A Factor Analysis of the Transformational Leadership Among Undergraduate Student Leaders in Thailand

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Abstract
The study was aimed at factor analysis of transformational leadership among undergraduate student leaders in Thailand. The samples were 328 undergraduate student leaders in 5 universities. They were selected by multi-stage random sampling. Data were collected through Multifactor Leadership Questionnaire (MLQ). A confirmatory factor analysis (CFA) was used in this study. The results found that the transformational leadership model well matched with evidence – based practices (Chi-square = 0.149, df = 1, P-value = 0.699, GFI = 1.000, AGFI= 0.998, CFI = 1.000, RMR = 0.002, RMSEA = 0.000).The transformational leadership scale comprised 4 factors as follows: 1) Idealized Influence (II) 2) Inspirational Motivation (IM) 3) Intellectual Stimulation (IS) and 4) Individualized Consideration (IC). The factor loading values among those factors were 0.866, 0.591, 0.597 and 0.476 respectively. Besides, the reliability of those factors were 0.750, 0.349, 0.357 and 0.227 respectively. These results can be used to develop transformational leadership among undergraduate student leaders in Thailand more efficiently in the future.

Keywords: Factor analysis, Transformational leadership, Undergraduate student leaders

Introduction

From The Eighth National Economic and Social Development Plan of B.E.2540-2544 (A.D.1997-2001) to the Eleventh National Economic and Social Development Plan of B.E. 2555-2559 (A.D.2012-2016) that is currently used, focus on "human beings" as the center of development. Aim at everyman holistic development of his full potential aspects (Office of the National Economic and Social Development Board, 2012). The human development to achieve their full potentials essentially bases on creating individual knowledge, ethics and virtual, vision, being farsighted, through the acceptations of others and living together happily, which are self-leadership-characteristics. Besides, The Tenth Developmental Plan on Higher Education of B.E.2555-2559 (A.D.2012-2016) in Thailand conduct education to develop learners' knowledge, intellectual virtues and leadership. Therefore, leadership plays an important role in social development and sets social direction towards noble ends. (Office of the Higher Education Commission, 2012) However, there is a very low level of personal leadership in today's society because of a lack of support as students who serve in leadership roles. Its result is an adult without leadership. Therefore, creating leadership in society should start during college or university years in order to gain leadership experience as well as self-efficacy that are poised to become a high self leadership adult after graduation (Dempster and Lizzio, 2007). Moreover, there are only a few researches related to students who serve in leadership roles. Most of the studies are adult leaders in professional. In fact, leadership thoughts and theory can be studied and made a better understanding of students who serve in leadership roles.

Burke (2006) demonstrated on leaders' behavior patterns that influence team effectiveness significantly using Meta –analysis. The results analyzed two leadership styles: - One is task-focused leadership and the other is person-focused leadership. Results concluded that actual team performance was higher for person- focused led teams than for task-focused teams. The pattern of behavior in person-focused led teams that showed the highest effect size is transformational leadership (TL). Moreover, the researches of Yammarino, Dionne, Chun and Dansereau (2005), Bono and Judge (2004) and Eagly, Johannesen-Schmidt and Engen (2003) promoting transformational leadership., revealed that transformational leadership is a new approach of paradigm shift towards leadership having vision, decentralization, virtue, and encouraging followers sharing a few common characteristics. These thoughts match desired characteristics of university student leaders most universities in Thailand need. The ones who have knowledge, actual capabilities, creativity, virtues, promoting self development, and building others' confidence to follow.

Therefore, I adopted the thoughts and transformational leadership theory to use in the context of university student leaders by presenting the assessment of transformation leadership to undergraduate student leaders adopted from Multifactor Leadership Questionnaire (MLQ) that is an international assessment of Bass and Avolio (1995). Aim at checking construct validity of the mentioned assessment. Apply to measure transformational leadership of undergraduate student leaders and to study further more about leadership development of undergraduate student leaders in the future.

Literature Review of Transformational Leadership (TL)

Transformational leadership theory is a new approach to study leadership. The process influences the change of organizational members' attitude and assumption, the strong relationship to the goal and significant strategy change. Transformational leadership affects not only a leader but also a follower. However, the influence encourages followers to become change agents in the process of organizational change. Transformation Leadership was first mentioned by Burns (1978). He explained that transformational leadership is two-way processes that leaders use to influence their followers or vice versa. Transformational leadership is aware of followers' need and motivation. Besides, the relationship between leaders and their followers is raised each other's needs that transform both of them from followers to become leaders having transformational leadership and transform the leaders having transformational leadership to become leaders having ethical leadership. In other words, the leader with transformation leadership is aware of his followers' needs and encourages his followers' awareness to uplift their needs higher according to Maslow's hierarchy of needs and to determine ideals and ethical values such as freedom, justice, equality, peace and human rights etc.

Afterwards, Bass (1985) adopted transformational leadership theory more details to explain organizational change process that leaders having transformational leadership affect their followers concerning over self interest through idealized influence, inspiration motivation, intellectual stimulation and individualized consideration. The leaders will be moving up their followers' maturity and ideal to be concerned about achievement, self actualization, social organizational and others' security, and filling up their lives with meaningful tasks, too. They may guide or participate in the need for the development of organizational ethics. Next, Avolio and Bass (1999) defined transformational leadership more deeply that it is a process of influencing participants and followers not only to make a determined effort towards higher positions and increased potentials, but also to be aware of team and organizational mission and vision. Motivate participants and followers to be farsighted of their personal interest for groups', organization's or society's common interest. This process consists of four patterns of behavior as follows:-

1) Idealized Influence (II)
2) Inspiration motivation (IM)
3) Intellectual Stimulation (IS)
4) Individualized Consideration (IC)

The Study Approaches

A cross-sectional survey was undertaken from January to February 2015. The self-reporting questionnaires were collected from 328 undergraduate student leaders in five universities located in Bangkok Metropolitan area by multistage sampling technique (King Mongkut's Institute of Technology Ladkrabang, King Mongkut's University of Technology Thonburi, Kasetsart University, Bangkok University and Saint John's University). The sampling is 328 undergraduate student leaders that is adequate for checking construct variety according to Brown and Keeping (2005), Heinitz, Liepmann and Felfe (2005). The undergraduate student leaders were asked to

complete the questionnaire after they were informed that their participation was voluntary, that their responses were anonymous and confidential, and that results would be reported only in a group format. All signed informed consent forms were separated from their questionnaires.

I adopted the assessment of Transformation Leadership for undergraduate student leaders, from Multifactor Leadership Questionnaire: MLQ (Avolio and Bass, 1999), to 39 questions altogether. Adapt the language in each question to match the context of undergraduate student leaders in order that they are able to report themselves suitably according to the questions consisting of four characteristics, as follows

1) Idealized Influence (II) Question examples:- You determine to the team goal and do your work connected with it. You express your confidence through self efficacy, etc.
2) Inspiration Motivation (IM) Question examples:- You motivates your friends to pay attention to their work. You can make your friends to be aware of the main point of work, etc.
3) Intellectual Stimulation (IS) Question examples:- You will encourage your friends to express their points of view. You search for different aspects to solve problems, etc.
4) Individualized Consideration (IC) Question examples:- You teach your friends how to understand others' needs and capacities. You treat your friends based on individual basic more than groups, etc.

Use five-point Likert's scales to gauge, assign 1 as to do this the least until 5 as to do this the most.

Including, the statistics used to data analysis were mean, standard deviation, correlation and confirmatory factor analysis (CFA) as an instrument to check construct validity of the assessment of transformational leadership for undergraduate student leaders. How to test a model of transformational leadership assessment is in part of criteria for consideration whether the model adopted from the theory will match empirical data or not under the term as follows:- 1) Test Chi square – test goodness of fit must have P – Value more than 0.05 2) Test Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI) and Comparative Fit Index (CFI) should be more than 0.90. and 3) Test Root Mean Square Residual (RMR) and Root Mean Square Error of Approximation (RMSEA) should be less than 0.08. (Hair, et al., 2010; Hussey & Eagan, 2007; Schumaker & Lomax, 1996)

Research results

Descriptive and relationship between observed variables in this study

The samples included 328 undergraduate student leaders, most of them were male (61.6%), aged 19-21 years old (56.4%) and studied in field of science and technology (45.4%). The results found that mean of transformational leadership for undergraduate student leaders in four observed variables was as follows: idealized influence (II) ($\bar{x}$ = 3.479, S.D. = 0.835), inspiration motivation (IM) ($\bar{x}$ = 3.652, S.D. = 0.939), intellectual stimulation (IS) ($\bar{x}$ = 3.860, S.D. = 0.694), and individualized consideration (IC) ($\bar{x}$ = 3.476, SD = 0.831).

Besides, the results of the correlations among 4 observed variables (6 pairs) found that every correlation coefficient was significant at the .05 level. The highest correlation coefficient was 0.517 (the correlations between idealized influence and intellectual stimulation) and the lowest correlation coefficient was 0.295 (the correlations between intellectual stimulation and individualized consideration). Before analysis, checking the problem of multicollinearity was performed by considering all correlations among observed variables. The results found that all correlations in this study were less than 0.80. This range of correlation coefficients was considered an acceptable level without the problem of multicollinearity (Doane & Seward, 2011; Hair et al., 2010). While, Approx. Chi-square of Bartlett's Test of Sphericity was 299.055 (df = 6) and p - value was 0.000 that showed significantly at the .05 level. Furthermore, Kaiser-Meyer-Olkin (KMO) analysis was performed. It found that KMO value was more than 0.50 (KMO = 0.731). This showed that correlation matrix among observed variables in this study was not identity matrix and correlations among observed variables were sufficient for factor analysis to check validity of measurement model as shown in Table 1.

Table 1: Mean Standard Deviation and Correlation of Observed variables in transformational leadership among undergraduate student leaders

TL	Correlation			
	II	IM	IS	IC
II	1.000			
IM	0.513*	1.000		
IS	0.517*	0.347*	1.000	
IC	0.410*	0.453*	0.295*	1.000
Mean	3.479	3.652	3.860	3.476
S.D.	0.835	0.939	0.694	0.831

KMO: Measure of Sampling Adequacy = 0.731
Bartlett's Test of Sphericity: Chi-square = 299.055, df= 6, p= 0.000
*p<0.05

Check validity of undergraduate student leaders' transformational leadership measurement model

The results showed the undergraduate student leaders' transformational leadership measurement model match empirical data (Chi-square = 0.149, df = 1, P-value = 0.699, GFI = 1.000, AGFI= 0.998, CFI = 1.000, RMR = 0.002, RMSEA = 0.000) and demonstrated the undergraduate student leaders' transformational leadership measurement model having the construct validity as well. Transformational leadership are able to measure significantly from each factor analysis as follows:- Idealized Influence (II) measured significantly by factor loading = 0.866, Inspiration Motivation (IM) measured significantly by factor loading = 0.591 and measurement error = 0.572, Intellectual Stimulation (IS) measured significantly by factor loading = 0.597, Individualized Consideration (IC) measured significantly by factor loading = 0.476. Therefore, Transformational Leadership is able to be measured from inspiration motivation the most significantly. Besides, reliability of variable of transformational leadership measured from each factor analysis as follows:- Idealized Influence (II) = 0.750, Inspiration Motivation (IM) = 0.349, Intellectual Stimulation
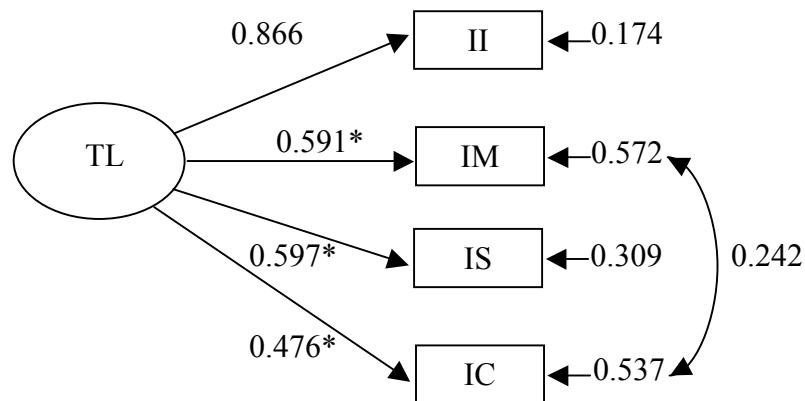
(IS) = 0.357 and Individualized Consideration (IC) = 0.227 as shown in Table 2 and Figure 1.

Table 2:   Factor loading of transformational leadership among undergraduate student leaders

TL	b_{sc}	S.E.	t	Sig.	R^2
II	0.866	-	-	-	0.750
IM	0.591	0.100	7.664	0.000	0.349
IS	0.597	0.073	7.804	0.000	0.357
IC	0.476	0.084	6.583	0.000	0.227

Chi-square = 0.149, df= 1, p= 0.699, RMSEA= 0.000, RMR= 0.002, GFI = 1.000, AGFI= 0.998, CFI = 1.000

*p<0.05

Chi-square = 0.149, df= 1, p= 0.699, RMSEA= 0.000, RMR= 0.002, GFI = 1.000, AGFI= 0.998, CFI = 1.000

Figure 1: Measurement Model of transformational leadership among undergraduate student leaders

Conclusion and Discussions

In consequence, the study finding presented that undergraduate student leaders' transformational leadership measurement model well matched with empirical data and also showed that the assessment of undergraduate student leaders' transformational leadership measurement model has construct validity. Factor analysis is defined that idealized influence (II) is able to be measured the most significantly of all characteristics by factor loading = 0.866 and intellectual stimulation (IS), inspiration motivation (IM), individualized consideration (IC) are in sequence. The undergraduate student leaders having transformational leadership always devote themselves to groups, be self-sacrificing, as well as create motivation, and encouragement atmosphere. And they are concerned with the four characteristics according to Avolio and Bass (1999) thoughts and transformational leadership theory. The study finding is in harmony with Ergeneli Gohar and Temirbekova (2007) which revealed transformational leadership of undergraduate student leaders of Pakistan, Kazakhstan and Turkey of which idealized influence can be measured the most

significantly of all characteristics, as well. Furthermore, the assessment of transformational leadership having validity and reliability can be used to test transformation leadership of students in other researches. In addition, the assessment developed from Multifactor Leadership Questionnaire which is a universal one can be used suitably in the context of undergraduate student leaders in Thailand.

Although thoughts and theory of transformational leadership are generally used to study adults in working life span, the study finding obviously showed that transformational leadership approach can be used suitably for undergraduate students in learning life span, and also well-matched with Dempster and Lizzio (2007) to promote many more researchers to study sampling related to student leadership roles. Since leadership plays the most important roles in society development in the future, students should be trained to be aware of their leadership roles, of self and society development in order to become highly effective adults. Moreover, the researches of students who serve in leadership roles can be created a new approach to study further on adults who serve in leadership ones, too.

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