Investigating Relationship Between Self-Efficacy, Achievement Motivation, And Learning Strategies Of UKM Undergraduate Students

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Abstract: - The main purpose of the present paper was to investigate the relationship between self-efficacy, achievement motivation, and self-regulated learning strategies of UKM undergraduate students. The self efficacy construct included three sub-scales: control self-efficacy, performance learning efficacy, and self efficacy encouragement. The achievement motivation construct contained three sub-scales namely; mastery goals, performance goals, and avoidance goals. The learning strategies construct comprise 6 sub-scales: rehearsal strategies, elaboration strategies, organizational strategies, meta cognitive self-regulation strategies, time and study environment management strategies, and help seeking regulation strategies. 300 undergraduate students participated in the study using the Confirmatory Factor Analysis to answer the research Question: Is there any relationship between the self-efficacy beliefs, the achievement motivation, the self learning strategies, and academic achievement of the UKM undergraduate students? Empirically, the CFA results indicated that there was a considerable relationship between the self-efficacy beliefs, the achievement motivation, and the self learning strategies confirming the argument of literature review.

Key-Words: - Self-Efficacy, Achievement Motivation, Learning Strategies.

1 Introduction

It was widely believed that self -efficacy belief serves as core cause of human actions, it makes individuals believe in their own ability to execute a given task. Individual self-efficacy enables them to find solution to difficulties. The Self efficacy belief actively injects other factors of success such as motivation and self-regulation. Theoretically and empirically, self-efficacy behaviour regulates human execution through cognitive function and motivational elements (Bandura 1986, 1997; Bandura and Locke 2003).

The self-regulation of motivation is governed by quite a few self-regulatory mechanisms which occupy a central regulatory function. Firstly, self- efficacy drives an individuals' beliefs in their ability to mobilize their level of their motivation, manage to set up goals, and able to expend the required efforts to accomplish. The stronger the people's sense efficacy, the higher their goals setting and commitments.

Consequently, believing in self ability control leads to goal setting which is a second mechanism of self-regulated motivation, the higher the goal the grater the individual motivation is enhanced. Thirdly mechanism of self-regulation is affective self-evaluation which is about matching people's adopted goals with the desired effort and self direction to determine managerial rules to accomplish (Bandura 1986; Bandura and Jouden 1991).

Bandura (1989) suggests the most important source of human motivation function is cognitive engagement. Through cognitive processes humans generate the motivation to set goals, plan a course of action and guide their measures towards goals, so, perceived self-efficacy improved human performance through cognitive, affective, or motivational intervening processes.

Self-efficacy theory demonstrates a close relationship between students' self ability beliefs to execute learning tasks and self-regulated learning strategies. Consequently, numerous research findings indicate the primary influence of a students' sense of efficacy beliefs on their self regulated learning. Those who own confidence in their ability to exercise tasks have an ability to control their learning regulation.

Students with a high sense of efficacy will study harder and definitely persist longer when they approach difficulties whereas low efficacy students perform worse at learning tasks, tend to avoid difficult tasks, and do not really regulate their learning behaviours (Shunk 1991). Self efficacy plays an important role because it energizes individual students to set high goals, influences the amount of efforts to be invested helps students to

confidently identify effective strategies to be used, and time to be spent. In another words, goal setting, self-efficacy, and strategic knowledge help students to discover their monitoring system, and evaluate their learning activities (Niemczyk and Savenye 2001).

Zimmerman (1989) argues that self regulated learning has three influential elements, they are: commitment to academic goal, self efficacy, and learning strategies. Academic goal setting stands as students reasoning to engage in learning activities and can described as their causal agency for leaning behaviour. Bandura and Locke (2003). (2003) indicated functional properties of self-efficacy beliefs in connection with motivational goals self-learning strategies.

Young Bong and Choi (2000) demonstrate that self-efficacy for self-regulated learning strategies was related to 152 junior high school students' academic self-efficacy, strategy use, and Internets self-efficacy in web-based activities. Wood and Bandura (1989) examined the impact of conceptions of ability on self-regulatory mechanisms and complex decision making in graduate students on a business program. The results of Path analysis showed that students' self efficacy enhanced organizational performance and indirectly influenced the analytic strategies. The mediation of analytic strategies and personal goals affected organizational performance.

Also, the entire influence of the self-regulatory factors mediated the relation of prior organizational performance to subsequent performance. Andrew and Vialle (1998) self-efficacy and self-regulated learning strategies were observed among nursing students' academic performance in science courses. The use of learning strategies (critical thinking, organization, elaboration, time and study environment, help-seeking, peer learning and meta cognitive learning strategies) were statistically related to academic performance. In this study, students used organization and elaboration strategies to learn more than any other learning strategy variables. High and Low senses of efficacy were related to students' performance and strategies development. The higher the sense of efficacy the greater the achievement and strategy used.

We may observe from the above research findings that not only are self-efficacy beliefs mediating students' self-regulation, rather, studies on self-regulated learning emphasize the importance of goal setting as a significant element that critically influences the self-regulated learning functioning. Also, the type of goals that learners own influence their learning regulation process. Additionally, Pintrich and DeGroot (1990); Pintrich and Schrauben (1992) found a relationship between self-efficacy, self regulated learning, and students' academic performance.

When an individual set clear goals for themselves in line with priority the initial strategies to regulate the behaviour will appear. With the appearance and clarity of goal setting the individuals' ability to monitor their own activities become assessable, this is because human agency or attention has received internal and external intelligent direction which could lead to appropriate control strategies (Behncke 2002).

2 Problem Formulation

It is empirically important to examine the proposed measurement models separately before investigating them simultaneously; this allows us to obtain more reliable model fit (Hair et al. 1998). Concurrently, the above suggestion was considered in this study and therefore, separate Confirmatory Factor Analysis was conducted for each construct before merging them.

The following omnibus fit indices were used to estimate parameter: the root mean square error of approximation (RMSEA) value of .05 to .08, the less the better, the CMIN/DF (chi-square degrees of freedom) of 5. or bellow, the Tucker-Lewis Index (TLI) of .9 or greater, the comparative fit index (CFI) of .9 or greater than, the adjusted goodness-of-fit (AGFI) of .9 or above, the root mean residual (RMR) of less than .05, the goodness-of-fit index (GFI) of .9 or larger, the Hoelter' s critical number (CN) of 200 or greater.

The Hoelter's .05 and .01 indexes were purposely and directly designed to estimate adequate or sufficient sample size for the model fit rather than focusing on model fit (Barbara 2001). The above statistical calculation requirements and other relevant fit indices were suggested as indicatives that the models "fit the input data well" (Pintrich et. al. 1991 and Barbara 2001).

Confirmatory factor analysis was used separately to examine the self-efficacy construct which contains two sub-scales; control of learning beliefs and self-efficacy beliefs for learning and performance. The confirmatory factor analysis was repeatedly applied to scrutinize a 14 items Self-efficacy encouragement construct, achievement motivation construct, and self-learning strategies construct. However, some items were removed from further analysis because they were below recommended minimum requirements and the remaining items were subjected to another confirmatory factor analysis.

The quick overall model fit for each individual constructs, indicated that the minimum was achieved. Additionally, the root mean residual (RMR), the root mean square error of approximation (RMSEA), the goodness-of-fit index (GFI), the adjusted goodness-of-fit (AGFI), the Tucker-Lewis Index (TLI), the comparative fit index (CFI) values fell well in between the minimum

and maximum recommended values indicating that the separated models fit well the collected data from UKM undergraduate students.

For example, CFA's fit indices satisfied that the self-efficacy hypothesized model fit the collected data well. The overall model fit indicated that the minimum was achieved, the chi-square resulted a value of 2.07, degrees of freedom was 41 with probability of p≤0.001, Because of the large sample size (300) CFA showed high statistical significance (p≤0.001) which is somehow considered as negative impression to the research model.

However, other measurement fits proved the model to be reasonable and acceptable; the root mean residual (RMR) .040, the Hoelter critical number (CN .05) 201, Hoelter critical number (CN.01) 229, the root mean square error of approximation (RMSEA) .060, CMIN/DF 2.07, the goodness-of-fit index (GFI) .95, the adjusted goodness-of-fit (AGFI) .92, the Tucker-Lewis Index (TLI) .96 and the comparative fit index (CFI) .97.

3 Problem Solution

The preliminary results of CFA statistical tests established that the individual hypothesized model of the study enjoys internal consistency correlation. These suggested the above separate evaluated 4 models to be combined into one single hypothesized model. Yet again, the confirmatory factor analysis method was used to explore good fit of the combined hypothesized model, namely, the self-efficacy beliefs (2 indicators), the self-efficacy encouragement (1 indicator), the achievement motivation (3 indicators), and the learning strategies (6 indicators). According to figure 1.1, the covariance between indicators of the achievement motivation and the learning strategies were the highest values .84 followed by the covariance between the achievement motivation and the learning strategies .82 while the covariance between the self-efficacy beliefs and the achievement motivation indicators was .80. The results of CFA's fit indices suggested that the collected data fits the combined hypothesized model and reasonable .The minimum overall model fit was achieved.

Table 1 demonstrated that the ration of chi-square value was less than three while the degrees of freedom was 51, and with probability of p≤0.001. In addition, the root mean residual (RMR) .035, the root mean square error of approximation (RMSEA) .054, CMIN/DF 1.88, the goodness-of-fit index (GFI) .95, the adjusted goodness-of-fit (AGFI) .92, the Tucker-Lewis Index (TLI) .96, and the comparative fit index (CFI) .95. Results of the standardized regression indicators were also statistically significant at 0.001 proving the combined hypothesized model fulfilled to be valid, reliable, and tolerable integrated model.

Table 1 The Combined Hypothesized Model Fit Indices

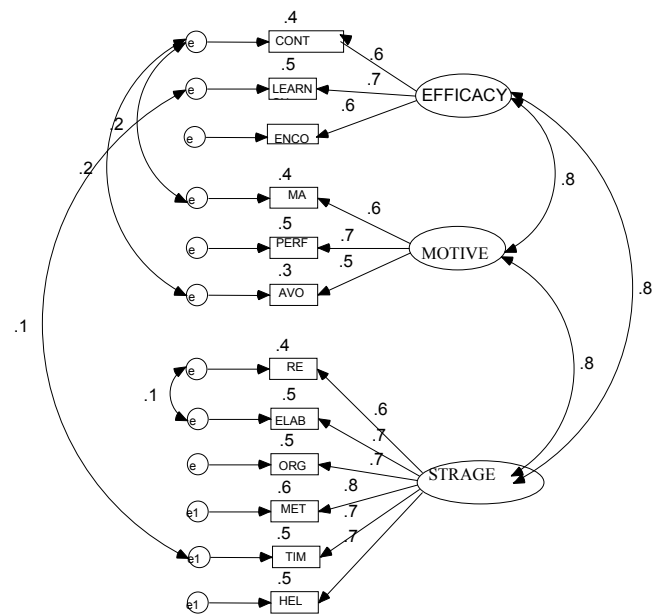| CIMNDF/ TLI Chi-square	d.f. RMR	P	GFI	AGFI RMSEA	CFI CN
1.880	47	0.001	.955	.926	.974
.964 .035		.054	217 &	246	

Figure 1.1 Combined Measurement Hypothesized Model

Note keywords: *EFFICACY = self-efficacy, MOTIVE= achievement motivation, and STRAGE= self-regulation learning strategies.*

4 Conclusion

Confirmatory Factor Analysis results demonstrated satisfactory statistical model fits for the combined measurement models. It shows acceptable goodness-of-fit for the correlations between the models of **self-efficacy beliefs,** the achievement motivation, and the learning strategies confirming. Bandura 1986, 1997; Bandura and locke 2003 emphasized on observable relationship between **self-efficacy beliefs,** the achievement motivation, and the learning strategies, Wood and Bandura (1989). The relationship between the above influenced self-regulatory mechanisms and complex decision making of business graduate students.

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