers since helping behaviors satisfy the interpersonal needs of individuals in an organization. Furthermore, these ties can help employees perceive what they need for accomplishing their tasks. Thus, high involvement in OCB suggests strong ties and leads to greater job performance. The relational approach is especially favorable as an explanation for the relationship between OCBI and job performance because citizenship behaviors directed to individuals can facilitate interpersonal interactions, reduce friction and conflicts, lower time costs, and increase efficiency and effectiveness (Podsakoff & MacKenzie, 1997; Smith et al., 1983).

Other theoretical perspectives are consistent with and extend the positive relationship between OCB and individual job performance. For instance, social exchange theory (Blau, 1964) suggests employees would build up psychological contracts with their employers and colleagues. This "invisible" contract leads employees to spend more time and effort on in-role behaviors and even extra role behaviors since employees would expect help in return for their extra work. Based on reciprocal norm (Gouldner, 1960), people tend to help those who have helped them, therefore OCB would not necessarily represent a cost to employees, while still facilitating job effectiveness. In addition, a prior study indicated that OCB (especially OCBI) can foster the sharing and exchange of tacit knowledge among the coworkers (Evans & Davis, 2005), leading to an improvement in task quality and greater productivity.

In terms of OCBO, Van Dyne, Graham and Dienesch (1994) indicated that the relationship between an employee and an organization may become a conventional relationship when it is characterized by shared values, organizational identification, and trust. In other words, employees tend to align their own objectives with those of their company. Thus, employees can recognize that they are helping themselves as they engage in OCBO. For instance, addressing constructive ideas and demonstrating concern can improve the work environment, resulting in immediate benefits to individuals' work effectiveness.

Direct and indirect evidence for the positive relationship between OCB and job performance was found in prior research (e.g. Chow, 2009; Diefendorff et al., 2002; Lee et al., 2004; Markose & Jayachandran, 2009; Piercy et al., 2006; Wang et al., 2005). Thus,

Hypothesis 1: OCBI and OCBO are positively related to job performance.

The Moderating Role of Experiential Human Capital

This study claims that the positive relationship between OCB and job performance is moderated by human capital. As previously mentioned, human capital was subdivided into intelligential human capital and experiential human capital. The former refers both to in-born intelligence and also knowledge acquired from formal education. The latter refers to capabilities acquired from actual operation and routine practices. Consequently, intelligential human capital equips individuals with systematic knowledge and logical thinking to solve their problems whereas experiential human capital equips individuals with an approach which relies on observation, experimentation, and practical experience.

As mentioned above, knowledge exchange can link the relationship between OCB and job performance. From the same standpoint, however, experienced employees will receive less feedback during the process of knowledge exchange and sharing; in other words, knowledge asymmetry may occur in the workplace. Workable tacit knowledge, a contributor to job-related performance, is embedded in the actions and behaviors of individuals and so, not easily transferable (Liebeskind, 1996). It is generally accumulated through work experience and thus, less experience restricts the ability to share knowledge with coworkers. Meanwhile, it limited in transferring individual tacit knowledge to others. On the contrary, experienced workers may transfer to co-workers more knowledge than can be gained from them, especially from less experienced colleagues. Accordingly, the positive effect of helping others on personal performance would more likely occur for those who have lower experiential human capital than for those who have higher experiential human capital.

Additionally, experienced employees might be more rigid and less open to changing their minds (Berlew & Hall, 1966) since they may still rely on some work habits and patterns which were beneficial during their prior jobs. In an earlier work, Saks and Waldman (1998) indicated that when hiring for an entry-level position, work experience was associated with a negative impact on the newcomers' work effectiveness. Therefore, higher human capital derived from work experience may restrict the ability of senior employees to develop innovative and productive ideas. The latent advantages of engaging in OCB will be mitigated by the inertia of experienced employees.

Social norms require less experienced employees to comply with experienced ones' advances in workplace, especially in Chinese society. Therefore, less experienced employees are unlikely to promote better ideas because they were conditioned to accept the ways of their more experienced colleagues without question. This might restrict knowledge flow from junior workers to senior workers. In summary, even though relational perspective and social exchange theory provide us a good reason to link OCBI and job performance, higher work experience may limit the benefit of knowledge sharing. Consequently, less experiential human capital of employees leads to a stronger influence of OCBI on their performance, whereas greater experiential human capital leads to a weaker positive relationship between OCBI and job performance. Thus, I hypothesize,

Hypothesis 2a: Experiential human capital weakens the positive relationship between OCBI and job performance.

In terms of OCBO, engaging in OCB at an organization, such as attending meetings and functions that are not required, might lead employees to obtain useful information from organizations or supervisors. This information may be relevant to organizational policies/systems, market demands, and could be valuable to individuals in performing their work. In achieving greater job performance through engaging in OCBO, the effect will be greater in less experienced employees than experienced ones. Since the information is embedded in organizational routines, less experienced employees can find the most effective ways to accomplish their tasks if they can learn the unwritten rules quickly. For the experienced employees, the information is still helpful but not to the extent that it helps less experienced employees.

Another way to link OCBO and job performance is to find individuals who identify themselves with their organization when they see the organization as providing opportunities for personal achievement (Bolino et al., 2002; Brown, 1969). OCBO can help individuals to establish or maintain a satisfying relationship with the organization and hence, it can be treated as a channel to increase identification with the organization; for instance, employees identifying themselves as a member of the organization by taking the initiative to recommend how the organization's operations can be improved.

To devote extra time and effort to benefit organizations may raise an employee's affective involvement in the organization. Sheldon (1971) verified that investment and involvement can increase the commitment of employees to their organizations. Thus, social exchange would occur between individuals and organizations in such a way that a "better" organization can provide employees a more effective work environment and a greater opportunity for career success. This study suggests that the effect of the psychological contract mentioned earlier in

this paper would be stronger on those who have lower experiential human capital because experienced workers (regardless of whether their tenures were calculated in the same organizations or not) are usually stable and have higher organizational commitment (Hrebiniak & Alutto, 1972; Steers, 1977). Thus, it is more likely for less experienced employees to transfer the benefit of OCBO into individual objectives.

Hypothesis 2b: Experiential human capital weakens the positive relationship between OCBO and job performance.

The Moderating Role of Intelligential Human Capital

According to knowledge exchange assumption, investing in helping behaviors benefits individual job performance. I suggest that the greater the intelligential human capital, the stronger the relationship between OCBI and job performance will be. For example, a smart worker may deal with his or her assignment well due to knowledge obtained in past jobs. In other words, in any workplace, individuals need some firm-specific or industry-specific capability to satisfy customer demand and to complete their tasks.

However, intelligent employees can incorporate the knowledge acquired from co-workers faster than those of lower intelligence can. More specifically, employees who have high intelligential human capital reveal greater comprehension, inductive, deductive, and cognitive ability and these facilitate the learning and solving of problems. Hence, greater intelligential human capital can effectively transform the value of interpersonal relationships through helping others. Thus, I hypothesize

Hypothesis 3a: Intelligential human capital strengthens the positive relationship between OCBI and job performance.

Similarly, I propose that the higher the intelligence of employees, the greater the benefit of OCBO on individual job performance. This argument draws on intelligence to explain the variation of OCBO and job performance. Higher cognitive ability can let employees receive more useful information and make more useful observations by engaging in extra efforts which are worthwhile in performing their jobs. Hence, I suggest that intelligential human capital would moderate the positive relationship between OCBO and job performance in such a way that the relationship will be stronger when employees have greater intelligence related human capital.

Hypothesis 3b: Intelligential human capital strengthens the positive relationship between OCBO and job performance.

METHODS

Sample and Data Collection

1,232 pairs of questionnaires were averagely distributed to 56 high-technology companies in Taiwan. Questionnaires were mailed directly to a contact (either the HR manager or the coordinator of R&D department) in each company, who then randomly distributed the questionnaires throughout the R&D departments. Data in this study was obtained from the engineers' immediate supervisor's matched surveys. For each dyad, two envelopes were bound and sent out, one to the engineer and one to his or her direct supervisor. A stamped and addressed envelope could be returned directly to the author or the sealed envelope could also be returned to the contact person specified. A number code was put on each questionnaire and envelope to allow for later matching the supervisor and subordinate responses.

643 supervisor versions and 638 engineer versions were returned. Although 631 supervisor-subordinate responses were successfully matched, I observed 46 matched surveys which lacked complete data or included obviously incorrect data. The final sample in this study consisted of 585 engineers and their immediate supervisors from 40 high-technology companies in Taiwan. Seventy four percent of the engineers were male, reflecting the sample distribution. The majority of engineers were aged from 27 to 34 years (65.9%). The total job tenure and industry tenure of the engineers both ranged from 3 months to 39.25 years, and their organizational tenure ranged from 1 month to 35.83 years. In addition, their years of being formally educated ranged from 10 years to 26 years.

Subordinate Measures

Engineers provided human capital, impression management (IM), and their demographic data.

Experiential human capital (moderator 1). Following Saks and Waldman (1998), I used four variables to measure experiential human capital: (1) Total job tenure: was measured as the number of months of previous work experience; (2) Industry-specific tenure: was measured as the number of months of job-related work experience in this industry; (3) firm-specific tenure was measured as the number of months an incumbent was the respondent with the company; (4) Job number was measured as the number of previous jobs. To create a composite variable, I standardized the numbers and averaged the scores to be one variable.

Intelligential human capital (moderator 2). I used two variables to measure intelligential human capital: years of schooling and college ranking. SAT scores or undergraduate grade average (GPA) are a common source of intelligence measurements in the United States (e.g., Saks & Waldman, 1998). Even though I collected similar data in Taiwan, the meaning of the scores in years is different due to the diverse grading policy in different

colleges. In addition, asking the respondents to answer sensitive questions is difficult, especially in managerial field studies, due to privacy issues. Furthermore, the respondents, particularly the older ones, might not remember their precise scores. For this reason, I used college ranking as the substitute variable. Previous studies have adopted similar measurement approaches (e.g., Hitt et al., 2001). Each employee was asked to fill out the college name from which he or she received his or her B.A. degree while simultaneously I coded data on rankings of college based on the sequence of Taiwanese high school students who participated in the joint college entrance examination. In Taiwan, normally a national university outranks a private university and a general university outranks a technological university. Hence, all colleges were categorized into eight groups in this study. If the respondent received a B.A. degree from a top tier national university, I coded "8," second tier was coded "7," and so on. A "1" represents a respondent who did not attend college. In addition, I also collected years of schooling to measure intelligential human capital. The respondents were asked to number their years of formal education (kindergarten was excluded). A higher score represents greater intelligential human capital. Ultimately, the two measures were standardized and combined into a composite variable.

Impression management, IM (control variable). IM has been verified as a predictor of a supervisor's rating of a subordinate's job performance; therefore, this was a control variable in the current study. I assessed IM using five items from a self-focused impression management scale of Wayne and Liden (1995). Two sample items are "Try to be polite when interacting with your supervisor" and "Work hard when you know the results will be seen by your supervisor." For the validation of IM measure, supervisors were also asked to respond to the same questions. I obtained positive and significant correlations between subordinate and supervisors' ratings (γ = .12 to .22, four of five coefficients are significant at the p< .001 level, one is at the p< .01 level). In order to avoid common method variance problem, I used the subordinate's responses to test the hypotheses.

In addition, I included gender as a control variable for variance in predicting performance outcomes. Age was excluded since age is collinearly related with tenure. Position was not collected since all subordinate respondents were frontline employees. This provided some control for variation across positions.

Supervisor Measures

Direct supervisors responded to the OCB and job performance rating for their subordinates because supervisors are a common source of these two measures (Podsakoff et al., 2000; Wayne & Liden, 1995).

Organizational citizenship behaviors, OCB (independent variable). OCB referred to employees' extra-role behaviors which offer an intended benefit to their organizations. Using Lee and Allen's (2002) scale, the current study used two subscales to collect different types of OCB with which to distinguish the beneficiaries. Eight OCBI items were used to measure the extent of behaviors benefiting coworkers, and another eight OCBO items were used to measure the extent of behaviors benefiting the organization. Two sample items are "Help others who have been absent" and "Offer ideas to improve the functioning of the organization," reflecting OCBI and OCBO measures respectively. Following previous research (Chen et al., 1998; e.g., Moorman et al., 1998; Vilela et al., 2008; Williams & Anderson, 1991), supervisor ratings of employee OCB were obtained in this study.

Job performance (dependent variable). Four items, developed by Wayne and Liden (1995), were used to ask supervisors to evaluate their employees' overall work performance. Sample items are "This subordinate is superior to other new subordinates that I've supervised before" (where 1 = strongly disagree and 5 = strongly agree) and "What is your personal view of your subordinate in terms of his or her overall effectiveness?" (where 1 = very ineffective and 5 = very effective). I combined ratings across the five items to create the measure.

All scales were originally developed in English. For the survey in Taiwan, the back-translation method (Brislin, 1986) was used to translate the items from English to Chinese. For high-quality measurement, I accepted Brislin's (1986) suggestion of having a monolingual rewrite the Chinese version so that the statements could be clear to native speakers. Then, I asked a bilingual to translate the rewrite version to English and compared this with the original. There were some extensive discussions among the translators about the dissimilar wordings. After further discussion, I made minor changes to minimize the possible differences between the original and Chinese version.

In addition, I consulted six professors who teach business and conduct human capital research about the content validity of this study. These professionals provided some valuable suggestions for items modification to match the definition of the constructs. After minor changes, the final version was pre-tested by 15 engineers who were independent of our final sample to ensure the clarity of all items.

All data was obtained from surveys administered in Chinese. Responses were on a Likert-style five-point scale (e.g., 1, "strongly disagree," to 5, "strongly agree") unless otherwise specified. Scale items were averaged. Higher scores indicated a greater degree of the underlying construct.

RESULTS

Table 1 shows the descriptive statistics and correlations obtained. As seen, two independent variables (OCBI and OCBO) and a main control variable (impression management) were positively correlated with the dependent variable. Interestingly, the results show no evidence to support the positive relationship between individual human capital and job performance. Furthermore, the correlations between the three tenure indicators and experiential human capital were highly correlated and significant since experiential human capital was measured by tenure. This was also seen in the relationship between years of schooling, college ranking, and intelligential human capital.

Insert Table 1 here

The results for the hierarchical regression analysis are summarized in Table 2. Hypothesis 1 claims that OCB can predict individual job performance. As shown, the significant coefficients in Models 1 and 4 show support for the hypothesized main effects of OCBI and OCBO on job performance. It should be noted that the two types of human capital were not significantly related with job performance even though they were both variables in our analysis.

Insert Table 2 here

Models 1 and 2 were evaluated to test Hypothesis 2a which argued that experiential human capital would lessen the positive relationship between OCBI and job performance. As can be seen in Model 2, the interaction is significant at the $p<.01$ level ($\beta= -.09$; $\Delta F = 7.30$, $p < .01$). The significant effect of interaction of experiential human capital and OCBI on job performance is plotted in Figure 1a. As indicated by both positive slopes, employees who engaged in OCBI can achieve better job effectiveness. However, the significant two-way interaction indicates that the link between OCBI and job performance was stronger when the employees lacked work experience. Thus support was found for Hypothesis 2a, indicating that experiential human capital mitigates the positive effect of OCBI on job performance.

Insert Figure 1a here

Similarly, Models 1 and 3 were evaluated to test Hypothesis 2b which stated that experiential human capital would lessen the positive relationship between OCBO and job performance. The result of Model 3 indicated that experiential human capital was a significant moderator to predict the variation of OCBO-job performance linkage (β= -.09, $p < .01$). As plotted in Figure 1b, the significant two-way interaction indicates that the positive relationship between OCBO and job performance was stronger for the employees with less work experience than those with more. Hence, the result provides support for Hypothesis 2b that the OCBO-job performance link, as well as the OCBI-job performance link, can be moderated by experiential human capital.

Insert Figure 1b here

Hypothesis 3a states that intelligential human capital would enhance the positive relationship of OCBI and job performance. As shown in Table 2, the moderating effect was not found in Model 5 (β= .06, $p < .1$ but $> .05$); thus, Hypothesis 3a was not supported. On the other hand, the regression result supported Hypothesis 3b, that intelligential human capital would enhance the positive relationship of OCBO and job performance. The interaction coefficient displayed in Table 2 (Model 6) was significant and positive (β= .09, $p < .01$). As Figure 2 illustrates, the interaction involving intelligential human capital as the moderator of the relationship between OCBO and job performance was consistent with what had been hypothesized in this study. Specifically, the relationship between OCBO and job performance is even higher than that expected when the employees' intelligential human capital is high.

Insert Figure 2 here

It was observed that there was no significant direct effect for two kinds of human capital on job performance. This result indicated that human capital was not a predictor of job performance.

DISCUSSION AND CONCLUSIONS

The results of this study provide support for my hypothesis that both OCBI and OCBO can predict individual job performance. Furthermore, this study provides evidence that human capital is a conditional factor in illustrating the positive relationship between OCB and job performance. This paper suggests that the effect of OCB on job performance depends on the extent of experiential human capital and intelligential human capital. Specifically, the

findings clearly show that employees who have less work experience or more intelligence are more likely to transform the value of OCB into performing better at their job than those with more work experience or less intelligence.

Finally, the results also indirectly suggest that there is no relationship between human capital and job performance. It was found that individuals are not predicted to achieve greater job performance from having knowledge and experience.

Theoretical Implications

The main implication of this study is that its results support the relational perspective, social exchange between coworkers, and knowledge acquisition. This in turn can explain the positive relationship between OCB and job performance. In other words, OCBI and OCBO were proved to be predictors of employee job performance. This finding was consistent with previous research revealing that any potential costs of engaging in OCB are offset by the improvements in employee work performance. This feedback effect was apparent on OCB both toward interpersonal relationship and also toward organizations.

The major finding of this study was the interaction effect of human capital and OCB on performance ratings. Human capital and OCB interacted through their influence on supervisor ratings of employee job performance. The research findings indicated that less experienced employees were far more likely to receive high performance ratings through OCB engagement than the experienced employees were. This research also found that it is easier for employees with above average intelligence to transfer the benefits of OCBO to their performance rating. This study, distinct from prior research, regarded human capital as a significant antecedent for predicting individual job performance and verified that the contingent role of human capital is more significant than its traditional predictor role.

According to the traditional perspective, employers are willing to provide incentive pay to those with greater human capital in anticipation of higher productivity. Unfortunately, the results of this study did not provide support for the above assumption. This, in turn, illustrates the unstable causality between human capital and work achievement. I interpreted this finding to mean that higher human capital is not the “must have” character for an effective worker; however, it plays a catalytic role, which can improve the value of OCB in different ways.

This study thus follows Podsakoff et al.’s (2000) suggestion for future research: “OCB might have different effects on performance in units where employees are low in ability, experience, training, or knowledge, than in units where employees have high levels of ability, experience,

training, or knowledge," to determine the contingent relationship between OCB and job performance.

From these research findings, I have discovered that the two types of human capital represent the reverse moderating effects of OCB job performance. Although in previous research, human capital was regarded as a single dimension construct, we argue that, based on the definition and the results of this research, staff ability is derived from at least two different sources: accumulated actual work experience, and knowledge acquired from formal education. These two concepts should be discussed separately in order to fully understand the role of human capital.

Managerial Implications

Although the benefit of OCB is larger on less experienced employees than on experienced ones, OCB can foster individual job performance on both sides. It is my recommendation that managers should cultivate a climate that encourages seniors to lead juniors in order to solve work related problems, and also find more efficient ways of performing their jobs. In addition, the less experienced employees should be inspired to help co-workers and participate in voluntary functions as well as helping them understand the benefits they can derive from this. Over time, both senior and junior staff should be willing to actively engage in OCB, which should in turn create a stable organizational culture. At the same time as they raise their own levels of performance, staff will deliver a high level of efficiency for the entire organization.

This research discovered that while the level of education does not have a direct positive effect on job performance, it is a critical situational factor. In other words, outstanding student performance is no guarantee that an individual will be able to translate that success to work. According to our research recommendations, intelligent and talented staff should not assume any superiority as a result of their high level of education or specialized knowledge because, in the working world, possessing those attributes will not necessarily translate into good job performance. In order to carry out tasks in the workplace, workers must understand many tacit rules. Information channels necessary for the job and a way of working unique to each individual cannot be learned from school and specialized theory.

However, through participating in jobs and activities outside their normal responsibilities, staff can gain a profound knowledge of many unwritten rules, thereby raising their level of performance in the workplace. Therefore, human resource management policy within companies can make OCB one item in assessing work performance, giving star employees an incentive to show a willingness to participate in company affairs. This will not only increase

star employees' identification with the company, but also help individual work performance.

Managerial implications addressed from previous OCB research were not from an employee perspective. The findings of prior works indicated that forming a positive OCB climate in organizations can reduce managerial cost, increase group cohesiveness, and lead to better organizational effectiveness. Management should put themselves in employees' shoes to encourage employees to demonstrate model behavior. For instance, the connection between OCB and job performance can be made explicit in training programs and OCB related evaluation can be included in performance appraisals. In addition, supervisors can set a good example and initiate the engagement in OCB. Subordinates should be encouraged or even trained to volunteer in some of the activities of the experienced employees' regardless of whether these pertain to personal or company benefits. When the employees are well aware that engaging in OCB can benefit their jobs, they will be more involved in relevant extra-role behaviors.

Limitations and Directions for Future Research

As with any study, this study has limitations. Firstly, the cross sectional research design limits the extent to which causality can be inferred from our findings. Future research should implement longitudinal designs in order to determine the causal relationship of the variables. Secondly, collecting data from a single industry potentially limits the applicability of the findings to other industries even though a single-industry study can control for industrial variation of the hypothesized relationship. To enhance external validity, future research should obtain data from different industries. Thirdly, job characteristics of the sample may have limited the applicability of the findings because the participants in this study were R&D engineers. Different jobs reflect distinct level of job completeness, autonomy, and feedback which may result in different findings. Future research should focus on diverse jobs for certifying the certifying the conclusions of this study. Finally, future researchers should be encouraged to further test the dual role of human capital.

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Table 1 Descriptive Statistics and Bivariate Correlations (n=585) [a]

	variables [b]	mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Gender	.74	.44	--													
2	Age	3.83	1.38	.09	--												
3	Job tenure	92.9	68.3	-.11	.82	--											
4	Industry tenure	68.7	58.4	-.08	.74	.85	--										
5	Firm tenure	53.5	52.1	-.07	.63	.72	.83	--									
6	Job number	2.59	1.73	-.11	.29	.38	.14	-.05	--								
7	Years of schooling	16.6	1.87	.25	-.11	-.43	-.34	-.29	-.26	--							
8	College ranking	3.74	2.24	.21	-.05	-.29	-.22	-.18	-.25	.61	--						
9	IM	4.17	.53	-.16	-.01	.03	.03	.03	-.01	-.02	-.10	(.85)					
10	OCBI	3.75	.54	-.03	.06	.05	.05	.03	-.01	.01	-.02	.12	(.91)				
11	OCBO	3.53	.57	-.03	.15	.14	.15	.11	.01	-.03	-.08	.09	.73	(.91)			
12	Experiential HC	0	.78	-.12	.80	.95	.90	.80	.47	-.42	-.30	.03	.04	.13	(.82)		
13	Intelligential HC	0	.90	.26	-.09	-.40	-.31	-.26	-.28	.90	.90	-.07	-.01	-.06	-.40	(.75)	
14	Job performance	3.81	.65	-.05	.04	.06	.07	.06	.02	-.04	-.02	.12	.62	.55	.07	-.03	(.90)

[a] Coefficient alphas for constructs that could be computed are located on the diagonal. Correlations $|\gamma| \geqq .08$ are significant at the $p < 0.05$ level; correlations $|\gamma| \geqq .11$ are significant at the $p < 0.01$ level.

[b] Categorical variables coded as: gender: 0 = female, 1 = male; age: 1 = less than 23 years, 2 = 24-26 years, 3 = 27-30 years, 4 = 31-34 years; 5 = 35-38 years, 6 = 39-42 years. Three measures of tenure were collected by months. College ranking: 1 = 2-years or 5-year junior college, 2= private technology college or newly technology university, 3 = third tier private university, 4 = second tier private university, 5 = national

technology university or top tier private university, 6 = Third tier national university, 7 = Second tier national university, 8 = Top tier national university in Taiwan. Experiential HC was calculated from standardized all tenure and job number. Intelligential HC was calculated from standardized years of schooling and college ranking.

Table 2 Results of Regression Analyses: Influence of Human Capital and OCB on Job Performance [a, b]

	DV: Job performance					
variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control variables						
Gender	-.02	-.02	-.02	-.02	-.02	-.02
IM	.04	.04	.04	.04	.05	.04
IV						
OCBI	.47***	.47***	.48***	.47***	.47***	.47***
OCBO	.20***	.21***	.20***	.20***	.20***	.20***
Moderator						
Experiential HC	.02	.02	.03			
Intelligential HC				-.01	-.00	-.01
Interaction						
Experiential HC × OCBI		-.09**				
Experiential HC × OCBO			-.09**			
Intelligential HC × OCBI					.06+	
Intelligential HC × OCBO						.09**
ΔR^2	--	.01	.01		.01	.01
ΔF		7.30**	8.15**		3.77+	7.79**
Overall R^2	.41	.42	.42	.41	.42	.42
Overall F	80.90***	69.37***	69.61***	80.82***	68.30***	69.44***

[a] Standardized coefficients are reported.

[b] IM=image management; Experiential HC=experiential human capital; Intelligential HC=intelligential human capital.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

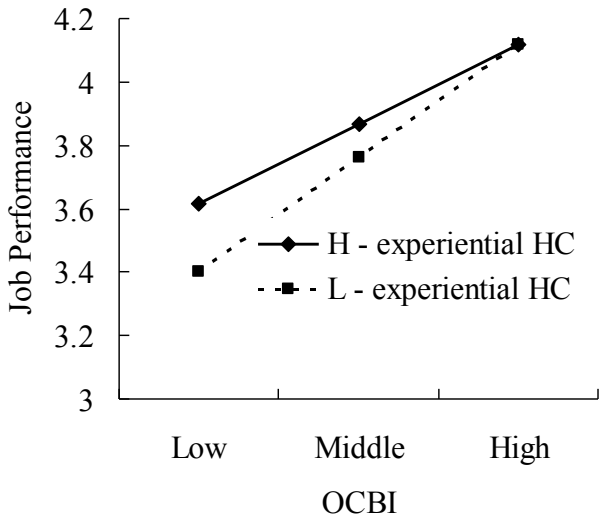

Figure 1a Interactive effect of experiential human capital and OCBI on job performance

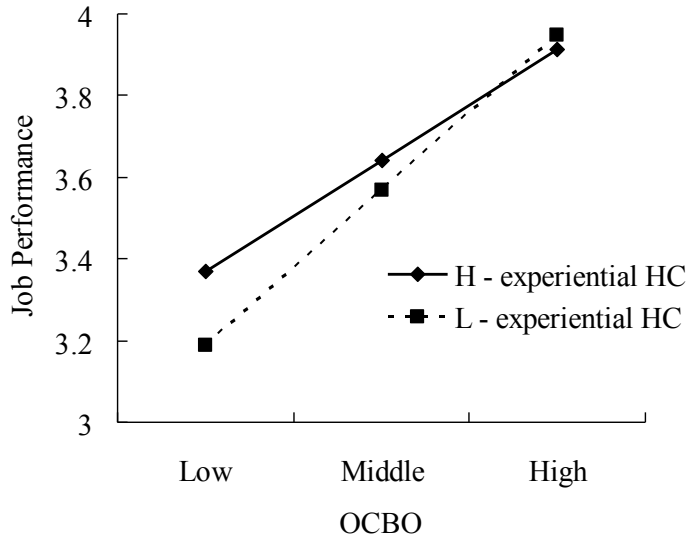

Figure 1b Interactive effect of experiential human capital and OCBO on job performance

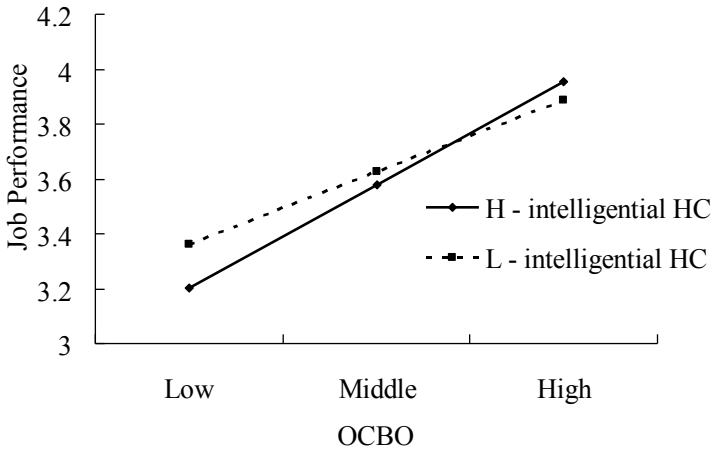

Figure 2 Interactive effects of intelligential human capital and OCBO on job performance

Evaluating the Relationship between Stock Exchange Volatility and Macro-economic Indicators in the Chinese Context-The case of the Shenzhen Stock Exchange

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Abstract

Previous stock market research in developed countries (such as US, UK and Japan) indicates that relationships exist between stock exchange volatility and macro-economic forces, such as exchange rates, inflation, money supply, real output and interest rates. Some initial evidence indicates this is also the case in emerging markets, such as Malaysia and Korea. However, few studies address these important relationships in the Chinese context. To understand the applicability and relevance of this research to China, we consider two perspectives using monthly data from the Shenzhen Stock Exchange (SZSE) for the period 2001 to 2010. Firstly, we examine the long-term cointegration relationship between the Shenzhen Stock Exchange (SZSE) fluctuation and a set of macro-economic variables. Secondly, we investigate the short-term adjustment mechanism using an error-correction model. Additionally, causality tests are adopted to further prove the previous findings. The results show that although long-term conintegration relationship can be found between SZSE performance and exchange rate as well as short-term interest rate, a large degree of instability and unpredictability still exists over the short term. We conclude that there is no close correlation between stock market change and most macro-economic indicators, and therefore macro-economic activity is still not the barometer of stock market volatility in SZSE case, thus reducing the relevance of this type of modelling in the Chinese context.

Key words: Cointegration analysis; China Stock Market; Shenzhen Stock Exchange; Macro-economics; Engle-Granger two-step approach; Johansen and Juselius procedure

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1. Introduction

Numerous studies have been undertaken to analyse how stock market indices react to domestic macro-economic activities and the correlation between the macro economy and the stock market has become the research issue which was broadly accepted by overseas researchers(Fama, 1990, Mukherjee and Naka, 1995). Fama (1990) and Mukherjee and Naka (1995) argued that a long-term equilibrium relationship existed between stock prices and real economic activities in US and Japan. Moreover, this topic was also evidenced in other developed countries, as well as in several emerging markets (Bilson et al., 2001, Kwon and Shin, 1999, Ibrahim, 1999, Liljeblom and Stenius, 1997, Gjerde and Saettem, 1999).

However, distinguishing from the situation in other countries, the researchers in China had various opinions about this issue. A few researchers believed that there was not only a stable long-term relationship between the stock market and macro-economic variables, but also a correlation over the short-term fluctuations (Jing and Yu, 2001, Zhang and Wang, 2000, Wang and Xu, 2001, Shang and Li, 2002). However, in contrast, several researchers held the point of views that the correlation was weak between China stock market volatility and economic activity, and even showed a status of deviation (Jin, 2011, Wang, 2000, Huang, 2004, Yan et al., 2004). The results obtained by the Engle-Granger (EG) two-step approach and the Johansen and Juselius (JJ) procedure in this paper indicated the similar phenomenon with the latter viewpoint. There were only two groups of variables performing the long-run cointegration relationship, which proved that macro-economic activity was still not the barometer of stock market volatility in the SZSE case.

The structure of the paper is organized as follows: section 2 describes the data and methods applied to this paper; section 3 discusses the empirical results separately conducted by the EG two-step approach and the JJ procedure; section 4 proposes the limitations and concludes the study.

2. Data and methods

2.1 The data

Cointegration analysis in this paper is applied for investigating both the long- and short-term relationships between SZSE index volatility and macro-economic variables, using the EG two-step approach for two-variable analysis, and the JJ procedure for multiple variables.

The monthly data employed in this paper cover the period from January 2001 to December 2010 and the sample size has 114 observations. The data were obtained from Resset Financial Database, National Bureau of Statistics of China, People's Bank of China and Shenzhen Stock Market Fact Book, 2001 to 2010.

Table1 Definitions of applied variables in Chinese context

Variables	Implication	Particular characteristics in China	Issuing agency
SZSE Manufacturing Index	Paasche price index;[1] Index sample selection criteria: all stocks listed in SZSE belonging to the wholesale and manufacturing industry	none	SZSE
Exchange Rate	the price of one country's currency expressed in another country's currency	managed floating exchange rate system; capital controls	People's Bank of China
Short-term Interest Rates	the benchmark one-year deposit rate	control of interest rate and restrictions on floating range	People's Bank of China
Consumer Price Index (CPI)	measures changes in the price level of consumer goods and services purchased by households	lower proportion of housing prices included in the estimation of CPI	National Bureau of Statistics of China
Ex-factory Price Indices of Industrial Products (Producer Price Index) (PPI)	measures average changes in prices received by domestic producers for their output	none	National Bureau of Statistics of China
Industrial Production Growth Rate	annual percentage increase in industrial production	none	National Bureau of Statistics of China
Money Supply 1 (M1)	M0 (cash in circulation) plus demand deposits of enterprises, institutions, organizations, military units, schools and other units in the bank	checks cannot be directly converted into cash; not enough currency in circulation[2]	People's Bank of China

[1] The Paasche price index is an index formula used in price statistics for measuring the price development of the basket of goods and services that is consumed in the current period.
Source: European Communities Statistical Office
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Paasche_price_index [accessed: June 12, 2012]

[2] Source: MBAlib http://wiki.mbalib.com/wiki/%E8%B4%A7%E5%B8%81%E4%BE%9B%E5%BA%94%E9%87%8F [accessed: June 12, 2012]

The Inter-bank Weighted Average Interest Rate	the weighted average interest rate in the inter-bank borrowing/lending market	Irrational structure of interest rate; it is difficult to use the inter-bank borrowing/lending rates as the benchmark of interest rates (Zhou, 2010)	People's Bank of China
State Foreign Exchange Reserves	foreign currency deposits and bonds held by central banks and monetary authorities, commonly including foreign exchange, gold, special drawing rights (SDRs), and International Monetary Fund (IMF) reserve positions	the policy of stable gold reserves	State administration of Exchange Control

Source: Shenzhen Stock Exchange; National Bureau of Statistics of China; People's Bank of China

Table 1 shows the list of variables used in the cointegration analysis. For the independent variables, financial indicators are usually published by People's Bank of China, and most economic data are released through National Bureau of Statistics of China. The implications of several variables were endowed with specific characteristics in China's context. For instance, because of the incomplete structure of interest rates in China, the inter-bank borrowing/lending rates was not the reliable benchmark for interest rates (Zhou, 2010). The same situation also occurred with money supply 1. Since checks could not be directly converted into cash, there was in reality not enough currency in circulation. [3]

As the dependent variables, the SZSE manufacturing index is applied to the cointegration analysis, in place of the SZSE composite index and the SZSE component index. One of the reasons why the SZSE manufacturing index is adopted is that most important enterprises in dominant industries are state owned, so using the manufacturing index will be a more representative of the volatility of the stock market in regard to the 'market economy'(Yuan, 2000). Another reason for adopting the manufacturing index is that previous literatures mainly focused on the SZSE composite index which was used to represent the SZSE, this research intends to examine the relationship between stock market fluctuation and macro-economic performance from another perspective (Yan et al., 2004, Liu and Shrestha, 2008, Hu and Zhang, 2009, Cong et al., 2008, Soenen and Johnson, 2001).[4]

[3] Source: MBAlib http://wiki.mbalib.com/wiki/%E8%B4%A7%E5%B8%81%E4%BE%9B%E5%BA%94%E9%87%8F [accessed: June 12, 2012]

[4] In fact, SZSE composite index had already been tried for obtaining the estimated results before using the manufacturing index, however, it was difficult to find obvious cointegration relationship in each group of two variables. After referring to related journal articles and discussing this problem with professor Satish in our School, we decide to substitute manufacturing index for composite index.

The following notations will be employed in the rest of the paper:

szsem: SZSE Manufacturing Index

exchangerate: Exchange Rate

interestrate: Short-term Interest rate

CPI: Consumer Price Index

PPI: Ex-factory Price Indices of Industrial Products

ipgr: Industrial Production Growth Rate

m1: Money Supply 1

ibwai: The Inter-bank Weighted Average Interest Rate

sfer: State Foreign Exchange Reserves

lnx: logged variables

D(x): first difference of variables

As illustrated above, shortened forms of the variables will be used to represent the indicators. In order to eliminate the effects of heteroskedasticity, all variables have been converted into natural logarithms except *ipgr* (Bi, 2007).

2.2 Methods

The EG two-step approach hereby is used in the cointegration analysis for two variables, whereas the JJ procedure which adopts maximum likelihood process is suitable for multiple variables (Engle and Granger, 1987, Johansen and Juselius, 1990). The EG two-step approach includes the estimation of the following cointegration regression:

$$y_t = \alpha_0 + \alpha_1 x_{1t} + \cdots + \alpha_k x_{kt} + \varepsilon_t$$

Where it is assumed that each of the (k+1) series y_t, x_{1t}, …,x_{kt} has a single unit root. Then the (k+1) series are taken as being cointegrated if series ε_t is stationary (Liu and Shrestha, 2008). Compared to the EG two-step approach which involves only one cointegrating vector, the JJ procedure can identify multiple vectors (Engle and Granger, 1987, Johansen and Juselius, 1990).

3. Empirical results

3.1 Engle-Granger two-step approach

3.1.1 Long-run relationship test

Because *lnszsem* is I(1) , the first step is to test whether other time-series are I(1), which is a basic condition for further testing process. The standard Augmented Dicky-Fuller (ADF) test is used to examine if the time-series is stationary. Unit roots are firstly tested in the cases when intercept and trend is involved in the regression, then when there presents the intercept only, and finally using "none", namely without intercept and trend (Fukač, 2012). If the null hypothesis that the variable has a unit root cannot be rejected, the first difference will be applied for the original time-series. It is can be shown from table AI (see Appendix) that

lnPPI,ipgr and *lnipgr* are stationary, which indicates that these two variables are not suitable for next procedure. Likewise, *lnmi* which becomes stationary after the second difference cannot be adopted for cointegration analysis with *lnszsem* by EG two-step approach. Therefore, *lnexchangerate, lninterestrate, lncpi, lnibwai* and *lnsfer,* which are all stationary after first difference, will be tested whether or not they have long-run relationship with *lnszsem*.

Then long-run relationships will be estimated for each group of the two variables. Then the regression residuals are obtained from the equations. The next step is to examine if the residuals are stationary, using the standard ADF test of which the process is same as the procedure discussed in last paragraph.

If the statistic can reject the null hypothesis that the residual series has a unit root, it could be concluded that the two variables are cointegrated of the orders CI(1,1), otherwise a cointegration relationship does not exist between the two variables.

It can be shown from table AII (see Appendix) that the residuals of three equations are stationary after first difference, which means that the relationships between (1) *lnszsem and lncpi,* (2) *lnszsem and lnibwai* and (3) *lnszsem and lnsfer* are CI(2,1). As a result, no cointegration relationship can be detected separately by CPI, the inter-bank weighted average interest rate and state foreign exchange reserves with stock market volatility, in terms of Engle-Granger two-step approach.

The long-run relationship between *lnszsem and lnexchangerate* are estimated as following:

Equation 1:

$$lnszsem = 1.57842278804 + 1.06241772693\,lnszsem(-1) - 0.153155155391\,lnszsem(-6) - 0.489483463155\,lnexchangerate(-1)$$

(2.758457) (31.42931) (-4.143092) (-2.520325)

$R^2 = 0.974347$ DW = 2.157583

As shown in the equation, the coefficient 0.489483463155 measures the long-term relationship between *lnszsem* and *lnexchangerate.* Because there is serial correlation in the equation which does not have any lags in terms of Q-statistics test (Table 2), suitable lags are added into the equation and it is confirmed that the residual series is stationary. According to the results of LM test, it can be evidenced from Table 3 that the null hypothesis of no serial correlation in the residuals cannot be rejected, so it can be concluded that serial correlation does not present in the residuals of Equation 1.

Table 2 Results of Ljung-Box Q-statistics for residuals of equation with no lag

Sample: 2001M07 2010M12
Included observations: 114

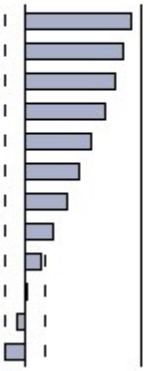
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.948	0.948	105.28	0.000
		2	0.888	-0.118	198.33	0.000
		3	0.808	-0.221	276.04	0.000
		4	0.718	-0.121	337.97	0.000
		5	0.601	-0.302	381.75	0.000
		6	0.479	-0.097	409.80	0.000
		7	0.374	0.193	427.05	0.000
		8	0.257	-0.184	435.30	0.000
		9	0.142	-0.084	437.82	0.000
		10	0.024	-0.106	437.90	0.000
		11	-0.080	-0.089	438.73	0.000
		12	-0.186	-0.092	443.23	0.000

Table 3 Results of Breusch-Godfrey Serial Correlation LM tests of equation 1

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.764785	Prob. F(2,102)	0.4681
Obs*R-squared	1.595617	Prob. Chi-Square(2)	0.4503

Similarly, the equation which indicates the long-term relationship between *lnszsem* and *lninterestrate* can be presented as following:

Equation 2:

lnszsem = 0.630333481841 +0.0661492109495*lninterestrate* + 1.07539712251 *lnszsem (-1)*
–

(1.821359) (1.547743) (26.74208)

0.325627506918*lnszsem (-6)* + 0.188999273657 *lnszsem(-7)*

(-2.982654*)* *(*1.940739*)*

R^2 = 0.974896 DW = 2.125046

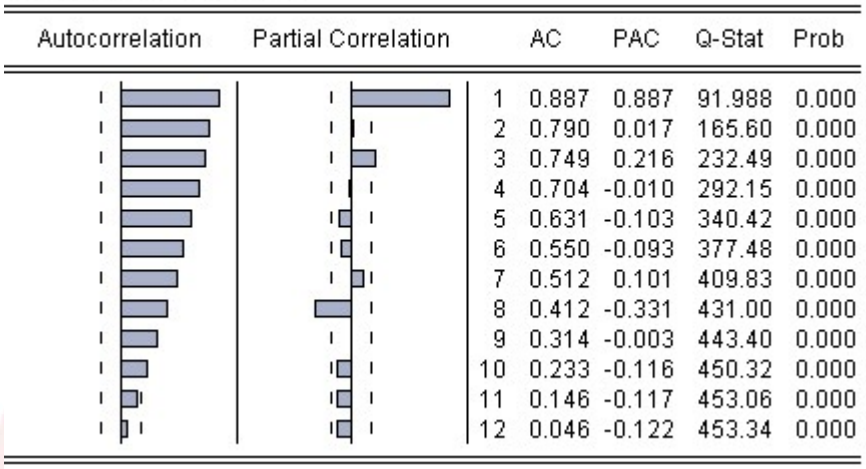
In the above equation, the coefficient 0.0661492109495 measures the long-term relationship between *lnszsem* and *lninterestrate*. However, this coefficient is not that significant, which means that changes of interest rate have no remarkable impact on stock market fluctuations.

As in the same situation as last case, lags are added into the equation since the autocorrelation exists in the equation when no lag as shown in Table 4. Then the stationarity of the residual is

proved. After adding suitable lags to the equation, serial correlation has been eliminated in terms of LM test (Table 5).

Table 4 Results of Ljung-Box Q-statistics for residuals of equation with no lag

Sample: 2001M07 2010M12
Included observations: 114



Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.887	0.887	91.988	0.000
		2	0.790	0.017	165.60	0.000
		3	0.749	0.216	232.49	0.000
		4	0.704	-0.010	292.15	0.000
		5	0.631	-0.103	340.42	0.000
		6	0.550	-0.093	377.48	0.000
		7	0.512	0.101	409.83	0.000
		8	0.412	-0.331	431.00	0.000
		9	0.314	-0.003	443.40	0.000
		10	0.233	-0.116	450.32	0.000
		11	0.146	-0.117	453.06	0.000
		12	0.046	-0.122	453.34	0.000

Table 5 Results of Breusch-Godfrey Serial Correlation LM tests of equation 2

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.922184	Prob. F(2,100)	0.4010
Obs*R-squared	1.937736	Prob. Chi-Square(2)	0.3795

3.1.2 Error-correction model (ECM) estimation

After estimating the long-term relationship, ECM is used to involve the short-period adjustments in the equation. As a result, the residual of the long-term relationship equation is built into the ECM estimation.

After making the first difference of the two equations, ECM can be illustrated as follows:

Equation 3:

$$D(lnszsem) = 1.13404874687D(lnszsem\ (-1)) - 0.330968476722D(lnszsem\ (-6)) -$$
$$(4.424172) \qquad (-3.266283)$$
$$3.71733892402D(lnexchangerate\ (-1)) - 1.16152324953resid(-1)$$
$$(-1.563034) \qquad (-4.216277)$$
$$R^2 = 0.178542 \qquad DW = 1.886147$$

Equation 4:

$$D(lnszsem) = 0.167128951863D(lninterestrate) + 1.09692919267D(lnszsem\ (-1)) -$$
$$(1.762426) \qquad (3.925550)$$

$$0.359285654587D(lnszsem\ (-6)) + 0.325770909588D(lnszsem(-7)) -$$

(-3.463681) (3.189870)

$$1.10763434727 resid(-1)$$

(-3.681976)

$R^2 = 0.183088$ DW = 1.980099

The ECM model is used to estimate short-term relationships, in which the error correction (namely resid in the equation) reflects the impact of short-term fluctuation on long-run equilibrium, so the variables after first difference in the right side of the equation demonstrate the effects of short-term volatility. From the two equations above, it can be seen that error correction constitutes a significant impact on D(*lnszsem*), since the absolute value of the coefficients are both over 1 (β =-1.16152324953 in equation 3 and β =-1.10763434727 in equation 4). Usually the equation works out when -2‹β ‹0, though it could be better if -1‹ β‹0 (Banerjee et al., 2001, Wooldridge, 2009). Because the error correction coefficient β is less than -1, it means that other important control variables may be omitted in the ECM. As seen in the ECM above, each equation only covers the short-term relationships between two key variables.

The argument from equation 3 and 4 could be summarized that although stable long-term relationships exist between stock market change and a few financial indicators, there is still a large degree of instability over the short-term.

3.2 Johansen and Juselius procedure for multiple variables

3.2.1 Johansen system cointegration test

Apart from the analysis of the EG two-step approach for two variables, the JJ procedure hereby is suitable for the cointegration test for more than two variables. All the I(1) time series, consisting of *lnszsem, lninterestrate, lnibwai ,lnexchangerate, lncpi,* and *lnsfer* are applied to cointegration test. After confirming the presence of cointegration vectors, the results of the cointegration equation could be generated, and this will be followed by ECM estimation to examine the short-term adjustment for the conintegration relationship.

Table 6 Results of Johansen System Cointegration Test

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.381695	52.40427	40.07757	0.0013
At most 1 *	0.325025	42.84568	33.87687	0.0033
At most 2 *	0.225289	27.82390	27.58434	0.0466
At most 3	0.149358	17.63231	21.13162	0.1442
At most 4	0.083497	9.503692	14.26460	0.2466
At most 5 *	0.040206	4.473015	3.841466	0.0344

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Both Trace and Max-eigenvalue tests could be used to examine the cointegration relationships. This research adopted Max-eigenvalue test through which we can see that the hypothesis of no cointegration vectors can be rejected at the 0.05 level. However, the hypothesis of three cointegration vectors can be accepted (Table 6). Therefore, the cointegration equation between the dependent variable (*lnszsem)* and the independent variables (consisting of *lninterestrate, lnibwai ,lnexchangerate, lncpi,* and *lnsfer*) can be concluded as follows (table 7):

Table 7 Results of Cointegrating Equation

1 Cointegrating Equation(s): Log likelihood 1553.345

Normalized cointegrating coefficients (standard error in parentheses)

LNSZSEM	LNINTERESTRATE	LNIBWAI	LNEXCHANGERATE	LNCPI	LNSFER
1.000000	-0.113043	-0.085211	11.06551	-6.614748	0.754874
	(0.32253)	(0.18882)	(1.68633)	(2.51025)	(0.10846)

From table 7 the long-term cointegration relationships between SZSE manufacturing index and macro-economic indicators can be described as follows:

lnszsem - 0.113043*lninterestrate* - 0.085211*lnibwai* + 11.06551*lnexchangerate* - 6.614748 *lncpi* +0.754874 *lnsfer = 0*

According to the equation above, equation 5 can be concluded after transposing the variables:

Equation 5:

lnszsem =0.113043*lninterestrate* + 0.085211*lnibwai* - 11.06551*lnexchangerate* + 6.614748 *lncpi* - 0.754874 *lnsfer*

It can be shown from the equation 5 that over the long term, the change of short-term interest rates, the inter-bank weighted average interest rate and CPI have positive effects on the SZSE manufacturing index. By contrast, the relationships between the SZSE manufacturing index and exchange rates as well as state foreign exchange reserves are found to be negative.

3.2.2 Vector error-correction model (VECM) estimation

Similar to the steps of the EG two-step approach, VECM hereby is used to specify the short-term fluctuations between SZSE manufacturing index and macro-economic activities.

The number of lags is decided by either the Schwarz Bayesian criterion (SBC) or the Akaike information criterion (AIC). According to the principle of AIC minimization, it results in the use of two period lags in ECM estimation. The estimation result of VECM is shown in table 8:

Table 8 Vector Error Correction Estimates

Vector Error Correction Estimates
Sample (adjusted): 2001M10 2010M12
Included observations: 111 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
LNSZSEM(-1)	1.000000
LNINTERESTRATE(-1)	-0.762107 (0.44866) [-1.69863]
LNIBWAI(-1)	-0.075915 (0.27068) [-0.28046]
LNEXCHANGERATE(-1)	8.608667 (2.34064) [3.67791]
LNCPI(-1)	-14.26798 (3.38060) [-4.22055]
LNSFER(-1)	0.929767 (0.15286) [6.08253]
C	26.75563

Error Correction:	D(LNSZSEM)	D(LNINTERESTRATE)	D(LNIBWAI)	D(LNEXCHANGERATE)	D(LNCPI)	D(LNSFER)
CointEq1	0.100009	0.034032	0.071491	-0.002301	0.010894	0.002545
	(0.03496)	(0.03284)	(0.06228)	(0.00129)	(0.00224)	(0.00593)
	[2.86047]	[1.03629]	[1.14786]	[-1.78466]	[4.86619]	[0.42957]

According to table 8, equation 6 can be summarized as follows after removing the not significant coefficients:

Equation 6:

D(*lnszsem*) =0.100000*lnszsem(-1)* + 0.860867*lnexchangerate(-1)* -1.426798*lncpi(-1)* +0.093978

(2.86047) (3.67791) (-4.22055)

lnsfer(-1) - 0.173896D(*lnszsem(-1)*) - 0.168574D(*lnibwai(-1)*) - 0.185529D(*lnibwai(-2)*) –

(6.08253) (-1.52920) (-2.93965) (-3.12363)

1.113153D(*lnsfer(-2)*) + 2.675563

(-1.79058)

From table 8 and equation 6 it can be seen that the error correction term have significant effect on the change of SZSE manufacturing index. As a result, the conclusion hereby is the same as the one described when using the EG two-step approach earlier in this paper, that although SZSE manufacturing index fluctuations and macro-economic indicators have a long-run equilibrium relationship, it is not stable over the short run. Therefore, this result of the JJ procedure for multiple variables further presents that the correlations between SZSE change and macro-economic indicator movements are not significant.

3.3 Grange Causality Tests

Through the Grange Causality Tests, it could be further proved that the causality between SZSE volatility and macro-economic activity is not significant. What should be emphasized is the Granger causality test must be run on I(0) series, so in this case, all the variables used are stationary and they become stationary after first difference (Fukač, 2012).

As shown in Table 9, the changes of inter-bank weighted average interest rates do cause the SZSE fluctuations, significantly at 5% level. However, conversely the hypothesis that 'SZSE fluctuations do not cause changes of inter-bank weighted average interest rate cannot be rejected. The change of State foreign exchange reserves and the SZSE manufacturing index fluctuations do not cause each other. The same situation also occurs for the change of exchange rates and the SZSE manufacturing index volatility, of which the result is inconsistent with the estimation of Equation 1 that long-term cointegration relationship existed between exchange rate and SZSE manufacturing index.

SZSE fluctuations do cause the change of interest rates according to the F-Statistic in the table 9, significantly at 1% level. On the contrary, the hypothesis that 'interest rate dose not Granger cause SZSE' cannot be rejected. Similarly, SZSE fluctuations do have a causal influence on CPI change, significantly at 10% level. However, CPI fluctuation causing SZSE volatility cannot be found.

The results of Grange Causality Tests are the same as the conclusion obtained from both the EG two-step approach and JJ procedure, which proved that there is no close correlation between SZSE changes and most macro-economic variables in China.

Table 9 Results of Grange Causality Tests

Pairwise Granger Causality Tests
Sample: 2001M07 2010M12
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DLNSFER does not Granger Cause DLNSZSEM	111	1.48392	0.2314
DLNSZSEM does not Granger Cause DLNSFER		0.09962	0.9053
DLNINTERESTRATE does not Granger Cause DLNSZSEM	111	0.21483	0.8070
DLNSZSEM does not Granger Cause DLNINTERESTRATE		7.42868	0.0010
DLNIBWAI does not Granger Cause DLNSZSEM	111	3.19608	0.0449
DLNSZSEM does not Granger Cause DLNIBWAI		2.08768	0.1290
DLNEXCHANGERATE does not Granger Cause DLNSZSEM	111	0.29079	0.7483
DLNSZSEM does not Granger Cause DLNEXCHANGERATE		0.64806	0.5251
DLNCPI does not Granger Cause DLNSZSEM	111	0.25491	0.7755
DLNSZSEM does not Granger Cause DLNCPI		2.56503	0.0817

4. Limitations and conclusions

This paper is part of a larger PhD thesis of which the title is “Individual Investor Behaviour on SZSE”, and it explains the macro-economic context for the individual investors on SZSE. Because the whole research is mainly derived from the application of behavioural finance using survey and interviews, the paper did not employ further analyses for vector autoregressive model (VAR), including stability condition checks, impulse responses and variance decomposition analyses.

This paper mainly focused on both long-run equilibrium and short-run adjustment relationships between SZSE volatility and macro-economic changes. Cointegration analysis was applied to the study using the EG two-step approach for two-variable analysis and the JJ procedure for multiple variables. The empirical results of the EG two-step approach showed that the long-tem cointegration relationships only exist between SZSE manufacturing index and exchange rates as well as interest rates. However, a large degree of unstability did exist over the short run. The similar situation was also applicable for the JJ procedure for multiple variables, and finally the Granger causality further proved the weak correlation between the SZSE index change and macro-economic movements. As the viewpoints which have been discussed in previous literatures, macro-economic activity is still not the barometer of stock market volatility in the SZSE case.

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Appendix:

Table AI: ADF unit root test results of all variables

Variables	ADF t-statistic (trend and intercept)	Critical value at 1% (trend and intercept)	Critical value at 5% (trend and intercept)	ADF t-statistic (intercept)	Critical value at 1% (intercept)	Critical value at 5% (intercept)	ADF t-statistic (none)	Critical value at 1% (none)	Critical value at 5% (none)	Conclusion
lnszsem	-1.762932	-4.041280	-3.450073	-0.208322	-3.489117	-2.887190	0.884543	-2.585587	-1.943688	Nonstationary
D(lnszsem)	-5.617134	-4.042819	-3.450807							Stationary
lnexchangerate	-2.124130	-4.043609	-3.451184	0.061511	-3.490772	-2.887909	-1.684467	-2.586154	-1.943768	Nonstationary
D(lnexchangerate)	-6.030953	-4.042042	-3.450436							Stationary
lninterestrate	-3.209094	-4.041280	-3.450073	-0.701800	-3.489117	-2.887190	-1.020604	-2.585587	-1.943688	Nonstationary
D(lninterestrate)	-9.733786	-4.042819	-3.450807							Stationary
lncpi	-2.318268	-4.051450	-3.454919	-2.175323	-3.496346	-2.890327	0.519166	-2.588059	-1.944039	Nonstationary
D(lncpi)	-4.684959	-4.051450	-3.454919							Stationary
lnPPI	-4.067084	-4.042042	-3.450436							Stationary
ipgr	-3.770104	-4.042042	-3.450436	-3.802131	-3.489659	-2.887425				Stationary
lnipgr	-3.770104	-4.042042	-3.450436	-3.802131	-3.489659	-2.887425				Stationary

lnm1	-1.678826	-4.051450	-3.454919	1.003620	-3.496346	-2.890327	2.037320	-2.588059	-1.944039	Nonstationary
D(lnm1)	-2.270633	-4.051450	-3.454919	-1.987536	-3.496346	-2.890327	-0.367110	-2.588059	-1.944039	Nonstationary
D(lnm1, 2)	-6.913883	-4.051450	-3.454919							Stationary
lnibwai	-2.960461	-4.041280	-3.450073	-2.961356	-3.489117	-2.887190	-1.087022	-2.585587	-1.943688	Nonstationary
D(lnibwai)	-12.21714	-4.042042	-3.450436							Stationary
lnsfer	0.269021	-4.041280	-3.450073	-2.968382	-3.489117	-2.887190	6.499474	-2.585773	-1.943714	Nonstationary
D(lnsfer)	-8.633133	-4.042042	-3.450436							Stationary

Notes: (1) Results are from EViews 7 student version.

(2) In order to keep the authenticity of the data through which the data could reflect the real economic meaning, seasonal adjustments were not applied for the variables(Liu, 2001).

Table AII: ADF unit root test results of the Residuals of the two-variable equations

Residual of the equation of each two-variable group	ADF t-statistic (trend and intercept)	Critical value at 1% (trend and intercept)	Critical value at 5% (trend and intercept)	ADF t-statistic (intercept)	Critical value at 1% (intercept)	Critical value at 5% (intercept)	ADF t-statistic (none)	Critical value at 1% (none)	Critical value at 5% (none)	Conclusion
lnszsem and lnexchangerate	-3.414679	-4.044415	-3.451568	-3.442535	-3.491345	-2.888157	-3.457210	-2.586350	-1.943796	Stationary
lnszsem and lninterestrate	-2.581012	-4.041280	-3.450073	-2.616092	-3.489117	-2.887190	-2.627372	-2.585587	-1.943688	Stationary
lnszsem and lncpi	-1.727902	-4.041280	-3.450073	-0.646619	-3.489117	-2.887190	-0.655853	-2.585587	-1.943688	Nonstationary
D(residual of lnszsem and lncpi)	-9.559505	-4.042042	-3.450436							Stationary
lnszsem and lnibwai	-1.670136	-4.041280	-3.450073	-0.181593	-3.489117	-2.887190	-0.195777	-2.585587	-1.943688	Nonstationary
D(residual of lnszsem and lnibwai)	-5.900468	-4.042819	-3.450807							Stationary
lnszsem and lnsfer	-1.965064	-4.042819	-3.450807	-1.915673	-3.490210	-2.887665	-1.920758	-2.585962	-1.943741	Nonstationary
D(residual of lnszsem and lnsfer)	-5.592707	-4.042819	-3.450807							Stationary

A Test of Initial Public Offerings (IPOs) Underpricing Performance in Malaysian Stock Exchange (MSE)

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Abstract

The main purpose of this paper was to investigate the degrees of Initial Public Offerings (IPOs) underpricing in Malaysia market. Based on 476 IPOs data collected from 2000 until 2011 in Malaysian Stock Exchange (MSE), we calculated the degrees of IPOs underpricing and determinants factors of IPOs underpricing. The effect of determinants factors were examined in this study is issues price, offer size, companies age and types of industries into degrees of IPOs underpricing. 12 dummy variables were created in types of industries. The results from descriptive statistics analysis show that, total degrees of IPOs underpricing in Malaysian Stock Exchange was 35.87% with a standard deviation was 1.1032. Estimation based on multiple linear regression analysis indicates a difference result in issues price, offer size, companies age and types of industries into degrees of IPOs underpricing. Issues price and offer size was significance at 5% significance level. Companies' age, REITs and Infrastructure Project Cos. was found to be significance at 10% level of significance. While, consumer product, construction, property, technology, trading/service, Special-Purpose Allocation Company (SPAC), finance, close-fund and plantation was founded to be insignificance (at 5% and 10% significance level). The R square was 80.7%. This result means the issues price, offer size, companies' age and types of industries can explain 80.7% variations of degrees in IPOs underpricing issues in MSE. While, the F-Value is 137.905 was indicated that this hypothesis was statistically significant between dependent variable and independent variable.

Keywords: Initial Public Offerings (IPOs), Underpricing, Determinants Factor of Underpricing and Malaysian Stock Exchange (MSE).

1 INTRODUCTION

1.1 Background

Initial Public Offerings (IPOs) underpricing is an interesting research area that has major attention by academic scholars or researchers. Most of international studies found the existing of underpricing during initial trading at stock exchange (Boulton, et.al, 2010; 2011; 2012; Banerjee, et.al, 2010; Nguema and Sentis 2006). This phenomenon was generated negative return and worse perception into IPOs companies' performance. Boulton, et. al. (2010) was examined 10783 IPOs form 37 country and found that IPOs underpricing is depend on the corporate government in each countries. Boulton, et. al. (2011) IPOs underpricing was depend into quality earnings information in each countries. Boulton, et. al. (2012) in the current research founded that the country-level institutional quality is positively correlated with the underpricing of IPOs. Benerjee, et. al., (2010) was examines the impact of country-level information asymmetry, investors' home country bias, effectiveness of contract enforcement mechanisms and accessibility of legal recourse on IPOs underpricing in 36 countries around the world founded that all the variable have significance impact into IPOs underpricing. Study from Nguema and Sentis (2006) into 33 countries around the world found that country risk is one of the determent factor of IPOs underpricing. Ariff, et. al. (2007) investigates IPOs underpricing in United Kingdom, Singapore and Malaysia found that the IPOs underpricing are strongly related with government-linked companies (GLC). Moshirian, et. al. (2010) examine the IPOs performance in Asian countries found that IPOs was underpriced which is the highest IPOs underpricing is China (202.63%). Dawson, (1987) examined IPO in three Asian country found the existing of underpricing during the initial trading.

Summarizing the findings of various studies, that was focus on IPOs underpricing in a single country. (e.g. Agathee, et. al., 2012; Darmadi and Gunawan, 2012; Islam, et. al.,2010; Samarakoon, 2010; Borges, 2007; Pande and Vaidyanathan, 2007; Chi and Padgett, 2005; Ekkayokkaya and Pengniti, 2012; Yamamoto, 2009) confirmed the existing of underpricing during the initial trading at stock exchange. However, what determined factor that was influenced IPOs underpricing were varies in each countries and still a largely unexplored question. These underpricing phenomenon's are difficult to understand because various issues were related such as companies' performance, government policy and others issues.

Thus, this paper was to examine the degrees of IPOs underpricing performance for the first day trading at MSE. This study will provide the general insight for investors regarding IPOs performance and which IPOs shares were generated high returns. As the investors, they need information to evaluate future IPOs performance in order to decide whether to buy or sell that share.

1.2 Problem Statement

The degrees of IPOs underpricing are varies in every country. Studies examining IPOs have documented the existence of underpricing in Malaysian market (Dowson, 1987; Yong and Isa, 2003; Uddin, 2008; Murugesu and Santhapparaj, 2009). IPOs underpricing refer to the situation where the offer price is below than market price. This phenomenon was generated

negative return during the initial trading. Yanthi (2005) Underpricing refer to the significance increase of the IPO market price over the first few days after the initial listing. Murugesu and Santhapparaj (2009) underpricing is referring to the situation where a private company seeking to list its shares on stock exchange prices its shares to the public at a discount relative to its true value. This situation makes investors to earn negative return if they were to sell their shares once trading commences.

IPOs underpricing are common phenomenon to most of stock market over the world. This phenomenon is inconsistency with the capital market efficiency which is to get a return during the initial trading at stock exchange. Underpricing or negative initial return phenomenon happened during initial trading at stock exchange gives worse performance into IPOs companies'. Thus, this study were investigate the determine factor that influence the degrees of IPOs underpricing in MSE.

1.3 Objective of the study

The objectives of this study are:

1. To analyze the degree of IPOs underpricing in MSE.
2. To investigate the effect of issues price into degree of IPOs underpricing in MSE.
3. To investigate the effect of offer size into degree of IPOs underpricing in MSE.
4. To investigate the effect of companies age into degree of IPOs underpricing in MSE.
5. To investigate the effect of types of industries into degree of IPOs underpricing in MSE.

1.4 Overview of IPO process in Malaysia

1.4.1 Malaysia Stock Exchange (Bursa Malaysia)

In Malaysia, the statutory body that was responsibility with investment and new listing companies at stock exchange is known as Malaysian Stock Exchange (MSE). Before changes the name on 14 April 2004, stock exchange in Malaysia is known as Kuala Lumpur Stock Exchange (KLSE) that was incorporated on 14 December 1976. MSE contains 3 boards that are Main Board, Second Board and The Malaysian Exchange of Securities Dealing and Quotation Berhad (MESDAQ). The Main Board is provided for bigger capitalized companies whilst smaller companies will seek to be listed on the Second Board. MESDAQ was provided for high growth and technology companies in order to raise capital.

MSE was provided two (2) types of securities that are *shariah*-complaint securities and non *shariah*-complaint securities. 89% of the shares listed at MSE were *shariah*-compliant securities. *Shariah*-complaint securities have two (2) indexes that are *FTSE Bursa Malaysia Emas Shariah Index* and *FTSE Bursa Malaysia Hijrah Shariah Index*. *FTSE Bursa Malaysia Emas Shariah Index* was introduced for *shariah*-complaint investment. Shares were screened according to the *Shariah* Advisory Council (SAC) in Securities Commission of Malaysia. The criteria of *FTSE Bursa Malaysia Emas Shariah Index* are not involved in these activities:

1. Financial service based on *riba* (interest)
2. Gaming and gambling
3. Manufacture or sale of non-halal product or related products
4. Conventional insurance
5. Entertainment activities that are non-permissible according to *shariah*
6. Manufacture or sale of tobacco-based products or related products
7. Stock broking or share trading on *shariah* non-complaint securities
8. Other activities deemed non-permissible according to *shariah*

FTSE Bursa Malaysia Hijrah Shariah Index was introduced for international Islamic investors. Companies in this index are screened by *Shariah* Advisory Council in Securities Commission of Malaysia and leading global *shariah* consultancy that is Yasaar Ltd. Shares in this index are not permitted to be involved in any of the following core activities:

1. Banking or any other interest-related activity, such as lender and brokerages
2. Alcohol
3. Gaming
4. Arms manufacturing
5. Life insurance
6. Pork and non-halal production
7. Packaging and processing or any other activity related to pork and non-halal food

While, non *shariah*-complaint securities are involved in all activities. For example:

1. Financial service based on *riba* (interest)
2. Gaming and gambling
3. Manufacture or sale of non-halal product or related products
4. Conventional insurance
5. Entertainment activities
6. Manufacture or sale of tobacco-based products or related products
7. Stock broking or share trading on non *shariah*-complaint securities
8. Other activities deemed non-permissible according to *shariah*

1.4.2. Securities Commissions

Securities Commission (SC) was established on 1 March 1993 under Securities Commission Act 1993. SC is a self-funding statutory body with focus on capital market regulation in Malaysia. The main role of SC is to regulate, supervise and systematically develop Malaysian's capital market.

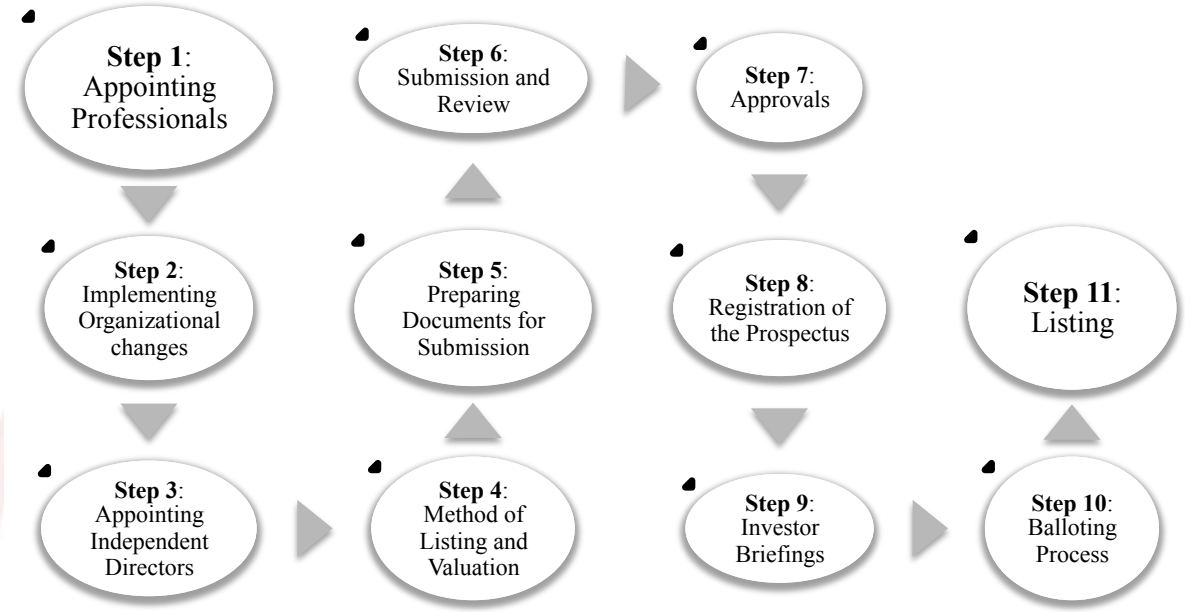
In January 1996, SC was liberalized new method of IPOs issues in Malaysian market that is market-based pricing mechanism. Market-based pricing mechanism gave total responsibilities to issuers and advisers for setting or make decision regarding IPOs price. While, the final approval from SC is still required to ensure appropriateness (How et. al., 2007; Abdul Rahim and Yong, 2010)

Securities Commission also leads the development of Malaysian Islamic capital market by establishing *Shariah* Advisory Council (SAC). The main role of *Shariah* Advisory Council is to screen or review the securities in order to fulfill *shariah* requirement for listed at MSE.

1.4.3. IPOs listing process in Malaysia

Figure 1 below show the IPOs listing process in Malaysia. The process were start at Step 1 until Step 11.

Figure 1: IPOs listing process in Malaysia



Source: Malaysian Stock Exchange (Bursa Malaysia)

Step 1: Appointing Professionals/Principal Adviser

Principal Adviser is the corporate finance adviser. They were responsible for making submission to SC for corporate proposals (Principal Adviser Guidelines, 2009). In Malaysia, Investment Bank is Principal Adviser for issuing IPOs share at MSE.

Step 2: Implementing Organizational Changes

Principal adviser will assess IPOs companies' position in view of the listing exercise such as corporate structure, composition Board of Directors, corporate governance and internal controls framework.

Step 3: Appointing Independent Directors

Under MSE's Listing Requirements, all IPOs firms should appoint independent directors. There must be at least two independent directors or one-third of the members of Board, whichever is higher.

Step 4: Method of Listing and Valuation

IPOs companies and principal adviser need to decide on a suitable equity structure and method of offering IPOs shares. They also should make valuation of IPOs companies based on past earning in order to forecast the future earnings.

Step 5: Preparing Documents for Submission

The application for listing at MSE (Prospectus) should be included with the method of listing and valuation of IPOs companies. The regulators required directors, senior management and any other relevant parties to make written declarations. The principal adviser also makes written declarations to ensure that all information is true, accurate and not misleading.

Step 6: Submission and Review

The review of the application for listing will begin after submit application document. Prospectus will go through a public exposure period on the SC website for a period 15 market days for public feedback.

Step 7: Approval

MSE will issue a letter of approval for IPOs shares. While, SC will issues a letter of approval-in-principle for the Prospectus registration.

Step 8: Registration of the Prospectus

IPOs companies must prepare to register IPOs Prospectus after receive approval (from MSE and SC) for issuing IPOs. This Prospectus should make any necessary changes and updates. Before registration IPOs Prospectus, board of director, senior management and principal adviser need to conduct a final legal verification.

Step 9: Investor Briefings

The offer period began when the prospectus is issued to public. During this time, IPOs companies needs to start briefing campaign to investors. Briefings campaigns activities can include road shows, briefings and presentations to investors by the company's directors and promoters.

Step 10: Balloting Process

Once the offer period ends, balloting of the applications will commence.

Step 11: Listing

IPOs companies will be marked by a listing ceremony at MSE and the trading of IPOs share will commerce on this day.

The timeline below (Figure 2) show an estimation of duration of IPOs listing process from beginning until listing at MSE.

Figure 2: Timeline of IPOs listing

Pre-Approval Structuring IPO & Submission **T+11 weeks**	Finalization of IPO proposal Preparation of valuation report (if required) Drafting of submission document & Prospectus
Approval Processing the application **T+21 weeks**	Public exposure of Prospectus Addressing queries from regulators Visit by regulators to the company's business premises Evaluation & approval by regulators
Post-Approval Registration of Prospectus **T+25 weeks**	Updating of prospectus Registration & lodgement of Prospectus Pre-marketing commences
IPO Prospectus Launch **T+26 weeks**	Prospectus launch Roadshow & book building exercise
LISTING **T+28 weeks**	Allocation of shares Trading commences

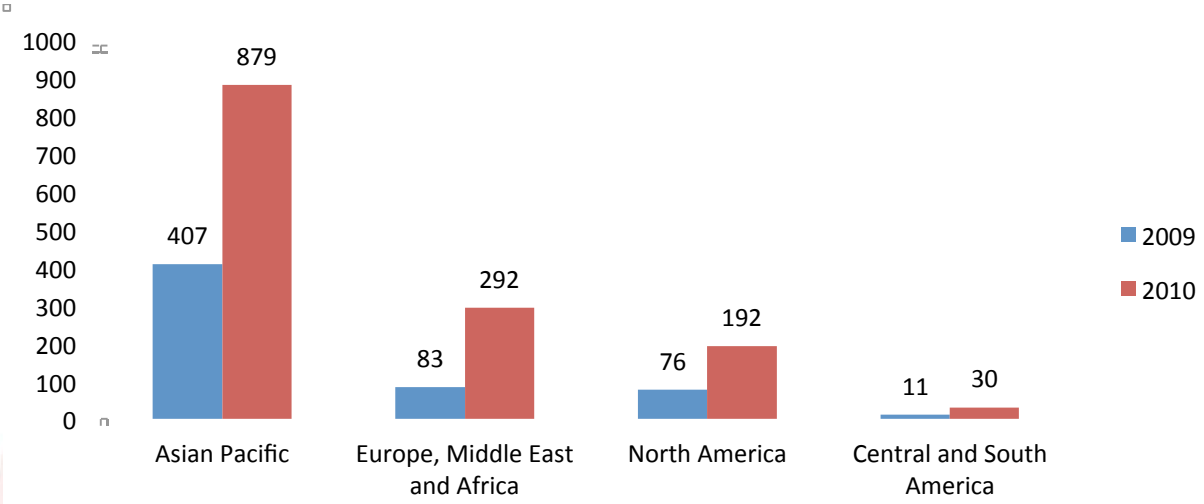
Source: Malaysian Stock Exchange (Bursa Malaysia)

1.5 IPOs over the world

Figure 3 shows the IPOs issues over the world. The graph shows the increasing of IPOs issuing from 2009 to 2010. The total IPOs issues in 2009 were 577 IPOs. While in 2010, IPOs issues were 1393 IPOs shares. Asian Pacific becomes highest IPOs issues over the world. The countries under Asian Pacific country is China, Japan, Australia, South Korea, Indonesia, Taiwan, Thailand, Malaysia, Hong Kong, Singapore, Philippines, New Zealand,

Vietnam, Myanmar, Brunei, Cambodia, Laos, Mongolia, Fiji, Solomon Islands, East Timor, Samoa and Tonga. Central and South America (such as Belize, Costa Rica, El Salvador, Guatemala and others) is the lowest countries issues IPOs. http://en.wikipedia.org

Figure 3: IPOs issues over the world

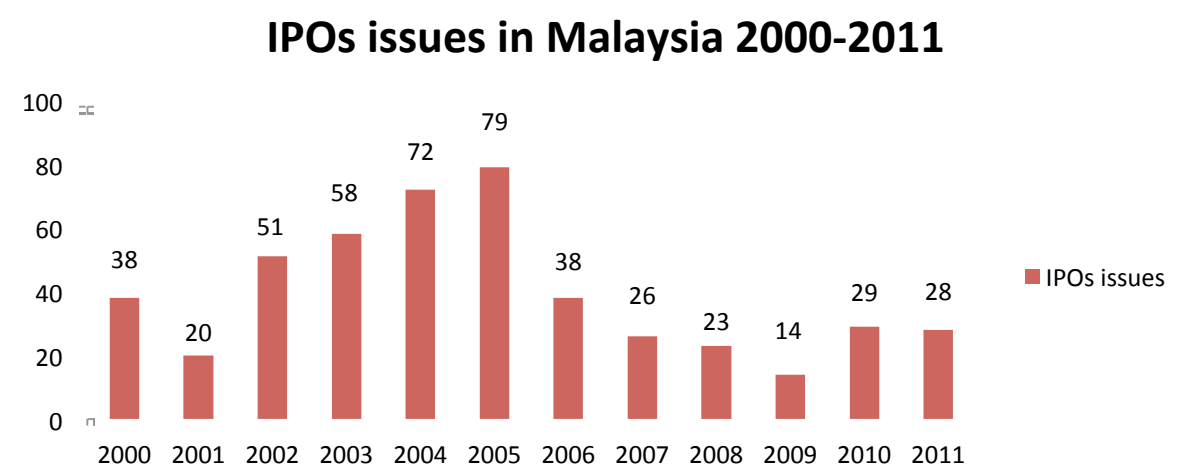


Sources: Global IPOs Trend 2011 Report

1.6 IPOs issues in Malaysia

Figure 4 show the number of IPOs issues in Malaysia since 2000 until 2011. The highest IPOs issues are in year 2005 that is 79 IPOs. While, The lowest IPOs issue is in year 2009.

Figure 4: IPOs Issues in Malaysia from 2000-2011



Source: Malaysia Stock Exchange

While, Figure 5 shows *shariah*-compliant and non *shariah*-compliant IPOs companies issues. 420 securities are *shariah*-compliant companies and 56 securities are non *shariah*-compliant IPOs companies.

Figure 5: *Shariah*-compliant and non *shariah*-compliant companies

Year	Shariah-Compliant	Non Shariah-Compliant
2000	36	2
2001	20	0
2002	48	3
2003	48	10
2004	60	12
2005	70	9
2006	35	3
2007	22	4
2008	22	1
2009	13	1
2010	23	6
2011	23	5
Total	**420**	**56**

1.7 IPOs issuing by types of industry in Malaysia

Figure 6 shows types of industry issuing IPOs in Malaysia from 2000-2011. The highest industry issues IPOs are in industrial products sector with is 134 IPOs shares (28.15%). While, the lowest industrial issues IPOs are Closed/Fund sector and Special-Purpose Allocation Company sector which is only 1 IPOs issues (0.21%).

Figure 6: Types of industry issuing IPOs in Malaysia from 2000-2011

Sector	Total (year 2000-2011)	Percentage (%)
Industrial Products	134	28.15%
Trading/Services	105	22.06%
Technology	99	20.80%
Consumer Product	73	15.34%
Property	19	3.99%
REITs	13	2.73%
Construction	11	2.31%
Plantation	9	1.89%
Finance	7	1.47%
Infrastructure Project Cos.	4	0.84%
Close/Fund	1	0.21%
SPAC	1	0.21%
TOTAL	**476**	**100.00%**

2. LITERATURE REVIEW

2.1 IPO underpricing in Malaysia

Empirical studies show that IPOs was underpriced during the initial trading in Malaysia. The significant study that attempts to measure IPO underpricing performance in Malaysia based on initial return is Dowson, (1987). IPOs data collected from 1978-1984 show that IPOs in Malaysia was underpriced (offering price compared with closing price on the first day trading) at 166.7% compare with Hong Kong 13.8% and Singapore 39.4%. While, Young and Isa, (2003) found the average initial return (offer price to open price) is 94.91% over the entire January 1990 – December 1998 period. Murugesu and Santhapparaj (2009) found that IPO was underpriced (closing price and offering price was deflated by Net Asset Value) at 81% from 1999-2004.

The study from Prasad, et. al. (2006) regarding the short-run and long-run performance in Malaysian IPOs was founded that Malaysian IPOs are highly underpricing compared to IPOs in developing countries. The data consist of the IPOs of various firms that went public for first time during the period 1968-1992. This study was investigating the impact of IPOs policy that was implementing since 1976 in Malaysia. The policy is at least 30% of an new shares on an IPO offer be sold to the indigenous Bumiputra population or to mutual funds owned by them. The result show that, the average of IPOs underpricing is 61% during the period after the regulatory economic policy was instituted.

Uddin, M.H. (2008) found that the average listing time lag for Malaysian IPOs is 115 day and average intended underpricing in Malaysia is 68.81%. This study was used data from January 1990 until December 2000.

2.2 IPOs underpricing in other countries

Darmadi and Gunawan (2012) examine the relationship between board structure and ownership into IPOs underpricing in Indonesia for a period 2003 until 2011. The data comprise 101 companies. This study found that the board independence is significantly related into the level of underpricing. This study also provides evidence that the level of underpricing is negatively associated with board size and institutional ownership. This factor indicating that governance play important role in mitigating information asymmetry between issuer and potential investors.

Boulton, *et. al*. (2011) examines the impact of country-level earnings quality on IPOs underpricing for 10,783 IPOs from 37 countries. They found that, IPOs are underpriced less in countries where public firms, produce higher quality earnings information.

Sahoo and Rajib (2011) found that the risk and uncertainty surrounding IPOs have significant impact on underpricing by using a sample of 171 IPOs issued in India during a period from year 2002 until 2007.

Mahmood, *et. al.* (2011) was examined the IPO underpricing and aftermarket performance for two time window of crises in Chinese stock market. Firstly, during the time period of Asian financial crisis (1997-1999) and the second is prevailing global economic crisis (2007-

2009). Samples of 626 companies and market adjusted return model are used. Result indicates that in the recent global economic crisis IPO activity is on shrinking trend and there is 10% increase in average underpricing as compare to last Asian financial crisis. There is a fluctuating trend in aftermarket performance of IPO returns. A minimum return of 62% in 2009 is observed.

Moshirian, et. al. (2010) study the post-issues stock price performance of IPOs from advanced and emerging Asian market from 1991 to 2004. The results show the existing of initial underpricing in Asian IPOs.

Boulton, et. al. (2010) studies how differences in country-level governance affect the underpricing of initial public offerings (IPOs). Examining 4462 IPOs across 29 countries from 2000 to 2004, this study found the surprising result that underpricing is higher in countries with corporate governance that strengthens the position of investors' relative insiders.

Zhang and King (2008) found the underpricing ration is 0.873 for the stock listed on Chinese stock exchange and 0.613 for the stock cross-listed on NASDAQ. Underpricing is less pronounced for firms cross-listed on Singapore exchange which is 0.165. For Hong Kong and NYSE the underpricing ratio is -0.053 and -0.138 that indicate overpriced.

Borge (2007) examines the IPO underpricing phenomenon in Portugal. In the period 1988-2004, founded that IPO was underpriced averaged at 11.1%.

Study from Chi and Padgett (2005) on 668 new issues in Shanghai and Shenzhen Stock Exchanges from 1 January 1996 to 31 December 2000 found that the average market-adjusted initial return on the 1st, 5th, 10th and 20th trading days are 129.16, 126.93, 126.93 and 124.95 percentage. Using a cross-sectional analysis to explain the extraordinarily severe underpricing of Chinese IPOs, found that IPO underpricing is primarily explained by the high demand caused by the quota system and the high proportion of uniformed individual investors. Estimation results show that the Information Asymmetry Hypothesis explains the underpricing in the Chinese IPO market well, while the Signaling Hypothesis does not.

Chan, K., Wang, J. and Wei, K.C.J. (2004) investigates the underpricing and long-term performance of 570 A-share IPOs issued in China between January 1993 and December 1998 and 39 B-share IPOs issued between January 1995 and December 1998. This study found that there is a huge underpricing of A-share IPOs, as the average return of the A-share IPO on the first trading day is 178%. In contrast, the underpricing for B-share IPOs is much smaller, with an average return of only 11.6% on the first trading day.

Figure 7: Summarizing of IPOs underpricing over the world

No.	Countries	Period of Study	IPOs underpricing	Authors
1	Bangladesh	1995-2005	480.72%	Islam, Ali and Ahmad (2010)
2	China	1996-2000	129.16%	Chi and Padgett (2005)
3	Japan	2001-2006	60.21%	Uzaki (2009)
4	Sri Lanka	1987-2008	34%	Samarakoon (2010)
5	Thailand	1990-2007	22.99%	Ekkayokkaya and Pengniti (2011)
6	India	2004-2006	22.62%	Pande and Vaidyanathan (2007)
7	Indonesia	2003-2011	22.2%	Darmadi and Gunawan (2012)
8	Singapore	1993-2005	16.5%	Zhang, C. and King, T.H.D. (2008)
9	Mauritius	1989-2010	13.14%	Agathee, Sannasse and Brooks (2012)
10	Portugal	1988-2004	11.1%	Borges (2007)

3. RESEARCH METHODOLOGY

3.1 Sample

The data used in this study is comprises of 476 IPOs issues in MSE from 2000-2011. All the IPOs data gathered from: Malaysian Stock Exchange, Prospectus, ISI Emerging Market website and listed company website.

This study includes IPOs issues in all types of industry such as consumer product, construction, property, industry product, technology, trading/service, Special-Purpose Acquisition Company (SPAC), plantation, closed/fund, finance and Real Estate Investment Trusts (REITs).

3.2 Data Analysis

To analyze degree of IPOs underpricing in first day trading at MSE, this study was calculated initial return (underpricing) using this formula:

$$UP_i = \frac{CP_i - OF_i}{OF_i}$$

Where,

UP_i: underpricing in firm i

CP_i: closing price in firm i

OF_i: offering price in firm i

Therefore the hypotheses are proposed:

H_0: There are no relationship between issues price, offer size, companies' age and difference industry into degrees of IPOs underpricing.

H_1: There is significant effect between issues price and degrees of IPOs underpricing.

H_2: There is significant effect between offer size and degrees of IPOs underpricing.

H_3: There is significant effect between companies' age and degree of IPOs underpricing.

H_4: Difference types of industry is significant effect into degrees of IPOs underpricing

Multiple regressions were employed to find whether issues price, offer size, companies age and industry significantly affect the degrees of IPOs underpricing in Malaysia market. The model is described below:

$$\boldsymbol{UP = \alpha + \beta_1(IP) + \beta_2(OS) + \beta_3(CA) + \beta_4(IND) + \varepsilon}$$

Where,

UP: Underpricing.

IP: Issues price is refer to the offer price per share (retail).

OS: Offer size was represented by the number of shares issued under the offer for sales multiplied by par value per share.

CA: Companies' age was computed from the date (year) of incorporation to the date (year) of IPOs listed at Malaysian Stock Exchange.

IND: Types of industry is all the industries listed at Malaysian Stock Exchange.

ε: Other factors

4. RESULT

4.1 Degrees of underpricing

Tables 1 show degree of underpricing in MSE for period 2000 until 2011. The overall degree of underpricing was 35.87% with a standard deviation of 1.10323. Table 2 shows the IPO underpricing yearly. The highest IPOs underpricing was recorded in year 2000 with average mean 2.1487 and the lowest IPOs underpricing was recorded in year 2004 with average mean

0.0929. The table also shows in year 2005 and 2006, IPOs were overpriced with average mean -0.1806 and -0.2296. Table 3 was explained the degrees of underpricing for *shariah*-complaint securities (38.16%) and non *shariah*-complaint securities (18.7%).

Table 1: Descriptive Statistic

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
underpricing	476	-.88	6.55	.3587	1.10323
Valid N (listwise)	476				

Table 2: IPOs underpricing (yearly)

Year	No. of Companies	Mean Underpricing	Minimum	Maximum	Standard Deviation
2000	38	2.1487	0.31	6.5	1.14675
2001	20	1.1525	0.2	2.92	0.82728
2002	51	0.6405	-0.88	4.15	0.84267
2003	58	0.3146	-0.78	3.76	0.86397
2004	72	0.0929	-0.79	2.66	0.73642
2005	79	-0.1806	-0.79	2.7	0.55542
2006	38	-0.2296	-0.79	1	0.42679
2007	26	0.6131	-0.72	3.92	1.16905
2008	23	0.1361	-0.74	6.44	1.52461
2009	14	0.175	-0.53	4.42	1.2639
2010	29	0.2324	-0.75	4.31	1.24069
2011	28	0.1129	-0.78	3.89	1.13467

Table 3: *Shariah*-Compliant Securities and Non *Shariah*-Compliant Securities

Securities	No. of Company	Underpricing
Shariah-Compliant Securities	420	38.16%
Non *Shariah*-Compliant Securities	56	18.7%

Table 4 shows the result of R square. The R square was 80.7%. This means that issues price, offer size company age and industry can explain 80.7% variations of degree of IPOs underpricing. This indicates that there are other factors that may explain 19.3% variations of degrees in IPOs underpricing. The Durbin-Watson result was 1.214 that is within acceptance range. Table 5 shows the ANOVA result. The F-value is 137.905 was indicated that this hypothesis was statistically significant between dependent variable and independent variable.

Table 4: Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.898[a]	.807	.801	.49166	.807	137.905	14	461	.000	1.214

a. Predictors: (Constant), plantation, closed_fund, SPAC, IPS, finance, construction, REITs, property, consumer_product, issues_price, company_age, trading_service, offer_size, technology

b. Dependent Variable: underpricing

Table 5: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	466.695	14	33.335	137.905	.000[b]
	Residual	111.436	461	.242		
	Total	578.131	475			

a. Dependent Variable: underpricing

b. Predictors: (Constant), plantation, closed_fund, SPAC, IPS, finance, construction, REITs, property, consumer_product, issues_price, company_age, trading_service, offer_size, technology

Table 6: Regression Analysis Result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-.882	.056		-15.747	.000	-.992	-.772
	issues_price	1.214	.031	.926	39.230	.000	1.153	1.275
	offer_size	-3.366E-009	.000	-.085	-3.690	.000	.000	.000
	company_age	-.006	.003	-.043	-1.921	.055	-.013	.000
	consumer_product	.055	.072	.018	.765	.445	-.086	.196
	construction	.001	.154	.000	.007	.994	-.302	.304
	property	-.159	.122	-.028	-1.297	.195	-.399	.082
	technology	-.031	.068	-.011	-.459	.646	-.165	.102
	trading_service	.010	.064	.004	.156	.876	-.116	.136
	SPAC	-.321	.494	-.013	-.650	.516	-1.291	.649
	REITs	-.258	.144	-.038	-1.793	.074	-.541	.025
	finance	.107	.197	.012	.543	.587	-.280	.494
	closed_fund	-.315	.494	-.013	-.639	.523	-1.286	.655
	IPS	-.455	.255	-.038	-1.786	.075	-.956	.046
	plantation	.022	.177	.003	.125	.900	-.326	.370

a. Dependent Variable: underpricing

4.2 Determents factors of underpricing

Multiple regressions analysis was used to find whether issues price, offer size, company age and industry have any significance effect on the degrees of IPOs underpricing.

Table 6 present the result of regression analysis for companies listed at Malaysian Stock Exchange from 2000-2011. Estimation based on the multiple regression analysis indicated that issues price and offer size were founded to be significance (5% level of significance). Then, Company age, REITs and Infrastructure Project Cos. were founded to be significance (10% level of significance). While, consumer product, construction, property, technology, trading/service, Special-Purpose Allocation Company, finance, closed/fund and plantation were founded to be insignificance (5% and 10% level of significance).

Table 7 show the IPOs was overpriced for issues price below than RM1.00 that is 34.40%. However, IPOs were high underpriced for issues price over that RM1.00 that is 119.74%.

Table 7: Issues price below than RM1.00 and over than RM1.00

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
underpricing	259	-.88	.65	-.3440	.29237
Valid N (listwise)	259				

Issues price: Below RM1.00

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
underpricing	217	-.22	6.55	1.1974	1.12947
Valid N (listwise)	217				

Issues price: Over than RM1.00

Table 8 shows the result for offer size. IPOs was underpriced for offer size below than RM100,000,000 that is 33.56%, while IPOs was high underpricing for offer size more than RM100,000,000 that is 190.50%. (Show Table 7)

Table 8: Offer size below than RM100, 000,000 and above than RM100, 000,000

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
underpricing	469	-.88	6.55	.3356	1.07380
Valid N (listwise)	469				

Offer size: Below RM100, 000,000

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
underpricing	7	-.53	4.42	1.9050	1.89368
Valid N (listwise)	7				

Offer size: Over than RM100, 000,000

Table 9 show that the company age more than 10 year are more underpricing that is 59.20% compare with company age less than 10 year. The underpricing is 30.65%

Table 9: Company age below than 10 years and over than 10 year

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
underpricing	389	-.88	6.50	.3065	1.08168
Valid N (listwise)	389				

Company age: Below than 10 years

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
underpricing	87	-.78	6.55	.5920	1.17318
Valid N (listwise)	87				

Company age: Over than 10 years

4.3 Types of industry

Table 10 shows IPOs issues in difference type of industry from 2000 until 2011. The highest number of industry that was listed at MSE was Industrial Product sector. There were 134 companies listed during the period of study. The second highest number of IPOs companies listed was trading/service. There were 105 companies listed. While, the lowest of companies issuing IPOs were Special-Purpose Allocation Company (SPAC) sector and closed/fund

sector. The company under SPAC sector is Hibiscus Petroleum Berhad that is the first fully-fledged oil and gas exploration and production (E&P) entity in Malaysia market. Company under Closed/Fund sector is Icapital Biz Berhad which is the first independent investment adviser in Malaysia. The results show that IPOs was high underpricing in Infrastructure Project Cos. While, in technology and Special-Purpose Allocation Company sector show that the IPOs was overpriced with is 34.50% and 47.00%.

Table 10: IPOs underpricing by types of industry.

Sector	No. of Companies	Mean Underpricing	Minimum	Maximum	Standard Deviation
Industrial Product	134	0.4615	-0.79	6.5	1.10388
Trading/Service	105	0.57	-0.76	6.55	1.40456
Technology	99	-0.345	-0.78	2.96	0.47956
Consumer Product	73	0.6618	-0.72	3.89	1.09192
Property	19	0.4947	-0.53	2.38	0.73004
Real Estate Investment Trusts	13	0.0665	-0.12	0.68	0.19915
Construction	11	0.6614	-0.25	1.66	0.54458
Plantation	9	1.0289	0.08	2.2	0.7332
Finance	7	0.7393	-0.88	2.7	1.39353
Infrastructure Project Cos.	4	0.7638	-0.5	1.43	0.89846
Special Purpose Allocation Company	1	-0.47	-0.47	-0.47	-
Close/Fund	1	0.01	0.01	0.01	-

The regression analysis also shows that, industrial product was excluded from this variable because no significance effect into IPOs underpricing. (Table 11)

Table 11: Excluded variable.

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	industrial_product	.[b]	.	.	.	.000

a. Dependent Variable: underpricing

b. Predictors in the Model: (Constant), plantation, closed_fund, SPAC, IPS, finance, construction, REITs, property, consumer_product, issues_price, company_age, trading_service, offer_size, technology

5. CONCLUSION AND FUTHER RESEARCH

Using a sample of IPOs listed on MSE from 2000-2011, this study was investigate the degree of IPOs underpricing. This research found that the average IPOs underpricing (closing price to offering price) is 35.87%. This amount is lower than the amount reported by Dawson (1987) is 166.7%, Young (2003) is 94.91%. While, Murugesu and Santhanpparaj (2009) documented IPOs underpricing (closing market compared to offer price) at MSE was 81% for the period 1999 until 2004.

There are a few conclusions that can be made regarding the degrees of IPOs underpricing in Malaysia market. Firstly, overall degrees of IPOs underpricing from year 2000 until 2011 is 35.87%. Secondly, the R square was 80.7%. Thirdly, estimation based on the multiple regression analysis show that issues price and offer size has significance (5% level of significance) effect into degrees of IPOs underpricing. Company age, REITs and Infrastructure Project Cost was significance (10% level of significance) effect into degrees of IPOs underpricing. While, consumer product, construction, property, technology, trading/service, Special-Purpose Allocation Company, Finance, Close/Fund and Plantation was founded to be insignificance (at 5% or 10% level of significance).

Although, this study was contributes to understand the overall of IPOs underpricing in Malaysia market with limited to investigate the companies' performance effect into degrees of IPOs underpricing. The companies' performances were investigating in this study is issues price, offer size, company age and types of industry. Moreover, further research should seek enlarge determine factor were influence the degrees of IPOs underpricing. Besides that, the research should make comparison methods use by company for issues IPOs. In MSE have two (2) methods for issues IPOs that is *shariah*-complaint method and conventional method. 89% of IPOs issues in MSE were *shariah*-compliant companies. This data show, most of companies were interested to issues IPOs in *shariah*-complaint board. The further research should be more specific into *shariah*-compliant companies in order to measure the degrees of IPOs underpricing. The research also should include the role of authorities' body in Malaysian capital market such as government, underwriter (investment bank) or Securities Commission of Malaysia effect into IPOs in short-term and long-term performance in Malaysia market.

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The Relationship Between Innovation and Firm Performance: Evidence from Malaysian Manufacturing Firms

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0038

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Abstract

The relationship between innovation and firm performance has been well studied in the context of developed countries but very few studies on this topic have been undertaken for developing countries. The paper empirically examines the relationship between innovation and firm performance in a developing country, namely, Malaysia. The study utilised firm-level data collected from the Malaysian National Survey of Innovation. The empirical model is a multi-structural equation model linking innovation investment, innovation performance and firm performance. The main findings are as follows. Innovation is an important determinant of firm performance. Successful product innovations enhance firm performance and higher investment leads to better performance in innovation activity. In addition, some notable findings emerge. Firm size shows differential effects on innovation input and innovation output. The nature of in-house innovation activity and government non-financial support affect firms' innovation investment. Knowledge interaction affect firm performance in innovation activity and the effect depends on the type of knowledge interaction. The paper concludes with a discussion of these findings for enhancing firm performance in innovation activity.

JEL classification: L60; O32
Keywords : Developing Countries; Innovation; Manufacturing; Productivity.

1. INTRODUCTION

The relationship between innovation and economic performance has long been a topic of research interest in economics. Today, there are a large number of firm-level empirical studies on research and development (R&D), innovation and technology. Within the literature, the majority of firm-level empirical analyses based on the experience of developed countries suggests that innovation plays a significant role in firm performance (for example, Crepon et al., 1998, Loof and Heshmati, 2002, 2006; Janz et al., 2004; OECD, 2009). These studies noted that successful product innovations enhance firm performance and that higher innovation investment leads to better performance in innovation activity. Related studies based on the experience of developing countries have been scarce, although several studies have been carried out in Argentina (Chudnovsky et al., 2006), China (Jefferson et al., 2006), Brazil (Goedhuy, 2007), Bulgaria (Stoevsky, 2005), Chile (Benavente, 2006), Estonia (Masso and Vather, 2008) and Russia (Roud, 2007). The present paper adds to the firm-level empirical literature on the relationship between innovation and firm performance in developing countries, particularly Malaysia.

Given the importance of the manufacturing sector in Malaysia – it accounts for about 30 percent of the country's GDP and 80 percent of its exports – there has been significant interest amongst policymakers and scholars in understanding the impact of innovation in the sector. Most of the existing firm-level studies on innovation in Malaysia have focused on the obstacles to innovation (Ong, 2001; Lim and Nagaraj, 2011) and the determinants of innovation (Lee, 2004; Lee and Lee, 2007). This paper extends the existing firm-level literature by providing an empirical analysis of the impact of innovation on firm performance for Malaysian manufacturing firms. More specifically, it extends previous related local works by addressing the following four issues: a) how does innovation investment affect innovation performance? b) how do successful innovations affect the economic performance of firms? c) how do the nature of in-house innovation activities and government support and incentives affect firms' investment in innovation activity? and d) how does knowledge interaction affect a firm's performance in innovation activity? The paper is important for at least three reasons. First, it contributes to the firm-level empirical literature on the relationship between innovation and firm performance in developing countries where the innovation environment may be different from that in a developed country. Second, it extends previous studies on the determinants of innovation and on the relationship between innovation and firm performance in the Malaysian manufacturing sector. Third, it also provides insights into the possible direction of innovation policies regarding innovation investment, in-house innovation activities, government support and incentives for innovation and knowledge interaction among various actors.

The paper is organized as follows. Section 2 presents and discusses the empirical model and specifications used in this study. Section 3 describes the data used for the analysis, as well as presenting the descriptive statistics of the firms in the sample data, the econometric results on the determinants of innovation and the impact of innovation on firm performance. Section 4 concludes.

2. THE EMPIRICAL MODEL AND IMPLEMENTATION

In establishing the relationship between innovation and firm performance, some firm-level innovation literature examines this relationship within a production function setting, that is, using the output production function framework to describe the relationship between factor inputs of production and outputs within a given production function. Innovations are investments in knowledge capital. The production function describes the physical relationship between various inputs and outputs in a given production system. With a given level of the stock of knowledge, the output production function is generally presented as follows,

$$Q = K\, f(X) \quad (1)$$

where Q is the measure of output, K is the stock of knowledge and **X** is the vector of standard inputs, assuming that Equation (1) is a Cobb-Douglas production function. In the standard Cobb-Douglas production function, the variation of output (Q) is explained by a number of standard inputs (**X)**, and the additional input, stock of knowledge (K), given by the following equation:

$$\log Q = \alpha + \beta_j \log X_j + \beta_k \log K + \varepsilon \quad (2)$$

where Q is the measure of output at the firm, industry or national level, **X** is a vector of standard inputs such as labour and physical capital inputs, K is a measure for the stock of knowledge, α represent systematic changes in productivity, β_j is the elasticity of output with respect to a vector of inputs, β_k is the elasticity of output with respect to changes in the stock of knowledge, and ε is the random error. The stock of knowledge (K) is often measured by using the input side of an innovation process, such as R&D expenditure or number of employees engaged in R&D activities. The limitation of this standard Cobb-Douglas production function is that it explains the variations of output with the R&D input. During the innovation process, not all innovation inputs will be successfully transformed into innovation outputs. Following this, the estimation of Equation (2) is likely to be subjected to bias, if one were to measure the stock of knowledge using the input side of the innovation process, since not all innovation input will be transformed into innovation output. It neglects the link between the innovation input and output. Crepon et al. (1998) argued that it was the innovation output, rather than the innovation input, that would influence the economic performance of the firm. Firms invest in innovation activity to develop innovation, which will influence their innovation performance and hence contribute to their productivity and economic performance. A number of firm-level innovation studies that evaluate the impact of innovation on firm performance have been based on the empirical model developed by Crepon et al. (1998) (which is often referred to as the CDM model) and its variants (for example, Loof and Heshmati, 2002, 2006; Janz et al., 2004; OECD, 2009). Most empirical studies that are based on firm-level innovation data have adopted the CDM model and its modified versions to examine the impact of innovation on firm performance. The application of the original CDM model is preferred when longitudinal panel data are available. Since this study is based on a single cross section of data, a modified CDM model introduced by Loof and Heshmati (2002), is chosen to estimate the impact of successful innovations on firm performance for Malaysian manufacturing firms.

The empirical model comprises three functional relationships – innovation investment (or innovation input), innovation output (or innovation performance) and firm performance. These are represented in four equations – the innovation investment participation equation, the innovation input equation, the innovation output equation and the firm performance

equation. In the model, the impact of innovation on a firm's performance is accounted for through innovation output. Conceptually, a firm invests in an innovation activity in order to develop innovations, which in turn may contribute to its total sales and hence affect the economic performance of the firm. However, not all innovation input will be successfully transformed into innovation output. Furthermore, not all firms are equally efficient in turning innovation input into innovation output. Firms may have different ways of innovating. Some may rely on internal research while others may emphasize external sources of knowledge.

<< insert Figure 1>>

Figure 1 provides an illustration of the links between innovation input, innovation output and firm performance. A firm must first make the decision to invest in innovation activity. Having decided to invest, the firm will need to determine the amount of resources to be allocated to innovation activities. There are two reasons for differentiating the two types of innovation decision. The first reason for considering the two decisions separately is empirical. Innovation activities are observed to be conditional on firms' decisions to engage in innovative activities. The second reason is that the policy impact may differ substantially between the two phases of the innovation process. Mohnen and Roller's (2005) results suggest that the probability of a firm undertaking innovation and the amount of innovation inputs required are both subject to different constraints, implying that the impact of policies might be different for the amount of innovation inputs as compared to the likelihood of engaging and investing in innovation activity. In the next step, the innovation output is determined by the innovation input and other determinants. Finally, together with other standard inputs such as labour and capital, the innovation outputs are related to an indicator of the firm's performance. These functional relationships are discussed in greater detail below.

The innovation input functional relationship of the empirical model deals with the innovation input decision. The innovation input decision involves a two-stage decision making process. In the first stage, the firm has to decide whether or not to engage and formally invest in the innovation activity. This first decision is formulated as the *innovation investment participation equation*, or the selection equation, as given by Equation (3).

$$\text{PARTICIPATION}_i^* = \beta^0 X_i^0 + \varepsilon_i^0 \quad (3)$$

where PARTICIPATION_i^* is a latent investment decision variable for firm *i* representing the decision to engage and invest in the innovation activity (with an observable counterpart PARTICIPATION_i, representing the investment participation decision and taking the value of 1 when firm *i* has decided to engage and formally invest in an innovation activity, and a value of 0 otherwise). X_i^0 is a vector of the explanatory variables that explain the decision to engage and formally invest, β^0 is a vector of unknown parameters to be estimated and ε_i^0 is the random error term with mean zero, constant variance and no correlation with the explanatory variables.

In the second stage, conditional on a firm's decision to engage and invest in innovation activities, the firm will decide the amount of resources to be invested in innovation activities, or the innovation input. The observed positive amount of innovation input could be due to some underlying innovation investment decision process of the firm based on the expected present value of profit generated from innovation (Crepon et al., 1998). This indicates that the innovation input can be observed only after the decision on whether or not to formally invest

in the innovation activity is made. This decision is formulated as the *innovation input equation*, Equation (4). It defines the amount of investment allocated for the innovation activity and can be specified as follows,

$$\text{INPUT}_i^* = \beta^1 X_i^1 + \varepsilon_i^1 \qquad \text{if PARTICIPATION}_i^* > 0 \qquad (4)$$

where INPUT_i^* is the latent innovation input for firm *i* (with an observable counterpart INPUT_i representing the observed level of innovation input for firm *i*), X_i^1 is the vector of explanatory variables that explain the innovation input, β^1 is the vector of unknown parameters to be estimated and ε_i^1 is the random error term with mean zero, constant variance and no correlation with the explanatory variables. Both error terms ε_i^0 and ε_i^1 are assumed to follow the bivariate normal distribution,

$$(\varepsilon_i^0 \text{ and } \varepsilon_i^1) \sim N\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho\sigma \\ \rho\sigma & \sigma^2 \end{pmatrix}\right)$$

where σ is the standard error of ε_i^1, the standard error of ε_i^0 is normalized to be 1 since Equation (3) is modelled as a probit model (only the sign of $\beta^0 X^0 + \varepsilon_i^0$ is observed), and ρ is the correlation coefficient between error terms.[1]

Given that the firm has decided on the amount of innovation input, Equation 5 or the innovation output equation provides a link between innovation output and innovation input as well as other determinants of innovation output.

$$\text{OUTPUT}_i = \boldsymbol{\beta}^2 \mathbf{X}_i^2 + \beta^k \text{INPUT}_i + \varepsilon_i^2 \qquad \text{if PARTICIPATION}_i^* > 0 \qquad (5)$$

where OUTPUT_i is the innovation output for firm *i*, β^2 is a vector of unknown parameters to be estimated, INPUT_i is the innovation input for firm *i*, X_i^2 is a vector of explanatory variables explaining the innovation output, β^k is the unknown parameter to be estimated associated with innovation input and ε_i^2 is the random error term and not correlated with the explanatory variables.

Performance Functional Relationship

The performance functional relationship describes the relationship between innovation output and firm performance. It is formulated as follows,

$$\text{PERFORMANCE}_i = \beta^3 X_i^3 + \beta^t \text{OUTPUT}_i + \varepsilon_i^3 \quad \text{if PARTICIPATION}_i^* > 0 \quad (6)$$

[1] If the error terms of both innovation investment participation and the innovation input equations are not correlated ($\rho=0$), then the OLS estimation of the uncorrected innovation input equation that excludes the inverse Mills ratio variable using the selected sample will generate consistent estimates of β^1. If both error terms are correlated ($\rho\neq0$), the OLS estimation of the uncorrected innovation input equation that excludes the inverse Mills ratio variable will generate a biased estimator of β^1 (Ameiya, 1984). In this case, the OLS estimation should be based on the corrected innovation input equation that accounts for the potential selection bias.

where $PERFORMANCE_i$ is an indicator of firm *i*'s performance, $OUTPUT_i$ is the innovation output for firm *i*, β^t is the unknown parameter to be estimated with respect to the innovation output, β^3 is the vector of unknown parameters to be estimated, X_i^3 is the vector of explanatory variables explaining firm performance, and ε_i^3 is the random error term and not correlated with the explanatory variables. Both error terms ε_i^2 and ε_i^3 are correlated.
The empirical model is expressed as follows:

$$PARTICIPATION_i = \beta^0_{0i} + \beta^0_{1i} SIZE_i + \beta^0_{2i} AGE_i + \beta^0_{3i} EXPORT_i + \beta^0_{4i} FOREIGN_i + \beta^0_{5i} GROUP_i + \beta^0_{6i} LIABILITIES_i + \varepsilon^0_i$$

$$INPUT_i = \beta^1_{0i} + \beta^1_{1i} SIZE_i + \beta^1_{2i} EXPORT_i + \beta^1_{3i} FOREIGN_i + \beta^1_{4i} GROUP_i + \beta^1_{5i} PROCESS_i + \beta^1_{6i} CON\_R\&D_i + \beta^1_{7i} FINANCIAL_i + \beta^1_{8i} NON\text{-}FINANCIAL_i + + \beta^1_{10i} MILLS_i + \varepsilon^1_i$$

$$OUTPUT_i = \beta^2_{0i} + \beta^2_{1i} INPUT_i + \beta^2_{2i} SIZE_i + \beta^2_{3i} EXPORT_i + \beta^2_{4i} FOREIGN_i + \beta^2_{5i} GROUP_i + \beta^2_{6i} SO\_GROUP_i + \beta^2_{7i} SO\_MARKET_i + \beta^2_{8i} SO\_GENERAL_i + \beta^2_{9i} SO\_INSTITUTION_i + \beta^2_{10i} COOP\_NATIONAL + \beta^2_{11i} COOP\_GLOBAL_i + \beta^2_{14i} MILLS_i + \varepsilon^2_i$$

$$PERFORMANCE_i = \beta^3_{0i} + \beta^3_{1i} OUTPUT_i + \beta^3_{2i} PROCESS_i + \beta^3_{3i} SIZE_i + \beta^3_{4i} PHYCAPITAL_i + \beta^3_{5i} EXPORT_i + \beta^3_{6i} FOREIGN_i + \beta^3_{7i} GROUP_i + \varepsilon^3_i$$

Eleven industry dummies are included as independent variables in all these four equations to control industry heterogeneities. The empirical model has accounted for the possibility of selection bias in both the innovation input and innovation output equations, but not in the firm performance equation. This assumes that there is no direct impact of innovation input on firm performance (Loof and Heshmati, 2006). The underlying argument is that it is the innovation output, and not the innovation input, that explains the variations in firm performance. Following this, the inverse Mills ratio variable is not included in the performance equation.[2] Nevertheless, the performance equation has accounted for the indirect effect of innovation input on firm performance through the predicted innovation output. Although both the innovation input and innovation output functional relationships are modelled separately in this study, the empirical model still accounts for limited correlations among the error terms between the two functional relationships through the inverse Mills ratio variable which was constructed from the first part, and included in the second part of the model (Loof and Heshmati, 2003). The definition and measurement of each variable is presented in Table 1.

<< insert Table 1>>

[2] If one assumes that innovation input has a direct impact on performance, then the inverse Mills ratio should be included as an independent variable in the performance equation (Janz et al., 2004).

Model estimation is undertaken in two parts. In the first part, the innovation investment participation and innovation input equations are estimated by a Heckman two-step estimation procedure, using the observations for all firms, regardless of their innovation status. The computed inverse Mills ratio is incorporated as an explanatory variable in the innovation input and innovation output equations to correct potential selection bias. In the second step, the corrected innovation input equation is estimated using the ordinary least squares for the successful investment innovators. In the second part, both the innovation output and performance equations are estimated jointly in a simultaneous equation system using the observations for successful investment innovators. The computed inverse Mills ratio and the predicted value of innovation input from the first step are among the explanatory variables in the innovation output equation.

3. THE DATA

The data used for the analysis comes from the third National Surveys of Innovation (NSI-3), Malaysia. The NSI-3 was conducted to collect information on the state of innovation in the manufacturing sector in Malaysia. The methodology used in the NSI-3 is similar to those employed in the CISs undertaken in the EC countries which are set up based on the guidelines set out in the Oslo Manual (MASTIC, 2003). The NSI-3 provides a rich data source related to firms' innovation activity. The questionnaire is, however, structured in such a way that there are some filtering questions regarding innovation activity. If a firm answered affirmative to any of the filtering questions, then it was required to answer the full questionnaire. Generally, the innovating firms have more information than the non-innovating firms. For a detailed description of the survey methodology, refer to MASTIC (2003). A total of 671 observations were included for the analysis

4. EMPIRICAL RESULTS

The analysis of the relationship between innovation and firm performance is based on firms which reported both innovation input and innovation output, identified as successful investment innovators. The discussion of the results is organised into three sections, namely the determinants of innovation input, the determinants of innovation output, and the impact of innovation on firm performance.

Determinants of Innovation Input

The results for the estimation of the innovation investment participation and innovation input equations using the Heckman two-step estimation method are presented in Table 2.

<< insert Table 2>>

Innovation input, proxied by innovation expenditure per employee, is significantly determined by firm size, process innovations, continuous R&D activity and government non-financial support. Firm size has a negative impact on innovation input. The coefficient for firm size is negative and significant. The negative sign shows that the larger the size of the firm, the lower its innovation expenditure per employee. Larger firms tend to enjoy economies of scale in innovation investment as they are able to spread their investment over a larger number of employees, thus lowering innovation investment per employee. These results, however, do not seem to indicate that there is any significant relationship between the factors foreign ownership, export orientation and group membership on the one hand, and innovation input on the other. This suggests that these factors have no obvious impact on the amount of innovation investment once a firm has decided to engage in innovation activity. A plausible explanation is that, once the effect of the factor, for example, foreign ownership, and other factors on innovation investment participation are accounted for, foreign firms are no different in terms of innovation input than their domestic counterparts.

Taking into consideration the nature of innovation activity within the boundaries of the firm, the effect of the two factors namely, being engaged in process innovation and being engaged continuously in internal R&D, conformed to expectations. This suggests that the amount of innovation investment increases when the firm is engaged in process innovation and continuously engaged in internal R&D activity. This result may be due to the firm's investment in machinery and equipment associated with the implementation of a new or improved production technology, and to the presence of an in-house R&D department. It is therefore not surprising to find that these firms tend to have higher innovation input given their potential chances of success.

Government support and incentives for innovation exhibit a significant effect on firms' investment in innovation activity, but the effect depends on the type of support. The positive sign of the coefficient for government non-financial based support (such as technical consultancy services, technical support services and duty free importation of machinery or equipment), suggests that firms utilizing government non-financial support have higher innovation expenditure per employee than those that do not. In contrast, government financial-based support appears not to be a significant factor, suggesting it is not a primary concern in the firms' decisions in allocating the amount of inputs to the innovation process once the firms have decided to engage and invest in innovation activity. Such a result is at variance with other studies which have found a positive effect from government financial support on innovation input in developed countries (for example, Janz and Peters, 2002; Van Leeuwen, 2002). The lack of a statistically significant effect of government financial support may be due to the greater proportion of medium and large sized firms among the recipients of such support (Lim, 2009), as often it has been small sized firms for which a positive effect has been observed (Loof and Heshmati, 2005).

Determinants of Innovation Output

Table 3 presents the estimated coefficients and their standard errors from the innovation output and performance equations. Consistent with the findings of empirical literature in developed countries, the coefficient for innovation input is positive and statistically significant. This suggests that firms with higher innovation expenditure per employee enjoy higher innovation sales per employee. The value of the estimated coefficient for INPUT suggests that not all investment that firms undertake in innovation activity will be successfully transformed into innovation sales.

Previous empirical literature in developed countries does not reach a consensus regarding the impact of firm size on innovation output (Crepon et al., 1998; Janz and Peters, 2002; Van Leeuwen, 2002; OECD, 2009). Our result indicates that firm size has a significant positive effect on innovation output. This suggests that larger innovator firms enjoy higher innovation output than smaller ones. Larger innovators are able to appropriate innovation benefits as they have extensive marketing strategies, strengthening sales forces, and the like, that may lead to better innovation performance as compared to their smaller counterparts.

Export orientation has a significant and positive relationship on firms' innovation output. This suggests that the more a firm engages in export activities, the better it performs in innovation activity. Factors such as foreign ownership and group membership are not significant determinants of innovation output when controlling for the size of the firm, innovation input, export orientations, different types of knowledge interaction and industry sectors. This suggests that innovator firms, regardless of their foreign equity share or group membership structure, have acquired or developed similar levels of the capacity to succeed in innovation activity.

Interestingly, different types of knowledge interaction exert differential effects on innovation output. While one may expect that firms engaging in formal knowledge interaction are likely to perform better in their innovation activities, our results do not fully support this notion. The impact of formal knowledge interaction on innovation output depends on the location of cooperative partners. The positive impact of global cooperation on innovation output suggests that innovators establishing cooperation with foreign players enjoy higher innovation output than those that do not. This could be a consequence that innovators who have established cooperation with foreign players have acquired superior technology from global suppliers, parent companies and other affiliates. In contrast, innovators who establish cooperation with domestic players have lower innovation output than those that do not.

As for informal knowledge interaction, the results show that innovators that perceived institutional information sources as highly important are more successful in their innovation activity, that is, in terms of having higher innovation sales per employee. Apparently, information, such as new industrial technologies, industrial developments, foreign science and technology information, and others, provided by these public institutions has assisted firms in improving their performance in innovation activity. Such a result is at variance with the findings in the empirical literature in developed countries that institutional information has no obvious impact on innovation output (Janz and Peters, 2002; Janz et al., 2004). Somewhat surprisingly, sources of knowledge for market information have a significant and negative impact on innovation output. This is at variance with the findings in the literature in developed countries that market information has a positive impact on innovation output (Loof

and Heshmati, 2002; OECD, 2009). The inverse market information relationship indicates that innovators that find information sources from market players to be highly important have lower innovation sales per employee than those that do not. This is plausible if these firms have utilized 'outdated' information sourced from the market players (which could be due to the high degree of market and technological uncertainty), and hence one may expect this would lead to a lower innovation output when innovations are commercialized in the market. The non-significance of the coefficients for internal information sources and general information sources suggests that internal information and generally available information sources have no obvious impact on innovation output. The result is at variance with the findings of the majority of empirical literature in developed countries that internal information sources have a positive impact on innovation output (Loof and Heshmati, 2002; OECD, 2009). The lack of statistical significance could be due to the transmitted information between domestic subsidiary companies and their parents and other affiliated companies being mainly related to some other quality related issues, such as those associated with normal quality and its maintenance, rather than with the development of new or improved products or production processes.

<< insert Table 2>>

The Impact of Innovation on Firm Performance

The study found evidence that successful product innovation is a significant determinant in explaining the difference in firm performance among Malaysian manufacturing firms. The result shows that the more innovation sales gained by the firm per employee, the higher its sales per employee. This suggests that successful product innovations lead to better firm performance. The result confirms the findings of the majority of studies in developed countries (Crepon et al., 1998; Van Leeuwen, 2002; Loof and Heshmati, 2002, 2003; Janz et al., 2004; OECD, 2009).

On the contrary, process innovation is not a significant determinant of firm performance when innovation output, firm size, physical capital, group membership and industrial sectors are taken into account. This result corresponds with the findings from previous studies (Van Leeuwen, 2002; Janz et al., 2004 for Sweden; OECD, 2009). The non-significance of process innovation as a determinant of firm performance may be partly due to the fact that the impact of process innovation (for innovators engaged in both product and process innovation) has been accounted for via predicted innovation output, and very few of the sample firms cited carrying out only process innovation.

4. CONCLUSION

This paper examined the relationship between innovation and firm performance using firm-level data from the third National Survey of Innovation, Malaysia. The relationships between innovation input and innovation output, and innovation output and firm performance are analysed using a multi-equation framework based on a modified CDM model.

The main findings are as follows. Innovation is an important determinant of firm performance. Successful innovations lead to better firm performance, which is largely consistent with the findings of the majority of firm-level empirical literature in developed countries (for example, OECD, 2009). The regression results show that innovation output is positively associated with innovation input, firm size, export intensity, global cooperation

and institutional information sources, while negatively associated with domestic cooperation and market information sources. Innovation input is positively associated with process innovation, the nature of in-house R&D activity and government non-financial support, while negatively associated with firm size.

The results have shown that the firms' investments in innovation activity are an important determinant of the firms' performance in innovation activity. The more a firm invests in innovation activity, the better it performs in innovation activity. Innovators who engage continuously in R&D activity and those who receive government non-financial support tend to invest more in innovation activity. Governments may encourage innovators, especially small and medium sized enterprises, to establish in-house R&D departments by granting accelerated capital allowances for a short period for capital expenditure on equipment used for R&D activities. In addition, accelerated tax deductible allowances may be used to encourage firms with in-house R&D activities to invest continuously in in-house R&D.

Another important finding is that the effect of knowledge interaction on innovation output depends on the type of knowledge interaction. Hence, policies aiming to enhance firms' innovation performance should consider the differential effect of different types of knowledge interaction. As indicated by the results, not all information sources have obvious impacts on firms' innovation output and that some information sources may exert a negative impact on firms' innovation output. For example, market information sources have a negative impact on firms' innovation performance. Hence, firms need to be more cautious when sourcing information from market players. The result has shown that institutional information sources have a positive impact on innovation output, implying that firms may enhance their innovation performance through intensifying their knowledge interaction with institutional players. Following this, there is a need for governments to further enhance knowledge interaction between institutional players, especially universities or other higher education institutions, and industry. The results show that the impact of formal knowledge on innovation output depends on the location of cooperative partners. Firms which establish innovation cooperation with foreign players have higher innovation performance than those which do not, while the reverse is observed for those which establish cooperation with domestic players. The data reveals that the majority of innovators who establish cooperation with foreign players cooperated with other companies within the group. In contrast, innovators who established innovation cooperation with domestic players cooperated with external players within the value chain, that is, customers and suppliers. It is plausible that these innovators have encountered disputes arising from opportunistic behaviour by cooperative partners and the delay problems associated with specific innovation investment while cooperating with external players, hence negatively affecting the firms' performance in innovation activity.

To conclude, the analysis clearly shows that successful innovations lead to better firm performance and that innovation output rises with innovation input. The way firms interact with external players affects firms' investments and performance in innovation activity and the impact of these interactions may differ from those interactions experienced in developed countries. The results suggest that policies to enhance firm performance in innovation activity should consider the heterogeneity of the role played by external players in the innovation process.

APPENDIX

Figure 1 : The Link Between Innovation and Firm Performance

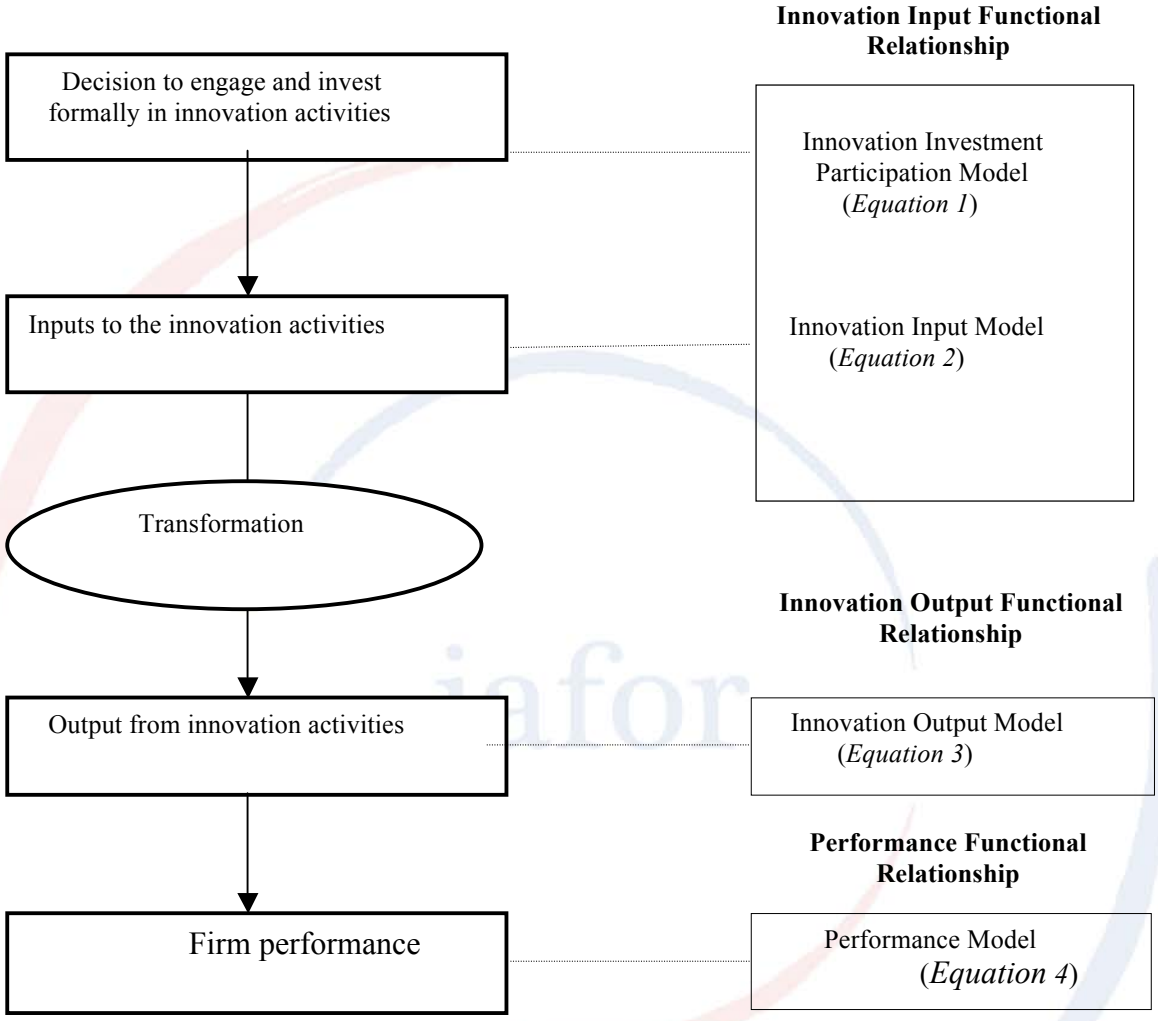

Table 1: Variables and Its Definition

Variable	Description
PARTICIPATION	Dummy equal to 1 if the firm has invested in innovation activity during the reference period (2000-2001)
INPUT	Innovation expenditure per employee (log) in 2001
OUTPUT	Innovation sales per employee (log) in 2001
PERFORMANCE	Sales per employee (log) in 2001
SIZE	Number of employees (log) as at 31 December 2001
AGE	Number of years established
EXPORT	Percentage of sales exported in 2001
FOREIGN	Percentage of foreign equity shares
PHYCAPITAL	Physical capital expenditure per employee (log) in 2001
GROUP	Dummy equal to 1 if the firm belongs to a group of companies, 0 otherwise
LIABILITIES	Dummy equal to 1 if the firm has a limited liabilities ownership structure, 0 otherwise
HIGHTECH	Dummy equal to 1 if the firm is in high or medium-high technological intensity, 0 otherwise
PROCESS	Dummy equal to 1 if the firm has engaged in process innovations
CON_R&D	Dummy equal to if the firm has carried out their in-house R&D continuously during the reference period, 0 otherwise
FINANCIAL	Dummy equal to 1 if the firm has received government financial support during the reference period, 0 otherwise
NONFINANCIAL	Dummy equal to 1 if the firm has received government non-financial support during the reference period, 0 otherwise
SO_GROUP	Dummy equal to 1 if the firm has cited internal information sources for innovation as highly important during the reference period, 0 otherwise
SO_MARKET	Dummy equal to 1 if the firm has cited market information sources for innovation as highly important during the reference period, 0 otherwise
SO_GENERAL	Dummy equal to 1 if the firm has cited general information sources for innovation as highly important during the reference period, 0 otherwise
SO_INSTITUTION	Dummy equal to 1 if the firm has cited institutional information sources for innovation as highly important during the reference period, 0 otherwise
COOP_NATIONAL	Dummy equal to 1 if the firm has established innovation cooperation with domestic players during the reference period, 0 otherwise
COOP_GLOBAL	Dummy equal to 1 if the firm has established innovation cooperation with foreign players during the reference period, 0 otherwise
MILLS	The computed inverse Mills' ratio

Table 2: Estimated Results for Innovation Investment Participation and Innovation Input Equations

Explanatory variables	**Innovation Investment Participation**	**Innovation Input**
SIZE	0.1052**	-0.2416**
	(0.0485)	(0.0995)
EXPORT	0.0007	-0.0042
	(0.0023)	(0.0045)
FOREIGN	-0.0034	0.0040
	(0.0025)	(0.0053)
GROUP	0.3293**	-0.4641
	(0.1588)	(0.3616)
AGE	-0.0137**	
	(0.0053)	
LIABILITIES	0.3974**	
	(0.1752)	
PROCESS		0.6431**
		(0.2526)
CONT_R&D		0.4798*
		(0.2461)
NONFINANCIAL		1.0406***
		(0.2677)
FINANCIAL		-0.4250
		(0.3164)
MILLS		-1.4566*
		(0.2051)
CONSTANT	-1.2754***	9.2198***
	(0.2051)	(1.3038)

Note: ***, **, * indicate the coefficient is significant at the 1%, 5% and 10% levels of significance, respectively. Figures in parentheses are standard errors.

Table 3: Estimation Results for Innovation Output and Performance Equations

Explanatory variables	Innovation Output	Performance
INPUT (predicted)	0.5902***	
	(0.1887)	
OUTPUT (predicted)		0.2931**
		(0.1375)
PROCESS		-0.2349
		(0.1570)
PHYCAPITAL		0.0810**
		(0.0352)
SIZE	0.2349***	0.1562***
	(0.0859)	(0.0465)
EXPORT	0.0070*	0.0002
	(0.0037)	(0.0022)
FOREIGN	-0.0025	-0.0037
	(0.0046)	(0.0024)
GROUP	0.1084	0.5221***
	(0.3206)	(0.1507)
COOP_NATIONAL	-0.7215*	
	(0.4272)	
COOP_GLOBAL	0.7530*	
	(0.4057)	
SO_GROUP	-0.0206	
	(0.2716)	
SO_MARKET	-0.4106*	
	(0.2474)	
SO_INSTITUTION	0.5344*	
	(0.2782)	
SO_GENERAL	-0.0662	
	(0.2399)	
MILLS	1.4716**	
	(0.7259)	
CONSTANT	8.9343***	5.6267***
	(2.1282)	(2.1190)

Note: ***, **, * indicate the coefficient is significant at the 1, 5 and 10 percent levels of significance, respectively. Figures in parentheses are standard errors.

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Service Quality and Spectator Satisfaction: Perspective of Female Spectators on University Sporting Grounds

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0042

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Abstract

The main aim of this study was to investigate the quality of service experienced by female spectators at a sporting event as well as well as to establish if there is a relationship between a core sport product and the product servicescape in conjunction to female spectator satisfaction. The study also investigated the perceived value that female spectators receive from the total sport product which forms an integral part of the total market offering to spectators. It is important to establish this relationship as it will have an impact on future attendance of these type of events. In order to achieve the objectives of the study a survey was distributed to female spectators who watched soccer and basketball games on the grounds of a particular university. The respondents were exposed to the services, staff and activities in and around the stadium before, during and after the matches to ascertain total female satisfaction of the sporting event.

Keywords: Sport service quality, satisfaction, female spectators.

1. Introduction and objectives

The professional sports events industry is becoming increasingly competitive as a result of a worldwide social trend towards people attending sports events as spectators and an ever-increasing range of available spectator events. In this competitive environment, providers of professional sporting services are increasingly motivated to encourage customers to attend games as spectators (Theodorakis, Koustelios, Robinson & Barlas, 2009: 456). This motivation can be successfully provided and enhanced if the spectators are initially satisfied with their prior experience. Customer satisfaction is crucial in the long-term survival of a business or sport type and this is influenced by a number of factors and sport organisations. These organisations are increasingly learning the importance of not taking their customers for granted and treating them as individuals and as important valued partners. Sports organisations and the events they present do not differ. Spectators have different reasons for supporting a particular sport organisation and thus need to be catered for accordingly.

Service satisfaction is a function of consumers' experience and reactions to a provider's behavior during the service encounter; it is a function of the service setting (Abdullah & Rozario, 2009: 185). In order to reach that level of satisfaction, commitment from employees is necessary as they facilitate the service encounter. Sureshchandar, Rajendran and Anantharaman (2002) suggested that customer satisfaction comprises of the following factors; core service, human element of service delivery, systematization of service delivery, tangibles of services and lastly social responsibility. These components may define the behaviour intentions at sporting events. Research considers customers favourable intentions to (a) recommend the team to other customers, (b) to attend the team's future sporting events and (c) to remain loyal to the team (Yoshida & James, 2010: 344).

Previous research studies such as Abdullah & Rozario, (2009); Yoshida & James, (2010) and Robinson & Barlas, (2009) support this conceptualisation and provide the basis for the conclusion that the core product in sport is derived from sport-related factors such as the quality of the home and opposing teams. Winning percentage of a team, their place in the standings, the team's history, the number of star players on the team, and the reputation of the team, are also important factors that impact on spectator satisfaction. The core product in spectator sports includes game-related components, which are key determinants of whether an element is the core product or ancillary service (Yoshida & James, 2010).

Although researchers (Theodorakis, Kambitsis, Laios & Koustelios, 2001: 431) generally agree that there is an actual relationship between the two constructs, the direction of this relationship has been the subject of debate. Therefore the objectives are as follows:

- To investigate the relationship between the core sport product and female spectator satisfaction.
- To investigate the relationship between the servicescape product and spectator satisfaction.
- To determine the perceived value spectators receive from the total sport product.

2. Overview of service quality

Service quality defined

Service quality has in recent years become the great equaliser in companies' dealings with customers and spectators. Potluri and Zeleke, (2009) explains that with the economic hardships and realities companies have been forced since 2008 to become more focussed on the needs of the customer and meeting their expectations and it has turned out to be very crucial especially in those organisations in order to retain them. Service quality is influenced by expectation, process quality and output quality; in other words the standards of service is defined by customers who have experienced that service and used their experience and feelings to form a judgment (Abdullah & Rozario, 2009: 185).

Literature offers a number of service quality models but one that is widely accepted and used is the SERVQUAL model developed by Parasuraman, Zeithaml and Berry (1988). This model highlights five service quality dimensions namely reliability, assurance, tangibles, empathy and responsiveness. Reliability as Kouthouris and Alexandris, (2005: 103) observe refers to the ability to perform the promised service dependably and accurately; assurance refers to employees' knowledge and their ability to convey trust and confidence; tangibles refers to the physical environment; empathy refers to employees' willingness to provide individualised attention to customers and responsiveness refers to employees' willingness to help customers and to provide prompt services Jae Ko & Pastore, (2007: 34) stress that to be competitive in the very competitive sporting events market environment, sport organisations need to increase customer satisfaction by providing consistently high quality services. Zeithaml and Bitner defined perceived service quality as a global judgement or attitude relating to the superiority of a service. Since the perception of the quality of the service received will differ from one spectator to another it is clear that these perceptions could occur at multiple levels in an organisation (Sureshchandar, Rajendran & Anantharaman, 2002: 364).

Chelladuri and Chang (2000) identified the targets of service quality that ultimately influences the overall satisfaction spectators have with the sport as (a) The Core product; (b) Service Co-production and (c) sportscape features. Each of these is discussed in the next sections.

The core sport product

The term 'Core sport product' refers to those elements of the spectator sport service experience that directly involve the sporting contest (Mullin, Hardy & Sutton, 1993). The core sport product is what makes people come to the stadium and it involves the activities that produce the entertainment for which they are willing to pay (Westerbeek & Shilbury, 2003: 15).

Morgan and Summers (2005: 140) however; refer to the core sport product as the competition itself as this is the main reason people spend money to attend sporting events. Like any product, the sport product is seen as also consisting of three product levels which together all enhance the total product experience. These levels are depicted in Figure 1:

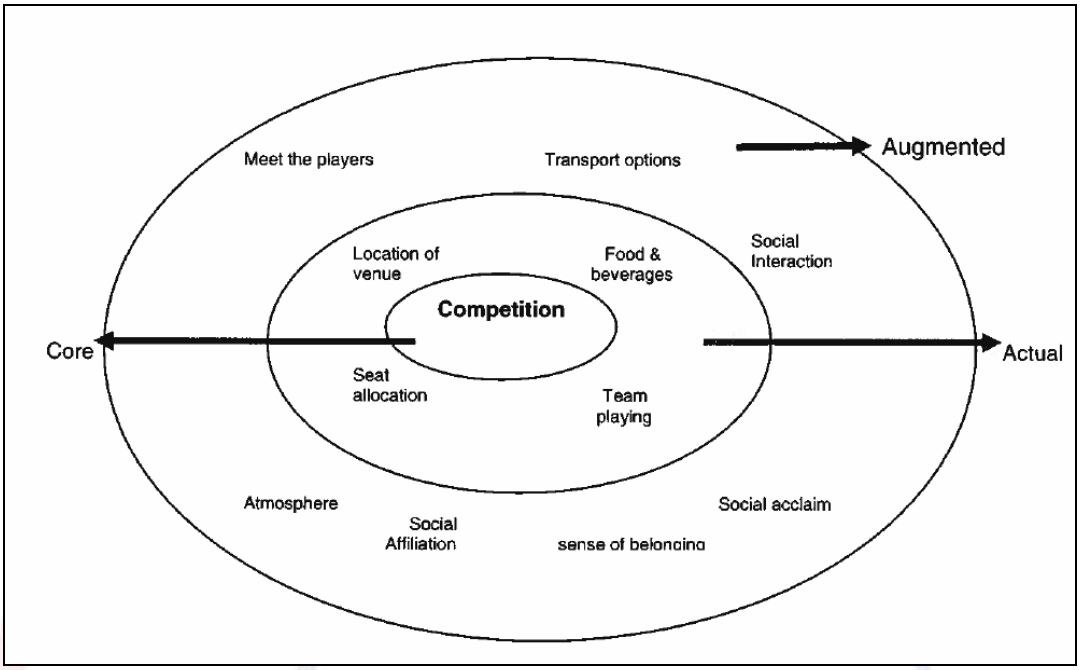

Figure 1: Product levels for a sporting event
Source: Morgan, M. and Summers, J., (2005), *Sports Marketing*. Thomson: Australia. [Online] Available from: http://books.google.co.za/books?id=R-Kn3jVW39gC&printsec=frontcover &source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false [Downloaded: 2012-03-14].

As specified in figure 1 competition by its very nature is completely uncontrollable and unpredictable, and therefore is key to the passionate and committed following of many sport fans. Spectators can be satisfied with their experience even if their team does not win, as long as the quality and intensity of competition was of a high standard (Morgan & Summer, 2005: 140). The actual products and the augmented products simply enhance the entire experience, which then affects and impacts on spectator satisfaction. Sports marketers can thus use past performances of the team in any marketing communication initiatives to intensify the expectation fans have of the core product.

Fan identification and social identity

According to Grencer (2011: 2140) the emotions and feeling of spectators form a significant part of the sports product. More decisively, customers typically make emotional investments in such organisations, for example, supporting sports teams and becoming members Westerbeek and Shilbury (2003:15) mention that the identification of fans varies from religious follower to hedonist fans. The religious follower views the core product (competition) as a religious ceremony whereas, the hedonists view of a sporting event is that fans should simply have a good time. This viewpoint indicates that each team has an equal opportunity of winning and therefore it is not necessary to fuss over one team.

Fan identification is defined as the personal commitment and emotional involvement customers have with a sport organisation. Individuals with a strong degree of identification to their team consider the success or failure of their team as their own. Such individuals bear

their teams unceasingly. Gencer (2010: 2142) is of the opinion that when managed effectively, this condition presents professional sports teams the prospect to acquire enviable advantages

Studies in the identification literature are grounded in social identity theory. Social identity theory states that people tend to classify themselves and others in various social categories. These categories allow people to segment and order their social environment and they provide a means of classifying themselves and others in it (Greer & Tomas, 2009: 16). Social identification itself as Ashforth and Mael (1989) explain is the perception of belongingness to some human aggregate It is therefore interesting to investigate whether fan identification with a particular sport or sports team can influence the level of satisfaction fans may experience with regard to that particular sport or sports team.

Fan involvement

Meenaghan (2001: 106) suggests that because fan involvement forms part of the social identity theory, fan involvement has been recognised as "…the extent to which consumers' identity with and are motivated by their engagement and affiliation with particular leisure activities". The Hunt *et al*., (1999) typology is based on the source of motivation and on behaviour exhibited by the different types of fans. The fans were distinguished based on the types of motivation, namely; situational motivation and enduring motivation. Situational motivation is bound by time and space and therefore is more temporary in nature while enduring motivation is a result of the fan perceiving the sports object as important to his or her self-concept (Westerbeek & Shilbury, 2003: 23). These fans are ranked as temporary, local, devoted, fanatical and dysfunctional. Temporary fans will be less involved in the game and will support the sport only based on a temporary phenomenon. On the other hand, fanatical fans take their support onto another level. They are more than loyal and feel the sport object to be as important as a means of self-identification which they demonstrate in different forms of supportive conduct (Westerbeek & Shilbury, 2003: 24).

Service co-production

Sportsmen do not bear the sole responsibility in producing a satisfactory atmosphere for a sporting event. The employees as well as sports spectators each bear significant responsibility in the total satisfaction of the sporting event. The employees have the duty to produce friendly service to spectators and treat spectators as individual customers with unique individual needs. Sports spectators also play a role in ensuring complete satisfaction for other spectators. This may be achieved by them choosing to engage in conversation and give their personal opinions on the sporting event. In addition, cheering, clapping of hands and singing can also contribute to uplift the social environment.

Sportscape features

Servicescape defined

Wakefield and Blodgett (1994: 66) mention that one of the main reasons customers attained leisure services is to experience excitement and stimulation. Research indicates that the degree of arousal or excitement that customers experience while consuming the leisure service may be a major determinant of their subsequent satisfaction with the service experience. The servicescape can either enhance or suppress these emotions and is therefore important in this experience (Wakefield & Blodgett, 1994: 67).

Servicescape is a term used in reference to the physical surroundings to facilitate the service offering to consumers. This is inclusive of tangible elements such as the infrastructure and intangible elements such as temperature or sound that make up the service experience (Hoffman & Turley, 2002). Bitner (1992) suggested that servicescape might have an effect on customer satisfaction. He mentioned two important aspects of servicescape in this regard namely (a) Spatial layout and functionality and (b) Elements related to aesthetic appeal.

Spatial layout and functionality refer to the ways in which seats, aisles, food service lines, security, restrooms, entrances and exits are designed and arranged in the sporting arena. Aesthetic appeals refer to factors such as the surrounding environment, cleanliness, signage and other elements. Based on their perception of these two sets of factors, they will have set thoughts and feelings that lead them to either approach or avoid the sporting event (Wakefield & Blodgett, 1994: 68). Aspects of the servicescape that can influence spectator satisfaction within a sporting environment context will be discussed in the following sections.

Safe atmosphere ensuring satisfaction

Westerbeek & Shilbury (2003: 16) observe that the safe atmosphere dimension relates to safety issues in and around the stadium. As mentioned previously, there are different types of fans present at the stadium. Dysfunctional fans are those whom the sports object are a primary method of self-identification. This attachment may lead to irregular behaviour such as violence. This implies that organisers must ensure that there is ample security within the facilities to ensure the safety of all spectators.

The Australian Institute of Criminology (2010) has reported that spectator violence in stadiums is an increasing concern. Spectators need to feel safe in the sporting environment in order for them to fully enjoy the event. Security personnel should be made available to ensure that spectators are safe should anything happen and that their cars are well looked after.

Hospitality dimension ensuring satisfaction

Service quality and customer satisfaction is vastly investigated. Theodorakis *et al*., (2001) investigates the effects of spectators' perception of service quality on their satisfaction in professional spectator sport. Employees at the stadium also play a vital role in ensuring that

all activities run smoothly therefore it is imperative that they are well trained. Frontline employees are the ones who interact with the spectators and should therefore do all they can to enhance their total experience.

The stadium arena facilitating spectator satisfaction

Correia and Exteves (2007) stated that spectators would be satisfied and happy when there are stadium facilities, car parks, safety and ticket counter space. Thus, there are various factors that can influence spectator's satisfaction and encourage them to come back again to the stadium for future games (Pilus, Yusof, Bojei, Fauzee, Samah & Aziz, 2010: 54). For those spectators who share a high degree of self-identification with the team, they may consider the stadium 'Home'. Westerbeek (2001) states that home goes beyond the physical boundaries and features of the sportscape; that it involves emotional attachment to the place where history has been created and memories are stored. It is with these memories spectators build their confidence in their teams' ability to perform well. Thus, some spectators may prefer their teams to play at their 'Home' arena.
Therefore for this study the following hypothesis is set:

H_1: There is a positive relationship between the core sport product and female spectator satisfaction.

3. Overall spectator satisfaction

Oliver (1997: 13) defines customer satisfaction as a product or service feature or the product or service itself, providing a pleasurable level of consumption-related fulfilment. No longer can organisations afford to take their customers for granted as they can simply take their business elsewhere. Sports organisations are not an exception.

Cronin and Taylor (1992) views customer satisfaction as the overall feeling customers have towards an organisation. This overall feeling can be incredibly beneficial to firms as it leads to positive word-of-mouth, customer loyalty and cross-buying. However, for sports spectators, customer satisfaction has been viewed as a significant predictor of intentions to attend future sporting events (Yoshida & James, 2010: 338).

Spectators may be satisfied only when they truly believe that they have received value for their time and money. The core sport product (competition) may create such value. The excitement, crowds cheering and social interaction from the stadium could also create the sense of value that spectators crave.

Perceived value from the spectator sport experience

Westerbeek and Shilbury (2003: 18) suggest that spectators receive value from each element of sport quality. From the core product (competition), one perceives value as emotional. The intensity, quality and standard of the sportservice can leave the spectator extremely emotional. Whether their team wins or loses, each type of fan will undergo a number of different emotions; be it joy, anger, suspense or contentment.

The perceived value from the service co-production comes in the form of practicality. Employees at the sporting arena may contribute to the total value received. A simple smile or friendly assistance can go a long way in creating a good environment. Lastly, logical value that one receives from servicescape features. Unlike with the core product and service co-production, servicescape value is neither dependant on players or employees. Either equipment works or it does not, sporting facilities are either available or not. It is therefore important that everything required for a sporting event is in good working condition. Mishaps can cause the stadium, as a brand, its reputation and discourage spectators from any association with it.

The study by Yusof (2008) investigated the relationship between spectator's perception on sportscape and spectator's satisfaction. This study concluded that there is in fact a relationship between these variables therefore it is hypothesised:

H_2: There is a positive relationship between the servicescape product and FEMALE spectator satisfaction.

4. Research methodology

Participants

The sample in this study consisted of female spectators to sports events (basketball and soccer) that had been exposed to two or more live matches. A total of 46 correctly complete questionnaires were obtained.

Procedures

Due to the nature of sporting events at university level, where season tickets or tickets for a match is not sold in advance, a sample frame does not exist for such events and very little is known about the population before the study is conducted. The population from which the sample is drawn is the spectators who attended the matches on the specific days during which the research was conducted.

Recognising the nature of the population at sport matches, a non-probability convenience sample method was chosen. Such methods do have limitations such as presenting a higher probability of not being representative of the target population. However, the nature of the population under study as well as the objective of the study which is on testing an existing sport service model rather than making inferences to a larger spectator population, makes the method suitable for the study.

Respondents were chosen before, during half time and at the end of each game to avoid the potential bias owing to the use of non-probability sampling. Respondents were approached from in and around the stadium and had to be exposed to two or more live matches to be included in the study. No incentives were provided to respondents to complete the survey.

Using a self completion questionnaire, respondents had to rate statements on a 5-point Lickert scale ranging from Strongly disagree to Strongly agree. The questionnaire consisted of 24 service related statements, an overall customer satisfaction statement (also using a 5-point scale ranging from Very dissatisfied to Very satisfied) and two questions asking whether the respondent is a Soccer – or Basketball spectator.

The statements in the questionnaire are based on those used in the Sportserve model. The questionnaire items are testing six sub-dimensions namely Tangibles, Responsiveness, Access, Security, Reliability and Core relating to the stadium, staff, facilities and the game played.

5. Results

Reliability

A number of tests can be used to determine the internal consistency and repeatability of results in a survey. This is done by testing two different part of the same instrument in a process that average the correlation between every possible combination of questionnaire statements used in the study.

For a multi-item scale such as the Lickert Scale used in this study, Cronbach's Alpha (a coefficient between 0 and 1) is used to test for internal consistency. A coefficient that is too low (below 70%) shows that respondents likely interpret the meaning of statements differently and a coefficient that is too high (above 0.9) it is likely that some statements used in the study is too similar and can be removed from the measuring instrument.

The female sample study scored 0.827 (total sample 0.878) against the international norm for reliability using Cronbach's Alpha which is 70%. For each of the sub-dimensions, the following reliability scores were obtained: Tangibles – 0.629; Responsiveness – 0.821; Access – 0.335; Security – 0.818; Reliability – 0.690 and Core – 0.496. The results show that improvements can be made to specifically the statements under the Tangibles, Access and Core sub-dimension scoring a low Cronbach's Alpha.

As with the total study, this study can be described as having content validity as none of the items measured were difficult to define, the probability is high that all respondents understood the statements in a uniform manner.

Data Analysis

The basic data characteristics are obtained through descriptive statistics. The data set for the 46 female respondents recorded an overall mean of 3.412 out of 5 (compared to the total sample of 3.458), which in percentage terms is an average of 68.24% recorded (69.16% for the total sample) for all the statements amongst all the female respondents. The median recorded for the female sample is 3.560. All statements were stated in a positive manner,

meaning that every statement was evaluated on how each respondent agrees on the positive aspects of the statement. For example, statements regarding staff was stated on how polite, willing to help and prompt they are and not how rude, unwilling to help or slow in their service.

An overall standard deviation of 0.968 (0.974 total sample) was recorded for the data. Considering a data range of 1-5, most scores would fall within two standard deviations of the mean affirming the mean as a good indicator of the average score. The overall standard error of 0.129 (0.068 total sample) indicates at least a 68% chance that the population mean for all spectators at these sport matches tested would be between 3.283 and 3.541.

Table 1 below provides an overall picture of how the spectators in this survey experienced the service as per the six dimensions of the Sportserve model. Spectators rated their experience on a five point scale.

Note that the option 3 of each statement, Neither agree nor disagree, is excluded from table1 below to show the difference in percentage terms between the two negative options (Strongly disagree and Disagree), versus the two positive options (Agree and Strongly Agree). The table below outlines the percentage contribution of the option Neither agree nor disagree (of the total per sub-dimension as tested in the questionnaire). Also note that the Neither agree nor disagree represents 0 in the graph but the actual percentages are shown in the table below.

Sub-dimension	% Neither agree nor disagree Response
Tangibles	**14.6**
Responsiveness	**37.1**
Access	**17.9**
Security	**18.3**
Reliability	**43.3**
Core	**14.9**

Table 1: % contribution per sub-dimension of the option Neither agree nor disagree

It is evident from the percentages in Table 1 that female respondents lack opinion of the stadium employees and staff regarding their reliability and responsiveness. This is likely due to the fact that they did not experience nor interact with staff before, during or after the games.

Figure 2 shows that female spectators experienced Core related statements (referring to who the winning team is, if the game was played well and the number of star players on each team) as most positive (69.0%), followed by Tangibles (66.1%) and Security (58.0%). It is therefore evident that the high scoring of the Core items is that spectators attend a sport match out of interest for the game itself.

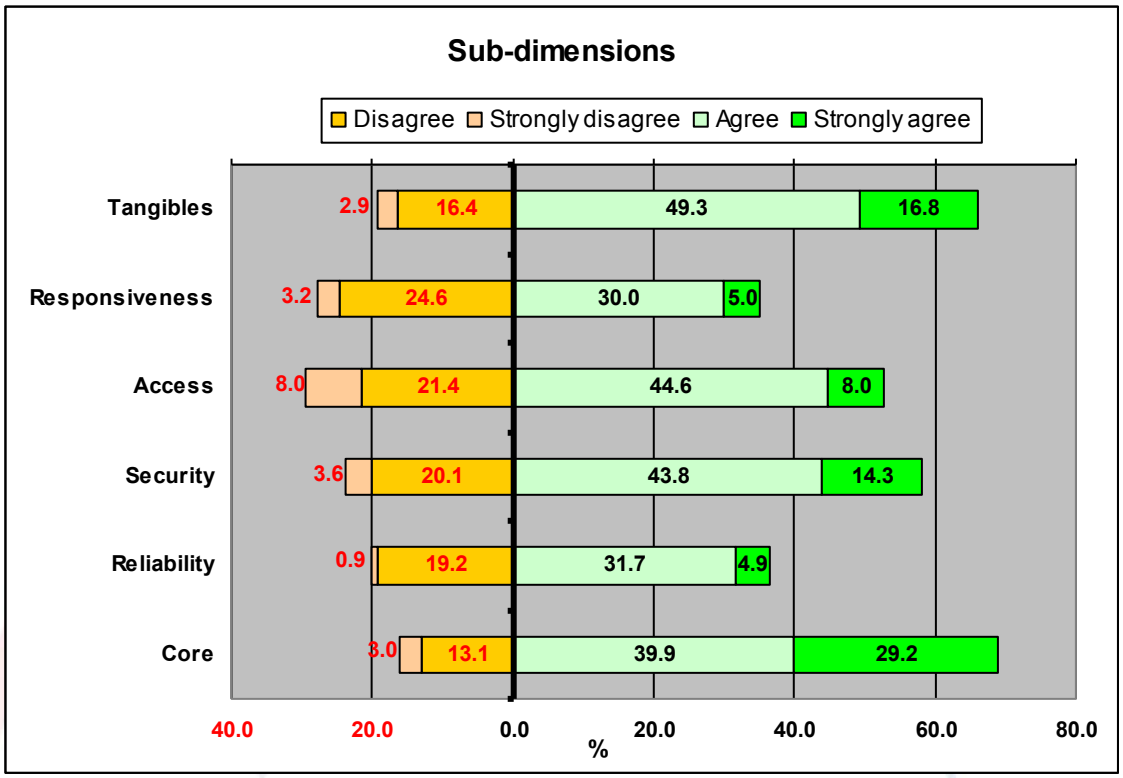

Figure 2: Overall experience per sub-dimension

Figure 2 shows that reliability (36.6%) and responsiveness (35.0%) relating to service staff/employees, scored the lowest positive response – note that these two dimensions also scored the highest percentage of respondents that indicated that they were unsure (neither agree nor disagree) with the statement. Access (29.4%) scored the highest negative response followed by Responsiveness (27.8%).

The Tangible sub dimension is the only sub dimension (of six sub-dimensions comparing both the negative and positive rating of each sub dimension to the total sample) where the female sample scored higher for the "positive statements" (2.89%) than the total sample. In all other sub-dimensions, the female sample scored lower (from -0.59% to -5.42%) in all negative and positive ratings compared to the total sample.

Female data fit to total sample

Female factor analysis

In factor analysis, principal components analysis (Varimax normalised procedure) was used which is an approach that considers the total variance of data.

As the original questionnaire and the Sportserve model itself is dimensionalised into six factors, a decision was made to force the data of this survey into the same number of sub-dimensions to enable comparisons. Factors were selected if their Eigen values were greater than 1.0 and their total variance accounted for more than 60%.

All six sub-dimensions achieved an Eigen value of higher than 1 and account for 61% of the variability of the data. The output is listed in Table 2 below:

Factors	Eigen value	% Total variance	Cumulative Eigen value	Cumulative %
1 - Security	5.74	23.91	5.74	23.91
2 - Responsiveness	2.36	9.82	8.09	33.73
3 – Tangibles	2.10	8.77	10.20	42.50
4 – Core	1.83	7.61	12.03	50.11
5 – Convenience	1.54	6.43	13.57	56.54
6 - Access	1.40	5.82	14.97	62.36

Table 2: Forced six-factor Eigen value report for female sample

It should be noted that although 6 dimensions were forced, that the female sample delivered only one significant factor which can loosely be described as "Safety, Comfort and Convenience".

Relationship between service variables and spectator satisfaction

The questionnaire used in this study is the same as the one used in the Sportserve model as one of the main objectives of the study is to determine to what extend the existing Sportserve model can be applied to South African circumstances.

The compilation of the questionnaire was not preceded by qualitative research to determine the exclusivity and exhaustiveness of the statements used to determine overall customer satisfaction at sporting events under South African circumstances. The purpose of testing the relationship between service variables and spectator satisfaction is therefore not to isolate variables with the highest predictive value in general, but limited only to those used in the existing Sportserve model.

First correlation analysis was conducted between each main sub-dimension and overall female customer satisfaction. The purpose was to understand possible relationships of these sub-dimensions to overall customer satisfaction. Table 3 below outlines the correlation output.

Pearson Correlations Section (Row-Wise Deletion)							
	Satisfaction	**Tan-gibles**	**Respon-sivenes**	**Access**	**Security**	**Relia-bility**	**Core**
Satisfaction	1.00	0.25	0.28	0.38	0.44	0.21	-0.07
Tangibles	0.25	1.00	0.40	0.10	0.50	0.28	0.08
Responsiveness	0.28	0.40	1.00	0.06	0.42	0.38	0.10
Access	0.38	0.10	0.06	1.00	0.18	0.11	-0.10
Security	0.44	0.50	0.42	0.18	1.00	0.50	0.07

Reliability	0.21	0.28	0.38	0.11	0.50	1.00	0.30
Core	-0.07	0.08	0.10	-0.10	0.07	0.30	1.00

Table 3: Correlation between sub-dimensions and overall satisfaction

Of interest (see table 3) is that the Core sub-dimension has no relationship to overall satisfaction (-0.07) to overall customer satisfaction for female respondent. The only notably sub-dimensions having a positive relationship with overall satisfaction is Security (0.44).

Multiple regression analysis was performed to determine the predictive value of service questionnaire statements (independent variables) to overall satisfaction (dependant variable). The confidence interval for the analysis was set at 95%. The goodness of fit statistics are listed in Table 4 below.

Goodness of fit statistics:		
	Total sample	**Female sample**
Observations	201	56
R^2	0.455	0.550
Adjusted R^2	0.381	0.202
MSE	0.276	0.315
RMSE	0.525	0.561
MAPE	10.519	8.850

Table 4: Goodness of fit statistics

Table 4 indicates that in the sample, 55% (R^2: 0.550) of the total variance of Overall Satisfaction is explained by the model. The model as a whole do not have predictive capability as the F value recorded is 1.579 (Pr > F of <0.1151).

6. Main findings

Female respondents lack opinion of the stadium employees and staff regarding their reliability and responsiveness. As noted earlier, this is likely due to the fact that they did not experience nor interact with staff before, during or after the games.

The regression model of the female sample does not offer any predictive capability. These are likely due to the relative small sample size of the female component of the study.

A correlation analysis was conducted between core sport product and overall customer satisfaction. The analysis produce a correlation coefficient of -0,07, indicating no correlation. The alternative hypotheses (H_1: There is a positive relationship between the core sport product and female spectator satisfaction) is therefore rejected.

A correlation analysis was conducted between the sub-dimensions and overall customer satisfaction. The correlation coefficients are as follows: tangibles 0.25; responsiveness 0.28;

access 0.38; reliability 0.21. The correlations that exist are weak as the correlation coefficient varies between 0.1 – 0.3. From all the sub-dimensions security with correlation coefficient of 0.44, has the strongest relationship with female spectator satisfaction. Regardless strength of the correlation, it was determined that there is a positive correlation between the sub-dimensions and female, thus confirming a relationship. Therefore the hypothesis H_2: There is a positive relationship between the servicescape product and female spectator satisfaction is accepted.

7. Conclusion

The objectives of the research were to investigate the relationship between the core sport product and female spectator satisfaction; to investigate the relationship between the servicescape product and spectator satisfaction and to determine the perceived value spectators receive from the total sport product. Even thought the repeatability of the study of the female sample was confirmed by the Cronbach alpha of 0.827, three sub-dimensions namely Tangibles, Access and Core sub-dimension scored a low Cronbach's Alpha and shows that a possible difference exist in how female respondents interpreted the statements.

The investigation found that female spectators are concerned with components of the service experience other than the core product. This supports of the marketing principle that some customers will evaluate not only the core product but also the servicescape in making their satisfaction judgments, even in spectator sport.

When it comes to female spectators, organisers of spectator sports on all levels professional and amateur needs to identify the controllable contributors to spectator satisfaction (service scape and peripheral service elements. Marketing efforts should focus on these as profitability of the sporting event is dependent on satisfied spectators. The outcome of the sporting event (win/loose) is an uncontrollable and not the main contributor to female spectator satisfaction.

Research is needed to determine the degree that the elements of the servicescape effect female spectator satisfaction amongst different sporting codes and the motivation for attending these sporting events.

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Influencing Factors on Career Growth in the Hospitality Industry

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Abstract

The main purpose of this study is to examine the relationship among employee performance and job satisfaction on the career growth in the spa industry in Thailand. The author applies structural equation modeling in order to test the effect of employee performance and job satisfaction on their career growth. A sample of 350 employees in spa industry was surveyed by means of a questionnaire. The results demonstrated significant influences among these factors. The study has implications for practitioners to support the career growth for their employees. In addition, academic contributions were also discussed for the future research development.
Keywords: Career Growth, Employee Performance and Job Satisfaction

Introduction

With the significance and growth of tourism industry, hospitality industry strived and searched for opportunities to provide high quality services to attract the tourists to become their customers and continue to use the service in the future. Spa industry is one of the most important hospitality industries in Thailand and Thai spa treatment is one of the main activities for tourists to experience the uniqueness of Thailand. The core of spa business and its success depends on the performance and quality of spa employees. This current study focuses on the relationship among three main factors, including career growth, job satisfaction and employee performance.

Background of Spa Industry

For the definition of spa, International Spa Association (2012) defines "spa as places devoted to overall well-being through a variety of professional services that encourage the renewal of mind, body and spirit."

Types of spa are categorized as follows;

- Club spa is a place where the main service is fitness and supplementary types of spa with the services completed in one day.
- Day spa is a facility providing variety of spa services within one day.
- Destination spa is a place to help its customers improve the good habits to take care of their health. It includes short-term and long-term programs including different types of activities, such as spa service, healthy food program, fitness program, health and wellness educational program and other tailor-made program to fit the need of the customers.
- Medical spa is a place offering spa services with licensed and professional medical personnel with the main objective to provide the combination of medical, wellness and spa services.
- Mineral springs spa is a destination giving hydrotherapy treatments together with natural mineral or seawater normally provided the service on the sites of natural resources.
- Resort and hotel spa is a spa in a hotel or resort offering professional spa services, usually including wellness and fitness programs.

Citrinot (2012) reported that spa tourism is known as one of the important strengths in Thailand's tourism industry. With its goal to become "World-Class Health provider" by the year 2014, Thailand, with both Thai governments and private firms, has initiated its plan of Thailand, Spa Capital of Asia. Many internationally well-known spa destinations, including Chiva-Som, Deravan Spa and Six Senses Spa, crucially help the country build the strong reputation in spa services globally, with around 1.4 million international visitors visiting the country for medical or spa services per year. The expected revenue from spa and wellness services from the year 2010-2014 were estimated around US$2.23 billion and the sales of spa related products around US$1.3 billion. Moreover, additional strength of Thai spa is the reasonable price, comparing to all its competitors globally. In the year 2012, there were more

than 1,200 spas in Thailand with approximately 400 luxury spas and the number was expected to increase in the future.

Spa service or treatment in Thailand started around 1994, spa treatment was provided for guests mainly in the top hotels in Thailand (Thaiways, 2012) and became popular among international visitors very quickly. Since then the greater number of spa service provided has been increasing significantly in most of the foreign tourist destinations, including Samui, Chiang Mai, Phuket and Bangkok. Together with the increasing number of the spa service providers, types and techniques of spa treatment had been introduced to the market simultaneously and rapidly, including hydrotherapy and aromatherapy. The popularity of spa treatment occurs among Thai people as well due to the changing lifestyles and intense working environments. Several spa businesses offered packages for the customers for the long-term relationship.

According to Thaiways (2012), there are many factors supporting Thailand to lead in Spa business at the global level. Thai hospitality with gentle and caring attention was among the main factors. Other factors were relaxing Thai traditional atmosphere and expertise of the therapists. The roles of Thai government were also crucial to promote the Thai spa to the global travelers. Referred to in Thaiways (2012), the well-accepted quality of Thai spa was shown in the results from the Spa Industry Surveys & Spa Consumer Surveys. For potential spa-holiday destinations, Thailand ranked number 1 (22%), followed by Indonesia (19%), Malaysia (13%) and Australia (7%). Another category was for destinations for the next spa treatment, the respondents identified that 42% considered Thailand, and the other major destinations were 30% for Indonesia, Maldives (5%) and Malaysia (5%). Additional insight was about their favorite spa treatment and the findings provided that 54% for massage treatment, 14% for body scrub, 10% for body wrap, 4% for facial treatment and the rest was for other types of the spa treatment.

The employees in the spa industry are the driving force for the growth and development of the industry. The spa employees are important to the spa businesses because these employees interact directly with the customers and represent the quality of the spa service to the customers. To support the development of spa industry, the quality and performance of the employees have to be studied. Furthermore, career growth is one of the most important long term goals for the employees. In this study, career growth was studied as the dependent variable to be affected by job satisfaction and employee performance. In this area of study, little research studies had been conducted to help understanding the employee performance (Netemeyer and Maxham III, 2007) and their level of job satisfaction as well as career growth for the long-term relationship between the organization and the employees.

Literature Review

Career Growth

Choosing career in hospitality and tourism can affect the career growth for the employees. Employees may also encounter different stages of growth in their career from entry levels or managerial levels (McKercher et al., 1995). Career growth can be categorized into four dimensions, including career goal progress, professional ability development, promotion speed and remuneration growth (Weng et al., 2010).

For its definition, career growth was considered as the process of growing in a person's career. In addition, career growth is measured in the aspects of a part of the work from the efforts of the employees to progress in their career goals. The growth in the employee career also included acquisition of new skills valued by the organizations and the employees are rewarded with promotions and the increase in their pays or bonuses(Weng et al., 2010). Organizational supports are crucial to ensure the career growth opportunities, improving employee skills and greater contributions to the organizations (Aryee and Chen, 2004). In addition, career growth signals positive job security for the employees. For this reason, when employees have good career growth, the employees build mutual trust and positive social exchange relationships with the organizations.

Job Satisfaction

The concept of job satisfaction has been in the center of organizational behavior topics. One of the early works in this field (Locke, 1969) provided the definition of job satisfaction in that it was defined and measured in terms of how employees like their jobs. Job satisfaction can be detailed as the feelings, attitudes or preferences of the employees towards works or their jobs. Historically the model for job satisfaction emphasizes all aspects of the employees' feeling toward their jobs (Lu et al., 2012). In addition, the expectation of the employees on the jobs highly affects their job satisfaction. Another aspect for explaining the job satisfaction is known as the global and facet approach. The global approach focuses on the sum of all attitudes of the employees' concerns about their jobs and facet approach is to highlight the aspects of the jobs generating job satisfaction. To understand job satisfaction, external factors or working environment, such as work structures in the organization, can also affect job satisfaction (Mulinge and Mueller, 1998).

For measuring job satisfaction, Spector (1997) demonstrated that job satisfaction dimensions can be measured from the followings; appreciation, communication, co-workers, fringe benefits, job conditions, nature of the work itself, the nature of the organization itself, an organization's policies and procedures, pay, personal growth, promotion opportunities, recognition, security and supervision. All these dimensions can be applied to help measure the job satisfaction.

Employee Performance

Employee performance is known to be crucial for the organization in many ways. For service industry, employee performance directly affects the perception of service quality of the service firms(Bitner, 1990). The implication is that improving employee performance can enhance the level of service quality perceived by customers(Hartline and Jones, 1996). For categories of employee performance, there are two classifications, including core task and socio-emotional dimensions. Firstly, employee performance can be evaluated from product knowledge, facilitating to satisfy customer needs, supporting customers to attain their service goals. The second dimension is about socio-emotional one. In this aspect, the performance of the employees can be evaluated from interpersonal skills, the degree of friendliness, attentiveness, and having sympathy for customers (van Dolen et al., 2002).

Research Methodology

The sample was the employees from staff to senior management levels from spa service providers in Bangkok, Thailand. As a capital of Thailand, Bangkok is one of the most competitive and wide-spread types of spa service providers, representing the suitable location for the study. The questionnaires were distributed to all types of spa services, including club spa, day spa and resort and hotel spa. The usable sample was 350. For data analysis, in order to assess the relationship of all the constructs, structural equation modeling was chosen as the most appropriate technique for hypothesis testing.

Results

The results included demographic characteristics, validity tests, and model testing with fit indices.

Table 1. Demographic Characteristics

Classification	Variable	N	%
Gender	Female	180	51.43
	Male	170	48.57
Education	High school or below	120	34.29
	Bachelor's degree	180	51.43
	Master's degree/Ph.D.	50	14.28
Age(year)	25 or younger	120	34.29
	26–30	90	25.71
	31–45	80	22.86
	Older than 45	60	17.14
Position held	Senior management	40	11.43
	Middle management	100	28.57
	Staff	210	60.00

Female employees represented 51.43% of all the respondents. Most of the respondents had Bachelor's degrees, accounted for 51.43% or 180 out of 350 samples. The majority of the

samples aged 25 years old or younger, which was 34.29%. There were three levels of position investigated and 60% were staff, 28.57% were middle management and the rest were senior management level.

Tests of Validity

Convergent validity and discriminant validity were assessed prior to further model testing as shown in Table 2. The results indicated that convergent validity has achieved because all the AVE values were greater than 0.5(Fornell and Larcker, 1981) for all the constructs. For discriminant validity, all AVE values of two constructs were higher than their squared correlation (Fornell and Larcker, 1981).

Table 2. Constructs, Correlation Coefficients and Measure Validation

Factor	Number of Items	CG	EP	JS	Cronbach's alpha	AVE
CG	4	1.00			.854	.765
EP	6	.601	1.00		.89	.759
JS	7	.625	.711	1.00	.922	.795
Notes: CG= Career Growth; EP= Employee Performance; JS= Job Satisfaction						

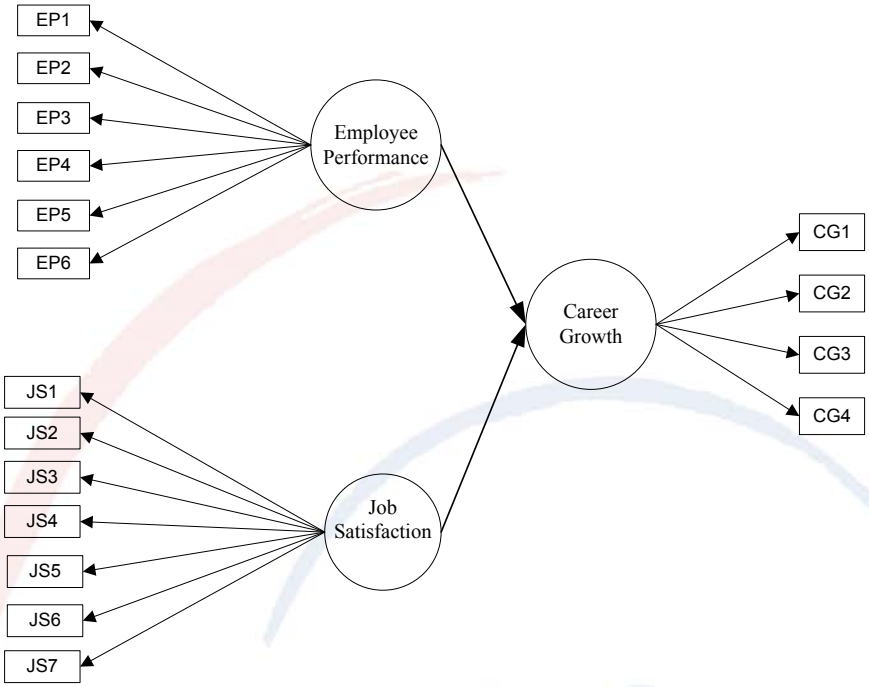
Research Hypotheses

There were two research hypotheses proposed in this study as follows;

H1: Employee performance is positively related to career growth.

H2: Job satisfaction is positively related to career growth.

Figure 1. The Proposed Model



Structural equation modeling was applied to test the relationship among the constructs. The overall fit indices of the model were good: NFI = .968, NNFI= .976, CFI = .979, IFI =.979 and RMSEA =.073. In addition, the results from the test supported the two hypotheses.

Table 3. The Relation of Parameters and Parameter Estimates of Proposed Model

The Relation of Parameters	Standardized Estimates
Job satisfaction→ Career growth	.488* (8.970)
Employee performance → Career growth	.464* (7.208)

* indicated statistical significance at .05 and t-values are shown in parentheses.

From Table 3, both job satisfaction and employee performance had significant relationship with career growth. With the coefficients, Job satisfaction has greater positive influence on career growth than employee performance.

Discussion

The findings pointed out that job satisfaction and employee performance had positive effects on career growth. The relationship between employee performance and career growth were recognized in past studies (Campion et al., 1994, Weng and McElroy, 2012). Job satisfaction and career growth were also discussed in past research works (Orpen, 1979); (Orpen,

1998);(Barnett and Bradley, 2007). In addition, job satisfaction indicated stronger influence on career growth, comparing to employee performance. This highlights the highly important impact of job satisfaction on career growth. Job satisfaction broadly demonstrated how employees like their jobs and with this empirical investigation, it provided the significant link between their satisfaction on their jobs and the growth in their profession. Another relationship was between employee performance and career growth. Good performance employees have high tendency to have positive career growths. However, the findings implied as well that positive emotional attitude towards their jobs or job satisfaction together with good performance can support the employees to improve their career growth.

Conclusion and Directions for further Studies

The present study has provided the detailed investigation of quantitative research of factors affecting career growth of the employees in hospitality industry. The author achieved the objectives by showing the significant relationships of the constructs. Moreover, practical implications from the study included that companies should provide the clear policy for their employees to understand the career growth opportunities so that the employees can feel that they have great job securities and potential long-term employment with the organizations (Aryee and Chen, 2004). Additionally, employers should focus on supporting the employees to improve their performance and should create the positive working environment leading to higher job satisfaction.

Further research studies can emphasize the long term relationship among these constructs and cross-industry studies (e.g. service and manufacturing industries) can also be conducted to enhance the knowledge about the constructs.

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Small Businesses and Economic Empowerment of Women in Pakistan

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Abstract

This research attempts to investigate the underlying reasons for entry of women in the realm of small businesses, the barriers faced by them towards this end and the ways in which small businesses empower women, in Pakistan. The data were collected from 50 respondents/ women-entrepreneurs based in the capital territory of Islamabad and its suburbs. A questionnaire was employed for data collection so as to maximize the response rate and effectively utilize the respondents' as well as researcher's time. Descriptive statistics were used to examine the data. The study provided illuminating results and indicated that women, indeed, have a major contribution in social and economic development. Most of the women disclosed that they view small businesses as the only viable strategy to augment their family's income and status. It was also revealed that day-to-day, they face considerable hurdles in the form of poor social support mechanisms, lack of adequate capital, insufficient governmental support, and deficient business education/marketing skills. Moreover, it became apparent from the results of the study that the participation of women in small business ventures has led towards greater women empowerment in Pakistan by liberating women financially as well as psychologically. It is recommended that the government, coupled with philanthropic NGO's and the overall business community, should strive for better micro-financing facilities. At the grass root level, improving public school education along with introduction of ICT's at all levels is also required to eradicate the problems faced by these women.
KEY WORDS: Entrepreneurship, Women Empowerment

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1. INTRODUCTION

In developed countries of the world, it is not a novel concept for women to engage in small business ventures. The global scenario for women in business presents an encouraging picture and such a case appears to be in South Asia as well. It is evident that economies are being widely impacted by the ever increasing participation of women in small businesses. The communities to which these women hail from are also benefitting from the establishment of these businesses. (Henry, 2002) was of the opinion that the contribution of females in small business ventures still needs to be researched widely and in depth despite all the work already undertaken on the subject. He stated that this issue warrants researchers' special attention and as such research on it needs to be updated regularly.

Women empowerment is a highly exhaustive term and hence it widely encompasses many conceptualizations. However, this is also one of the reasons why this term almost always freely crops up in all the realms of women development literature. Different researchers interpret this term uniquely. Wherever there is an issue pertaining to the modern woman, this expression is brought into the dynamics of the play.

It cannot be stressed enough that empowering women is a vital prerequisite for the ultimate reduction in world poverty and the continuation of human rights initiatives. Numerous studies regarding the concept of development were conducted by the aid of critical evaluation of the development process on the whole. These listed certain gaps that included bureaucratic approaches, opportunistic nature of rural elites and marginalization of the poor sectors of the society. If we consider holistic development, then women participation in small business ventures needs to be considered as a significant part of such a development at an economic as well as social level.

This study highlights the underlying reasons for entry of women in the realm of small businesses, the barriers faced by them towards this end and the ways in which small businesses empower women, in Pakistan. The conceptual framework is based on small business ventures started by females in Islamabad and its suburbs. Considering the context of Pakistan, unemployment prevails in the country to a large extent; therefore it is a dawning need for researchers and policy makers to study those sectors of the economy that exhibit considerable potential for employment provision. In tandem, we need to guarantee that women are bestowed with quality education as well as adequate training to participate and contribute in this sector i.e Entrepreneurship: Small Businesses.

For the purpose of this research, the small business environment for Pakistani women reveals complex correlations of various factors which can be sorted into two major groupings. The first one is composed of the social element which corresponds to cultural values of women, traditional approaches towards businesses in Pakistan, and religious facets. These are actually displayed in terms of the widely prevalent patriarchal system and the antiquated award of lower positions to women in society. The second one revolves around the policies of the government and institutional/support mechanisms.

For this research, Small-Businesses and their women owners in Pakistan are described in this manner:

- Small businesses led by women that *operate from homes i.e Household businesses*. These business women are mostly only educated till primary school level. They are poorly qualified and mostly do not even own bank accounts
- Businesses that are at such a small scale that they are not even registered
- Financial matters pertaining to their household budget are mostly managed by the male members as women are deemed incapable of handling/ investing money. This implies that women do not possess full autonomy
- Women (small)business owners, who are perceived in secondary roles because they do not have technical education

In Pakistan as well as other countries of South Asia, slowly and progressively the general environment is becoming favorable for women, which may be largely attributed to their own will power and unwavering strength and in a less way related towards the change in societal factors. In the future, overall, the scenario seems promising for women engaged in businesses. They are stepping into various fields of life. It is estimated that approximately 70 % of contemporary women entrepreneurs in Pakistan begin their small businesses in the form of beauty salons/parlors, tailoring, take-away and bake shops as well as handicrafts.

Despite the less-than-conducive environment, women still seem to be thriving in the arena of small businesses. In some cases, the motivation seems to stem from the fact that no other option appeared to these women to support their families and to survive in this economy with the ever rising rates of inflation. Generally, there are certain, common problems faced by women entrepreneurs of Pakistan:

- Poor commercial, marketing and selling skills
- Poor knowledge and provision of micro-financing schemes
- Lack of business and operational skills
- Lack of product designs
- Insufficient networking and lack of influential social ties
- Poor trust building
- Insufficient capital to purchase raw material
- Unawareness of quality control and management
- Unfavorable work environment
- Lack of economies of scale

Admittedly, the glut of potential is embedded in high technology, modern industries but the hidden growth of an economy lies in the labor intensive, traditional, small businesses and the services that support such ventures. With the advent of globalization, the importance of small businesses has been propelled into the limelight and these have been deemed to occupy a major portion the economic development of a country. Small business ventures by women significantly impact economic growth and lead towards sustainable development.

2. Literature Review

Women contribute immensely towards the growth and development of small business ventures and their role towards economic development cannot be overlooked at any cost. In

the U.S, it is stated that small businesses owned by women/minorities had a significant contribution in the economy by providing over $3 trillion in sales (Chun, R.J. 1998).

In Pakistan, during the past few years, the participation of women has significantly increased in various social, political and economic structures in the country. Small businesses owned by women have sprung up near all the major cities. This has altered the societal attitudes and perceptions of the general male population towards women to the extent that they have learned to accept that women are capable and competent enough to launch different kinds of business ventures. (Qamar Jehan, 2000) states that, for the general male population, it is of the utmost relevance to recognize the fact that in the same way that environment and development are inseparable, so are women and development.

Unfortunately, it has also become apparent that those women, who have ventured to launch small businesses, are not adequately equipped with the right education and/or training to sustain these businesses in the long run. In order to grow, sustain and expand their businesses they need to be trained in terms of business education and commercial skills (Glen Muske; Nancy Stanford, 2000). Significant leadership potential and qualities are possessed by these women but due to their meager knowledge about business and the market, most of their potential remains untapped. They can survive in the small business industry, but they find it hard to excel at it.

The government of Pakistan has provided various support mechanisms and systems to reinforce the participation of women in business yet a lot still needs to be done in terms of micro-financing and loan disbursement (Business Recorder, 2012). Moreover, despite the fact that the perceptions of the males in the population seems to have undergone an attitudinal change yet a considerable number of the labor force still do not appreciate or welcome women as their supervisors.

The importance of women in business cannot be stressed enough. Women occupy the status of an equally contributing factor towards economic, social, political and technological growth of a country. (Chinsman 2005) comprehensively lists the role of females by declaring that women create the establishments of a society. He claims that it is virtually impossible to speak of a society without reflecting on the family and likewise one cannot speak of a family without stressing the importance of the women. He is also of the opinion that their resourcefulness upholds and nourishes the family.

In the era of globalization, policy makers all across the world, especially in South Asia, need to investigate the role played by women in small businesses and account for their share in the economic development as well as the lack in economic development without their participation. Developmental programs and strategies need to be devised to encourage, reinforce as well as buoy up the progress of entrepreneurs engaged in small businesses all across the globe (Berns, 1991).

The development of women entrepreneurs needs to be assigned high priority and for this purpose, proper education and training needs to be provided at all levels. If the women possess the adequate knowledge and skills, their adversities would be considerably lessened. In fact, this can be considered as a fundamental step towards women independence and empowerment.

It is commonly believed that fostering a person's intrinsic entrepreneurial talent is a strong key for economic development. In this way, understanding the vast potential that women possess is a definite step towards economic sustainability. Tremendous potential is also concealed in the sector of small businesses and it needs to be delved into to achieve growth and prosperity of a country (Carter, 2001).

The importance of education at all levels to business women should be a priority for all developing/under-developed countries, not just Pakistan. Higher growth rates of an economy can only be penetrated with adequate and equitable educational provisions. Since women are vital contributors to the economy, it goes to follow that they also play a major role in social development. In Pakistan's case which is a newly industrialized economy, it is a remarkable fact that its women-owned small businesses are still comparable with those of the developed countries. In 2005, 75 % of the total workforce employed in small businesses, the share of women was 45 %. The women in the suburbs are innovative and creative as well as indigenous. They are capable of creating hand woven garments, food items, ornaments etc without the usage of machinery.

Most of these business women depend heavily on their personal finances and mostly seek loans from their suppliers. The role of banks is there to a limited extent not only because of the lack of support systems but also due to their own illiteracy and poor awareness. As stated earlier most of these women do not even own and operate bank accounts. This depicts the lack of technological knowledge and financial know-how as a major problem of small business owners in Pakistan, especially women. Mostly their working capital is gained via their minimal profits and advance money taken from customers/buyers.

Another matter of attention is the traditional role distribution of males and females and the accepted behavior which impedes women's progress. (Chukwuemeka 2009) believes that these concepts form family and community cultures and that the whole past concept of roles and relationships between genders needs to be abolished. (Nwosu 2007) also argues in favor of this by stating that gender inequality has fueled negative stereotypes and perception of women, leading towards various socio-economic and legal obstructions to counter women at all levels.

(Lehrer and Nerlove 1986), (Brewster and Rindfuss 2000) highlight another factor. They stated that a woman with a greater number of children might not be willing to engage in a small business (or business of any sort for that matter) on account of her family's needs. But then, they also argued, that a woman with more children might have an even greater need to launch or engage in a small business of some sort to augment the family income. Therefore, it stands to logic that a married woman with a bigger family needs to be encouraged to work to contribute and enhance her family's income and welfare.

(Gallup survey, 2004) in Pakistan shows that the number of small businesses in Pakistan is over 400,000 and it comprises of manufacturing items greater than 90 %. This survey also indicates sixty governmental laws that affect small businesses. Most of these laws need to be altered and modified in line with the current needs and status of our economy. It has also been revealed in that survey that 40 % of small business enterprises hire apprentices or as they are referred to in the local language, 'shagirds'. These apprentices are trained by them to

handle various tasks and this training pattern is a predecessor of a cyclic pattern. These apprentices learn and in-turn launch small businesses of their own.

The current dilemma facing our economy is that data is collected by organizations like Gallup but it is not used adequately towards progress. Data also needs to be updated periodically. Policy makers, practitioners, and even academics should be gathered and united to discuss the long term effects of these small/home-based, women-owned businesses and the incentives required to spur the growth and development of these businesses, keeping in view their long term effects on the economy.

3. Research Objective

The prime objective of this research work is to explore women empowerment through small business ventures. For the analysis, this study focuses on underlying reasons that motivate women to launch their own small businesses and the types of hurdles they face in the process thus shaping them into empowered women of the 21st century. This research takes a unique bearing by investigating via survey approach from the direct stakeholders, that are, women.

4. Research Questions

(a) Which factors motivate women to launch their own small business ventures?
(b) Which factors hamper the women's progress towards launching and sustaining their small businesses in Pakistan?
(c) To what extent are women empowered through small businesses in Pakistan?

5. Data Collection

Participants

For the purpose of this study, 50 women participants were selected. All of them operate their own small businesses from home. The nature of the business varies from Textiles/Carpets/Handicrafts to Pottery/Ceramics, Beauty Salon and services, Food items/Takeaways/Bakeshops and Jewellery/Ornaments. For achieving a clearer picture of this relationship, the researcher visited the suburbs of the capital city to meet these women and to administer her data collection regime.

Instrument

A structural, in-depth, questionnaire was designed as the data collection instrument. A total of 50 questionnaires, in the form of statements, were distributed in January 2012 to target participants in Islamabad and its suburbs. All of these were completed by the respondents and promptly returned for data analysis. The questionnaire was originally drafted out in Urdu (the national language) along with translations to English, for the ease of understanding by these poorly qualified women. Moreover, the questionnaire was in the form of statements that revolved around simple, daily life situations for ease of comprehension. During the first meeting with some of these women, it became clear that some technical terms were being

misunderstood so the researcher explained these phrases and words to the respondents in an explicit manner.

The questionnaire was divided into three parts: The first part was based on a demographic survey and the reasons women decide to venture into the realm of small businesses. The second part focused on the hurdles they face, and the third part ventured to measure the degree of empowerment gained by these women. There were a total of fifteen statements in the questionnaire (II & III Part) and a five point Likert scale of agreement was used to evaluate their response: Strongly agree =1, Agree ,=2 No idea=3 , Disagree=4 and Strongly disagree=5.

6. Data Analysis

The respondents completed the questionnaires in due course of time and returned them for data analysis. Some women reported confusion regarding a few questions, which may be attributed to their lack of quality education. Their confusions were cleared out by the respondent and they answered those questions upon clarification. It is of relevance to mention that the researcher had to visit these women periodically to assist them in filling out the questionnaire. This also developed a closer link between the two parties which positively impacted the research work. The respondents also overcame their hesitation in answering questions. The women were given full access to contact the researcher regarding any ambiguities or confusions.

From the survey results, it is evident that most of the women agree that they lack information about marketing of their products. The underlying reason for this is their poor business education and knowledge, which is also shown by the survey results. If they had received education on how to run their business and to market their products, this statement would have been disagreed to by most of the respondents. For this purpose they also need to evaluate their business capital. Once they have adequate knowledge as well as provision of the required and existing capital, they can disburse it effectively. *This goes to show that most of the common hurdles are, in fact, correlated.* This served as a major revelation from the study.

The results portrayed the women's lack of knowledge about micro-financing and the dearth of its provision. This is very important for successfully running a small business and sustaining it in the long run. Moreover, if they need loans then they must know how to write a plausible loan proposal and submit it to the concerned bank. These women, regardless of their level of education (low or high) are unaware of financial management including handling of financial statements/letters etc. This is also one of the reasons why they are often underpaid by the buyers or in certain cases even over charging their customers thereby losing them in entirety. Also, the reason most of the women confessed to having lower amount of capital is because they do not have means of attaining greater finances for their business. Also since, Economies of scale are non-existent so it leads towards increased production costs.

The data also revealed that women do not have good trust building and networking abilities as they have minimal to nil contacts with influential people who could help them in marketing and expanding their business. Moreover, due to unfavorable working environment and lack of social support from family, friends and the authorities, women are not earning up

to their deserved potential and efforts. Husbands' non cooperative attitude and having a large number of children impedes their business progress. *The intriguing factor here is that in most cases, having a large family actually initiated these women as entrepreneurs and then it also served as a major hurdle in sustaining that business.* It has also been observed that there is no formal quality assurance procedure in line. These women business owners are not even concerned about maintaining the quality of their products. They can improve so much if only their products/services follow some standardization procedure. Technological deficiencies and poor infrastructure, such as the ever rising rates of commercial electricity and frequent power outages, also lead towards diminished profitability.

The recent higher participation rate of women in small business ventures in Pakistan can be explained to a greater extent by the above analysis. The reason that women have stepped forth into the small business realm is because of augmenting their family status and supporting their breadwinning husbands in the time of high inflation in the economy otherwise, there are still numerous barriers against their entry and sustenance in the business world. Despite the prominent role of women at governmental level and numerous favorable policies for working women in Pakistan, they are mostly overlooked in terms of household ventures. Recent efforts of the government have been a trifle bit better yet the effects of these on income generation activities such as food processing and handicrafts has still not been gauged.

The lower earning brackets of these women entrepreneurs is due to a lifetime of unrealistic balancing between work and family dynamics. In the conventional households, women are supposed to take care of all the chores at home including bringing up children; this is why most of the women qualification tends to be ignored and least invested in by their fathers or husbands. If they are allowed to work, then they choose their jobs to be less demanding and lesser hours like part-time which in turn lead them towards lower pay scales too.

There seems to be a definitive relationship between small businesses and women empowerment. Most of the women report that launching or running their own businesses has liberated them to a greater extent by developing their personalities, confidence and augmented their income as well as awarding them greater mobility. They are also becoming influential in terms of decision making and spending the collective earnings at home. 52 % of these women report that due to their status as business women, now they are allowed ownership of land and productive assets. This depicts a promising scenario for the economic empowerment of women.

7. Conclusion, Recommendations and Future Implications

From past studies and present research, a general consensus can be derived i.e for economic and social progress of a country, it is vital to employ and involve both genders. In the past, women were largely ignored as a part of the workforce and their acceptance as entrepreneurs was even less. However, with the passage of time this situation has globally improved. Employers as well as the business world seem to have embraced women as vital contributors towards socio-economic development.

In Pakistan, the scenario has dramatically improved as women seem to have carved a niche for themselves in the form of small businesses. Based on the Survey in the last two years

women made up 35.5 per cent of contribution in small business. Such ventures seem to have cropped up in almost every other town and suburb. Yet, with progress there have been hurdles in the growth of women. If these barriers are overcome, then surely it would pave the way towards greater freedom of women since many of them confess that they indulge in small businesses to support their family and husband.

Keeping in view the startling results of the study, it is recommended that the largest dilemma needs to be addressed first and foremost i.e Access to capital. It is a huge impediment for these women in terms of establishment of new small businesses. Banks in Pakistan seldom allocate capital as loans to new businesses that do not possess credit history or sufficient collateral, such as the ones owned by these impecunious women. It is, therefore, suggested that the government should free 'economic development lenders' from unnecessary laws that restrain loans to new small/home based businesses. Moreover, business and charitable organizations also need to offer their expertise and resources to aid prospective small business women in refining their enterprise management skills. This would also help in coping with their lack of managerial and business administration skills.

The researcher believes that the alarming fact is that SMEDA (Small & Medium Enterprise Development Authority) in Pakistan has a narrow scope. It must be widened for economic development and assistance of these home-based, women entrepreneurs. This is possible in two ways, either by widening its definitional scope of what constitutes an 'enterprise'; or by establishing a separate unit for assisting home-based, small businesses owned exclusively by women. Recently, SMEDA has announced that fourteen business development centers would be set up to cater to women entrepreneurs exclusively (Pakistan Times, 2012); however, there has not been any illumination about small/home-based women owned businesses.

There are certain government/provincially owned small-industry corporations, whose primary goals revolve around helping the cottage industry prosper. Unfortunately, due to resource limitations these corporations are not living up to their full potential. They can initiate change by improving their census mechanisms so as to cater to the women owned house-hold businesses in a better manner. This can be achieved by, first, establishing an updated record system of women owned businesses in the cottage industry. Temporary human resource can also be employed to carry out and assist with the process. This would cut down costs and improve functionality.

At the grass root level, it is the dawning need to deal with the low standards of public education in the country. Our schools are not at par with the rest of the world and especially not with the private schools in the country or the rest of Asia at large. Most of these women are barely literate till matriculation/SSC level. Hence the government as well as the business community must assist these schools in imparting an adequate level of education under matriculation as well.

It is also suggested that voluntary women 'mentors' should be appointed by the government and/or NGO's to act as role models and assist these women on a quarterly/periodic basis to improve them in building their potential and enhance creativity even with limited potential.

Essentially, these women need to be provided computer education to augment their existing formal education. In view of the global economy, Information & Computer technology plays

a significant role. E-commerce can play a vital role in expanding small businesses and for marketing. Involving ICT's may assist them in dealing with hurdles related to firm characteristics and gender and geographic limitations.

Women empowerment encompasses many factors and at times it also varies from country to country, nation to nation. For a country like Pakistan, women feel greatly empowered when they have the power to earn and handle their own finances. They also feel in greater control of their destinies in that manner. The idea of participating in day-to-day decision making also empowers women to a large extent.

Small businesses lead towards greater women empowerment and highly empowered women are an asset to the economy especially for South-Asian countries as these have been slow in demonstrating comparable levels of growth with the rest of Asia and the world, for that matter. This study has numerous implications for future policy makers, business women/men and researchers such as the fact that most of the impediments towards business, faced by these women, are correlated. Furthermore, variables that in fact lead towards business initiation become hurdles for business sustenance and expansion, later on.

For future research, comparative studies between business owners and non-business owners might be illuminating in terms of portraying an accurate degree of women empowerment through small business ventures. In addition, a larger sample size and employing more than one instrument for data collection is also recommended for future studies.

In order to move towards a progressive economy, it is vital to support small, home based businesses and to eradicate all the problems faced by their owners. This study is not just relevant for Pakistan; In fact, its results can be generalized and are applicable to most of the countries of South Asia due to social and cultural similarities.

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Annexure I: Questionnaire & Data
Small Businesses and Economic Empowerment of Women in Pakistan

Part- I: Demographics/ Reasons for Initiating Small Businesses

1. Name

2. Age group

16-20	20-25	25-30	30-above
11	09	20	10

3. Education

Primary School	SSC/Matriculation	HSSC	Graduation	Masters
35	13	0	02	0

4. Full time business or Part time

Full time business	Part time
46	04

5. Monthly Income from Business

Below 5000	5-10,000	10-20,000	20-30,000	Above 30,000		
16	31	03	0	0		

6. Purpose of doing business (Choose one)

Past- time activity	For monetary support of husband/Father	Improving the economic status of the family	
02	37	11	

7. Nature of Business

1.	Tailoring/Stitching/Carpets/Embroidery/Handicrafts	29
2.	Pottery/Ceramics/Woodwork	07
3.	Beauty Salon/Beauty Parlor Services	03
4.	Food/Bakery items	06
5.	Jewellery/Ornaments	05
	Total	**50**

Part II: Common Hurdles/Difficulties Faced in Launching and Sustaining a Small Business

You can show your level of agreement in the following way. Strongly agree =1, Agree =2, No idea=3, Disagree=4 and strongly disagree.

S.No	Statements	Strongly Agree	Agree	No idea	Disagree	Strongly Disagree
1.	We lack information/knowledge about marketing our products.	34	08	01	04	03
2.	We are not familiar with latest product designs and knowledge about product development	10	21	09	10	0
3.	We lack knowledge and skills of business operations	26	13	02	09	0

4.	We Lack knowledge & availability of different schemes/means of Micro Financing	34	05	01	07	03
5.	We have insufficient capital to buy raw material and improve our existing products	39	04	0	07	0
6.	We do not possess adequate networking skills or networks and contacts with influential people	28	07	0	07	08
7.	We have unfavorable and unsupportive working environment (Poor social support from family, peers, government,	31	11	0	06	02

	banks, gender bias etc)					
8.	We have no means of quality assurance and management	20	17	04	08	01
9.	Technology as well as better infrastructure would assist in increased profitability (Less Power Outages/ lower electricity rates, cell phone, internet usage etc)	11	17	05	14	03

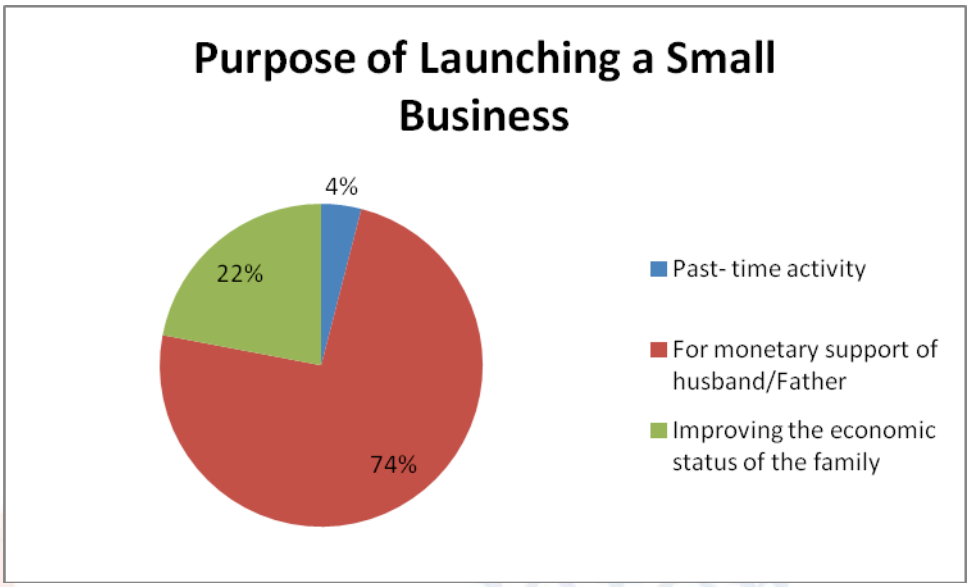
Part III: Role of Small Business in Women Empowerment

S.No	Statements	Strongly Agree	Agree	No idea	Disagree	Strongly Disagree
10.	Owning and running a small business of my own has strengthened my confidence level	41	03	0	06	0

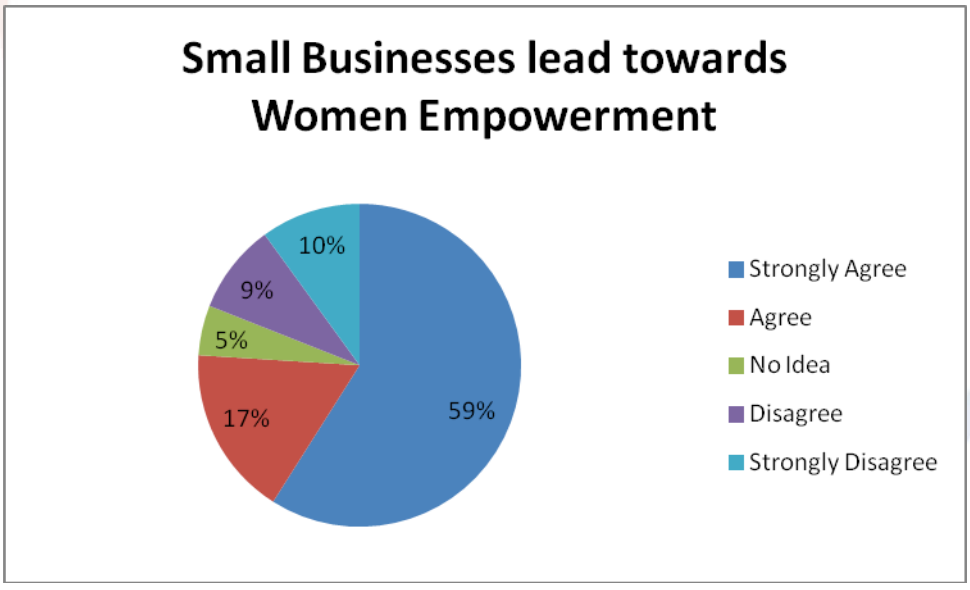
11.	I have gained substantial financial freedom due to my business	28	07	02	09	04
12.	I have improved my knowledge with the help of my business	31	17	0	02	0
13.	I participate in my family's decision making due to my role as a business owner	33	05	04	05	03
14.	I can have complete ownership of land/property/productive assets related to my business	16	10	02	17	05
15.	My mobility has increased i.e I can go out on my own using public transport for shopping/grocery/purchase of raw materials etc	28	12	05	05	0

Annexure II: Major Figures for Data Analysis

Questionnaire- Part I: Purpose of Launching a Small Business



Questionnaire- Part III: Role of Small Business in Women Empowerment



The Benefits of English Study Abroad Programs for Japanese Companies and Learning Organizations: Competitiveness in the Global Market and the Cross-Cultural Adaptability, Learner Autonomy, and Critical Thinking Skills of Japanese Employees

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Abstract

Japanese government and business leaders have noted the unsatisfactory English communicative ability of Japanese students and employees for several years (Uchibori, Chujo, & Hasegawa, 2006; Yoneoka, 2000). Relatively few foreigners work in Japan, and Japanese students have few occasions to communicate with people from different cultural backgrounds or to interact with foreigners in complex, real-life settings (Nippon Keidanren: Japan Business Federation, 2002; Yoshida, 2003). Japanese students have few opportunities to integrate English practice and critical thinking skills in task-based learning projects (Hart, 2002; Wilson, 2007). Learner autonomy and cross-cultural adaptability in students and employees may be critical to success in the current era of globalization (Nippon Keidanren: Japan Business Federation, 2005; Shiraev & Levy, 2007). Intensive English study abroad programs may be associated with a wide range of positive learning outcomes such as rises in the levels of cultural sensitivity and learner autonomy of Japanese students in addition to improvements in the students' communicative ability and English skills. Students who complete study abroad programs may gain a competitive advantage in the increasingly international job market (Keillor & Emore, 2003; Kelm, 2003; Yucas, 2003). Students and employees who improve self-directed learning abilities, cross-cultural awareness, and critical thinking skills are capable of functioning effectively on an international stage and can increase the competitiveness and efficiency of organizations (Peterson, 2004; Senge, 2006; Thomas & Inkson, 2003). Increasing the number of Japanese students and employees studying abroad may be critical to the future success of Japan in the global market.

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Introduction

The promotion of high levels of learner autonomy and cross-cultural adaptability in students and employees is an area of interest to educators and employers in a wide range of fields in the current era of globalization (e.g., Earley, Ang, & Tan, 2006; G. Hofstede & G. J. Hofstede, 2005; Keillor & Emore, 2003; Loughrin-Sacco & Earwicker, 2003; Nippon Keidanren: Japan Business Federation, 2005; Shiraev & Levy, 2007). Intensifying competition in the international marketplace is prompting governments, educational institutions, and private sector companies around the world to explore effective methods to improve international training and to promote independent, lifelong learning (Black & Duhon, 2006; Marsh, Richards, & Smith, 2002; Mok, 2006; O'Dowd, 2005; Schmidt-Fajlik, 2004; Tight, 2003; Tsuruta, 2003). The Japanese education system is designed to cultivate a relatively high degree of learner autonomy at the lower elementary school level but not at the secondary or tertiary level of education (Lewis, 1995; Nemoto, 1999). Relatively few foreigners reside in Japan, and Japanese students seldom have opportunities to interact with individuals or groups from different cultural backgrounds or to communicate with foreigners in challenging, real-life situations (Hamada, 2008b; Nippon Keidanren: Japan Business Federation, 2002; Yoshida, 2003). Japanese students have few opportunities to combine English practice and critical thinking skills in task-based learning activities (Hart, 2002; Wilson, 2007). Exposure to foreign cultures is necessary to build a solid foundation for effective cross-cultural communication in international organizations.

Global Literacy and Cross-Cultural Adaptability in the Context of Internationalization in Japan

Japanese government leaders in the 1980s, a key phase of rapid economic growth in Japan,

realized that Japan needed to engage in a more active role in the international community (Ertl, 2008; Umakoshi, 2004; Vinh, 2004). The pressures of globalization resulted in an acknowledgment by Japanese educational leaders of the deficiencies in the structure and planning of higher education in Japan (Mok, 2006; Tsuruta, 2003; Umakoshi, 2004). The Prime Minister's Commission on Japan's Goals in the 21st Century (2000) suggested that English become the second, official language of Japan and stressed the need for Japanese citizens to acquire "global literacy" to address the economic and cultural challenges of globalization (p. 4). The demand for English fluency and for effective cross-cultural communication skills is increasing steadily due to the influence of technological change and

the growing use of English as a common international language (Hart, 2002; Mok, 2006). Japanese business leaders have endeavored to encourage the Japanese government to improve the English ability of students to enable Japanese companies and organizations to function more effectively in the global economy (Aspinall, 2003; Yoshida, 2003). Hiroshi Mikitani, the CEO of the major Japanese Internet company Rakuten, declared in 2010 that Rakuten would become an English-only company (Hoare, 2012). Japanese companies that can function effectively in an English-language environment have a competitive advantage over domestic rivals in the international market. English-only organizations can work more quickly and effectively with foreign staff members, researchers, engineers, and customers. The trend towards English-only organizations is growing among major multinational corporations around the world. For example, Airbus, Nokia, Renault, Daimler-Chrysler, Microsoft Beijing, and Samsung have selected English as the primary language in corporate communication (Hoare, 2012).

The Japanese study English in junior and senior high school for a total of 6 years and usually for an additional 2 years at university, but the average level of English ability in Japan remains among the lowest in Asia (Aspinall, 2003; Ishikida, 2005; Prime Minister's Commission on Japan's Goals in the 21st Century, 2000; Uchibori et al., 2006; Yoshida, 2003). The Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) has attempted to promote communicative foreign language teaching that addresses realistic situations and intercultural exchange since the 1980s (Ishikida, 2005; Ministry of Education, Culture, Sports, Science and Technology, 2003; Yashima, 2002). In order to maintain the competitiveness of Japanese companies and research centers in a rapidly evolving age of globalization, the Japanese government has aimed for the past few decades to actively promote *kokusaika*, the process of internationalization (Ertl, 2008; Hood, 2003; Umakoshi, 2004; Vinh, 2004; Yoneoka, 2000). The Japanese government has sought to expand the number of foreign students and faculty members in Japan and to promote an increase in international perspectives in university curricula (Ishikida, 2005; Tsuruta, 2003; Umakoshi, 2004). The process of internationalization and reform within the Japanese education system has led to mixed results (Goodman, 2003; Ishikida, 2005; Tsuneyoshi, 2005; Tsuruta, 2003; Yoneoka, 2000).

Cross-Cultural Communication Skills and National Education Policy in Japan

Globalization is resulting in an increasing level of interdependence between countries, and English language ability is of prime importance in creating new cultural and economic opportunities for individuals and companies in Japan (Aspinall, 2003; Hart, 2002; Ministry of Education, Culture, Sports, Science and Technology, 2003; Uchibori et al., 2006). The

official MEXT Web site lists national education policy statements on the growing cultural and economic importance of English and cross-cultural communication in Japan (e.g., Ministry of Education, Culture, Sports, Science and Technology, 2003). The ability to use English to communicate effectively with foreigners is essential for the future prosperity of Japan and for the role of Japan as a member of the international community (Hart, 2002; Ministry of Education, Culture, Sports, Science and Technology). MEXT has recognized the importance of experiential modes of language learning and the need for the acquisition of intercultural skills through field trips and exchange programs (Ishikida, 2005; Ministry of Education, Culture, Sports, Science and Technology). Despite the official national education policy of the government, many Japanese high schools and universities continue to employ traditional, teacher-centered, grammar-based approaches to language teaching that emphasize drills and rote memory more than practical communication skills and cross-cultural adaptability (Nemoto, 1999; Uchibori et al., 2006). Real-life, interactive learning environments may be more effective than traditional classroom lessons in developing language skills, learner autonomy, cross-cultural understanding, problem-solving abilities, and advanced communication skills.

The Benefits of English Study Abroad Programs for Japanese Students and Employees

Intensive English study abroad and homestay programs may be associated with many positive learning outcomes such as increases in the levels of cultural sensitivity and learner autonomy of Japanese university students in addition to improvements in the students' communicative ability and English skills. Students who participate in study abroad programs may obtain a competitive advantage in the increasingly international job market (Keillor & Emore, 2003; Kelm, 2003; Kitsantas & Meyers, 2001; Loughrin- Sacco & Earwicker, 2003; Yucas, 2003). Students and employees who develop self-directed learning abilities, cross-cultural awareness, and critical thinking skills are capable of functioning effectively on an international stage and can increase the competitiveness and efficiency of organizations (G. Hofstede & G. J. Hofstede, 2005; Loughrin-Sacco & Earwicker, 2003; Peterson, 2004; Senge, 2006; Shiraev & Levy, 2007; Thomas & Inkson, 2003). A general problem exists in the area of English fluency in the Japanese workforce and in the student population (Aspinall, 2003; Hamada, 2008a; Hart, 2002; Mok, 2006; Nemoto, 1999; Yoneoka, 2000; Yoshida, 2003). Lack of English fluency may limit the career prospects of many Japanese graduates and the ability of Japanese graduates to communicate effectively with foreigners in a variety of cultural contexts (Aspinall, 2003; Hamada, 2008b; Nippon Keidanren: Japan Business Federation, 2002; Uchibori et al., 2006; Yoneoka, 2000; Yoshida, 2003). In recent years, some major Japanese companies have instituted an English-only policy in the workplace to help ensure

that Japanese managers and employees can communicate with an international clientele and collaborate effectively with overseas partners and research institutions.

In addition to high levels of English communicative ability, companies and organizations increasingly require employees and managers with high degrees of cross-cultural adaptability to function effectively in the global economy (Earley et al., 2006; Hughes, 2003; Keillor & Emore, 2003; Kelm, 2003; Loughrin-Sacco & Earwicker, 2003; Mead, 2005; Nippon Keidanren: Japan Business Federation, 2005). Many Japanese companies require English-speaking employees in order to remain competitive, to conduct international research, and to work effectively with foreign customers and partners (Hamada, 2008b; Nippon Keidanren: Japan Business Federation, 2005). A shortage of fluent English speaking employees may be limiting the effectiveness of Japanese companies in the global economy (Aspinall, 2003; Hamada, 2008b; Mok, 2006; Yoshida, 2003). The relation between cultural intelligence, autonomy, and effective leadership and management practices has grown in importance in recent years (e.g., Earley & Ang, 2003; Earley et al., 2006; G. Hofstede & G. J. Hofstede, 2005; Mead, 2005; Peterson, 2004; Thomas & Inkson, 2003). The ability to work effectively with people from different cultural backgrounds has become essential in many companies and organizations around the world (Mead, 2005). Effective cross-cultural adaptability and communication skills can create a competitive advantage for companies and organizations functioning in an international marketplace of products, services, and ideas.

The development of worker autonomy has also evolved into a significant factor incontemporary leadership and management practices in learning organizations (Drucker, 2003, 2006; G. Hofstede, 2001; Senge, 2006; Thomas & Inkson, 2003). Innovation, rather than the mere improvement of existing processes, is one of the most important factors that a leader in an organization can help to promote (Drucker, 2003; Senge, 2006). Study abroad programs provide a challenging, stimulating, and authentic learning environment that can significantly improve the critical thinking skills and learner autonomy of students and employees.

Large-Scale, Cost-Effective Corporate Sponsorship of Study Abroad Programs for Japanese University Students and Current Japanese Managers and Employees

Japanese corporations with significant investments in research centers and production facilities in overseas markets may increasingly require Japanese managers and employees who can engage in self-directed learning and function effectively in a foreign culture. International companies operating in Japan need Japanese employees who have developed an adequate level of English fluency and cross-cultural adaptability to collaborate effectively

with foreign colleagues (Hamada, 2008b; Urata, 2004). Self-directed learning, cross-cultural awareness, and critical thinking skills permit students and employees to function effectively in an international context, increasing the efficiency and the ability of organizations to compete (Earley & Ang, 2003; Earley et al., 2006; G. Hofstede & G. J. Hofstede, 2005; Loughrin-Sacco & Earwicker, 2003; Palfreyman, 2003; Peterson, 2004; Senge, 2006; Shiraev & Levy, 2007; Thomas & Inkson, 2003).

Students benefit from study abroad programs by acquiring a competitive advantage in the expanding international job market (Kitsantas & Meyers, 2001; Loughrin-Sacco & Earwicker, 2003; Yucas, 2003). Growing competition in the global marketplace is obliging governments and private companies in many countries to examine optimal methods to improve international training and to promote independent, lifelong learning (Black & Duhon, 2006; O'Dowd, 2005; Schmidt-Fajlik, 2004; Tight, 2003). Japanese government and business leaders have been aware of the inadequate English communicative ability of Japanese students and workers for several years (Nippon Keidanren: Japan Business Federation, 2002; Uchibori et al., 2006; Yoneoka, 2000; Yoshida, 2003). Generous corporate sponsorship of study abroad programs for Japanese university students could help to significantly increase the number of students who can afford to study abroad. Larger numbers of study abroad participants could create a larger pool of future Japanese managers and employees with the high levels of English fluency, learner autonomy, and cross-cultural adaptability that Japanese corporations increasingly require in the global economy.

Implications and Conclusion

The need for English-speaking employees is increasing in many types of industries in Japan, and an increasing number of Japanese managers believe that English communicative ability is of the utmost importance in business (Aspinall, 2003; Hamada, 2008b). Inward foreign direct investment in Japan is low in relation to the size of the national economy (Paprzycki & Fukao, 2008; Urata, 2004). A shortage of suitably trained job candidates in Japan with the requisite attitudes and experience may be a contributing factor to the low levels of inward foreign direct investment in Japan (Paprzycki & Fukao, 2008; Urata, 2004).

The Japanese may need to improve understanding of foreigners and foreign cultures and to further develop international communication skills in order to attract and benefit from higher levels of foreign direct investment in Japan (Paprzycki & Fukao, 2008; Urata, 2004). Study abroad programs may benefit Japanese companies and current
Japanese managers and employees, significantly increasing English fluency, learner autonomy, and cross-cultural adaptability in a short time and in a cost-effective manner.

Paying for highly effective study abroad programs for promising Japanese university students and potential job candidates may be more cost-effective for Japanese and international corporations than providing years of expensive, traditional, in-company English lessons of questionable value to Japanese employees. Study abroad and homestay programs may assist Japanese managers in acquiring a more global perspective and a detailed understanding of the specific values and needs of foreign customers in addition to improved communicative ability and English fluency.

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Economic Evaluation for Area Development: Multinomial Logit Approach

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Abstract

Evaluation on the one of productive resource—the land areas-- in economic aspect is so complicated. Many researchers try to make the concept to assess land development and estimate it appropriate rent. This paper aims to suggest the economic evaluation to assess the land, analyze them with econometric methods and define the suitable variables to consider them. Multinomial logit approach is used in this study to define the inception idea and test it with land areas owned by the department of highway in Thailand. The 1,623 areas of land are evaluated by this method and find the proper rent that could be charge in term of opportunity costs for development plan. The results show that the land areas about 57.12% have trend to develop to agricultural and others. The appropriate rents of them are about 900.16 USD per thousand Square feet. There are 30.99% of land areas that more likely to develop to commercial activities. Theirs appropriate rents are about 1,359.37 USD per thousand Square feet. Finally, there are 11.89% of land areas that development trend in to industries zone with appropriate rents about 1,938.77 USD per thousand Square feet. More areas in Thailand have less development factors which are likely to improve to the commercial development community. Then, Government should implement the strategic policy to solve these unequal areas development and manage them in the suitable ways.

Keyword: land evaluation, multinomial logit

JEL Classification: C3, J1, O2

1. Introduction

Nowadays, the development of each area has many factors involved. The factors such as the frequency of flooding time, the economic planning policy, the road construction project, the expanding of community area, etc. impact a trend to the area growth. Chalearn (2005) showed the evaluation method to explain the degree of land usage by mentioning on the characteristics and the conditions of each land. This method only mentioned on physical factors such as transportation, utility, environment and infrastructure, which is conducted to evaluate the land usage and compared with theirs appraisal to declare the value of each area. Meanwhile, Nick (2005) specified the evaluate process on social views, which are demand and supply flow of each land. Although, Vlad (1997) referred to add more variety factors into this process aims to increase the accuracy degree of land evaluation. He suggested that land characteristics and qualities, site assessment factors, economic factors, social factors and sustainability factors are appropriate keys to assess the area benefits.

The probability of development techniques were used to define the inception idea on area development in Vitawat (2011). It is considered that what is the most opportunity that area will be improved and suggested the main issues that should be used to evaluate each type of properties such as physical, legal, marketing and finance. However, like other previous study, Vitawat (2011) did not do the empirical study or identified clearly on variables. Then, this paper tried to conclude all concepts of land evaluation and defined the suitable variables to assess them.

For background of this study, Thailand government has more lands to make an improvements plan. However, most of them cannot be development in the proper way. The department of highway was the second largest of land handling (the largest is Treasury Department). It has land assets more than 5,000 units that separate all provinces in the country. However, the highway department has the lands that have more valuable because these areas are settled beside the main road, called the areas outside the highway or AOH. These AOHs were more valuable today, so the highway department will construct the strategy to manage them under the good governance and transparency concepts. Although, in Thailand, the process of land assessment is the retroactive style and cannot applied to modern economic change. Then, this study aims to analyze economic evaluation concept to assess these areas for development by Multinomial logit and used the AOHs for empirical work and suggested the development plan to the government.

2. Data and Methodology

The process of this study was shown in figure 1. First, the researcher defined the evaluated variables in each aspect from review literatures and specialist ideas. The aspects consist of physical aspect, social aspect and economic aspect. Then, 1,623 AOHs that separated in all provinces were corrected by the empirical surveys. All factors should bring in the multinomial logit to estimate the probability of land assessment in each area. Then, this study defines that what areas should be development or conclude them into the feasibility of land development.

Next, the feasibility of land developments of each areas and the important factors should be conclude to estimate the appropriate rent of area utilization by ordinary least square methods. The maximum and minimum rents of each area should be determined from their mahalanobis distance approach. These range can be investigate as the suitable price for policy

management. Last, this study should forecast all variables into 5 years and 10 years age and repeat all process again. This creates the long-run development show by the growth of appropriate rent in the future. Then, the management strategy in both policy strategy and operation strategy will be constructing to suggest to Thailand government. The framework of this study is in figure 1.

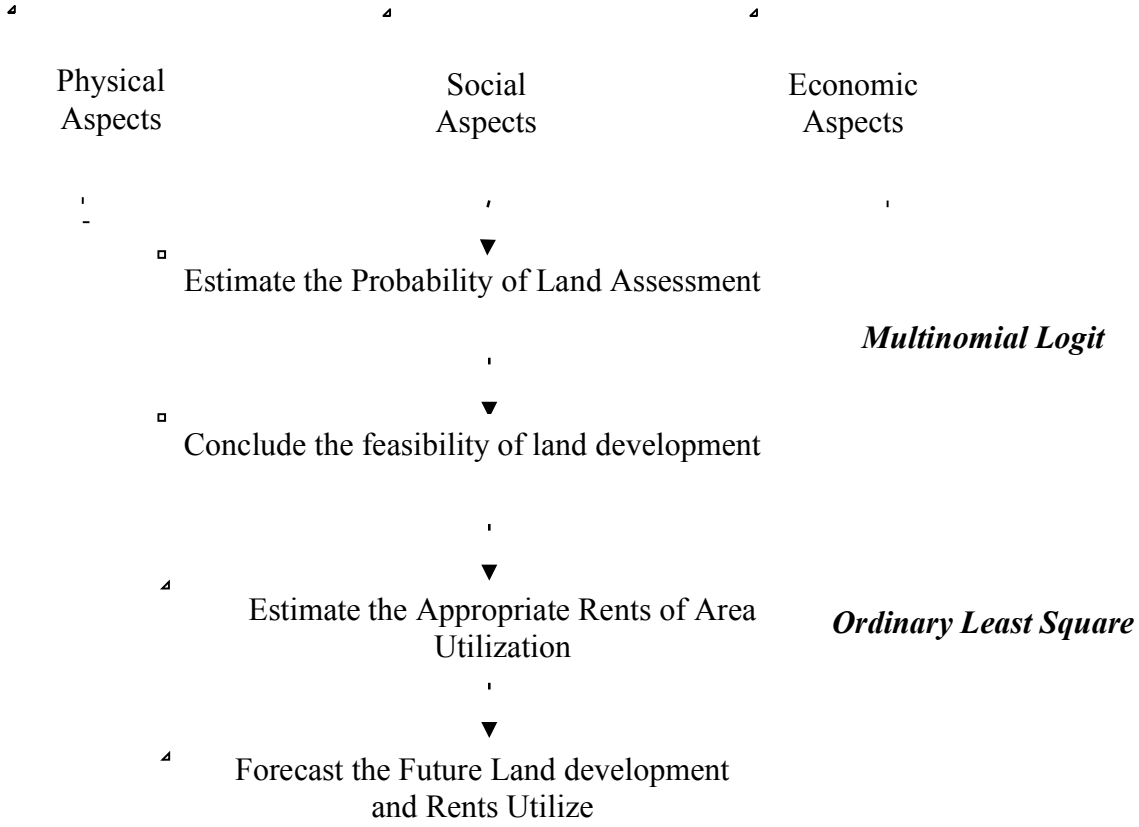

Figure 1 Framework of the study

Next, the multinomial logit was used to estimate the probability scores that each area could be developed. In this step, each AOH could be concluded the feasibility of improvement. In the study the development feasibility can be categorized into 3 groups. The first one is the group of lands that have development probability to be the agricultural area and other. This group is the reference group of multinomial logit model. The second category is the group of lands that have development probability to be the commercial area. And, the last category is the group of lands that have development probability to be the industry area.

Table 1. The area development categories

Categories	**Area Development**
1	Agricultural area and others (reference group)
2	Commercial area
3	Industry area

This means that we will know that what area should be determined to the agricultural area and other or commercial area or industry area. When the development trend could be

determined, next, the ordinary least square method was used calculate its appropriate rents by recognize area utilization. Last, to make a strategy plan, this study forecasted the future land development in 5 and 10 years and their appropriate rents across the time. The figure of this assessment will help the government to make a suitable plan for manage their assets.

3. Model of Estimation

A. Multinomial Logit

The multinomial logit model is the basic model of logit theory. However, this method is more complicated than the normal logit. It can use to estimate the equation with more than 2 groups of dependent variables which is also in the unordered data format. In addition the distribution of multinomial logit is logistic distribution; then, the maximum likelihood can be used to estimate equation. The system equations of multinomial logit are shown equation 1-3.

$$P(Y_i = m) = \frac{1}{1 + e^{-Z_{mi}}} = \frac{e^{Z_{mi}}}{1 + e^{Z_{mi}}} \quad (1)$$

$$Z_{mi} = \beta_0 + \sum_{k=1}^{K} \beta_{mk} X_{ik} \quad (2)$$

$$L_i = \ln[\frac{P(Y_i = m)}{P(Y_i = 1)}] = \beta_0 + \sum_{k=1}^{K} \beta_{mk} X_{ik} = Z_{mi} \quad (3)$$

where dependent variable--Y is dichotomous data which the numbers of group is equal to m. The reference group is the first group in the data (Group 1). X is independent variable which k variables and i observations. β's are coefficients of estimation. The equation 1 shows the probability that the dependent variables are in the m group. This probability could be divided by the probability that the dependent variable are in the reference group, called the odd ratio-- $e^{Z_{mi}}$. The natural logarithm of the odd ratio is shown in equation 3. Thus, in each case the dependent variable is equal to m ($Y_i = m$) is the M-1 predictions of the odd ratio.

However, the dependent variable of this study is area development that can be divided into 3 groups-- the agricultural area and others (reference group), the commercial area and the industry area. The probability that each area should be developed could be calculated by factors of land assessment in each aspect. For physical aspect, this study tries to mention on the suitable of location for development. For development to be agriculture and others or industry would have more quarter than commercial. The areas that have floods frequently should not be developed to commercial or industry section. Some areas from the survey have the building on theirs site, then the construction place should be determine to make a plan for improvement. To sum, the physical factors that used to assessment the land are area's size, a number of moths that have flooded and the construction on the site.

This study examine the score that calculated by average grade of social connection in all area's directions to be the social factors. A number of vehicles that pass this area refer to business activity that across this region. The military area is the obstacle to progress to the industry, on the contrast, under local development plans; this ground should have potential to marketable development. Population density shows the social integration among people in

that area. And either proportion of agriculture or non- agricultural of the province that area is settled are the important factor to classify the commercial and industry movement.

In economic condition, gross province product (GPP), population and GPP per capita of province that land is settled promote the efficiency to be commercial and industry development. To sum, the variables and theirs descriptions are used in multinomial logit model are shown in table 2.

Table 2. The factors of land assessment

Variables/ Factors	Name	Notation	Data Decription
Dependent Variable	Type of area development	Type	1 = agricultural area and others (reference group) 2 = commercial area 3 = industry area
	Type of area development (estimated)	type_est	1 = agricultural area and others (reference group) 2 = commercial area 3 = industry area
Independent Variables: Physical	Area size	Area	Squared meters
	A number of moths that have flooded.	Month	0-12 months
	Buildings of site	New	0 = none 1 = should be dismantled 2 = should be repaired 3 = available but old 4 = new 5 = on construction
Independent Variables: Social	Social score of areas	socio	The average score of social connection in all directions. The scores are 0 = low capability to development to be the commercial and industry unit. 0.5 = medium capability to development to be the commercial and industry unit. 1 = high capability to development to be the commercial and industry unit.
	A number of vehicles that pass this area	vehicle	0 = few of vehicles run over this area 1 = sometimes to be crowded 2 = to be crowded
	It is military area	military	0 = No

Variables/ Factors	Name	Notation	Data Decription
			1 = Yes
	It has under local development plans	plan	0 = No 1 = Yes
	Population density	density	Persons per kilometer
	Proportion of agriculture of the province that area is settled	agri	Percents
	Proportion of non-agriculture of province that area is settled	nonagri	Percents
Independent Variables: Economic (of the province that area is settled)	Gross province product	gpp	Million Baht
	Population	pop	Thousands person
	Gross province product per capita	percapita	Bath per person

However, some variables have problems such as near singular matrix and multicollinearity. This study cut these variables to increase the power of estimation. Then, for evaluate the land area by multinomial logit, the system equations are equation 4.

$$\begin{aligned}\ln[\frac{P(type=2)}{P(type=1)} &= \beta_{20} + \beta_{21}area + \beta_{22}month + \beta_{23}new + \beta_{24}military + \beta_{25}gpp \\ &+ \beta_{26}pop + \beta_{27}density + \beta_{28}percapita + \beta_{29}agri + \beta_{2,10}socio \\ \ln[\frac{P(type=3)}{P(type=1)} &= \beta_{30} + \beta_{31}area + \beta_{32}month + \beta_{33}new + \beta_{34}military + \beta_{35}gpp \\ &+ \beta_{36}pop + \beta_{37}density + \beta_{38}percapita + \beta_{39}agri + \beta_{3,10}socio\end{aligned} \quad (4)$$

Form model, each ßs show the change in the probabilities of area that should development to commercial or industry compared with agricultural and others cause by each factor. Thus, the estimated outcomes are equation 5

$$\begin{aligned}\ln[\frac{P(type=2)}{P(type=1)} &= -1.597291 - 0.000018area - 0.314884month + 0.498071new \\ &+ 1.062992military + 0.000038gpp - 0.000895pop \\ &+ 0.000029percapita - 3.061582agri + 5.295695socio \\ \ln[\frac{P(type=3)}{P(type=1)} &= -8.353327 + 0.000044area - 0.022791month + 0.277617new \\ &- 0.457555military - 0.000020gpp + 0.001333pop \\ &+ 0.000028percapita - 2.075239agri + 7.273546socio\end{aligned} \quad (5)$$

The dependent variables are logarithm of the odd ratio that shows the probability of areas that should be developed. The power of estimation show by Nagelkerke's pseudo R-Square is equal to 0.508. Like pseudo R-square, chi-square shows the significance of equation to estimation. To test the accuracy of the estimation, equation 4 can be truly evaluated the

AOHs property about 79.3%, which is quite close to situation. This means the system equations are suitable to assess the land for development. All coefficients of this system equation have the direct signs that support the idea of evaluation.

B. Appropriate Rents equations

The opportunity costs of area utilization show by appropriate rents in each zone. For this research, the appropriate rents derived by the econometric model. Linear regression is used to estimate the rents by ordinary least squared methodology. Defining the variables, this study examines the government's price as a reserve price of each area. As a result, the estimated of theses reserve prices will be known as the appropriate rent of each area.

Table 3. The dependent variable of appropriate rents equations

Variables/ Factors	Name	Notation	Data Decription
Dependent Variable	price	price	Baht per squared meters
Independent Variables	Type of area development (estimated)	type_est	1 = agricultural area and others (reference group) 2 = commercial area 3 = industry area
	Area size	Area	Squared meters
	A number of moths that have flooded.	Month	0-12 months
	Buildings of site	New	0 = none 1 = should be dismantled 2 = should be repaired 3 = available but old 4 = new 5 = on construction
	Social score of areas	socio	The average score of social connection in all directions. The scores are 0 = low capability to development to be the commercial and industry unit. 0.5 = medium capability to development to be the commercial and industry unit. 1 = high capability to development to be the commercial and industry unit.
	A number of vehicles that pass this area	vehicle	0 = few of vehicles run over this area

Variables/ Factors	Name	Notation	Data Decription
			1 = sometimes to be crowded 2 = to be crowded
	It is military area	military	0 = No 1 = Yes
	It has under local development plans	plan	0 = No 1 = Yes
	Population density	density	Persons per kilometer
	Proportion of agriculture of the province that area is settled	agri	Percents
	Proportion of non-agriculture of province that area is settled	nonagri	Percents
	Gross province product	gpp	Million Baht
	Population	pop	Thousands person
	Gross province product per capita	percapita	Bath per person

Like the multinomial logit model, this study cut some insignificant variables out of the original model (model 6) to increase the power of estimation. The appropriate rent original model shows as

$$price_i = \gamma_0 + \gamma_1 type\_est_i + \gamma_2 month_i + \gamma_3 new_i + \gamma_4 military_i + \gamma_5 vehicle_i + \gamma_6 gpp_i + \gamma_7 pop_i + \gamma_8 percapita_i + \gamma_9 density_i + \gamma_{10} agri_i + \gamma_{11} growth_i + \gamma_{12} socio_i \quad (6)$$

Then, this study estimate the equation 6 by ordinary least square methods with 5% significance level and linear relationship. The appropriate rent estimation model shows in equation 7.

$$price_i = -9.6119 + 226.402 type\_est_i + 0.019 percapita_i + 1.797 density_i \quad (7)$$
$$(173.477) \quad (101.274)^* \qquad (0.001)^* \qquad (0.644)^*$$

The R-squared of this estimation is equal to 0.379 that means this model has some power to forecast on the appropriate rents of each land.

4. Results of the Study

This study uses 1,623 AOHs from the highway department as an empirical study to estimate the probability of land assessment and find the appropriate rent of each land. The results show that there are 927 areas that have trend on development to be an agricultural and others or about 57.12 percent. The locations of most areas are settled in Ubonratchathanee, Nakhornratchasrima, Sakonnakhorn, Nakornpanon and Petchaboon provinces, etc. To estimate the appropriate rent of each areas and sum up to the province, the average rent of those areas is about 900.16 USD per thousand Square feet. The range of this appropriate rent is about 755.02-1,045.31 USD per thousand Square feet. The findings show that the agricultural and other areas have low appropriate rent compared with others.

There are 503 areas that have trend on development to be a commercial area or about 30.99 percent. The locations of most areas are settled in Petchaboon, Ubonratchathanee, Nakhornratchasrima, Burirum provinces, etc. The average rent of those areas is about 1,359.37 USD per thousand Square feet. The range of this appropriate rent is about 1,127.68-1,591.05 USD per thousand Square feet.

There are 193 areas that have trend on development to be an industry area or about 11.89 percent. The locations are settled in Petchaboon, Nakhornratchasrima and Samutsakorn provinces etc. The average rent of those areas is about 1,938.77 USD per thousand Square feet. The range of this appropriate rent is about 1,643.78-2,233.77 USD per thousand Square feet.

For the long-run development, this study forecasted the factors that affect the AOHs development in 5 years and 10 years. And then, the estimation of the land assessment probability by multinomial logit should do again and investigated the appropriate price of each AOHs in the future. The findings will define the price adjustment of each AOHs and then concluded to average of provinces' price and set up the improving strategy.

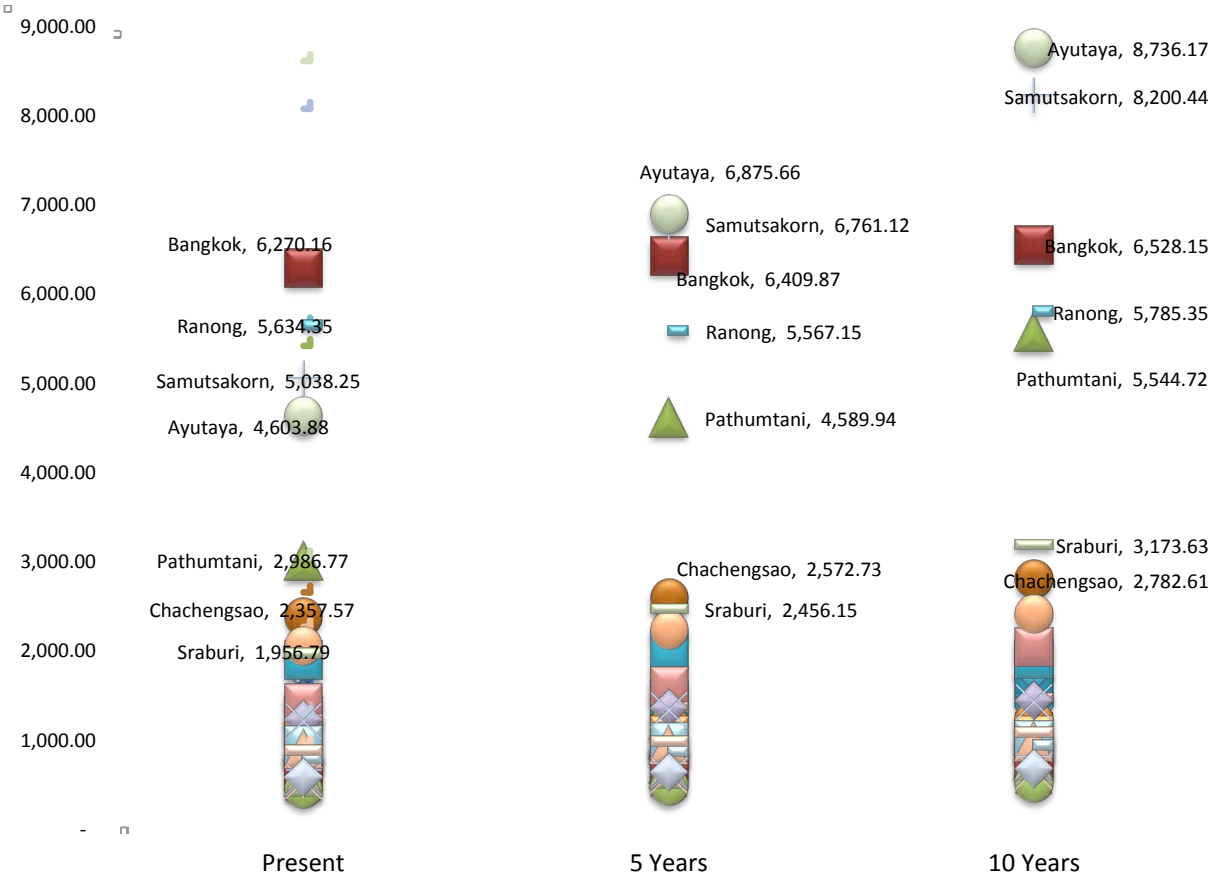

Figure 2 the growth of appropriate rent in land in the long-run development (Categorized by each provinces)

This figure shows the growth of price adjustment of each AOHs. The interesting point is the high growth of land development that shows by appropriate rent in the future in the areas that located in the Ayuathaya, Samutsakorn, Pathumtanee and Saraburi provinces. These increasing growths are signaling the government to make the urgent plan to manage these

lands and make management strategy to use these lands to maximize social benefit for Thailand.

The management plan of this study comes from the voices of stakeholder such as policy implementers, the persons in each areas and the advice of specialize. There are policy strategy and operations strategy that can be set as a long-term plan for area development in Thailand. For policy strategy, the stakeholders want government to make the strategy must be relevance with main policy of highways Department and make the efficiency and effectiveness plan for using the AOHs to gain more social benefits. The plan should determine the sustainability gain due to the settles activities.

For Operations Strategy, the stakeholders want government should set the potential teamwork in both national and local levels. This team should have the transparency action especially on the high value areas. The action should mind on the advocacy process aims to create the equal benefits on the stakeholder. Finally, the operation workers should have the accountability on right and duties to manage the lands.

5. Conclusion

For conclusion of this study, this study sums up the ideas that the economic evaluation is the social method to assessment the land management and the multinomial logit is one instrument that suitable to evaluate these lands. The factors used in this methodology are physical, social and economic that shows the characteristics of each area.

The results show that there are some areas in Thailand that have development trend to have high value growth in the future. The provinces that these lands are settled are in Ayuathaya, Samutsakorn, Pathumtanee and Saraburi provinces. These areas have both a high growth of appropriate rent and a feasibility to be commercial or industry zones. Government should determine these results and make the suitable management strategy aims to gain more social benefits. These actions together would make proactive plan for land development and make Thailand's government has the clear action to manage the social benefit in the future.

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The Effect of Attribution and Brand Image on Satisfaction through Relationship Quality: In Service Failure Perspectives

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Abstract

This research investigated how customers' internal/external attribution of service failure affects their reactions to satisfaction with relationship quality. It also explored whether the brand image has any effect on the relationship between service failure and attribution. This study used hierarchical regression tools to analyze the effect on the dependent variable of the hypothesized independent variables. The empirical results showed that internal/external attribution mediated the relationship between service failure and satisfaction through relationship quality. The study also showed that brand image has a moderating effect on the relationships between service failures and internal/external attributions.

Keywords: service failure; internal/external attributions; brand image; satisfaction through relationship quality

Introduction

In marketing services, developing interpersonal relationships between sellers and buyers is very important in order to maintain long term relationships. Service quality is a major factor in providing customers with satisfactory service. In past studies, scholars were mostly concerned with consumer purchase behavior and purchase intention in the relationship between service qualities. However, it is almost impossible for any service market to go without any service failures. In a service market, if the services have not synchronized with changes in production and consumption, the quality of services will be more difficult to control (Lovelock 1996). The purpose of this research is to examine the way in which attribution reactions affect satisfaction that is mediated or moderated to individual feelings after a service failure occurs. In previous studies, some scholars support moderator effect on attribution and other scholars support mediator effect on attribution. This study seeks to examine two separate points of view. The first point of view predicts that attributions mediate the relationship between the service failures and customer satisfaction, and the second point of view predicts a moderating relationship between the service failures and the customer satisfaction.

Literature Review and Hypotheses Development

The Relationship between Service Failure and Satisfaction with Relationship Quality

Service failure is defined as the service performance that does not meet customers' expectations (Hoffman and Bateson 1997). Keaveney (1995) pointed out that service failures can be divided into core service failures and service encounter failures. Core service failures refer to all errors that are associated with the service itself, such as a situation in which service personnel sent customers the wrong meal, or billed the wrong amount that causes the customer financial damage. Service encounter failures refer to inappropriate interaction between customers and service personnel, such as rudeness of service staff, unfriendliness, a lack of customized service, and unprofessionalism. All these problems can cause customer switching behaviors**,** and that can ultimately damage the profitability of the service firm.

Hoffman, Kelley, & Rotalsky (1995) continued the study (Bitner et al. 1994) and analyzed the service failure with CIT (Critical Incident) and classified the service failure and service recovery. With recovery methods, managers come forward to solve

the problems by sending a coupon and/or a discount, but the customer may not have high satisfaction or repurchase intentions even after attempts to remedy the situation.

According to equity theory (Messick and Cook 1983), exchanges in fairness occur when one party in an exchange receives a value that is proportionate with their counterpart's contributions to the exchange. In a service marketing environment, customers' demand for value results in a proportion of their contributions to the exchange of quality, fair price, and good service in the purchase they make (Power 1991). Tax et al. (1998) pointed out that the service failure can reduce customer satisfaction of relationship quality even though antecedent service experience is a positive**,** and a high-quality customer relationship will reduce the negative impact of service failure. The quality of service is more difficult to judge than the quality of commodities since the service is intangible and the products are tangible (Estelami 2003). Therefore, when service failure occurs, the remedy acts are usually able to reduce complaint of service failure and the negative effect thereof. Based on the above analysis, we predict the following:

H1: Service failures have a negative effect on customer satisfaction through relationship quality.

The Relationship between Brand Image and Relationship Quality

A brand can be defined as "a name, term, sign, symbol, or design, or combination of them which is intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competitors" (Kotler 2012. p. 262). Brand knowledge includes brand awareness and brand image. Brand awareness is the consumers' ability to recall and recognize the performance of brand. Brand image is a series of associations linked to the brand. Brand awareness is the consumers' ability to identify the brand (Rossiter and Percy 1987). Brand image is defined as a perception of brand associations that is reflected in consumers' memory. Therefore, under consumers' perception of brand image, a brand is said to have a positive/negative impression when consumers react more/less favorably to the product or service of the brand than the unnamed version of the product or service (Kevin, Lane, & Keller 1993).

Aaker (1998) argued that enterprises not only build "brand relationship" but also build brand image to meet the expectations of the customers in order to maintain their relationship in an interactive manner, which can bring enterprises and the customers together in a close relationship. Brand relationship is a concept that describes people

getting along with the environment (perceived quality), and this relationship can connect the enterprises and customers. The brand is very important in establishing the quality of a relationship since it can shorten the distance between businesses and customers (Blackstone 1993). Moreover, the brand's personality will also affect the loyalty of its customers which will induce and motivate customers to buy the products (Brandt 1998). Therefore, brand image is described as extrinsic/intrinsic properties of the product or service. The brand image not only evaluates customers' perceived quality and but also attempts to meet customers' psychological or social needs. This leads to the following hypothesis:

H2: Brand image has a positive effect on satisfaction through relationship quality.

Mediated or moderated effect on Attribution

According to attribution theory (Fritz Heider 1958), people try to observe and analyze human behaviors with explanations. Attribution can be analyzed as internal (personal) or external (situational) attributions (Weiner, B. 1974a; Somasundaram, T. N. 1993). When an internal attribution is made, the cause of the given behavior is an individual's characteristics, such as ability or personality. When an external attribution is made, the cause of the given behavior is the situation or the surrounding environment, such as other people or luck. A service failure may be encountered before the formation of consumers' attitudes in the process of providing services. The difference between consumers' expectations before buying and actual feelings (perceived) about the purchase will indirectly affect consumers' satisfaction (Oliver 1980; Howard 1974). Heider (1958) pointed out that individual behavior has a reason behind it because of the conduct observed by the viewer's thinking and perspective. The above analysis indicates that each person has a timely response, so when the observer assumes the service failures are due to external environment then the customer may experience reduced dissatisfaction. If the service failures are due to intrinsic behavior, this is called a "personal or internal attribution" and "then the customer may increase the dissatisfaction" (Folkes & Kotsos 1986). They tend to increase customer dissatisfaction when the outcome of a service failure occurs with internal attribution, but they tend to decrease customer dissatisfaction when a service failure occurs with external attribution. This is because external attribution increases customers' tendency to attribute outcomes to the environment rather than to the provider. From the above analyses, the below hypothesis follows:

H3a: External attribution has a positive effect on satisfaction through relationship

quality.

H3b: Internal attribution has a negative effect on satisfaction through relationship quality.

H3c: The relationship between service failure and satisfaction through relationship quality is mediated by external attribution.

H3d: The relationship between service failure and satisfaction through relationship quality is mediated by internal attribution.

However, previous research has shown that the impact of attribution on satisfaction has been stronger in some instances than in others depending upon the source responsible for the feelings. Attribution theorists refer to the question of ‘‘who is responsible?’’ as the internal/external attribution (Weiner 1985b).This is also what theorists would consider an example of “control,” as ‘‘was the event controllable by someone?’’ (Weiner 1986). For example, to a service failure is due to stores’ lack of enough employees or due to a special occasion. Thus:

H4a: Internal attribution is moderating between service failure and satisfaction through relationship quality.

H4b: External attribution is moderating between service failure and satisfaction through relationship quality.

Method

Sample and Procedure

A total of 190 usable surveys were completed by 124 female and 66 male adults (65.3 percent and 34.7 percent, respectively; 78 missing).

This study used a service failure situational simulation and designed questionnaire. Participants were sought that had experience in, access to, and had previously consumed Starbucks' coffee shop to compensate for the lack of authenticity of scenario simulation.

The following scenario will illustrate: there is a promotion activity visibly advertised where one can buy one drink and get a second one free, and the customer ordered two

cups of drink. However, the staff negligently served wrong drink, the company made another drink and gave the person a store coupon as an apology.

Measures

Service Failure. The measure of service failure was adopted from a previous study (Boshoff 1999) using six seven-point scales assessing the degree to which respondents strongly agreed or disagreed that service failures had occurred (e.g., "The shop had occurred in the service delay errors in me"). Cronbach's $\alpha = 0.876$.

Attribution. Internal attribution was measured by four seven-point scales and external attribution was measured by three seven-point scales adopted from a previous study (Folkes 1986; Folkes 1987**)**. Strongly disagree/strongly agree were available answers to the given questions (e.g., "The service failure was caused by staff's inadequate training"; "The service failure was caused by special occasion"). Cronbach's $\alpha = 0.601$(internal attribution $\alpha = 0.639$, external attribution $\alpha = 0.709$).

Brand Image. Brand image was measured by five seven-point scales adopted from previous study (Park et al. 1986)**,** using strongly disagree/strongly agree as available responses (e.g., "I felt Starbucks Coffee (Starbucks) was an excellent brand image"). Cronbach's $\alpha = 0.943$.

Satisfaction. Satisfaction was measured by three seven-point scales adopted from previous studies(Crosby et al. 1990; Morgan et al. 1994; Tax et al. 1998) as strongly disagree/ strongly agree (e.g., "I felt satisfied with the shop's overall services"). Cronbach's $\alpha = 0.916$.

Results

We tested the model using hierarchical regression analysis and also regressed the dependent variable on the hypothesized independent variables.

Reliability analysis

Cronbach's alpha coefficient values were assessed using the conventional method, and the results (shown above) all reached the recommended significant level of 0.6 (Nunnally and Bernsteinstein 1994). Cronbach's alpha for brand image was 0.943; Cronbach's alpha for service failure was 0.876; Cronbach's alpha for attribution was 0.601 (internal attribution was 0.639, external attribution was 0.709); and Cronbach's alpha for satisfaction was 0.916. These were all greater than 0.6 and reached significant level.

As predicted in H1, service failures have a negative effect on customer satisfaction with relationship quality ($F = 3.595$, adjusted $R^2 = 0.014$, $p < 0.1$). The regression model is statistically significant; therefore, H1 was supported. H2 predicts that the brand image has a positive effect on satisfaction through relationship quality ($F = 243.920$, adjusted $R^2 = 0.562$, $p < 0.001$). The regression model is statistically significant; therefore, H2 was supported. H3a predicts that the external attribution has a positive effect on satisfaction through relationship quality ($F = 12.746$, adjusted $R^2 = 0.059$, $p < 0.001$). The regression model is statistically significant; therefore, H3a was supported. H3b predicts that the internal attribution has a negative effect on satisfaction through relationship quality ($F = 10.839$, adjusted $R^2 = 0.049$, $p < 0.001$). The regression model is statistically significant, and therefore, H3b was supported. H3c predicts that the relationship between service failure and satisfaction with relationship quality is mediated by external attribution ($F = 11.296$, adjusted $R^2 = 0.098$, $p < 0.001$). The regression model is statistically significant; therefore, H3c was supported. H3d predicts that the relationship between service failure and satisfaction with relationship quality is mediated by internal attribution ($F = 5.502$, adjusted $R^2 = 0.045$, $p < 0.05$). The regression model is statistically significant; therefore, H3d was supported.

However, the present study only partially supported a moderated relationship for attributions on the relationship between service failures and satisfaction. As predicted in H4b, external attribution is moderating between service failure and satisfaction through relationship quality ($F = 0.00$, adjusted $R^2 = 0.19$, $p < 0.001$). The regression model is statistically significant; therefore, H4b was supported. However, unlike external attribution effect, the internal attribution is not significant ($F = 0.178$, adjusted $R^2 = 0.05$, $p = 0.178$).

Discussion and Conclusions

In addition to the reliance on past consumption experience as a reference, the elements of brand image are important to consumers. High brand image has a significant influence on satisfaction, and that ultimately can reduce customer dissatisfaction when the service failure occurs. However, when there is low brand image, customers tend to use internal attribution (which is when the service failure is attributed to the provider itself not to environment); therefore, it causes the dissatisfaction to increase.

Service encounter failure occurs when the staff does not provide adequate services, and this ultimately causes customer dissatisfaction. Since the service can cause the direction of the feelings of the consumers, it is the most important part of the contact with service personnel and that ultimately could affect the integrity of follow-up consumers reviewing the service quality of the store**.** Therefore, the quality of education and training of service personnel is very important to reduce service failures.

Furthermore, through examining the mediating and moderating effect of attribution in the relationship between service failures and satisfaction. The results indicate: attribution is mediated the relationship between service failures and customers' satisfaction, but the external attribution also is moderated the relationship between service failures and customers' satisfaction. In sum, it could be concluded that attribution has different effects at the same time as attribution is mediated the relationship between service failures and customers' satisfaction. But also external attribution weakened the immediate impact of service failures on customers' dissatisfaction.

Managerial Implications

These findings highlight the important role of attribution effect to the customers' satisfaction, which may provide the policy makers with some implication in service providing behaviors and also help to predict customers' satisfaction.

Limitations and Future Research

There are limitations to this study: (1) the questionnaire was used as a single source (CMV), and the study was a cross-sectional nature of the data; (2) the sample size was relatively small.

For future study in this area (1) future research could also investigate other dependent variables**,** such as commitment and trust in the relationship quality (Crosby et al. 1990; Morgan & Hunt 1994); (2) Future research might employ larger sample sizes and different sample compositions to study a longitudinal nature of the data.

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Systems Intelligence Competencies for Leadership Performance in the Complex World

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Introduction

Globalisation and modernisation are creating an increasingly diverse and interconnected world. Nowadays private and public organizations have to face crisis, change, turbulence, and high competitive pressure. The environment in organizations is becoming more complex and changes more often and suddenly (Ossimitz, 2000; Laszlo, 2002; Gharajedaghi J., 2006, Makridakis, 2009). The dynamics, complexity and diversity enhance demands on management and leadership competencies at all organizational levels. Therefore, increasing understanding of different aspects of globalization and interrelationships of various factors and their changes will help organizations to meet the new challenges brought by globalization. Since the need for more leadership in organizations comes from the necessity to adapt more rapidly to changing environments, leadership competencies focus on helping the organizations to adapt and change (Pagon, 2008). The aim of the present paper is to apply Systems thinking to leadership. System Thinking, "as an agent of integration and enabler of effective decision making for permanent solutions of this complex world, has developed as an important tool for strategic planning and decision making" (Batra et al, 2010). Systems thinking (Midgley, 2003; Maani, Cavana, 2007) offers a holistic way of appreciating all dimensions of a complex problem and enables the formation of effective and long-term management strategies (Dawidowicz 2011). In spite of its extensive application, Systems thinking has mostly been used and applied by systems scientists and some academics. The applications of Systems thinking by policy makers, managers, practitioners and ordinary people have been limited (Nguyen et al, 2012). This is attributed to several factors including the 'difficulty to understand Systems thinking' (Herrscher, 1995). This paper demonstrates the potential for making Systems thinking popular and applicable in leadership and management. The first part of the paper explains the Systems Thinking concept and briefly outlines its history and emergence in management. The second focus of this paper is the relatively new topic of Systems intelligence, which extends the multiple intelligences approach, including Emotional and Social intelligence, to the next level in the effort to develop a more comprehensive, pragmatically relevant, and realistic perspective for leadership in action (Hämäläinen, Saarinen, 2004). The hypothesis formulation is based on the conceptual model of relationship between Systems intelligence competencies and leadership performance. The theoretical model was supported by empirical evidence from the public administration organization perspective. Virtanen (2000) explored the generic features of public managers and uttered that much of previous research on managerial competence saw management as a generic profession and the differences between private and public sector were not directly addressed. However, the paper reveals the differences in intelligence competencies and compares the impact of intelligence competencies on leadership performance in business and public administration organizations. Intelligence competencies which are predictors of leadership performance in Lithuanian public administration were identified by this research.

Defining Systems Thinking and Systems Intelligence

The precise beginning of the systems thinking field cannot be pinpointed, as the beginning is a matter of perspective (Nguyen et al, 2012). Applied Systems thinking originated in biology and has spread into other areas including cybernetics, ecology, psychology, operational

research, information systems and management science (Beer, 1967; von Bertalanffy, 1968; Churchman, 1968; Ackoff, 1999; Capra, 2002; Midgley, 2008). The idea of a system as a bounded set of inter-dependent elements, which as a whole exhibits a number of 'emergent' properties, is now used to study and manage complex situations in organisations and society (Córdoba-Pachón, 2011). Systems thinking has become increasingly popular because it provides a 'new way of thinking' to understand and manage complex problems, whether they rest within a local or global context (Bosch *et al.*, 2007; Cabrera *et al.*, 2008). Systems thinking is a very broad field, and it would be impossible to cover all the tools, techniques, methods and approaches in a single document (Sherwood, 2002). When focusing on Systems thinking, Checkland (1981) described the concept of *applied systems thinking*, differentiating between *hard systems thinking* and *soft systems thinking*. Hard Systems thinking often called systems dynamics or operations analysis is most useful in computer simulations where the problem and factors related to it are well defined (Dawidowicz, 2011). At the core of system dynamics methodology are the concepts of feedback loops and time delays that characterize the dynamic complexity of a system (Sterman, 2000). Causal loop maps are often used to convey these elements (Wong et al, 2010). In contrast, soft systems thinking, sometimes called holistic or reflective thinking, is applied to problems where the problem involves conflicting or multiple perspectives that must be reconciled or understood. As a result, soft systems thinking includes developing a model and comparing that model to the real-world situation until potential answers are sufficiently honed to support one best answer to the problem (Jackson, 2006; Hung, 2008; Capelo and Dias, 2009; Dongping, 2010, Dawidowicz, 2011).

Systems thinking is about integrating all aspects, all points of view and all interests in a given system of multiple interdependent processes to deliver quality (Blockley, 2010). Systems thinking involves a broader view, looking at larger and larger numbers of interactions and that creates a better understanding of the "big picture" (Ackoff, 1999). System thinking resists the breaking down of problems into its component parts for detailed examination and focuses on how the thing being studied interacts with the other constituents of the system (Batra, 2010). This results in sometimes strikingly different conclusions than those generated by traditional forms of analysis, especially when what is being studied is dynamically complex or has a great deal of feedback from other sources, internal or external (Haines, 1998). Many people tend to think in straight lines – moving from cause to effect. Systems thinkers look for connections and feedback. Senge (1990) gives many examples of thinking in loops. Connectivity or connecting is at the heart of modern complexity theory, leading to the important concept of 'emergence,' that results from interactions between the parts that make the whole. It is in this sense that the whole is more than the sum of its parts (Blockley, 2010**).** Effective decision making and learning in a world of growing dynamic complexity requires managers to become systems thinkers – to develop tools to understand the structures of complex systems (Sterman, 2000). Taking on a systems approach to leadership and management involves exploring the complexity of interactions within the system. A systems approach has been shown to be useful because it takes on a holistic view of the world and allows for interactions to be discovered (Dawidowicz, 2011). Gharajedhagi (2006) gave a new philosophical sense to systems thinking in the modern context by proposing an interactive management model: "The best way to understand the system is to construct it, to get a handle on emergent properties, …we need to understand the processes that produce them,…controlling, influencing the system`s existence." In the global context, technical expertise, factual knowledge and customer or shareholder orientation seem to gain much less attention than the "soft" qualities such as systems thinking, pattern recognition, flexibility etc. (Jokinen, 2004).

It is not surprising that recent literature has suggested that 'new ways of thinking' are required to manage the complexity. Although this range of new methods and methodologies are extensive, many of these new problems ways of thinking have emerged from or embrace the concepts inherent in Systems Thinking (Bosch et al, 2007). It should be noted that the Systems thinking theories are widely spread but they are not universally known and applied in management, since they require a deeper understanding of systems philosophy. One of the reasons why it is difficult to apply Systems thinking effectively according is "that the thinking skills stand in stark contrast to the skill set that most of us currently use when we grapple with business issues" (Richmond, 2001). The focus of this paper is the relatively new topic of Systems intelligence. First appearing in the published literature in 2004 (Hämäläinen, Saarinen), Systems intelligence has resonated with the related fields of decision making, communication and leadership (Jones, Corner, 2011). Following the footsteps of Emotional, Social and Cognitive intelligence (Rosete, Ciarrochi, 2005; Spencer, Spencer 1993; Kotter, John, 1999; Goleman, 1998, 2000), Systems intelligence offers a new perspective on how individuals act with a lesser or greater degree of intelligence within physical and social systems. Although drawing on traditional Systems thinking, Systems intelligence goes beyond it by positing that people act with systems intelligence even when they do not objectively know about systems (Ormerod, 2008, Jones, Corner, 2011). The relationship between Social and Emotional intelligence competencies and leadership has been investigated by many scholars (Kets De Vries, 2001, 2004; Mintzberg, 2001, Rosete, Ciarrochi, 2005). Our goal in this paper is to relate the elements of a leadership performance model to our Systems intelligence competencies framework.

Scientific framework for Systems intelligence competencies

Systems intelligence as a theory is based on the belief that some people have a greater intuitive ability to operate effectively in systems than others and that these people are able to instigate positive systemic change. However, it is also based on the idea that Systems intelligence can be improved upon and developed (Hämäläinen, Saarinen, 2004). Researchers argue individuals have a certain level of natural Systems intelligence, but they have the capacity to improve their use of systems intelligence. The level of systems intelligence an individual is capable of reaching is dependent on the stage of self-development held by an individual (Kegan, 1994; Jones, Corner, 2011). How is it possible to learn thinking systemic? Ossimitz (2000) answers this question and states that one needs to start from "Awareness of Systems" – a conscious perception and philosophy of systems. „Learning the systems methodology is very much like learning to play chess. The rules are relatively simple, but proficiency comes only with practice" (Gharajedaghi, 2006).

Hämäläinen, Saarinen (2006) have proposed a five-level understanding of Systems intelligence, with a particular focus on leadership. Leadership with Systems intelligence is defined "as ability to continue and foster systems intelligent behavior in the long run, an ability to initiate and create systems intelligent organizations" (Hämäläinen, Saarinen, 2006). Our main contribution here is to define what we see as the typical competencies associated with high Systems intelligence. Based on theoretical sources analysis and on our previous research on Systems Thinking (Palaima, Skarzauskiene, 2010) we look at 5 Systems intelligence competencies and within this competencies framework we try to incorporate and explain the drivers for leadership performance in a complex world (Table 1):

Table 1. Theoretical background for defining Systems intelligence competencies

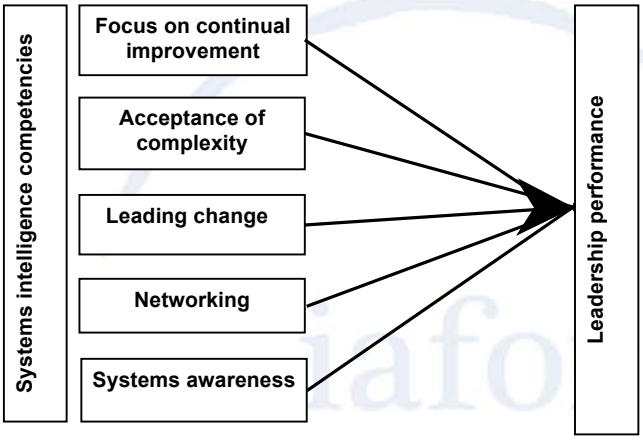
Systems intelligence competencies	**Description and theoretical background**
Focus on continual improvement	In today's dynamic environment, managers cannot always rely on previous knowledge and experience (Harvey and Buckley, 2002). According to Srinivas (1995), successful leaders focus on continual improvement. Mumford et al. (2000) also discuss a similar trait, stressing the importance of achievement and mastery motives, motivation to extend one's performance capabilities, and openness. Engagement in personal transformation is also referred to as openness to change (Jordan, Cartwright, 1998). To personal effectiveness Jokinen (2005) includes items such as strong, intrinsic desire to experience new things, avoiding limiting assumptions, and reflective learning, which can all be seen as reflections of focus on continual improvement. Continuously learning as important Systems thinking dimension defined by Senge (1990, 2007) involves individual learning and the shift from traditional organization thinking to learning organizations, to develop the ability to think critically and creatively.
Acceptance of complexity	In the global context, technical expertise, factual knowledge and customer or shareholder orientation seem to gain much less attention than the "soft" qualities such as self-awareness, self-mastery and flexibility. Acceptance of complexity and its contradictions describes a personal attitude towards the ambiguous and unpredictable (Jokinen, 2005). Today`s managers should have divergent thinking skills, be able to switch their focus of concentration quickly from one thing to another, and have the capacity of pattern recognition, to identify key fact and anomalous observations, speed of closure, and intelligence (Mintzberg, 2001). These can be related to different activities such as evaluating performance and strategic options, designing strategies, plan formulation, and making well-reasoned decisions. Acceptance of complexity as a Systems intelligence competence and its contradictions describes a personal attitude towards the ambiguous and unpredictable (Pagon, 2008). It is essential in that it legitimizes the need for learning and thus creates motivation for personal development. Srinivas (1995) defines acceptance of complexity and flexibility as seeing opportunity in adversity, using diversity to stimulate creativity, and being capable to lead life on many levels. This competence includes the ability to detach from what is going on – meaning to gain a certain distance from the action. This degree of distance enables a manager to sense the situation, interpret evaluate and judge the dynamic and the

	options without premature judgments and act flexible (Nedopil, 2011).
Leading change	Leadership happens in the context of people and groups working together. Leadership in a complex world requires a fine balance between the necessary cooperation in small groups and the openness, diversity and embracing the ambiguity of a complex outside world. Both, the leading change and networking skills are frequently discussed under the single term of "relationship management". The task of leading change is made more complex by the unconscious dynamics of human interactions and relationships. Leading change "systems intelligent" means to be "able to understand the dynamic complexity of social systems" (Senge, 2007), to see clearly interconnections among emergent, complex systems, to focus on positive outcomes, to act intuitively and thoughtfully in any given context etc. (Jones, Corner, 2011). The possibilities provided by understanding of Systems thinking principles include seeing interrelations, understanding system forces that form changes, identify sources of resistance, creating a perspective, influencing and changing. The essence of Systems intelligence in leading change is to see interrelations but not linear cause-effect relations, to see processes of changes but not static states (Senge, 1990).
Networking	The world becomes increasingly overlaid with virtual teams, matrix organizations or networks, washing out formal hierarchical structures. Networking skills are more related to formal relationships, created and maintained on an organizational rather than personal level. Networking skills are referred to by items such as building and maintaining networks (Srinivas, 1995), building partnerships and alliances (Goldsmith and Walt,1999), building relationships and linking capabilities and activities globally (Jordan, Cartwright, 1998), pursuing partnerships actively, building connections, creating internal networks, and community building (Jokinen, 2005).
Systems awareness	Systems awareness refers to "seeing the big picture", or taking a perspective, which have been described by many authors as one of the key leadership competencies, whether in a domestic or an international context. According to Jones, Corner (2011) systems awareness includes ability to understand relationship between self, others and systems, to balance goals of systems with goals of self, understand and monitor social systems, try to visualize systems and imagine consequences of actions (systems thinking). Systems awareness refers to the understanding conception of the systems dynamics: evaluation of the feedback loop to the system, identification of the delay effect and barriers of growth, etc. The conception of these principles creates an additional value in the leader's activity: business systems are seen as interdependent, reasons are

	searched both inside and outside the organization (Senge, 2007; Ossimitz, 2010).

The hypothesized model of relationship developed in this paper demonstrates the relationship between Systems intelligence competencies and leadership performance (See: Figure 1). The existence of relationships between those constructs has been tested empirically.

Figure 1. Hypothesis: Systems intelligence competencies have significant positive impact on leadership performance



Impact of Systems intelligence competencies on leadership performance: empirical evidence

Research methods and instruments

This paper presents the research results in evaluation of Systems intelligence competencies developed by managers in public administration organizations in Lithuania. The paper follows quantitative research approach and the predetermined questionnaire rests on 3 instruments: the questionnaire ESCI-U SAQ (Emotional and Social Competency Inventory, Self Assessment Questionnaire, Goleman, Boyatzis, 2007), LCP SAI (Leadership Current Performance Self Assessment Instrument, Stephen Haines&Partners, 2007) by the authors of this paper developed instrument for measuring System intelligence. Leadership performance has always been difficult to measure as objective criteria are often absent (Rosete, Ciarrochi, 2005). For this reason the leadership performance assessment can be shown as a chain of various determinant variables. It depends on the subject of research and values of the researcher (Palaima, Skarzauskiene, 2010). We have chosen LCP as basis for our leadership performance evaluation because it goes beyond summary financial measures. It captures the critical value creation activities created by skilled, motivated organizational participants: the leadership performance is measured through the content of 10 organizational performance dimensions. Intelligence competencies were treated holistically and were measured using five-point Likert scales, while leadership performance was assessed using ten-point Likert scales. The Self-Assessment Questionnaire is a 73-item questionnaire in which the

participants were asked to assess the frequency with which they demonstrate each behavior. Intelligence competencies were measured using five-point Likert scales. The total sample consists of 150 respondents. The two stage procedure, recommended by Bartlett, Kotrlik and Chadwick (2001) was employed to determine sample size. In this survey mainly public heads of departments and managers were surveyed using web-based questionnaire (participants in Leadership development program 2009-2010 in Lithuanian Institute of Public Administration (LIPA, http://www.livadis.lt/_en/index.php). The return rate of this survey was 65% and can be treated as a good one. Data was analyzed using statistical software package SPSS (Field, 2006). Firstly, exploratory factor analysis (EFA) was employed to assess the dimensionality of scales. Secondly, relationships between variables were explored using Spearman's correlation. Thirdly, multiple linear regression was run to test the hypothesized model of relationships.

A measure's dimensionality is concerned with the homogeneity of items. Scales of Systems intelligence competencies and leadership performance were factor-analyzed separately. Having identified unidimensionality of every scale, we evaluated the reliability. Internal consistency was assessed by Cronbach α. Also there are no "hard" statistical criteria what is a minimum acceptable Cronbach α, a widely advocated level has been 0.7 (Netemeyer *et al*., 2003). Despite that Field (2005) argues that when dealing with psychological constructs, values even bellow 0.7 can be expected, because of diversity of constructs being measured. Furthermore, such general guidelines should be used with caution, because the value of α depends on the number of items on the scale (Field, 2005). It is very likely that lower values of α (see Table 2) were influenced by smaller number of items in the scale. The internal consistency of scales varies from good to average or low. Some scales may need improvement in the future. The final scale validation is not the aim of this study. It can be considered as a limitation.

Table 2. The exploratory factor analysis results of System intelligence competences scales

Systems intelligence competencies	**L**	**%**	**α**
Acceptance of complexity	.691	10,391	0,854
	.804		
	.836		
	.588		
	.803		
Focus on continual improvement	.692	14,496	0,883
	.717		
	.683		
	.691		
	.637		
	.615		
	.682		
	.744		
	.641		
Networking	.661	17,593	0,885
	.759		
	.646		

	.706		
	.769		
	.644		
	.801		
	.666		
	.771		
Leading change	.465	8,635	0,833
	.795		
	.547		
	.418		
	.669		
Systems awareness	.710	17,853	0,930
	.827		
	.815		
	.516		
	.791		
	.768		
	.818		
	.771		
	.817		
	.777		

Note: L- factor loadings, % - percentage of variance explained; α – Cronbach α; Total variance explained = 68,968%; KMO (Kaiser-Meyer-Olkin measure of sampling adequacy) = 0.7231

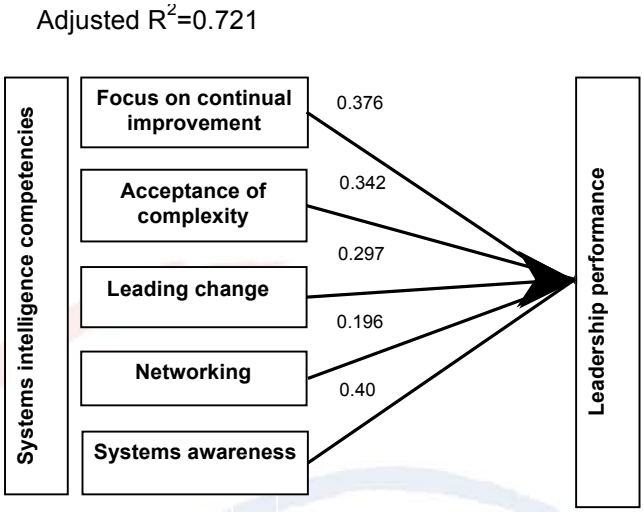
Multiple linear regression was employed to test hypotheses and to assess the relationships between competencies and leadership performance. The accuracy of linear regression model was assessed using two-stage procedure, recommended by Field (2005):

(1) Firstly, diagnostics was performed in order to determine whether the model fits the observed data well, or if it is influenced by a small number of cases.
(2) Secondly, the ability of the model to generalize to other samples was evaluated.

Results

The research demonstrated that 72,1% of variance in *leadership performance* construct is explained by 5 competencies: *systems awareness* (β=0.40, p=0.00), *focus on continual improvement* (β=0.38, p=0.00), *acceptance of complexity* (β=0.34, p=0.00), *leading change* (β=0.29, p=0.00), *networking* (β=0.196, p=0.00). We have similar results in business organizations according Palaima, Skarzauskiene (2010): the research demonstrated *leadership performance* construct is explained by the competencies of *dynamic thinking* (β=0.37, p=0.00), *change catalyst* (β=0.22, p=0.00), *trust* (β=0.17, p=0.00), *flexibility* (β=0.12, p=0.03). See Figure 2.

Figure 2. The impact of Systems intelligence competencies on leadership performance



Limitations and suggestions for further studies

The references used for this review are not an exhaustive list within the topic area. Relevant sources of information may also exist in other domains of scientific inquiry. Because of the chosen research approach, the research results may lack generalizability. The sample of this research was limited only to national level therefore there is no possibility to compare results across different countries. In order to deepen understanding about research subject, it would be useful to test the model in other countries and organizations. Secondly, the traditional self-assessment method has been used for evaluation of competencies in this paper, but the results could be supplement by adding 360-Degree Feedback or multisource assessment results. Summing up, it is worth to note there may exist other constructs of Systems intelligence competencies, which influence leadership results. The other constructs are outside the limits of this research. System Thinking has immense potential for future research.

Conclusions

1. By evaluating the Systems intelligence competencies impact on leadership performance the hypotheses Systems intelligence competencies have significant positive impact on leadership performance was accepted. The model has more explanatory power in comparison with the model tested in business organizations (Palaima, Skarzauskiene, 2010). Multiple linear regression demonstrated that Systems intelligence competencies explain 72% of leadership performance in public administration organizations in Lithuania (52% in business organizations). Today`s public administration organizations change the focus from the ineffective bureaucratic models to more flexible communities of professional workers. Modern conceptions of management stress the importance of a new perspective: flexible reaction of management to changes and orientation towards integrated solutions are very important. *Systems awareness* and *Focus on continual improvement* are most important and valuable competencies in leadership. They have the strongest effect on leadership performance in comparison with other competencies.

2. Systems intelligence competencies which are predictors of leadership performance were identified by this research. The empirical found out that the levels of Emotional and Systems intelligence competencies of Lithuanian executives are higher than Social intelligence competencies. Following research results could be concluded that development of Systems intelligence competencies and retention of thinking abilities could significantly improve both efficiency of leadership and efficiency of organisation. It should be noted that the Systems thinking theories are widely spread but they are not universally known and applied in management, since they require a deeper understanding of systems philosophy. The future growth of systems education will depend on how well systems educators around the world can relate Systems thinking and Systems intelligence to topical issues and the complex problems managers and decision-makers are facing today (Jones *et al.*, 2011, Nguyen et al, 2012). From human resource development perspective, this research results may provide the base for planning training activities where the fundamental questions to be answered is: what type of competencies development is needed by managing complexity.

3. The research proves that systems intelligent leaders perform better in managing organization climate, project and change, innovating, implementing vision, scanning global environment etc. The conclusion could be drawn that System Thinking methodology is highly beneficial to improve the performance of any organization. Systems thinking is not simply an engineering approach; it is a philosophy for solving many practical problems (Blockley, 2010). Systems Thinking can no longer be attached onto the end or added as an isolated part of a research project, but rather needs to be an integral mechanism in which to explore and analyze a complex problem in a holistic way (Bosch et al,, 2007).

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Women in Business

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Abstract

Women need occupation to attain financial independence. Many women are coming up only as wage earners. Self employment is also a powerful motivating factor (Narayanan & Dhanalakshmi, 2000). There may be pull and push factors that drive women folk to take u p employment in different areas. The Push Factors may include death of bread winner, sudden fall in family income and permanent inadequacy in income of the family where as the Pull Factors may include women's desire to test their talents, utilization of their free time or education or both, perception of Women's Liberation, sense of equality, gaining recognition, importance and social status and getting economic independence etc. Fieldon & Davidson, (2006). Thus, sense of achievement can be considered as the major factor leading to women entrepreneurship.

Key words.: - Financial Independence, Motivating factor, In Adequacy in

Income, Utilization of Time

Entrepreneurs are driven by unique attitudes, needs, and values. These characteristics are thought to drive the entrepreneurs to behave in a certain fashion. The common way of explaining why women start a business is associated with the individual needs for independence and self -achievement. Another approach to understanding the nature of entrepreneurs is to focus on their socio -economic outlook. These factors include family history and tradition
of entrepreneurship, cultural background, family support, work ethics and educational level.

Success or failure, in terms of achievements of goals set forth, work satisfaction and general environment of the enterprise largely depend upon the personality of the entrepreneur. The term personality is the general pattern of an individual's total behaviour.
Numerous studies have analysed the nature of entrepreneurial motivations and personal characteristics in running the enterprise. These include the studies of Hisrich and Brush (1982);[1] Kuratko and Hodgetts (2004), [2] Scholl Hammer and Kuriloff (1979). [3] It has been affirmed that two people with comparative levels of critical thinking but varying levels of personalities will respond differently to the knowledge and know -how they possess (Sternberg, 1988). [4] Past studies on the effects of personality attributes such as extroversion, agreeableness, emotional stability, independence and openness to experience on start -up propensity, survival growth and success of firms have found that each of these personality components is positively or negatively related to entrepreneurship in some way or the other (Beugelsdijk. and Noorderhaven, 2005; Ciavarella et al., 2004; Hisrich, 2000; Singh and DeNoble, 2003). [5]

Personal characteristics of entrepreneurs have been acknowledged as key determinants that mark different categories of entrepreneurs. Economic circumstances, social networks, entrepreneurial teams, marketing, finance, even public agency assistance are important factors. But none of these will, alone, create a new venture. For that we need a person, in whose mind all of the possibilities come together, who believes that innovation is possible, and who
has the motivation to persist until the job is done.

In this chapter, personality traits of women entrepreneurs under study have been measured using Cattell's 16 PF Inventory (2000), which consists of 200 items that comprehensively assess the five -personality factors, constructs of extroversion, low anxiety, openness, agreeableness etc. Personality traits such
as self -discipline, perseverance and an intense desire to succeed have an impact on the success of the female -owned business. Here, traits of personality as described by Cattell have been analysed .

Extroversion -introversion Traits

Traits of extroversion -introversion are a central dimension of human personality. Extroverts tend to enjoy human interactions and they are sociable, enthusiastic and assertive. They take pleasure in activities that involve large social gatherings, such as

parties, community activities, public demonstrations, and business or political group s. Extroversion, sometimes referred to as the
"need for affiliation" (Begley and Boyd, 1985) [6], is the inclination to be sociable to external events and activities, a trait which facilitates the development of social networks and partnerships with suppliers and customers (Barringer and Greening, 1998). [7]
Introversion is 'the state of or tendency towards being wholly or predominantly concerned with and interested in ones' own mental life' (Ciavarella et al., 2004); [8] introverts tend to be more reserved and less assertive in social situations but
are also marked by a richer inner world. They often take pleasure in solitary activities and prefer to concentrate on a single activity at a time and like to observe situations before they participate (Hisrich, 2000). [9] Introversion is generally not the same as shyness. Introverts choose solitary activities over social activities by preference whereas shy people avoid social encounters out of fear (Merriam Webster). [10]

Although many people view introversion -extroversion as a dichotomy, most contemporary trait theories (e.g. the Big Five) measure levels of extroversion -introversion as part of a single, continuous dimension of personality with some scores near one end and others near the half -way mark (Meredith Whitten).[11] Ambiversion is a term used to describe people who fall more or less directly in the middle and exhibit tendencies of both groups (Ocean of Personality). [12] An ambivert is normally comfortable with groups and enjoys social interaction but also relishes time alone and away from the crowd.

In the global extroversion/introversion traits included are warmth (Factor A), Liveliness (Factor F), Social Boldness (Factor H), Forthrightness (Factor N), Vigilance (Factor L) and Self -Reliance (Factor Q2).

Table 5.1

Responses of Women Entrepreneurs on Extroversion/ Introversion Traits

S.No	Nature of Tendency	Factors	No. of Respondents & Score Description		
			Low	Balanced	High
1.	Warmth	A	1(3.33)	14(46.67)	15(50)
2.	Liveliness	F	3(10)	18(60)	9(30)
3.	Social Boldness	H	—	12(40)	18(60)
4.	Vigilance	L	3(10)	9(30)	18(60)
5.	Forthrightness	N	9(30)	12(40)	9(30)
6.	Self-Reliance or Affectivity	Q2	9(30)	6(20)	15(50)

From Table 5.1, it is pertinent to note that 14(46.67 percent) respondents under study showed a balanced tendency of warmth (Factor A) while another
15(50 percent) respondents showed a high score description of warmth. Being possessive of warmth, they were cooperative, listened attentively to others, thus won the hearts of one and all. This attitude made them successful.

While evaluating liveliness (Factor F), it has been observed that 27 (90 percent) respondents either showed a high score description or balanced tendency of liveliness. Meeting workers, clients and managers cheerfully, expressing opinions and decisions frankly and tacitly motivated them to do better for the organization.

It is further evident that 18(60 percent) respondents showed a high tendency of Social Boldness (Factor H) that means, they were venturesome, spontaneous, confident and ready to face challenges and risks. On the other hand, 12(40 percent) respondents showed a balanced approach towards social boldness, which means they were confident and vent uresome, and behaved according to the needs of time and place.

It is further evident that 27(90 percent) respondents showed either a balanced approach or a high tendency of vigilance (Factor L) that means they were confiding trust in others, and at the sam e time being vigilant had paid them dividends.

In case of Forthrightness (Factor N), 21(70 percent) respondents were forthright, unpretentious, open and genuine. They possessed natural warmth and a genuine liking for people and were more socially aware, diplomatic and calculating. To be successful one has to be calculative, diplomatic, shrewd as well as aware.

As far as Affectivity (Self -Reliance) factor(Q2) is concerned, 21(70 percent) respondents showed that they were resourceful, cooperative, willing t o compromise ,group oriented, self decision -makers and temperamentally independent. Under the given situations these entrepreneurs were resourceful on the one hand but cooperative and compromising on the other.

Openness- Tough-Mindedness Trait

Whereas Openness vs Tough -mindedness traits include Sensitivity (Factor I), Abstractedness (Factor M), Openness to Change (Factor Ql).
Openness is the tendency to be creative, original, and receptive to new ideas and experiences, a trait closely associated with creativity (Kuratko and Hodgetts, 1995). [13] Open individuals display a preference for variety, enjoy grasping new ideas, and have an appreciation for novelty (McCrae and Costa, 1997).[14] Openness is a general appreciation of art, adventure, unusual ide as, imagination, curiosity, and variety of experience. The trait distinguishes imaginative people from down -to-earth and conventional people. People who are open tend to be more creative and more aware of their feelings. They are likely to hold unconventional beliefs. People with low scores on openness tend to have more conventional and traditional interests. They prefer the plain, straightforward, and obvious over the complex and subtle. Closed people prefer familiarity over novelty. They are conservative and resistant to change. People who score high on the trait of conscientious tend to be more organized and less cluttered in their homes and offices (Gosling, S.2008).[15]

Under this head Factors of Sensitivity (Factor I), Abstractedness (Factor M) and Openness to Change (Factor Ql) have been analyzed .

Table No. 5.2
Responses of Women Entrepreneurs on Openness vs Tough-Mindedness Trait

S.No	Nature of Tendency	Factors	No. of Respondents & Score Description		
			Low	Balanced	High
1.	Sensitivity	I	18(60)	9(30)	3(10)
2.	Abstractedness	M	6(20)	15(50)	9(30)
3.	Openness to Change	Ql	9(30)	12(40)	9(30)

Figures in parenthesis shows Percentage of Women Entrepreneurs

From Table 5.2, it is evident that 18(60 percent) respondents showed low tendency whereas 9(30 percent) of respondents showed a balanced attitude towards sensitivity (Factor I) that means they tend to be tough, down to earth, independent and responsible.

As far as Abstractedness (Factor M) is concerned, 9(30 percent) respondents showed a high score description. They tend to be unconventional, unconcerned over routine matters, self -motivated, imaginatively creative. Only 6(20 percent) respondents exhibited low score, that means they were practical, concerned with down to earth issues, anxious to do right things, able to keep their heads in emergencies. In brief, they were responsible to the outer rather than the inner world whereas 15(50 percent) respondents had a balanced tendency towards Abstractedness. Furthermore, it is evident from the above Table that 9(30 percent) respondents exhibited Openness to Change (Factor Ql).They were experimental, liberal, critical and open to change. They had doubts on fundamental issues. An equal number of 9(30 percent) respondents had shown low profile on this issue. They were conservative, respecting traditional ideas. They tend to oppose and postpone change and were inclined to go along with tradition. On the other hand
12(40 percent) respondents achieved a balanced score on factor Ql. From Table

5.2, it is revealed that women entrepreneurs were self -reliant, realistic and responsible as well as self -motivated. On further probing, they expressed that they were liberal, experimental and open to change from time to time.

It is evident from the above description that women entrepreneurs under study were good natured, cooperative and attentive to their employees. They were full of confidence and were vigilant about the activities going on in the enterprise. On further enquiry, they revealed that they used to invite co -workers and encouraged them to interact. All these traits developed a congenial atmosphere in the enterprise. It can

be safely concluded that they were adventurous and possessed variety of experience. These personality traits made them successful entrepreneurs as they were balanced in their approach towards these traits.

Conscientiousness Trait

Conscientiousness is a tendency to show self -discipline, act dutifully and aim at achievement. The trait shows a preference for planned rather than spontaneous behaviour. It influences the way in which we control, regulate and direct our impulses. It is a trait of being pains taking and careful or the quality of acting according to the dictates of one's conscience.

Conscientiousness includes the factor known as Need for Achievement. The benefits of high conscientious are obvious. A high conscientious person pursues fewer goals in a purposeful way and tends to be responsible, persistent, dependable, and achievement oriented. They are also positively regarded by others as intelligent, self-disciplined, careful and reliable. On the negative side they can be compulsive in their behaviour, perfectionists and workaholics. People who are low on conscientious tend to be more easily distracted, pursuing many goals and more hedonistic.

Conscientiousness trait includes rule consciousness (Factor G), Perfectionism (Factor Q3), Emotional Stability (Factor C). A considerable amount of research indicates that conscientious is one of the best predictors of performance in the work place. J. F. Salgado (1997). [16]

Table No. 5.3
Responses of Women Entrepreneurs on Conscientiousness Trait

S.No	Nature of Tendency	Factors	No. of Respondents & Score Description		
			Low	Balanced	High
1.	Rule-Consciousness	G	3(10)	3(10)	24(80)
2.	Perfectionism	Q3	3(10)	15(50)	12(40)
3.	Emotional Stability	C	3(10)	18(60)	9(30)

From Table 5.3, it is evident that 24(80 percent) respondents showed a high score on Rule Consciousness (Factor G) that means, they tend to be exacting in character, dominated by sense of duty, persevering and responsible. They were usually conscientious and moralistic and they preferred hard working people to witty companions. They were conscientious and rule bound. As many as 24(80 percent) of respondents showed a

high attitude towards Rule Consciousness and only 3(10 percent) respondents each either showed low or balanced attitude.

As many as 12(40 percent) respondents showed high score on Perfectionism (Factor Q3). They were socially precise and compulsive. They sometimes tend to be perfectionist and obstinate but were effective leaders. Whereas 15(50 percent) respondents showed a balanced trait towards perfectionism. On the other hand 3(10 percent) respondents were on the low score that means they were less disciplined, self conflicting, lax and careless of social rules. They were impetuous and not overly considerate, or painstaking.

As far as emotional stability factor C is concerned, 18(60 percent) respondents showed a balanced trait and 9(30 percent) respondents were on the high pro file whereas 3(10 percent) respondents showed low score. They were more adaptive, mature, affected by dealings and emotionally stable.

The study on women entrepreneurs exhibits that they were self -disciplined and acted dutifully. They planned their activities in order to achieve the goals. Their behaviour influenced the employees in controlling, regulating and directing the activities of the enterprise. Thus, they avoided trouble and achieved high level of success through purposeful planning. In other words , they were regarded as intelligent and reliable. They were compulsive perfectionists and workaholics. On further probing, they revealed that they always preferred
hardworking and rule -conscious people.

Neuroticism

Table No. 5.4

Responses of Women Entrepreneurs on Neuroticism Trait

S.No	Nature of Tendency	Factors	No. of Respondents & Score Description		
			Low	Balanced	High
1	Apprehension	O	3(10)	24(80)	3(10)
2	Tension	Q4	—	30(100)	—

As far as Apprehension (Factor O) is concerned, 3(10 percent) respondents were apprehensive, self -doubting, worried and insecure. 3(10 percent) respondents showed a low profile on apprehension as they were self assured, unworried, complacent, confident, secure and self -satisfied whereas 24(80 percent) respondents showed a balanced approach towards apprehension.

In respect of Tension (Factor Q4) all the respondents showed a balanced approach as they behaved in a normal way.

Most of the women entrepreneurs under study were on the low score of neuroticism. They were less easily upset and less emotionally reactive in conditions of stress and emergencies. Majority of them were calm, emotionally stable and free from persistent negative feelings

Agreeableness

This trait refers to an individual's propensity to defer to others. High agreeable people value harmony more than they value having their say or their way. They are cooperative and trusting of others. People with score low on agreeableness focus more on their own needs than on the needs of others. Agreeable ness is a tendency to be compassionate and accommodating in social

situations. It is one of the five major dimensions of personality structure, reflecting individual differences in concern for cooperation and social harmony. In case of dominance factor E, 9(30 percent) respondents showed a low profile as they were deferential, cooperative, submissive, humble, accommodating and avoided conflicts, whereas 6(20 percent) respondents showed a high profile ,as they were dominant, assertive, forceful, aggressive, stubborn and competitive . However, 15(50 percent) respondents had a balanced approach.

From the data, it can be analysed that women entrepreneurs were generally considerate, friendly, generous, helpful and willing to compromise their interests with others . They further revealed that they believed that their employees were basically honest, decent and trustworthy. No doubt, sometimes, their skepticism about their motives caused them to be suspicious, unfriendly and uncooperative but such occasions were rare .

It can be said that majority of the women entrepreneurs were balanced in their approach as far as their personality traits were concerned. That is why they have been successful entrepreneurs.

The respondents were found to be transformational leaders. They acted towards their employees like coaches and mentors. They also contributed to workers' sense of accomplishment, solved workers problems on one -to-one level but also pushed the workers to achieve the most with the solution. They were modest and for commendable job, gave the credit to them, helped them to improve their skills and this improved the functioning of the enterprise. More importantly, they instilled confidence in their employees. This translates into not only better job satisfaction for employees but also better productivity for the company.

Performance and Personality

Performance and personality as measured in the five -factor model are positively related. The five factors are strongly correlated, are cooperating with others and enjoying the overall workplace experience which are key components of long-term entrepreneurial success.

Conscientiousness and extroversion are the two aspects of the five -factor model that are positively correlated with work performance. Extroverted individuals are more satisfied in the workplace because work gives them an opportunity to experience an optimal level of arousal whereas introverted individuals are less satisfied in the workplace due to too much stimulation. Given this conscientious, individuals have a tendency to perform better. Neuroticism is negatively correlated with the performance. Cognitive ability is the major factor in work performance.

Leadership abilities are often essential in the workplace, especially for those entrepreneurs who aspire to attain success rapidly. A good leader needs to be well-rounded in all the "positive" social aspects of the five -factor model such as high levels of agreeableness impeding one's will to put forth one's
own ideas. Openness to experience is unrelated to leader ship abilities but extroversion is positively correlated with leadership abilities.
Two aspects of motivation —status striving and accomplishment striving —are correlated with extroversion and conscientiousness respectively.
Running a business is never easy, especially for women, in a society like India. Words like capability, credibility and confidence are the terms used while evaluating women entrepreneurs which pose problems for them. While some authors view the reliance on personality profile as of no relevance (Gartner, 1989), [17] authors like Fagenson (1993) [18] have cited many others who recognize the influence of personality factors on entrepreneurial behaviour. It can be concluded that women entrepreneurs are balanced in their approach as far as their personality traits are concerned. That is why they have been successful entrepreneurs. They can be dealt with as well organized, well planned and best predictors of performance and perfectionism.
Thus, Hypothesis Ho2 that there are specific personality traits of women entrepreneurs, stands proved.

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A Model of Commercial Domestic Passengers of Low Cost Carrier Flight in Indonesia (The Analysis of Post Airlines Deregulations in 1999)

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Abstract

This research is intended to analysis the influence in fares, service quality, and physical evidence simultaneously to the passengers satisfaction of the commercial domestic airlines of LCC in Indonesia.
The measurement of research variables by determine the degree of correlation and effect between variables. Description analysis are used to characteristic for passengers, fares, service quality, physical evidence and passengers satisfaction. Verification analysis is used to approve hypothesis by using structural equation modeling (SEM). Total samples chose clusterly are 400.
The result of this research showed that there was simultaneously the variables influence the passenger satisfaction were fares and service quality, while physical evidence had no significant. Fares have the biggest influence on satisfaction which menas passengers prioritize it. While agents for ticketing and waiting time, delay and compesation.

Key words: LCC airline, fares, service quality, physical evidence, and passengers satisfaction.

Introduction

In 2010 there were 16 commercial domestic operators while previously in 1999 there were only 5 operators. This is because of the post deregulation airlines in 1999 which has raised the competition between operators. The operators need to establish a new strategy to increase their market. The business strategy used by the airline business to improve their market is called low cost carrier (LCC). LCC concept has influences in changing of fares, service quality, and physical evidence that affected passengers satisfaction.

Fares are of concern for the airlines; fares are cheap to increase market share. Yet, according to Chang, et al., 2002, airline fares having a competitive advantage can not be sustained in the long term.

Competitive advantage in the airline service quality is more accepted by the passengers and can compete in the long term (Chang et al., 2002; Jou et al., 2008; Liou et al. 2011). Companies can use the advantages fares but must be supported by a good quality service, according to Rao et al., 1989. Saha et al., 2009 said that the level of service quality has a direct impact on air transport passengers satisfaction.

Physical evidence as termed by Zeithaml et al., 2009, or service environment according to Lovelock, 2011, which is tangible, supports in the provision of services with characteristics of intangible services (Kotler; Bowen; Makens, 2010; Parasuraman, 1985; Zeithaml et al., 2009), which can be seen by passengers and that may affect passengers satisfaction.

Physical evidence can support airline passengers satisfaction, because the exterior and interior designs can be seen directly by the passengers (Zeithaml et al. 2009). According to Lovelock et al., 2011:277, the service environment affects the consumer experience and behavior, and supports the corporate image positioning and differentiation strategies. The addition of value (value proposition) of the facility to improve productivity and quality of services is rendered. Therefore the physical evidence is needed in flight services for passengers' satisfaction.

The low cost carrier airline has different physical evidences from full-service, especially regarding the distance between seat rows in the interior of the aircraft, whereby passenger comfort will be reduced. This will have an influence on passenger satisfaction, so that Low Cost Carriers airlines need to provide other interior facilities in order to enhance the satisfaction.

Based on my research, the problem is identified that the fares, service quality, and physical evidence of air transport have not been optimally arranged by LCC airlines to give passengers a higher satisfaction. Satisfaction on fares, service quality, and physical evidence needs to be put in order to prevent movement of passengers to other airlines. Fares, service quality, and physical evidence are crucial factors in the face of domestic competition in Indonesia.

Based on the identification of the above, the study will address issues ranging from the extent of fares, service quality, and physical evidence, both partially and simultaneously, which affect passenger satisfaction on domestic commercial flights of Low Cost Carriers in Indonesia.

2. Literature review

According to Damardjati, 2001:6, airlines are private or government owned companies that hold a special general air transport services permits to transport passengers for both scheduled (scheduled service,/regular flight) and non-scheduled (non-scheduled service). Scheduled flights have fixed route schedules, destinations and cities stopovers. Scheduled flights do not depend on the needs and demands of the tenant.

Suwarno, 2001:7, explained that the airline must have issued documents of flight for passengers and their luggage, shipments (cargo) and postal (mail). In Law No. 1 Year 2009 on Flights, chapter 1 verse 20, it is said that the Air Transport Enterprises can be State-owned enterprises, or owned in legal form by a limited liability company or cooperative, whith the main activity to operate aircrafts to carry passengers , cargo, and or post, and to collect payment.

This research will discuss about the theory of price, service quality, and physical evidence.

2.1 Fares

Price, according to Kotler et al.,2008:266, is the amount of money charged for a product or service, or the number of values that consumers exchange for the benefits of using the product or service. A simple pricing structure will reduce costs in the airline, so it is significant if the reduced cost will increase profits (Shaw 2011:206).

In the context of economics, price is the amount of money that we have to sacrifice to get what we want (Monroe, 2003:5). The price formulated by Monroe, 2003:5, is as follows:

$$Price = \frac{\textit{quantity of money or goods and services received by the seller}}{\textit{quantity of goods and services received by the buyer}}$$

According to Lovelock et al.,2011:160, pricing strategy can be described as a tripod consisting of cost, competition, and value to consumers. Cost-based pricing; the pricing is based on fixed and variable costs. Competition-based pricing; pricing based on price competition in the industry. Value-based pricing; pricing is based on the benefits provided to different consumers.

According to Zeithaml et al. 2009:525, rates, when viewed from the perspective of the consumer is an acceptable value, so the value is perceived into four kinds:

1. *Value* is low price
2. *Value* is everything I want in a service
3. *Value* is the quality I get for the price I pay
4. *Value* is all that I get for all that I give

It is emphasized that the value is the net value, where all the value received (gross value) minus all expenses incurred to obtain the services.

According to Zeithaml et al. 2009:519, there are three ways in determining prices and changes in the products and services, namely: cost-based pricing, competition-based pricing and demand-based pricing.

The calculation of the cost-based pricing: Price = direct cost + overhead cost + profit margin. There are some difficulties in determining the prices for services, because the cost price is very difficult to quantify for the services business. Moreover, with various services rendered at a sale of services, and the components cost more on employees than on material, and the time sacrificed by the people involved is very difficult to quantify or predict.
In determining prices based on competition, there are two things to consider, namely the monetary costs should be adjusted to the value of non-monetary costs, and price is not a major factor.

On the pricing based on demand, there are three points to consider, namely smaller companies may determine a relatively cheaper price in order to survive, with different services as basis for comparison, and the price may not reflect the value presumed by consumers (Zeithaml et al., 2009: 519 -525).

In the airline businesss, there are fares groupings. Fares are set according to the service provided. The concept of full services, known as the traditional airline business model concept (legacy carriers), or as described in Porter's generic strategies, they are grouped on differentiation, where marketing operations still rely on the ticket agent or travel agent as sales partners, for quality service and flexibility (Manurung, 2010:17).

In contrast, with the low-cost carrier, or cost leadership by Porter, the generic strategies in research Dess et al., 1984, which emphasize low cost, causing fares paid by consumers cheaper.

Deregulation by the Ministry of Transportation in 1999, led to an increased competition in the aviation industry. This is because there are many new players in the aviation business. They compete on fares, so fares offered become more generous, resulting in the concept of full services becoming obsolete by new players. The concept of full services began to shift in the concept of low-cost carrier, (Hofer & Eroglu, 2010; Pels, 2008; O'Connell & Williams, 2005).

Fares for the airline in Indonesia are regulated by the Ministry of Communications Decree No. 26 of 2010 on the Mechanism of formula calculations and Upper Passenger Fares Determination for Services of Economy Class in Air Transportation Commercial Affairs, where the amount of fares depend on the service provided.

There are three types of services that can be provided: full services, media services, and no frills services, according to KM 26 in 2010. KM 26:

1. Application of fares 100% (one hundred percent) of the maximum fares for air transport entities that provide services to the maximum standard (full services).
2. Application of maximum fares of 90% (ninety percent) of the maximum fares, for service with the standard (medium services).
3. Application of maximum fares 85% (eighty five percent) of the maximum fares, for service with the minimum standards (no frills services).

Doganis (2010:137) says that the distance between the seats for LCC flights should be between 28 or 29 inches. The short distance between the seat will cause inconvenience to passengers.

If the value provided to consumers becomes higher, than consumers are willing to pay a high price for the service (Lovelock et al. 2011:160). In determining airline fares , it is necessary

to pay attention to competitors' fares, the value for consumers and the cost incurred by the company. Fares are appropriate for the consumer if the cost is equal to the value or benefit received.

In the study by Voss, et al. 1998, it is demonstrated about the influence of consumer perceptions of price and performance prior to purchase compared with perceptions after purchase. If perception before purchasing is fulfilled, it will cause satisfaction to consumers. This shows that fares given are in accordance with the performance given by the company, so as to create reasonable fares.

2.2 Service quality

The dimensions of service quality do not always refer to existing research. According to Liou, 2011, the domestic airline service quality dimensions can be used in accordance with the problems that could arise. Service quality in the airline raises many issues, such as the level of air passenger complaints because of frequent flight departure delays, cancellation of flight departure, luggage problems, and poor relationships with consumers (Taylor, 2001). In general, service quality is driven by the 10 major factors, that are: punctuality, check-in, flight schedules, seat comfort, location of entrances, interior aircraft, flight attendants, service after the flight, food service and pilot flying hours (Glab, 1998).

Consumer complaints happen during purchase of tickets, return tickets, with fares, customer service, advertising and other issues. Overall they occur also on the timeliness issue, the problem of boarding and baggage handling, according to Rhoades et al., 2008. Consumers are angry about flight problems, flight delays, flight cancellations, pricing models variation, flight restrictions and airline employees, since it is assumed that the airline industry should provide a good quality service to consumers (Rhoades et al. 2008). ISO 14001 emphasizes on customer satisfaction, improved image and reputation, and increased domestic market share (Korul, 2005:54).

Interpersonal relationship is a key factor for reducing consumer dissatisfaction. The place or the environment related to the service provided is also important, so the combination of services and a place is called serviscape (Edvardsson and Strandvik, 2000:89).

According to Hu and Burning, 1978; Ritchie, Johnston, Jone, 1980; Abraham, 1983, airline service process steps consist of:

1. Pre-journey; which is the service to the passengers prior to the flight. This could include schedule information, routes, reservation or booking a ticket.
2. Pre-flight; service to passengers who are going to start doing the flight. At this stage, the activity starts with jobs at the airport which include: check-in, baggage checking, waiting room,/ lounge, and boarding. The airlines, in providing services, are highly dependent on the existing facilities and infrastructure at the airport.
3. In-flight or onboard; is a service provided to the passengers during the flight. Services include the seat width, leg room, cabin and seat cleaning, food service, information and reading services, restroom services, and cabin crew service.
4. Post-flight, is a service rendered to the passengers after the flight. Services include baggage retrieval, flight connection information,lost baggage handling, and complains management.

Research to establish service quality refers to the research conducted by Liou et al., 2011; Rhoades et al., 2008, where the dimensions of the study are on flight information,

ticket service, check-in, punctuality, pilot flying time and time after flying, with indicators used in the study developed by Liou et al., 2011. Service quality in this study is measured as an augmented product.

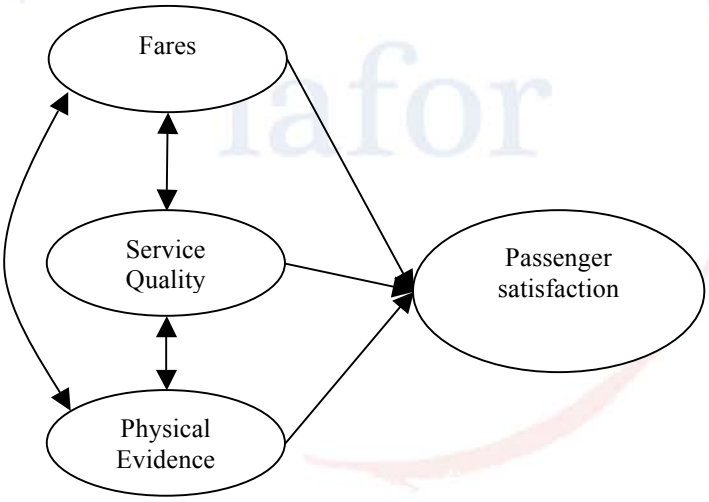
2.3 Physical Evidence

One of the characteristics of this service is that it is tangible. It is needed by consumers in evaluating the physical evidence before making a purchase, and assess satisfaction at the time of purchase and after purchase (Zeithaml et al. 2009:313).
Environmental services have a major role in shaping the perception of corporate image and positioning (Lovelock et al. 2011:296). Therefore the physical evidence at the airline must be considered, because of the effect on passengers satisfaction. Physical evidence includes the observed flight amenities beyond physical appearance and facilities on board the aircraft.

2.4 Passenger satisfaction

The stage of the buyer decision process in which consumers take further action after purchase based on their satisfaction or dissatisfaction with a purchase (Kotler, et al. 2012:194).

Based on the theory used and the results of the pre-survey, the research paradigm can be made as follows:



Picture 1 Research Paradigm

3. Hypotheses

Hypotheses can be structured as follows:
Hypothesis 1
Passenger satisfaction is influenced by fares at LCC airlines in Indonesia.
Hypothesis 2
Passenger satisfaction is influenced a by service quality on LCC airlines in Indonesia.
Hypothesis 3
Passenger satisfaction is influenced by physical evidence at LCC airlines in Indonesia.

4. Methodology

This study chose causality investigation, the unit of analysis and observations on domestic commercial passenger flight LCC. The primary data collection is done by distributing

questionnaires distributed to airline passengers LCC at Soekarno-Hatta and Juanda Airport. List of instrument was used to obtain data from respondents (domestic commercial passenger airline LCC) on fares, service quality, physical evidence, and passengers' satisfaction.

The number of samples 400 passengers. Probability sampling with simple random sampling.

5. Analysis and Result

5.1 Passengers characteristic

Table 2 Passengers Characteristic

Information	Amount	Persentase (%)
Gender:		
Male	276	69,3
Female	124	30,7
Age:		
< 20 years	34	8,6
21 – 30 years	142	35,4
31 – 40 years	100	24,9
41 – 50 years	81	20,2
51 – 60 years	34	8,8
> 60 years	9	2,1
Educations:		
High school	140	35
Diploma	49	12,2
S1	154	38,6
S2	44	10,9
S3	10	2,6
Others	3	0,6
Jobs:		
Student	61	15,2
Entrepreneur	62	15,7
Government employees	109	27,3
Private employees	131	32,8
Others	37	9

Number of sample (Σn) = 400

Table 2 shows that most passengers on the flight were male LCC. Passengers aged between 21-30 years S1 level of education, and private employees. This is consistent with the results of pre-survey that one of the factors in flight is on time. Therefore, companies need to consider LCC flight punctuality so as to meet the needs of passengers. Punctuality is part of the services provided by LCC airlines. When the timing is less precise, it will affect the company's service quality given to passengers.

5.2 Measurement model testing and results

The results of the test show a comparison between the model chi-square with the degress of freedom, with the result of 2.44, so it can be concluded by controlling the complexity of the model (which is proxied by the number of degrees of freedom), has a pretty good fit, because it is still under 3.

Overall, it can be said the model can be used to explain the relationship between the variables studied, namely fares, service quality, physical evidence, and the passenger satisfaction of domestic commercial airline passengers low cost carriers in Indonesia.

Table 3 Goodness of Fit

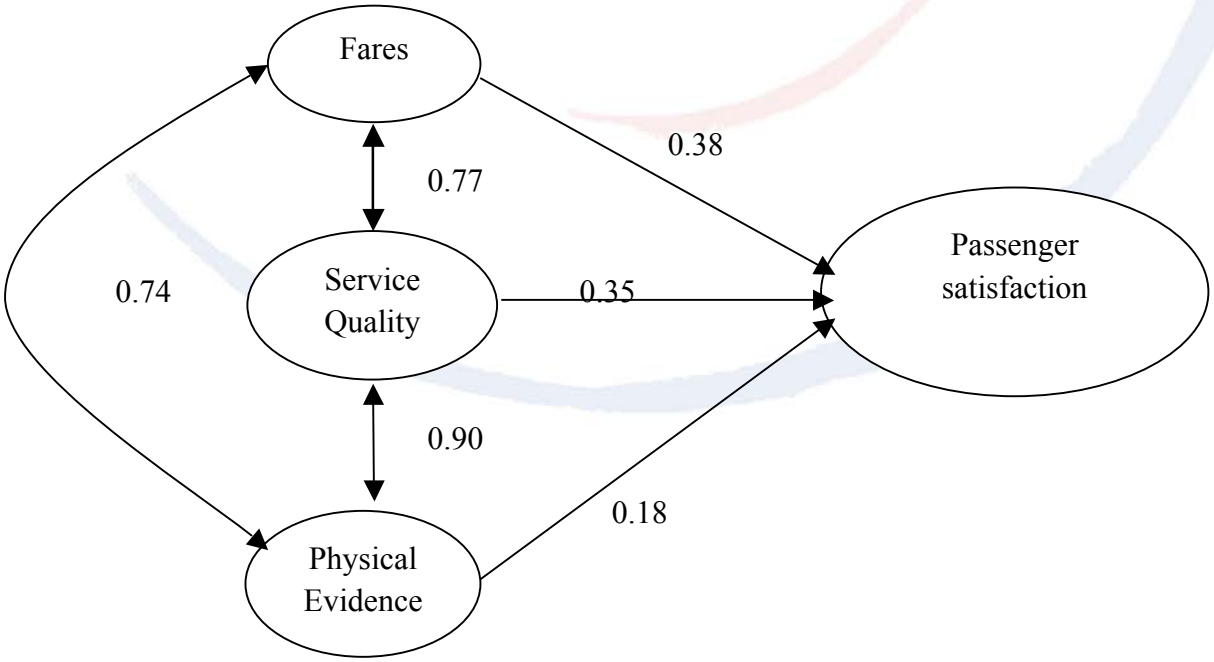
Fit Measure	*Good Fit*	*Acceptable Fit*	Estimasi
χ^2 (*Chi-square)*	$0 \leq \chi^2 \leq 2df$	$2df \leq \chi^2 \leq 3df$	χ^2 = 2756.63
p value	$0,05 < p < 1,00$	$0,01 \leq p \leq 0,05$	p-value = 0,00
χ^2/df	$0 \leq \chi^2/df \leq 2$	$2 < \chi^2/df \leq 3$	2.37
RMSEA	$0 \leq RMSEA \leq 0,05$	$0,05 \leq RMSEA \leq 0,08$	0.06
P value for test of close fit (RMSEA < 0,05)	$0,10 < p \leq 1,00$	$0,05 < p \leq 0,10$	0,00
Confidence interval (CI)	*Close to RMSEA, left boundary of CI = 0,00*	*Close to RMSEA*	
SRMR	$0 \leq SRMR \leq 0,05$	$0,05 \leq SRMR \leq 0,10$	0.06
NFI	$0,95 \leq NFI \leq 1,00$	$0,90 \leq NFI \leq 0,95$	0.96
NNFI	$0,97 \leq NNFI \leq 1,00$	$0,95 \leq NNFI \leq 0,97$	0.98
CFI	$0,97 \leq CFI \leq 1,00$	$0,95 \leq CFI \leq 0,97$	0.98
GFI	$0,95 \leq GFI \leq 1,00$	$0,90 \leq GFI \leq 0,95$	0.77
AGFI	$0,90 \leq AGFI \leq 1,00$ *close to GFI*	$0,85 \leq AGFI \leq 0,90$ *close to GFI*	0.74

This Measurement is based on: Engel; Moosbrugger; Muller (2003). Evaluating the Fit of Structural Equation Models: Test of Significance and Descriptive Goodness-of-Fit Measures. Process result 2012

5.3 Overal structural model and hypothesis testing

From the test results obtained by the influence of the following hypothesis:

1. The first hypothesis states there are influence fares toward passenger satisfaction passengers. Obtained value fares to passengers passenger satisfactioncoefficient of 0.38 with t-value of count equal to 4.91. Positive sign on the coefficient indicates the influence of fares to passengers proportional passengers satisfaction, the higher the performance or value of the fares received by passengers then lead to increased passenger satisfactionscores passengers, meaning that the value received by the passengers on cheap fares, and services in accordance with the preferences of passengers. The absolute value of t-count (4.91)> t-table limit value (1.96) obtained statistically test decision H0 is rejected. So it can be concluded that the effect on fares toward passengers satisfaction.
2. The second hypothesis stated that there is influence between service quality to passengers satisfaction. Retrieved coefficient service quality to passenger satisfactionof 0.35 with t-value of 2.69 count. Positive sign on the coefficient indicates the influence of service quality on passengers proportional passengers satisfaction, higher service quality that passengers increased passenger satisfactionscores. The absolute value of t-count (2.69)> t-table limit value (1.96) obtained statistically test decision H0 is rejected. So it can be concluded that service quality affects satisfaction passengers.
3. The third hypothesis states there is little influence on the physical evidence of the passengers satisfaction. Coefficient values obtained physical evidence to the passenger satisfaction of 0.18 passengers with a value of t-count equal to 1.38. Positive sign on the coefficient indicates the influence of physical evidence directly proportional to the passengers satisfaction, the higher the physical evidence that an increase in passenger satisfaction scores. Absolute value of t-count (1.38) < t-table limit value (1.96) obtained statistical decision test H0 is accepted. Significantly then showed the results were not statistically significant but there is little influence on the physical evidence, the passengers satisfaction.



Picture 2 Correlation and Effect of Inter-Variable

5.4 Descriptive Fact Finding

Some interesting facts here are :

1. Fares have the biggest influence on satisfaction which means passengers prioritize it. The majority of passengers are on duty but they often look for and buy promotional tickets. This shows, low fares are their concern. This is in line with fares value on passengers satisfaction.
   It means only the first alternative from
   Zeithaml et,al,2005, is dominant in accordance to LCC airlines and the other 3 are not applicable.
2. In accordance to the fact that service quality towards passengers is in the second posistion, passengers were satistfied (suited their expectations) with the service quality of the LCC. However, it was discovered that agents are still needed in ticketing. Although, LCC ticketing is internet based to reduce cost. Additionally, waiting time, delay, and compensation information is expected to be more transparant.
3. As physical evidence is in the third position (smallest influence), it shows that passengers do not prioritize it. There is only one minor problem which is passengers request to have more visible information signs.

6 Conclusion

There first position of significant positive effect is fares, follow by service quality, while physical evidence almost not significant to the passenger satisfaction. Fares in Low Cost Carriers airline is the main variable in shaping the value of passenger satisfaction, while service quality is a ranked second and physical evidence showed no effect on passenger satisfaction.

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The Influence of Online Brand Image and Perceived Risks on Online Customer Loyalty for Women's Apparel in Taiwan Market

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Abstract

Ebay, the first illustrious online auction market, allows all unknown, un-trusted parties to sell products and services to one-another. But how we discriminate a product from the similar one? A name, term, sign, or we can say they all Brand, have the immediate bearing on this solution. In internet, marketers use online brand to communicate with consumers, whom get risk to shop online for women's apparel, however. This paper provides a lucid understanding of the most important risk, online brand image, which affects the customer loyalty of women's apparel shopping in Taiwan market. Some online stores, such as Mayuki, JOYCE SHOP and so on, are the cases and a sample of 252 college students participated by survey methodology in this research. According to the result of this research, online brand image such as Synonymous, Innovation, Informality and Competence are significantly affect customer perceived risks and are related to consumer loyalty. Online brand images of a seller significant and positive relationship with the brand or products trust. The managerial implications of this study with strategic directions are shown finally to get more customer loyalty in Taiwan market.

***Keywords*:** Online brand image, risk, customer loyalty, Taiwan
***JEL field codes*:** M31, L86

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1. Introduction

Using internet has become increasingly popular in the last ten or fifteen years, especially in industrialized countries in which the cost of accessing and building an internet site is relatively low (Aspray and Ceruzzi, 2008). In internet environment, retailing has become increasingly competitive. Multi-channel retailing that associates the internet with its channel portfolios has become a standard business strategy for once-traditional in-store retailers such as department stores and specialty stores (Geyskens, Gielens, and Dekimpe, 2002). Internet provide compelling product and service opportunities and play the role of the communication platform for marketers and consumers, for the more, to engage them in two-way communications. Internet not only reduces transactional costs, but also is a marketing force to enhance participator s ' , no matter the seller or the buyer, competitive advantages. Researchers have established a strong relationship between perceived risk and total customer loyalty(Johnson et all, 2006, Yen, 2010). But in the internet marketplace, explosive amount of providers and products let consumers make decision with more and more difficulty. Buyers estimate the quality of products and goods only by the brand image or the pictures. It is only a click or press away in the internet market environment, so it is critical that companies must understand how to build customer loyalty in online marketing.

There are three objectives in this study. First, use online brand images→ perceived risks→ customer loyalty framework to develop and test research hypotheses. Second, to examine the moderating effect of perceived risks value on the relationship between online brand images and customer loyalty. Third, to integrate relevant literature and develop a comprehensive research model of experiential marketing to identify the interrelationships among relevant research constructs.

2. Literature review

Online brand image

Brands ability to communicate meaning is important because, as humans, we like to perceive meaning in what we do, and also allow us to imbue our actions with a sense of added significance (Goodchild and Callow, 2001). Researchers have written much about the impact of the internet revolution on online brands(Elena and Miguel, 2008; Colton, 2012), and we can know brands are almost the most valuable assets of a

company. It is an intangible property but critical component of what a company stands for. Park, Jaworski, and Maclnnis (1986) suggested that brand image is a perceived phenomenon affected by enterprises before they enter market activities. Consumers can understand a brand through brand-related activities and concepts. Once consumers have made a decision, brand concept will affect its own position in the market, as well as the brand image perceived by consumers. Moreover, Park, Jaworski and MacInnis (1986) suggested that, based on different consumer interests, different brand concept-image (BCM) will be developed. BCM can be divided into the following three categories: functional BCM, symbolic BCM and experiential BCM.

Dobni and Zinkhaml (1990) defined brand image as consumers' perceived concept about a certain brand. It is a subjective and perceptual phenomenon established by consumers based on either rational or emotional interpretation. Brand image does not exist in the techniques, functions, and entities of products. On the contrary, it is affected and shaped by relevant marketing activities, propaganda content and characteristics of recipients themselves. For product categories that typically require physical evalua- tion, such as apparel, some of the information desirable for making a purchase decision is not available online(Marine et all, 2012). Keller (1993) suggested that brand image is the brand perception reflected by consumers' association with a brand in their memory. Moreover, he suggested that brand image is the brand association existing in consumers' mind. In addition, it is composed of preference for brand association, association types, association strength, and association uniqueness. Once brand equity and its important role are defined and reinforced in response to different situations, brand image can reflect consumers' feeling, thought and expectation to a brand.

Grewal, Krishnan, Baker and Borin (1998) also suggested that, the higher the brand image, the more positive the perceived quality. Jenni and Byron (2003) defined brand image as brand perception originating from various sources, such as customer experience, market information and word of mouth, including the assessments on interest, information and special point of view on brand. He verified that brand image cannot be composed of a brand attribute alone, and a strong brand image cannot be created unless there are more association and perception. Rita (2007) suggested that brand image is an important factor of corporate image. Da Silva and Syed Alwi(2008) Brand image emphasizes corporate value and it not only helps firms to fulfill competitive advantages, but also encourages consumers' purchase.

Customer loyalty

Customer loyalty is a behavior, while customer satisfaction is an attitude. According to Reichheld (1989) suggested, when an enterprise' customer repurchase rate is increased by 5%, its profit can be increased by 25% to 100%. Some scholars even directly indicate that loyal customers will be the main source of competitive advantage. As a result, it is an important task for enterprises to keep loyal customers loyalty. Bhote (1996) suggested that customer loyalty is customers' willingness to promote the positive word of mouth of a company after they are satisfied with the product or service provided by the company. Oliver (1997) suggested that customer loyalty is a strong support from customers, which make them keep repurchasing or choosing a product or service in the future. Consumers' intention to keep using the product or service will not be affected even when they face certain changes in situations. Moreover, they will not change their behaviors owing to the impact of situation and market sales.

Peltier and Westfall (2000) suggested that customer loyalty originates from the perception of attitude, image, possibility or behavior. Therefore, multiple indicators are required to assess loyalty. Reichheld and Schefter (2000) indicated that customer loyalty refers to an enterprise's winning of the trust from customer, namely, the striving for offering customers great experiences to make them willing to have a business with a company. Funk and James (2001) proposed that customer loyalty is consumers' preliminary psychological connection with product content, which further triggers their long-term and persistent attitude and behavior. Dimitriades (2006) indicated that customer loyalty means customers prefer the organizations. They recommend the organizations to others and have repurchase behavior. Augusto de Matos et al. (2009) argued that the loyalty behaviors, trust, and satisfaction of customers are formed during the service process.

Perceived isks

The concept of perceived risk is proposed by Bauer (1960) from a psychological aspect. In the 1960s, he firstly proposed the concept that consumer behavior itself includes the concept of perceived risks in his article *Consumer Behavior as Risk Taking*. He suggested that perceived risks include nondeterministic results, and some of them may lead to dissatisfaction. Because the existence of risk affects consumer behavior to a certain extent, consumer behavior can be explained based on the concept of perceived risks. Cox (1967) continued the study by Bauer to better clarify the

concept of perceived risks and analyze consumers' shopping. In other words, unfavorable results will be obtained once consumers are not sure whether the product they purchase achieves their shopping objective or what they consume or purchase fails to achieve the expected shopping objective. Perceived risks will be developed once any of the factors, such as product quality, product itself and its pattern, place of purchase and method of purchase, fails to meet consumers' needs. Therefore, Cox suggested that perceived risks are subject to two factors:

1. Perceived pre-consumption level of uncertain risks: consumers' perception of unfavorable situation and risks before the purchase.
2. Post-consumption consequence of perceived risk level: subjective feeling developed when the results of the purchase fail to meet expected objectives.

Rao, Kim and Ferrin (2008) proposed that consumers' perception is a critical obstacle. Thus, when there is perceived risk, consumers will focus on perceived risk and it might influence their decision making of online purchase.

3. Research design

This research focuses on the important risk, online brand image, which affects the customer loyalty of women's apparel shopping. We proposes a conceptual framework, as shown in Figure 1.

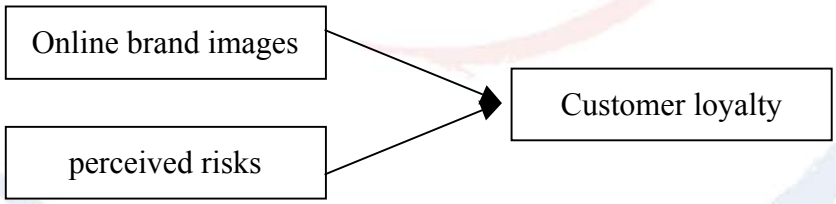

Fig. 1. Conceptual diagram of the relationship between online brand images, perceived risks and customer loyalty.

This research analyzed the survey data collected from May 2012 through July 2012, and two methods We Used to collect data from subjects who were members of Yahoo bid. First, we distributed paper questionnaires to students in National Pingtung Institute of Commerce, Taiwan. Second, we designed an digital version of our survey and posted it to the websites of research. Totally, We received 284 responses and 252 of these, or 88.7%, were completed.

The questionnaire development and the items selected represent the concept about the research model and adapted from prior researches to ensure content validity. It initially including 28 items, consisting of 14 items for perceived risks, eight items for customer loyalty and six items for online brand image. We use Likert scales which range from 1 for strongly disagree to 5 for strongly agree in this questionnaire. Three parts was made to measure different constructs.

The descriptive information shows that 38.6% of the subjects were mail, and 61.4% were female. Most of our subjects were students aged between 18 and 25 and 91% had education of undergraduate or above. This research uses software SPSS version 16.0 for statistical analysis to test the hypotheses presented in this research, the following statistical methods were used: ANOVA, reliability analysis, factor analysis.

4. Discussion

Fourteen questions were asked about the existing perceived risks of purchasing products and if it needs further improvement for an positive decision making. The questions accumulated to improve whether the customer loyalty depends on the perceived risk which is H1, and the result presented in table 1:

Table 1. The perceived risk is positively related to the customer loyalty

ANOVA

Model		Sum of Square	Df	Mean Square	F	Sig
1	Regression	2.627	1	2.627	8.353	.004
	Residual	31.540	89	.334		
	Total	33.219	92			

We found that the F value= 8.353 which is >1.9, and Sig= 0.004 which is <0.05. Therefore, we can accept the Alternative Hypothesis(H1) and reject the Null Hypothesis. Online shopping or online retailing is a form of virtual process whereby consumers directly buy goods or services from a seller over the internet without an intermediary service. People can't touch real products, and most information of products are just characters. The more risk customers feel, the less customer loyalty done.

To understand the online brand image attitudes of women's apparel, eight questions

were asked and accumulated to improve H2. The result presented in table 2:

Table 2. The online brand image is positively related to the customer loyalty
ANOVA

Model		Sum of Square	Df	Mean Square	F	Sig
1	Regression	1.455	1	1.455	4.753	.038
	Residual	32.171	87	.336		
	Total	33.525	90			

We found that the F value= 4.753 which is >1.9, and Sig= 0.039 which is <0.05. Therefore, we can accept the Alternative Hypothesis(H2) and reject the Null Hypothesis. This study shows that attitude toward brand trust of customers represents an important marketing opportunity to help an unknown online brand change to celebrated one. Quality and immediately service appear to be important drivers of consumer brand image, that is a positive or negative perception of an online brand. Take JOYCE SHOP for example, there might be limited information for a people to know about the quality of the products, but more and more customer buy the shoes, it will not just a discriminate tool for consumers but a real brand for an idea. A customer would expect the transaction to be successful if he believes that the bid website is capable of providing a safe environment and quality service.

5. Conclusion

This study were still a working paper, and we analysis the dataset continually for more information for the relationship between online brand image, perceived risk and customer loyalty. With the pilot analysis of this research, we indicated that the positively relation with these dimensions. This study sheds light on the extent of online brand image concepts in the internet marketing in Taiwan, and approved that the perceived risk and brand image affect the customer loyalty. But we mainly focus on the image of members and do not consider many factors related to the website, such as the website-width. Future research can examine these aspects as familiarity with a store and perceived similarity between websites.

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Organizational Ownership of Young Workers as a Key to Success in Labor-intensive Industry: A Case Study

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Introduction

Generational changes of the day have made work organizations experience new generations at work. Consequently, most of the young employees represent generation Y, while most of the mid-careered employees represent generation X in the contemporary world of work. Particularly, the work organizations in the labor-intensive industry indubitably confront the challenge of responding to the voice of such new generations.

Massive portions of industries those immensely contribute to the GDP in the Asian region are labor-intensive, and composite of young workers in huge numbers. However, a frequently raised and widely debated issue in this industry with its young workers is the voluntary turnover. Voluntary turnover of operational level workers has threatened the profitability, growth, and even survival in certain organizations, especially those in garment and textile industries.

Despite this broadly seen empiricism, there are few exemplary organizations those deal with a large number of young operational level workers, and succeeded in retaining them and reaching high profits, growth, and stability in the industry. This study presents a case of such a success story while proposing a theory for dealing with young workers at operational level. It reports the case of a Sri Lankan organization in the textile industry, and exhibits how the facilitation of 'organizational ownership' for its young workers helped it becoming through a great loss to a public limited company. Organizational ownership is theorized as an attitude that is created through (1) managerial actions, and (2) positive communal responses accrued from outside. It draws from the existing knowledge of the characteristics of new generations, and seeks the validation of its views through learning organization, impression management, and recent developments in leadership research.

Industry background

Textile and clothing industry stands to be highly labor-intensive and low-wage industry placed in a dynamic and innovative sector. It has been an important source of job creation, offering entry-level jobs for non-skilled and semi-skilled labor, especially in developing countries (Nordas, 2004). Easy adaptation of relatively modern technology, and relatively low investment costs had encouraged developing countries to step into this industry. Textile industry becomes the major input provider to the clothing industry thus creating a vertical supply chain. Accordingly, the key success variables of the textile industry are noted as cost effectiveness, high quality of products, meeting delivery targets etc. and the factors enabling competitive advantage are the access to

quality inputs, uninterrupted production process, reliability of delivery and continuous improvements to the entire process.

Case selection

Textile and apparel industry in Sri Lanka has been widely contributing to the national economy during the past, thus making it a substantial source of addition to GDP. Nonetheless, globalization (Kelegama, 2005), poor working conditions, low investments in technology, inadequate HRD, higher labor turnover, and lack of professionalism (Kelegama, 2002) have challenged the industry to a greater extent. Survival of organizations in textile and apparel industry eagerly needs the assurance of economies of scale, availability of raw materials, and low cost and skilled labor combined with efficient technologies. Thus, it is vividly understood that successful organizational performance needs the assurance of many other operations, which activate beyond just survival.

The selection of this single case company was purely based on its merit performance despite a massive number of issues and challenges faced by the organizations in the same industry at global as well as local spheres. As evidenced in Sri Lanka, organizations in textile industry seldom bring out success stories. The case organization, being an exception to the majority of the organizations in the industry, has been successful to maintain the labor turnover rate at a low and stagnated level, and to report a steady increase in its revenue during the past five years period since its incorporation in Sri Lanka. Its net profits show a significant up-turn during the past two years. Passing a remarkable juncture, recently it was listed as a public limited company at the Colombo Stock Exchange. It has won several awards and certifications to its credit, including Akimoto 5S Award, British Computer Society National Best Quality Software Award, and National Industrial Safety Award, to mention some.

Case background

The case organization was a (recently listed) Public Liability Company in Sri Lanka, operating from 2001. It manufactures and supplies a variety of designs and specifications of weft knitted fabrics for garment manufacturers and apparel brand owners worldwide. The company is situated in an industrial zone located approximately 55 km. away from Colombo metropolitan city. The employment structure includes managers, assistant managers, executives, staff, and associates (operational level workers), total numbered to nearly 1200, and sixty-six percent of the employees are associates. The associates were rural youth living around the organization premises or those who commuting from a bit distant rural areas. Ninety three percent of the

associates fall between 18 and 35 years of age. The worker profile (associates) is given in the table 1 below.

Table 1 Worker Profile (Associates)

Character	Percentage
Gender: Male	95
Female	05
Civil status: Married	23.5
Single	76.5
Age category: 18-24	41
25-35	52
Above 35	07

Source: Survey data (2011)

Organization has reached remarkable financial returns during the past few years. The total annual revenue and profits are shown on table 2 below.

Table 2 Trend of Annual Profits

Financial Year	Revenue Rs.	Net Profit/(Loss) Rs.
2004	1,719	(177)
2005	2,151	(21)
2006	2,968	225
2007	4,096	195
2008	5,004	163
2009	7,188	145
2010	8,352	577
2011	9,285	685

Source: Survey data (2011)

Methods and data collection protocol

This study relied on five types of data sources: (a) observation of work setup, (b) observation of an audio-visual presentation about the organization, (c) interviews and discussions with the workers, (d) interviews and discussions with managers, and (e) archival data. The data collection

was carried out by a group of researchers. The group held discussions at certain points of data collection for more clarification prior to recording of data. Data collection was continued until the marginal contribution to the analysis and theory development becomes smaller (Eisenhardt, 1989).

Observation of work setup

The team of researchers did an on-site observation and the facts were discussed in a discussion forum followed by. This was used to ensure the capturing of wider portrait of the scenario avoiding any personal biases of a single observer at the site. The notes taken at observatory visits, anecdotes, and hunches were analyzed accordingly. These field notes were used for cross-verification and elaboration of interview data.

Observation of an audio-visual presentation

The research group observed a power-point slide presentation and a discussion held by management and workers, followed by a question-and-answer session with the field-visitors. Power-point presentation detailed the organization's strategic intent, corporate concept, core values, policies, and procedures, the nature of leadership, achievements, and challenges, while incorporating photographs of several annual events organized by the organization with the cooperation of workers.

Interviews and discussions with the workers

We conducted a semi-structured interview with a team of operational level workers (associates) and a team of joint consulting committee (JCC) members with the use of a set of open-ended questions. The questions covered, (a) reasons for joining this organization, (b) the nature of working environment, (c) satisfaction or dissatisfaction with the job and the organization, (d) reasons for remaining in this organization, and (e) future prospects and attitudes towards their career. The interviewing process was adjourned at a point of saturation of evidence. Further, a free discussion was held with the workers while having special attention on: (a) the nature of relationship between the superiors and the workers, and (b) the general attitude of workers towards the management.

Interviews and discussions with management

Several interviews were held at the organization premises with the Deputy General Manager/Human Resources and Administration (DGM/HR & Admin) and a few personnel from

the middle management level. The interviews used a semi-structured and open-ended questionnaire for probing into details. The questions mainly focused on the managerial actions performed in dealing with the rural youth workforce. These covered: (a) recruiting the appropriate individuals for work, (b) enacting them for work, (c) maintaining the labor turnover at a stagnated level, (d) winning the heart of workers, and (e) winning the acceptance of the general community around.

Archival data

The group of researchers examined the internal documents including organization structure, worker demography, performance indicators, achievements and awards, and the records of employee achievements. In addition to these, the magazine of events, published by the organization, and the home page of the organization were used as secondary data sources. The prospectus of Initial Public Offering (IPO), and related news articles were examined further.

Rigor and reliability of data

A several measures were taken to assure the rigor and reliability of data and an unbiased analysis, which is free from accidental judgments during the entire study. Those were, (a) using multiple sources of evidence, (b) employing a group of researchers for data collection (for interviews and observation), and (c) member checking (Yin, 2009).

What makes young workers work hard and retain in the organization

Interestingly, no material gain that we were able to find as that reinforced hard work and retention of young workers at the case organization. To be noted, the wage rate, other benefit, or special motivational facilities did not stand there to claim any significant difference, when compared to the situation with their counterparts employed in the similar industry. Apparently, the work environment did not mark differences in terms of the work atmosphere, infrastructure, floor design, type of machinery used, location etc. Nonetheless, the operational level workers reflected a great emotional bond towards the organization through their work as well as their words. Resultantly, we were compelled to probing into the particular ‘attitude’ that enforced the young workers to work so harder and retain in the present organization for long.

Organizational ownership as an attitude

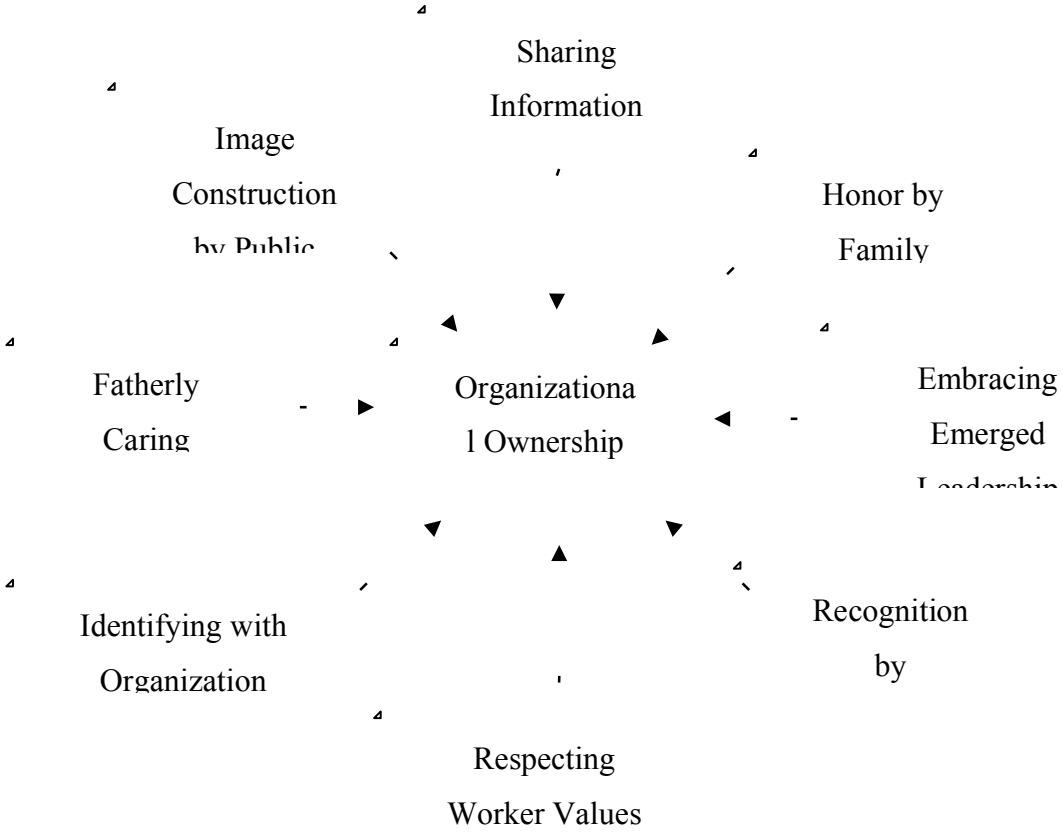
The discussions and interviews held with informant workers reflected their inner-bound strong feeling of ‘ownership’ on the present organization. The simple meaning of this notion was that

'the organization was theirs''. The 'homely feeling', 'working for its betterment', 'being with it always', and 'safeguarding it' were the most highlighted feelings towards the organization through their expressions. Thus, this reflection made us labeling this attitude as 'organizational ownership'.

However, organizational ownership in the existing literature deemed to mean a financially-driven ownership that leads to sharing of profits. It is a materialistic ownership, which is enabled through taking shares of company stocks or a financial stake in any such form. In contrast to such a financial stake, we would like to highlight the organizational ownership seen at case organization and theorized in the present study, purely as '*an attitude created in employee mind through certain identifiable managerial actions, and then strengthened with positive communal responses those accrued from outside, thus ultimately bonding them emotionally to hard work and retention for long with this particular organization*'.

Thus, the two streams of determinants of the attitude of organizational ownership of operational level workers were found as: (a) managerial actions, and (b) positive communal responses. It was evident that the so labeled 'managerial actions' were not deliberate actions of management to create any particular attitude in the young workers, but a series of usual practices followed by human resource management (HRM) and general management for encouraging and motivating young workers. The four managerial actions evident were, (1) information sharing, (2) embracing emerged leadership, (3) fatherly caring, and (4) respecting worker values, and the four positive communal responses identified were, (1) honor by family, (2) recognition by the surrounding community, (3) differentiation through organizational identity, and (4) image building by general public. Figure 1 below depicts the concept that we present in this study.

Figure 1. Factors Creating Organizational Ownership



Below we discuss these in more detail, and present the main evidence with data sources and exemplary illustrations in table 3.

Information sharing

Our interviews of operational level workers and the discussions with managers revealed that workers have frequent meetings (held once in a month) with a top-level manager: most often the chairperson of the organization. These meetings were held mainly for communication purposes. The content of the communication covers timely important information about the organization, industry, and the general environment, as the management decides to share with its workers. Some examples of such information were noted as below.

1. Production, profits, assets or future expansions
2. Demand for products
3. Behavior of major competitors and suppliers

4. Technological advancements in the industry
5. Changes needed for existing work processes
6. Government budget proposals
7. Future projections of above

This flow of information from management to workers had mainly served two purposes. (1) It educated workers about the organization, industry, and the general environment, of which knowledge it led to understanding the reality of the environment in which they live, and (2) it had enhanced double-loop learning (Argyris & Schön, 1978), which encouraged workers to come up with suggestions and creative ideas (ex. for improving existing work processes).

We learnt the reactions of workers towards this endeavor. Almost all the workers who mentioned about this practice of the organization expressed their pleasure, especially of the meeting with the top-management member. They were delighted to see him and to listen to him. The information shared was of much value to them, and that was expressed with the words: "At the meetings with the 'Sir', we are able to learn about our organization and the industry as well. At home, we know all our home affairs. Likewise, here we get to know everything about our company". Our discussions with managers revealed that this practice helps convincing workers the real situation at the company, the industry, suppliers, competitors etc. and resultantly, there is lack of room for labor disputes, especially those based on demands for high wages or benefits at wrong time.

Asia Onward: Serendipity as an Alternative Way for Innovation

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Abstract

This paper tries to contribute to innovation in several ways. First, we articulate a model of serendipity in the organizational context and facilitate further empirical work on the topic. Second, we build on existing research to relate this notion to a number of organizational concepts and areas of study, from strategy to organizational behavior and entrepreneurship. Third, we contribute to the development of knowledge on the emergent side of organizational life. As we will discuss, serendipity as an event may be facilitated, but not managed, at least in the sense of being subject to forms of organizational control or being programmed to happen.

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Introduction

Serendipity may alter or initiate a firm's strategy. Serendipity in strategic managementinvolves the chance observation of an accidental event, drawing conclusions from the observation with regard to the (re-) orientation of strategies and being able to imple- ment the resulting strategy. An individual may observe by chance an opportunity, imagine the potential significance and develop the idea, receiving support from other members of the organization or being in a position to determine the strategy and being motivated to turn it into a business opportunity.

Despite an evident scarcity of settled law-like explanations, since its outset, organization theory has had a penchant for order (Clegg, Courpasson & Phillips, 2006). Taylor was obsessed by it; Mayo and Barnard vested management with a moral purpose in securing it, and much of its normal development since that time has been oriented to a structural functionalist account of it (Donaldson 1996). Tsoukas' (2004) argues that scholars have devoted more attention to formal organizations than to the broader phenomenon of organization as a process of becoming rather than being (see also Kornberger et al., 2004). Indeed, it was in 1993 that the Nobel Laureate, Herbert Simon, founded the idea of strategic planning as assuring "a stream of new ideas that will allow the organization to continue to adapt to its uncertain outside world" (p.141). The organization has long been seen as a keep or haven of order against an uncertain and disorderly world (Clegg 1990).

Serendipity in organizational practice

That there is logic to disorder does not mean that organizations are irrational or incoherent but rather that there is an element of unpredictability and emergence in the fabric of complex systems that needs to be considered and studied. The logic of disorder may be found in Cohen, March and Olsen's (1972) work on garbage-can type decision making, which demonstrated the role of chance, luck and timing in organizational choice. In this model, choice occurs through the accidental confluence of problems, solutions, participants and problems. Pascale's (1984) work on Honda's entry in the American market is a classic example of unexpected discovery, or of how organizations make sense of unplanned opportunities as they go along. Serendipity has also been presented as an outcome of exploratory learning efforts (March 1991).

While it is often said that highly prescribed and standardized processes lead to good products as the fruit of hard work and tight control (Cooper, 1998) the importance of serendipity has been seen as particularly visible in the case of innovation, especially in new product development.. The role of chance and serendipity, elements of "the unexpected", as Drucker (1985) put it, have been illustrated in theory and practice. The effort to make the accidents work through their development as new products is often discounted from popular narratives.

Facilitating Serendipity

In their work on cognitive repairs, or organizational practices that compensate for individual shortcomings, Heath, Larrick and Klayman (1998) contrasted two distinct paths to such repairs. Some repairs originate in a top down approach: they were deliberately designed and implemented by managers or outside professionals, such as consultants. Others emanate from the bottom up, resulting from unplanned discoveries made while doing the work. Action is a facilitator of learning and people may act in order to learn and discover (Weick, 1990).

Being an emergent process, serendipity cannot be managed/programmed but organizations can create conditions for it to "appear". They can increase the likelihood of serendipity, without guaranteeing any results. Deep-distant search (Katila & Ahuja, 2002) appears as a fruitful problem-solving strategy. The process, utilizing the organization's stock of knowledge but redirecting people's attention, combines expertise with curiosity, a possibility consistent with Shane's (2000) finding that entrepreneurs tend to discover opportunities related to the information they already possess. Broadcast search can be conducted by companies acting as knowledge brokers between seeker firms and globally dispersed independent solvers. New information and communication technologies open new and creative ways of addressing problems by allowing the organization to search for knowledge in its periphery. As Lakhani (2006) shows, some answers represent unanticipated but adequate solutions from distant knowledge fields.

In segmented cultures, "thought worlds" tend to dominate (Dougherty, 1992). Information flows less freely and people become more and more focused, diminishing the possibilities for bisociation to occur. As such, cross-functional teams (Holland, Gaston & Gomes, 2000) and boundaryless structures (Hirschhorn & Gilmore, 1992) may improve the chances of bisociation. The changes introduced by some organizations in their human resource function are suggestive: HR professionals are increasingly viewing their work as one of connecting and facilitating the circulation of knowledge in order to promote further knowledge creation, rather than aiming to accomplish the traditional HR functions (such as selection, development, compensation).

New Directions

In a literature review of organizational learning, Huber (1991) observed that little research effort has been devoted to unintentional learning. There may be many reasons for this lack of attention, including the presumed superior quality of intentional learning, and the methodological difficulties and challenges inherent in the study of a phenomenon that, being unintentional, is also unpredictable, irregular, random and ambiguous. We contributed to this field by analyzing one of the possible shapes of unintentional learning. Chance, luck, and accidental discoveries are often presented as the result of the random combination of multiple factors that are beyond the company's control (e.g., Barney, 1986), but the effort expended in better understanding this ambiguous concept may be relevant.

If we take organizations as entities in which relevant emergent elements can appear, then serendipity may have a role in explaining the processes of organization (Tsoukas & Chia, 2002). We are aware of the dangers involved on an organization's reliance on serendipity

as a means of discovery, given its unpredictable, non-programmable and untamed nature; thus, we attempt to increase familiarity with the concept in the organization studies field while not suggesting that serendipity is superior to other forms of learning and discovery, such as those described by Miller (1996) or to the structured management of innovation value chains (Hansen & Birkinshaw, 2007).

Conclusion

The present paper may be read as an invitation for management scholars to develop further research in a vein that is contrary to the dominant logic of organization and management studies as the engineering foundations of the field bequeathed them (Shenhav, 1999). Abandoning the bias for routine and predictability, accompanied by the appreciation of the unplanned and fortuitous (Plowman et al., 2007), can unshackle organizations from the predictable legacy of much organization and management theory. Indeed, our paper is not only an example of an argument constructed in terms other than those of a hypothetico-deductive method it is also an argument against the primacy attached to such work in management theory - and practice - in general. Serendipitous discovery does not emerge from what is already thought and known and its systematic application, as we have argued. Instead, its essential nature is surprise.

A wholly different view of organizations to that which sees them as more or less stable structures struggling with exogenous and endogenous sources of uncertainty emerges from is perspective. On the contrary, lively organizations, organizations that exhibit vitality and innovation rather than a commitment to the perfectibility of routine, will be spaces of enquiry, surprise, with time for reflection. They can be designed to be like that and we have spent our time in this paper suggesting what that design might be. The model, of course, is the university seminar or research laboratory, where there is a collective commitment to strive for ideal speech situations in which anything might happen or be said, in which vitality is not subject to conformance with routines that stultify (Habermas, 1971) but finds expression in the power to act, the history to be able to inform that action intelligently, and the imagination to be able to do so (Clegg, 2006).

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Data Mining Through Self Organising Maps Applied On Select Exchange Rates

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Abstract

The self organising maps are gaining popularity as they help in organizing the haphazard data in topological maps. They conserve space in storing, help in pattern identification, matching, recognition, data mining etc. The Neural Networks designed by Hopfield is applied in this paper to organize the returns produced by seven exchange rates by the competitive Kohonen algorithm. Our analysis produces interesting self organizing maps for these currency returns. All exchange rate returns are nicely organized in a solid tight group and placed at the center of the boundary rectangle except for US dollar, European Euro and Korean Won. One weekly grouped return fall outside the boundary rectangle for these three exchange rates. These grouped returns are outliers which could have germinated by significant information or an economic event happened in these countries.

Keywords: Competitive learning, Data Mining, Exchange Rates, Neural networks, Pattern recognition, Self organizing Maps

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Introduction

Globalistaion removed most of the barriers to international trade and facilitates large amount of capital flows among countries. The global economies are currently dependent on each other directly or indirectly, thus no economy is independent. When one economy is affected by the financial crises or big scams or any natural disaster, several other dependent economies are affected by these events as they are more integrated presently than ever. The 2008 global financial meltdown caused countries to take various preventive actions to protect their economies from the repercussion. Even Malaysian government released from its reserves about Ringgit 70 billion to stabilise the economy. The effectiveness of relative economic management of two countries converges and reflected in exchange rates (Baillie and McMahon, 1989). The exchange rate (XR) is the linking bond (Bartov and Bodnar, 1994) between any two countries' economies. If home country's economy is not well managed, the XR against every other country's currency will go up which indicates local currency's weakness and the strengthening of the foreign currency against the local currency. International trade and capital flows (Das, 1999) depend on the stability of local currency value and XRs (Ravindran and Hanif, 2010). All international economic activities like tourism, education, financial services in the form of banking, insurance, both foreign direct investments and portfolio investments have strong dependence on XRs (Amihud and Levich, 1985).

Traditional analysis of financial time series (Adya and Collopy, 1998) in parametric statistics have strong assumptions (B. Ripley, 1993) like normality of data, non stationary character of data and non correlated nature of residuals etc (Ravindran et.al 2011). Often they produce limited information for decision making and this information is spurious occasionally. The researchers constantly apply different techniques to understand the root causes for their dynamism and to know their direction of movement in advance (Atiya and Yaser, 1996). Once data is understood in proper perspective, studying and recording their pattern, properties and behavior are easy (E.M. Azoff, 1994). With this objective in mind this paper tries to organise the XRs in Self-Organising Maps (SOM). The SOM concept was proposed by Hopfield in understanding the topological arrangement (J.J. Hopfield, 1982, 1984, 1985) of physical objects by repeated learning with an organised neural network (NN) by adjusting initial values which are assigned arbitrarily by the researcher (Vanstone and Tan, 2005).

Literature Review

Neural sciences have been evolving for the last 30 years or so. These biological neurons are equated to artificial neurons and applied in many physical and social sciences. In the last decade, many econometric applications of NN have been tried by the researchers in understanding the properties, behaviour and the pattern of the economic variables such as Gross Domestic Product (GDP), interest rates, share prices (Vanstone and Tan, 2005) and XRs. This study is another attempt to apply NN in XRs to organize them and produce maps, popularly known as Self-Organizing Maps proposed by Nobel laureate Hopfield and applied by Kohonen (Kohonen, 1995; Xinyu Guo et. al, 2007).

Self-Organising Maps

Organising the data into the SOM is very important for three major reasons. Firstly, the scattered data which is strewn everywhere is to be organized into a form not only save space but also to organize them orderly, to observe whether any pattern (K.S. Fu, 1982; P. M. Grant, 1989) is formed. Secondly the SOM has the ability to reveal the existence of extreme data and this piece of information is extremely useful in data mining. Data mining is very useful in identifying the rogue or fishy transactions. Thirdly, the data could be stored, retrieved and transmitted economically since it is organized. Finally they can be matched with other SOMs to find similarities and deviations like correlation coefficients in parametric statistics to find co movements of data.

Learning by neural networks

The NN is working on the principles of learning repeatedly and storing the learnt information in the neurons (K. Jason, 1988). The stored neuron contents will be retrieved back as and when the information is needed for recognition, matching etc. Secondly in data mining especially in ATM transactions the fraudulent are to be isolated from the millions of genuine transactions. This is possible in organizing the data in SOM.

There are two learning methods which are supervised and unsupervised. In supervised learning, there will be a teacher to correct when the student goes out of the right path. Similarly, when the network organizes the data, there will be a target data or threshold data it needs to compare and find the gap. If gap exists, in the next training round, the gap is to be reduced and this reduction is called supervised learning. After several rounds of training if a map is drawn for the learnt stored weights, one could observe a clear pattern emerging from the output of the network (Bartov, 1992; Devroye et.al, 1996).

On some occasions, the target value or threshold value will not be available for finding the gap. In such circumstances, the network will take the individual weights as targets and

try to narrow the gap is known as unsupervised learning. In supervised learning the convergence will be faster than unsupervised learning. In this study, unsupervised learning is applied on XRs' returns to organize them in SOM. The command structure of the NN algorithm is given below.

Methodology

Algorithm

Given
Exchange Rates of 2011 of seven currencies
Rates are detrended and returns computed

Initialize

Weights to some small random numbers (50 weekly groups)
Epoch
Learning rate, alpha

Iterate
Repeat
{
Pick a return R_i

Find the Euclidean distance for all weights

$D^2 = (X_i - W_{i,j})^2$

Find the shortest Euclidean distance, winning neuron (i,j)

$W_{ij} = \min(D^2)$

Update weight of winning, forward and backward neurons

$W_{ij} = W_{ij} + alp(X_i - W_{ij})$ $i,j = 1...n$

$W_{i,j-1} = W_{i,j-1} + alp(X_i - W_{i,j-1})$

$W_{i,j+1} = W_{i,j+1} + alp(X_i - W_{i,j+1})$

Reduce the learning rate

}

Until the learning rate is negligible

Data

We have chosen seven countries' exchange rates to perform the SOM mapping. The selected XRs are USD, EUR, GBP, AUD, NZD, JPY and KRW representing two currencies for each continent except Africa. American continent is represented by US dollar only as it is the most popular and globally accepted medium of pricing and transactions. USD is widely accepted by all nations as the benchmark currency and as such, it was treated as a distinct figure. The GBP and EUR represent European continent, JPY and KRW represent the Asia and the Pacific area is represented by AUD and NZD. These nations are also the major trading partners of Malaysia. The required daily XRs were downloaded from pacific XR services website and the analysis was performed. A MATLAB program was written to draw the SOM. The results are presented below.

Results and Discussion

The SOM figures are prepared in three parts, the first part is for the raw returns, the second part is for initial unorganized weights connected by their path in a haphazard manner and the third and final part is for the organized SOM. Hopfield network is used in this experiment and the Kohonen competitive learning algorithm is applied in weight updating and organising the returns. A boundary rectangle is drawn to assess the scatter of returns before organising. The figure will reveal the spread of returns inside the boundary rectangle whether in a concentrated form or spread in various directions. The second part of the graph is assessing the spread of random weights assigned initially and they are connected by lines to see a SOM. The third portion of the graph is the organized SOM which will show the outliers and spread of organized returns.

USD - Ringgit Exchange Rate Returns

USD/Ringgit XR for 2011 is converted into returns to avoid non-stationary character and it is given in the first panel of the above graph in the form of a scatter diagram. The return scatters equally in all four directions of the boundary rectangle which indicates chaotic nature of the spread or behavior. The second panel is showing the 50 weekly representative groups of weights before organizing. The initial random weights spread at all directions of boundary rectangle. Six weights fall on the right hand side while on the left three weights fall. On the top and bottom, only a few weights appear before it is organized. These 50 weekly group weights of the network are trained in an unsupervisory competitive mode for organizing or clustering these returns. When the network is trained, the returns are coming closer and closer in each epoch and form a pattern which falls within the boundary rectangle. Only one weekly group return falls outside the rectangle on the right hand side. Closer observation reveal all weekly return groups are similar and cluster together tightly. The abnormal return falling outside the boundary rectangle may be due to the arrival of new significant positive information to the foreign exchange market because the return falls on the right hand side of the boundary rectangle. In data mining terms this is an abnormal transaction where something fishy.

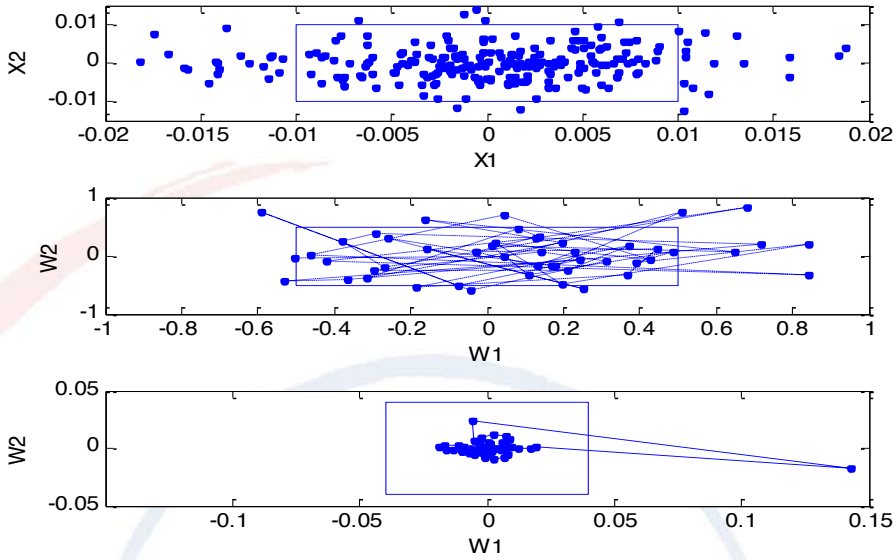

Figure 1. USD / MYR Returns Self - Organising Map

Euro - Ringgit Exchange Rate Returns

The Euro XR returns against Ringgit are plotted in the panel one of the graph shown below. The first panel of this figure, the scatter graph indicates a uniform spread in the left, right, top and bottom side of the boundary rectangle. This implies that the rates are normally behaving in 2011. It further indicates the independent and identically distributed nature of the returns. The second panel exhibits the unorganized initial random weights which are generated to cluster 50 weekly groups. These weights are to be trained to cluster the returns on a weekly basis. They spread in all four directions of the boundary rectangle. The third panel shows the organized SOM. In Euro-Ringgit XR also one of the returns falls outside boundary rectangle. But this time it is diametrically opposite to the USD-Ringgit returns. This abnormality may be due to the arrival of significant information to foreign exchange market or may be due to any significant event in Euro zone. A lot of adverse information are emanating from Euro zone area of late. This could be the reason for this outlier.

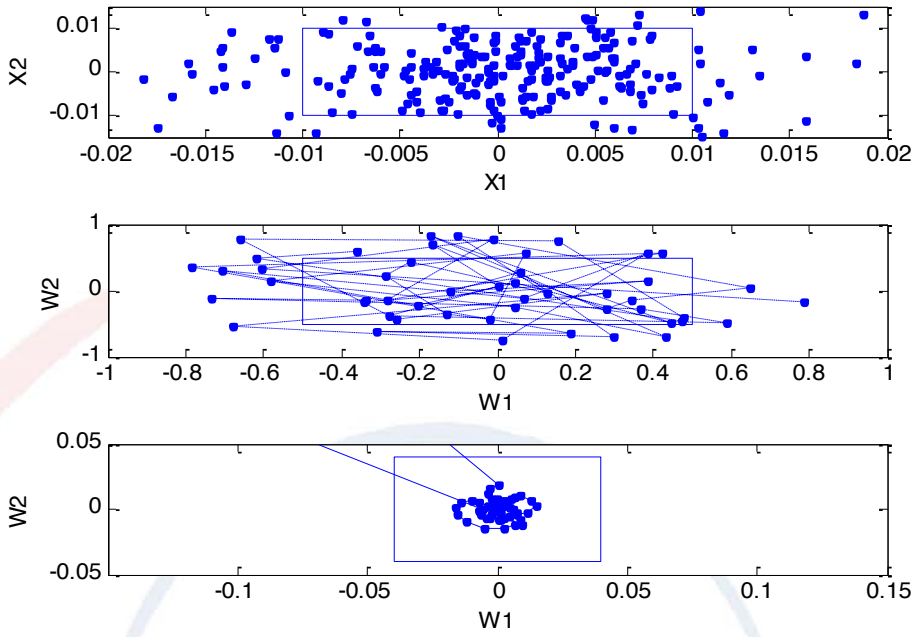

Figure 2. EUR / MYR Returns Self - Organising Map

GBP - Ringgit Exchange Rate Returns

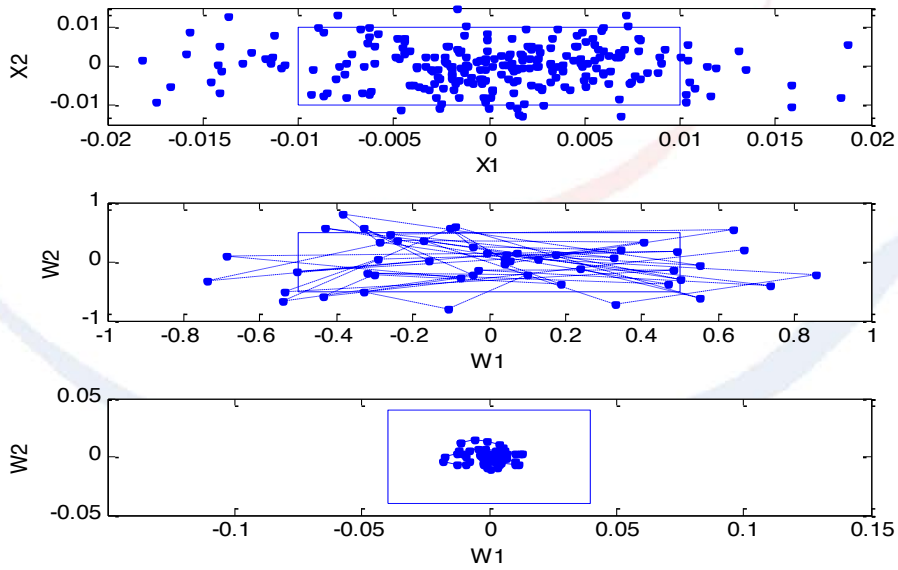

Figure 3. GBP/ MYR Returns Self - Organising Map

First panel of GBP returns show the spread of returns. They spread in all directions equally which indicates the normal distribution of returns. The middle panel exhibits the initial unorganized weights assigned to train the 50 weeks returns in the competitive learning algorithm. These weights also spread in all directions of boundary rectangle. The last panel shows the organized SOM of GBP. The returns cluster in a compact group and they are placed at the center of the boundary rectangle. It seems there are no abnormal events or information to influence the GBP XRs against Ringgit.

JPY - Ringgit Exchange Rate Returns

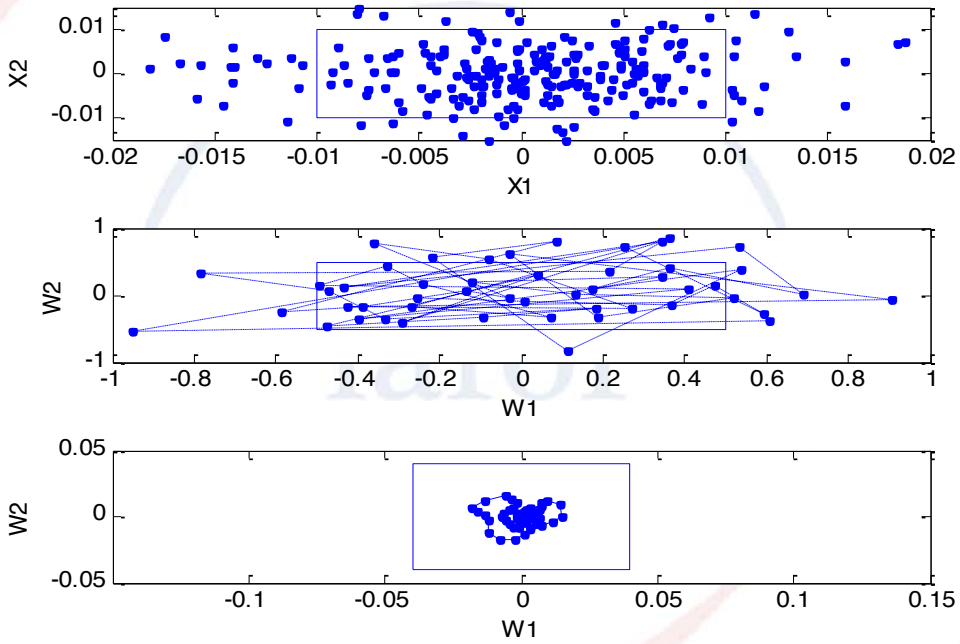

Figure 4. JPY / MYR Returns Self - Organising Map

The JPY show a uniform pattern in panel one which produces scatter graph for returns in 2011. Panel one of the above graph shows that the initial returns fall inside and outside of the boundary rectangle equally and in all four directions. Panel two gives the scatter diagram of the unorganized random returns which are simulated pure random numbers. In panel three the SOM clustering is similar to GBP and it reveals that the JPY exchange rates against Ringgit are stable without any abnormal behavior.

KRW - Ringgit Exchange Rate Returns

The Korean XR's returns are shown in the first panel of the following graph. The scatter spreads in all four directions equally. The second panel gives the unorganized returns' position which is also fairly spread like the real returns in panel one. The trained and organized SOM of KRW is also tightly clustered like the previous currencies' rates, but one trained rate just falls below the boundary rectangle, like USD rate. But this return is just below the boundary rectangle not like USD which falls at a fairly longer distance. This indicates some moderate information has come to the XR market which has temporarily influenced one of the returns.

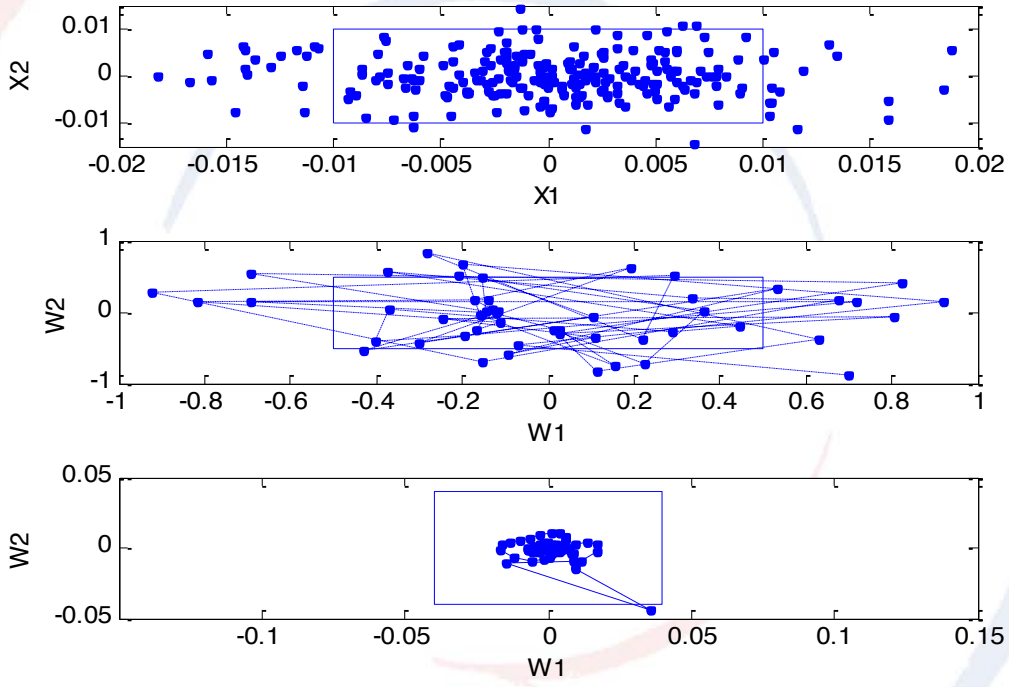

Figure 5. KRW / MYR Returns Self - Organising Map

AUD - Ringgit Exchange Rate Returns

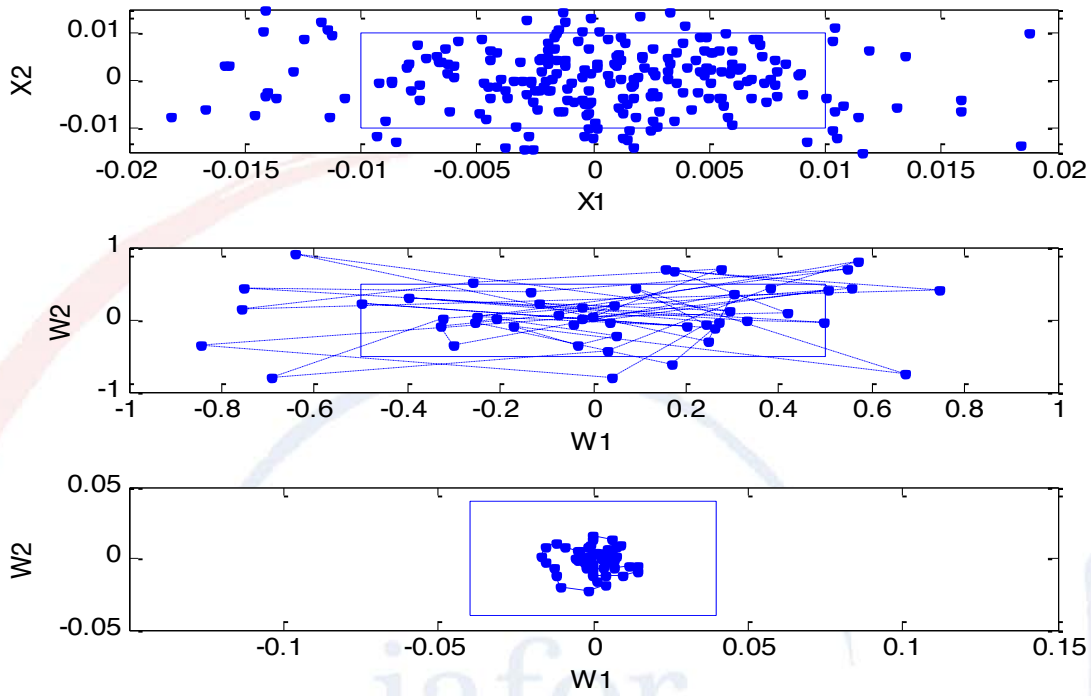

Figure 6. AUD / MYR Returns Self - Organising Map

The first panel of figure six shows the spread of real returns of AUD. As other XR returns the AUD's returns also spread in all four directions. The second panel gives the random initial weights which will accommodate all 250 returns after training by Kohonen competitive training algorithm. Panel three gives the organized returns after training which are also tightly clustered like other currencies' returns and they are placed at the center of the boundary rectangle as a compact group. It seems AUD returns are also normal and there is no abnormal behavior.

NZD - Ringgit Exchange Rate Returns

The AUD and NZD XR returns behave more or less similarly. The NZD scatter diagram shows spread in all four directions of the boundary rectangle. The unorganized weights given in panel two spread more on the right hand side of boundary rectangle. When the returns are organized into 50 weekly groups after training, they show a pattern closely knit compact group placed at the centre of the boundary rectangle. This implies that both AUD and NZD XRs returns organize similarly in SOM.

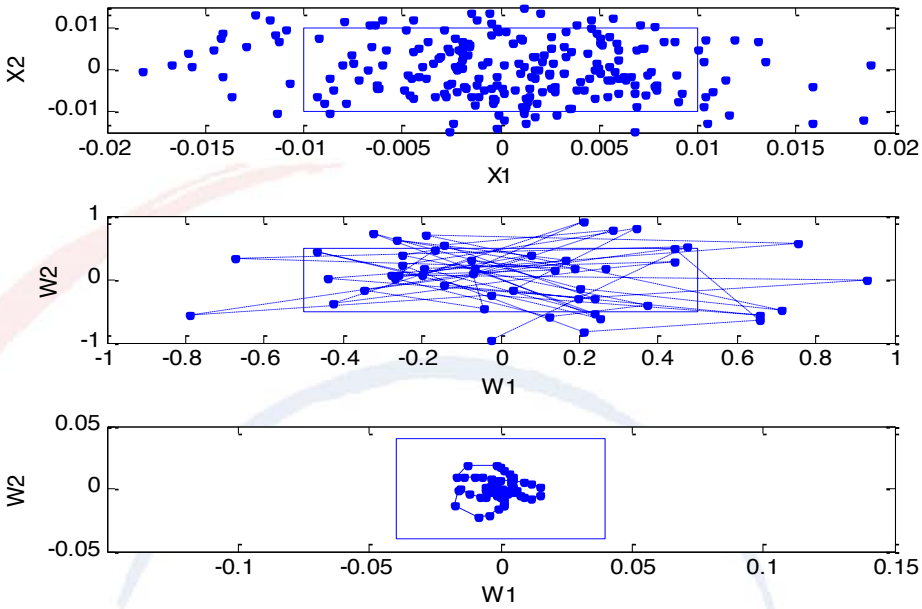

Figure 7. NZD / MYR Returns Self - Organising Map

The above SOMs help in pattern recognition, organizing the data for storing and data mining purposes. XR returns of 2011 show a very tight compact clustering and placed well at the center of the boundary rectangle with three exceptions. This shows the economic stability and better management of these countries' economies by the respective governments and the central banks.

Conclusion

SOMs are important in data storing, data mining, pattern recognition etc. We applied exchange rates to prepare SOMs for seven popular currencies' exchange rate returns. The SOMs are prepared in three parts, the first part was for the raw returns, and the second part was for 50 unorganized initial random weights which are haphazardly connected to each other. The third and final panel represents the organized SOM. Hopfield network was used in the experiment and the Kohonen competitive algorithm was applied in organizing the returns. The first part of the SOM the returns spread inside, outside, top and bottom of the boundary rectangle equally for all currencies. The second panel which

is prepared with initial unorganized weights scattered in all directions of boundary rectangle as it appears in panel one. The third portion of the graph is the organized SOM which is prepared after training the weights with returns in Kohonen competitive algorithm. These returns are well organized and placed within the boundary rectangle except USD, Euro and KRW. One outlier is present in these currencies returns and they fall outside the boundary rectangle. These are outliers and may have arisen due to the arrival of some significant information to the exchange rate market. They are to be investigated to know in which week these are behaving like this and for what reason. This research lays the foundation for the behavior of the exchange rates in the form of SOM.

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MATLAB Program

```
close all
clear all
clc


load currency1
y=1./data;                      % Find direct exchange rate
x11=y(504:753,:);               % 2011 data

%% Descriptive of exchange rates

ret11=price2ret(x11);                % Rates are converted to returns
x=[ret11(:,1)' rand(250,1)-0.5]';    % Exchange rate returns scattered
w=[rand(1,50)-rand(1,50); rand(1,50)-rand(1,50)]; % Random weights

%% Figure for returns scatter

figure
plot([-0.5 0.5 0.5 -0.5 -0.5],[-0.5 -0.5 0.5 0.5 -0.5]) % Rectangle
xlabel('X1')
ylabel('X2')

hold on
plot(x(1,:),x(2,:),'b.')             % Exchange rate returns scatter
axis([-1 1 -1 1])

%% Figure for unorganized returns

figure
plot([-0.5 0.5 0.5 -0.5 -0.5],[-0.5 -0.5 0.5 0.5 -0.5]) % Rectangle
xlabel('W1')
ylabel('W2')
hold on
plot(w(1,:),w(2,:),'b.',w(1,:),w(2,:),'-.') % Unorganised weights
axis([-1 1 -1 1])

%% Program parameters

alp=0.9;                                % Learning rate
ite=1;                                  % Start the learning loop
epoch = 0;                              % Epoch counter

while ite
for i=1:250                             % 250 exchange rates per year
    for j=1:50                          % Weekly grouping
        d=sum((w(:,j)-x(:,i)).^2);      % Find Euclidean distance
```

```
        d1(j,:)=d;                  % store d in d1 for finding winner
    end
 [wn wi]=min(d1);          % Minimum distance is the winner neuron
 fwd=wi+1;                 % Forward neuron
 bwd=wi-1;                 % Backward neuron
 if bwd<1, bwd=50; end     % If end is 0 then column is 50
 if fwd>50. fwd=1; end     % If end is 50 then column is 1
 w(:,wi)=w(:,wi)+alp*(x(:,i)-w(:,wi));     % Update winner neuron
 w(:,fwd)=w(:,fwd)+alp*(x(:,i)-w(:,fwd));  % Update forward neuron
 w(:,bwd)=w(:,bwd)+alp*(x(:,i)-w(:,bwd));  % Update backward neuron
end
  alp=alp*.9;              % Reduce the alpha rate or annealing
if alp < 0.01                 % If alpha is too small
       ite=0;                    % Stop the iteration
end
  epoch=epoch+1;           % Epoch counter
end

%% Figure for the self organized map

figure
plot([-0.5 0.5 0.5 -0.5 -0.5],[-0.5 -0.5 0.5 0.5 -0.5])
xlabel('W1')
ylabel('W2')

w = [w w(:,1)]                % Connect the last and first returns
hold on
plot(w(1,:),w(2,:),'b.',w(1,:),w(2,:))
axis([-1 1 -1 1])
```

Women in Workplace Bullying

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0107

The Asian Business and Management Conference 2012

Official Conference Proceedings 2012

Abstract

This research is trying to figure out how the female workplace bullies suffer from the bullying process. There are three purposes of this research. Firstly, to know the main workplace bullying pattern in their work. Secondly, to know how they deal with the workplace bullied condition. Thirdly, to know the considerate points when they were bullying and tried to escape from their current job. The researcher uses qualitative research paradigm and deep interview method to collect 4 workplace bullies' suffering process information. Use qualitative analysis procedure, researcher clarifies the information and get close to the answers of the research purposes. **The workplace bullying pattern** shows that there will be irresponsible supervisors; include direct manager and high level supervisor. The victim is always called 'able people' who should do more work, but training for their job is always not enough. The leadership is failure because the managers/supervisors only care about KPI but victim's physical/emotional condition. The organizational culture is disappointing; job rotation never succeeds, supervisors always can't keep their words. There will be a senior colleague who plays the main bullying role, he/she always shirks his/her responsibility and snatches the victim's credit to be his/her own. The victim has to face the 'Black Box', be scold without reason, be exploited, cheated or framed. There is some traditional gender stereotype bullying. Her work loading is too heavy; facing great pressure, working overtime almost every day and the deadline is too rushed. The bullying will cause her physical/emotional problems. **How they deal with the workplace bullying condition?** She tries to work harder and harder but the loading is heavier. She tries to get some understandings and supports from the bullies but never works. She tries to discuss the job rotation with her manager/supervisor but never works. Under great pressure and overloading work all the time, she gets physical/emotional problem. She tries to get some help from families and close friends, but she always doesn't want to bother them too much. Just like a broken balloon, since she has no way to solve the bullying condition, she thinks about quit. Sometimes the quit process will make the organization be hurt, so the individual and organization are both losers. What are **the considerate points when they were bullying and tried to escape from their current job**? If she is a married woman, she will consider about the income reducing for the whole family. At the same time, she thinks that she can quit from her job anytime and easier than her husband. If she is not married, she will consider about the income reducing for her and try to quit the current job until she find the next job. The researcher provides **some suggestions for further researches**. The workplace bullying phenomenon is very complicated and worth to make further researches especially in Taiwan. The next step of workplace bullying research might explore about the national culture's influence and identify Taiwan's workplace bullying characteristics. The gender issue for workplace bullying is worth to make further research continually.

Keywords: Workplace bullying

Introduction

Workplace bullying is a long-lasting phenomenon, but it has been recognized as a serious problem until late of 20th century. The Canada Safety Council had inquired into 9000 Canadian federal employees; the survey indicated that 42% of female and 15% of male employees reported being bullied in a 2-year period, resulting in more than $180 million in lost time and productivity (Canada Safety Council, 2002). Namie and Namie pointed out that 82% of employees who had been bullied left their workplace, there are 38% for health reasons and 44% because they were victims of a low performance appraisal manipulated by a bullying supervisor to show them as incompetent (Namie and Namie, 2003). Workplace bullying is an emerging academic topic in Taiwan. According to the survey of 104.com, 40% of employees in Taiwan have been bullied in 2010 and 20% of above employees have even been bullied once a week (104 investigation center, 2011). This research is trying to figure out how the female workplace bullies suffer from the bullying process. There are three purposes of this research. Firstly, to know the main workplace bullying pattern in their work. Secondly, to know how they deal with the workplace bullied condition. Thirdly, to know the considerate points when they were bullying and tried to escape from their current job. The researcher uses qualitative research paradigm and deep interview method to collect 3 to 5 workplace bullies' suffering process information. Use qualitative analysis sequence, researcher could clarify the information and get close to the answers of the research purposes. At last, the researcher will propose some useful suggestions for future research of workplace bullying in Taiwan.

Literature Review

The topic of workplace bullying was noticed by many researchers. According to the research results, the workplace bullying will cause employees' physical and psychological harmfulness, negative mood, low morale and legal problems (WBI, 2000). What is workplace bullying? The researches of bullying started at 70's in north Europe. The Norway's scholar Olweus had defined the bullying as 'when someone repeatedly and on purpose says or does mean or hurtful things to another person who has a hard time defending himself or herself' (Olweus, 1999). Base on Olweus' research, several researchers extend their concept to workplace bullying. Adams wrote the book 'Bullying at Work', which offered solutions to help overcome the stressful, often isolating experience faced by many people (Rigby, 2002). The definition emphasizes two main parts of most definitions of bullying at work: (1) repeated and enduring aggressive behaviors that are (2) intended to be hostile and/or

perceived as hostile by the victim (Einarsen & Skogstad, 1996). WBI (2000) defined workplace bullying as 'repeated mistreatment: sabotage by others that prevented work from getting done, verbal abuse, threatening conduct, intimidation, & humiliation'. DeVoe & Kaffenberger (2005) announced 3 essential elements of workplace bullying and were accepted by majority of researchers: (1) the behavior is aggressive and negative and meant to harass; (2) the behavior is carried out repeatedly; and (3) the behavior occurs in a relationship where there is an imbalance of power between the parties involve. Leymann (1993) claimed four prominent organizational factors in eliciting harassment at work: (1) deficiencies in work design, (2) deficiencies in leadership behavior, (3) a socially exposed position of the target, and (4) a low moral standard in the department.

Accord to the purpose of this research, workplace bullying is defined as (1) behavior that is intentionally negative and malicious, whether physical or emotional, from one or more persons, (2) negative behavior is persistent and consistent, and (3) the bullying site is in the workplace include whole organization.

Methods

The paradigm of this research is qualitative. Researcher uses deep interview to collect workplace bullying data. 4 bullied female victims are chosen. All of them were working in colleges. 2 of them are singled professional psychological counselors and the others are married official administrative employees. Through 442 minutes interview totally, researcher gained over 100,000 characters text. After word-by-word text finished, the researcher confirmed the content with 4 respondents. Then the analysis phase started. First is to line the key sentences from all text. The researcher invited another experienced professional to line the key sentences separately and compared the result to each other to find out the differences. After discussing and revising, researcher gained 978 key sentences. To revise the meaning of each key sentence, the researcher transferred them into key concepts and discussed with another experienced professional then concludes 41 concepts. At last, the researcher induced 41 concepts into 9 groups.

Results

There are 9 groups as below:

1. Organizational bullying to personnel. It means the work loading is not fair in the organization. The victim's professional capability was weaken. Their supervisors always thought that the able people should do more work. The

on-job-training is not enough so they have to pay more efforts to reach the least performance. The leadership always made them disappointed. And the organizational culture is stressful and not easy to change.

2. Supervisors' bullying to personnel. In the organization, the key performance indicator (KPI) is more important than anything. The supervisor/manager is not trustworthy and/or responsible enough. The job rotation has never been done.
3. Colleagues' bullying to personnel. The majority force her to choose their side. There is a senior employee who bullies her. She was questioned as she has some kind of relationship to gain some favor. She was scolded and sometimes will quarrel with colleagues. The bullies always shirked responsibility and snatch her credit to their own. She was ignored and be shown indifferent attitude.
4. Other department bullying to personnel. There is always a 'black box' phenomenon in the organization. The victim did not have chance to involve in most decision process. She was exploited, cheated or framed; even has to face scolding from supervisors or employees of other department without reasons. The traditional image of female makes people still maintain gender stereotypes. For example, one respondent has ever been shouted: 'you woman is so ignorance!' and another respondent has ever been invited to be the reception just because she is 'cute and pretty and the male guests will like to come to join the meeting'. The organizational climate is bad and there are some gossips spread in the organization. At the time, she can find someone in the organization that supported her.
5. Other supervisor bullying to personnel. The bullying happened just because the other supervisor owns higher authority. Sometimes she has even been questioned about her integrity.
6. Work loading bullying to personnel. Her work loading is always too heavy. The deadline of her mission is always too rushed. She always feels great pressure from her daily work and almost work overtime every day.
7. About herself. In the bullying process, she is always full of conflict and contradiction in her mind. The personal trait influences her to make different decisions. The married 2 respondents' families need their attention at the bullying process, so they feel much more pressure. All of them have healthy problem because of great pressure.
8. About the bullies. The victim will try to escape from the bullies or avoid contacting with the bullies. Sometimes she will be afraid to work with the bullies. She has many opinions about the bullies.
9. About the organization. The victim will try to leave the organization and even

take revenge to the organization.

Conclusion

According to the results, the researcher concludes the answers of this research.

1. The main workplace bullying pattern in their work. There will be irresponsible supervisors, include direct manager and high level supervisor. The victim is always called 'able people' who should do more work, but training for their job is always not enough. The leadership is failure because the managers/supervisors only care about KPI but victim's physical/emotional condition. The organizational culture is disappointing; job rotation never succeeds, supervisors always can't keep their words. There will be a senior colleague who plays the main bullying role, he/she always shirks his/her responsibility and snatches the victim's credit to be his/her own. The victim has to face the 'Black Box', be scold without reason, be exploited, cheated or framed. There is some traditional gender stereotype bullying. Her work loading is too heavy; facing great pressure, working overtime almost every day and the deadline is too rush. At last the bullying will cause her physical/emotional problems.
2. How they deal with the workplace bullying condition. She tries to work harder and harder but the loading is heavier. She tries to get some understandings and supports from the bullies but never works. She tries to discuss the job rotation with her manager/supervisor but never works. Under great pressure and overloading work all the time, she gets physical/emotional problem. She tries to get some help from families and close friends, but she always doesn't want to bother them too much. Just like a broken balloon, since she has no way to solve the bullying condition, she thinks about quit. Sometimes the quit process will make the organization be hurt, so the individual and organization are both losers.
3. The considerate points when they were bullying and tried to escape from their current job. If she is a married woman, she will consider about the income reducing for the whole family. At the same time, she thinks that she can quit from her job anytime and easier than her husband. If she is not married, she will consider about the income reducing for her and try to quit the current job until she find the next job.

The researcher provides some suggestions for further researches. The workplace bullying phenomenon is very complicated and worth to make further researches especially in Taiwan. The next step of workplace bullying research might explore about the national culture's influence and identify Taiwan's workplace bullying

characteristics. The gender issue for workplace bullying is worth to make further research continually.

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Ownership Structure and Export Performance: Firm-Level Evidence from Korea

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0121

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Abstract

The central objective of our paper is to empirically examine the relationship between the ownership structure of firms and their export performance. To do so, we use data from Korea, a classic example of successful export-oriented industrialization. While a large and growing empirical literature investigates the relationship between the ownership structure and overall performance of firms, there are almost no studies which delve into the issue of whether the concentration of ownership has a positive or negative effect on export performance. The primary contribution of our study is to help remedy this serious gap in the empirical literature on ownership and performance. Our empirical results indicate that Korean firms with more concentrated ownership are more likely to be exporters and export more.

Key words: Exports, ownership structure, logit analysis, Tobit regression, Korea

JEL Classification Codes: F10, G30, D80

1 Introduction

According to the corporate governance literature, a firm's ownership structure affects its performance. In a seminal paper, Berle and Means (1932) proposed a simple intuitive explanation for the relationship between a firm's ownership structure and its performance. A manager tends to pursue his/her own interest rather than owners' profits in the absence of adequate monitoring. When ownership is widely dispersed, owners do not face strong incentives to engage in monitoring the management since they incur high monitoring costs but capture only a small share of the benefits. All owners thus face an incentive to free ride on others. This implies that firms with more concentrated ownership will be more closely monitored and perform better. At the same time, there are theoretical reasons for why concentrated ownership may harm corporate performance. For example, a dominant shareholder can expropriate firm resources to his benefit at the expense of minority shareholders [Joh (2003)].

In theory, ownership concentration can thus have either a positive or negative impact on a firm's performance. Therefore, whether ownership concentration is beneficial or harmful for corporate performance is ultimately an empirical question which needs to be resolved through empirical analysis. A large and growing empirical literature has sprung up to examine precisely the issue. The literature, which includes Demsetz and Lehn (1985), Morck, Shleifer and Vishny (1988), McConnell and Servaes (1990), and Hermalin and Weisbach (1991), fails to uncover any definitive pattern. A number of additional studies have elaborated upon the empirical methodology. For example, in order to account for firm heterogeneity, Himmelberg, Hubbard and Palia (1999) included firm-specific control variables and Griliches and Hausman (1986) applied the fixed-effects model to panel data. However, the overall evidence on the relationship between ownership structure and corporate performance remains mixed and inconclusive.

The central objective of our paper is to empirically examine the relationship between the ownership structure of firms and their export performance. Due to globalization and integration of markets, export performance is an increasingly influential determinant of overall corporate performance. At the same time, there are some conceptual grounds for a relationship between a firm's ownership structure and its performance, as explained in Section 3. In particular, firms with more concentrated ownership may be more likely to export due to the higher risk of exporting vis-à-vis selling in the domestic market. While a large and growing empirical literature investigates the relationship between ownership structure overall corporate performance, there are almost no studies which delve into the relationship between ownership structure and export performance. The main contribution of our study is to help remedy this serious gap in the empirical literature by investigating this relationship on the basis of firm-level data from Korea.

At a broader level, Korea is a well-known example of highly successful export-led industrialization and growth. Underlying Korea's export prowess is the success of Korean companies such as Samsung, LG and Hyundai which have become global brands with operations all over the world. More generally, Korean firms which vary widely in terms of structural characteristics, including size and ownership concentration, export a broad

range of manufactured products. Given the export success of Korean companies and their structural diversity, it would be interesting to examine whether ownership concentration has a significant effect on their export performance. In addition to informing us about the role of ownership structure in Korean firms' export performance, the study marks a first step toward filling a major gap in the broader empirical literature on ownership structure and corporate performance.

The rest of the paper is organized as follows. Section 2 outlines a conceptual basis for a relationship between the ownership structure of firms and their export performance, and reviews the empirical literature on this relationship. Section 3 describes the data and variables used in the empirical analysis, and Section 4 reports and discusses the main findings of the analysis. Section 5 brings the paper to a close with some concluding observations.

2 Ownership Structure and Export Performance: Conceptual Basis and Empirical Literature

In this section, we first outline the conceptual basis for a relationship between the ownership structure of a firm and its export performance, and then briefly review the empirical literature.

2.1 Conceptual Overview

For firms, entering the export market is a high-risk activity that involves sunk costs, revenue volatility due to exchange rate fluctuations, limited knowledge of market conditions, and tougher competition. The agency problem influences a firm's export decision-making through attitude toward risk. If two firms are identical except in ownership structure, the manager of a firm owned by small number of shareholders will try to increase the firm's value by venturing into export markets which have high growth potential. At the same time, fast-growing foreign markets expose the firm to greater risk than the domestic market due to asymmetric information. The manager of a firm with less concentrated ownership will try to minimize risk and thus concentrate on the domestic market. This manager wants to achieve concrete results in a short period by focusing on the less risky domestic market rather than the more risky foreign market. The implication is that firms with more concentrated ownership are more likely to export.

This study will hypothesize that manager's preferences toward risk are related with its ownership structure. In a firm with a diffuse ownership structure, the manager maximizes his own interests rather than shareholders' profits by venturing into the foreign market. The manager will maximize his expected utility from the firm's profits by avoiding risk. However, in a firm with concentrated ownership, the manager represents the dominant shareholder's interest and thus maximizes the firm's expected profits rather than his own expected utility. Therefore, the manager of such firms bears the risks associated with foreign markets. Risk preference has crucial implications for a firm's export decision since exporting is a fundamentally risky activity. Breaking into the export market requires a large sum of up-front sunk costs, including adapting products to the foreign

consumer preferences, complying with foreign government regulations, and building distribution networks. Expected profits are subject to high risks due to limited information about foreign demand and exchange rate fluctuations. In these circumstances, the decision to export depends mostly on costs and expected profits for firms with concentrated ownership structure but risk attitudes for firms with dispersed ownership.

2.2 Empirical Literature

As noted earlier, there is a large and growing empirical literature which delves into the relationship between the ownership structure of firms and their overall performance. This literature looks at the relationship between ownership concentration and measures of overall corporate performance such as profit rate. In marked contrast to this rich literature, there are only a few empirical studies which investigate the nexus between ownership and exports. Most of the few studies look at the impact of foreign ownership rather than ownership concentration on export performance.

Cole, Elliot and Virakul (2010) investigate the relationship between foreign ownership and a firm's decision to export, using the annual survey of Thai manufacturing firms from 2001 to 2004. They find that foreign-owned firms are more likely to export than domestic firms. They further find that the propensity to export differs according to the country of ownership. Ngoc and Ramsetter (2009) analyze data on multinational firms in Vietnam to examine the relationship between foreign ownership and exports in the Vietnamese manufacturing sector. They find that companies with very high share of foreign ownership – i.e. 90% or more foreign-owned – make a disproportionate contribute to Vietnam's manufacturing exports. A number of additional empirical studies examine the relationship between foreign ownership and export performance in other countries. These include Filatotchev, Stephan and Jindra (2008), Wignaraja (2008), Rojec, Damijan and Majcen (2004), and Rasiah (2007, 2005 and 2003).

To summarize our literature review, it should be clear that the empirical literature on the relationship between the ownership structure of firms and their export performance is quite limited. More importantly, this limited literature deals primarily with the effect of foreign ownership on export performance. Some studies compare the export performance of foreign-owned firms versus domestic firms whereas others compare the export performance of firms with different shares of foreign ownership. None of the studies delve into dimensions of ownership structure other than foreign ownership. In particular, the studies do not look at the effect of ownership concentration on export performance. However, there are conceptual grounds for believing that whether a firm's ownership structure is relatively concentrated or diffuse will influence its success as an exporter. The underlying intuition is that exporting is fundamentally risky activity, as explained above.

3 Data and Variables

In this section, we describe the data and variables used in our empirical analysis of the relationship between the ownership structure of firms and their export performance. The data set used in this paper is an unbalanced panel consisting of annual time-series for 463 Korean manufacturing firms during 1994-2005, with a total of 5,557 observations. The sample covers all manufacturing firms whose stocks are listed on the Korean Stock Exchange. The enlisted firms are required to report their financial status. All firms' data are taken from their financial reports.

Exports are observed in 1,640 observations, which is about 29.5% of total observations. Given that a large portion of observations are domestic firms, a binary variable of exporters/non-exporters is first constructed to investigate the impact of ownership concentration on firm's export decision. We use the logit model, which is widely used in the literature on firm-specific effects on export activity. This model regress the binary variable on the set of explanatory variables that include concentration rate and other relevant variables. In the logit model, coefficient estimates represent the impact of explanatory variables on the probability of firm's being an exporter. In addition, we estimate a Tobit model to study firm's export propensity – i.e. ratio of exports to total sales. The propensity to export is defined on [0, 1], which suggests that a Tobit model designed for censored data will be useful.[1]

Our key variable of interest is the ownership concentration rate (CR) since the central objective of our empirical analysis is to investigate the effect of ownership structure on export performance. CR is defined as the ratio of the dominant shareholder's share to total shares, and reflects the extent to which the dominant shareholder controls the management. CR is a good proxy for ownership structure since dominant shareholders tend to exercise a great deal of influence on the management of Korean firms.

To accurately estimate the impact of ownership concentration on exports, we have to control for other firm-specific factors that influence exports. Our control variables include standard variables such as wage rate, capital intensity, R&D stock, firm size, productivity, and firm age. Among these variables, wage rate and capital intensity represent the traditional factor endowment theory. R&D stock reflects the technology gap theory of trade [see Posne (1961), Kreugman (1979)] or the product cycle theory [see Vernon (1966)] in which technological innovation plays a central role in shaping international trade structure. Many empirical studies analyzed the impact of R&D on firm's export activity [see Kumar and Siddharthan (1994), Willomore (1992), Hirsch and Bijoui (1985) and Wakelin (1998)].

There are fixed costs associated with entering export markets. These include collecting information, establishing a distribution network, and adapting products to foreign tastes and regulations. Since these costs are sunk costs, uncertainty may cause persistence in export participation. Firms may continue to export even though it is temporarily unprofitable to do so, or hesitate to export due to the option value of waiting for more

[1] Applying ordinary lease square (OLS) regression method will produce biased estimates.

information [see Roberts and Tybout (1997)]. For this reason, a number of studies point out that exporters are large and productive enough to absorb the costs of waiting [see Richardson and Rindal (1995), Bernard and Jensen (1997), Bernard and Wagner (1997), Bleaney and Wakelin (1999) and Roberts and Tybout (1997)]. Firm size affects export performance through economies of scale in production and export marketing, higher capacity for taking risks, better access to financing, and sufficient managerial, R&D and marketing resources [see Sterlacchini (2001)].

Both productivity and age are additional firm-specific variables which may influence a firm's decision to export. The effect of productivity on exports is intuitively straightforward since global markets are typically much more competitive than the domestic market. Therefore, more productive and efficient firms are more likely to be internationally competitive and more likely to export. The impact of firm age on exports is ambiguous. On the one hand, older firms might have higher export propensities because they are more experienced in international trade. On the other hand, many newer firms are more successful with new technology, which can be an important tool for exports [Ramstetter (1999)]. The positive impact of age might diminish beyond a certain threshold as firm's learning curve rises at decreasing rate. In light of this possibility, we include both age and age squared in our estimation.

We compute the wage rate by dividing total labor costs by the number of employees (L). Total labor costs consist of wages, bonuses, retirement compensation, and all other costs associated with employee remuneration. The capital stock (*K*) is the real amount of tangible fixed assets. Dividing the capital stock (K) by the number of employees (L) gives us the capital-labor ratio (K/L). Labor productivity (VA/L) is per capita value added (VA), and comprises net profits, labor costs, net interest payments, rents, taxes other than corporate tax, and depreciation costs. R&D stock is estimated by perpetual inventory methods based on firm's R&D investment. Following much of the literature, we apply a depreciation rate of 10%. Firm age is calculated from the founding year. All variables are converted into constant 2000 prices.

Table 1 presents sample means and standard deviations. We perform the t-test to test the null hypothesis that mean values are equal between exporters and non-exporters. The null was rejected at the 1% significance level for every variable except age. Most significantly, this implies that exporters have higher ownership concentration than non-exporters. In addition, relative to non-exporters, exporters pay higher wages and have greater capital intensity ratio, R&D stock, labor productivity, and sales.
[Table 1]

4 Main Empirical Findings

In this section, we report and discuss the main results from our empirical analysis, which consists of two parts – (1) logit estimation of the decision to export or not and (2) tobit estimation of export propensity. Before estimating the logit and tobit models, we examine the correlation between explanatory variables. Table 2 reports the Pearson correlation coefficients. There exists a strong correlation between wage rate and labor productivity,

R&D stock and both sales and employment, and sales and employment. We do not use these pairs of variables together in regressions to avoid multicollinearity.[2]
[Table 2]

4.1 Logit Estimation of Exporters versus Non-Exporters

Table 3 reports the results of our logit estimation of the export decision – i.e. whether or not to export – of our sample of Korean manufacturing firms. The regression uses a binary variable of exporter or non-exporters as the dependent variable. For our purposes, the key explanatory variables is the ownership concentration rate. Additional explanatory variables include variables widely used in the trade literature, such as wage rate, capital intensity and R&D stock. We experiment with various permutations of explanatory variables to estimate four different models.
[Table 3]

The coefficient estimates of ownership concentration rate, wage rate, capital intensity and R&D stock are all positive and significant in Model (i). Estimation results show that firm's probability of entering the foreign market increases with ownership concentration rate, wages rate, capital intensity and R&D stock. This implies that exporting firms pay higher wages and have greater capital intensity and R&D stock. Model (ii) substitutes wage rate with labor productivity as explanatory variable. These two variables are closely correlated.[3] The coefficient estimates of all the explanatory variables remain positive and significant. This is still the case when R&D stock is replaced with sales in Model (iii).[4] Model (iv) added both firm age and firm age squared as additional explanatory variables to Model (i). The coefficient estimates of the basic explanatory variables remain the same. However, the coefficient of age is positively insignificant and its squared term is negatively significant.[5] This suggests that the impact of business experience on entering export market diminishes as firms grow older, even though it might initially have a positive influence.

Most significantly, our estimation results show that higher ownership concentration rate increases the probability of firm's entering foreign markets. The results thus support our central hypothesis that firms with concentrated ownership venture into risky export markets to maximize expected profits whereas firms with dispersed ownership tend to stay home to avoid the risk of incurring the large sunk costs associated with exporting. Managers in firms with dispersed ownership prefer to avoid risk and achieve concrete business outcomes in a short period. This discourages them from entering risky foreign markets, which require large sunk costs that can only be recovered in the long run. Our empirical results confirm the existence of an agency problem – i.e. risk-averse managers

[2] Putting these correlated variables together changed the significance and sign of coefficient estimates, which is apparent symptom of multicollinearity.
[3] Coefficient estimates of these two variables become insignificant due to multicollinearity when they are both included.
[4] Multicollinearity causes coefficient estimates of R&D to be insignificant when these two variables are both included.
[5] Coefficient estimates of wage rate, labor productivity and R&D stock become insignificant due to multicollinearity when labor productivity and sales are added to Model (iv).

of firms with diffuse ownership do not export even though exporting is profitable and thus beneficial for shareholders.

With respect to our control variables, our results show that firms are more likely to be exporters as wage rate, capital intensity, R&D stock, productivity and sales increase. Our results confirm that within the Korean manufacturing sector, exporters are larger, more productive, more capital- and R&D-intensive, and pay higher wages than non-exporters. Our evidence is consistent with a large body of empirical literature which find similar differences between exporters and non-exporters [see Bernard and Jensen (1997), Aitken, Hanson and Harrison (1997), Aw and Hwang (1995), Clerides, Lach and Tybout (1998), and Roberts and Tybout (1997)]. Such evidence is intuitively plausible since more efficient and larger firms with adequate resources are better able the large sunk costs required to enter foreign markets.

Firms' behavior on export activity might differ across the industry, as each industry has unique development stage and faces different protection from foreign countries. Table 4 represents coefficient estimates of logit regression on export decision for the Korean manufacturing firms by industry, based on Model (iv).

[Table 4]

Coefficient estimates of concentration rate are positively significant in the textiles, paper, basic-metal and fabrication industries, but negatively significant in the chemical industry, and insignificant in the other industries. Empirical results suggest that increase in concentration rate enhances the probability of entering the export market in more industries than not (four industries out of seven). However, the correlation is reversed in the chemical industry, which comprises large exporting firms that produce standardized raw materials and chemical products to serve the Chinese market, and the shares of these firms are well dispersed as this industry is mature enough to attract a large number of investors, as chemical firms are built since 1970s in Korea. Moreover, entering the Chinese market in the industry might not pose much risk to the firms due to both standardized products and the excess demand of the market.

Coefficient estimates of wage rate are positive and significant in the food and textiles industries. Those of capital intensity are positive and significant in the paper, chemical and non-metal industries, but negative and significant in the food, textiles and fabrication industries. Those of R&D stock are positive and significant in the paper, chemical and fabrication metal industries. Coefficient estimates of firm age itself are positive and significant in the food, textiles and fabrication industries, and those of its square term are negative and significant in the above three industries.

Estimation results show the influence of the variables on firm's export activity differs across industry. Relatively labor-intensive firms are more likely to be exporters in the food, textiles and fabrication industries, while relatively capital-intensive firms are in the paper, chemical and non-metal industries. The results show that exporting firms pay significantly higher wages only in the food and textiles industris, partially supporting whole sample estimation results that exporters generally pays higher wages than non-

exporters. This implies that non-exporting firms have to pay their workers industry competitive level, which is wage rate set by exporting firms. On firm age, estimation results suggest that business experience provide positive impact on entering the foreign market through accumulation of human resources and network in the food, textiles and fabrication industries. However, the influence is non-linear, as it diminishes with age in these industries.

Signs and significance of coefficient estimates remain the same in every industry when labor productivity is substituted for wage rate. In this model, labor productivity has positive significant impact on firm's export decision.

4.2 Tobit Estimation of Export Propensity

The previous section treated exporting as a zero-one binary variable by dividing the sample firms into exporters and non-exporters. If there are many different export markets that require separate fixed costs to enter, risk-averse firms are likely to export to a smaller number of markets since entering more markets entails a larger total fixed cost. As discussed earlier, a lot of the fixed costs are sunk costs. We now treat a firm's exports as a continuous variable rather than a binary variable. More precisely, we measure a firm's export performance as export propensity, or the ratio of export revenues to total sales.

Table 5 represents the coefficient estimates of the tobit estimation of export propensity for Korean manufacturing firms. Export propensity defined on [0, 1] is the dependent variable. Zero stands for non-exporters and one stands for firms exporting their entire output. Applying ordinary least square (OLS) estimation method to this censored data will cause coefficient estimates to be biased since this method can generate predicted values of the dependent variable which lie outside the feasible range. To deal with the problem, we use a tobit model censored at both right and left ends. As for the logit estimation, our key explanatory variable of interest is the ownership concentration rate. In addition, we include explanatory variables widely used in the trade literature such as wage rate, capital intensity, and R&D stock. In estimation, we use a semi-log model is utilized which transforms all explanatory variables into logarithms to control for heteroscedasticity arising from firm scale. However, we use the dependent variable in its original form to keep its censored characteristics.[6] We estimate four models, which represent various permutations of the explanatory variables.
[Table 5]

The coefficient estimates of ownership concentration rate, capital intensity and R&D stock are all positively significant, but that of wage rate is negatively significant in Model (v). Estimation results show that firm's export propensity rises with the ownership concentration rate, capital intensity and R&D stock, but falls with the wage rate. Model (vi) substitutes wage rate with labor productivity as explanatory variable. These two

[6] However, age and its square term is used in their original form because the logs of these variables are perfectly correlated.

variables are closely correlated.[7] The coefficient estimates of concentration rate, R&D stock and labor productivity are positive and significant, but that of capital intensity become insignificant. When both age and squared term of age are added as explanatory variables in Model (vii), the coefficient estimates of original explanatory variables are positively significant, but that of age is positively insignificant and its square term negatively significant. When labor productivity and employment are added in Model (viii), the coefficient estimates of wage rate, capital intensity and R&D stock become insignificant due to multicollinearity.

Most significantly, our estimation results show that an increase in the ownership concentration rate boosts a firm's export performance. The results suggest that firms with concentrated ownership are willing to bear risk the high level of risk required to enter a large number of foreign markets, in order to maximize expected profits. In contrast, our evidence implies that the managers of firms with dispersed ownership tend to avoid the risk of incurring large sunk costs required to enter a large number of foreign markets. They may prefer instead to concentrate on fast-growing export markets with which they are more familiar due to geographical proximity. This type of export strategy is less risky and involves lower sunk costs than exporting to many different countries. For example, China is a highly promising market for a large number of Korean firms, regardless of their ownership structure. On the other hand, our results indicate that firms with more concentrated ownership are more likely to bear the higher risk associated with exporting to slower growing and less familiar markets. Our confirm evidence supports the existence of agency problem in firm's decision-making about the number of export markets. Risk aversion deters the managers of firms with dispersed ownership from exporting to more markets even though doing so may raise profits and thus benefit shareholders.

With respect to our control variables, much of our evidence mirrors the results of our logit analysis. More specifically, our tobit results indicate that firms with higher capital intensity, R&D stock and productivity export to more markets. One departure from the logit results is that firms paying lower wages are likely to enter more export markets than firms paying higher wages. Our tobit results are based on comparing the wage rates of exporters with those of other exporters while our logit results are based on comparing the wage rates of exporters and non-exporters. Our tobit results suggest that exporters paying lower wages export to more countries than exporters paying higher wages, whereas our logit results suggests that exporters pay higher wages than non-exporters.

Industry-specific characteristics might have different effects on firm's export activity in Tobit model. Table 6 represents coefficient estimates of Tobit regression on export decision for the Korean manufacturing firms by industry, based on Model (iv) of the whole sample estimation.

[Table 6]

Coefficient estimates of concentration rate are positively significant in the textiles, basic-metal and fabrication industries, but negatively significant in the chemical industry, and

[7] Coefficient estimates of these two variables become both insignificant due to multicollinearity when both are included.

insignificant in the other industries. Empirical results show that increase in concentration rate enhances the probability of entering more export markets in three industries out of seven, but decreases the probability in the chemical industry. The results are very similar with industry-level estimation results from logit analysis, except the paper industry that shows insignificant relation. Thus, the results are fairly robust, regardless of dependent variable or models adopted.

On trade-related variables, coefficient estimates of wage rate are positive and significant in the textiles and non-metal industries, but negative and significant in the paper, basic metal and fabrication industries. Those of capital intensity are positive and significant in the paper, chemical and non-metal industries, but negative and significant in the textiles, basic-metal and fabrication industries. Those of R&D stock are positive and significant in the food and non-metal industries, but negative and significant in the textiles industry.

Estimation results show firm-specific factors have a different influence on export activity across industry. Relatively less capital intensive firms paying lower wages have greater export propensity in the basic-metal and fabrication industries, while the reverse holds in the non-metal industry. Relatively labor-intensive firms enter more export markets in the former industries, but relatively capital-intensive firms in the latter industry. As wage rate increases and capital intensity decreases, export propensity increases in the textiles industry, but it decreases in the paper industry. These results imply that firms producing human capital intensive clothes and materials perform better in the textiles industry. Thus, competitive advantage of Korean firms might exist in designers clothing and high-end functional clothes and differentiated textile materials in this mature industry. These products are custom-made and produced in small quantity. However, firms selling standardized products mass produced in large factory tend to export more in the paper industry, as firm's competitive advantage is mainly based on production costs. Also, there is not much room for product differentiation in this industry.

Coefficient estimates of firm age itself are positive and significant in the food, textiles and fabrication industries, but negative and significant in the non-metal industry. Those of its square term are negative and significant in the food, textiles, chemical and fabrication industries. These results again imply that the positive impact of experience on export performance generally decreases as firms get older.

Sign and significance of coefficient estimate mostly remains the same when labor productivity is used for wage rate. However, R&D stock has positive significant impact on firm's exports only in the chemical, basic metal and fabrication industries, and labor productivity in every industry, except the paper and non-metal industries.

5 Concluding Observations

The central objective of our study was to empirically examine the relationship between the ownership structure of firms and their export performance. More specifically, using data from the Korean manufacturing sector, we investigate the relationship between ownership concentration and export performance. In contrast to the large and growing

empirical literature which delves into the relationship between the ownership structure of firms and their overall performance, there are almost no studies which explore the impact of firms' ownership concentration on their export performance. The few empirical studies that do touch upon the ownership-exports nexus look at the relative export performance of foreign owned firms versus domestic owned firms. Therefore, the primary contribution of our study is to help remedy this serious shortcoming of the literature on the basis of firm-level evidence from Korea.

Despite the lack of empirical studies, there are plausible intuitive grounds for believing that the ownership concentration of firms matters for their export performance. Our conceptual point of departure is that exporting is a fundamentally high-risk activity. Foreign markets inherently involve greater risk than the more familiar domestic market due to asymmetric information. In addition, firms have to incur large sunk costs – e.g. adapting products to foreign consumer tastes, complying with foreign government regulation, building up new distribution networks, and marketing and advertising costs – in order to enter foreign markets. The manager of a firm with dispersed ownership tries to avoid the large risk associated with exporting whereas the manager of a firm with concentrated ownership is more willing to bear the risks associated with exporting and thus maximize expected profits. An empirically testable prediction of the above intuition is that firms with concentrated ownership are more likely to export that firms with diffuse ownership. We estimate two types of empirical models- logit models and censored tobit models - to examine the relationship between ownership concentration and export performance. To measure the impact of ownership concentration more accurately, we include a number of additional explanatory variables widely used in the trade literature. The most significant finding is that firms with concentrated ownership are likely to enjoy stronger export performance than firms with diffuse ownership. This result provides some support to our hypothesis that risk aversion may cause an agency problem which discourages diffuse-ownership firms from exporting.

The primary implication of our empirical results for policymakers is that the positive effect of concentrated ownership on exports is an important additional factor which must be factored into policies influencing the ownership concentration of firms and, more generally, corporate governance. That is, the effect of ownership concentration on export performance is relevant for policies that influence ownership concentration, especially in highly open, export-dependent economies such as Korea. Our empirical evidence suggests that firms with more concentrated ownership were at the forefront of Korea's emergence as a globally significant exporter. This lends support to the conventional wisdom that originally family-owned firms with highly concentrated ownership, known as *chaebols*, made a big contribution to Korea's export success. The chaebols have been recently blamed for a growing concentration of economic power in Korea, and the consequent lack of a dynamic small and medium enterprise (SME) sector. However, our analysis suggests a need to exercise a measure of caution in policies that seek to regulate and control the chaebols.

While our study empirically investigates an important but previously underexplored relationship – that between ownership structure and export performance – it is by no

means the definitive final word. In fact, our study marks a first step toward better understanding the ownership-export nexus which will, hopefully, encourage other researchers to delve into the issue. There are several promising directions for future research. Perhaps the most promising research area is to examine the relationship between ownership structure and export performance in other successful export-led East Asian economies. It would also be interesting to take a look at the ownership-exports relationship in more mature advanced economies such as the US which have different corporate governance environments. Finally, another potential extension of our research would be to look at the relationship between ownership structure and FDI.

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Table 1
Variables for Ownership Concentration and Exports of the Korean Manufacturing Firms: Means (Standard Deviations)

Variable (Abbreviation)	Definition	Exporters	Non-Exporters
Exporters	Exporters if Exports>0	1640+	3916
Export Propensity	Exports/Sales	0.410(0.291)	
Ownership Concentration Rate (OC)	Largest Shareholder's Share Rate	29.74(19.16)	25.76(19.51)
Wage Rate (Wage)	Labor Costs/Employment	14.69(19.94)	11.83(17.78)
Capital Intensity (K/L)	Fixed capital (K) /Employment (L)	1.875(2.410)	1.581(1.845)
R&D Stock (R&D)	R&D Stock	264.76(2008.7)	77.67(933.0)
Labor Productivity (Prod.)	Value Added (VA) /Employment (L)	17.42(30.44)	13.28(29.94)
Firm Age (Age)	Years Elapsed from Foundation	28.65(11.91)	28.74(16.73)
Sales	Total Sales	10927(54940)	2621(12434)

Notes: + denote the number of exporting firms. All the other variables are in 10 million Korean won in 2000 constant price, except largest shareholder's share rate and firm age. To convert into approximate US dollars, divide by 1,000.

Table 2
Correlation between the Variables for Ownership Concentration and Exports of the Korean Manufacturing Firms: Pierson Correlation Coefficient

Variable	OC	Wage	K/L	R&D	Prod.	Age	Sales
Wage	0.0615						
K/L	0.0930	0.2273					
R&D	-0.0617	0.1099	0.0223				
Prod.	0.0355	0.855	0.1803	0.1496			
Age	0.0817	-0.0427	0.1526	0.0135	-0.0328		
Sales	-0.0531	0.176	0.1113	0.7279	0.2372	0.0162	
L	-0.0771	0.0777	0.0313	0.6499	0.1087	0.0566	0.7775

Notes: OC=ownership concentration rate, Wage=wage rate, K/L=capital intensity, Prod.=labor productivity (=VA/L), Age=firm age, Sales=total sales.

Table 3
Logit Regression for Ownership Concentration and Exports of the Korean Manufacturing Firms: Dependent Variable (Exporters/Non-Exporters)

Variable	Model			
	(i)	(ii)	(iii)	(iv)
OC	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.006*** (0.001)
Wage	0.005*** (0.001)		0.004*** (0.001)	0.004*** (0.001)
K/L	0.055*** (0.014)	0.057*** (0.014)	0.034** (0.014)	0.073*** (0.015)
R&D	0.0001*** (0.00004)	0.0001*** (0.0000)		0.0001*** (0.0000)
Prod.		0.003*** (0.001)		
Age				0.005 (0.008)
Age^2				-0.0003*** (0.0001)
Sales			0.00001*** (0.00000)	
Constant	-1.181*** (0.064)	-1.167*** (0.063)	-1.131*** (0.060)	-1.007*** (0.139)
LLR	-2937.85	-2938.46	-3212.95	-2906.21
$\chi^2(4)$	65.47***	64.25***	101.16***	128.75***
No. of Obs.	4837	4837	5261	4837

Notes: Standard errors are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively. OC=ownership concentration rate, Wage=wage rate, K/L=capital intensity, Prod.=labor productivity (=VA/L), Age=firm age, Sales=total sales.

Table 4
Logit Regression for Ownership Concentration and Exports of the Korean Manufacturing Firms by industry: Dependent Variable (Exporters/Non-Exporters)

Variable	Industry						
	Food	Textiles	Paper	Chemical	Non-metal	Basic-metal	Fabrication
OC	0.005 (0.009)	0.013** (0.006)	0.020** (0.008)	-0.008** (0.003)	-0.012 (0.010)	0.023* (0.005)	0.018* (0.002)
Wage	0.033* (0.008)	0.040*** (0.022)	0.014 (0.015)	0.005 (0.003)	0.013 (0.013)	0.012 (0.008)	-0.002 (0.002)
K/L	-0.347** (0.162)	-0.317** (0.127)	0.282* (0.077)	0.218* (0.033)	0.102* (0.039)	-0.031 (0.041)	-0.167* (0.060)
R&D	0.0009 (0.0006)	-0.008 (0.013)	0.017** (0.008)	0.001* (0.0003)	0.001 (0.001)	0.0002 (0.0002)	0.0001* (0.0000)
Age	0.088* (0.033)	0.262* (0.049)	0.058 (0.074)	-0.011 (0.016)	-0.084 (0.140)	0.052 (0.039)	0.035** (0.016)
Age^2	-0.0006** (0.0003)	-0.002* (0.0005)	-0.001 (0.001)	-0.0002 (0.0002)	0.001 (0.001)	-0.0006 (0.0006)	-0.001* (0.0002)
Constant	-4.157* (0.908)	-7.265* (1.064)	-3.285* (1.209)	-0.542*** (0.284)	-0.862 (2.466)	-2.131* (0.624)	-1.001* (0.240)
LLR	-153.64	-202.41	-117.53	-699.52	-112.80	-286.07	-1051.73
$\chi^2(8)$	27.07*	69.20*	38.25*	137.37*	15.85**	32.43*	105.49*
Obs.	399	412	224	1281	274	446	1706

Note: OC=ownership concentration rate, Wage=wage rate, K/L=capital intensity, Prod.=labor productivity (=VA/L), Age=firm age, Sales=total sales. For others, see notes to the previous table.

Table 5
Tobit Regression for Ownership Concentration and Exports of the Korean Manufacturing Firms: Dependent Variable (Exports/Sales)

Variable	Model			
	(v)	(vi)	(vii)	(viii)
log(OC)	0.083*** (0.018)	0.086*** (0.018)	0.076*** (0.018)	0.079*** (0.018)
log(Wage)	-0.078*** (0.011)		-0.096*** (0.011)	-0.147 (0.097)
log(K/L)	0.021* (0.012)	0.011 (0.013)	0.048*** (0.012)	0.005 (0.013)
log(R&D)	0.009** (0.003)	0.021*** (0.003)	0.006* (0.003)	-0.002 (0.003)
log(Prod)		0.071*** (0.010)		0.097*** (0.012)
Age			-0.001 (0.003)	0.0008 (0.003)
Age^2			-0.0001*** (0.0000)	-0.0001*** (0.0000)
log(L)				-0.022 (0.097)
Constant	-1.455*** (0.174)	-1.964*** (0.200)	-1.620*** (0.180)	-2.574*** (0.217)
LLR	-2471.92	-2473.02	-2418.36	-2377.50
$\chi^2(4)$	117.90***	115.72***	225.02***	306.75***
No. of total Obs. (left, right censored)	3947 (2731, 32)			

Notes: Standard errors are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively. OC=ownership concentration rate, Wage=wage rate, K/L=capital intensity, Prod.=labor productivity (=VA/L), Age=firm age, Sales=total sales. For others, see notes to table 3.

Table 6
Tobit Regression for Ownership Concentration and Exports of the Korean Manufacturing Firms by Industry: Dependent Variable (Exports/Sales)

Variable	Industry						
	Food	Textiles	Paper	Chemical	Non-metal	Basic-metal	Fabrication
log(OC)	-0.017 (0.031)	0.253* (0.096)	0.094 (0.059)	-0.086* (0.030)	-0.025 (0.065)	0.330* (0.047)	0.182* (0.032)
log(Wage)	-0.006 (0.016)	0.245* (0.078)	-0.302* (0.082)	-0.025 (0.025)	0.157** (0.069)	-0.126* (0.026)	-0.155* (0.019)
log(K/L)	0.018 (0.024)	-0.284* (0.086)	0.152** (0.059)	0.209* (0.023)	0.090*** (0.053)	-0.093* (0.030)	-0.054** (0.028)
log(R&D)	0.021** (0.009)	0.022*** (0.013)	-0.002 (0.009)	0.009 (0.008)	0.073** (0.032)	0.007 (0.005)	0.004 (0.008)
Age	0.005*** (0.003)	0.111* (0.022)	-0.042 (0.026)	0.0002 (0.006)	-0.071** (0.032)	0.002 (0.010)	0.014** (0.006)
Age^2	0.00005*** (0.00003)	-0.0009* (0.0002)	0.0004 (0.0003)	-0.0001** (0.0000)	0.0009** (0.0004)	-0.0000 (0.0001)	-0.0004* (0.0001)
Constant	-0.842** (0.333)	1.122 (1.197)	-3.429* (0.883)	-2.533* (0.336)	-0.186 (0.756)	-0.994** (0.400)	-1.279* (0.349)
LLR	-80.14	-102.94	-60.31	-608.66	-83.95	-168.37	-961.14
$\chi^2(8)$	18.09*	70.84*	29.11*	157.11*	12.79**	63.77*	187.83*
No. of Obs. (left, right censored)	364 (307, 0)	228 (166, 0)	166 (124, 0)	1125 (807, 1)	239 (199, 2)	332 (181. 0)	1415 (904, 28)

Notes: OC=ownership concentration rate, Wage=wage rate, K/L=capital intensity, Prod.=labor productivity (=VA/L), Age=firm age, Sales=total sales. For others, see notes to table 3.

Thai Youth Travel Forms: Green Values and Environment-Friendly-Travel Values Measurement

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Abstract

This research has the objective for studies the youth travel form predispositions, with green consumers values and environment-friendly-travel (EFT) values measurement. To classify the youth travel by green values level and separate green youth from the not so green. This research also investigates the role of leisure activities toward EFT activeness categories. The main research instrument employed for this study was questionnaires that were self-administered to 900 respondents. A respondent must be 19 – 24 years old. The results showed high green consumer values ($\bar{x}$=2.72), and high EFT values ($\bar{x}$=2.68). There were statistically significant relationship between green consumer values and EFT values. When classified the youth by green shading, there were five major forms of EFT travel; very dark green, dark green, medium green, light green, and very light green. We found that 65.6% of youth were dark green group, 25.7% were medium green group, 7.8% were very dark green, 0.8% were light green group, and 0.2% were very light green group. There were no statistically significant differences based on age, gender, education, and income. The tourism area preference was the importance factor of distinguish between these groups.

Keywords : Predisposition, Travel, Youth, Environment-Friendly Travel

1. Introduction

The ecological sustainability of tourism has emerged as one of the most widely discussed and debated concepts within the broad tourism sector. The central objective of sustainable tourism research has been to identify how an economically viable tourism industry can be developed and maintained at a destination while minimizing adverse environmental impacts and in doing so, preserve the destination's natural and cultural resources for both residents and future generations of tourists. Global concern about environmental sustainability and climate change has increased in recent years and is now one of the most widespread social issues in Thailand. Evidence exists that concern about the quality of life for future generations via increasing awareness of the impacts of the use of household products, car emissions, long haul travel and over-development is encouraging consumers to be more cautious about the type of products and services they purchase. Because of the environmental impacts, The Tourism Authority of Thailand (TAT) has provided educational and campaign programs. The programs name is seven greens project. The objectives of project were to promote sustainable development and eco-friendly travel by providing programs that help tourist, travel-related companies, and communities protect the environmental, sociocultural and economic needs of the places they visit. The seven greens concept including green heart, green logistics, green attraction, green community, green activity, green service, and green plus. Although there are many campaigns whether the environmental concerns of The Tourism Authority of Thailand, there is evidence that some television program discloses the impact of resort in the lake or campaign against tourism development that destroys the natural environment. While supply-side measures have attracted most attention, a complementary approach to reducing tourism's ecological footprint at a destination may be available in the form of demand-side approaches, which are based on the assumption that tourists have different ecological footprints and that the 'size' of this footprint is a personal characteristic of each tourist and a function of how tourist behave environmentally during their visit (Carrus et al., 2005, Kals et al., 1999). According to Wearing and Neil (1999), there are two primary groups of characteristics, which will assist in exploring what features distinguish ecotourists: demographic and psychographic characteristics (which include a range of attitudinal and behavioral patterns). Likewise, behavioral segmentation was used in a study of overnight ecolodge patrons in Lamington National Park, Australia that resulted in three clusters of ecotourists (Weaver and Lawton, 2002). They identified 10 characteristics that are commonly attributed to the hard and soft ideal types at either pole of an ecotourism spectrum. The 'harder ecotourists' display characteristics such as strong environmental commitment, enhancive sustainability, specialized trips, long trips, small groups, physically active, physical challenge, few if any services expected, emphasis on personal experience and making own travel arrangements, while, the 'softer ecotourists' exhibit characteristics such as moderate environmental commitment, steady state sustainability, multi-purpose trips, short trips, larger groups, physically passive, physical comfort, services expected, emphasis on interpretation and reliance on travel agents and tour operators. To these two groups may be added a third group which they refer to as 'structured' ecotouists' who combined hard and soft characteristics. These 'structured' ecotourists resemble the 'harder' ecotourists in terms of their strong environment commitment, enhancive sustainability and being physically active whereas they resemble the 'softer' ecotourists in the following factors: Multi-purpose trips, short trips, larger groups, services expected and emphasis on interpretation.

Young tourists will soon become adults, who, as they start their careers and their families, prefer to follow the travel patterns they established in their youth. Thus, this stage of life that is youth must contribute to building the social identity because today's young people

will be tomorrow's full members of society. Therefore, socialization becomes a major objective because it is a process that will determine the individuals to share the society's values, which build multiple relationships with the constitutive members. As there is still much to learn about youth travel form predispositions in particular, the specific aims of this research are to describe the youth travel form predispositions, with green consumers values (Haws et al, 2010) and environment-friendly-travel (EFT) values measurement which operationalisation'specifies the activities construct from the work of Weaver and Lawton, 2002 and The Tourism Authority of Thailand. 2012. One of the earliest definitions of green consumers was published by Elkington and Hailes in 1988. Green Consumers were described by their avoidance of products that have negative impacts. The impacts related to a number of concerns – the health of others or the environment; use of large amounts of resources; unnecessary waste; animal cruelty; use of materials from endangered species and/or adverse affects on other countries. Over time there has been substantial research to identify and segment these consumers (Peattie, 2001a).There were many researches attempted to explain these consumers in demographic terms which produced contradictor results. Another approach was to focus on the consumers' concerns and knowledge of the environment. However, this also proved to be inconsistent in isolating those who made green purchases. It was finally concluded that beliefs do not necessarily translate into purchasing, making it difficult to segment green consumers by demographics and/or values (Peattie, 2001b). The complexity surrounding the gap between values and action makes research of green consumerism difficult. A number of theories of consumer behavior and pro-environmental consumer behavior, in particular, have progressed. Choice, in an environmental context, is not straightforward as intentions and desires are moderated by social, cognitive, situation and cultural limitations (Jackson, 2004). The social psychological models show how cognitive processes and unconscious biases impact on behavior. For example, individual habits play a key role in moderating behavior. Unconscious and routine activities, such as taking waste to the rubbish bins and driving to work, can require interventions in the form of information and incentives (Jackson, 2004). The inconsistency and unpredictability of green consumers has been of interest to a number of researchers (McDonald et al, 2006) who present green consumers in terms of shades of green – from 'very dark green' to 'no green at all'. McDonald et al (2006), in their typology of green consumers, have distinguished three groups – Translators, Exceptors and Selectors. In the field of psychology, green (or pro-environmental) behavior is described in terms of value-beliefs-norms (Steg, et al, 2005). In the research of Steg et al values were thought to activate beliefs in relation to human-environment relations which are then thought to affect specific beliefs consequences of behavior. In the Steg et al framework (2005) it is assumed that environmental behavior results from the general beliefs about the relationship between humans and the environment. These initial general beliefs then lead to awareness of consequences and the view that environmental conditions may threaten things the individual treasures and the idea that specific behavior can make a difference and reduce impacts. This research classifies the youth by shades of green and separate green from the not so green. The measurement of green consumers values and environment-friendly-travel (EFT) values has been criticized as measuring a plan to act rather than measuring an attitude also investigates the role of leisure activities toward EFT activeness categories. The conceptual framework as following.

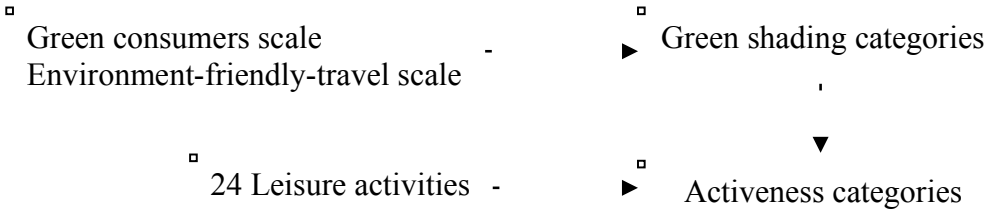

Figure 1 Conceptual Framework

2. Methodology

Questionnaire development and data collection

The study instrument (a questionnaire) consisted of two sections. The first part involved basic demographic and background data of the respondents. The second part comprised a fifty-three-item intended scale which included green consumer values which be designed by Haws et al., 2010. The Environment-friendly-travel value which operationalisation' specifies the activities construct from the work of Weaver and Lawton, 2002 and The Tourism Authority of Thailand, 2012. The leisure activities preference was based on the work of Elisabeth Gotschi et at.(2010) which consist of 24 activities. Respondents were asked to state the extent of their agreement with each value that are commonly attributed to the green shading on Likert-type of summated rating scales. This section presented statement such as "It is important to me that the products I use do not harm the environment." Scored on a 0-5 point strongly disagree to strongly agree scale. The main research instrument employed for this study was questionnaires that were self-administered to 900 respondents. A respondent must be 19 – 24 years old. The questionnaires were collected from respondents over the course of two months. The sociodemographic characteristics of the sample, 56% were female and 44% were male, 23.7% were 20 years old, 20.4% were 19 years old, and the remaining 55.9% were 22 years (18.8%), 21 years (18.2%),24 years (9.6%) and 23 years (9.3%). Of the sample, 41% live at the middle region, 40% live at the northeastern and the remaining 19% live at the north (8%), the east (7%) and the south (4%). Based on the tourism area, 26.8% preferred roaded-natural area, 20.6% preferred nature primitive area, 19.3% preferred rural area, 14.9% preferred semi-primitive non-motorized area, 11.8% preferred roaded- modified area, and 6.7% preferred urban area.

Statistical Evaluation

Descriptive statistics, discriminant analysis, and chi square tests was run, using the Statistical Package for Social Sciences v.11.5. For all analyses the minimum level of significance was set to $p < .05$. Discriminant analysis was employed to determine the impact of the leisure activities on activeness categories and to assess which factors have a greater impact in explaining behavior. For calculation method of the discriminant analysis the case of mean score <3 were recoded into the category *less active youth* and the case of mean score >3 were recoded into the category *active youth*.

3. Findings

Green Values and Environment-Friendly-Travel Values Measurement

As far as green consumers and EFT variables are concerned, the self-reported consumable and travel plan to act revealed that the Thai youth were high green consumer values ($\bar{X}$ =2.72), and high EFT values ($\bar{X}$=2.68). There were statistically significant relationship between green consumer values and EFT values. When classified the youth by mean of green shading, the travel forms of the sample can be found in Table1.

Table 1. Green Categories

Green Categories	Mean	SD	Total	Percentage of total sample (%)
Very Light Green	0.35	.4945	2	0.2
Light Green	1.50	.1195	7	0.8
Medium Green	2.28	.1546	231	25.7
Dark Green	2.79	.2103	590	65.6
Very Dark Green	3.50	.2003	70	7.8
Total	2.70	.4009	900	100.0

SD, Standard Deviation

As Table 1 show, there were five major forms of EFT travel; very dark green, dark green, medium green, light green, and very light green. We found that 65.6% of youth were dark green group, 25.7% were medium green group, 7.8% were very dark green, 0.8% were light green group, and 0.2% were very light green group. The relation of sociodemographic characteristics (age, gender, education, and income and tourism area preference) to green shading categories was analyzed using Kruskal-Wallis test. There were no statistically significant differences based on age(χ^2=5.721, Sig.=.221), gender(χ^2=2.216, Sig.=.696), education(χ^2=.497, Sig.=.827), and income(χ^2=7.541, Sig.=.110). The tourism area preference(χ^2=13.888, Sig.=.008**) was the importance factor of distinguish between these groups with levels of significance .01 (values in parentheses with levels of significance ***p <.001,**p <.01,*p <.05).

Determining the Impact of Leisure Activities on Activeness Categories Using Discriminant Analysis

For calculation method of the discriminant analysis the case of mean score <3 were recoded into the category *less active youth* and the case of mean score >3 were recoded into the category *active youth*. The travel forms of the sample can be found in Table 2.

Table 2. Activeness Categories

Activeness Categories	Mean	SD	Total	Percentage of total sample (%)
Less active	2.55	.2946	712	79.1
Active	3.25	.2337	188	20.9
Total	2.70	.4009	900	100.0

As Table 2 show, when classified the youth by mean score of EFT travel scale, there were 79.1% of youth were less active group, 20.9 % were active group. There were no statistically significant differences based on age, gender, education, and income (χ^2=4.926, 0.415, 1.950, 8.159 and Sig.=.425, .519, .583, .148 respectively). Exploring the importance of leisure activities for activeness categories by compare means. As Table 3 show, the mean preference of 24 leisure activities variables were differently between groups, which mean preference of each leisure activities for less active youth was less than active youth. We explained that the leisure activities were less importance for less active group than active group significantly. The next step, using the discriminant analysis to find out the most importance leisure activity that classified these groups.

Table 3. Leisure Activities with Regard to Activeness Categories

Leisure Activities	Activeness categories	Mean	SD	F	Sig.[a]
Voluntary service	Less active	2.25	.858	124.915	.000***
	Active	3.03	.784		
Hiking/biking/outdoor	Less active	2.40	.831	55.185	.000***
	Active	2.91	.873		
Nutrition	Less active	2.42	.811	62.417	.000***
	Active	2.95	.829		
Health	Less active	2.46	.822	90.801	.000***
	Active	3.09	.734		
Special event	Less active	2.58	.805	81.452	.000***
	Active	3.17	.748		
Activities via mobilephone	Less active	2.31	.894	42.503	.000***
	Active	2.80	.977		
Nature protection and environment	Less active	2.56	.782	98.098	.000***
	Active	3.20	.780		
Sport	Less active	2.57	.891	64.204	.000***
	Active	3.14	.789		
Car/motorbike	Less active	2.39	.928	22.200	.000***
	Active	2.76	.972		
Party	Less active	2.51	.919	18.735	.000***
	Active	2.84	.979		
Income	Less active	2.57	.859	40.774	.000***
	Active	3.02	.871		
Music and Singing	Less active	2.55	.892	43.707	.000***
	Active	3.03	.846		
Television	Less active	2.62	.876	14.747	.000***
	Active	2.89	.807		
Theater	Less active	2.25	1.022	10.264	.001**
	Active	2.53	1.116		
Computer and videos	Less active	2.83	.896	13.106	.000***
	Active	3.10	.822		
Cinema	Less active	2.76	.887	10.804	.001**
	Active	2.99	.887		
Travelling	Less active	2.55	.950	31.707	.000***
	Active	2.99	.965		
Dances	Less active	1.89	1.134	19.686	.000***
	Active	2.30	1.192		
Classic music	Less active	2.20	1.023	36.413	.000***
	Active	2.71	1.042		
Pop/rock music	Less active	2.62	.897	5.454	.02*
	Active	2.80	1.025		
Art and Crafts	Less active	2.23	.949	34.783	.000***
	Active	2.70	1.007		
Friends	Less active	2.61	.892	11.392	.001**
	Active	2.85	.871		
Journals/comics	Less active	2.66	.915	8.874	.003**
	Active	2.89	.977		
Reading books	Less active	2.50	.962	33.563	.000***
	Active	2.96	.978		

[a]***p <.001,**p <.01,*p <.05

Table 4. Variables Entered/Removed (a,b,c,d)

Step	Importance Variables Entered	Wilks' Lambda							
						Exact F			
		Statistic	df1	df2	df3	Statistic	df1	df2	Sig.
1	Voluntary service	.878	1	1	898	124.915	1	898	.000***
2	Nature protection and environment	.844	2	1	898	82.908	2	897	.000***
3	Classic music	.828	3	1	898	62.037	3	896	.000***
4	Special event	.814	4	1	898	51.096	4	895	.000***
5	Sport	.808	5	1	898	42.478	5	894	.000***
6	Reading books	.804	6	1	898	36.299	6	893	.000***

At each step, the variable that minimizes the overall Wilks' Lambda is entered. ***p <.001
a Maximum number of steps is 48.
b Minimum partial F to enter is 3.84.
c Maximum partial F to remove is 2.71.
d F level, tolerance, or VIN insufficient for further computation.

As table 4 show, the impact of 24 leisure activities was tested with discriminant analysis to explore the importance leisure activities preference factor of separate green youth (active group) from the not so green (less active group). There were statistically significant differences based on voluntary service, Nature protection and environment, classic music, special event, sport, and reading books, respectively.

Table 5. Classification matrices for two-group discriminant analysis (b, c)

			Predicted Group Membership		
		Activeness categories	1	2	Total
Original	No. of Cases	1 Less active	682	30	712
		2 Active	125	63	188
	%	1 Less active	95.8	4.2	100.0
		2 Active	66.5	33.5	100.0
Cross-validated(a)	No. of Cases	1 Less active	679	33	712
		2 Active	128	60	188
	%	1 Less active	95.4	4.6	100.0
		2 Active	68.1	31.9	100.0

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.
b 82.8% of original grouped cases correctly classified.
c 82.1% of cross-validated grouped cases correctly classified

The final step of assessing group membership prediction accuracy, the cross-classification results (Table 5) are shown that the discriminant functions (not shown here) in combination achieve a high degree of classification accuracy. The hit ratio for the analysis cases is 82.8% or the analysis accurately classified 82.8 % of all the surveyed respondents. The Less active cluster were misclassified 0.4%. There were 3 cases tend to be Active youth. The discriminant analysis results identified the total of 712 respondents (79.11%) fell into the Less active cluster, 188 (20.89%) in the Active cluster.

4. Recommendations and Conclusions

This research has the objective for studies the youth travel form predispositions, with green consumers values and environment-friendly-travel (EFT) values measurement. The main research instrument employed for this study was questionnaires that were self-administered to 900 respondents. A respondent were 19 – 24 years old. The results showed high green consumer values ($\bar{x}$=2.72), and high EFT values ($\bar{x}$=2.68). There were statistically significant relationship between green consumer values and EFT values. When classified the youth by green shading, there were five major forms of EFT travel; very dark green, dark green, medium green, light green, and very light green. We found that 65.6% of youth were dark green group, 25.7% were medium green group, 7.8% were very dark green, 0.8% were light green group, and 0.2% were very light green group. There were no statistically significant differences based on age, gender, education, and income. The tourism area preference was the importance factor of distinguish between these groups. To classify the youth travel by green values level and separate green youth from the not so green. The study indicated two different traveling patterns, these patterns were named, "Less active youth," and "Active youth". The discriminant analysis results identified the total of 712 respondents (79.11%) fell into the Less active cluster, 188 (20.89%) in the Active cluster. The traveling pattern "Active youth" loads items to physical activities, access attributes, interacting with nature, natural location prefer. The pattern "Less active youth" includes items effective in less saving natural resources and less protect the environment. It revealed 20.89% of Thai youth were physically active, more environmentally aware and knowledgeable, service expected, multi-purpose and short trip, and moderate obedience of law and order. There were no statistically significant differences based on age, gender, education, and income. The findings show that the majority of Thai youth (79.11%) tend to be nature-based tourist with less environmentally aware and knowledgeable. In fact, it could be argued that tourists in natural environments, even if they try to minimize their impact, may cause more environmental damage than tourist on a city tour. So, The Tourism Authority of Thailand (TAT), Ministry of Natural Resources and Environment, together with Ministry of Transport should cooperate to clearly decide the tourism areas as following the Recreation Opportunity Spectrum (ROS) before completely planned out the route, which link the tourism destinations. The road construction planning should be planned conform to the attributes of each destination in order to provide destination management with an additional tool to reduce the environmental impact of the tourism industry for both preserving environment and developing tourism sustainability.

5. End-notes

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The Impact of Foreign Direct Investment in Multi Brand Retail Market in India on the Indian Retail Market- A Study

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Abstract

Government of India has recently effected a landmark reform allowing up to 51 per cent in Foreign Direct Investment (FDI) in multi-brand retail market, paving way for the international multi-brand retailers interested to set up shops in India. Some sections of Indian retailers have welcomed the move saying that the policy is expected to give a push to the sectoral growth and the overall growth of the economy. However, a number of people cutting across various sections of the society have expressed apprehensions about the move fearing possible destruction of the local retail market in India, which is spread over in two major sectors , Organized Sector and Unorganized sector. .It is estimated that as on date 3-4% of retail trade in India is covered by Organized Sector and 96-97% is covered by Unorganized sector . The Government of India hopes to develop the retail sector to International Standards and provide ample employment opportunities through this move. However some sections of the society have expressed serious reservations about the success of the move.This paper attempts to make a detailed study of both the views and tries to come out with appropriate findings and suggestions to facilitate further discussions and studies on the subject.

Objectives of the Study:

1. To study the sector wise distribution of the FDI in Indian Multi Brand Retail Market.
2. To examine the risk factors associated and legal framework formulated by the Government of India, to encourage FDI in Indian Multi Brand Retail Market.
3. To study various strategies and instruments of entry and exit used by the Multi-National Companies (MNCs) investing in FDI in Indian Multi Brand Retail Market .

4. To analyze the attitude and perception of Retailers and Consumers in relation to FDI in Indian Multi Brand Retail Market.

Scope of the Study:

Though the study was initiated recently and limited to India, it is intended to enhance the scope of the study to cover the continent of Asia.

Keywords: FDI, Multi Brand Retail Market, Government of India, Organized Sector, Unorganized Sector. MNCs.

INTRODUCTION:

Retailing industry in India is one of the main pillars of the economy and accounts for about 15 percent of its GDP. The value of Indian retail market is estimated to be 450 billion US $ and is rated as one of the top five retail markets in the world. Indian Retail is growing at a faster rate backed by a huge population of 1.2 billion people. Indian retail industry comprises sole proprietary small units which are in the form of small shops and business establishments meeting the needs of people around their locality. It is estimated that in India chain stores ,larger departmental stores and supermarkets are situated in metropolitan cities and other urban centers and account for about 4 percent of the industry. India's retail industry employs about 40 million people (3.3% of Indian population). Retail market in India is spread over in two major sectors , Organized Sector and Unorganized sector. .It is estimated that as on date 3-4% of retail trade in India is covered by Organized Sector and 96-97% is covered by Unorganized sector .Until 2011, Indian central government denied foreign direct investment (FDI) in multi-brand retail, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets. But there is a turnaround in the policy of the Government and Indian retail market has been thrown open for FDI. There are two spheres in retail market. Viz Single Brand Retail Market and Multi Brand Retail Market. As on date , 51% equity in Multi Brand Retail Market is allowed for FDI operators and 100%equity participation in single brand retail market has been allowed for FDI.

Foreign direct investment (FDI)

Foreign direct investment (FDI) refers to the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It usually involves participation in management, joint ventures, transfer of technology and expertise. Government of India has recently initiated a landmark decision allowing up to 51 per cent in Foreign Direct Investment (FDI) in multi-brand retail market, there by inviting the international multi-brand retailers interested to set up their establishments in India. Foreign Investment Promotion Board in India (FIPB) is a competent body to consider and recommend FDI. In November 2011, Government of India promulgated retail reforms for both multi-brand retail outlets and single-brand retail outlets.

These market reforms paved the way for retail innovation and competition with international multi-brand retailers such as Wal-Mart, Carrefour and Tesco. The announcement sparked intense activism, both in opposition and in support of the reforms.

On 14 September 2012, the government of India announced the opening of FDI in multi brand retail, subject to approvals by individual states. This decision has been welcomed by economists and the markets, but has caused protests among general public and opposition parties. On 20 September 2012, the Government of India formally notified the FDI reforms for single and multi brand retail, thereby making it effective under Indian law.

STATEMENT OF THE PROBLEM AND NEED FOR THE STUDY:

The announcement of opening of FDI in multibrand retail market for international operators with 51% equity holding has evoked mixed reactions from individuals and organizations across the country. There are two views expressed in this context:

Those who support FDI argue that:

1. The decision would benefit **stakeholders** across the entire span of the supply chain. Farmers stand to benefit from the significant reduction in post-harvest losses, expected to result from the strengthening of the backend infrastructure and enable the farmers to obtain a remunerative price for their produce.

2. **Small manufacturers** will benefit from the conditionality requiring at least 30% procurement from Indian small industries, as this would enable them to get integrated with global retail chains. This, in turn, will enhance their capacity to export products from India.

3. As far as **small retailers** are concerned, it is evident that organized retail already co-exists with small traders and the unorganized retail sector.

4. The **young people** joining the workforce will benefit from the creation of employment opportunities.

5. Consumers stand to gain the most, firstly, from the lowering of prices that would result from supply chain efficiencies and secondly, through improvement in product quality, which would come about as a combined result of technological up gradation; efficient grading, sorting and packaging; testing and quality control and product standardization.

6. Implementation of the policy will facilitate greater FDI inflows, additional and quality employment, **global best practices** and benefit consumers and farmers in the long run, in terms of quality, price, greater supply chain efficiencies in the agricultural sector and development of critical backend infrastructure.

Those who oppose the FDI argue that:

1. It is observed that FDI **eliminates small producers** from international and national level competition, as they operate with old fashioned traditional infrastructure.

2. Foreign companies always try to achieve quick and large returns on their capital. They take interest only in profit oriented ventures **and neglect domestic and traditional business** while investing.

3. Due to open-minded business policy of India, the problem of **surplus FDI will create hurdles in the economic growth of India.**

4. Problem of **unemployment in rural area is not adequately solved**

5. FDI favors only urban regions for the investment and **neglect rural & backward** regions.

6Ø There are no provisions for the improvement of traditional **handicraft industries** and there are few provisions **for the small scale industries** under FDI in India.

Keeping these arguments in mind there is a need for studying the problem threadbare and arriving at conclusions that may help the policy makers to initiate further policy modifications and reforms so that a reasonable balance is struck between these arguments.

REVIEW OF LITERATURE:

The Indian economy in the 1990s underwent a structural change following the economic reforms. Many studies have tried to re-analyse the role of FDI in the post reforms period (Sharma, 2000); (Siddharthan and Nollen, 2000);(Pailwar, 2001). These studies show that the majority of the inward FDI aims to explore India's sizeable and expanding retail market. De Mello found that FDI has positive effects on economic growth in both developed and developing countries, but concludes that a long-term growth in host countries is caused by the external effects of the technology and knowledge of the countries investing in host countries. (De Mello, 1999).Balasubramanyam found support for their hypothesis that the effect of the increasing of the foreign direct investment is positive for countries that promote exports and potential negative forthe one that imports. (Balasubramanyam et al, 1996) Foreign direct investments are generally considered to have a major contribution in the economic development of the emerging markets. On the other hand, foreign direct investments are also very important for multinational companies. So, both developed and emerging economies have a common interest in encouraging FDI flows, although their goals are different (Resmini 2000, Estrin and Meyer 2004): the positive efects of FDI are important for the host economies, while the corporate growth and the revenues are a typical target for the multinational companies. Although FDI in emerging economies have been the subject of many economic research, it is unclear why investors prefer to take advantage of emerging countries opportunities despite the fact that they are considered to be slow in the adopting new reforms and suffer from corruption.(Tiju, 2007). It is found that though a host of studies have been carried out from time to time they have taken into account only macro economic factors and micro economic factors have not been taken in to account. Further, the views of general public and unorganized sector are not heard. These factors have created a void in research output. Hence, this study has been taken up with the following objectives:

OBJECTIVES OF THE STUDY:

1. To study the sector wise distribution of the FDI in Indian Multi Brand Retail Market.

2. To examine the risk factors associated and legal framework formulated by the Government of India, to encourage FDI in Indian Multi Brand Retail Market.

3. To study various strategies and instruments of entry and exit used by the Multi-National Companies (MNCs) investing in FDI in Indian Multi Brand Retail Market .

4. To analyze the attitude and perception of Retailers and Consumers in relation to FDI in Indian Multi Brand Retail Market.

METHODOLOGY OF RESEARCH:

The research methodology adopted is ex post facto research. The research has been conducted by survey by close ended questions to store managers and general consumers visiting the shopping outlets . Non participative observation is applied through surveyors to elucidate information. Standard questionnaires and interview schedules are being used and will be further analyzed to arrive at a general conclusion on Foreign Direct Investment in multi brand retail market in India.. Wherever available primary data is used and secondary data is used to supplement the primary data.

SCOPE OF THE STUDY:

Though the study was initiated recently i.e., after the Governmment of India promulgated an order permitting Foreign Direct Investment in multi brand retail market with a holding upto 51% in the equity capital of the enterprise and limited to Indian multi brand retail market, it is intended to enhance the scope of the study to cover the continent of Asia in due course. Presently it is in the form of a pilot study to be converted into a Major Research Project at the national level in India.

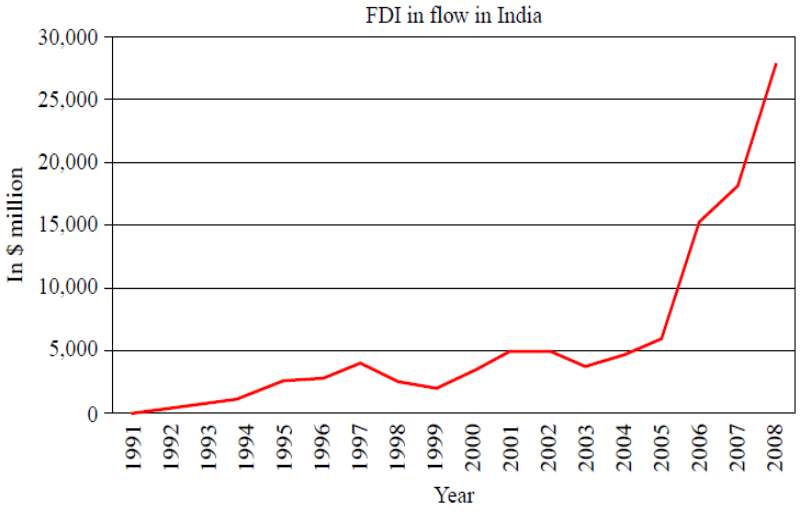
TOOLS OF DATA COLLECTION:

The research methodology adopted is ex post facto research. The research has been conducted by survey by close ended questions to store managers and general consumers visiting the shopping outlets . Non participative observation is applied through surveyors to elucidate information. Standard questionnaires and interview schedules are being used and will be further analyzed to arrive at a general conclusion on Foreign Direct Investment in multi brand retail market in India.. Wherever available primary data is used and secondary data is used to supplement the primary data.

- **Sampling Design:** The managers of leading FDI units in India and consumers visiting these units have been taken as sample population.
- **Techniques of sampling:** To select a representative sample from the group of investors, random sampling is adopted.
- **Unit:** The managers and customers are taken as a unit.
- **Size:** Sample size of 1000 is used to arrive at a general conclusion on Foreign Direct Investment and its impact on Indian Multi Brand Retail Market in India.
- **Primary Data:** Structured questionnaire is used to get the primary data from the consumers with a sample size of 1000. Interview schedules are used for theManagers of the store.
- **Secondary Data**: Secondary data is collected from the magazines, books on the topic, journals and websites.

DATA ANALYSIS AND SUMMARY OF FINDINGS:

Chart showing flow of FDI to India from 1991 to2008:



Source: World Bank Databank, http://data.worldbank.org/country/india

1. The above chart shows that the FDI flow into India is increasing at an increased rate from 1991 to 2008. However, the entire inflow was in single brand retail market. It is worth noting that **until 2011, Indian central government denied foreign direct investment (FDI) in multi-brand retail**, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets.

2. Even single-brand retail was limited to 51% ownership and a bureaucratic process.

3. Government of India has recently effected a landmark reform . allowing up to 51 per cent in Foreign Direct Investment (FDI) in multi-brand retail market, paving way for the international multi-brand retailers interested to set up shops in India.

4. Foreign Investment Promotion Board in India (FIPB) is a competent body to consider and recommend FDI. In November 2011, India's central government announced retail reforms for both multi-brand stores and single-brand stores.

5.These market reforms paved the way for retail innovation and competition with multi-brand retailers such as Wal–mart, Carrefour and Tesco. The announcement sparked intense activism, both in opposition and in support of the reforms.

6. In January 2012, India approved reforms for single-brand stores welcoming anyone in the world to innovate in Indian retail market with 100% ownership, but imposed the requirement that the single brand retailer source 30 percent of its goods from India.

7. On 14 September 2012, the government of India announced the opening of FDI in multi brand retail, subject to approvals by individual states. This decision has been welcomed by economists and the markets, however has caused protests among general public.

8. On 20 September 2012, the Government of India formally notified the FDI reforms for single and multi brand retail, thereby making it effective under Indian law.

9. The Government of India hopes to develop the retail sector to International Standards and provide ample employment opportunities through this move. However some sections of the society have expressed serious reservations about the success of the move.

10. Foreign Investment Promotion Board in India (FIPB) is a competent body to consider and recommend FDI.

11. The impact of FDI on exports in the new regime has drawn attention. As on date India is one of the most vibrant markets in the world. It has one of the most well trained technical and skilled labour force in the world.

12. Fixed income earning population of India surpasses the population of the USA or the European Union.

13. Private sector is one of the most significant sectors of Indian economy . which provide India a key place in International competition.

14. Under the new economic policy, India provides open and liberal economic atmosphere and offers considerable scope for foreign direct investment, joint ventures and collaborations.

Accordingly, the following proposals have been approved:

i. Retail sales outlets may be set up in those States which have agreed or agree in future to allow FDI in MBRT under this policy. The establishment of the retail sales outlets will be in compliance of applicable State laws/ regulations, such as the Shops and Establishments Act etc.
ii. Retail sales outlets may be set up only in cities with a population of more than 10 lakh as per 2011 Census and may also cover an area of 10 kms around the municipal/urban agglomeration limits of such cities; retail locations will be restricted to conforming areas as per the Master/Zonal Plans of the concerned cities and provision will be made for requisite facilities such as transport connectivity and parking; In States/ Union Territories not having cities with population of more than 10 lakh as per 2011 Census, retail sales outlets may be set up in the cities of their choice, preferably the largest city and may also cover an area of 10 kms around the municipal/urban agglomeration limits of such cities. The locations of such outlets will be restricted to conforming areas, as per the Master/Zonal Plans of the concerned cities and provision will be made for requisite facilities such as transport connectivity and parking.
iii. At least 50% of total FDI brought in shall be invested in 'backend infrastructure' within three years of the induction of FDI, where ‘back-end infrastructure’ will

include capital expenditure on all activities, excluding that on front-end units; for instance, back-end infrastructure will include investment made towards processing, manufacturing, distribution, design improvement, quality control, packaging, logistics, storage, ware-house, agriculture market produce infrastructure etc. Expenditure on land cost and rentals, if any, will not be counted for purposes of backend infrastructure.

iv. A high-level group under the Minister of Consumer Affairs may be constituted to examine various issues concerning internal trade and make recommendations for internal trade reforms.

FDI INFLOWS: SOME HIGHLIGHTS:

These are the major grounds for FDI inflow from developed countries to India.

India is the fifth largest economy in the world and position third in the Gross Domestic Product(GDP) in the Asia.

India is considered second largest country amongst all further developing countries and ranks fourth in the PPP in the world.

Starting from a baseline of less than $1 billion in 1990, India reached more than $24.2 billion FDI in 2010.

A recent UNCTAD survey projected India as the second most important FDI destination (after China) for transnational corporations during 2010–2012.

There are more than 63 zones in India where FDI is involved.

Some sectors are prohibited from FDI because of national security, sensitiveness and to protect interest of the country.

Some sectors are reserved by Indian government for public sector.

The sectors which attracted higher inflows were services, telecommunication, construction activities and computer software & hardware.

Mauritius, Singapore, Japan, U.S.A., Netherlands, U.K., Germany, Singapore, France, Switzerland, and South Korea are among the leading sources of FDI.

SECTORS RECEIVING FDI IN INDIA:

**Service Sector, Computer Software & Hardware, Telecommunication,
Construction Activities, Automobile Industry, Power, Chemical, Real Estate,
Drugs & Pharmaceuticals, Electrical Equipments, Cement & Gypsum Product,
Metallurgical Industries, Electronics, Consultancy Services,
Petroleum & Natural Gas, Hotel & Tourism, Trading,
Textiles, Information & Broadcasting, Sea Transport,**

**Fermentation Industries, Hospital & Diagnostic Centers, Air Transport,
Rubber Goods, Machine Tools, Sport,
Industrial Machinery, Agricultural Machinery, Paper & Pulp,
Agricultural Services, Diamond, Gold Ornaments,
Glass, Industrial Instruments, Photographic Raw Film & Paper,
Scientific Instruments, Non-conventional Energy, Leather and Leather Goods,
Tea and Coffee, Sugar, Vegetable Oils & Vanaspati,
Railway Related Components, Education, Fertilizers,
Earth-moving Machinery, Printing of Books, Soaps,
Cosmetics & Toilet, Medical & Surgical Appliances,
Mining, Ceramics, Boilers & Steam Generating Plants,
Dye-stuffs, Coal Production, Coir, Timber Product, Defense Industries.**

RESTRICTED SECTORS FOR FDI IN INDIA:

**Atomic energy, Nidhi company, Betting and gambling,
Chit fund business, Plantation or agricultural activities,
Real estate business, Business in Transferable Development Rights,
Lottery business, Railway transport,
Mining of chrome, zinc, gold, diamonds, copper, iron, gypsum, manganese, and sulphur,Ammunition and arms.**

INDUSTRIES RESERV ED FOR PUBLIC SECTOR WHERE NO FDI IS AALLOWED:

**Atomic energy, Railway transport,
Ammunition and defense equipment,
Mineral oils, Arms ,
Minerals used in atomic energy etc..**

BENEFITS OF FDI:

1. Results of studies have shown that by resorting to FDI companies can achieve economies of scale and produce goods and services at lesser cost and also reduce thew transportation cost thereby providing goods and services at lesser price to the end user.

2. Expansion of business leads to creation of large number of job openings, thus benefitting the host country.

3. Increased production with better technology, labour and expanded markets may boost exports and help in reducing balance of trade of the host country.

4. FDI is expected to improve the GDP and Growth rate of the host country, which inturn may enhance the living standard of masses in that country.

5. It is observed that, FDI enhance the competition at global level. FDI inflow develops the efficiency and sustains the growth rate of developing country.

6. Widespread , balanced industrial development throughout the economy is possible.

7. It is viewed that, FDI releases broad opportunities in the traffic of goods and services in The host country. Products of finer quality are manufactured by various industries and provides better status in International market.

8. It is found that, FDI helps for upgrading the existing traditional manufacturing processes with modern technological process in the host country..

DEMERITS OF FDI:

1. Micro , Medium and Small industries may be eliminated and endangered by the large and sophisticated FDI units.

2. Foreign companies always try to achieve quick and large Return on Investment on their capital. They take interest only in profit oriented ventures and neglect domestic and traditional business for investment.

3. Due to open-minded business policy of India, the problem of surplus FDI may create hurdles in the economic growth of India.

4. Problem of employment in rural area is not adequately solved. Most of the population of India is lived with unemployment in rural region. FDI favors only urban regions for the investment and neglect rural & backward regions.
5. Problem of centralization of FDI projects is occurring in India. Foreign investors prefers only facilitated areas for the establishment of their ventures therefore the projects are centralized in a particular area.

6. Only profit making from FDI projects is became primary thing in global economy. Economic growth, Infrastructure development and education transformation are became secondary things. FDI may lead for profit maximizations.

7. Indian political environment is not constant. Business policies are affected with the change of political environment. It will create constraints in smooth and fine running FDI policies.

8. Lastly, there are no provisions for the improvement of handicraft industries and there are few provisions for the small scale industries under FDI in India.

Recommendations:

1. It should be ensured that foreign direct investment should be used properly. The related authority should plan strategies where FDI must be employed as medium of enhancing infrastructure, and industrial production.

2. A balanced development with , healthcare, financial adequacy, technological up gradation, creation of employment opportunities and ,enhancement of export potential should be ensured.

3. It is also suggested that the Indian government must promote research and development

to maintain better economic growth under FDI. Maximum preference should be given to the development of human resources.

4.The study emphasizes on the survival of small industries and handicraft business. Theses industries should get benefit from the FDI projects for their existence. The policy makers must consider these industries while making FDI policy.

Conclusion: Though an attempt has been made in this paper to analyse the system of Foreign Direct Investment in multi brand retail market in India with reference to the latest economic reforms implemented by the Government of India, there are some limitations like paucity of time , limited geographical coverage etc. Since it is only a preliminary study, an elaborate study will be carried out in due course thereby covering all possible spheres of the problem. There is scope for further study in various aspects of the problem being studied.

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The Investigation of Efficient Market Hypothesis: Evidence from an Emerging Market

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Abstract

This study examines the weak-form efficiency of Iranian capital market, after the changes in the market regulations. Some events after 2005 have fundamentally changed the environment of the Iranian capital market, and we expect those reforms to increase the market efficiency. Therefore, this research examines the daily returns behavior in Tehran Stock Exchange (TSE) utilizing autocorrelation, augmented Dickey Fuller, and runs tests over the period of 2005-2010. The results of all tests do not support that TSE daily returns follow a random walk. Therefore, we conclude that it is possible to use the technical skills to attain the abnormal gains.

Keywords: Capital market efficiency, Random walk theory, Autocorrelation test, Runs test, Augmented Dickey Fuller Test

Introduction

An efficient stock market is vital for economic development. While, a market is efficient, the financial resources will be allocated in an economic way. Efficient stock markets encourage individuals to invest in stocks and help firms' managers to maximize wealth of stockholders. The "market efficiency", declared in the seminal work of Fama (1970), is referred to as the informational efficiency of financial markets, which emphasizes on the role of information in setting prices. The efficient market hypothesis has been one of the most intensely researched topics in the past several decades. Furthermore, it continues as a topic that has both advocates and opponents. Market efficiency is under the effect of traders' capability for gathering and disseminating information. More investors will be attracted by those stock markets that are more efficient, and in its turn market liquidity will be increased. Market efficiency is important for investors, because their wealth depend on stock price changes. In a general manner, stock market inefficiency may affect consumption and investment spending and hence, affect the performance of economy (Adelegan, 2003).

The efficient market hypothesis (EMH) implies that, price changes in the stock market follow a random walk model. A random walk means that, changes in prices are independent and stock prices of each day in the market immediately reflect the information announced for the same day. Since, the news is not predictable by the market, therefore, the stock prices reflecting unpredictable news are random (Malkiel, 2003). According to the efficient market hypothesis, current prices reflect available information about the future profitability of the companies. When new information announces to the market, stock prices rapidly adjust to the information. Because of that the investors in the market can't take advantage of available information to attain an abnormal gain (Pearce, 1987). The efficiency of stock markets implies that, there is a positive relationship between expected returns on stocks and their systematic risk (Beneda, 2005).

Fama (1970) in his seminal work categorizes the EMH into the weak-form, semi-strong-form and strong-form. Following his work, many studies have investigated the randomness of stock price changes to demonstrate the capital markets efficiency. In this paper, we concentrate on the weak-form category, which asserts that security prices fully reflect all information contained in the past price history of the market. The Iranian Capital Market expected to be efficient to attract individuals for investing their funds in viable investment opportunities that, causes economic development. This encouraged research in this area to identify the level of efficiency and the problems preventing the development of the market for effective regulations. The aim of this study is to evaluate daily return behavior in Tehran Stock Exchange (TSE) focusing on the weak-form version of EMH. The literature indicates that weak-form version of market efficiency will be accepted if the stock market daily returns follow a random walk. In other words, whenever, the daily returns are following the random walk theory then, the weak-form version of efficient market is accepted (Namazi and Shoushtarian, 1996). This study employs the most popular tests; Autocorrelation, Runs, and Augmented Dickey-Fuller tests to examine the TSE weak-form efficiency.

However, a number of studies (for examples; Nasrollahi, 1992; Fadaeenejad, 1994; Namazi and Shoushtarian, 1996; Allahyari, 2009) have researched the efficiency of Iranian stock market but, those have studied the market for the periods before 2005. Some events, after aforementioned date, have fundamentally changed the environment of the Iranian capital market. Those events are passages of Securities Market Act of The Islamic Republic of Iran, and The Bylaw

Governing Foreign Investment in the Exchanges and OTC Markets. Privatization and market reforms might have an impact on the functioning of the capital market. The results of research from other markets show that financial liberalization, privatization, and market reforms increase the capital market efficiency (for example Singh, 2010; Majnoni and Massa, 2001; Richards, 1996). The objective of this study is to examine the Iranian capital market efficiency after the changes in the market, because we expect them to affect the stock market efficiency. We use the daily returns for the period of 13/3/2005-9/3/2010 to test the research hypothesis; the TSE daily return follows a random walk. The research data are extracted from TSE website (www.irbourse.com). The results don't show that TSE daily returns follow a random walk.

The rest of the paper is organized as follows. The next section reviews the literature on capital market efficiency as well as a review of some empirical evidence. Section 3 outlines the research methodology while Section 4 presents the empirical results. Section 5 provides the summary and conclusions.

1. Literature review

The primary function of the capital market is an allocation of financial resources. While, a market is efficient, the financial resources will be allocated in an economic way. Efficient stock markets encourage individuals to invest in stocks and help firm managers to maximize wealth of stockholders. There might be two kinds of traders: "informed" and "uninformed". Informed traders have access to valuable information about the fundamental value. They sell (buy) over, or under-priced stocks making a gain and driving quickly back the price toward its fundamental value. Uninformed traders don't invest their resources in gathering information, but they know that, current prices reflect the information from informed traders. Fama (1970) defines three types of efficiency, namely weak-form efficiency, semi-strong-form efficiency and strong-form efficiency. In a weak-form efficient market, no investor is able to earn excess returns based on historical price or return information. According to Fama (1991), weak-form version of market efficiency implies the predictability of future returns using past returns. If prices follow random trends, stock price changes are independent; otherwise they are dependent. Semi-strong-form version of efficiency infers that no investor is able to earn excess returns based on any publicly available information. Strong-form efficiency implies that no investor is able to earn excess returns using any type of information, whether publicly available or not (Adelegan, 2003).

Following Fama (1970), many capital markets researchers investigated the random walk behavior of stock price changes. The aim of those researches was the demonstration of capital markets efficiency. Then, other researchers studied market inefficiencies by recognizing systematic and permanent variations in the stock market returns (Jarrett, 2008). There is a voluminous literature on weak form tests in USA and early tests strongly support the hypothesis. Most of the early literature uses the serial correlation (autocorrelation) to examine the linear dependency of lagged price changes or returns. As well, some researchers use Runs tests to determine the duration of upward and downward changes (Singh, 2010). The previous studies have shown mixed results. Magnusson and Wydick (2000) examine the weak-form efficiency of eight African countries and their results indicate that there is greater support for the African stock markets compared to other emerging stock markets. Alam et al. (1999) test the random walk hypothesis for five Asian stock markets. Their results show that all the stock return indices except the Sri Lankan index follow a random walk. Squalli (2006) tests the weak-form efficiency

of two exchanges in the United Arab Emirates, the Dubai Financial Market (DFM) and the Abu Dhabi Securities Market (ADSM). The results from variance ratio tests show that all of the sectors in the financial markets of UAE except banking sector of the DFM are inefficient. Stock returns in the two financial markets are negatively serially correlated that indicates inefficiency of the markets. Jarrett and Kyper (2006) investigate the existence of time series characteristics of daily stock prices of 62 firms listed on NYSE and NASDAQ. The results of the study indicate that stock prices do not follow a random walk. Lo and MacKinley (1988) employing variance-ratio statistical tests, reject the random walk hypothesis for daily and weekly returns, but for monthly returns, they couldn't find evidence against the random walk hypothesis. They contrary to Fama and French (1987) that found negative serial correlation for longer horizon returns, find significant, and positive serial correlation for weekly and monthly holding-period returns. Poterba and Summers (1988) using monthly returns for a NYSE value-weighted index from a different period (1926-1985) find negative serial autocorrelation that is different from the results provided by Lo and MacKinley (1988).

The unit root test is another type of statistical test utilized for examining the weak-form efficiency. In the test, if the data are non-stationary the random walk hypothesis is supported and otherwise that is evidence of mean reversion. The results of previous studies on the random walk hypothesis, using various approaches of unit root test are mixed. Cooray and Wickremasinghe (2005) investigate the weak-form stock market efficiency in the stock markets of India, Sri Lanka, Pakistan and Bangladesh. They find that for all of the countries the classical unit root tests support weak-form efficiency. Narayan and Smyth (2005) used the ADF unit root test to stock market indices from 22 OECD countries. Overall, the results of their study support strongly random walk hypothesis and they could only reject the random walk hypothesis for New Zealand. Later, Narayan and Smyth (2006) extend their previous study by applying multiple trend break unit root tests to investigate the random walk hypothesis for 15 European stock markets and provide strong support for the random walk hypothesis. Narayan and Smyth (2004) as well applied the conventional ADF unit root test with one and two structural breaks to the stock price index of South Korea. The results indicate that, stock prices in South Korea are consistent with the efficient market hypothesis. Jarrett and Kyper (2005a) examine the efficient market hypothesis utilizing index numbers of daily stock market prices in US. They find that the ADF test shows a unit root for many time series of closing prices. Chaudhuri and Wu (2003) studied 17 emerging markets and their results show that, the ADF unit root test rejects the random walk hypothesis for 10 out of 17 emerging markets. Lu and Ito (2010) use unit root test to examine the efficiency of Chinese stock markets. They provide some evidence that, do not reject the random walk hypothesis.

Runs tests were also conducted in the literature, which determine the duration of upward and downward changes. Karemera et al. (1999) investigate the random walk properties of equity returns in 15 emerging capital markets. The results of runs test indicate that, most of the examined markets are weak-form efficient. Butler and Malaikah (1992) examine the Saudi and Kuwaiti markets using serial correlation and runs tests. They find that, the markets are not efficient in the weak-form. Urrutia (1995) tests the random walk hypothesis for Latin American Emerging Equity Markets and finds that, runs tests show they are efficient in weak-form. Fuss (2005) examines the random walk hypothesis for seven Asian emerging markets. He provides evidence that show stock indices become efficient after market liberalization. Squalli (2006)

using runs test, investigates the weak-form efficiency of two exchanges in the United Arab Emirates, the Dubai Financial Market (DFM) and the Abu Dhabi Securities Market (ADSM). The study provides evidence of weak-form efficiency only in the insurance sector of the ADSM. Kompa and Matuszewska-Janica (2009) examine the weak-form efficiency in Warsaw Stock Exchange (WSE) using runs test and provide evidence that shows the WSE is efficient in weak-form.

The published literature on weak-form efficiency in Iran is relatively limited. Nasrollahi (1992) examines the weak-form of efficiency in Tehran Stock Exchange (TSE) for the period 1989-1991. She, using runs test, provides evidence that indicates the TSE is not efficient in weak-form. Fadaeenejad (1994) using autocorrelation and runs tests, investigates the market for the period 1989-1993. He finds that, the TSE is not efficient in weak-form. Namazi and Shoushtarian (1996) study the TSE using the daily and weekly prices for the period 1988-1994. The study does not provide evidence of weak-form efficiency. Allahyari (2009) using autocorrelation and runs tests, examines the weak-form efficiency of TSE for the period 1999-2005. His results don't support weak-form efficiency. The previous studies all show that the TSE is not efficient in weak-form. This study focuses on the weak-form of the efficient market theory and tries to examine the market efficiency after reforms and fundamental events in the market after 2005.

2. Research Methodology

We have implemented autocorrelation, augmented Dickey Fuller, and runs tests to examine the market efficiency over the period 2005-2010.

3.1 Serial Correlation

Serial correlation is one of the statistical tools used for measuring the dependence of a variable on the past values of itself. In the other words, this test measures the relationship between the stock return at current period and its value in the previous period, which is defined as follows:

$$\rho_k = \frac{\sum_{t=1-k}^{n}(r_t - \bar{r})(r_{t-k} - \bar{r})}{\sum_{t=1}^{n}(r_t - \bar{r})^2} \quad (1)$$

Where, ρ_k is the serial correlation coefficient of daily returns of lag k; N is the number of observations; r_t is the stock return over period t; r_{t-k} is the stock return over period t-k; $\bar{r}$ is the mean of stock returns, and k is the lag of the period. r_t is measured as follows:

$$r_t = \frac{p_t - p_{t-1}}{p_{t-1}} = \ln p_t - \ln p_{t-1} \quad (2)$$

Where, p_t is the index of stock market in the period t, and p_{t-1} is the index of stock market in the period t-1.

This test is frequently performed for the purpose of testing the joint hypothesis that, all the ρ_k up to certain lags are simultaneously equal to zero, instead of testing the statistical significance of any individual autocorrelation coefficient (Gujarati, 2004). Statistically, the hypothesis of weak-form efficiency should be rejected if stock returns (price changes) are serially correlated (ρ_k is significantly different from zero). Positive or negative results indicate that, there might be potential, profitable trading strategies. A zero correlation is consistent with

the random walk hypothesis. This research performs this by using the Q statistic developed by Box and Pierce (1970), which is as follows:

$$Q_{BP} = n\sum_{k=1}^{m}\hat{\rho}_k^2 \qquad (3)$$

Where, *n* is the sample size and *m* is lag length. In large samples, it has a chi-square distribution with *m* d.f. (Al-Jafari, 2011). As well, this study for testing the joint hypothesis that all correlations are simultaneously equal to zero, uses the Ljung-Box Statistic Q-statistic(1978) as a variant of Box-Pierce Q statistic (Q), which is as follows:

$$Q_{LB} = (n(n+2)\sum_{j=1}^{h}\frac{\rho^2(j)}{n-j} \qquad (4)$$

Where, *n* is the sample size, $\rho(j)$ is the autocorrelation at lag *j*, and *h* is the number of lags being tested. Under the null hypothesis of zero autocorrelation at the first *k* autocorrelations ($\rho_1 = \rho_2 = \rho_3 = \cdots = \rho_k$) the Q-statistic is distributed as a chi-squared with degrees of freedom equal to the number of autocorrelation (*k*). If Q-statistic is significantly different from 0, this indicates that, the series is serially correlated. Such a result would allow rejecting the null hypothesis that returns are independent (Guidi et al., 2010).

3.2 Augmented Dickey Fuller

We use the augmented Dickey-Fuller (ADF), because it is still the most common procedure for testing the unit root. This unit root test provides evidence of whether the prices in the stock market follow a random walk. Hence, it can be used as a test for the weak-form market efficiency. If the stock market is inefficient in the weak form, then it is implied that market prices do not follow a random walk. Random walk requires that the time series must contain a unit root. Therefore, we test daily returns for the presence of a unit root in them (Al-Jafari, 2011).

The original version of the Dickey-Fuller test assumes that, there is no correlation between error terms. If this assumption is incorrect then, the limiting distributions and critical values obtained by Dickey and Fuller cannot be assumed to hold. When serial correlation is present, the ADF version of the test proposes to include in the regression several lags of the difference of the series to account for the serial correlation. Dickey and Fuller (1981) illustrate that, the limiting distributions and critical values that they obtain under the assumption that, e_t is a random sequence, are also valid when, e_t is autoregressive if the ADF regression is run. Therefore, we assume the data are generated according to $y_t = \rho y_{t-1} + e_t \ , t = 1,2, \ldots$ with ρ=1 and that, e_t is a stationary autoregression of order p:

$$e_t = \theta_1 e_{t-1} + \theta_2 e_{t-2} + \cdots + \theta_p e_{t-p} + \varepsilon_t \qquad (5)$$

Where, ε_t is an Independent Identically Distribution (IID) process and considers the reparameterized version of $y_t = \alpha + \beta t + \rho y_{t-1} + e_t$ as follows:

$$\Delta y_t = \alpha + \beta t + \phi y_{t-1} + e_t \qquad (6)$$

Where H_0: $\phi = 0$ is to be tested against H_1: $\phi < 0$. Given the equation for e_t in (5) we can write as follows:

$$\Delta y_t = \alpha + \beta t + \phi y_{t-1} + \theta_1 e_{t-1} + \theta_2 e_{t-2} + \cdots + \theta_p e_{t-p} + \varepsilon_t \qquad (7)$$

Since $y_t = \rho y_{t-1} + e_t$, $t = 1,2, \ldots$ with ρ=1 gives $e_t = y_t - y_{t-1}$ the equation (7) can be written as follows:

$$\Delta y_t = \alpha + \beta t + \phi y_{t-1} + \theta_1 (y_{t-1} - y_{t-2}) + \theta_2 (y_{t-2} - y_{t-3}) + \cdots + \theta_p (y_{t-p} - y_{t-p-1}) + \varepsilon_t$$

$$= \alpha + \beta t + \phi y_{t-1} + \sum_{i=1}^{p} \theta_i \Delta y_{t-1} + \varepsilon_t \qquad (8)$$

We are unlikely to know the correct value of p for using in the ADF regression and then will be needed to determine that on the basis of the available data. In practice, it is usual to include terms with a lag to the extent that, ε_t has no correlation and to use Lagrange multiplier tests for serial correlation to check whether the chosen p is adequate. In our test, the null hypothesis is $\phi = 0$; that indicates there is a unit root, in other words, the time series is non-stationary. The alternative hypothesis is $\phi < 0$. Rejecting H_1 implies that we do not reject that, the time series has the properties of a random walk (Noferesti, 2000; Harris, 1992a; Al-Jafari and Altaee, 2011).

3.2 Runs Test

The runs test, as a non-parametric test, is used to detect the frequency of the changes in the direction of a time series. Runs test is a strong test for randomness in examining serial dependence in asset price movements. Runs are defined here as the number of sequences of consecutive positive and non-positive (negative or zero) returns. The number of runs is computed as a sequence of the price changes of the same sign (++, - -, 00). When the expected number of runs is significantly different from the observed number of runs, the test rejects the null hypothesis that, returns are random (Gu and Finnerty, 2002). To perform this test, we compare the number of actual runs (R) and expected runs (m), which is as follows:

$$m = \frac{N(N+1) - \sum_{i=1}^{3} n_i^2}{N} \qquad (9)$$

Where, *N* is the number of observations (daily returns), *i* is the sign of +, - , or 0, and n_i is the number of observations in each run. For large sample sizes (N>30), expected runs are approximately normally distributed with a standard deviation = σ_m as follows:

$$\sigma_m = \left[\frac{\sum_{i=1}^{3} n_i^2 [\sum_{i=1}^{3} n_i^2 + N(N+1)] - 2N \sum_{i=1}^{3} n_i^3 - N^3}{N^2 (N-1)} \right]^{1/2} \qquad (10)$$

Then, we use the standard normal Z-statistic to test whether the actual number of runs is consistent with the random walk hypothesis. The standard normal Z-statistic is calculated as follows:

$$Z = \frac{R - m \pm 0.5}{\sigma_m} \sim N(0,1) \qquad (11)$$

Where R is the actual number of runs, and 0.5 is continuity adjustment. When, the actual number of runs exceed (fall below) the expected runs, the result will be a positive (negative) Z value. Positive (negative) Z value indicates negative (positive) serial correlation in the return series (Abraham et al., 2002). Since, Z statistic is normally distributed, $N(0,1)$, critical value for Z statistic at a significant level of 0.05 is ± 1.96.

4. Empirical Results

The daily stock returns of Iranian equity market represented by TEPIX are obtained from the web site of the Tehran Stock Exchange (www.irbourse.com). The dataset consists of 1153 daily observations for the period from March 2005 to March 2010. This study utilizes autocorrelation, augmented Dickey Fuller, and runs tests to examine the market efficiency using daily returns over the research period. Figure 1 shows the trend of daily returns for the market.

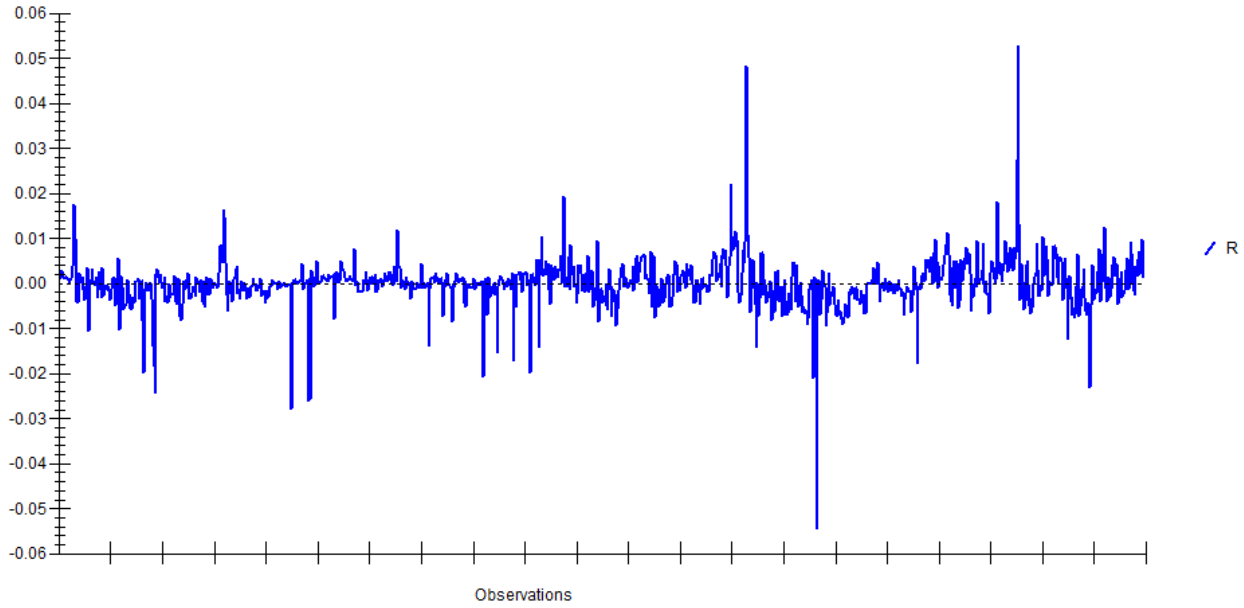
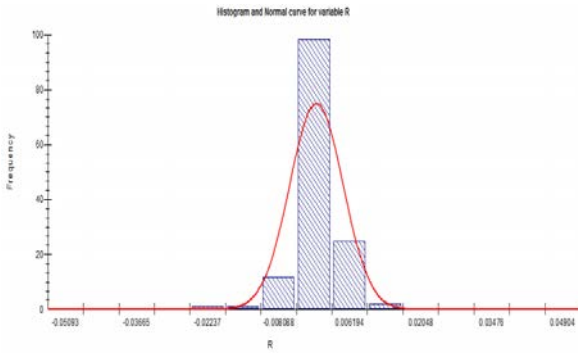


Figure 1: The trend of daily stock returns for Tehran Stock Exchange (during 1153 days)

Table 1 presents descriptive statistics of daily returns of TSE. The results show that daily returns are positively skewed which implies that, the returns are flatter to the right and have asymmetric distribution. The results of descriptive statistics based on positive skewness, high kurtosis and Kolmogorov-Smirnov reject the hypothesis of normally distributed daily returns.

Table 1: Descriptive Statistics for Stock Price Index of Tehran Stock Market



N	1152
Minimum	-.0545029650
Maximum	.0526084820
Mean	.000028124044
Median	.0000913471
Std. Deviation	.0052981657883
Kurtosis	27.01830212
Skewness	.13964659
Kolmogorov-Smirnov Z	3.965
Asymp. Sig. (2-tailed)	0.000

4.1 Results of Autocorrelation Test

We use autocorrelation test with 25 lags to examine the weak form of market efficiency. Table 2 shows the autocorrelation coefficients, Ljung-Box, and Box-Pierce statistics. The autocorrelation coefficients, reported in the table 2, are significant that, indicate daily returns of the TSE are serially correlated. The other statistics, Ljung-Box, and Box-Pierce support that, the returns are serially correlated. Therefore, the results do not support the weak-form efficiency.

4.2 Results of Augmented Dickey Fuller

The Augmented Dickey-Fuller test is another method to examine the weak form efficiency of TSE. In the ADF test, the null hypothesis is that, the series is non-stationary. We determine the significant level of this test to be 5%, and the related critical value is 3.416. The results of the test (presented in appendix) indicate that, on the basis of Schwarz Bayesian and Hannan-Quinn Criteria, the white noise of the error term (ε_t) occurs in the second lag. In other words, the error term has the highest value at the second lag. The absolute value of Dickey-Fuller statistic at the second lag is 13.828 and greater than the critical value (3.416) at 95% significant level. The results are identical for the Dickey-Fuller regressions including and excluding a linear trend. Therefore, we reject that, the daily stock returns for the TSE have the properties of a random walk.

Table 2: Autocorrelation Function, Ljung-Box, and Box-Pierce Statistics for Daily Stock Returns

Order	ACF	Box-Pierce Statistic	Ljung-Box Statistic
1	0.41115	(0.000) 194.7392	(0.000) 195.2468
2	0.25308	(0.000) 268.5268	(0.000) 269.2910
3	0.20270	(0.000) 315.8583	(0.000) 316.8285
4	0.17053	(0.000) 349.3606	(0.000) 350.5059
5	0.13563	(0.000) 371.7007	(0.000) 372.9823
6	0.13563	(0.000) 392.8920	(0.000) 394.3216
7	0.095704	(0.000) 403.4436	(0.000) 404.9561
8	0.12053	(0.000) 420.1782	(0.000) 421.8169
9	0.15222	(0.000) 446.8711	(0.000) 448.7868
10	0.17378	(0.000) 481.6608	(0.000) 483.9421
11	0.14254	(0.000) 505.0657	(0.000) 507.6136
12	0.15380	(0.000) 532.3158	(0.000) 535.1983
13	0.12755	(0.000) 551.0586	(0.000) 554.1880
14	0.10547	(0.000) 563.8746	(0.000) 567.1842
15	0.12166	(0.000) 580.9256	(0.000) 584.4910
16	0.11953	(0.000) 597.3840	(0.000) 601.2093
17	0.11563	(0.000) 612.7873	(0.000) 616.8704
18	0.13031	(0.000) 632.3484	(0.000) 636.7765
19	0.13162	(0.000) 652.3063	(0.000) 657.1043
20	0.11474	(0.001) 667.4714	(0.000) 672.5642
21	0.076587	(0.000) 674.2285	(0.000) 679.4587
22	0.091000	(0.000) 683.7683	(0.000) 689.2011
23	0.075727	(0.000) 690.3745	(0.000) 695.9536
24	0.069452	(0.000) 695.9513	(0.000) 701.6385
25	0.067129	(0.000) 701.1226	(0.000) 706.9541

4.3 Results of Runs Test

This section reports the results of runs test as a nonparametric test. Since, the daily stock returns for TSE do not conform to the normal distribution. Table 3 shows the results of the runs test for daily returns. The results show that Z statistic is -13.205 and greater than ±1.96, the critical value. The negative value for Z statistic indicates positive serial correlation. Therefore, runs test shows that TSE is inefficient in weak form.

Table 3: Results of the Nonparametric Runs Test

Test value	Observations >test value	Observations ≥ test value	Total Observation	# of runs	z-stat	p-value
.0000913471	576	576	1152	353	-13.205	0.000

5. Summary and Conclusions

This study examines the Iranian capital market efficiency after the changes in the market regulations, because we expect them to affect the stock market efficiency. We use the daily returns for the research period to test the research hypothesis. For the purpose of the hypothesis testing, we implement autocorrelation, augmented Dickey Fuller, and runs tests. The results of all tests do not support that TSE daily returns follow a random walk, and have the mean reversion properties. Therefore, we conclude that it is possible to use the technical skills to attain the abnormal gains, because, the effects of price shocks are convergence in the stationary processes and it can be expected that implementing technical skills causes abnormal returns.

Tests implemented at the aggregate level of the TEPIX do not support the hypothesis of weak form efficiency following fundamental changes and reforms in the market. Since the stock market is under the effects of various factors, it is difficult to determine exactly the causes of improvement in market efficiency. Given the fundamental changes and reforms that took place in the mechanisms of Tehran Stock Exchange during the research period, it was expected that, the market efficiency would be shifted to the weak form of efficiency. However, our findings do not support that the level of efficiency has been increased despite the reforms in the stock market.

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Appendix:
Unit root tests for variable DLP

The Dickey-Fuller regressions include **an intercept but not a trend**

1146 observations used in the estimation of all ADF regressions.
Sample period from 8 to 1153

	Test Statistic	LL	AIC	SBC	HQC
DF	-21.8521	4483.2	4481.2	4476.2	4479.3
ADF (1)	-16.5565	4489.1	4486.1	4478.6	4483.3
ADF (2)	-13.6721	4493.0	4489.0	4478.9	4485.2
ADF (3)	-11.9701	4494.8	4489.8	4477.2	4485.1
ADF (4)	-10.9034	4495.4	4489.4	4474.3	4483.7
ADF (5)	-9.8791	4496.7	4489.7	4472.1	4483.1

95% critical value for the augmented Dickey-Fuller statistic = -2.8645

LL = Maximized Log-Likelihood AIC = Akaike Information Criterion
SBC = Schwarz Bayesian Criterion HQC = Hannan-Quinn Criterion

The Dickey-Fuller regressions include **an intercept and a linear trend**

1146 observations used in the estimation of all ADF regressions.
Sample period from 8 to 1153

	Test Statistic	LL	AIC	SBC	HQC
DF	-22.0162	4485.9	4482.9	4475.3	4480.0
ADF (1)	-16.7151	4491.4	4487.4	4477.3	4483.5
ADF (2)	-13.8282	4495.0	4490.0	4477.3	4485.2
ADF (3)	-12.1268	4496.6	4490.6	4475.4	4484.9
ADF (4)	-11.0634	4497.1	4490.1	4472.4	4483.4
ADF (5)	-10.0394	4498.3	4490.3	4470.1	4482.7

95% critical value for the augmented Dickey-Fuller statistic = -3.4161

LL = Maximized Log-Likelihood AIC = Akaike Information Criterion
SBC = Schwarz Bayesian Criterion HQC = Hannan-Quinn Criterion

Do Entrepreneurial Companies Make Good Corporate Citizens? The Relationship between Entrepreneurial Orientation and Corporate Citizenship in Korea

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Abstract

Do entrepreneurial companies make responsible corporate citizens? In this paper, we examine the relationship between companies' entrepreneurial orientation and their corporate citizenship. An empirical study consisting of 261 South Korean firms, utilizing both a unidimensional and multidimensional approach, reveals that entrepreneurial orientation does not have direct causal effect on corporate citizenship but has indirect effect through market orientation. Results also indicate that market orientation has full mediation effect between entrepreneurial orientation and corporate citizenship. In addition, the study finds that firms' risk taking and competitor orientation can adversely affect market orientation and corporate citizenship, respectively. Managerial implications are discussed.

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INTRODUCTION

Do entrepreneurial companies make responsible corporate citizens? Does an increase in entrepreneurial orientation (EO) in organizations lead to more responsible behavior by corporations for the benefit of society?
To clarify, entrepreneurial activity has often been demonstrated to be beneficial to societies. Entrepreneurship in both startups and large organizations has long been credited for innovation, economic prosperity, increased employment opportunities, and even longer lifespan in the United States and other developed economies (Schramm 2010; Zahra, 1999; Wennekers and Thurik, 1999). Studies of other parts of the world have led to similar findings: Entrepreneurial activity has been the driving force for increased employment, above-average rates of economic growth, and more competitive economies (Reynolds et al, 2000; Wang et al., 2005).

However, while entrepreneurial endeavors have often produced socially beneficial outcomes, it is uncertain whether there is a direct connection between entrepreneurial proclivity in an organization and its socially responsible behavior. On the contrary, it often seems that entrepreneurial pursuits have led to some of the most irresponsible corporate misdeeds. For instance, Enron, a poster child for irresponsible behavior, was commonly recognized as an entrepreneurial company with innovative management practices (Carson, 2000; Hamel, 2000). Moreover, investigations into the many corporate misdeeds (e.g., WorldCom, Tyco, Wall Street Crash of 2008), have shown that such activities were the result of freewheeling, aggressive, entrepreneurial organizational systems and cultures (Sorkin, 2010; Neubaum et al., 2004).

Making the case even worse for entrepreneurship, one could argue that the social contributions, such as jobs and economic prosperity are by-products – not the primary objectives – of the entrepreneurial activity. For example, although Schramm (2010) may be accurate in his thesis that entrepreneurial enterprises in refrigeration and transportation industries have improved the health of Americans in the early 20th century, it is unlikely that improving health was the intended primary objective of the companies.

So, does EO in firms lead to unintended positive social outcomes in the best of circumstances and disastrous misdeeds on other occasions? Or can entrepreneurial cultures and practices in fact lead to more responsible actions in organizations? There is some evidence that they may: Considering that corporate citizenship (CC) can actually enhance corporate competitive advantage (Ellen et al., 2006; Becker-Olsen et al., 2005; Maignan and Ferrell, 2005), it is possible that entrepreneurial organizations would pursue responsible actions to strengthen their companies. Moreover, EO has been shown to positively impact corporate financial performance (Zhao et al., 2010; Keh, et al., 2007; Morris and Paul, 1987; Bhuian et al., 2005; González-Benito et al., 2009; Lumpkin and Dess, 1996; and Matsuno et al., 2002), which in turn has been shown to increase responsible actions (Griffin & Mahon, 1997; McGuire et al., 1988).

Traditionally, there have been very few studies examining the link between EO and CC or corporate social responsibility (CSR). In strategy literature, several studies have been published on the relationship between EO and market orientation (MO) (Keh, et al., 2007; Morris and Paul, 1987; Bhuian et al., 2005; González-Benito et al., 2009; and Matsuno et al., 2002). The relationship between MO and CC has been explored in marketing literature (Maignan et al., 2000 &1999; Maignan and Ferrell, 2004, 2001a & 2001b).
In this paper we propose to investigate if and how firms' EO affects their actions toward CC. To this end, we also examine how MO, if at all, affects this relationship. In this context, we

propose a systematic framework to test the structural relationship between EO, MO, and CC. To our knowledge, our study is the first that examines these relationships in such a manner.

The topic at hand has special relevance in South Korea, where our sample was collected. South Korea has made significant gains in its economy over the last 40 years. Much of the credit for the country's economic success has been attributed to its past and ongoing entrepreneurial achievements (Kim et al., 2008). However, with the country's increased economic prosperity, the citizens have become more attuned to the issue of CC and CSR (Chapplle and Moon, 2005). Korean consumers, like those in advanced economies, expect their businesses to act more responsibly (Yoon and Cho, 2007; Clarkson, 1995). The Korean government is also pushing companies to act with a higher standard of responsibility, while continuing to enthusiastically support entrepreneurship in small and large organizations. Perhaps as a response to such consumer and government demands, there has been an increase in sustainable business practices among firms of all sizes in South Korea (Korea Economic Daily, 2010; Chapplle and Moon, 2005).

Our study utilizes both a multidimensional approach and a unidimensional approach, each method serving a particular purpose. Using a sample of 261 surveys obtained from South Korean small and medium enterprises (SMEs), we take a component-wise ("multidimensional") approach by examining how the three components of EO (innovativeness, proactiveness, risk taking) impact the three core subconstructs of MO (customer orientation, competitor orientation, interfunctional coordination) en route to impacting CC responsibilities (economic, legal, ethical, discretionary). We also develop a unidimensional structural equation model to empirically test and substantiate MO's potential mediating role at the concept level.

The contributions of our study are twofold. By exploring the relationship between EO and MO as well as between MO and CC of South Korean SMEs, our study will add to extant academic literature. There is evidence that the relationship between EO and any firm performance or behavior found to be positive in the U.S. is often not replicated in other (emerging) economies due to differences in constraints and contexts (Zhao et al., 2010; Kreiser et al., 2010; Tang et al, 2008; Lumpkin & Dess, 1996). More importantly, our study systematically analyzes the structural relationship between EO, MO, and CC, with particular focus on the link between EO and CC. It examines if and how EO affects CC with the objective to offer practical insight to managers and policy makers.

THEORETICAL BACKGROUND AND HYPOTHESES

Entrepreneurial Orientation

Entrepreneurial Orientation (EO), or entrepreneurial proclivity, has been shown to be an important contributor to successful new market entry and high performance to individuals and corporations (Moreno and Casillas, 2008; Wiklund and Shepherd, 2005; Lumpkin and Dess, 1996; Covin and Slevin, 1991). EO is often described as an organizational predisposition to entrepreneurial management processes (Matsuno et al, 2002). It is also defined as the propensity of a company's top management to be innovative, proactive, and take risky action (Morris and Paul, 1987). In fact, both strategic management and entrepreneurship literatures commonly utilize the above three dimensions for EO: Innovativeness, proactiveness, and risk

taking (Barringer and Bluedorn 1999; Caruana et al., 1998; Morris et al. 1993; Covin and Slevin 1989; Jennings and Young 1990).

A recent study by Rauch et al. (2009) offers a clear description of the three components of EO: It defines innovativeness as the proclivity of being creative and experimental in introducing new products and services with technical leadership; proactiveness as opportunistic and converting perspective of introducing new products and services before competition and acting according to future demand forecast; and risk taking as taking bold actions by venturing into the unknown, borrowing heavily, and/or committing significant resources to ventures in uncertain environments.

Corporate Citizenship

Maignan and Ferrell (2001) define corporate citizenship (CC) as the extent to which businesses meet the economic, legal, ethical, and discretionary responsibilities imposed on them by their stakeholders. The four responsibilities mentioned here are consistent with Carroll (1979)'s four corporate social responsibilities, which are used as dependent variables in this study. Of the four responsibilities, the economic responsibility is often the foundation on which the other three responsibilities can exist. The legal responsibility requires the corporate mission to be pursued within the legal boundary. Ethical responsibility demands the companies to operate according to the standards, norms or expectations considered fair and impartial by consumers, employees, shareholders and the local community. Discretionary responsibility consists of the activities that correspond to playing a positive role as a social constituent, e.g., actions that promote social welfare and goodwill.

It should be mentioned that in most literature, the terms CSR and CC are often used interchangeably. For instance, Moon (2005) notes that, "the term, CC, has been used increasingly by corporations, consultants and scholars to echo, underscore, extend, or re-orient certain aspects of corporate social responsibility." CSR was first defined in 1953 by Bowen (1953, p. 8) as, "the obligation of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society." McGuire (1963, p. 77) added that, "the idea of social responsibilities supposes that the corporation has not only economical and legal obligations but also certain responsibilities to society that extend beyond these." By the 1990's, the responsibilities expanded to encompass business ethics and corporate governance as well as what could be called "discretionary" responsibilities, including social issues and broad environmental concerns (Carroll, 1979, 1994, & 1999).

Market Orientation

Market orientation (MO) refers to the organizational culture that effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and thus continuous superior performance for the business (Matsuno et al, 2005). To be specific, Narver and Slater (1990) present three components of MO: Responsiveness toward customers' needs (customer orientation), close monitoring of the competitors' actions (competitor orientation), and facilitation of interfunctional coordination (inter-functional coordination), all of which are needed to provide value to customers. Customer orientation involves the full understanding of target buyers to provide value. Competitor orientation is the understanding of the current major

competitors. Inter-functional coordination refers to the coordination and integrative use of organizational resources to provide value to the target customers.

Several studies have been published on the relationship between EO and MO (Keh, et al., 2007; Matsuno et al., 2002; Morris and Paul, 1987; Bhuian et al., 2005; González-Benito et al., 2009; and Lumpkin and Dess, 1996). Other studies have examined the relationship between MO and CC (Maignan et al., 2000 & 1999; Maignon and Ferrell, 2004, 2001a & 2001b).

Dimensionality of the Factors

In our model, we propose to utilize three components for EO (innovativeness, proactiveness, risk taking); three components for MO (customer orientation, competitor orientation, interfunctional coordination); and four components for CC (economic, legal, ethical, discretionary responsibility).

We should note that while our approach may be the most conventional, there are a few scholars who have modeled the variables differently. Earlier, Miller (1983) proposed a one-dimensional approach consisting of 3 factors to represent EO. Subsequently, Covin and Slevin (1989) described EO (originally named "strategic posture") as consisting of three separate components as above. Kreiser et al. (2002) also determined that a three-factor structure deduced better results than that of one-dimensional or two-factor structure. However, Covin et al. (2006) recently utilized a one-dimensional model of EO. Similarly, the three components of MO have been analyzed as a single variable (Narver & Slater, 1990) or as separate components of the variable (Jaworski & Kohli, 1993) in empirical analyses. Also, CSR or CC has been viewed as a single concept (Maignan et al., 1999, Maignan and Ferrell, 2001a) as well as separate components in empirical analyses (Maignan and Ferrell, 2001a).

In this study, we perform both a multidimensional and unidimensional approach to model the relationship between the three key concepts. Using both approaches, we hope to minimize any shortcomings associated with either approach and obtain additional insight.

Multidimensional Approach

Relationship between Entrepreneurial Orientation and Market Orientation

Several studies have shown that EO is closely related to MO (Blesa & Ripollés, 2003; Hult et al., 2003; Jaworski & Kohli, 1993; Matsuno et al., 2002). For instance, in Matsuno et al. (2002), EO is found to have direct as well as indirect effects on MO. In Hult et al. (2003), entrepreneurship is found to be positively correlated to MO.

Analyses at the component level have led to similar conclusions. For example, innovativeness has positive effect to MO (Hult et al., 2003). Proactiveness has been found to positively affect MO (Blesa & Ripollés, 2003). Risk-taking is an antecedent to MO because risk aversion considered as an antecedent of MO (Jaworski & Kohli, 1993).

Given the above findings, we hypothesize that EO in our sample of South Korean businesses will have a positive effect on MO. We also hypothesize that each of EO's components, e.g., innovativeness, will positively affect each of the components of MO.

Hypothesis 1: EO will have positive effects on MO.

H1a: Innovativeness will respectively have positive effects on customer orientation (H1a1), competitor orientation (H1a2) and interfunctional coordination (H1a3).

H1b: Proactiveness will respectively have positive effects on customer orientation (H1b1), competitor orientation (H1b2) and interfunctional coordination (H1b3).

H1c: Risk taking will respectively have positive effects on customer orientation (H1c1), competitor orientation (H1c2) and interfunctional coordination (H1c3).

Relationship between Market Orientation and Corporate Citizenship

Vaaland et al. (2008) observes that CC is beneficial from a marketing context, because it creates positive publicity and goodwill. Since a market-oriented company is responsive to customer needs and reacts to environmental changes before competition is (Kohli and Jaworski, 1990; Narver and Slater, 1990), it may astutely recognize the importance of CC and take actions promptly. Indeed, several studies have indicated that MO has positive effects on CC (Maignan and Ferrell, 2001a; Maignan and Ferrell, 2001b; Maignan et al, 1999): Specifically, in Maignan et al. (1999)'s study of American companies, MO is found to have positive effect on CC. Similarly, Maignan and Ferrell (2001b)'s study of French companies has led to similar observations.

Given the above facts, MO is likely to positively impact CC in our sample of South Korean firms. The following hypotheses are proposed:

Hypothesis 2: MO will have positive effects on CC activities.

H2a: Customer orientation will respectively have positive effects on economic responsibility (H2a1), legal responsibility (H2a2), ethical responsibility (H2a3) and discretionary responsibility (H2a4).

H2b: Competitor orientation will respectively have positive effects on economic responsibility (H2b1), legal responsibility (H2b2), ethical responsibility (H2b3) and discretionary responsibility (H2b4).

H2c: Interfunctional coordination will respectively have positive effects on economic responsibility (H2c1), legal responsibility (H2c2), ethical responsibility (H2c3) and discretionary responsibility (H2c4).

"Insert Figure 1 Here"

Unidimensional Approach (Mediational Inference of Market Orientation)

In this section, we collapse the multidimensional subconstructs into a unidimensional construct as demonstrated in Bagozzi and Heatherton (1994) and Bagozzi and Edwards (1998) to determine the relationship between EO, MO, and CC. To test the potential mediating quality of MO with respect to EO and CC, we need raise the question, "Is MO a strong mediational variable between EO and CC?" and/or "Are there any variables which can be mediated between EO and CC other than MO?" That is, MO's role as a mediating variable has to be sensible theoretically and empirically. To do so, we rely on the causal sequence theory proposed by Mathieu and Taylor (2006) and observe existing empirical studies on the relationships between EO and MO as well as MO and CC.

We established above in the theoretical development of H1 and H2 that EO is closely related to MO and MO to CC. For instance, MO is "inherently entrepreneurial when it focuses on understanding market needs (Slater & Narver, 1995)." Moreover, studies have confirmed that organizations need risk-taking entrepreneurship to realize market-oriented behavior (Jaworski & Kohli, 1993), and that innovativeness is related to customer-oriented behavior (Kohli & Jaworski, 1990). Furthermore, market-oriented organizations fulfill their role in society as expected by their customers and stakeholders (Kohli et al., 1993).

Empirical results in the literature reveal that EO among all independent variables has the highest effect on MO; and MO on CC. Matsuno et al.(2002) show that EO has the highest effect (.740) on MO. Similarly, in Maignan et al.(1999), MO affects CC more positively (.64-.68) than other antecedent variables. In addition, in Maignan and Ferrell (2001b), MO is the only variable that affects CC significantly (.45). Also in Qu and Ennew (2003), the effect of MO on social responsibility is the highest of all variables (.61).

Given the above theoretical and empirical evidence on the relationship between EO and ME and between MO and CC, it is clear that MO should be firstly considered as a mediating variable. We note that there is no indication or evidence in the literature that EO causes CC directly. In fact, Neubaum et al. (2004) find that EO is not related to any measures of ethical climate such as social responsibility. Given a potential meditational inference and no suspected direct effect of EO on CC, we propose that MO may play a full mediating role.

Hypothesis 3: MO will play a full mediating role in the relation of EO and CC.

"Insert Figure 2 Here"

METHODS

Sample and Data

To test our hypotheses, a questionnaire was used to elicit responses from a sample of firms in South Korea. We mailed out 1,100 surveys to companies in the manufacturing and service sectors in South Korea during the period of June 1 through July 31, 2008. We received 129 mailed questionnaires indicating 11.7% mailed response rate. A market research team visited additional small and medium sized companies over the next two months to complete another 150 surveys for a total of 279 surveys. Of the 279 collected questionnaires, 18 were removed from further analysis due to incomplete responses. The characteristics of the 261 remaining samples were as follows: About 29.5% of the respondent firms were in the manufacturing sector (e.g., production, construction, publishing) while 70.5% were the service sector (e.g., finance, hospitality, distribution, product sales). All (100%) of the respondents held positions of manager and above, whereas 33.7% were senior manager level and 6.9% were executives. As for gender, 65.5% of the respondents were male and 34.5% were female.

Special care was undertaken in the survey design to ensure reliability and validity. The survey items, as listed in Table 1, pertaining to EO, MO, and CC were derived from past studies. For instance, EO used in this study consisted of 3 items of innovativeness, 3 items of proactiveness and 3 items of risk taking consistent with the scales used by Covin and Slevin (1989). In the

case of MO, we chose the scales used by Maignan et al. (1999), originally developed by Narver and Slater (1990). As in the study by Maignan et al. (1999), the scale consisted of 5 items of customer orientation, 4 items of competitor orientation and 5 items of interfunctional items. As for CC, we utilized 4 items for economic citizenship, 4 items for legal citizenship, 5 items for ethnical citizenship and 5 items for discretionary citizenship as in the study by Maignan and Ferrell (2001) and Maignan et al. (1999). We translated the scales into Korean and utilized a Likert scale (where 1=strongly agree and 7 = strongly disagree) to record the responses.

"Insert Table 1 Here"

Data Analysis: Consistency and Validity of our Analysis

We tested our model using regression as well as structural equation analysis to examine the path relationships stated in the hypotheses. Our approach to estimating the structural equation model involved first establishing consistency and validity of our model, followed by using structural equation modeling (SEM) to test the hypothesized relationships.

To measure the overall consistency and validity of our analysis, Cronbach's alpha was obtained; and Exploratory Factor analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted on each of the components of the three concepts – EO, MO, and CC. As for the factor extraction and rotation methods, we utilized principal axis factoring and varimax, respectively. We used SPSS 13.0 and AMOS 7.0 to conduct EFA and CFA, structural equation modeling, and χ^2 difference test, the results of which are shown in Table 2.

Given the size of the variables, our original pool of 41 items was subjected to EFA to gain initial insights before moving on to CFA models (Gerbing and Hamilton, 1996). The items that displayed high cross-loadings or failed to load highly on any factor were dropped from further analysis. The remaining 26 items were entered into CFA and executed. As seen in Table 2, the lowest alpha value was 0.694 and the highest alpha value was 0.879, indicating the items within each construct were internally consistent and scales were deemed reliably for further data analysis (Nunnally, 1978). The results of EFA showed that the lowest value of factor loading of each component was 0.508 and the highest value was 0.877, significantly above the requisite 0.40 level suggested by Fornell and Larcker (1981), indicating convergent and discriminant validity for each construct.

"Insert Table 2 Here"

To validate internal and external consistency of the factors, CFA and correlation analysis were performed on our entire list of components and their sub-components, and their results listed in Table 3. In particular, we evaluated convergent validity using average variance extracted (AVE) which measures the amount of variance that is captured by the constructs as opposed to measurement error (Fornell and Larcker, 1981). Table 3 lists construct reliability and AVE results calculated to measure for reliability and validity of the factors – a process essential in analyzing meditational inference (Mathieu and Taylor, 2006). If the square of the intercorrelations between the two constructs is less than the AVE estimates of the two constructs, the discriminant validity of the constructs is considered acceptable.

RESULTS

Assessment of Model Fit

For the variables listed in Table 3, every λ (lambda) is significant at 1% significance level and the sizes of standardized λs are between 0.571 and 0.855 indicating that observed variables explain latency to a large extent. We believe that these results establish convergent validity in our model as specified in Bagozzi and Yi (1988).

In terms of consistency, the results of the model are in satisfactory range since both composite reliability and AVE are either close or within cutoff points 0.7 and 0.5, respectively. Note that we calculated error variance using the LISREL method because error variance reported by AMOS can be different from that of using LISREL (Hair et al., 2006). Lastly, The CFA fit indexes (χ^2= 431.587, d.f. = 254, p=0.000, GFI = .889, AGFI = .847, SRMR=0.044, TLI=0.933, CFI = .948, RMSEA=0.052) indicate an acceptable level of model fit.

"Insert Table 3 Here"

Table 4 below is a correlation matrix containing the relationship between all subconstructs. The upper diagonal of the table shows the squared multiple correlation (SMC) values, and the bottom diagonal lists the correlation values (not squared). All values have been found to be significant to 1% significance level.

The discriminant validity of each component can be determined by comparing AVE of Table 3 with SMC values of Table 4. For discriminant validity to exist between two factors, A and B, AVE of A (AVE_A) and AVE of B (AVE_B) need to be larger than SMC_{AB} (Fornell and Larcker, 1981). In most cases in our data, the AVE values are larger than SMC values for each of the constructs, indicating that its explanatory power is more significant than that of simultaneous explanation of other components.

"Insert Table 4 Here"

Structural Model Analysis with Multidimensional Construct

Table 5 and Figure 1 below display a multidimensional approach that establishes a causal relationship among the individual components. It is revealed that innovativeness, a component of EO, has significant effects on the three components of MO, i.e., customer orientation (0.447), competitor orientation (0.533), and interfunctional coordination (0.380). The relative higher effect on competitor orientation may signal that our sample companies view innovation as means for overcoming competition. Proactiveness has significant effects on customer orientation (0.500), competitor orientation (0.470), and interfunctional coordination (0.530). It appears that proactiveness is effective in stimulating organizations to coordinate more readily across functions. On the other hand, risk taking seems to have negative effects on all three components of MO, in particular on customer orientation. Thus, Hypotheses 1 are supported with the exception of H1c.

Customer orientation and interfunctional coordination of MO are found to have significantly positive effects on the three components of CC, i.e., economic, legal, and ethical responsibilities. Customer orientation had significant effects on economic responsibility (0.405), legal

responsibility (0.337), and ethical responsibility (0.567) whereas interfunctional coordination has significant effects on economic responsibility (0.272), legal responsibility (0.255), and ethical responsibility (0.322). Customer orientation appears particularly connected to the items within ethical responsibility. We know from discussion with several sample companies that they viewed providing greater value to customers as an ethical matter. Neither customer orientation nor interfunctional coordination had significant effect on discretionary responsibility.

Although competitor orientation has significantly positive effects on legal responsibility, it does not have significant effects on economic responsibility and ethical responsibility. Companies focused on surpassing competitors may pay attention to regulations and laws, but they are not necessarily more concerned about economic or ethical responsibilities as a result. Thus, hypotheses 2 are confirmed with the exception of H2a4, H2c4, H2b1, H2b3, and H2b4.

"Insert Table 5 Here"

"Insert Figure 3 Here"

Unidimensional Structural Model Analysis on Mediation Variable

To test the mediating role of MO between EO and CC, we transformed the multidimensional subconstructs into unidimensional construct through first-order partial aggregation as demonstrated in Bagozzi & Edwards (1998) and Bagozzi & Heatherton (1994).

As shown in Table 6, we estimated two single mediation structural models using maximum likelihood method for individual model fits and executed χ^2 difference test to check for mediating effect. The overall model fit was acceptable. In particular, the fit indexes of model A(χ^2 = 92.377. d.f. = 25, p=0.000, GFI = 0.934, AGFI = 0.880, SRMR=0.059, NFI = 0.909, TLI=0.901, CFI = .931) and model B(χ^2 = 92.317. d.f. = 24, p=0.000, GFI = 0.933, AGFI = 0.875, SRMR=0.059, NFI = 0.909, TLI=0.895, CFI = .931) indicate a reasonable model fit. We utilized the bootstrapping method with 1,000 resamplings as suggested by Stine (1989) and Cheung and Lau (2007). In table 6, p-values of indirect effects were calculated from bias-corrected confidence interval.

The analysis of (constrained) model A reveals that EO had significant effect on MO (γ=0.861, t=6.369) and MO on CC (β=0.923, t=10.649). At the same time, the standardized effect of EO on CC was significant ($\gamma \cdot \beta$=0.795, bootstrap p-value=0.0345) as well.

In (unconstrained) model B, two regression coefficients (EO→MO and MO→CC) were significantly positive as they were in model A. However, in the unconstrained model, the effect of EO on CC (EO→CC) was not significant (γ=0.046, t=0.252). Moreover, the χ^2 difference test between unconstrained model A and constrained model B was not significant. This means that model B did not have a better fit than model A when adding the relationship EO→CC, and that models A and B cannot be viewed to be statistically different from each other. These results in sum prove the following: EO does not have direct effect on CC and has indirect effect through the mediating variable, MO. Therefore, MO serves as a full mediating variable between EO and CC, and H3 is accepted.

"Insert Table 6 Here"

"Insert Figure 4 Here"

DISCUSSIONS AND CONCLUSIONS

In this study we examined the relationships between EO and MO, MO and CC, and, most importantly, EO and CC, among SMEs in South Korea.

Our multidimensional models show that the majority of the components of EO were positively related to those of MO, most of which in turn were positively related to those of CC. The exceptions pertained to risk-taking in EO, which was negatively correlated with all three components of MO, and competitor orientation in MO which was not closely related with several components of CC. These results indicate that singular focus on risk taking or competitor orientation, which are often thought to be an important "part of being in business", do not seem to contribute to positive outcome for the company or society at large.

The results obtained through the unidimensional model, indicate that EO does not have significant direct effect on CC. However, EO does have indirect causal effect on CC through MO. Moreover, MO plays full mediation role between EO and CC. To our knowledge, our paper is the first to empirically establish such a definite relationship between EO and CC.

This established relationship helps answer several important research questions including: Can organizations that are more entrepreneurial also be more responsible? What kind of connection is there between EO and CC? Our results show that increased EO can lead to more CC – through the existence of MO.

The significance of the above findings is as follows: While there is no direct causal connection between EO and CC, an increase of EO can affect CC positively. Moreover, EO does not lead to CC without first going through MO. Thus, it would be better for managers and policy makers to encourage EO and thereby increase MO which in return will lead to more responsible actions. Moreover, the following perspective also holds: MO benefits from (and perhaps needs) an increase in EO to increase CC. Thus, EO can be a useful resource for increasing CC.

Limitations and Future Research

This study has several limitations. Our sample was limited to S. Korean SMEs. The results may have been somewhat different if a different sample were collected and studied. Moreover, sample size was not sufficient to conduct comparative studies by business and industry types. It would be a meaningful task to comparatively analyze similarities and differences among various types of corporations and industries.

It should also be noted that the measures of EO, MO, and CC used in the study were provided by company representatives. It would be more ideal to conduct a study that measures these factors from consumers' viewpoint.
We recall that in our test of discriminant validity, discretionary responsibility could not be differentiated from ethical responsibility. Our respondents seemed to find it difficult to distinguish the two. The reason may be that Korean professionals traditionally have had a broader concept for ethical responsibility, which encompasses both ethical and discretionary

responsibilities. Future studies should seek to understand the difference in understanding or perception of various responsibilities.

The study's implications would be more significant with a longitudinal study, or in combination with another study at a different period of time. A study at a different point in time could potentially offer a somewhat different result in terms of causal relationships or at least in their intensity. A comparative study with samples from different economies/countries would also be highly insightful.

Managerial Implications

Our study suggests that it would be beneficial for managers and policy makers to understand EO and its tangible relationship to MO and CC. Based on our finding, we offer the following concrete managerial and policy implications:

First, managers should be assured that EO can be beneficial to both the organization and society at large. As our study has demonstrated, an organization's EO can enhance MO directly and CC indirectly. Thus, managers should continue to foster their organizations to innovate and be proactive.

At the same time, managers and policy makers need to understand that increasing EO may not directly and immediately raise CC. Therefore, encouraging entrepreneurial behavior in corporations, as done in many countries (e.g., S. Korea, Singapore, and the U.S. etc.), will not necessarily lead to socially responsible actions over night. But managers and policy makers should be comforted when investment into EO results in an increase of MO.

Moreover, managers of organizations with strong EO who want to increase their companies' CC levels should make sure that their EO leads to higher MO. That is, they should make the necessary organizational and process investments to ensure that employees' innovativeness and proactiveness do indeed result in customer orientation, competitor orientation, and inter-functional coordination – which in return will enhance CC. For instance, a proactive employee with an idea for a better way of serve customers should be encouraged to put her idea into action.

Managers of organizations with an existing strong MO may want to foster EO to further enhance MO and thereby increase responsible behavior. In other words, an established large company with strong marketing capability may more readily introduce a new set of socially responsible products when it becomes more proactive and innovative.

It is also interesting that risk taking shows negative effects on all the three components of MO. In theory, risk taking should have positive effect on MO if it is implemented appropriately. It may be interesting to understand what aspect(s) of risk-taking negatively affect(s) MO. Managers should develop plans to ensure that risk-taking on the part of employees and organization actually leads to a fruitful increase of MO.

Overall, our findings imply that a firm that is strong both with respect to EO and MO could also be more responsible. A casual observation appears to substantiate this possibility: Companies, in which management and employees are proactive and customer-oriented, appear to have more environmental and social programs.

From a policy viewpoint, our findings insinuate that an alternative way to increase CSR in corporations, other than making laws prohibiting certain activities, is to encourage entrepreneurial (and market) orientation. For example, it may be possible for policy makers to encourage responsible actions in certain industries by supporting innovation (e.g., R&D subsidies) and sponsoring training programs on customer service, to obtain desired corporate behavior.

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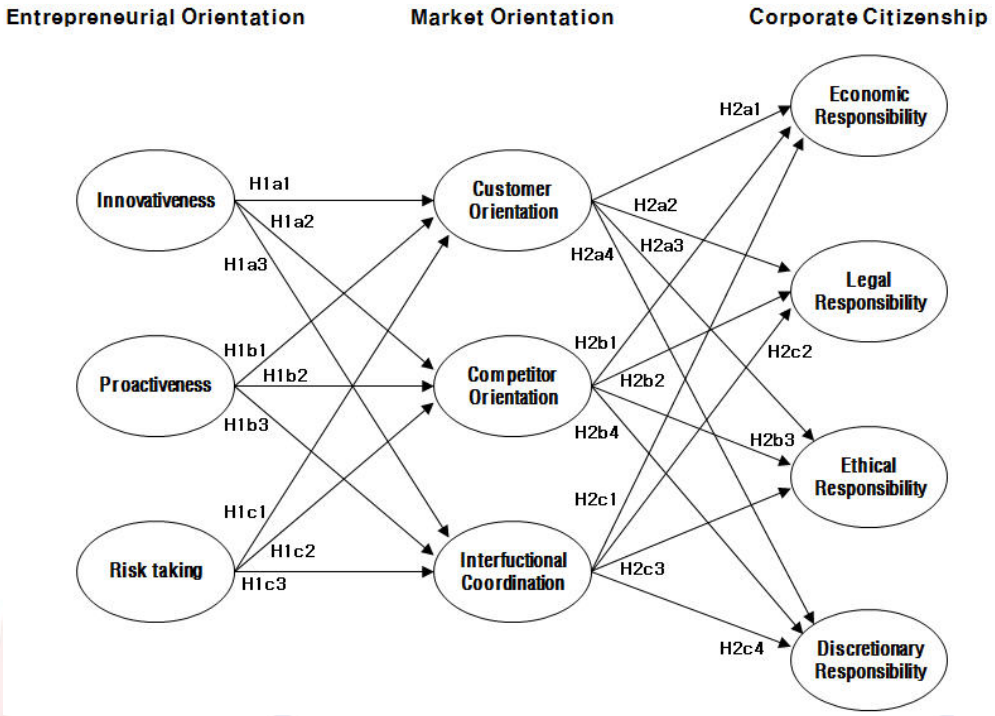

Figure 1. Multidimensional Research Model: Theoretical Model

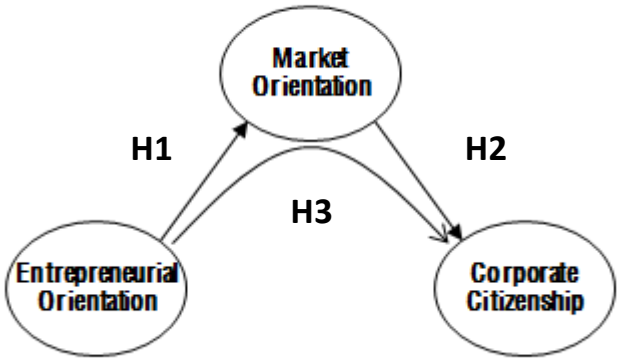

Figure 2. Single Mediation Model with Unidimensional Constructs: Theoretical Model

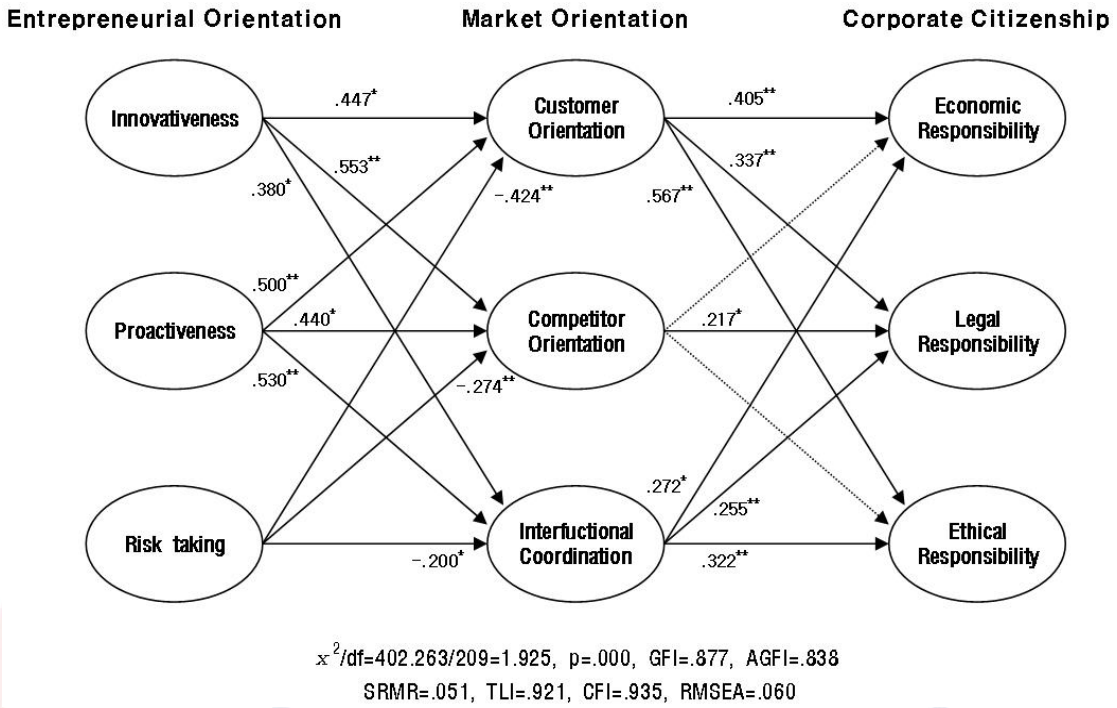

Figure 3. Multidimensional Research Model: Results

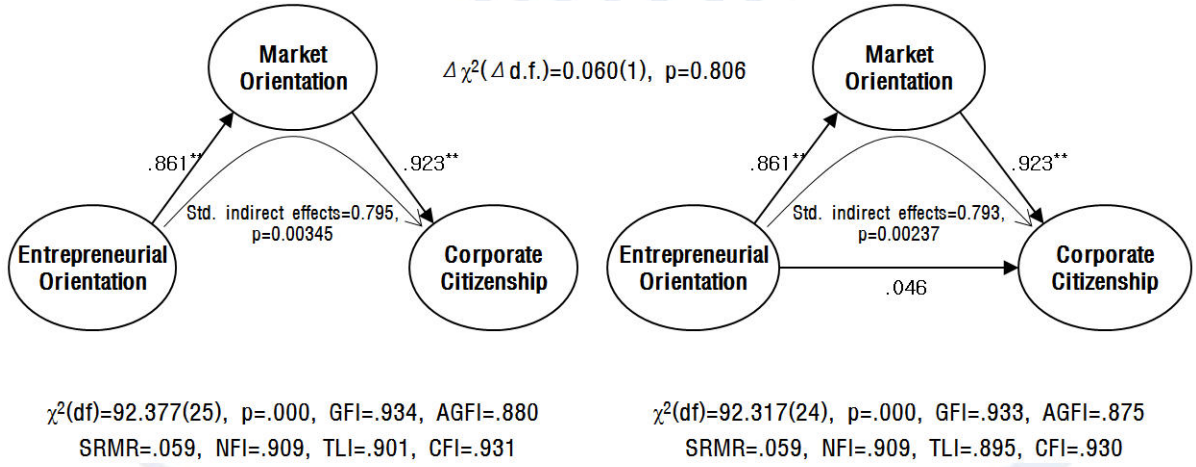

Figure 4. Single Mediation Model with Unidimensional Constructs: Results

Table 1. Full Components and Items List

	Components	Items	
EO	Innovativeness	inv1	Very strong emphasis on R&D, technological leadership and innovations
		inv2	Frequent introduction of new products/services in the past 5 years
		inv3	Drastic change in product production amount and type in the past 5 years
	Proactiveness	pro1	Leading instead of following competitors
		pro2	More frequent introduction of new products/services, management & operation techniques than competitors
		pro3	Take competitive measures against competitors than avoiding confrontation
	Risk taking	ris1	Preference of high-profit, high-risk projects
		ris2	Taking various actions of challenge to accomplish corporate goal under environmental restrictions
		ris3	Minimizing the probability of making costly decisions during decision-making situations involving uncertainty
MO	Customer Orientation	cus1	Monitoring our level of commitment and orientation to serving customers' needs.
		cus2	Our business objectives driven primarily by customer satisfaction
		cus3	Strategy deduction based on understanding of customer needs
		cus4	Strategy establishment with the premise of providing even bigger customer value
		cus5	Pay attention to service after sales
	Competitor Orientation	com1	Rapid response to competitive actions that threaten us
		com2	Regularly sharing information within our organization regarding our competitors' actions.
		com3	Periodic discussion by the management on competitors' strengths and strategies
		com4	Target market selection for gaining competitive advantage
	Interfunctional Coordination	int1	Integrated business functions (e.g., marketing/sales, manufacturing, R&D, etc.) in serving the needs of our target markets
		int2	High responsiveness to the request from other departments
		int3	Our top managers regularly visiting current and prospective customers
		int4	Free communication on the customer success/failure experiences
		int5	Understanding level of the management on how the organizational constituents can create customer value
CC	Economic Responsibility	eco1	Successful realization of profit maximization
		eco2	Effort to lower operational costs
		eco3	Monitoring of employee productivity
		eco4	Establishing long-term strategies for our business
	Legal Responsibility	leg1	Effort by the management to adhere to laws
		leg2	Effort to adhere to the regulation on employee hiring and benefits
		leg3	Programs encouraging the diversity of our workforce (in terms of age, gender, or race)
		leg4	Internal policies preventing discrimination in employees' compensation and promotion
	Ethical Responsibility	eth1	Comprehensive code of ethics in place
		eth2	Recognition of a trustworthy company
		eth3	Fairness toward coworkers and business partners as an integral part of our employee evaluation process
		eth4	Level of preparation of reliable system for reporting unjust behaviors in the workplace (theft, sexual harassment, etc.)
		eth5	Provision of complete and accurate information to customers by the sales staff and employees
	Discretionary Responsibility	dis1	Supporting employees who acquire additional education.
		dis2	Flexible company for better coordinate work and personal life
		dis3	Performing appropriate charitable acts
		dis4	Conducting appropriate acts to save energy and reduce waste
		dis5	Encouraging cooperation with the local industries and schools

Table 2. Consistency & Validity Measurement

Factors	Components	Measured Items	F1	F2	F3	F4	Alpha	Fit indexes
Entrepreneurial Orientation α=0.838	Innovativeness	inv2	0.314	0.139	0.736	-	0.767	÷²/df=29.908/11, p=.002, GFI=.969, AGFI=.921, SRMR=.038, TLI=.950, CFI=.974, RMSEA=.081
		inv3	0.351	0.322	0.632	-		
	Proactiveness	pro1	0.820	0.124	0.234	-	0.822	
		pro2	0.682	0.201	0.366	-		
		pro3	0.592	0.299	0.275	-		
	Risk Taking	ris1	0.183	0.597	0.080	-	0.699	
		ris2	0.136	0.841	0.269	-		
Market Orientation α=0.864	Customer Orientation	cus3	0.180	0.705	0.287	-	0.815	÷²/df=45.534/17, p=.000, GFI=958, AGFI=.912, SRMR=.046, TLI=.947, CFI=.968, RMSEA=.080
		cus4	0.221	0.877	0.132	-		
		cus5	0.274	0.529	0.342	-		
	Competitor Orientation	com3	0.348	0.206	0.645	-	0.735	
		com4	0.198	0.270	0.704	-		
	Interfunctional Coordination	int2	0.644	0.195	0.277	-	0.828	
		int4	0.850	0.162	0.181	-		
		int5	0.679	0.290	0.231	-		
Corporate Citizenship α=0.877	Economic Responsibility	eco1	0.261	0.156	0.230	0.551	0.694	÷²/df=59.069/38, p=.016, GFI=.963, AGFI=.935, SRMR=.035, TLI=.975, CFI=.982, RMSEA=.046
		eco2	0.026	0.079	0.221	0.698		
		eco3	0.166	0.129	0.021	0.601		
	Legal Responsibility	leg1	0.286	0.776	0.266	0.207	0.879	
		leg2	0.281	0.784	0.223	0.168		
	Ethical Responsibility	eth1	0.628	0.289	0.227	0.208	0.81	
		eth4	0.634	0.210	0.369	0.120		
		eth5	0.660	0.279	0.301	0.241		
	Discretionary Responsibility	dis3	0.156	0.188	0.519	0.149	0.74	
		dis4	0.366	0.152	0.741	0.203		
		dis5	0.335	0.262	0.508	0.169		

Table 3. CFA with all Components

Components	Item		Unstand-ardized Lambda	S.E.	C.R.	Standar-dized. Lambda	Composite Reliability	AVE
Innovativeness	inv2	Frequent introduction of new products/services in the past 5 years	0.959	0.080	11.941	0.780	0.767	0.623
	inv3	Drastic change in product production amount and type in the past 5 years	1	-	-	0.798		
Proactiveness	pro1	Leading instead of following competitors	1	-	-	0.808	0.825	0.612
	pro2	More frequent introduction of new products/services, management & operation techniques than competitors	0.971	0.070	13.975	0.824		
	pro3	Take competitive measures against competitors than avoiding confrontation	0.773	0.066	11.754	0.709		
Risk taking	ris1	Preference of high-profit, high-risk projects	0.598	0.076	7.878	0.642	0.725	0.574
	ris2	Take various actions of challenge to accomplish corporate goal under environmental restrictions	1	-	-	0.858		
Customer Orientation	cus3	Strategy deduction based on understanding of customer needs	0.958	0.069	13.938	0.807	0.823	0.609
	cus4	Strategy establishment with the premise of providing even bigger customer value	1	-	-	0.831		
	cus5	Pay attention to service after sales	0.841	0.075	11.249	0.697		
Competitor Orientation	com3	Periodic discussion by the management on competitors' strengths and strategies	1	-	-	0.820	0.740	0.588
	com4	Target market selection for gaining competitive advantage	0.862	0.085	10.110	0.710		
Interfunctional Coordination	int2	High responsiveness to the request from other departments	0.882	0.079	11.148	0.705	0.827	0.616
	int4	Free communication on the customer success/failure experiences	1.056	0.081	13.101	0.805		
	int5	Understanding level of the management on how the organizational constituents can create customer value	1	-	-	0.839		
Economic Responsibility	eco1	Successful realization of profit maximization	1	-	-	0.773	0.687	0.427
	eco2	Effort to lower operational costs	0.821	0.112	7.335	0.597		
	eco3	Monitoring of employee productivity	0.796	0.115	6.903	0.571		
Legal Responsibility	leg1	Effort by the management to adhere to laws	1	-	-	0.918	0.881	0.787
	leg2	Effort to adhere to the regulation on employee hiring and benefits	0.911	0.057	16.000	0.855		
Ethical Responsibility	eth1	Comprehensive code of ethics in place	0.840	0.071	11.866	0.762	0.818	0.600
	eth4	Level of preparation of reliable system for reporting unjust behaviors in the workplace (theft, sexual harassment, etc.)	1	-	-	0.748		
	eth5	Provision of complete and accurate information to customers by the sales staff and employees	0.873	0.069	12.649	0.813		
Discretionary Responsibility	dis3	Company performs appropriate charitable acts	0.617	0.069	8.916	0.589	0.747	0.500
	dis4	Company conducts appropriate acts to save energy and reduce waste	0.999	0.086	11.599	0.770		
	dis5	Encourages cooperation with the local industries and schools	1	-	-	0.748		

χ^2/df=431.587/254, p=.000, GFI=.889, AGFI=.847, SRMR=.044, TLI=.933, CFI=.948, RMSEA=.052

Table 4 Correlation Matrix

	Discretionary Responsibility	Ethical Responsibility	Legal Responsibility	Economic Responsibility	Interfunctional Coordination	Competitor Orientation	Customer Orientation	Risk taking	Proactiveness	Innovativeness
Discretionary Responsibility		0.694	0.445	0.359	0.511	0.331	0.437	0.201	0.582	0.493
Ethical Responsibility	0.833		0.510	0.367	0.387	0.345	0.543	0.006	0.426	0.421
Legal Responsibility	0.667	0.714		0.268	0.396	0.360	0.368	0.035	0.428	0.300
Economic Responsibility	0.599	0.606	0.518		0.284	0.212	0.323	0.028	0.312	0.341
Interfunctional Coordination	0.715	0.622	0.629	0.533		0.448	0.355	0.120	0.473	0.376
Competitor Orientation	0.575	0.587	0.600	0.460	0.669		0.394	0.113	0.517	0.501
Customer Orientation	0.661	0.737	0.607	0.568	0.596	0.628		0.023	0.334	0.255
Risk taking	0.448	0.075	0.187	0.166	0.346	0.336	0.152		0.257	0.366
Proactiveness	0.763	0.653	0.654	0.559	0.688	0.719	0.578	0.507		0.602
Innovativeness	0.702	0.649	0.548	0.584	0.613	0.708	0.505	0.605	0.776	

* Every coefficient of correlation is significant in the significance level of 1%
** Lower triangle is correlation matrix and upper triangle is SMC

Table 5. Multidimensional Structural Model Analysis

Causal Variable	Effect Variable	Unstandardized Coefficient	Standard Error	Standardized Coefficient	C.R.	p	Hypothesis	Decision
Innovativeness	Customer Orientation	0.332	0.147	0.447*	2.262	0.024	H1a1	Acceptance
	Competitor Orientation	0.487	0.171	0.553**	2.838	0.005	H1a2	Acceptance
	Interfunctional Coordination	0.330	0.152	0.380*	2.168	0.030	H1a3	Acceptance
Proactiveness	Customer Orientation	0.454	0.147	0.500**	3.094	0.002	H1b1	Acceptance
	Competitor Orientation	0.505	0.172	0.470**	2.938	0.003	H1b2	Acceptance
	Interfunctional Coordination	0.563	0.157	0.530**	3.576	0.000	H1b3	Acceptance
Risk taking	Customer Orientation	-0.403	0.108	-0.424**	-3.742	0.000	H1c1	Rejection
	Competitor Orientation	-0.308	0.116	-0.274**	-2.665	0.008	H1c2	Rejection
	Interfunctional Coordination	-0.222	0.104	-0.200*	-2.136	0.033	H1c3	Rejection
Customer Orientation	Economic Responsibility	0.397	0.107	0.405**	3.710	0.000	H2a1	Acceptance
	Legal Responsibility	0.453	0.117	0.337**	3.888	0.000	H2a2	Acceptance
	Ethical Responsibility	0.672	0.118	0.567**	5.675	0.000	H2a3	Acceptance
Competitor Orientation	Economic Responsibility	0.073	0.113	0.088	0.646	0.518	H2b1	Rejection
	Legal Responsibility	0.247	0.126	0.217*	1.961	0.050	H2b2	Acceptance
	Ethical Responsibility	0.130	0.116	0.130	1.119	0.263	H2b3	Rejection
Interfunctional Coordination	Economic Responsibility	0.228	0.097	0.272*	2.347	0.019	H2c1	Acceptance
	Legal Responsibility	0.259	0.092	0.255**	2.816	0.005	H2c2	Acceptance
	Ethical Responsibility	0.371	0.105	0.322**	3.547	0.000	H2c3	Adoption

* $p < 0.05$, ** $p < 0.01$

÷^{2}/df=402.263/209=1.925, p=.000, GFI=.877, AGFI=.838, SRMR=.051, TLI=.921, CFI=.935, RMSEA=.060

Table 6. Mediation Effect in Unidimensional Structural Models

		Unstandardized Coefficient	Standardized Coefficient	C.R.	χ^2(df)	p	GFI	AGFI	SRMR	NFI	TLI	CFI
Model A* (Constrained)	EO→MO	1.020	0.861	6.369	92.377(25)	0.000	0.934	0.880	0.059	0.909	0.901	0.931
	MO→CC	1.175	0.923	10.649	• EO→CC : Standardized indirect effect =0.795, bootstrap p=0.0345							
Model B (Unconstrained)	EO→MO	1.019	0.856	6.329	92.317(24)	0.000	0.933	0.875	0.059	0.909	0.895	0.930
	MO→CC	1.117	0.880	4.427	• EO→MO→CC : Standardized indirect effect 0.753, bootstrap p=0.00237,							
	EO→CC	0.069	0.046	0.252	• EO→CC : Standardized total effect 0.799, bootstrap p=0.00356							
A-B	$\Delta\chi^2(\Delta df)=0.060(1)$, p=0.806											

* Since γ of EO→CC in Model A is set to 0, the value of standardized indirect effect and that of standardized total effect are the same. Also each of p-values is the same.
** Entrepreneurial Orientation (EO), Market Orientation (MO), Corporate Citizenship (CC)

The Impact of Supply Chain Integration Factors on Order Fulfilment in Public Hospitals

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Abstract

This study investigates the critical operational factors influencing supply chain integration (SCI) and their impact on order fulfilment in public hospitals. Based on the literature review and with the help of the practitioners we develop a hypothesised model. The results of empirical study are based on the responses from purchasing and supply personnel in New Zealand public hospitals. A survey research approach was used to collect data and multiple regression analysis was used to test the hypotheses. The key findings of this study suggest that SCI operational factors, such as cross-functional process within the hospital, collaborative planning, forecasting and replenishment, an organisation's strategy that includes supply chain integration, classifying inventories according to their importance, an effort to control costs, have positive influence on order fulfilment. We find lack of willingness to share information and inappropriate information systems are key barriers to effective SCI in the public hospitals. In conclusion, the findings of this study have implications for hospitals implementing or in the process of implementing SCI in order to reduce costs, and for reseachers the SCI model will be useful for further studies.

Keywords: Supply chain integration, Supplier relationships, Public hospitals, New Zealand

INTRODUCTION

Supply chain integration (SCI) has been considered as a means to reduce operations costs and supply chain ineficiencies, and to improve the service level in an organisation. Lack of integration between members of a supply chain results in operational inefficiencies and hinders the performance of the supply chain (Lambert 2004). Integration is also emphasised by the Supply Chain Council's supply chain operations reference model, that "enables users to address, improve, and communicate supply chain management practices within and between all interested parties. It is a process reference model for supply chain management, spanning from the supplier's supplier to the customer's customer" (Supply Chain Council 2003).

SCM literature has emphasized the importance of SCI in creating value and reducing costs and the cost of logistics in the supply chain (Lee 2000, Lee & Wolfe 2003). Bowersox, Closs and Stank (2000) have classified SCI into six different contexts: customer integration, internal integration, material and service supplier integration, technology and planning integration, measurement integration, and relationship integration. According to Lambert (2004), there are eight key SCM process based approaches that need to be integrated and these are: customer relationship management, customer service management, demand management, order fulfilment, manufacturing flow management, supplier relationships management, product development and commercialization, and returns management.

Although there is general understanding on the strategic importance of SCI, little is known regarding the relationship between SCI and its impact on company's business performance (Frohlich & Westbrook 2001). Early SCI research focuses mostly on the management process integration issues related to the manufacturing sector and part of the service sector. Studies of SCM/SCI issues in the health sector are scarce in the literature. For example,Task Force Report on Supply Chain Management, a joint initiative of the Ontario Hospital Association of Canada (2001), found that an efficient supply chain could reduce cost; Breen and Crawford (2005) state that e-commerce is an important aspect of SCM; Towill and Christopher (2005) emphasise the use of principles of supply chain design in healthcare; and Okoroh, Gombera and Ilozor (2002) stress that healthcare facilities management is part of the service chain process. Hersch and Pettigrew (2002) emphasise an efficient health care supply chain to improve the quality of care, health service efficiency, and finiancial benefits of organisation. Recently for Australian pharmacetical supply chain, implementation of e-business process in procurement is emphasised to boost efficiency in the supply chain (Bhakoo & Chan 2011). Brennan (1998) advocates SCI in the health care integrated delivery system for better service efficiencies. For New Zealand, Campbell and Sankaran (2005) identify three distinct dimensions of SCI as internal integration, backward or external integration with suppliers, and forward or external integration with customers. However, the study did not identify critical factors influencing the SCI and their impact on order fulfilment.

A review of the literature indicates that SCI influences and their impact on order fulfilment in public hospitals are not known. It is evident that there is lack of a model or framework for SCI in the public hospitals, which shows critical operational factors of SCI and their impact on order fulfilment in public hospitals. This paper aims to fill the gap in the literature.

The objective of our research is to develop an empirical understanding of the critical operational factors influencing SCI and their impact on order fulfilment. We test the model in the New Zealand public hospital sector and answer the following research questions:

(i) What are the critical operational factors influencing supply chain integration in public hospitals?

(ii) What is the impact of critical supply chain integration operational factors on order fulfilment?

This paper is organised as follows: SCI literature review and hypotheses development; research methodology; data analysis and hypothesis testing; results and discussion; and conclusion and further research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Supply Chain Integration in Health Care

Supply chain integration is the level to which all activities in an organisation and that of its suppliers, customers, and other supply chain members are integrated (Marquez, Bianchi & Gupta 2004). Cox (2004) argues that SCM is a proactive relationship between a buyer and supplier, and the integration is across the entire chain. Hill and Scudder (2002) emphasise the importance of inter-organisational coordination in the supply chain to integrate activities. Organisations must integrate their operations with trading partners in order to sustain competitive advantage for the whole supply chain (Lambert & Cooper 2000). The literature on SCI is composed of three types of integration: integration with suppliers, integration with customers, and internal integration across supply chain (Frohlich & Westbrook 2002, Frohlich 2002, Narasimhan & kim 2002). SCI is considered a suitable approach for improving business performance in a highly competitive market (Narasimhan & Jayaram 2001). Lack of integration between members of a supply chain results in operational inefficiencies and hinders the performance of the supply chain (Lambert 2004).

The operations situation in the health sector regarding SCI lags behind that of manufacturing and other service sectors. Early SCI research has focused mostly on the management process integration issues related to the manufacturing sector and part of the service sector. Little is known concerning how public hospitals can attain SCI. Health care budgets are very tight generally, and that is why health care organisations in all countries are looking for ways to improve the health care supply chain through improving operational efficiencies and reducing costs without affecting quality of patient care. Byrnes (2004, p. 1) states that "25 percent of hospital costs are supply related." The opportunity costs of supply chain inefficiency are enormous. With limited hospital budgets, supply chain inefficiencies consume resources that could be used to make important therapies more available (Byrnes 2004). Hersch and Pettigrew (2002) claim that group purchasing can reduce hospital supply chain expenses by 5% to 15%.

Many authors stress on the use of information technology for health care SCI. Novelli (2004, p. 32) provides examples of health care in the U.S., where he finds that information technology is not effectively or routinely applied to the practice of medicine, noting that "more than 90% of the 30 billion annual medical transactions are conducted by phone, fax or stamped mail. McGrath and More (2001) stated that poorly integrated information systems, certainly comprise a main problem within the Australian healthcare sector. Their study of a major Australian e-commerce project designed to improve pharmaceutical supply chain efficiency within the healthcare sector revealed that the standards set for the project resulted in improved levels of data and systems

integration in both within and between organisations (McGrath & More 2001). The importance of integration was also emphasised by Brennan (1998) who suggested that the healthcare organisations should include the complete supply chain in their integrated delivery systems. In addition, Brennan (1998) emphasised that implementation of e-business process in the procurement function might boost efficiency in the supply chain.

Research Hypotheses

The hypotheses indicated in Figure 1 are exploratory and have not been empirically supported or tested. Armstrong, Brodie, and Parsons (2001) argue that an exploratory hypothesis is the suitable approach to increase knowledge about a phenomenon.

SCI Operational Factors and Order Fulfilment

The success of an organisation regarding SCI depends on how management critically examines the SCI operational factors, which are likely to affect an organisation's ability to successfully implement SCI.

SCI operational factors are concerned with the organisation's activities that can have impact on enhancing SCI in an organisation. Barki and Pinsonneault (2005, p. 165) propose the concept of organisational integration, which is defined as "the extent to which distinct and interdependent organisational components constitute a unified whole" and they identified two intraorganisational integration: (1) internal-operational (integration of successive stages within the primary process chain (workflow) of an organisation) and (2) internal-functional (integration of administrative or support activities of the process chain of an organisation. Akkermans et al. (2003) found that the executives expected further integration of activities between suppliers and customers across the entire supply.

It is important to determine critical operational factors that affect the SCI in an organisation. Hoek and Weken (1998) state that the expected benefits of the increased integration in the inbound and outbound flow of goods are improved responsiveness to customers and increased efficiency in an organisation. The importance of information technology (IT) on operational performance has been emphasized in a study by McAfee (2002), and found that there is a relationship between IT adoption and improvement in operational performance measures (McAfee, 2002). The need to integrate the operations from suppliers to customers has increased tremendously in order to support global operations. Little is known in the literature concerning the influence of SCI critical operational factors on order fulfilment.

The nature of critical operational factors can have influence on order fulfilment. Thirumalai and Sinha (2005) revealed in their study of customer satisfaction with order fulfilment in retail supply chains that customers tend to have higher satisfaction levels with order fulfilment. However, the study conducted by Forslund (2006, p. 580) on performance gaps in the dyadic order fulfilment found that "customers' expectations are not perceived by customers as being fulfilled, customers' expectations are over-targeted by suppliers, but suppliers' internal performance decreases performance".

The study on information sharing and coordination in make to order supply chains conducted by Sahin and Robinson (2005) found that 47.58% cost reduction was achieved as a result of changing from a traditional supply chain to a fully integrated system. In addition, they revealed that although information sharing reduces costs, the major benefit comes from coordinated decision making (Sahin & Robinson, 2005). Furthermore, Petersen and Aase (2004) argue that

batching of orders produce more savings especially when smaller order sizes are common. However, many researchers, including Bozart and Chapman (1996); Daugherty and Pitman (1995) emphasise that organisations should make their operations more flexible and responsive to their customers' requirements and order fulfilment. Hui (2004) argue that strong supply chain integration needs to take into account a firm's resource capabilities and external environments. Hahn, Duplaga, and Hartley (2000) state that improved customer satisfaction can be achieved through good integration of functional activities. In order to improve efficiency and effectiveness in managing business processes that produce and deliver goods and services, it requires the integration of operations management and information systems both within the organisation and with the supply chain members (Barnes, Hinton & Mieczkowska, 2003). The results of a study by Rosenzweig, Roth and Dean (2003) indicate that supply chain integration intensity improves business performance.

In summary, based on the previous studies in the literature, it is shown that integration of operations can improve order fulfilment in an organisation. However, little is known concerning the impact of SCI operational factors on order fulfilment in public hospitals. This leads us to propose the following hypotheses (H3a – H3e):

H3a: *Supply chain integration initiatives have positive influence on order fulfilment.*

H3b: *Organisation strategy and supply chain integration drivers have positive influence on order fulfilment.*

H3c: *Performance improvement and supply chain integration have positive influence on order fulfilment.*

H3d: *Organisation environment forces have positive influence on order fulfilment.*

H3e: *Barriers to supply chain integration have negative influence on order fulfilment.*

Proposed Model:

Based on the literature review on SCI and order fulfilment, we propose a conceptual model and five relevant hypotheses (Figure 1). The construct with combinations OS & SCI, and PI & SCI were caused by exploratory factor analysis.

SCI operational factors

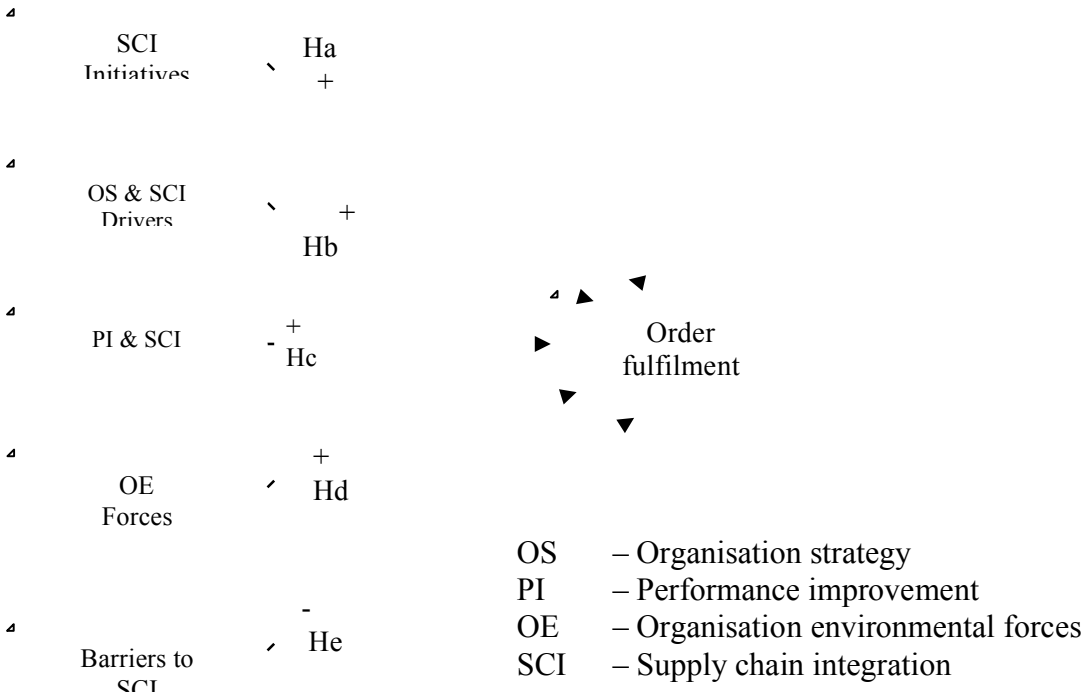

Figure 1. Research model and hypotheses

RESEARCH METHODOLOGY

Survey research approach was used in this study because it was useful to collect information on the type of the problem in this study, examine relationships between variables, and test hypotheses. Data collection is conducted based on the procedures such as information needs, sampling design, instrumentation, data collection, data processing, and report generation (Fowler 2009, Alreck & Settle 2004).

Our research considers all New Zealand public hospitals to test the proposed hypotheses. The survey questionnaire was sent to the population. New Zealand has 21 District Health Boards (DHBs) and 40 public hospitals, which provide services to 4.2 million people.

Initially, in order to effectively design and validate the survey questionnaire before administration, a comprehensive literature review was conducted to identify scales used in past studies to measure the constructs. Afterwards, we conducted preliminary interviews with senior purchasing and supply executives from a number of hospitals which provided additional scale items related to public hospital operations. SCI operational issues (factors) from Fawcett and Magnan (Fawcett & Magnan 2001) were adopted for the survey questionnaire as they were similar to the responses from the preliminary interviews.

Based on the selected variables, a model with five hypotheses was developed. The scales were validated using Churchill's paradigm (1979) to ensure that a valid and reliable scale was developed for the purpose of this study. Before conducting the pilot study, the survey questions were reviewed for content, clarity and ease of understanding by three academics and by two senior purchasing and supply executives from New Zealand public hospitals.

The sample size for the pilot study was composed of 150 purchasing and supply personnel directly involved in purchasing goods and services for the public hospitals. After several reminder emails within a month period, we received 12 usable responses (8% response rate). The sample was too small for rigorous statistical testing, but the responses were enough to determine important measurement items for the main survey. The T- test indicated that there was no significant non-response bias in the data received from the pilot study.

Based on the results of the pilot survey, a revised survey questionnaire for the main study was sent to the population of 350 purchasing and supply personnel in all 21 New Zealand DHBs and 40 public hospitals. 8 questionnaires were returned due to change of address or the contact person was no longer at the hospital. A total of 60 usable responses were received representing 17.2%. The Levene's test for equality of variances was used to evaluate the assumption whether the population variances of the two groups (responses and non-responses) were equal. The result showed that the variances were relatively equal, $p > 0.05$. Therefore, there was no significant non-response bias in the data received from the main study.

DATA ANALYSIS AND HYPOTHESIS TESTING

Assessment of the Normality

The data were assessed to determine normality of distribution because factor analysis and multiple regression analysis both require variables to be normally distributed. A visual examination of the normal probability plots of the residuals (errors in predicting sample data) indicates a normal distribution of the values and meets the assumption of normality. Normality of the distribution of the variables was checked through outliers. The outliers were checked using the partial regression plots which helped to identify influential observations for each independent-dependent observations relationship (Hair, Black & Babin 2006). All the variables were well represented by the relationship and they could not affect the partial correlation.

A variable with an absolute value of Kurtosis index greater than 10.0 indicates there is a problem with normality and values greater than 20.0 indicate a more serious normality problem (Kline & Santor 1999). The acceptable absolute value of skewness and kurtosis should not exceed three and ten respectively. The actual deviation from the normality of distribution was determined using skewness and kurtosis. The SPSS software was used to check both skewness and kurtosis and the result (Table 1) showed that the absolute values were within the acceptable levels (i.e., Kurtosis index < 10.0 and Skewness index < 3.0), which means there was univariate normality. In addition, the visual assessment of normal probability plots indicated that there was no serious deviation from normality.

Three different approaches such as principal component analysis with varimax rotation, the scree plot, and Cronbach's alpha (i.e., items with high inter-item correlation were selected) were used to determine the final number of measurement items required for multiple regression. In order to assess unidimensionality, we used exploratory factor analysis for each construct (Hair, Black & Babin 2006). The factor loadings for each construct are indicated in Table 2. The measurement items have factor loadings between 0.767 and 0.936 exceeding a minimum threshold value of 0.6 acceptable in the literature for new scales (Nunnally & Bernstein 1994).

Reliability Analysis and Construct Validity

The scale reliability feature of SPSS version 17 was used to determine reliabilities for each construct using Cronbach's alpha (measure of reliability). Table 2 also shows the reliabilities of the final constructs. The reliabilities of newly developed constructs met a minimum value of alpha (0.6) recommended in exploratory research, and the adapted constructs had reliabilities between 0.625 (close to minimum 0.7) and 0.798 which are acceptable for the scales (Hair, Black & Babin 2006).

Exploratory factor analysis provides support for acceptable convergent validity. Table 2 shows high factor loadings on a factor that indicate they converge on some common point. A good rule of thumb is that standardized loadings estimates should be 0.5 or higher indicating that variables in each construct are highly correlated and reliable, and ideally 0.7 or higher (Hair, Black & Babin 2006). The indicators or variables in each construct (Table 1) are highly inter-correlated and highly reliable, showing that all indicators are measuring the same (latent) construct (Lee 2000). The convergent validity of the scales was determined by checking the individual item correlations.

Table 1: Measures of the constructs and descriptive statistics

Construct/ Items	Mean	Std. Deviation	Skewness	Kurtosis
Supply chain integration Initiatives (SI)				
• Cross-functional process integration within the hospital (SI1)	3.567	0.851	- 0.557	- 0.375
• Integration with customers (SI2)	3.733	0.709	- 0.739	0.752
Organisation strategy and SC1 drivers (ST)				
• Our organisation's corporate strategy includes SC1 (ST1)	3.567	1.015	- 0.842	0.427
• We have a centralised purchasing department (ST2)	3.783	1.106	- 0.796	- 0.134
Performance improvement and SC1 (SP)				
• Ability to handle expected challenges (SP1)	3.567	0.789	- 0.334	- 0.241
• Lowering cost of purchased items (SP2)	3.967	0.712	- 0.534	0.656
• Hospital profitability (SP3)	3.300	0.849	0.058	- 0.637
Table 5.1 (cont.)				
Organisation environmental forces (SE)				
• Suppliers have initiated integration effort (SE1)	3.067	0.954	0.590	- 0.517

• Customers have initiated integration efforts (SE2)	3.283	0.993	- 0.068	- 1.250
Barriers to SC1 (SB)				
• A lack of willingness to share information (SB1)	3.250	0.856	- 0.346	- 1.241
• Difficult to establish relationships based on shared risks and rewards (SB2)	3.300	0.889	- 0.489	- 1.299
• Inappropriate information systems (SB4)	3.867	0.747	- 0.281	- 0.093
Order fulfilment (OF)				
• We classify inventories according to their importance (OF1)	3.700	0.849	- 0.916	0.227

Construct/ Items	Mean	Std. Deviation	Skewness	Kurtosis
Order fulfilment (OF) cont.				
• We have collaborative planning, forecasting and replenishment (CPFR) (OF2)	3.333	1.036	- 0.151	- 0.557
• We make an effort to control ordering costs (OF3)	3.667	0.933	- 0.571	- 0.487

Note: Calculations are based on 60 measurement items and used 5-point Likert scale.

Table 2: Factor loading, reliability and evidence of convergent validity (significant at the 0.01 level)

Construct	Measurement item	Loading	Cronbach's alpha	Pearson correlation
Supply chain integration initiatives (SI)	SI1	0.780		0.931
	SI2	0.924	0.798	0.898
Organisation strategy and SCI drivers (ST)	ST1	0.767		0.825
	ST2	0.921	0.6	0.855
Performance improvement and SCI (SP)	SP1	0.899		0.845
	SP2	0.846		0.850
	SP3	0.883	0.769	0.798
Organisation environmental forces (SE)	SE1	0.912		0.876
	SE2	0.875	0.711	0.886
Barriers to SCI (SB)	SB1	0.936		0.846
	SB2	0.878		0.863
	SB4	0.802	0.625	0.532
Order fulfilment (OF)	OF1	0.794		0.696
	OF2	0.813		0.765
	OF3	0.884	0.6	0.717

Note: SI1 = Cross-functional process integration
SI2 = Integration with customers
ST1= Organisation's corporate strategy including SCI
ST2= Centralised purchasing department
SP1= Ability to handle expected challenges
SP2= Lowering cost of purchased items
SP3= Profitabillity
SE1= Suppliers initiated integration efforts
SE2= Customers initiated integration efforts
SB1= Lack of willingness to share information
SB2= Lack of shared risks and rewards
SB4= Inappropriate information systems
OF1= Classifying inventories according to their importance
OF2= Collaborative planning, forecasting and replenishment
OF3= An effort to control ordering costs.

The indicators or variables in each construct (Table 2) are highly inter-correlated and highly reliable, showing that all indicators are measuring the same (latent) construct (Hair, Black & Babin 2006). The variable SB3 was removed due to low inter-correlation. Measures of the constructs and descriptive statistics are indicated in Table 1.

The convergent validity of the scales was determined by checking the individual item correlations. The measurement item correlations in each construct are between 0.696 and 0.931. There is evidence that the scales show strong convergent validity and they are adequate for measurement of the regression model.

Multiple Regression Analysis and Test of Hypotheses

Multiple regression analysis predicts the relationship changes in the dependent variable in response to changes in the several independent variables (Forza 2002). In this research, we used multiple regression analysis to test the relationships between the constructs based on the hypothesised model (see Figure 1). Regression analysis results showed that all five tested hypotheses have positive influence on order fulfilment. Summary results of the hypotheses testing with critical factors are indicated in Table 3. Collinearity diagnostics of the SPSS version 17 were used to test for potential multicollinearity effects. Two measurements of multicollinearity were used in this study: tolerance and condition index. The regression analysis of all the hypotheses indicated tolerance (> 20) and condition indices (< 30) showing that there was no significant multicollinearity effects (Hair, Black & Babin 2006).

Supply chain integration and influence on order fulfilment

The regression results are indicated in Table 3.

Hypothesis Ha: Supply chain integration initiatives have positive influence on order fulfilment.

The regression results present moderate support for this hypothesis. The hypothesis is statistically significant at p = 0.01 level for the relationship between supply chain initiatives and collaborative planning, forecasting and replenishment (R^2 = 0.126, F= 4.127, p = 0.021), with one independent variable, cross-functional process within the hospital having a moderate positive impact on the dependent variable collaborative planning, forecasting and replenishment (β = 0.243, t = 1.447, p = 0.153).

Organisation strategy and order fulfilment

Hypothesis Hb: Organisation strategy and supply chain drivers have positive influence on order fulfilment.

The regression results provide strong support for this hypothesis. The hypothesis is statistically significant at 0.01 level for the relationship between organisation strategy and SCI drivers and order fulfilment (classify inventories according to their importance measure) (R^2 = 0.147, F= 4.9, p = 0.01), with two independent variables, organisation's corporate strategy includes SCI, having a strong positive impact on the dependent variable classify inventories according to their importance (β = 0.296, t = 2.201, p = 0.032), and another independent variable, centralised purchasing department, having a moderate positive impact on dependent variable (β = 0.150, t = 1.117, p = 0.269).

In addition, the hypothesis is statistically significant at 0.01 level for the relationship between organisation strategy and SCI drivers and collaborative planning, forecasting and replenishment (R^2 = 0.245, F = 9.253, p = 0.000), with independent variable organisation's corporate strategy includes SCI (β = 0.483, t = 3.824, p = 0.000).

Performance improvement and order fulfilment

Hypothesis Hc: Performance improvement and supply chain integration have positive influence on order fulfilment.

The regression results provide strong support for this hypothesis. The hypothesis is statistically significant at p = 0.01 level for the relationship between performance improvement and SCI, and order fulfilment (classify inventories according to their importance measure) (R^2 = 0.115, F = 2.427, p = 0.075), with one independent variable, ability to handle expected challenges, having a positive impact on the dependent variable classify inventories according to their importance (β = 0.382, t = 2.220, p = 0.030). Also, the hypothesis is statistically significant at p = 0.01 level for the relationship between performance improvement and SCI and order fulfilment (an effort to control ordering costs measure) (R^2 = 0.369, F = 10.921, p = 0.000), with one independent variable hospital profitability, having a positive impact on the dependent variable an effort to control ordering costs (β = 0.647, t = 5.213, p = 0.000).

Organisation environment forces and order fulfilment

Hypothesis Hd: Organisation environment forces have positive influence on order fulfilment.

The regression results furnish moderate support for this hypothesis. The hypothesis is statistically significant at p = 0.01 level for the relationship between organisation environmental forces and order fulfilment (collaborative planning, forecasting and replenishment measure) (R^2 = 0.137, F = 4.515, p = 0.015), with one independent variable, customers have initiated integration efforts, having a positive impact on the dependent variable collaborative planning, forecasting and replenishment (β = 0.343, t = 2.325, p = 0.024).

Barriers to supply chain integration and order fulfilment

Hypothesis He: Barriers to supply chain integration have negative influence on order fulfilment

The regression results provide strong support for this hypothesis. The hypothesis is statistically significant at p = 0.01 level for the relationship between barriers to SCI and order fulfilment (classify inventories according to their importance measure) (R^2 = 0.359, F = 10.432, p = 0.000), with one independent variable, difficult to establish relationships based on shared risks and rewards, having a negative impact on the dependent variable classify inventories according to their importance (β = - 0.861, t = - 5.524, p = 0.000). In addition the hypothesis is statistically significant at p = 0.01 level for the relationship between barriers to SCI and order fulfilment (an effort to control ordering costs measure) (R^2 = 0.299, F = 7.977, p = 0.000), with two independent variables (lack of willingness to share information having a positive impact (β = 0.516, t = 3.182, p = 0.002) and inappropriate information systems having a negative impact (β = - 0.362, t = - 3.190, p = 0.002).

Table 3: The summary results of the hypotheses testing

Hypothesis	Statistical result	Comment (2-tailed)
Ha. Supply chain integration initiatives have positive influence on order fulfilment (i. cross-functional process – collaborative planning)	$R^2 = 0.126$, F = 4.127, p = 0.021	Significant at p = 0.01, Moderately supported
Hb. Organisation strategy and supply chain integration drivers have positive influence on order fulfilment (i: organisation strategy and SCI drivers; ii: collaborative planning, forecasting, and replenishment.)	(i) $R^2 = 0.147$, F = 4.9, p = 0.01; (ii) $R^2 = 0.245$, F = 9.253, p = 0.000	(i) Significant at p = 0.01, supported; (ii) Significant at p = 0.05, supported
Hc. Performance improvement and Supply chain integration have positive influence on order fulfilment (i. classify inventory -importance, ii. control order costs)	(i)$R^2 = 0.115$, F = 2.427, p = 0.075 (ii) $R^2 = 0.369$, F = 10.921, p = 0.000	Significant at p = 0.01, supported; Significant at p = 0.05, supported
Hd. Organisation environmental forces have positive influence on order fulfilment (i. collaborative planning)	(i) $R^2 = 0.137$, F = 4.515, p = 0.015	Significant at p = 0.01, Moderately supported
He. Barriers to supply chain integration have negative influence on order fulfilment (i. difficulty to establish relationships, ii. lack of willingness to share information and inappropriate information systems)	(i) $R^2 = 0.359$, F = 10.432, p = 0.000 (ii)) $R^2 = 0.299$, F = 7.977, p = 0.000	Significant at p = 0.01 , supported

RESULTS AND DISCUSSION

This study identified SCI operational factors and their influences on order fulfilment in the public hospitals. We identified the following key influential SCI operational and order fulfilment factors in New Zealand public hospitals:

SCI Operational factors

- Cross-functional process integration
- Integration with customers
- Organisation's corporate strategy including SCI
- Centralised purchasing department
- Ability to handle expected challenges
- Lowering cost of purchased items
- Profitabillity
- Suppliers initiated integration efforts
- Customers initiated integration efforts

Barriers to SCI

- Lack of willingness to share information
- Difficult to establish relationships based on shared risks and rewards
- Inappropriate information systems

Order fulfilment factors

- Collaborative planning, forecasting and replenishment
- Classifying inventories according to their importance
- An effort to control ordering costs.

Five hypotheses tested (Ha, Hb, Hc, Hd, and He) were found to have positive influence on order fulfilment. The findings suggest that supply chain integration initiatives, especially cross-functional process within the hospital has a strong positive influence on order fulfilment (i.e., collaborative planning, forecsting and replenishment) (Ha). The more hospitals have a higher level of cross-functional process within each hospital, the more they are likely to have collaborative planning, forecsting and replenishment (i.e., order fulfilment). The finding suports Hahn, Duplaga & Hartley (2000) who argue that improved customer satisfaction can be achieved through good integration of functional activities. The importance of cross-functional process as a requirement of an effective plan for order fulfilment was also identified by other researchers (e.g., Davenport & Prusak, 1998; Smith & Farquhar, 2000).

In addition, organisation's strategy that includes suply chain integration has strong positive influence on order fulfilment (i.e., classifying inventories according to their importance and collaborative planning, forecasting and replenishment) (Hb). This finding is in agreement with the work of Min and Yu (2008) who investigated the collaborative planning, forecasting, and replenishment: demand planning in supply chain management. The implementation of colllaborative planning, forecasting and replenishment aimed at improving collaboration between buyer and supplier has been successful in improving order fill rates (Min & Yu, 2008). The hypothesis Hb also was supported regarding the centralised purchasing department having positive influence on order fulfilment (i.e., classifying inventories according to their importance).

The results identify that performance improvement and supply chain integration have strong positive influence on order fulfilment (Hc). The ability to handle expected challenges and profitability (Fawcett & Magnan, 2001) have strong significant impact on the order fulfilment (i.e., classify inventories according to their importance) and an effort to control ordering costs, respectively. The results also showed an unexpected finding that performance improvement and supply chain integration do have significant influence on order fulfilment (i.e., collaborative planning, forecasting and replenishment) (Hc).

Furthermore, the results demonstrate that organisation environmental forces, such as customers have initiated integration efforts are predictors of order fulfilment (i.e., collaborative planning, forecasting and replenishment), indicating evidence to support Hd. The result confirms the finding of the previous study conducted by Fawcett and Magnan (2001) which revealed customers initiated integration, with higher mean average rating than suppliers initiated integration.

As hypothesized, barriers to supply chain integration have negative influence on order fulfilment (He). That is, barriers to supply chain integration factors, such as inappropriate information

systems and difficult to establish relationships based on shared risks and rewards, have significant negative influence on order fulfilment (i.e., an effort to control ordering costs and classify inventories according to their importance, respectively). This study supports Fawcett and Magnan (2001) and Fawcett, Magnan and McCarter (2008) who identified inadequate informations systems, as the most barrier to effective supply chain integration in an organisation, followed by lack of shared risks and rewards, and lack or willingness to share information. Surprisingly, this study found that lack of willingness to share information has strong positive significant influence on order fulfilment (i.e., an effort to control ordering costs). The results indicate that lack of willingness to share information is a predictor of an effort to control ordering costs.

The results of the hypotheses testing discussed above answers the research questions and fulfil the research objective. This study makes a contribution to the process-based management theory by examining the supply chain integration operational factors and their impact on order fulfilment. The study provides a comprehensive understanding of supply chain integration and order fulfilment in public hospitals in New Zealand.

CONCLUSION AND FUTURE RESEARCH

This study achieved its objective by highlighting the impact of SCI operational factors on order fulfilment in the public hospitals. The research contributes to theoretical and practical knowledge by providing a new model for enhancing SCI and order fulfilment in an organisation.

The proposed theoretical model consists of five hypotheses tested using multiple regression analysis. The results support five hypotheses that identify the following critical SCI operational factors which have influence on order fulfilment: integration with customers, establishing centralised purchasing department, lowering cost of purchased items, and inappropriate information systems.

The findings on order fulfilment also provide additional implications. The study results shows that order fulfilment can be improved in the hospitals by classifying inventories according to their importance, having collaborative planning, forecasting and replenishment, and make an effort to control ordering costs. Min and Yu (2008) argue that implementation of collaborative planning, forecasting and replenishment has been successful in minimizing safety stocks, improving order fill rates, increasing sales, and reducing customer response time. Therefore, results of this study are consistent with the findings of Min and Yu (2008). Thus, managers have to pay attention to collaborative planning, forecasting and replenishment in order to fulfil orders effectively.

Furthermore, this study identified three critical barriers to supply chain integration: lack of willingness to share information, difficult to establish relationships based on shared risks and rewards, and inappropriate information systems. Lack of willingness to share information is the most critical barrier of supply chain integration that managers should consider seriously. This finding does not support Fawcett and Magnan (2001) and Fawcett, Magnan and McCarter (2008) who found inappropriate information systems as the most critical barrier to supply chain integration. Managers should focus more on the information input in the appropriate information system for an organisation. Researchers and practitioners can use the survey instrument developed and tested in this study for understanding the general nature of operational supply chain integration factors and their impact on order fulfilment.

Like any research this study has limitations. We used in our study a survey instrument developed initially from the interviews with three procurement executives and the literature. Future research may start with more than three interviews. The sample size of the pilot study was only 12 (usable responses), not sufficient for rigorous statistical analysis. The survey instrument was developed based on expert opinion from New Zealand, and the survey was conducted in New Zealand. The organisational features and practices of New Zealand public hospitals may not have exact similarity with other country's hospitals.

Despite these limitations, the study provides many future research opportunities. Although the research was conducted in the New Zealand public hospital sector, the results have implications for the private hospital sector in other countries and different types of organisations, which are interested in enhancing supply chain integration. Also, a study comparing the nature of supply chain integration in public and /or other private hospital sectors can add value to the literature. Future research could further explore the impact of sustainable operational supply chain integration factors on customer relationships, demand, and returns (reverse) management. An additional future area for research is to conduct a longitudinal study on supply chain integration as perceived by operational, middle and senior management in public and private hospitals or other organisations by sector.

Furthermore, we believe that this research identified a research gap and fullfilled the stated objectives by making a notable contribution to the health care supply chain discipline.

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Barriers to Implementation of Knowledge Management in Hospital Institutions in Saudi Arabia

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Abstract

The rapid growth of medical care presents various challenges, especially in developing countries such as Saudi Arabia. The country's medical care is still struggling to establish standard medical care, that can match that of advanced nations, such as Western Europe and USA. One of the key areas facing this challenge within the medical fraternity of Saudi Arabia is the implementation of Knowledge Management (KM). This section faces barriers of organizational, technical, financial and human nature. Consequently, it requires a multi- faceted problem solving strategy. This article addresses the entire scope of barriers to KM implementation ranging from hospital peculiarities to a comprehensive framework for addressing the problem.

Index Terms-Data, Information, Language, Knowledge

Introduction

This article addresses the emerging barriers to KM implementation in the organization of hospitals in Saudi Arabia. One of the core values of human beings is knowledge. The two types of knowledge include tacit knowledge, which is acquired cognitively and explicit knowledge, which is derived from tacit knowledge through documentation. Consequently, it has become indispensable for organizations, including hospitals to include the newly evolved concepts, skills, tolls and practices in their organizational structure. The ability to collect, process, store and share knowledge, mark the boundary between success and failure in organizations. Another vital part of knowledge in an organization is the learning process. Even though, learning may be a natural process of the brain, considerable growth of an organization relies heavily on proper appreciation of the learning process with an aim of improving intellectual capital. It is also crucial to understand the notion of data and the confusion it has with other aspects of knowledge such as information. As compared to information, data are barely a structured record of transactions from which an organization retrieves information. However, the concept of knowledge is broader and encompasses all matters pertaining to data, information and the process of learning [1].

Problem Description

The role of knowledge, in the context of healthcare, is more significant than in any other industry. Even though knowledge is crucial in the growth of medical organizations, various factors present barriers to effective implementation of knowledge management. These factors range from the complexity of organizational structures to poor-knowledge sharing practices and lack of resources. These barriers create an enormous problem in hospitals due to the inability of the medical fraternity to improve patient care in a timely manner. The subsequent effect is low patient satisfaction coupled with a higher rate of medical errors. The number of medical errors is alarming with an average of 670 errors in the year 2009 alone [1].

Methodology of Investigation

The need for implementation of KM is embedded on its inseparable value in knowledge generation sharing and application aimed at enhancing the performance and profitability of an organization. The main problem with both the network of primary clinics and specialized treatment facilities in Saudi Arabia is their inability to meet the high demand for medical care, due to the numerous barriers to the functioning of the medical field. Investigating the barriers to implementation of KM requires the use of detailed narrative reviews of useful literature, as well as statistical data ranging from charts and diagrams.

Solutions to Medical Errors

There are numerous debates over the action to take to combat the barriers to the implementation of knowledge management in Saudi Arabian hospital organizational structure. One of the sounding proposals sites the provision of Information Technology (IT) infrastructure as a

possible solution. The proponents of this claim aim at improving the storage of personal information of patients to aid in reducing the occurrence of medical errors. Another section of people who claim that error reduction relies heavily on maintaining competency and professionalism among the medical personnel [1]. Eliminating barriers to the implementation of knowledge management, according to some, requires an active consideration of the cultural and social characteristic of the people of Saudi Arabia. The implementation of KM requires the adoption of a single language of communication, preferably English to eliminate the existing communication barrier. However, the most effective means of elimination barriers are the creation of a comprehensive framework of techniques and IT systems.

Data, Knowledge, Information and Knowledge Management

Data mainly refers to strings of numbers, letters without precise meaning. Attaching meaning to data gives information. On the other hand, knowledge is a broader term comprising of a mixture of information and value representing awareness. From the various definitions of knowledge management, it is summed up as a concept of gathering, organizing and analyzing of knowledge with respect to documents and skills from people. It is a pivotal concept in understanding the business conduct of an organization, information collection and utilization, as well as nature of data development and sharing culture.

Knowledge Management on the Global Context

Knowledge Management is gaining wider recognition from professionals and the public. There are four principal areas of the concept, which include the elicitation, archive, transmittal and utility phases. The elicitation phase highlights the importance of data while the archive phase is concerned with organizing knowledge into codes. The transmittal phase deals with connecting generators of knowledge to users, while the utility phase enables hospital workers to put into practice the acquired knowledge. Most organizations focus on scientific and IT evolution, to acquire a competitive edge over their competitors [1].

Knowledge Management Implementation in Hospitals of Saudi Arabia

An even economic growth within the country is guaranteed through considering such factors as equity, gender, and age among the residents of the country. Saudi Arabia has implemented the use of KM within the business strategy of public sector; however, KM is used widely in the private sectors. Following the need to ensure the use of KM in the development strategies of organization, the Ninth development plan was enforced to shift the country's economy to a knowledge-based economy level. Managing knowledge in the Ninth plan had six basic directions to attend to for long-term economic stability. This is achieved by focusing on technology people and processes covering factors such as leadership, learning, organization, and technology. Among the advantages associated with KM are; enhancement of productivity, boosting trust rate, enhances knowledge sharing process as well as transparency, decentralization of power and attraction of employees [1].

Knowledge Management Implementation Barriers

The barriers are grouped into organizational, human, technical, financial and political barriers. Nevertheless, KM is threatened by aspects such as; language barriers, closed society of Saudi Arabia, and human resource management structure.

Organizational Barriers

Organizational Barriers include poor management support, poor organizational structures, lack of leadership, poor organizational structure, insufficient planning, lack of awareness of KM provisions and lack of knowledge sharing. These barriers are the most critical barriers for the implementation of KM.

Human Barriers

Human Barriers link closely to organizational barriers. The main human barriers include cultural barriers, extra effort and time requirements, employee's opposition, staff retirement, staff defection and failure in ownership. These barriers lead to poor employee motivation, who subsequently fails to be committed to work and reduces their productivity and drive to achieve the objectives of the sector.

Technical Barriers

Technical Barriers include insufficient infrastructure, poor IT design and planning, poor networking and lack of maintenance and training needs. These barriers pose a threat to the implementation of KM since it is virtually impossible without the involvement of the IT department.

Political Barriers

Political Barriers include the challenges involving the creation of meritocracy of ideas and knowledge markets.

Financial Barriers

On the other hand, Financial Barriers comprise of the global economy, financial needs for professional development, poor financial investment of the organization, security concerns, and insufficient IT investment [1].

Knowledge Management Implementation Barriers in Hospitals

Table I: The table below shows the impact of barriers to human resource management, language and closed society. The symbol * represents major impact, ∇ refers to minor effect, and ∅ shows no impact. (Courtesy of dissertation of KM Implementation Barriers in Hospital Organization in Saudi Arabia)

Types of Barriers	Elaborations of each barrier	Language	Human Resources Management	Closed Society
Organizational Barriers	Poor Organizational Structure →	*	*	*
	Inefficient Planning →	*	*	*
	Lack of Leadership →	∇	*	*
	Poor Managerial Support →	∇	*	∇
	Poor Organizational Culture →	*	∇	*
	Lack of Knowledge Sharing →	*	∇	*
	Unawareness of KM Provisions →	∇	*	*
Human Barriers	Cultural Barrier →	*	*	*
	Opposition →	*	*	*
	Extra Time and Effort Requirements →	*	*	∇
	Staff Retirement →	∇	*	*
	Staff Defection →	*	*	*
	Problem of Failure Ownership →	∇	*	∇
Technical Barriers	Inefficient Technological Infrastructure →	*	∇	*
	Poor Networking →	*	∇	*
	Poor IT Design/Planning →	∇	∇	∇
	Lack of IT Training →	V	∇	∇
	Maintenance Requirements →	∅	∅	∅

Financial Barriers	Global Economy →	*	∇	*
	Poor Organizational Financial Investment →	∅	∅	*
	Poor Professional Development →	∇	*	*
	Inefficient Investment in IT →	∅	∅	*
	Security →	∅	∅	∅
Political Barriers	Knowledge Market Barrier →	*	*	*
	Meritocracy of Ideas →	*	∅	*

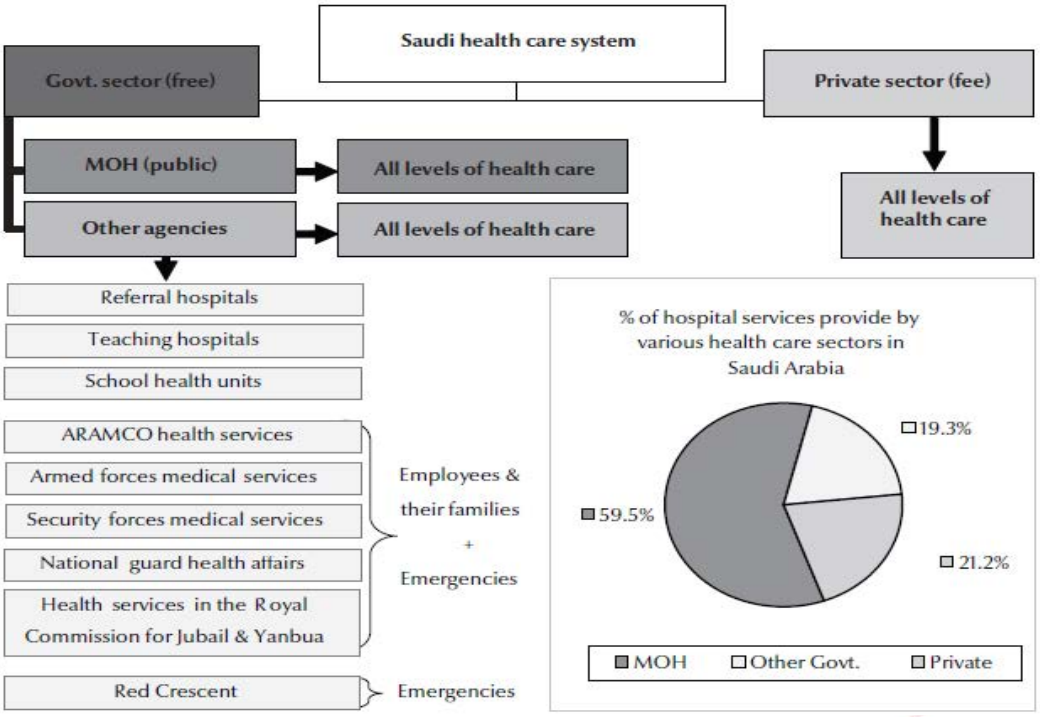
Discussion

Saudi Arabia Hospital System overview and structure

As a member of World Health Organization, SA has two branches of the hospital system. These are the government and private sectors. The chief hospital provider is the Ministry of Health (MOH) concerned with the needs of public hospitals and financing the public health service. MOH provides 605 of health care services of the country. Government agencies significantly contribute in the provision of hospital services. They include; school health units, referral hospitals and teaching hospitals to name but a few. These agencies work under full-time inspection and investigation by the government.

The structure of the hospital system of Saudi Arabia is well represented in the figure as follows:

1. **Fig I: Current Saudi Arabian Hospital Structure**



Source: **(**Courtesy of dissertation of KM Implementation Barriers in Hospital Organization in Saudi Arabia)

Government Plans for Development

The law binds the government to deliver free medical care services for the residents. This is achieved through implementation of health policies that protect the rights of citizens to free medical services. The government plans on improvement of health care services revolves around the health care strategies that seek to solve challenges facing hospital systems. These challenges include; high cost of medical technologies and equipments, expensive medical services and tools, efficient treatment for chronic sickness, and provision of efficient long-term therapy services.

Development of Model for Implementation of Knowledge Management in Hospitals

In a bid to establish a satisfying hospital system, the government is planning to implement a number of reforms in technological, administrative and human-related sectors. Cooperative care insurance is an ultimate government's plan in the ensuring quality health services and patients' well-being. Knowledge management is directly linked with change management [1]. This is

because KM involves implementation of cultural, structural and technological changes. The KM structure in hospitals should involve; design analysis, evaluation of infrastructure, knowledge management deployment, and evaluation.

Conclusion

Despite all the unique factors (closed society, perception of work status, and religion) surrounding the country, implementation of Knowledge management is one of the most significant strategies for improving healthcare services in Saudi Arabia. Research findings have formed a strong basis for drawing a conclusion that supports the claim that; hospital performance can be enhanced through constant improvements and reforms taken under the implementation of KM in the hospital's management systems.

Limitations and Recommendation

The study of KM was highly limited by the content of accessible resources. Therefore, it is recommended to foster further discovery of hospitals in the context of KM implementation based on the wide range of information available for the study of KM. the recommended resources constitute the use of government documents and medical-oriented records. The other limitation is the absence of statistical information that supports practical evidence. The recommendation involves the selection of appropriate research methodology that involves statistical methods, as opposed to narrative literature.

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India's Economic Growth: Quest for Sustainability

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Abstract

The global economic meltdown, triggered by sub-prime crisis, closely followed by Euro zone crisis and Middle East turmoil coupled with natural disasters such as earthquakes, floods and tsunami has been threatening the economic recovery of the entire world in general and developing countries in the Asian region in particular. Though, the Indian economy because of its strong fundamentals could successfully meet the global challenges the growth rate has slowed down considerably since 2010. The million dollar question is whether this slow down is entirely due to global recession or internal factors and populistic economic policies of the government have something to do with that? Another question is what needs to be done to maintain the growth rate of economy? Also, how effective had been the measures taken by the government so far?

In this paper, efforts have been made to identify the impact of global economic recession as well as internal factors such as trade deficit, fiscal deficit, defence expenditure, subsidies, inflation, etc; and also natural disasters like floods and drought on the GDP growth. Data for the study have been collected from Reserve Bank of India, National and Central Statistical Organization, India. The statistical tools like log-linear, log-quadratic and multiple regressions have been used to find out the relationship between GDP growth and aforesaid internal and external factors.

The study reveals that India's GDP growth had accelerated and shifted the growth path after the economic reforms in 1991. Though the global meltdown has affected the autonomous growth of Indian economy but during 1991-2010, the impact was not very significant. Of late the inflation, trade deficit, fiscal deficit and sliding value of Rupee in terms of US dollar have put a question mark on the sustainability of India's economic growth. Our analysis shows that to maintain the growth rate of economy, the country will have to reduce subsidy and cut down the unproductive expenses to reduce inflationary pressure on the economy. Fiscal deficit and trade deficit need to be brought under control.

Key Words: Global Meltdown, Natural Hazards, Policy Impact, Gross Domestic Product, Trade Deficit, Fiscal Deficit

Introduction:

After India got her independence from the colonial rule in 1947, the process of transformation in the economy started. Various policies and schemes were formulated. In 1952, Five Year Plans started by Indian government, focused on the needs of Indian economy. In one hand agriculture received the immediate attention on the other side industrial sector was developed at a fast pace to provide employment opportunities to the growing population and to keep pace with the developments in the world. Since then Indian economy has come a long way. The economic development in India followed socialist-inspired policies for most of its independent history, including state-ownership of many sectors. The Gross Domestic Product (GDP) at factor cost, which was 2.3 % in 1951-52 reached about 8.5% in financial year 2009-10. There was extensive regulation and isolation from the world economy. India's per capita income increased at only around 01 percent annualized rate in the three decades after Independence.

Since the mid-1980s, India has slowly opened up its markets through economic liberalization. Trade liberalization, financial liberalization, tax reforms and opening up to foreign investments were some of the important steps, which helped Indian economy to gain momentum. The Economic Liberalization introduced by Mr. Man Mohan Singh in 1991, then Finance Minister in the government of P V Narsimha Rao, proved to be the stepping-stone for Indian economic reform movements.

Since 1991, Indian Economy has grown at an average rate of about 6.0 percent per annum. This growth rate is believed to be sustainable for the next 20 years. The annual compound growth rate peaked during 2000-01 and 2010-11 at about 8.0 percent. India’s economic growth is largely attributed to the growth in the IT and service sectors. In recent years India has emerged as a major player in the IT industry.

Review of Literature:

The global economic recession has taken its toll on the Indian economy that has led to multi-crore loss in business and export orders, thousands of job losses, especially in key sectors like the IT, automobiles, industry and export-oriented firms. It has also shaken up the investment arena. It is a difficult phase for a growing economy like India (Upadhyaya, 2011).

The empirical evidence on the social costs of the East Asian financial crisis has provided a vivid illustration of the devastating impact that large output contractions can have on the poor. In Indonesia, for instance, the incidence of poverty (measured on the basis of the national poverty line) rose from 11% to 18% between 1996 and 1999. In Korea, the urban poverty headcount index rose from 8.5% to 18% in 1997-98; and in Thailand, the incidence of poverty increased from 11.4% in 1996 to 12.9% in 1998 (Krongkaew, 2001 a,b). Income of the poor fell as a result of both lower wages and higher unemployment (Horton and Mazumdar, 2001). The effect of the crisis on very poor households In Indonesia was also exacerbated by the dramatic increase in their cost-of-living index, which resulted to a large extent from the impact of the sharp depreciation of the exchange rate on domestic prices (Levinsohn, Berry, and Friedman, 2001).

Most of the researchers have explained that droughts and floods focus on the agricultural sector as the main channel through which the economy is affected. Whether these studies apply CGE models in the traditional ex ante manner to explore the impacts of hypothetical events (Boyd and Ibarraran 2009 and McDonald 2000) or to assess actual historical events (Horridge, Madden, and Wittwer 2005), a common feature is the use of information on the

biophysical impacts of extreme events, which is typically measured in terms of crop yield declines or agricultural land losses, in setting up the simulations. Such information may come from historical analyses of comparable events or from partial equilibrium crop production models.

The relationship between income growth and carbon dioxide emissions is widely hypothesised that pollutants and income are tied together in a Kuznets relationship (Shafik and Bandyopadhyay, 1992; Grossman and Krueger, 1995; Stern, 2004). The CO_2 per capita and income per capita increase together until a certain income level is reached at which growth of the pollutant flattens and then reverses. The existence of an Environmental Kuznets Curve (EKC) implies that once a certain level of income has been reached, economic growth can be secured without a proportional increase in pollutants. The corollary is that environmental degradation is best addressed through economic growth (World Bank, 1992). Some of the researchers have argued that economic growth involves an increase in emissions of carbon dioxide and that any attempt to curtail emissions will restrict economic growth (The Russia Journal, 2003).

From the empirical studies, it is revealed that there is no clear-cut agreement among the researchers about the nature and extent of the growth effects of defence expenditure. For example, by using the Feder–Ram models, Ram (1986), Atesoglu and Mueller (1990) and Ward et al. (1991) found a positive impact, while Biswas and Ram (1986), Alexander (1990) and Huang and Mintz (1991) concluded that there exists no relationship at all. With regard to the single demand-side equations, Smith (1980) and Rasler and Thomson (1988) showed a negative impact of defence spending on growth. Finally, evidence from most of the simultaneous equation models indicates a negative impact of defence expenditures on economic growth (Deger, 1986; Antonakis, 1997). Sezgin (1997), using a Feder–Ram model, found a positive effect, while Ozsoy (2000), using the same method, found no impact in case of Turkey. However, these findings are considered to be dubious (Brauer, 2002), as Sandler and Hartley (1995, pp. 206–209) states that the Feder-Ram type model is inherently structured to find a positive impact of defence expenditure on economic growth. Moreover, using the Granger–Causality analysis, Sezgin (2000) showed that there exists a negative impact of defence expenditure on economic growth. Sezgin (1999, 2001), on the other hand, using a Deger type model showed a positive effect of defence expenditures on growth in the Turkey.

There is a debate about whether the fertilizer subsidy benefits the farmers or the fertilizer industry (Gulati, 1990, Gulati and Sudha, 2003). Furthermore, the benefits of fertilizer subsidy are heavily tilted to large farmers growing water-intensive crops like rice, sugarcane, wheat, cotton, in a handful of states (Gulati and Sudha (2003).

Fiscal deficits play a role especially during currency crisis. If a country follows a fixed exchange rates and also runs a large fiscal deficit it could lead to speculative attacks on the currency. Higher deficits imply government might resort to using forex reserves to finance its deficit. This leads to lowering of the reserves and in case there is a speculation on the currency, the government may not have adequate reserves to protect the fixed value of the currency. This pushes the government to devalue the currency. So, though fiscal deficits do not have a direct bearing on foreign exchange markets, they play a role in case there is a crisis (Agrawal 2011). Though economists have different conclusions on the effects fiscal deficit, a lot of empirical results and the real world do not falter from evidencing the negative consequences. Studies made by Fischer (1993), Easterly et al., (1993, 1994, 1992), Bleaney et al., (2001) supported the adverse effects of fiscal deficit on economic growth.

Paulson (1989) examines the impact of monetary policy on Indian economy in the pre-reform period. The study reveals that the single important factor that influences the money supply in the economy is the reserve money. He points out a positive correlation between inflationary pressures and administered prices, and what is required, he suggests, to achieve price stability, is a cordial and symbiotic relationship between monetary policy and fiscal policy. Inflation is a monetary phenomenon which is triggered by the excessive creation of money.

In an article Inflation, Monetary Policy, and Financial Sector Reform, published in Southern Economist, Tarapore (1993) advocated inflation as a tax on the weaker sections of society. The need for a monetary relaxation is often argued as being helpful to the weakest sections of society. Nothing could be farther from the truth. The curtailment of inflation is the best anti-poverty programme and therefore a strong anti-inflationary monetary policy is in consonance with societal concerns. He also predicts that the imminent developments in the securities market in the foreseeable future call for development of entirely new skills in the Reserve Bank, the commercial banks and financial institutions.

Objectives:

1. To evaluate the performance of economic Indicators since 1991
2. To find out the factors affecting India's economic growth
3. To glance on the symptoms of recession and find out causes of recession in India
4. To identify major strategies for improvement in Indian Economy

Research Methodology:

The study covers a period from1990-91 to 2011-12. The Data for the study were collected from various published sources, mainly from Reserve Bank of India, National Accounts Statistics of India and Central Statistical Organization, New Delhi at current price.

For the estimation of compound annual growth rate, the following semi log trend equation has been used: Log $Y = \beta_0 + \beta_1 T + U$, Where Y is the dependent variable, T = Time, β_0 and β_1 = regression coefficients, U = The Error Term. Trend compound growth rate is estimated by (Antilog $\beta_1 - 1$) X100.

The constancy of long–term growth rate has been tested with the help of semi log quadratic equation – Log $Y = \beta_0 + \beta_1 T + \beta_2 T^2 + U$, Where β's are regression coefficients. The value of β_2 explains acceleration/deceleration in growth rate. Significant and positive value of β_2 indicates acceleration in growth rate while negative but significant value reflects deceleration in the growth rate. Insignificant value of β_2 indicates constancy in the growth rate.

In case of acceleration in growth rate, there must be some point of shift in the growth rate. In order to find out the year of shift in growth, following equation with dummy variables has been used (Rao & Miller); Log $Y=b_0+b_1T+b_2D+b_3DT+U$, Where bs are regression coefficients, b_3 represents intercept of dummy variable and b_3 is the slope of dummy. D is the Dummy variable representing the shift in the growth rate. It takes 0 for the period shift or breaks through and 1 otherwise. Thus the trend equation before and after shift will be as follows. Log $Y=b_1+b_2T$ (before shift) and Log $Y= (b_0+b_2) + (b_1 +b_3) T$ (after shift). Respective growth rates are estimated from this estimation for two periods that is pre and post reform period.

We have used multiple regression equations to find out factors affecting growth of Indian economy. $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$ .....+ U, where Y is the dependent variable, Xs are independent variables, β_0 and βs are regression coefficients and U is the error term. The positive and negative impacts are indicated by coefficients of independent variables. The

identified factors affecting growth of national income are Defence Expenditure, Subsidy, Inflation Rate, Trade Deficit, External Debt, Gross Fiscal Deficit, Foreign Exchange Reserve, Gross Terms of Trade and Non-Development Expenditure.

Performance of Various Economic Indicators from 2001 to 2011

The economic development of any country largely depends on the systematic growth of three important sectors such as Agriculture Industry, and Services. The contribution from these sectors makes possible the nation to conquer sustained economic growth. Intensification of three sectors is very essential; otherwise it would lead to social disasters and create an environment in which normal living will become impossible. The performance of Indian economy is shown in the Table No-1.

Agriculture plays crucial role in the Indian economy. Agricultural Production has grown at a compound rate of 3.0 percent per annum. Though its contribution to the overall Gross Domestic Product (GDP) of the country has fallen from about 30 percent, in 1990-91 to less than 15 percent in 2011-12, a trend that is expected in the development process of any economy, agriculture yet forms the backbone of development.

India has followed the strategic planning for its industrialization. The plans were implemented under the framework of a mixed economy with a considerable role for the public sector. The public sector was assigned the dominant role in heavy and key industries and the private sector, mainly the consumer goods industries. However, Industrial Production has grown at a compound rate of 7.9 percent during 2001-2011. It is expected that industrialization would solve major economic problems like unemployment, under-employment, under-utilization of natural resources, capital formation, etc.

As a tertiary sector, service sector plays an important role in the economy of a country. The growth of service sector has the ability to transform a developing country to a developed one. Services have grown at a compound rate of 9.6 percent during 2001-11. During the last two decades India has emerged as an IT superpower, thanks to the service industry. The compound growth of Exports is about 15 percent and the Imports have also increased by 17 percent during this period.

Table No-1: Performance of Indian Economy since 2001 to 2011

Economic Indicators	***Time Period 2001-02 to 2010-11***	***Coefficients***	***Standard Error***	***t Stat***	**R Square**	***Growth Rate (%)***
GDP at market prices	Intercept (b_0)	6.379	0.005	1385.44	0.9963	8.24
	X Variable (b_1)	0.034	0.001	46.32		
Agricultural Production	Intercept (b_0)	5.699	0.009	668.747	0.9212	3.01
	X Variable (b_1)	0.013	0.001	10.260		
Industrial Production	Intercept (b_0)	5.625	0.008	733.264	0.9896	7.93
	X Variable (b_1)	0.033	0.001	29.320		
Services	Intercept (b_0)	6.065	0.004	1402.65	0.9977	9.618
	X Variable (b_1)	0.040	0.001	62.555		
Exports of	Intercept (b_0)	5.503	0.031	176.82	0.9483	15.01

Goods and Services	X Variable (b_1)	0.061	0.005	12.11		
Imports of Goods and Services	Intercept (b_0)	5.538	0.028	197.09	0.9662	17.09
	X Variable (b_1)	0.069	0.005	15.13		
Gross fixed capital formation	Intercept (b_0)	5.644	0.040	139.64	0.9256	16.14
	X Variable (b_1)	0.065	0.007	9.97		
Changes in stocks	Intercept (b_0)	4.381	0.103	42.61	0.8130	25.24
	X Variable (b_1)	0.098	0.017	5.90		
Gross Domestic Saving	Intercept (b_0)	5.695	0.022	262.36	0.9836	19.27
	X Variable (b_1)	0.077	0.003	21.88		
Investment on Infrastructure	Intercept (b_0)	4.111	0.016	259.03	0.9907	18.80
	X Variable (b_1)	0.075	0.003	29.25		
Foreign Exchange Reserve	Intercept (b_0)	4.759	0.059	81.18		
	X Variable (b_1)	0.082	0.009	8.72	0.9047	20.88
Gross Fiscal Deficit	Intercept (b_0)	4.951	0.099	50.08	0.6196	
	X Variable (b_1)	0.058	0.016	3.61		14.16
Gross External Debt	Intercept (b_0)	5.569	0.026	213.48	0.9559	
	X Variable (b_1)	0.055	0.004	13.17		13.60
Inflation	Intercept (b_0)	0.568	0.095	6.01	0.2937	
	X Variable (b_1)	0.028	0.015	1.82		6.61

Source: indiastat.com

During 2001-11, it is found that Gross Fixed Capital Formation has increased by 16 percent compounded annually. The Investment (Change in Stock) has also increased by a compound rate of about 25 percent per annum. The Gross Domestic Saving has increased by 19 percent per annum. Investment on Infrastructure has risen by 18.8 % per annum. The Foreign Exchange Reserves have risen at the rate of 20 percent compounded per annum.

There are some negative developments in India. India's Fiscal Deficit has been increasing at a compounded rate of 14 percent per annum. Gross External Debt is rising by 12.5 percent per annum. Inflation is rising by 6.61percent per annum. It is also felt that social and economic inequality is rising fast. There is a growing mismatch between the demands being made on the state and its capacity, in every sense of the term, to deliver on them.

Factors affecting India's Economic Growth:

We have run multiple regression equation to find out the impact of various factors on Gross Domestic Product (GDP) of India. It is seen that the explanatory power of the model is quite satisfactory with significant value of F ratio. It is found that global recession has significant negative impact on Indian Economy. Natural disasters like floods are negatively affecting the growth of economy (Table No-2). Fiscal deficit is negatively affecting the growth of economy in India. Rising fiscal deficit is proved to be one of the major setbacks for India. Inflation rate has significant negative impact on the economy. Trade Deficit is also negatively affecting the economy during post reforms period (Table No-3).

It is also found that gross fiscal deficit has negative impact on GDP Growth. Non-developmental expenditures such as such as rural employment guarantee, loan waiver for farmers, freebies to students etc are hindering the growth of economy. Exchange Rates

especially with USD, Pound Sterling and Japanese Yen are adversely affecting the growth of Indian economy (Table N0-4).

Table No-2: Cyclical and Natural Hazards on GDP

R Square	***Adjusted R Square***	***Std. Error of the Estimate***	***F Value***	***Significance***
0.9936	0.9929	0.0197	1394.509	0.000
Indicators	***Coefficients***	***Standard Error***	***t Stat***	***P-Value***
(Constant)	5.582	0.062	90.331	0.000
Recessions	-0.011	0.007	-1.541	0.135
Flood damages	-0.004	0.015	-0.242	0.811

Sources: Various Issues of Economic Survey, RBI Bulletins and www.indiastat.com

Table No-3: Policy Impact on GDP

R Square	***Adjusted R Square***	***Std. Error of the Estimate***	***F Value***	***Significance***
0.9935	0.9911	0.0221	418.656	0.000
Indicators	***Coefficients***	***Standard Error***	***t Stat***	***P-Value***
(Constant)	4.851	0.150	32.282	0.000
Percentage of Defence Exp to Total Govt. Expenditure	0.014	0.005	2.553	0.018
Percentage of Subsidy to Total Govt. Expenditure	0.017	0.004	3.809	0.001
Inflation Rate	-0.005	0.001	-4.043	0.001
Trade Deficit to the percentage of Total Exports	-0.001	0.000	-2.511	0.020
Log External Debt	0.083	0.031	2.710	0.013
Gross Fiscal Deficit to Percentage of GDP	-0.011	0.005	-2.211	0.038
Log Foreign Exchange Reserve	0.122	0.030	4.105	0.000
Gross Terms of Trade	0.001	0.000	4.129	0.000
Non-Development Exp.	-0.001	0.000	-2.621	0.023

Sources: Various Issues of Economic Survey, RBI Bulletins and www.indiastat.com

Table No-4: Impact of Exchange Rates on GDP

R Square	***Adjusted R Square***	***Std. Error of the Estimate***	***F Value***	***Significance***
0.9688	0.9626	0.0452	155.370	0.000
Indian Rupees. VS Foreign Currency	***Coefficients***	***Standard Error***	***t Stat***	***P-Value***

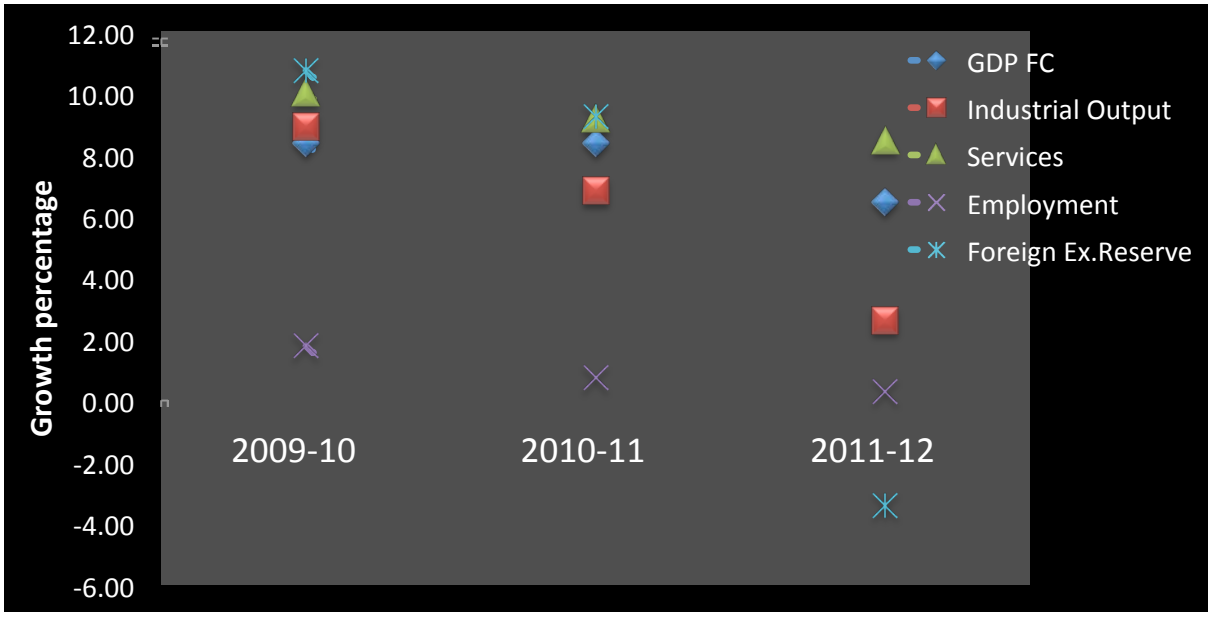
(Constant)	5.929	0.024	245.346	0.000
SDR	0.013	0.006	2.034	0.053
USD	-0.009	0.004	-2.123	0.044
Pound Sterling	-0.002	0.003	-0.553	0.585
Deutsche Mark / Euro	0.006	0.001	4.602	0.000
Japanese Yen	-0.091	0.514	-0.177	0.861

Sources: Various Issues of Economic Survey, RBI Bulletins and www.indiastat.com

Symptoms of Slowdown:

When we glimpse over the data of Indian economy for last three years, it is found that GDP has started falling since 2010-11 to 6.48 percent in 2011-12. The industrial output is also falling from 8.93 percent in 2009-10 to 2.62 percent in 2011-12. The contribution of services has fallen from 10.03 percent to 8.48 percent in 2011-12. The growth of employment is also lessening from 1.78 percent in 2009-10 to 0.31 percent in 2011-12. There is a great loss of 3.42 percent in foreign exchange reserve growth. It is shown in the figure no-1.

Figure No-1: Indian Economy during the Last Three Years



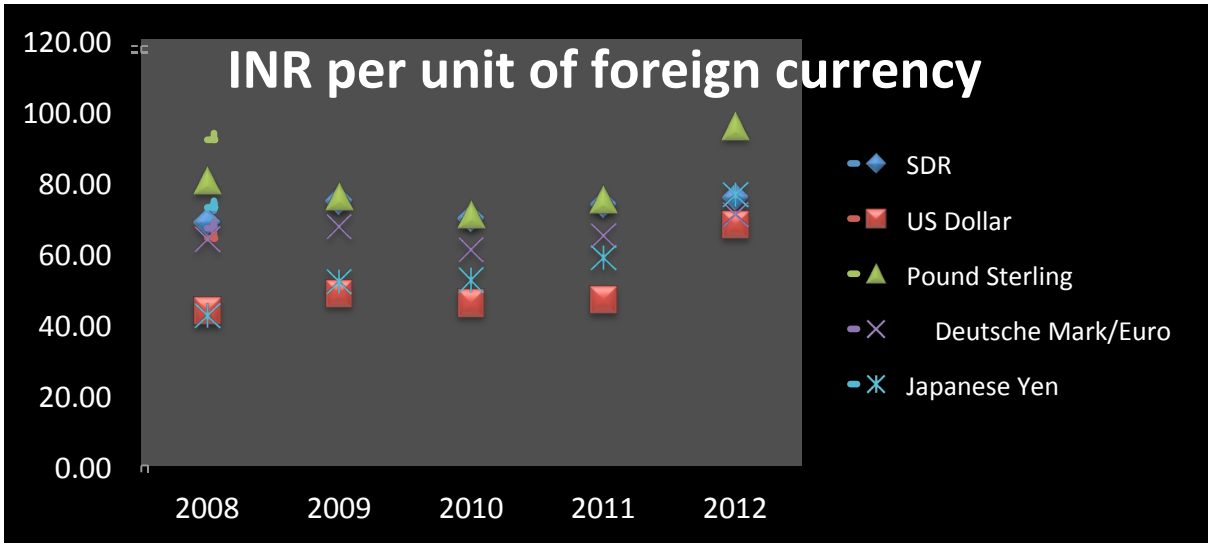
From the above figure it is deduced that the growth rate of GDP is declining since 2010. There is a steep decline in Industrial production since 2009-10. The contribution of Services sector to GDP is also slopping downwards since 2009-10. The incremental growth of Exports is falling since 2009-10. Foreign exchange reserve is plunging since 2009-10. Therefore, overall quality of life is worsening. These are the significant indicators of slowdown in Indian economy.

Possible Reasons for Slowdown:

1. Unproductive expenditure on populist policies such as rural employment guarantee, loan waiver for farmers, freebies to students etc. has been increasing during the last three years.

2. Private investment in infrastructure has fallen for a variety of reasons. For example, investment in telecom has dried up because of regulatory and legal issues. Secondly, investment in the power sector has suffered because of coal shortages and the financial condition of the state electricity boards. Third, road projects have slowed down because of land acquisition and environmental clearance issues and also because road construction firms are highly leveraged and are unable to access equity in the present market conditions.
3. There were no special attentions towards Micro and Small Scale Industries by the government or by any private participants.
4. There is a slow pace of financial reforms. Financial reforms such as rationalisation of the taxes, tightening fiscal management through the FRBMA and the continuing increase in the fiscal deficit, forms in the external sector for increasing foreign capital inflows, FERA replaced by FEMA, RBI issued guidelines allowing private sector banks to enter the banking sector, bank nationalisation and liberal entry of foreign banks, Liquidity Adjustment Facility (LAF) etc, are categorized as classical school of thought. All these financial reforms are not helping in accelerating economic growth.
5. India is providing intense subsidy on petroleum products and electricity; also free electricity to certain sections of society.
6. Trade deficit has increased rapidly during the last three years. It was US$ 109.6 in 2009-10, which increased to US$ 189.7 in 2011-12.
7. There is a fall in FDI equity inflows in India. The flow of FDI has declined by 5 percent in 2009-10 and followed by 25 percent fall in 2010-11. However, it has recovered by 24 percent, still lesser than that of in 2008-09.
8. Exchange rates are continuously fluctuating for Indian currency. Sliding value of Rupee has made considerable negative impact during the last three years (Figure No-2).
9. Expenditure on Defense has risen during the last three years. It was Rs. 1142.23 Billion in 2008-09 and increased to Rs. 1934.07 Billion in 2012-13.
10. Cost of Bureaucracy is rising consistently in India. It was Rs. 1164.3 Billion in 2009-10 and increased to Rs. 1401.3 Billion in 2011-12.

Figure No-2: Sliding Value of Indian Rupee



Strategy for improvement in the Indian Economy

1. There is a need of cutting-down unproductive expenditure in the fiscal budget of India. India should be more caution in maintain fiscal discipline. Orientation of public expenditure towards sectors in which India is faring badly such as health and education.
2. Urgent need of implementation of Big Push Theory is required in India. This may require large amounts of investments to embark on the path of economic development. In fact, injections of small quantities of investments will merely lead to wastage of resources.
3. More Investments are needed in Infrastructure and Technology. Reorganization of agricultural sector, introduction of new technology, reducing agriculture's dependence on monsoon by developing means of irrigation.
4. New wave of Financial Reforms is required. Introduction of financial reforms including privatization of some public sector banks will be beneficial to the economy.
5. Subsidies on petroleum products and electricity consumption need to be reduced.
6. Diversifying Export Portfolio by selecting markets and indentifying thrust products by Indian exporters.
7. Indian government should reduce dependency on IT exports.
8. Introduction of reforms in labour laws to generate more employment opportunities for the growing population of India.

Conclusion:

For speedy recovery India needs to reduce the trade and fiscal deficits by promoting exports, cutting down on government spending and non development expenditures on populist policies. The major causes of slowdown must be dealt carefully by the Indian Government. The strategies such as cut-down unproductive expenditure, more investment in infrastructure and technology, new wave of financial reforms, reducing subsidies on petroleum products and electricity consumption, diversifying export portfolio, reducing dependency on IT exports etc., will be very helpful to maintain growth rate of economy in Indian. The major challenges such as population explosion, poverty, unemployment, rural urban divide, etc. can be overcome by the sustained and planned economic reforms.

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*www.onlineijra.com/catogery/***Global Recession**: **Impact** In **India**. Deepika Upadhyay **Cited** on dated 29th July, 2012.

Emerging Influence of Mobile Technology in Supply Chain Management in Indian Industries

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Abstract

Global supply chains require integration of production and distribution processes for efficient delivery of products to the market. It is thought that sophisticated technology, and Internet access are critical to the effective management of supply chains. However in India, a developing country, poor Internet connectivity, security concerns, and the cost of implementing IT systems act as a hindrance in extensively using Internet based technologies. In India mobile technology is readily accessible, available and inexpensive. It is also easy to use, and as such, it appears that many members of supply chains are adopting and using mobile technology as their method of communicating with supply chain partners. This research is an attempt to understand the role of mobile technology as an alternative technology for supply chain management among supply chain partners. We find that in India, mobile phones are extensively used in supply chain coordination, even when companies have reliable Internet access. It seems that an effective, readily accessible communication tool such as a mobile phone is a key component in the successful management of a supply chain.

Keywords: Developing countries, India, mobile technology, supply chain management.

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Introduction

It is known that strong supply chain performance provides a competitive advantage for companies (e.g., Christopher 1998; Simchi-Levi et al. 2000). Supply chains require integration of production and distribution processes for facilitating efficient delivery of final products to the market. Integration is built on coordination and partnerships among supply chain members. Maximizing supply chain performance involves improving three primary measures of supply chains: flexibility performance, resource usage performance and outputs performance (Beamon 1999). Three factors have been shown to have an impact on these three performance outcomes: (i)supply chain integration; (ii)information sharing; and (iii)supply chain design (Sezen 2008). What is less clear, is how these three factors can be positively impacted. That is, what are the ways in which supply chain integration, information sharing and supply chain design be facilitated? One very general, and quite widely suggested mechanism to accomplish this is through advanced information technology (IT) and the Internet (e.g., Eng 2006; Lee and Park 2008; Wu et al. 2006). However, what happens when these advanced technologies and Internet access are not readily available?

In some developing countries such as India, these advanced technologies and information systems are *not* readily available. This then begs the question: how does a different level or type of technology use impact the three antecedents of supply chain performance: integration, information sharing and supply chain design? In particular, although some advanced technologies and information systems are present in developing countries, they are not financially feasible for many small and medium sized enterprises (SME) in the supply chain. In India, SMEs have adopted cell phones in a large way to manage their supply chains. Cell phones are advanced technology, but the use of phone calls and short message systems (SMS) – i.e., text messages – while on the road does not constitute a sophisticated information systems model. Yet the Indian SMEs in many cases have no choice – they must use cell phones, or else make personal visits and use land lines. It seems that many SMEs have found that cell phones are very effective.

Mohr and Nevin (1990) emphasize the importance of communications in integrating production and distribution processes. For SMEs in India, it appears that the use of mobile phones and SMS provide an adequate and robust communications mechanism within the supply chain. Therefore it is possible that even without sophisticated Internet and web-based technologies that a supply chain can perform at a high level. If this is the case, it can allow us to focus on the characteristics of communication that are critical in a supply chain, regardless of the technologies used.

This study takes a preliminary and exploratory look at how the use of this advanced - but limited - technology is used in India, and whether it might have some relationship to integration, information sharing and supply chain design. By extension, we may also then be able to extrapolate to overall supply chain performance measures.

Objective of the Research

The current research makes two significant contributions: first, it helps our understanding of supply chain management theory in terms of inputs that affect performance; second, it adds to the existing literature on Indian supply chains and their use of technology in improving their competencies. Earlier research on adoption of technology in different Indian manufacturing sectors (Sahay et al. 2003; Rahman, 2004; Kannabiran and Bhaumik, 2005; Jharkharia and Shanker, 2004; Jharkharia and Shanker, 2006; Sahay et al. 2006; Saad and Patel, 2006; Babbar et

al. 2008; Thakkar et al. 2008; Khan et al, 2009) suggests that though technology use is growing, there are several challenges in harnessing it to the fullest. The researchers suggest that technology use in Indian supply chains can help in improving supplier relationships, inventory turnover, performance, and profitability of the firms. However, with the issues associated with the lack of availability of advanced IT and Internet access, we decided to analyze the role of mobile technology as an alternate technology in improving supply chain efficiencies. Through an exploratory study, we attempted to understand the level of mobile technology use among different types of Indian firms and some of its impact on supply chain integration, information sharing and supply chain design. The sample was comprised of six different industrial sectors: automobiles, pharmaceuticals, clothing, fast moving consumer goods (FMCG), shoes and accessories, and electronics. The firms selected were the manufacturing units under each sector.

The rest of the article is organized as follows. We begin with a brief overview of the three measures of supply chain performance and the three factors that impact those performance measures. Then, we discuss mobile technology and integrate it into existing supply chain theory. Following this conceptual development is the methodology and study results. Finally we provide a discussion of the results, implications, suggestions for future research, and conclusions.

Literature Review

Achieving effective performance for supply chains is seen as important as it is significant in providing competitive advantage for companies (Simchi-Levi et al. 2000). According to Beamon (1999) and Sezen (2008) three measures help to determine supply chain operation: flexibility performance, resource performance and output performance. When these are strong, the supply chain is managed well. "Flexibility is the ability to respond to changes…Resource measures are concerned with the efficiency in using the resources in a supply chain system….Output measures include customer satisfaction (in terms of on-time deliveries, order fill rate, and response times), sales quantities, and profit." (Sezen 2008, p. 234). Three factors have been shown to affect these output measures: integration, information sharing and supply chain design. When the level of integration and information sharing increase, the output measures improve (e.g., Cousins and Menguc 2006; Kim 2006; Sezen 2008). Sezen also showed that improved supply chain design positively impacted the output measures. These three factors are thus important to understand in and of themselves, and also how they function.

Integration

Supply chain integration entails managing the inter-firm relationships and the various supply chain activities (Malone and Crowston, 1994) for cutting operating costs and attaining efficiencies. Integration has been show to increase the effectiveness of supply chains (e.g., Cousins and Mengguc 2006; Kim 2006; Zailani and Rafagopal 2005). Sezen (2008) says that, "Firms that achieved a successful integration in their supply chains have fewer inventories, shorter cash flow cycle times, reduced logistic and material purchasing costs, increased workforce efficiency, and improved customer responsiveness."

Samaranayake (2005) posits that each process in the supply chain network provides an integrated approach to planning and information sharing. A structural integration of different processes improves visibility and flexibility, thus improving overall supply chain performance. Firms can capitalize on the collaborations with their suppliers in improving supply chain coordination. Danese and Romano (2011) conducted research on manufacturing firms to understand if synergies existed due to supplier customer integration efforts. Customer and supplier integration

encompassed several aspects like sharing production plans, forecasts, performance, quality, design changes, joint quality improvement efforts, and partnerships.

Importantly, it has been shown that the implementation of advanced information technology by a firm can have an impact on supply chain integration, and ultimately on its performance (Wu et al. 2006). This finding however was based on the use of state-of-the-art information technology that is aligned with the firm's partners.

Information Sharing

Information sharing among the members of the supply chain is a second factor that has a positive impact on supply chain performance (Sezen 2008). Lee et al. (1997) state that downstream demand, sales, and customer order information helps in reducing inefficiencies. Inaccurate information can create problems in managing customer orders and service requirements. Information distortion occurs as companies are separated from their final customers. Sharing downstream information can help in reducing inventories and operating costs (Lee et al. 1997; Lehtonen et al. 2005).

Trkman et al. (2007) posit that technology use in supply chains helps in reducing costs, lead time, and quality improvement. The information which is critical for supply chain performance should be shared and demand-supply planning processes must be synchronized so as to provide accurate information about market demand and customers (Kaipia and Hartiala, 2006). Use of technology is significant in improving the information sharing capabilities within a supply chain. Boon-itt and Wong (2011) examined the moderating influence of technology and demand uncertainties on the relationship between supply chain integration and customer delivery performance. Internal and supplier integration was closely related to customer delivery performance. Technology and demand uncertainties moderate relationship between internal integration and customer delivery performance and supplier integration and customer delivery performance.

Supply Chain Design

The third factor that positively impacts supply chain performance is supply chain design. According to Chopra and Meindl (2010), this is the first phase of decision making in supply chain management decision making. Sezen (2008, p. 234) says that it "involves the decisions about number of suppliers, proximity to suppliers, supplier selection and evaluation, planned capacities in each facility, definition of contractual terms, and reactions to the possible disagreements between channel members." Sezen (2008) then showed that supply chain design has a significant effect on the performance of a supply chain.

Technology as a Strategic Tool

Technology is a strategic tool that enables supply chain collaboration and integration (Lee et al. 1997; Lee and Whang, 2000; Lin et al. 2002; Garcia-Dastugue and Lambert, 2003; Cagliano et al., 2003; Li et al., 2006; Ouyang, 2007). Information sharing in supply chain partnerships requires establishing processes that facilitate timely access to information. Technology can enhance efficiency, flexibility, and responsiveness through the supply chain network. Myhr and Spekman (2005) state, that collaborative efforts can be improved by building trust through an electronically mediated environment. Trust plays an important role in helping firms to offer customized products to customers. Internet and electronic commerce has also given business the opportunity to manage inter-organizational relationships and reduce operating costs (Williams et al. 2002). Information technology eliminates organizational boundaries and facilitates firms'

access to information (Gunasekaran et al., 2001; Lewis and Talalayevsky, 2004; Kannabiran and Bhaumik, 2005; Cullen and Webster, 2007; Dong et al. 2009). Maheshwari et al. (2006) suggest that organizations' can considerably improve supply chain performance by focusing on partnership benefits. However, collaborating firms must have similar technological platforms that facilitate information sharing, integration and supply chain design in order to reap any of these benefits.

Developing Countries

In many of the studies that look at supply chain performance and technology, a core assumption is that advanced technologies are available, and that availing themselves of that available technology is more beneficial than not (e.g., Lee and Park 2008; Wu et al., 2006). However, the assumption of the availability of advanced technologies and Internet access seems to come from developed countries (e.g., Lee and Park 2008; Wu et al. 2006). Even now though, some developing countries lack the desired IT infrastructure to enable inter-organizational collaborations. Internet and telecommunication networks may not available to all members in a supply chain. Some other aspects of advanced technology are not readily available to all members of the supply chain. This restricts the flow of information and affects the strategic alignment of supply chain objectives. Wiengarten et al. (2011) suggest that e-business applications have a strong impact on the operational performance of the firm *if* suppliers of the firm are ready and willing to engage in e-business applications. E-business is being used to redesign processes and streamline them to coordinate and integrate supply chain activities (Croom 2001; Kraemer et al., 2006; Saraf et al. 2007; Power et al. 2010). Companies are increasingly using technology to coordinate with their suppliers through e-procurement, customer relationship management, supplier relationship, and e-logistics software applications. Technology is perceived as a potential tool which has enabled efficient customer service, faster transaction, and shortened product life cycle (Dong et al. 2009; Rai and Tang, 2010; Wiengarten et al. 2011).

Again, this is good news for companies, but only if all in a particular supply chain have access to such technology, which is not the case in developing countries such as India. If all of the companies in a supply chain do *not* have access to advanced technology, then the lowest common denominator technology will be the de facto tool(s) used in the supply chain management.

In India, Internet access and sophisticated supply chain management software and systems are not available to many companies. On the other hand, the seemingly simple cell phone *is* available and used by companies. According to the Telephone Regulatory Authority of India (2009), the total wireless subscriber base was 391.76 million in the end year 2008-09. The report states, that there were 117.82 million wireless data subscribers. KPMG (2010) reports, that despite privacy and data security issues, India and China are leading in mobile technology use among developing countries. From the marketing and operations perspective, the advantages of using mobile technologies are immense, as it facilitates personalization and high interactivity (Leung and Antypas, 2001; Anckar and D'Incau, 2002; Facchetti et al., 2005). The innovative nature of mobile commerce enables diffusion of information both for commercial and non-commercial purposes (Feng et al. 2006; Tiwari and Buse, 2007). Thus, mobile technology can be harnessed for sharing and coordinating information across supply chain networks. The user is not restricted by knowledge or skill as in the case of Internet or web based technologies. The operational convenience and easy accessibility makes it an expedient tool for information sharing among supply chain partners.

Supply chain networks and integration decisions in emerging economies are dependent on institutional infrastructure. The coordination aspects in supply chain partnerships may not be clearly pronounced in many organizations. The concept of a supply chain is not given importance in Indian industries and is still in early stages of development (Sahay et al., 2003; Saad and Patel, 2006; Babbar et al. 2008). Moser et al. (2011) studied relationship and networking theories to develop a supply network configuration benchmarking framework for Indian automobile sector. They compared Indian automobile manufacturer's processes against a foreign automobile manufacturer. The results suggest that improvement in supplier base management techniques is required for improving supply chain performance. Anbanandam et al. (2011) studied the supplier collaboration between apparel manufacturers and retailers in India. They suggest that operational performance is linked to level of collaboration between the firms and retailers. Collaboration between suppliers and retailers should take into consideration information sharing, integration, trust, commitment, long term relationships and supply chain design. Singh (2011) studied supply chain coordination among small and medium sized firms (SME) in India. He suggests that SMEs in developing countries lack the infrastructure and resources to manage collaborative activities. The supply chain coordination enablers were identified as top management commitment, organizational factors, mutual understanding, flow of information, relationship and decision making and responsiveness. All six factors have mutual linkages and top management commitment was recognized as the major driver in supply chain coordination.

A Case for Mobile Technology

In recent years, mobile technology is being used by organizations for contacting and marketing to their customers (Moshin et al. 2003; Arnbjerg, 2004; Abu Bakar and Osman, 2005). The adoption of mobile technology in the supply chain may be related to its 'perceived-ease-of-use' as a communication device (Kurnia et al., 2006; Wang and Barnes, 2007; Wei, et al. 2009). The current research assumed that in a developing country like India, use of advanced technology and Internet based tools in building supply chain collaborations may present several institutional and infrastructural challenges (Jhakharia and Shanker, 2004; Rahman, 2004). Further, the receptivity of the suppliers, dealers, and logistics providers to use technology may be limited due to inability to comprehend its strategic advantage. Mobile technology, as it is relatively non-threatening and easy to use, presents a viable option for suppliers, firms, logistics providers, and dealers to collaborate on a real time basis (Eng, 2006; Pishchulov and Richter, 2009). It can help in reducing order processing, inventory management, and logistical costs (Pishchulov and Richter, 2009) by supporting collaborative endeavours between firms.

Theoretically mobile phones provide a communications link in the supply chain. Mohr and Nevin (1990, p. 36) say that "communication can be described as the glue that holds together a channel of distribution." If mobile phone usage – voice and text – can be effective in providing that "glue", then it is possible for a supply chain to be very effective even without the use of some of the advanced technologies. Mohr and Nevin (1990, p. 38) developed a model of communications for marketing channels (see *Figure 1*). In this model, the extant channel conditions interact with communication strategy to produce both qualitative and quantitative outcomes.

The communication strategy Mohr and Nevin (1990) describe has four key facets: frequency, direction, modality and content. Frequency refers to the quantity of communication between supply chain members. Direction refers to the flow of communication between upstream and downstream channel members. Unidirectional flow is either upwards *or* downwards communication, while bidirectional is communication flow in *both* directions. Modality relates to the method used to transmit information. Although there are multiple ways to define modality,

Mohr and Nevin (1990) used the formal/informal distinction. The fourth facet is content. Part of the content of a message includes the type of influence strategy embedded therein. Thus content includes either direct or indirect influence strategies.

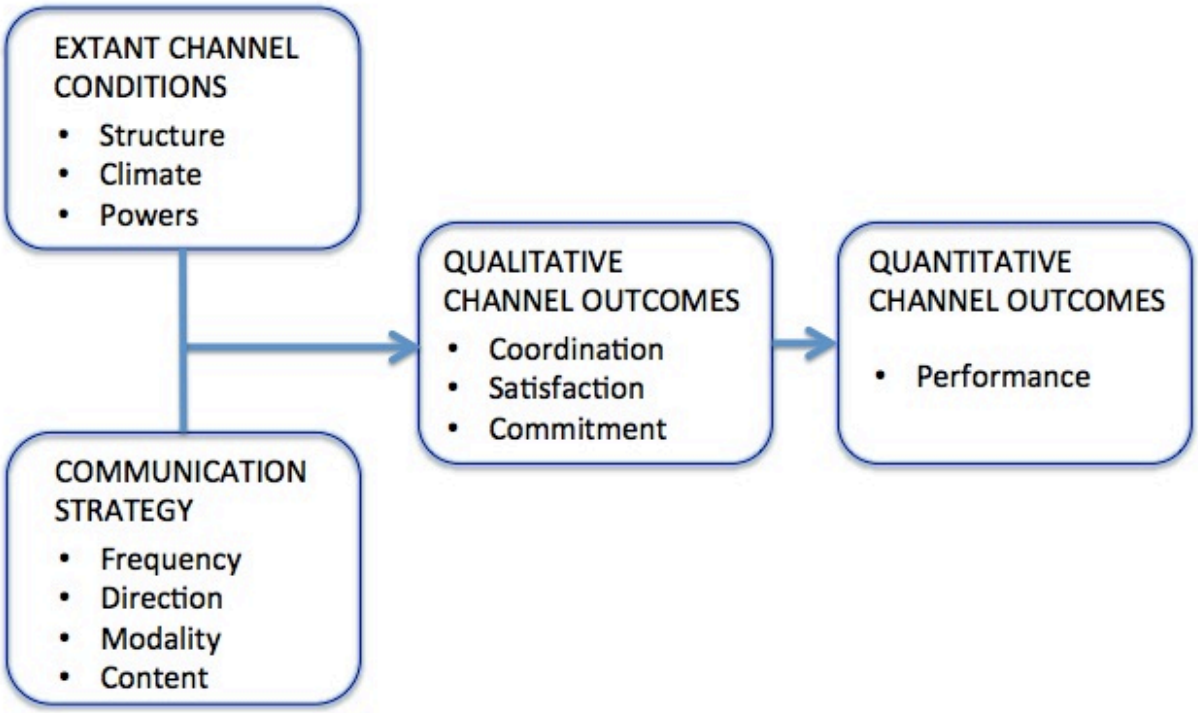

Figure 1: Model of Communication for Marketing Channels (Mohr & Nevin 1990, p. 38)

The three channel conditions are structure, climate and power. When these three are, respectively, relational, supportive and symmetrical, Mohr and Nevin (1990) posit that communications will have a higher frequency, be more bidirectional, more indirect and more informal. Each of these communications facets fits well with mobile phone usage. Thus, assuming that the channel structure in India is similar to this, one would expect that the use of mobile phones would be very effective for supply chain management.

In order to determine this, we measured the use of mobile phones in an Indian supply chain context, and looked at how these related to some measures of information sharing, integration and supply chain design. We expect that if mobile phones are effective, then these three factors will be high, and knowing that these lead to positive supply chain performance outcomes, we will have an indication that the use of mobile phones can be a positive contribution to supply chain performance, even when advanced technologies are not readily or consistently available.

Current Research

The current research examines adoption and use of mobile technology in enhancing supply chain coordination. More specifically, this study looks at how mobile phone usage in an Indian supply chain context impacts information sharing, integration and supply chain design.

Method

Research Instrument Design

This study is generally exploratory in nature. It was designed to gain understanding of some supply chains in a developing country – India – and to explore their usage of mobile technology in the management of supply chains. It also was designed to begin making linkages into constructs that are known to impact supply chain performance. As such, the questions included a number about the availability of Internet access, the use of technology (both through the Internet and mobile phones) in the supply chain, and some questions adapted from Sezen's (2008) study on supply chain integration and communication in Turkish manufacturing industries. In particular, the parts of Sezen's (2008) questionnaire we used drew from his scales to measure information sharing, integration and supply chain design. These items were modified to match our research context. The purpose was to understand if and how firms were using mobile technology with supply chain partners.

The total number of items in the questionnaire was 31; the first section of the questionnaire included general information about location, industry and availability of Internet. The remainder of the questionnaire dealt with the use of mobile technology within the supply chain. All items (except city location and industry group) used a five-point Likert type scale (1 – strongly agree, 5 – strongly disagree).

Sample

The questionnaire was given to small and medium sized firms (SMEs) in five cities in India: Ludhiana, Mysore, New Delhi, Lucknow, and Kolkata. These cities were selected as they are hubs of small scale enterprises. The firms were manufacturing units classified under six categories: automobiles, pharmaceuticals, fast-moving-consumer-goods, electronics, clothes, and shoes/accessories. Managers in the firms were contacted by the researcher and their help was solicited for completing the questionnaire. The purpose of the research was explained to them, and their support in providing the information was requested. Since most managers are fluent with English language, the questionnaire was administered in English. They were informed that we were focusing only on their use of mobile phones for communicating with the suppliers and that land line phones were not being considered. The participant managers' checked with other departments to ensure the accuracy of the information in completing the questionnaire. A total of 350 firms were contacted in the months of April-October 2011. We were able to get 330 completed questionnaires, a 94 percent response rate.

Findings & Analysis

The first part of the findings provided here are oriented to providing a perspective of supply chains in an emerging country – India. It was stated earlier that Internet availability was problematic in India. Our data confirmed this. In gathering information on this factor, it is important to recognize that even if a company has an Internet connection, service to that connection may be sporadic and inconsistent. Therefore, we used a five point scale (strongly agree to strongly disagree) to measure whether the participants felt they always had access to the Internet. Those who chose "strongly agree" and "agree" we deemed them to have quite consistent access; those who chose "disagree" and "strongly disagree" we deemed to essentially have no consistent access. Thus from this split we found that 52.8% of the companies have Internet access, and 45.8% have not Internet access. The remaining 1.5% of our sample did not know

whether or not they had Internet access. This likely means that they do *not* have access, but for further analysis these responses were not included. Further analysis was completed using this split of the sample: those with Internet access (the total of those who agreed and strongly agreed that they had access to the Internet) and those with no Internet access (the total of those who disagreed and strongly disagree that they had access to the Internet).

With nearly half of the respondents' companies not having Internet access, the use of web-based applications and sophisticated interconnected and integrated software systems to manage the supply chain is limited. Clearly, those without Internet access must rely on other means to communicate and coordinate across the supply chain. Of interest then is how does this affect the supply chain's effectiveness? Given the benefits that come with some of the advanced technology that requires Internet and web access, one might assume that firms with Internet access would have higher scores on the constructs that link to better supply chain performance. The way the sample has split, with nearly 50 percent on each side of the Internet access divide provides an opportunity to compare the two.

Also of interest is the breakdown of industries that have or do not have Internet access. Three industries in our sample had Internet access (percentages in brackets showing those with Internet access): automobile (100%), pharmaceuticals (92.8%) and electronics (100%). However, the other three industries that we included did not have Internet access (percentages in brackets showing those *without* Internet access): FMCG (100%), clothes (100%) and shoes and accessories (76.4%). It seems that the availability of Internet access is not spread in a normal distribution within each industry; rather it depends on the industry itself. So either your industry has Internet access or it does not. Our questionnaire did not capture information about why this is the case. There could be many explanations for this phenomenon, but those will have to be answered in future research. This division of Internet access by industry however, does create a limitation for this research, in that differences between those with and without Internet could be due to industry differences, rather than their lack of Internet access and mobile phone usage. Nevertheless, the differences and similarities are still indicators of how supply chains in India are managed.

In the survey 94.2 percent of the respondents stated that they used mobile phones for coordinating with their suppliers and customers. This is somewhat surprising given that approximately half of the companies have Internet access. One would assume that Internet availability with its supposed benefits and more sophisticated application abilities would equate to less reliance on phone technology. But this does not seem to be the case here. One possible explanation is the result that 99.2 percent of managers agreed that they found mobile phones and technology easy, economical, and convenient for communicating with their suppliers and customers. Mobile phones are becoming ubiquitous, and are extensively used outside of work. This likely makes many people very comfortable with how to use such technology, such that they are viewed as an easy and convenient technology *at* work. Nonetheless it was unexpected that even in the automobile, pharmaceutical and electronics industry, mobile phones are so highly used in coordinating with suppliers and customers.

Digging into the data in a bit more detail allows us to analyze how the use of mobile phones relates to supply chain management activities. Of the questionnaire items that explore mobile phone use in India are some questions that relate to the constructs tied to supply chain performance: integration, information sharing and supply chain design. Additionally, as our sample is divided almost in half by those who have Internet access, and those who do not, we were able to make comparisons of their use of mobile phones in each condition.

Sezen (2008) found that a more integrated supply chain had a higher performance. Key to integration is the communications within the supply chain. We found that regardless of the level of Internet access, there was frequent contact within the supply chain. Those without Internet access strongly agreed (31.8%) and agreed (68.2%), and those with Internet access strongly agreed (66.7%) and agreed (33.3%). Although these results are significantly different (at a .001 level), neither of the groups felt there was *not* frequent contact within the supply chain. Thus while it may be that access to the Internet and web-based tools will facilitate frequent contact (and thus increase supply chain performance), the lack of Internet access does not seem to affect the frequency of contact. However, we did not collect data on the specific frequency measure, so this is a somewhat relative measure that needs to be investigated further.

Another consideration of importance is general communication within the supply chain. General communication contributes to supply chain integration. We found that where the Internet is not available, 86.7 percent of our respondents agree, or strongly agree that mobile phones are used in communicating with suppliers and customers in the supply chain; only 6 percent of the respondents disagreed. Of the respondents that have Internet access, only 52.7 percent agree or strongly agree with this; 35.6 percent disagreed. Thus there is a higher level of mobile phone use for communications when there is no Internet access available. But clearly, there is also a high level of mobile phone use even when companies have Internet access. This could be an indication that communication within the channel is the important factor, rather than the advanced technology. Mobile phones are cheap and easy to use, thus they enable communication. The Indian context here illustrates that in order to get the benefits of communication in the channel as conceptualized by Mohr and Nevin (1994), all of the advanced technologies are not necessarily required. Rather, a communication means must be available that users are comfortable with, and are economical.

Information sharing is the second concept Sezen (2008) identified as contributing to supply chain performance. Our results showed that even without Internet access, aspects of information sharing were high. For example, for the item asking about the firm and its suppliers sharing information through mobile phones, 98 percent either agreed or strongly agreed. Another item relating to information sharing was how easily a firm could find information about the suppliers' products and prices; for this item, 81.5 percent of participants agreed or strongly agreed. Those firms *with* Internet access had scores of 88 percent and 90.2 percent for these same items. These results indicate that information sharing in Indian supply chains is high, which according to Sezen (2008) leads to better performance in the supply chain.

The third concept from Sezen (2008) was supply chain design. Sezen had introduced and found this construct as a significant predictor of supply chain performance. We found that whether or not companies had access to the Internet, the supply chain design items were high. For the item "suppliers and their capacities are sufficient to handle any possible needs of our customers", 94.7 percent of participants without Internet access agreed or strongly agreed; and 88.5 percent of those with Internet access agreed or strongly agreed. A second item related to supply chain design – "logistical activities in our supply chain are coordinated through mobile phones to minimize problems in distribution/service" – also rated highly. For those without Internet access, 93.4 percent strongly agreed or agreed, and for those with Internet access, 90.2 percent strongly agreed or agreed. We see from these two measures that some indicators of supply chain design are high, even when the benefits of Internet access and web based applications are not available. That is, even though mobile phone technology is relatively limited in its capabilities, it still enables firms in supply chains to achieve a high level of supply chain design, which then may lead to higher performance.

Discussion

This study provides some important indicators related to supply chain management and performance in a developing country. One clear factor was the significant use of mobile phones in managing Indian supply chains. This is particularly important as we found that not only do firms with no internet access use mobile phones, but so do the firms *with* internet access. As a tool for coordinating supply chains, mobile phones seem to have a great importance. Although this study was exploratory, and largely descriptive in nature, the importance of mobile phones in the management of supply chains was obvious. Mobile phones seem to play a noteworthy role in supply chain integration, information sharing and supply chain design for both those with internet access and those without internet access.

But why is this significant in the general view of supply chain management? The reason is that it strongly suggests that the communication "glue" referred to by Mohr and Nevin (1990) needs to be included in supply chain research and analysis. That is, while advanced technology, software and internet access are wonderful tools that help in supply chain management, a key component of why they are so effective can be traced back to the communications concept. Mobile phones are by their very nature communications tools. Being portable, easy to use, highly available and relatively inexpensive, mobile phones have become a very effective communication enabler. It thus makes sense that even in a developing country where internet access is not readily available to everyone, and where SMEs may not be able to afford more advanced software tools, that some of the factors that lead to high supply chain performance are still high.

Therefore, this exploratory research suggests that the communication strategy of a firm should be a significant part of supply chain management, along with the technology components.

Limitations and Future Research

As noted previously, this study was exploratory in nature. Consequently, most of the results are descriptive in nature. However, these results are strongly suggestive of the importance of communication strategy being crucial to supply chain management, and the use of mobile phones is a key facilitator of that strategy. Thus it makes sense to pursue this line of research further to more rigorously study this. In particular, we plan on measuring the communication strategy (frequency, direction, modality, content) and extant channel conditions (structure, climate, power) (Mohr and Nevin 1990), in conjunction with mobile phone usage of firms in India, to see how they impact supply chain integration, information sharing and supply chain design (Sezen 2008). We will also include quantitative measures of supply chain outcomes: flexibility performance, resource performance and output performance (Sezen 2008).

From this research, we will further develop our understanding of supply chain management in a developing country, and will importantly contribute to supply chain theory.

Conclusion

This article presents an exploratory study into the use of mobile phones in a developing country, India. The purpose was twofold: to further our understanding of mobile technology in Indian supply chains, and to contribute to supply chain theory. We found that mobile phones are widely used in India to coordinate supply chains for firms with and without internet access. That is, even when companies had access to the internet and advanced technology and software, mobile phones were important for managing supply chains. We suggest that the reason for this importance is that mobile phones are very effective at facilitating communications, which as Mohr and Nevin

(1990, p. 36) state is the "glue that holds together a channel of distribution." Although this was an exploratory study, its findings suggest that with additional research, we will be able to more confidently understand the role of mobile phones in a developing country's supply chain system, and that we will be able to significantly contribute to supply chain theory.

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Power Transition Model in Asia Region

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Abstract

I. Introduction

The growth of China is undoubtedly the greatest story of the Pacific Rim. China's strong economic growths combined with energetic diplomatic political strategies are already influencing this particular region, and future decades will see even greater increases in Chinese political power and economic power influence. Assuming China's current status as a regional hegemonic power in the Pacific Rim, will China overthrow or upset the existing regional order or become a part of it? And what, if anything, can the United States and other countries in the Pacific Rim do to contain the situation as China rises?

While many observers believe that the American era is coming to an end, China will try to use its growing influence to alter the rules and institutions of the international system to better serve its interests, we should first examine China's relationship with its neighbors in the region. The result of these developments, they predict, will be tension, distrust, and conflict, the typical features of a power transition. In this view, the drama of China's rise will feature an increasingly powerful China and a declining relatively weak group of countries in the Pacific region. China will first lock as the regional hegemonic power in an epic battle over the rules and leadership of the area. Therefore, we want to look at what ways the distribution of power is linked with the beginning of a regional conflict between China and the countries within the Pacific Rim. There are three popular models to describe and even to forecast the expansion of China in the near future.

II. The Balance of Power

The traditional political theory with its long development and history has provided many scholars and specialists of international politics for years; it's the so-called balance of power model. Now, what is "balance of power" exactly? It's about the equally distribution of power among great powerful nations or members of alliances in order to ensure peace. In another word, anytime the country with increasing power will use the opportunity to attack its weak neighboring countries. There is a built-in assumption that each one's ultimate goal is maximization whenever possible. Alliance is only formed out of necessity for security purpose for a short term; there is no trust. A balance of power, therefore, is desirable because it (a) preserves the independence of countries and (b) creates an equilibrium that promotes order and peace. Therefore, the theory is based on beliefs that the equality of power will lead to peace, and vice versa.

As Kenneth Waltz wrote, "If there is any distinctively political theory of international politics, balance of power theory is it." (Kenneth Waltz, 1979) Again, the powerful side is the mostly likely to become the aggressive one.

In this model, each actor/country will act naturally to arrange themselves to produce a result of balance of power; it explains also part of the reasons that similarly equal distribution of power is necessary in order to preserve the peace. Similarly all business models explain the behavior of business and people's behavior motivated by profits or greed, for the lack of better word. Many international specialists who accepted the model of balance of power also taken in the suggestion that the political motives of nations are motivated by the desires to maximize their influences over others. All nations can maximize their power and position by attacking and taking

advantages from the weak, these weaker nations, in turn, will gain power by allying themselves with other countries in comparable positions. For example, in the case of Pacific Rim, given Vietnam's historical conflict with China, Vietnam should align with Thailand or other countries from the region to avoid and to deter any potential conflict with China. China is currently viewed regional hegemon. Therefore, all nations, of course, can increase their strength by seeking new alliances, or even fighting to protect the distribution of power status quo. In long run, it will preserve their well-being and their existence in the region.

One interesting feature of this balance of power model is the focus on the forming and breaking of alliances. The definition of "balance" is strictly on the equal distribution of power among all nation actors; therefore, balance is the new equilibrium. However, there is one major contradiction of the first commandment of the system; all nation actors are trying to maximize their power (Morgenthau, 1985). Any increase of power by one nation will encounter by power from its similar opponents.

Furthermore, balance of power model is mostly stable without chaos. Since all nations are maximizing their own power positions, the balance and equal distribution of power tend to keep the system in balance with stability, security, and predictability. Another question, which derived from the basic assumption of balance of the power model, do all nations/actors really want to maximize their power over others. Looking back to the previous major wars, one cannot help noticing the variations. Now, Japan is a model of a business driven, peace-loving nation today, but it was once an omnipotent feared aggressor. Also, why weaker nations within the region didn't attack Japan right after tsunami in March, 2011? According to the balance of the power model, any nation/actor should maximize their power; in this case, other nations should expand its power over Japan after the natural disaster. This is the perfect timing. Instead, all neighboring countries assisted Japan with resources during the recovery period. These are further uncertainties on this and other points. The most important questions are those related to the validity of the model, and what must interest us most is whether or not the maximization of power does in fact, keep the peace.

III. Collective Security and Power Transition Theory

Now for will the second model, collective security, be able to describe the situation of a rising China in the Pacific Rim. Here, the so-called "collective security" model is based on the all against one order. The term, security is defined "as a high confidence of preserving, against external military attack, values presently held" (Snyder, 1997). In another word, one can use "one for all, all for one" to justify this particular model. Within this model, there are several assumptions. One major interesting assumption to the collective security model is that all nation actors will be equally interested in preventing aggression and conflicts and thus can be expected to regulate their political and military power to that end; everyone has the same level of salience on the conflict. Therefore, if in the near future, there is rising attention on Taiwan Strait between China and Taiwan, will the nations of Pacific Rim join the island to defend itself from military attack from China? Also, will that situation also induce the possibility of a clash between China and the United States over Taiwan? (Mearsheimer 2001). Another assumption is whenever a serious international dispute threatens an outbreak of hostilities, the identity of the aggressor, or public enemy will be obvious to all. It seems very uncertain, however. There are many examples

of one country's claiming another to be the aggressor, with every such accusation being widely credited.

The models differ in fundamental ways to describe the rise of China in the Pacific Rim, but share a number of important features. Overall, the motive of stakeholders in maneuvering their nations away from or toward conflicts differ in every model. For balance of the power model, the leaders of a nation seek to maximize its power. Powerful nations try to expand their powers, while their potential victims, seeking to protect themselves from aggression, group together to augment their offensive and defensive capabilities. Decision-makers in the collective security system are moved by a rational, reasonable, and logical desire to prevent unnecessary conflicts. Another similar assumption of both models is that the conflicts leading to war or ending in the preservation of the system are in control; the decision-makers can and must manage, and that foreign policy elites are key actors in the play. In another word, the two models can be summarized into a burning desire to maximize power or a single-minded urge to guarantee security in the narrow sense that leads nations to start major wars. Therefore, within the Pacific Rim region, China and other major countries should be focusing pure-power maximizing actions or policies lead to power maximizing under the balance of power model. Given China's emphasis on the idea of a peaceful rising development, the increase in Chinese military defense budget is causing alarm. Other weaker, smaller countries within the region will form strategic security alliance to prevent a rising China or any potential conflict with Chinese government's influence over the security issues.

Power Transition theory- Since the past terror attacks and subsequent events in the Middle East have created a condition of shifted focus in U.S. foreign policy, American strategic thinking has grown stale. A great challenge for the United States and the world lies not in terrorism or even in regional conflict. Instead, it lies in the long-term collision of interests between the U.S. and an emerging, powerful challenger China. Daily events in the Middle East, South Asia, and East Asia are important not for what they are but for what they will demonstrate about American leadership in the ultimate contest to come, as Asia becomes the focal point of world politics. (Note-Power transition theory is based on a hierarch model: both global and regional. Please see figure 1, and 2). For those who are interested the elements of power transition theory, please refer to figure 3.

Building a strong coalition between Japan and Russia is necessary for the maintenance of United States as the dominant nation among the major contenders in the next half century. The Asian challenge may not be avoidable, but it can be postponed and more effectively managed.

Figure 1 ***Global Hierarchy***

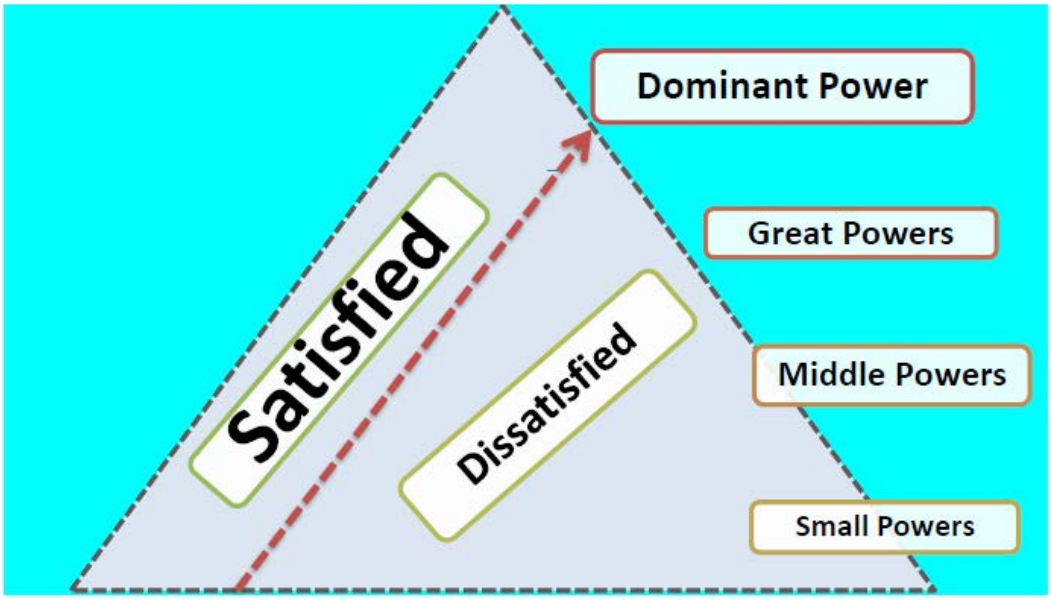

Figure 2 ***Regional Hierarchies***

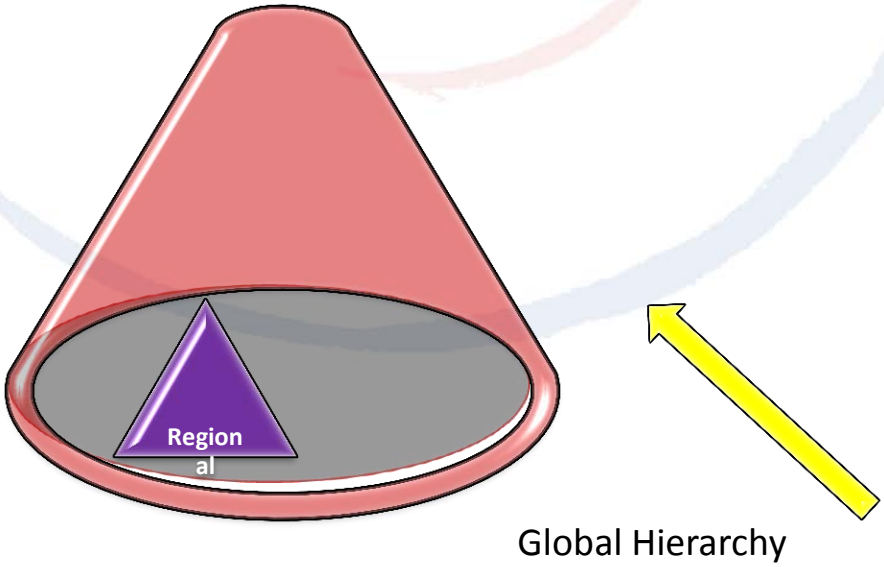

Figure 3 Power Transition Theory

Population-
Mature developed nations-stable populations or facing declining populations. (Ex: Germany, France, Italy, and Japan)
Developing countries-will continue to grow for a generation or more. (Ex: China and India)
Economic growth-
-National output- *Gross domestic product* (*GDP*)
Political Capacity-
-extracting resources from populations
-reduce birth rates in the early stage of development
-Avoid "poverty trap" (China's one child policy)*

IV. Conclusion

From a wider theoretical perspective, one may question the analogy between the structural models and economics. Waltz, for example, has written that "balance of power theory is micro theory precisely in the economist's sense. The system, like a market in economics, is made by the actions and interactions of its units, and the theory is based on assumptions about their behavior." However, the international system, as Waltz describes it, operates nothing like a competitive marketplace, and it is wrong to argue, as he does that the international system generates pressure on states in the same way that markets generate pressure on firms.

Why do relatively few nations disappear or "go out of business?" by other's financial pressures? Further, the balance of power becomes operational to maintain the system of states. It's different in economics, where "creative destruction" is an endless process. Moreover, economic systems are regulated and controlled by states. Better yet, states can even rescue or reshape the economic systems, whereas the international system is in anarchy. Both models appear flawed in many important respects. As a result, the study of international relations and economics on China are now in something of a crisis state: the existing paradigm appears to be of limited value with extreme calculation on the both sides, overly zealous optimistic or disorderly pessimistic of China in the Pacific Rim. Clearly, we know that domestic economic issues matter, but we still do not know how to treat economics and politics together as a whole. We also know the rise of China is extremely important and significant to the development of Asia region. It is thus not surprising that the field has found itself mired in debates that are taking an increasing ideological tone: whether nation actors in the Pacific Rim should seek relative gains or absolute security, or whether nation actors adopt a realist or alliance perspective in their work.

Adopting extreme positions maybe politically useful, but one wonders how helpful it is for the long term development of Asia as a whole.

In the near future, the research should continue to build on and refine its basic analysis of the relationship between system and unit. Most of experts of politics probably accept that one of the defining features of their field of study is that the interactions of the units take place in an anarchic environment, an environment without any central, governing authority. Previously during the cold war era, a significant debate had been focused on the distribution of power in term of bipolar, unipolar, or multipolar, etc. With the end of the cold war, the concept of polarity seemingly has become even more confused; scholars need to reexamine this concept and possibly redefine it, perhaps incorporating nothings of state type. Several studies have argued that economic cooperation among democracies is more likely to prevail when the distribution of power is asymmetric, or when one state is "hegemonic." Therefore, will we see a more democratic China in the near future? Or will we see a hegemonic state under a more restricted authoritative regime? The two models seem to provide us almost nothing about how states will behave in their international interactions. Therefore, the future explanations should begin within the nation-state in the Asia region.

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* "The most important, and indeed the truly unique, contribution of management in the 20th Century was the fifty-fold increase in the productivity of the MANUAL WORKER in manufacturing. The most important contribution management needs to make in the 21st Century is similarly to increase the productivity of KNOWLEDGE WORK and the KNOWLEDGE WORKER."*Drucker (1999, p135)*

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On Economics of Violence and the Construction of Railways in Asian Colonies in the Early Twentieth Century

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Abstract

My paper will address the emergence of peculiar colonial economies relied on the coercion of local population for the goal of economic modernization. In the case of railways, built by the French in Asia, the outcomes of such modernization were only effective in a long run, but the loss of human life was colossal. There was sharp contrast between, on the one hand, a very isolated location in which such bridges were built, tremendous difficulties in accomplishing such projects, the number of coolies who died during the construction (over 12,000) and, on the other hand, a very modest traffic it carried. My presentation will address how the construction of railways in Indochina and Yunnan played an important role in shaping the principles of French colonial economy. I will also address how empires could put coercion in the core of economic modernization despite their allegiance (in theory) to principles of laissez-faire. By examining the legacy of such endeavors, my paper will also raise a broad question of whether such projects--structured around coercion and the sheer use of force-- were able to produce positive results in a long run

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I shall address the emergence of peculiar colonial economies relied on the coercion of local population for the goal of economic modernization. In the case of railways built by the French in Asia, the outcomes of such modernization were only somehow effective in a long run, but the loss of human life was colossal. There was a paradox between the state-of-the art viaducts and bridges that the French built in Indochina and in the Yunnan and between the (rarely told) story of coercion and significant casualties which such projects meant for local population. There was sharp contrast between, on the one hand, a very isolated location in which such bridges were built, tremendous difficulties in accomplishing such projects, the number of coolies who died during the construction (over twelve thousands) and, on the other hand, a very modest traffic it carried. My article will analyze how the construction of railways in Indochina and Yunnan played an important role in shaping the principles of French colonial economy. I will also address how empires could put coercion in the core of economic modernization despite their allegiance—in theory--to the principles of laissez-faire. By examining the legacy of such endeavors, my presentation will also raise a broad question of whether such projects--structured around coercion and the sheer use of force-- were able to produce positive results in a long run.

Two decades before the Great War, French railway engineers traveled to the distant parts of Asia to construct railways. While the modernization of transport frequently accompanied colonization, French technological achievements in Indochina (Tonkin, Annam, and Cochinchina, i.e. the modern-day territory of Vietnam) and the Chinese province of Yunnan (Kunming) stand out as technological masterpieces; in comparison with such chefs-d'oeuvre of engineering, the railways in Metropolitan France often looked dull. There was a strange dissonance between, on the one hand, sophisticated engineering solutions and million francs poured into railway construction and, on the other hand, its limited political and economic impact on both colonial economies and advancing French imperial goals in China. The wondrous images of railway viaducts and bridges mesmerized contemporaries who considered such images the ultimate proof of a French success in imperial expansion. The most tragic aspect of the Yunnan railway was the death of over twelve thousand coolies who lost their lives for the sake of French imperial ambitions in China. The French railway of Yunnan failed to make drastic difference in promoting French imperialism in China. Almost immediately after the French built the railway line in Yunnan, China succumbed to civil war, and the French dreams of integrating this Chinese province into the French sphere of influence were shattered. The French were able to use this railway line only until 1945, for less than three decades.

Scholars approach the issue of imperial expansion from various points. During the period of imperial expansion, the European political elite emphasized, using the expression from a famous poem by Rudyard Kipling, that it was "the white man's burden" to carry out the civilizing mission to the colonies. In such an interpretation, the Europeans sacrificed their lives "to seek another's profit, and work another's gain." The French political establishment highlighted the fact that France invested millions of francs in building schools and hospitals, railways and enterprises abroad. Even though this romanticized notion of reasons for imperial expansion provided an oversimplified vision, such a notion, nevertheless, attracted many energetic youth to the colonies. As Henri Brunschwig argues, in going abroad, many young French saw an opportunity to apply their talents to improve life in the colonies (Brunschwig 1966). Being far from Paris, French officials and military officers acquired a considerably

greater amount of independence in decision-making and in launching initiatives. Living abroad, moreover, gave many French an opportunity to pursue a distinguished career that otherwise would be difficult to carve out in metropolitan France.

Many scholars highlighted the fact that the colonial expansion occurred during the Second Industrial Revolution with its revolution in transportation and communication, including the emergence of new weapons, and new advancements in medicine. In 1902, John Hobson published a thoughtful study of the causes of imperial expansion (Hobson). Hobson put forward a controversial argument that imperialism provided European powers with an opportunity to continue out-of-date technologies by shifting the problem to the colonies. Hobson argued that in the late nineteenth century, Great Britain encountered fierce competition from Germany, Russia, and the United States; such a competition forced the British political and entrepreneurial elite to search for new markets in their colonies. This argument explains an eagerness to build railways projects in colonies in the late nineteenth century. With the emergence of electric trains in the late nineteenth century, steam locomotives no longer represented new technology. Yet, well into the twentieth century, French and other European powers drew up the projects for building colonial railways in Africa that utilized steam power.

In his book, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*, Daniel Headrick also addresses the significance of the Second Industrial Revolution in the expansion of European empires (Hedrick 1981.) Headrick suggests that a number of innovations, including the introduction of speedier locomotives, steamboats, wire communication, rifles, and quinine, made possible European penetration into continental Africa and Asia (Headrick 1981, 3-12.) Headrick highlights the fact that it was new technological advancements that made it possible for the coming of European imperialism. Headrick, especially, underscores the role of the railway built by the British in India for consolidating its control over its Jewel in the Crown (Headrick 1981, 180-191.)

In the view of many scholars, the construction of colonial railways had less to do with the needs of colonial economies than with the French political agenda (Hobson 1948; Headrick 1981; Binoche-Guedra 1992, 141). France made considerable investments in the railway construction to create its permanent presence in Asia and Africa. While approaching the history of railways in Indochina, historians, as a rule, concentrate on social and economic aspects of railway construction (Lee 1989, Murray 1980; Bruguiere 1963). David Del Testa shows how significant the experience of working on Vietnamese railways was for the social mobilization of the native labor movement; many *cheminots*—railway workers--became the members of the Communist party and took part in anti-colonial strikes in the interwar decades (Del Testa 2001 and 2002). The work by Robert Lee contains a fascinating account of the French imperial penetration into China: Jules Ferry (1832–1893), one of the most passionate promoter of the French imperial project, dreamed of bringing French goods to “four hundred million inhabitants [of China and Asia],” “a chimerical vision” that, nonetheless, informed and shaped the policy of French imperial expansion in Southeast Asia (Lee 1989, 13). The Chinese province of Yunnan seemed to offer an opportunity of becoming a “French commercial monopoly” (Lee 1989, 266). The book by Lee focuses on debates that accompanied the expansion of French control to China, rivalry between France and Russia for the construction and financing of railways in Asia, and the role of Paul Doumer in making the decisive moves to establish strong economic

presence in Yunnan. Lee argues between 1885 and 1901 the French politics towards China became transformed to "an economically based imperialism" (Lee 1989, 267).

Recent scholarship has been examining a political and social importance of engineers on a French political stage in the late 19th century. Engineers played an important role in rebuilding interwar and postwar France: for example, inspired by the philosophy of paternalism, Raoul Dautry, the Director of the Northern railway network (*réseau du Nord*) embarked on a social project of "garden-cities" in northern France that provided schools, maternity hospitals, clubs as well as education opportunities for railway workers (Starostina 2007, 2009, 2011). Colonial railway engineers became involved in fulfilling a variety of tasks going beyond their direct responsibilities.

Paul Doumer and the railway construction in Indochina

The history of French colonial expansion in Indochina is remarkable because except for some politicians as Jules Ferry or Paul Doumer the French statesmen could be surprisingly uninterested in the building of the French empire in Asia. Paul Doumer was the gouverneur-général of Indochina from 1897 to 1902; he was the first administrator in Indochina that made the building of railways the priority of his politics (Lee 1989, 194-229; Brocheux and Hémery 1995, 92-99, 123-6). A former Budget Reporter, Doumer came to Indochina with a great deal of ambition. Doumer always emphasized the importance of Republicanism and the creation of Republican institutions in colonies (Doumer 1905, 287). He argued that in three thirds of the territories of Indochina there was no trace of a "Republican action:" in fact, in the preface to his memoir about his experience in Indochina, he described 1895-1896, the years when he received the post of the gouverneur-général after the death of Armand Rousseau as the very challenging years for the French Republicanism. It is not only that the Republicans faced an internal struggle between moderates and radicals. French Republicans also encountered the aftermath of the Panama Canal crisis that raise many questions about the corruption of the French Republican government and even discredited Gustave Eiffel, the father of the Eiffel Tower (Doumer 1905, XIII-XIV). In addition to his plans of the railway construction, Doumer also wanted to transform Indochina to a political entity. Before Doumer, the Ministry of the Colonies and the Ministry of Foreign Affairs governed the different parts of Indochina. In 1887, indicating a trend towards the unification of these territories, a position of the gouverneur-général of Indochina and the Council of Indochina were created. Doumer wanted to increase a general budget for Indochina. Doumer increased taxes on alcohol, opium, and salt. In accomplishing these reforms, he was in luck to rule Indochina during five consecutive years of good harvest, a rather rare stroke of good fortune for French gouverneur-générals.

Doumer, of course, did not concentrate on the construction of the railway in Indochina as the way to build his own reputation. Nonetheless, his political ambitions are evident in his discussion of the gouverneur-général's position in Indochina: he emphasized that such a post brought about only authority over Tonkin and had just nominal power over other territories of Indochina (Doumer 1905, 287). He spent a considerable amount of time on describing what he perceived a political vacuum in Indochina: even mandarins lacked power to strengthen the French rule despite their best intentions to do so (Doumer 1905, 286-287). In addition to increase his authority, Doumer also wanted to improve the economic development of the region. His plans

of the railway construction were essential in his drive to create the Union Indo-Chinoise (Lorin 2004; Doumer 1905; Bruguiere 1963). The construction of a railway between Hanoi and Saigon [Ho Chi Minh City]—the centerpiece in Doumer's ambitious plans--sought to bring together the territories of Tonkin, Annam, and Cochinchina. As a result, in 1898, the Conseil supérieur de l'Indochine and then the Chamber of Deputies considered a new project to construct six railways in Indochina including the major line between Haï Phong to Hanoi to the borders of Yunnan, the *Transindochinois* (Doumer 1905, 327-328). (Figure 1.)

Figure 1. The map of the *Transindochinois*. This map shows the original plan of Doumer to build a railway and to bring toghether different parts of Indochina as a political entity. It took more than three decades to build this railway which was completed only in the late 1930s.

Paul Doumer, *L'Indo-Chine française (Souvenirs)* (Paris, Vulbert et Nony, 1905), 326.

In the building of railways in Indochina, Doumer and the French state used the existing mechanisms of financing colonial construction. In British India, for example, the Great Britain made the taxpayers of India to finance the construction of railways by imposing taxes on the local population (Kerr 1995). What is astonishing in the history of colonial construction was the immense expenses which such a construction entailed: the colonial lobbies often ensured that the most expensive locomotives and most expensive technologies were used. In a case of Indian railways, for instance, the Scindia locomotives, the most luxurious machines--a kind of Rolls-Royces of locomotives-- were brought to India. Because the Indians did not have any say, the amount of the money that the British made them borrow to build the railway certainly ensured the profit for the British steel manufacturers and other participants of the colonial lobby. The same is true for the history of the railway construction in French Indochina. The cost of the construction of the railway in Indochina exceeded the initial estimate by twice and took more than thirty years to accomplish.

"A lace projected into the skies:" the Doumer pont in Hanoi

In constructing railways in Indochina and Yunnan, French engineers created an impressive image of the French empire as the harbinger of modernity, an empire that relentlessly introduced and developed advanced technology. Juxtaposition between the tropical forests of Asia and the state-of-the-art railway appears to convince a viewer of the superiority of France as civilization and the necessity of colonization. Photos of Indochinese railways captivate imagination because viaducts, tunnels, and bridges are spectacular and because their images are dramatic and visually appealing. The French built a remarkable number of such artifacts: between Lào Cai and Yunnan-Fu [Kunming], a 460 km section of the railway alone, French engineers had designed and built 107 viaducts and 155 tunnels. Between Hài-Phòng and Kunming, a railway of 860 km, 3,777 bridges, viaducts, and tunnels had emerged (Lorin 2004, 17). Among the most striking achievements are, first, the *pont Doumer*, bridge across the Red River [the Song Cai] in Hanoi, second, a metal bridge on km 111.883 near coast Mong-Tseu [Mong tzé], that is, *le pont sur Albalétriers*, and, third, the "Steel Lace" bridge on the kilometer 83; they all represent masterpieces of French engineering.

The bridge across the Red River in Hanoi—named as the *pont Doumer* and now known as Long Biên—symbolized the role of French engineers in the conquest of nature and, in particular, the Red River proverbial for its changing currents and fiery temperament. (Figure 2.)

Figure 2. The *pont Doumer* (1903) [now known as Long Biên]. Doumer described this bridge as a triumph of French engineering; he poetically described this bridge as a "weightless trellis, a lace projected into the skies." Contemporaries, however, noticed a sharp contrast between its magnificence as a technological artifact and its modest traffic flow: "there were just a single set of tracks on the bridge, only two sidewalks for pedestrians, and no line for vehicles ." Today, only parts of the original *pont Doumer* have survived also because the bridge was heavily bombarded during the Second Vietnam War.

A. de Berques, " Les Chemins de fer en Indo-Chine," *La Dépêche coloniale illustrée* V, no 4, Février 28 (1905): 50.

It was the Eiffel company that drew designs and supervised the construction of the bridge (Weill 1995, 291), the longest bridge that the French built in Asia by this time. The (remarkable) length of the bridge is 1668 m. Its desk rises 13 m above water level and consists of 18 piers; spans between 78 and 106 m separate them. Its foundation goes more than 30 meters deep below water (Hulot et al. 1990, 25).[1] Doumer described the construction of the bridge in his memoirs. Built between 1897 and 1902, this project required 6.1 millions francs. The most difficult part was to build foundations for the bridge. French engineers supervised indigenous workers who were building the foundation of the bridge thirty-three meters below water level; in such conditions air pressure would reach three atmospheres and work would be "horribly painful", in the words of Doumer (Doumer 1905, 312). The length of each shift was four hours; afterward workers were offered a drink, medical attention, and a massage. Doumer wrote:

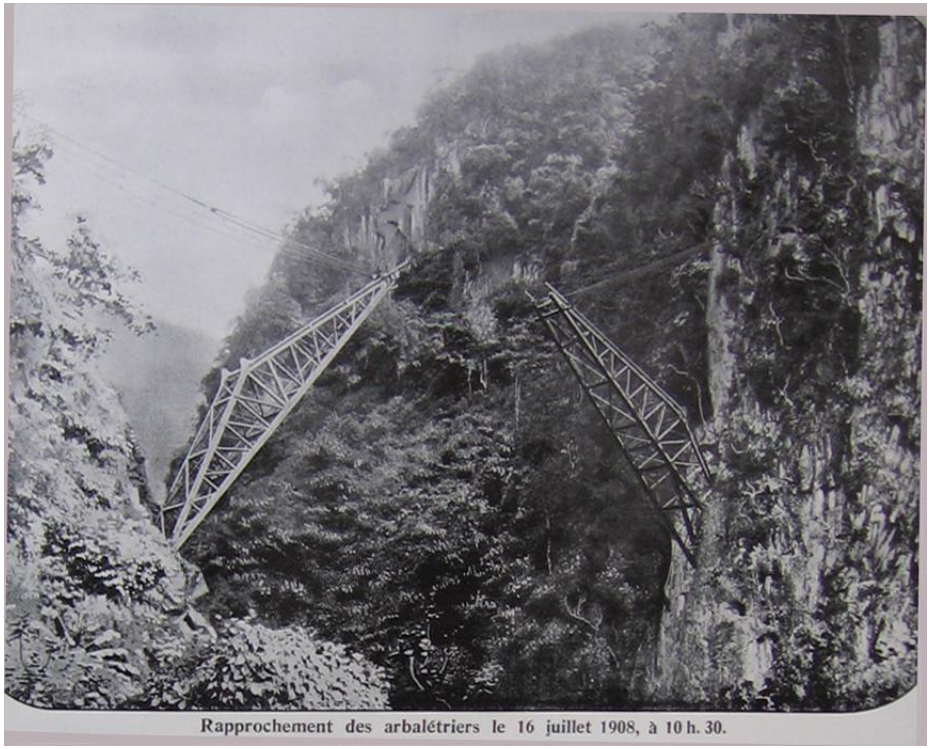
"this paternal treatment was more than one could ever imagine for [making] a good advertising for [the job of] construction workers, and offers from workers poured in… The establishment of the bridge on Hanoi definitely struck the imagination of the indigenous people. ... scientific techniques which were utilized and the result which was obtained made them aware of the beneficial force of French civilization. Our scientific genius, our industrial power morally conquered the population, whose armies we have subdued" (Doumer 1905, 312).

Doumer proudly stated that the realization of the bridge made the local population believe that "the French do everything they want"; the local population now comprehended that "definitely, the French were more powerful, more knowledgeable than one could believe" (Doumer 1905, 312). Of course, scholars need to take this statement about "the paternalism of French engineers" critically. Some workers were injured during the process of the bridge construction.

Ambiguous modernity? The tragedies of the railway construction in Yunnan

The construction of the Transindochinois also became a political project of integrating the province Yunnan, the southwestern province of China, into the domain of French influence (Lee 1989; Bruguiere 1963 ; Hulot et al. 1990, 23-55). The years between 1906 and 1909 were the most intensive in terms of the amount of accomplished work in Yunnan (Hulot et al. 1990, 150-154). The new gouverneur-général, Paul Beau, continued the building of the new railways. The railway to Yunnan became a showcase for French engineering. The creation of the bridge at the kilometer 111 ("*le pont sur Albalétriers*"), designed by Paul Bodin (1847-1926), became a remarkable engineering deed. (Figures 3-5.)

Figure 3. Le pont sur Arbalétriers. The photo is taken on the day when the bridge was completed. Describing a triumph of French technology, the images alluded to effortlessness of transforming the landscape of China and implied that only did the power of technology and superior engineering need to build the bridge. The bridge still exists.
Le Chemin de Fer du Yunnan (Paris, 1910) (an illustration between pp. 164 and 165).



Rapprochement des arbalétriers le 16 juillet 1908, à 10 h. 30.

Figure 4. Le pont sur Arbalétriers.
*Le Chemin de Fer du Yunnan (*the illustration between pages 165 and 166)

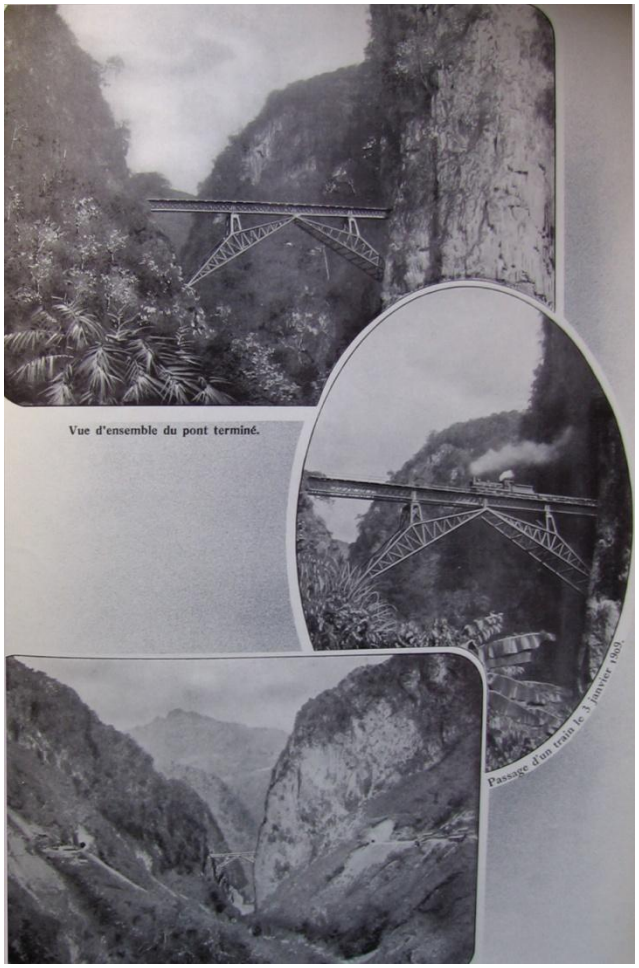
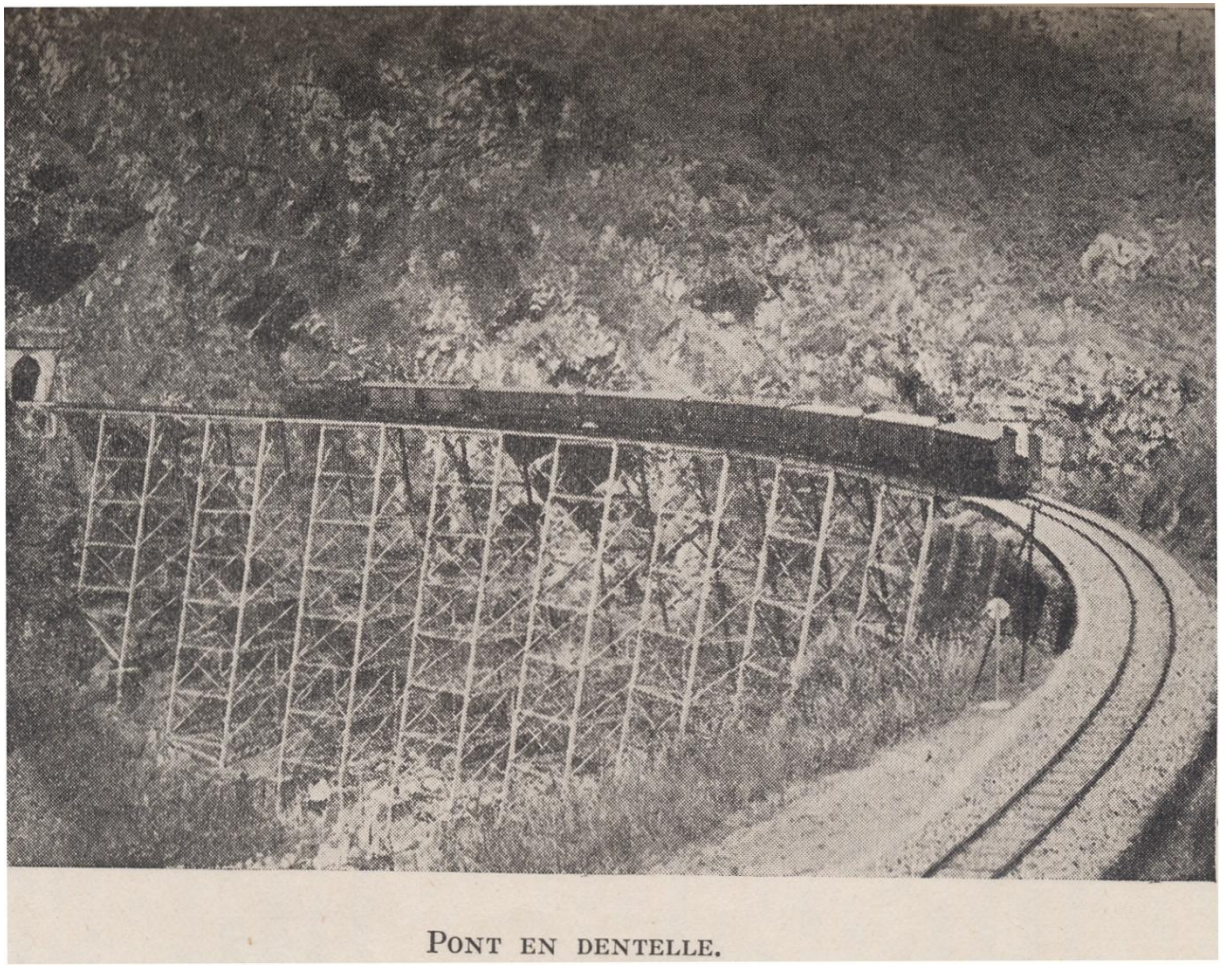


Figure 5. The Iron Lace bridge. Contemporaries poetically described this bridge as “the surface of disturbing fluidities.” Charles Valat devoted the novel Kilomètre 83 to the construction of the bridge and envisioned it as the symbol of French Republicanism and modernity. More than twelve thousands coolies died while the French built the railway in the Yunnan. One can still take a voyage on the bridge today.

Maurice Lécorché, *Vint-cinq ans d’Indochine et de Yunnan: Souvenirs* (1919-1943) s.p,..



PONT EN DENTELLE.

The bridge spanned a deep gorge with sheer sides. On each side the railway approached the chasm through a tunnel. Describing a triumph of French technology, the images alluded to effortlessness of transforming the landscape of China and implied that only did the power of technology and superior engineering need to build the bridge. In reality, however, the construction of this bridge demanded hard labor and surmounted to tremendous difficulties. Horses and mules delivered irons beams and girders: it required an endless persistence of the local population to carry material to the km 111 (Hulot et al. 1990, 38-9 and 160.)

The colonial railway construction became a centerpiece of the French dreams of imperial conquest and imperial penetration: the novel *The French Consul* by Lucien Bodard (1914-1998) contains revealing passages about the railway of Yunnan (Bodard 1999). Bodard was born in a family a French consul and spent his childhood in Indochina. Later in his life, Bodard became a journalist that witnessed and reported the First Vietnam War; in the 1970s, he published three novels describing his experience of growing up in Yunnan and his reminiscences of French Indochina. The novels unveil bitter and ironic realities of the colonial rule in the region by exposing a tragic, if not grotesque, gap between the grand narratives of the French empire and the petty realities of the French rule in Indochina. The characters in the novel understand that the French are not able to eliminate poverty, corruption, and misery in the region. In order to maintain their presence in colonies and to make the local elite their allies, the French need to befriend even most notorious figures such as, for example, colonial drug lords. The noble idea of the "civilizing mission" becomes an illusion and, ultimately, a pipe dream; ironically, it is after smoking opium, Monsieur the Consul, Albert Bonnard, indulges in reveries of building a railway from Tonkin to Sseu Tchouan [the Szechwan of China] (Bodard 1999, 161-231; Bodard 1977, 237-340). An entire chapter of *Monsieur le Consul* describes his dreams of building and inaugurating a railway line. Intoxicated with opium, the consul first fancies that his name appears in *Le Larousse*—a leading French dictionary; *Le Larousse*'s entry appraises him for building a railway and for extending French influence to a significant part of China (Bodard 1999, 164). The railway that he has built (in his dream) uses the latest technology: a journey begins at a train station with glass roof and equipped with switches, platforms, and other modern artifacts. The most pleasant and vivid part of the dream is the inauguration of the new railway: among guests are a minister from Paris and the gouverneur-général of Indochina, generals, admirals, renowned journalists including Albert Londres, a celebrated journalist, a mandarin representing the emperor of Annam, and, in addition, many beautiful wives of officials. The consul dreams that "there'll be a whole article on me in L'Illustration, and who knows, maybe my photo on the cover (Bodard 1977, 243). A magnificent celebration follows the inauguration: the festivities surrounding the inauguration of the railroad resemble those of the Colonial Exhibition. In his dream, the consul also imagines that more than two hundred "bandits" were captured and executed for the occasion. (Bodard 1999, 166).

Opium fumes make the consul envision a moment when the consul receives assurances of his promotion: for the construction of the railway, he should expect a nomination to a French ambassador. Apparently, the construction of the railway is important for the consul because it is way for him to receive a promotion, publicity, and to make himself known to a variety of important people. Bodard wrote:

"There on his divan, still up to his neck in bargaining, in mud, and in blood, in a medieval Chengtu where nothing was settled and danger lurked everywhere, he let his pipes bear him off into a crazy but logical delirium in which he saw his triumph celebrated, his railroad brought into being. He was fêted, famous, recognized all over the civilized world, by eternal France, by the governor general of Indochina and his entourage, by the priests, the bankers… and all the other Chinese" (Bodard 1977, 241-2).
His dream is not about bringing civilization to the region; his visions are about him becoming powerful and influential and escaping the boredom of his vocation and life.

There was, however, a drastic gap between the grandeur of the French "civilizing mission" as it was represented in the imagery of railways and the tragic history of the railway construction in Yunnan. In the beginning of the construction, many Vietnamese peasants willingly signed up contracts with the construction companies, but hard labor conditions and the outburst of malaria killed the majority of such volunteers during the first two years of construction. Later, the French government resorted to coercion to recruit more than 65,000 workers (*Les Chemin de Fer du Yunnan* 1910, 130). Most workers came from Tianjin in north China. In the course of the railway construction, more than 12,000 native workers died, that is, approximately twenty per cent of workforce; eighty French and Italian workers lost their lives too (*Les Chemin de Fer du Yunnan* 1910, 38). It was an exorbitant price which the coolies had to pay for fulfilling French ambitions in China. Moreover, the railway hardly brought prosperity to the local populace.

The railway construction raised many concerns among the intellectuals. Even though it facilitated the movement of people and goods, the modernization of transportation also disturbed the life in Indochina in many ways. New railways ran through rice fields and burial sites; peasants were overburdened with new taxes and were pressed with their corvée duties (Truong Buu Lam 2000, 46). A bitter description of French imperialism has appeared in an underground newspaper *Lao Nong* (Workers and Peasants): even though the following passage was written in 1927, it reflected the grim realities of the French "civilizing mission:"

"To this day, some naïve people still think that France came to "civilize" the Vietnamese. Those people live in tall houses with wide gates; they occupy important jobs and powerful positions; they never open their eyes to see how the imperialists are pilfering our resources and how they squash our compatriots. Right now, imperialist France uses all of its exploiting power to steal from its colonies in order to support its own economy. That's why, in Indochina, they are busily laying down railroad tracks, clearing wild forests, confiscating ricefields and land, taking advantage of our cheap labor" (*Lao Nong*, quoted in Truong Buu Lam 2000, 71).

Vietnamese intellectuals wanted to spread knowledge about the extremely high human costs of imperialism: "on these [rubber plantations], countless number of people are dying everyday, … from 1,000 coolies in Budop, 474 died" (Lao Nong, quoted in Truong Buu Lam 2000, 89). Doumer launched the reforms of tax system in 1898 to make possible the railway construction: in addition of changing tax payments from kind to cash, now the Frenchmen rather than the court would to enforce the production monopoly for alcohol and salt and other duties (Marr 1971, 186). Laborers who were recruited through the corvée system that not only made people leave their

villages, but also required the laborers rely on their own rice supplies (Marr 1971, 186). Overburdening people with taxes resulted in the demonstration and violence of 1908 (Marr 1971, 185-211): uprisings were often spurred by scholar-gentry. The slogan "Don't pay taxes to the French" became diffused rapidly in February 1908; many tax collectors were beaten, some perished in the course of 1908. The 1908 brought the dozens of casualties among Vietnamese peasants and the French soldiers alike; the year culminated with a plot to poison the soldiers of the French garrison in Hanoi. Two hundred and eighty-five riots erupted throughout China in 1910 in all parts of China (Chesneaux 1973, 56). The building of railways in the Yunnan also spurred the protest among the peasants and gentry in the Changsha rice riot of 1910. It was the building of the Canton-Hankow railway with foreign capital that mobilized the gentry of the Hunnan (Rosenbaum 1975, 693-694).

The construction of the railway inspired the French and, especially, the French engineers to be proud in the success of their "civilizing mission." The *Railway of Yunnan* emphasizes a positive impact of French engineers on the modernization of region—the impact beyond the improvement of communication (*Le Chemin de Fer du Yunnan* 1910, 115-6, 120, 124-6, 130-131). The French engineers working in the *Sociéte de Construction* succeeded to build significant medical facilities in the area ""almost completely isolated from the rest of the world." Only the Red River and the telegraph were the possible means of communication. On a territory of the plateau of Yunnan, the company established a hospital for coolies, and all coolies underwent a medical examination every month; a new military hospital opened its doors in Laokay. Between 1903 and 1908, 10,440 coolies received a treatment for different illnesses. As *The Railway of Yunnan* underscores, improvements in health service allowed the French to stop two epidemics, those of plague and cholera, which threatened to have devastating effects on the population of provinces in 1906. The railway company created what it called "acceptable temporary housing" for coolies, which resembled tents and mostly consisted of mobile structure with metal pillars. "These accommodations, relatively comfortable, were very appreciated by the coolies, and certainly contributed to that the workers remained on construction sites" (*Le Chemin de Fer du Yunnan* 1910, 131). When telling a story of the bridge across the Red River, Doumer had emphasized a concern of French engineers with the health of coolies along with a general prosperity of the local population. Doumer wrote: "the work of the explorers and engineers give France the incontestable rights over this territory, which it cannot forsake to others" (Doumer 1905, 343). In the eyes of Doumer, other administrators, and engineers themselves, the efforts of French engineers in constructing the railway and in transforming Yunnan entitled France to colonize the Chinese province.

The novels by Bodard, *Monsieur le Consul* and *The Son of the Consul*, highlight the tragedy of the railway construction in Yunnan and present an appalling story of the railway construction in a view drastically opposing those of the memoir by Doumer. Bodard characterized the railway company as "suppliers of human flesh" that "scoured entire China" (Bodard 1975, 141). Because it was cheaper to use man power rather than machines, the company brought Chinese peasants to the Yunnan. Arriving on foot, many coolies came from the north of China; they were unprepared to live and to work in the jungles, a "completely unknown land" (Bodard 1975, 140). Some coolies refused to work: according to Bodard, they even did not want to move rocks because they were afraid to offend the spirits of mountains ("*le genie de la*

montagne") (Bodard 1975, 141). (Such a refusal of work can be interpreted, however, as "the weapons of the weak," if to use the concept of James Scott (Scott 1985)). Sometimes coolies escaped to jungles only to become a pray of wild animals or bandits. Not once, a railway engineer arrived to a site of an abandoned construction site only to discover many corpses of Asian workers succumbed to the epidemics (Bodard 1999, 217). Bodard wrote that such coolies never rebelled and simply "allowed themselves to die" (Bodard 1975, 141). After the completion of the line, upon an occasion of the inauguration of the line, many toasts were proposed to Sino-French friendship and, yet, the death of thousand coolies was not even mentioned (Bodard 1975, 141-142).

The French Consul contains a description of the chief engineer as a person who developed indifference to "horrors and feelings" because he "faces up to everything" (Bodard 1999, 217). While building the railways, colonial engineers dealt with "dying people, doctors who are adventurers without diplomas and without medicine, its infirmaries which are morgues, and its cemeteries" which are nothing but "common pit" for Asians (Bodard 1999, 217 and 218). The determination of the engineers to build the railway is grim if not frightful in their disregard for human lives. (Bodard 1977, 319-321).Even though Bodard exaggerated, he described engineers as cold-blooded people who were only concerned with not overspending the budget for colonial railway construction and their obligations to the company. In the portrayal of the novel, colonial railway construction had a dehumanizing effect on French colonial engineers.

Conclusion: The French railways in Indochina and the costs of modernization?

Breathtaking images of the Yunnan line concealed a story of the ambivalent position of France in China. The dazzling imagery of the railways embodied imperial ambitions and dreams and obscured the real story of imperial fiascos and frustrations. What is undeniable is that the construction of railways resulted in an unprecedented casualties and the acceptance of violence as a way to fulfill imperial ambitions. Colonial economies, thus, came to depend on violence towards the local population; economic modernization, while important in terms of long-term economic development, nonetheless, often integrated the coercion of the natives in its very core.

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[1] There is a slight discrepancy in numbers describing the bridge in different editions.

'Big Data' and the Elusive Pursuit of Wisdom

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Abstract

Data! You're drowning in data, and that tide keeps on rising;
Build new and better boats, for surviving and for wisening.

We have entered the era of 'Big Data, what has been characterized as the next frontier for innovation, competition, and productivity. It is estimated that 90% of the world's data was generated within the past two years! *(1)* Only perhaps 5% of that data is in a structured format, such as numbers that computers can read; much of the rest is generated from photos, tweets, sensor readings, phone calls, e-mails and blogs. In a simpler time such data simply didn't exist, or we discarded it as useless, and focused our attention on bound books or rectangular blocks of numbers. Today's information age provides us with unimaginable data capture, storage capacity and computing capability, and sophisticated data intelligence algorithms to search, seek, and often find hidden insights in previously useless data.

With 'Big Data' come issues of heterogeneity, scale, timeliness, complexity, ownership and privacy. Although our collective storage capacity may seem unimaginably large, it is insufficient to store all data being created. There are many meanings of the term 'Big Data', and one is a set of strategies for dealing with data beyond conventional capacities.

The classical research framework is to first state a hypothesis and select a set of tools for statistical inference, then collect data and test the hypothesis against a null alternative. By contrast, a data-mining paradigm leads from data to information, knowledge, and perhaps wisdom, relying on tools for data extraction, transformation, and statistical association.

While academic purists much prefer the former, knowledge -- even wisdom -- can result from either approach. 'Big Data' is a start down the latter path, and it is an inexorable march that has implications for businesses everywhere. Furthermore, the pace and direction of that march varies greatly across firms, industries, national boundaries, and cultures.

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What is 'Big Data'?

'Big Data' has no meaningful definition in absolute terms; rather, it is defined relative to supporting capabilities that depend and vary in context, over time, and across space. The defining characteristic of 'Big Data' is digital information beyond the user's capacity to capture, store, access, and analyze within a reasonable timeframe using available hardware and software resources. Importantly, it is defined relative to the current capacity of a given user, yet both that capacity and the user can change over time. What is 'Big Data' for me today may not be for you today, and may not be for me tomorrow. Bigness is relative. *(4)*

Bigness often refers to more than mere volume of data. Another dimension is velocity, as data captured from automobile sensors provide near-continuous readings of external conditions and internal reactions, and cell phones in transit provide near-continuous readings of location. Yet another dimension is variety, as spreadsheets provide data in a quite different digital format than do photographs, DNA sequences, e-mails, videos, RFID and QR codes, and a plethora of other digital formats. Bigness is multidimensional.

Facebook, the U.S.-based social network, and *Alibaba*, the Chinese-based online shopping network, illustrate the scale and dimensions to bigness:

Volume
- *Facebook* processes 2.5 billion pieces of content into more than 500 terabytes of data – *every day.*
- *Alibaba* subsidiary *eTao.com* lists over a billion products for B2C purchase.

Velocity
- *Facebook* scans more than 3 terabytes of data – *every minute*. ("Terabyte" will be defined soon.)
- *Alibaba* subsidiary *AliPay.com* processes 1.5 million transactions – *every hour.*

Variety
- *Facebook* pulls in more than 300 million photos and 2.7 million "*Like*" actions – *every day.*
- *Alibaba* subsidiary *1688.com* maintains complete transaction accounts with 8.4 million suppliers.

How *Big* is 'Big'?

As previously stated, 'Big Data' is much more than bigness in terms of sheer volume of numbers, but rather big complexity resulting from the interactions of big volume with near-continuous velocity and rich variety.

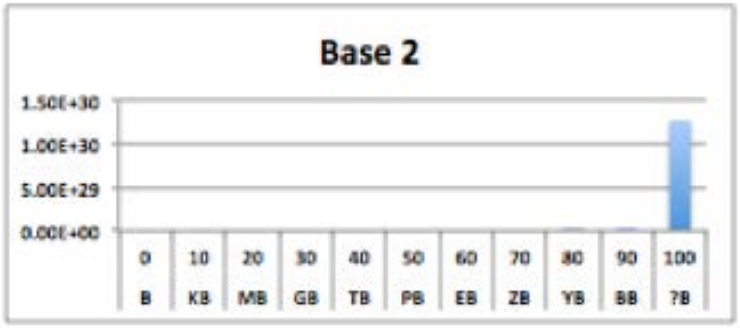
Nonetheless, it is useful to have some appreciation of measures of big volume. The human mind has extraordinary capacity, although sometimes constrained by social conditioning. One such conditioning is the tendency to think in linear terms to help simplify our relentlessly non-linear world. Such simplification tools once provided net benefit, and in many contexts do still, but fail us when encountering and attempting to comprehend very large numbers. Following is a brief guide to the terminology associated with big numbers and a notion of relative sizes.

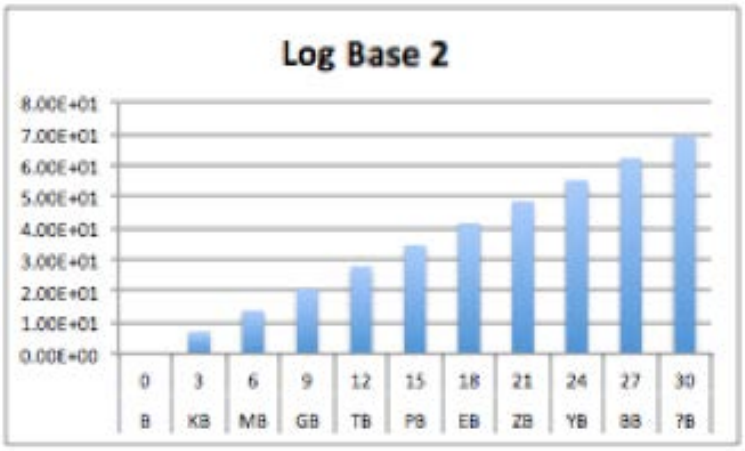
Table 1: Some Bytes to Chew On

Terminology		Measurement	Comparable Quantities
	Bit	= {0,1}	1 ~ A lightswitch {off,on}
B	*Byte*	2^0 B = 8 Bits = 1 B	1 ~ Character; 10 ~Word; 100 ~Sentence
KB	*Kilobyte*	2^{10} B ~1,000 B	1 ~ Page
MB	*Megabyte*	2^{20} B ~1,000 KB	2 ~ Books
GB	*Gigabyte*	2^{30} B ~1,000 MB	1 ~ Bookcase
TB	*Terabyte*	2^{40} B ~1,000 GB	10 ~ The U.S. Library of Congress
PB	*Petabyte*	2^{50} B ~1,000 TB	2.5 ~ Human brain capacity
EB	*Exabyte*	2^{60} B ~1,000 PB	5 ~ Spoken words, *ever*
ZB	*Zettabyte*	2^{70} B ~1,000 EB	1 ~ All digitized information, as of 2010
YB	*Yottabyte*	2^{80} B ~1,000 ZB	1 ~ Our current internet, *and then some*
BB	*Brontobyte*	2^{90} B ~1,000 YB	1 ~ More than 1,000 WWWs
? B	*Geopbyte*	2^{100}B ~1,000 BB	1 ~ A one, followed by *30 zeroes*

Most of us can comprehend the first set of terms, through a terabyte, especially given the analogies to contents of a very large library. Many of us now live in a terabyte world, wherein our 1 TB hard drive has the storage capacity of our entire university library. However, the second set of terms becomes increasingly difficult to comprehend, because the growth function continues in an exponential manner rather than linear. Examples and analogies begin to fail us. This progression can be deceptive, due to our linear mentality. For example, below is a plot of the mathematical measurements against the ordered terminology.

Table 2: The Power of Exponential Growth in Numbers





The top graph has only one visible bar – and this would have been true no matter how many or few of the terms were plotted, because each bar is 1,000 times taller than the one preceding it. By contrast, the lower graph is a nicer representation – but deceptive in its masking of the actual growth, at least for those less familiar with transformations. Note that the horizontal axis indicates the required number of zeros following a 1.

Consider but one example of how quickly we move up this exponential scale. Several U.S. states have legalized driverless automobiles, and it is expected such vehicles will become common over time. The current Google Autonomous Car generates about 1 gigabyte of data – *per second* – taking sensor readings of road surface conditions, speed limits, traffic flows, distances from surrounding vehicles, obstacles, pedestrians, etc. Last year the number of vehicles on roads around the globe surpassed 1 billion. *You* do the math!

From Industrial Waste to Competitive Advantage

In 1859 the first oil well was dug by Edwin Drake in Titusville, Pennsylvania, to power kerosene lamps at night. A by-product of the extraction process, gasoline was discarded into a nearby lake. Only years later, after the lake caught fire, did anyone realize this industrial waste might have value. Development of the internal combustible engine led to gasoline-powered automobiles, and suddenly gasoline had a market.

In 1975 *Health Application Systems, Inc. (HAS*) was a small technology firm, based in the San Francisco Bay Area and affiliated with *Paid Prescriptions*. It competed with H. Ross Perot and his *Electronic Data Services, Inc. (EDS)* for multi-million dollar state government medical and drug claims processing contracts, and in a given month would process and make payments on perhaps five million claims. HAS management had the insight to recognize that the data trail left behind might have value, so they created a position of Director of Analytical Services and hired a young Ph.D. in public policy to mine the data and repackage it to a secondary market. In short order, pharmaceutical companies were providing their drug detailer schedules of doctor visits to collate with physician prescription patterns pre/post the visits. The U.S. Federal Drug Administration (FDA) had a means to compare patient utilization patterns as a function of differences in copayment levels across states. And so it went, as Analytical Services became the leading profit center at HAS, despite its small revenue base relative to the large state processing contracts. The "industrial waste" had become the tail wagging the dog. EDS eventually bought HAS, and later GM bought EDS, a stepping-stone to its immersion into the new era we know as 'Big Data'.

So it is with many large enterprises today. The core business activity (or service, in the case of a governmental entity) continues, but the data trail generated by that activity no longer is discarded as "industrial waste". Instead, it is maintained, catalogued, linked to other databases, and transformed through data analytics into a useful feedback mechanism to guide and fine-tune decisions relative to the core activity. As a result, consumers can benefit even as enterprises gain competitive advantage. Such a feedback loop linked to 'Big Data' is resisted by some consumers but welcomed by others, flourishing in some industries but absent from others, and championed by some governments while eschewed by others.

Implications of 'Big Data'

Consequences of 'Big Data' are pervasive, and not yet fully understood. Following are some of the issues facing some of its constituencies.

Consumers

It is evident that organizations hold extensive amounts of information about us, that the amount they hold and share is accelerating, and that the ways they then use that information (to help or harm us) is expanding. There is a growing counter-movement whereby consumers might opt to proactively participate in processes to gain back control and leverage their personal data to advantage. So-called "data lockers", offered by start-ups like *Mydex*, *Personal*, and *Qiy*, provide secure cloud-based locations for individual consumers to store personal profiles, statistics, habits and preferences – and to then decide when and with whom to share it (or, perhaps someday, to sell it).

Companies

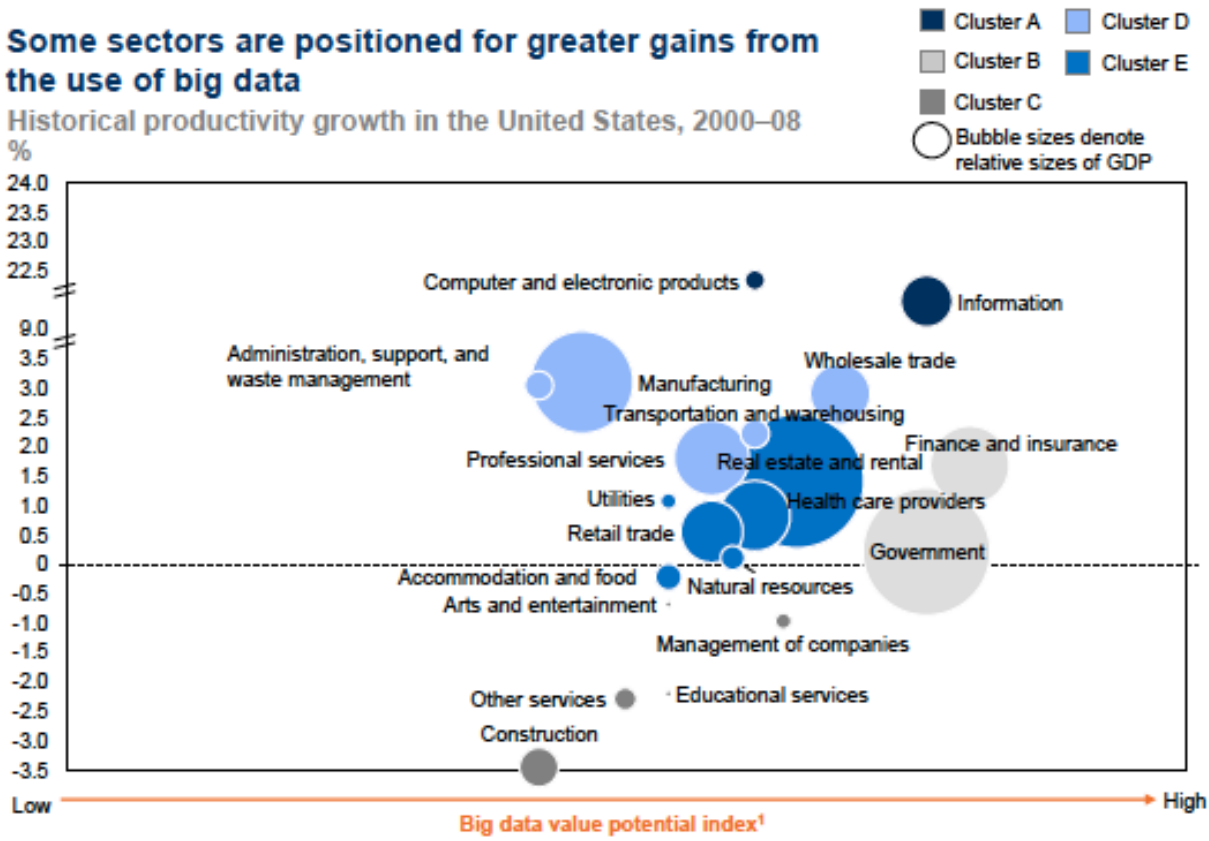
Most established corporations are organized into units, and there often is a tendency for units to develop a "silo mentality" over time. This tendency seems particularly pronounced within information technology (IT) units, perhaps understandably due to their responsibility to maintain data security and confidentiality. However, 'Big Data' represents a disruptive innovation that calls for a different mindset, as successful data mining and market analytics invariably require collaboration across units. The culture and adaptability of firms therefore becomes a critical ingredient in determining the ultimate success of such initiatives.

Industries

McKinsey Global Initiative *(12)* estimates 'Big Data' potential by industrial sector. Perhaps not surprisingly, the greatest potential growth is with information and technology firms. Government, the single largest sector of most economies, also should realize great value from proper utilization of 'Big Data', as is also likely the case for finance and insurance industries.

Remarkably, the study found that in 2012 all but two of the industrial sectors studied had more data stored, *per company*, than the entire contents of the U.S. Library of Congress. As data accumulation continues, and connecting nodes multiply, the sheer volume easily can overwhelm. In large part, the horizontal axis of Table 3 reflects the relative likelihood a particular industrial sector will harness that power.

Table 3: Potential Value of 'Big Data', by Industrial Sector

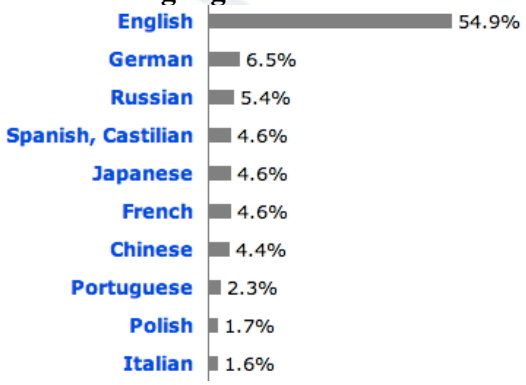


Cultures

There can be many cultures within a particular nation-state, and cultures freely flow across artificial, man-made geographic boundaries. Further, cultural influences help formulate and shape political, legal and economic systems. How might culture influence the development of 'Big Data'?

Consider language. At year-end 2012, the language distribution *(23)* of websites available to all users was dramatically skewed toward English.

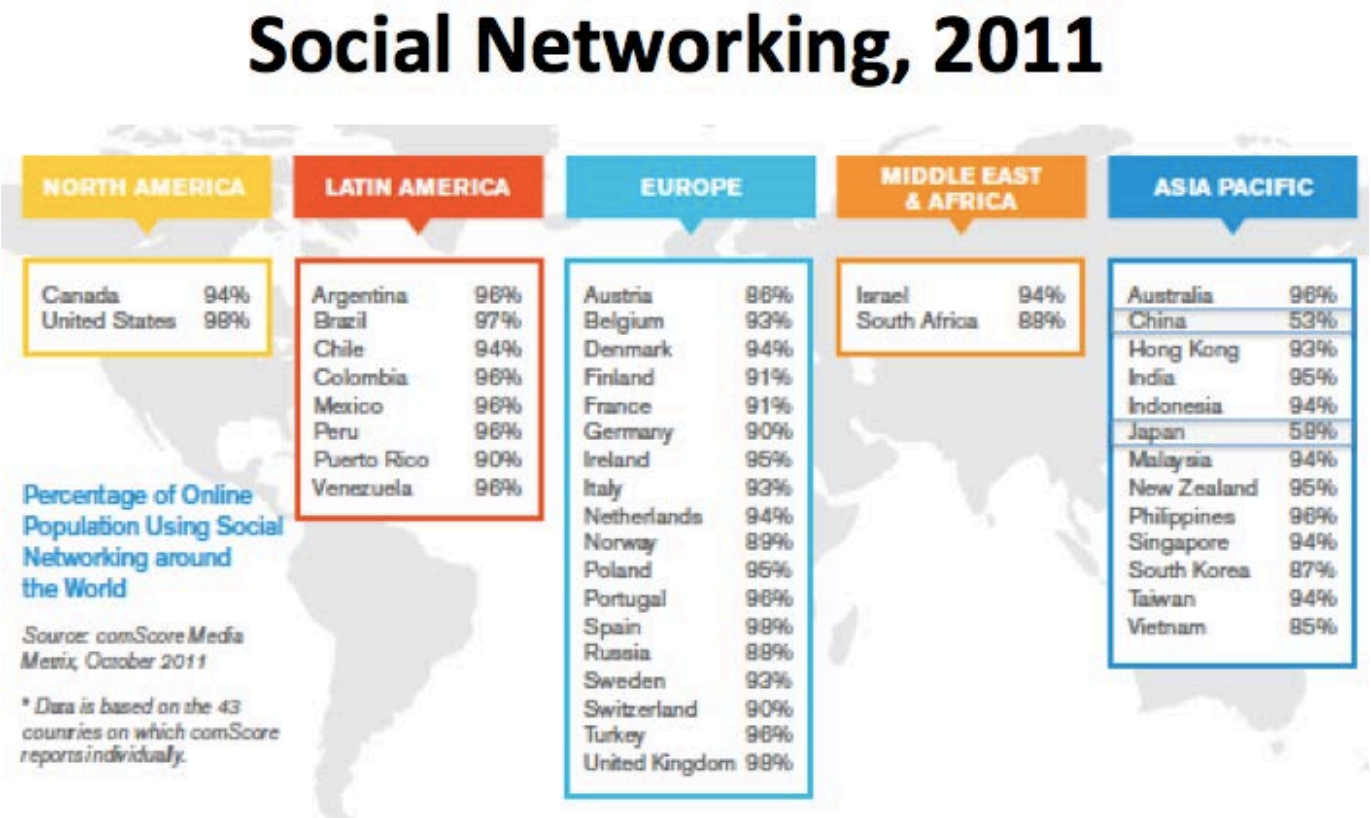
Table 4: Language Distribution of Known Websites



This is at most a minor annoyance to those Europeans or Chinese who excel at reading and processing English, but is a major obstacle to most Japanese. Allowing for *Google Translate*, there remains an access gap.

Consider social norms. By any accepted measure, Japanese tend toward extreme risk-aversion, and this mindset extends to their obsession with maintaining personal confidentiality and internet anonymity. This explains why a nation known for its electronic sophistication much favors cash transactions over credit cards, and a social network within Japan (*mixi*) that allows pseudonyms over one off-shore (*Facebook*) that doesn't. Because 'Big Data' flourishes when there are connecting nodes among entries, the restrictiveness of Japanese communicating only with other Japanese, only in Japanese, limits the opportunities for enterprises to link such data across cultural and nation-state boundaries. *(23)* Leaving aside connectivity, social networking participation rates in Japan lag others (except China, for different reasons), as Table 5 demonstrates.

Table 5: The "Variety" Component of 'Big Data' Depends on Social Networks

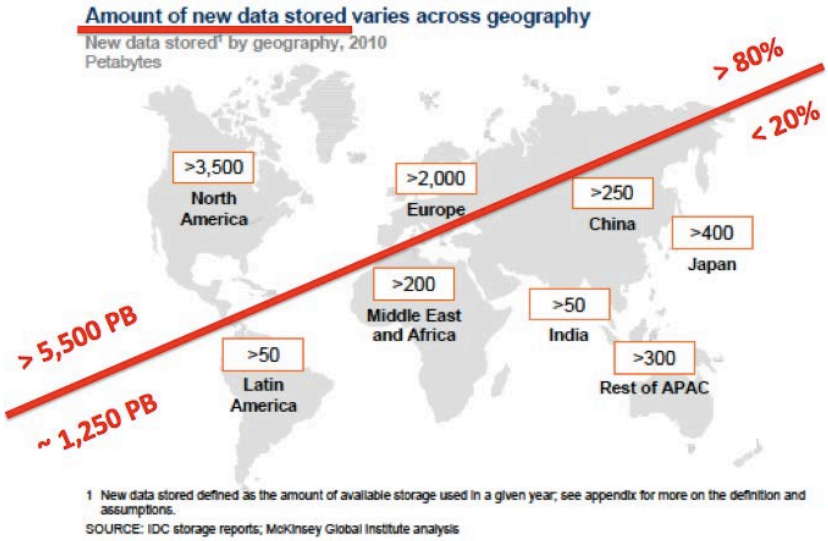


Nation-States

Last summer the author and his wife made arrangements to travel from Tokyo to Helsinki for a family reunion. We secured two flight tickets at the reasonable price of $2,484 from www.FlightBuddyOnline.com based in Hong Kong, wired the funds as instructed to National Westminster Bank in London, and promptly received our e-tickets with assigned seats. Only at Narita Airport check-in did we learn that the airline had no record of us or of the purchase, and that we had been duped by an internet scam. Suppose the crook somehow were identified. Would, or could, she be charged and prosecuted in Hong Kong? Japan? England? *Is there any jurisdiction?*

Now consider the computing-cloud, that mysterious repository to which organizations big and small are turning as the natural limits of chip technology are approached. If *Google* is headquartered in the U.S., but when a Japanese firm stores its *Google Docs* data and it is hosted via the Hamina Data Center in Finland, which country, if any, has jurisdiction? Would the answer differ for bank transaction data? Court records? These are open issues, of great consequence. Governments prefer to give their data protection laws extraterritorial effect, but how are disputes between governments to be resolved? *(17)* Would it not make more sense to follow the lead of commercial aviation, which a decade ago put aside local preferences to adapt a common standard for language communication between air traffic controllers and pilots crossing national boundaries? *(13)* As Table 4 indicates, the U.S. would seem to have the most at stake in any global solution to standardize regulation of the 'Big Data' up in the cloud.

Table 6: So, Where IS the 'Big Data'?



The 'Big Data' Talent Pool

'Big Data' analytics involves a wide array of skills, involving computer science, mathematics, statistical reasoning and computing, and data visualization. These skills are utilized in collaborative efforts that cut across departmental silos to transform 'Big Data' into competitive advantage. The stages of this process typically include:

- Capture

- Storage
- Extraction
- Transform
- Visualize
- Analyze
- Recommend.

Google employs a small army of highly trained data scientists. *ESRI*, the global leader in geographic information systems, is so staffed with PhDs in the spatial sciences that it also may be the world's largest academic-caliber geography department. Most enterprises, even the largest multi-nationals, lack sufficient in-house talent to take advantage of even the more obvious data-analytic opportunities afforded them by 'Big Data'.

McKinsey and Company estimate an acute and widening gap between supply and demand for data scientists. In the United States alone, the shortfall to take full advantage of 'Big Data' in 2012 is estimated at nearly 200,000 "deep analytical talent positions", as well as 1.5 million more "data-savvy managers needed". Since 'Big Data' grows exponentially, while university curricular changes are more properly measured glacially, the supply of data-analytic talent is certain to trail demand for the foreseeable future. This is perhaps one reason that last month the *Harvard Business Review* ran the unlikely headline, *Data Scientist: The Sexiest Job of the 21st Century*.

One solution to this paucity of available in-house talent is to outsource the data-analytics. A particularly creative solution is offered by *Kaggle*, *(22)* a website based in Australia that host competitions whereby any firm can provide their data and offer prizes for best solutions, and anyone can offer solutions. Fortune 500 companies like The Ford Motor Company have entered, invariably after disguising sensitive data; one current competition is offering a grand prize of $3 million to the winning entry.

That Elusive Pursuit of Wisdom

One of the most influential books on the scientific method written in the past half century was *The Structure of Scientific Revolutions*, by Thomas Kuhn. *(10, 18)* As one source puts it:

> Kuhn made several notable claims concerning the progress of scientific knowledge: that scientific fields undergo periodic "paradigm shifts" rather than solely progressing in a linear and continuous way; that these paradigm shifts open up new approaches to understanding that scientists would never have considered valid before; and that the notion of scientific truth, at any given moment, cannot be established solely by objective criteria but is defined by a consensus of a scientific community. Competing paradigms are frequently incommensurable; that is, they are competing accounts of reality that cannot be coherently reconciled.

Recent examples of challenges to the purist version of scientific method might include the Bayesian paradigm based on subjective probability and injection of prior probabilities, as well as bootstrap methods that substitute raw computing power for the classical statistical tests.

Chris Anderson, the Editor-in-Chief of *Wired* magazine, argues *(2)* that "the data deluge makes the scientific method obsolete", because in an age of cloud computing and massive datasets, the real challenge is not to come up with new taxonomies or models, but to sift through the data in new ways to find meaningful correlations.

> At the petabyte scale, information is not a matter of simple three and four-dimensional taxonomy and order but of dimensionally agnostic statistics. It calls for an entirely different approach, one that requires us to lose the tether of data as something that can be visualized in its totality. It forces us to view data mathematically first and establish a context for it later. For instance, Google conquered the advertising world with nothing more than applied mathematics. It didn't pretend to know anything about the culture and conventions of advertising—it just assumed that better data, with better analytic tools, would win the day. *And Google was right.*

This clearly is overstatement when applied to all scientific inquiry. However, it nicely captures the new reality of competitive data analytics.
For scientific enterprises, such as pharmaceutical companies when attempting to confirm the efficacy of a new drug, the predominant paradigm will remain the classic hypothesis-driven scientific method. Even here, history is replete with instances of serendipity, wherein casual observation of unexpected data patterns generate questions that subsequently lead to discoveries, knowledge, and even wisdom.

For most governmental and commercial enterprises, including those same pharmaceutical companies when attempting to examine historical patterns and associations to predict future physician prescribing levels, the data-mining paradigm applied to 'Big Data' is more useful.

Even as enterprising organizations are reaping benefits from first-mover advantages by exploiting 'Big Data' for competitive advantage, there is no confusing correlation with causation, no anticipation that the classical scientific method has become less important. The data-mining revolution enabled by 'Big Data' provides avenues to new insights into consumer behavior, purchasing patterns, and other response variables critical to organizational success. Some avenues result in a dead-end, others are transitory, useful for navigation today but perhaps not tomorrow. This is market reality, and for firms not on the road, there may be no tomorrow.

In short, different research purposes lead to different standards, or:

Containing Cancer Cells ≠ Retaining Customer Sales

For many enterprises, 'Big Data' is likely to accelerate a transformation from *HiPPO-like* decision-making to *DEEr-like* decision-making. Yes, hippos move slowly relative to deer, but the analogy runs much deeper. A *HiPPO-like* enterprise is characterized by a highly vertical structure, with the *hi*ghest-*p*aid *p*erson's *o*pinion ("*HiPPO*") tending to trump other views. That person sits at or near the top of the organization, and relies on intuition garnered from years of experience in making similar decisions. By contrast, a *DEEr-like* enterprise embraces a horizontal structure that de-emphasizes experience for its own sake, instead freeing the data to drive informed decisions that are tempered but nor pre-determined by intuition and experience. A knowledge-based democracy inevitably flourishes in such a *d*ata-*e*nriched *e*nte*r*prise ("*DEEr*"). Such an enterprise recognizes that 'Big Data' is transformative rather than transitive, insists upon data permeating the organization rather than becoming the property of an information technology unit, and rewards innovation in generating data-driven operational and strategic decisions.

Parting Thoughts for Managers

Today, although the term often is bantered about in the popular press as if a futuristic notion, the actual reach of 'Big Data' into our everyday life already is far more pervasive than commonly recognized. For example, U.S. governmental agencies like the Internal Revenue Service and the Recovery Accountability and Transparency Board link enormous databases and apply sophisticated social network algorithms to identify unusual connections that suggest the possibility of fraudulent behavior. Companies track location data generated by our cell phones to discern subtle shifts in the time we are willing to spend traveling to a shopping mall, and adjust their target marketing accordingly.

Consumers need to become sufficiently aware of the threats and opportunities this poses, if only to make more informed choices regarding their (heretofore unwitting) participation in this brave new world. An interesting starting point would be the *Google Transparency Report. (21)* Managers have less choice, as the 'Big Data' movement spreads and accelerates, but to adapt to market reality or lag behind. For those inclined to learn more, we close with a "starter kit" of concepts and tools with which any informed manager should become acquainted.

Table 7: Guidelines for Managers in the Era of 'Big Data'

Guidelines for Managers
1) Match Data Across Multiple Sources
2) Deal with Missing Data and Murky Measures
3) Subset the Data where Plausible
4) Bite-sized Chunks with Split-Apply-Combine
5) Summarize and Transform
6) Test Relations using Bootstrap Simulations
7) Explore Data Reduction Tools
8) Model Relations: Training, Trees, Cross-Validation
9) Build Multiple Models and Look for Convergence
10)Communicate Discoveries Visually

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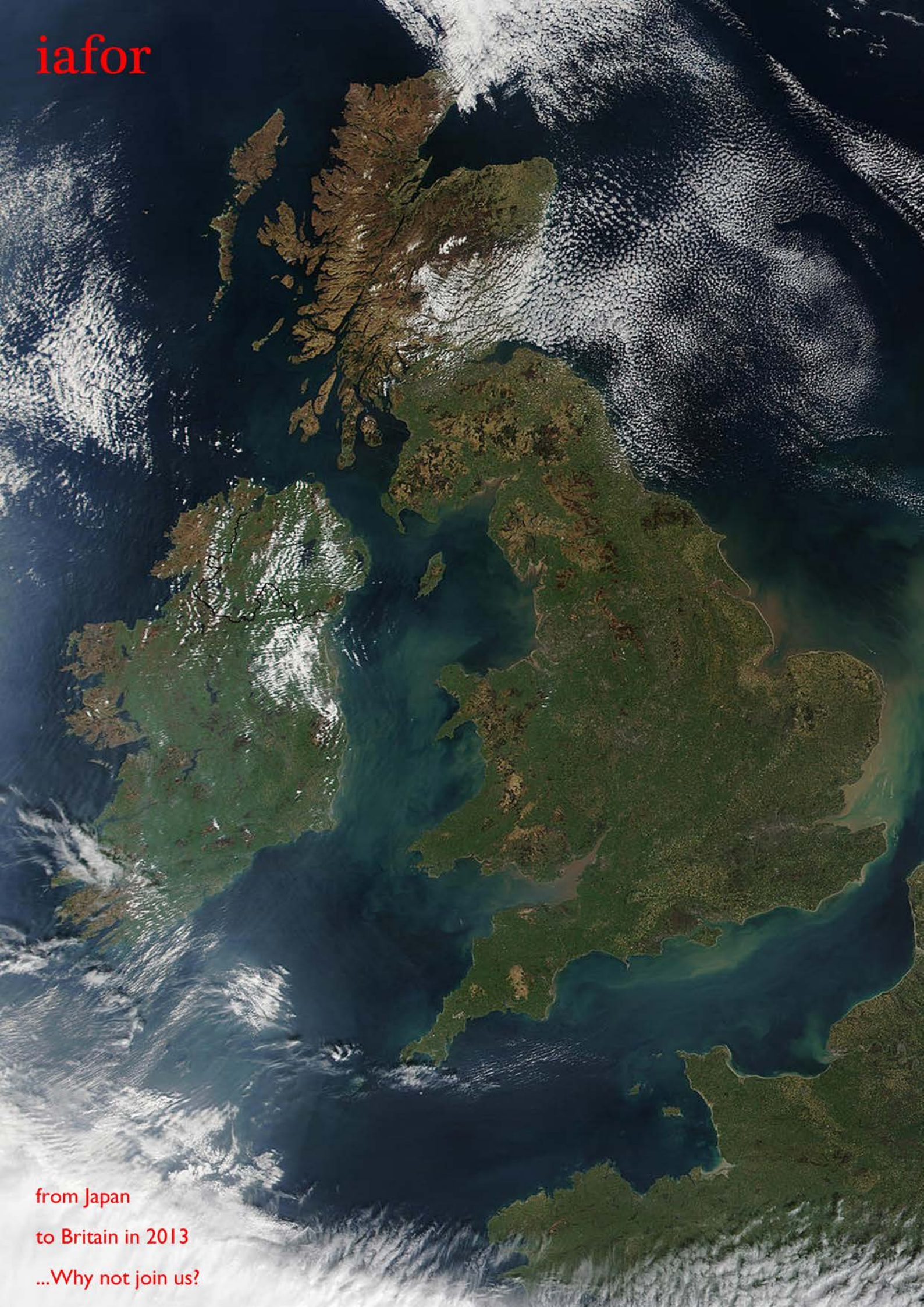
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