

## RELATIONSHIPS AMONG ACHIEVEMENT GOAL, ACADEMIC SELF-EFFICACY, AND ACADEMIC ACHIEVEMENT OF THAI UNDERGRADUATE STUDENTS

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**Abstract:** The present study examined relationship patterns among achievement goal, academic self-efficacy, and academic achievement via three path models with different order configurations based on social cognitive theory and expectancy value theory. Model 1 proposed (achievement goals → academic self-efficacy → academic achievement). Model 2 posited (academic self-efficacy → achievement goals → academic achievement). Model 3 placed (academic self-efficacy, achievement goals → academic achievement). Participants consisted of 988 Thai undergraduate students with mean age of 20 (SD = 0.99), ranging from 18 to 27 years. Structural equation modeling was employed to analyze the data. Findings revealed that all three models fitted the sample covariance matrix reasonably well. Direct model comparisons indicated that Model 1 and Model 3 fitted the data significantly better than Model 2. Findings from the path analysis indicated that adoption of different types of achievement goals directly influenced academic achievement. Specifically, performance-approach goal demonstrated a positive relationship with academic achievement in contrast to performance-avoidance goal which showed a negative relationship. Factors influencing student adoption of different types of achievement goals were discussed.

**Keywords:** Achievement Goal, Academic Self-Efficacy, Academic Achievement, Undergraduate Students

### Introduction

Evaluation is a part of the educational system that provides appropriate evidence to help both teachers and learners attain mutual goals of academic learning (Bloom, Hastings, & Madaus, 1971). However, unfavorable judgment is associated with increased rates of high-risk behaviors such as premature sexual activity, early pregnancy, delinquency, crime, violence, and drug abuse (Woods, 1994) which may affect students' entire career (Bloom et al., 1971). Therefore, identification of study factors that can assist students in fulfilling their academic tasks and formulating strategies to retain them in the educational process is greatly needed.

### Statement of the Problem and Significance of the Study

Many researchers have studied the relationship between achievement goal and self-efficacy and their influence on academic achievement (e.g., Thongnour, 2002; Hsieh, Sullivan & Guerra, 2007; Coutinho & Neuman, 2008). However, the findings have been inconsistent. For example, in support of the position that mastery-approach goal is a goal flowing to success from the need for achievement, Payne, Youngcourt, and Beaubien (2007) reported mastery goal as being positively related to learning strategies and academic performance. However, Elliot and Murayama (2008) found that mastery goals were unrelated to exam performance. In demonstrating that performance-approach goal is a goal to complete tasks due to fear of other people's negative perception (e.g., college students who are in the adolescent stage and need social acceptance may decide that performance goals could be more beneficial than other goals (Wolters, 2004). A number of prior studies (Elliot & Church, 1997; Elliot & Murayama, 2008) reported that performance goals were positively related to academic performance. However, Linnenbrink (2005) found that performance-approach goals were associated with lower scores on math exams. Self-efficacy influences individuals' choices and the courses of action they pursue. Thus, students with high self-efficacy master new knowledge and engage in challenging activities while students with low self-efficacy often decline to pursue new tasks (Lynch, 2008). On the other hand, other studies (e.g., Hsieh et al., 2007; Brazil & Edman, 2008) found partially opposing outcomes in that low achievers reported their self-efficacy as being equal or higher than that of high achievers.

In line with cultural perspectives, in as much as this study was explored in a Southeast Asian culture, Thailand is known to be a highly collectivist societies, individuals often pursue goals in order to maintain harmony between the self and parents as a given family obligation (Pomerantz, Grolnick, & Price, 2005). In support of this, Bong (2008) found that Korean students' feelings of obligation toward their parents, whether one of closeness or conflict, significantly predict academic achievement or performance.

Altogether, the relationship among achievement goal, academic self-efficacy, and academic achievement needs to be re-examined due to inconsistent research findings. The cultural perspective regarding fear of failure as resulting from other people's expectations may cause the pattern of relationship among Thai students to differ from that of their Western counterparts. Furthermore, the

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configuration of the two factors influencing academic achievement needs to be verified because the sequence of these two factors associated with academic achievement involved various applications by different researches. The following information will demonstrate the pattern and theoretical support of each model.

***Proposed Model 1 (Relationship between achievement goal and academic achievement, being mediated by academic self-efficacy)***

According to social cognitive theory, individuals are “cognitive beings who process information to formulate their learning, behavior, and development” (Sigelman & Rider, 2009, p. 42). Achievement goal is described as a cognitive-dynamic purpose of task engagement by which individuals’ competent perceptions induce their motivation to pursue a goal (Elliot & Church, 1997). For example, students endorsing mastery goals reported having high self-efficacy to proceed with their choice and succeed in their academic goals, whereas, students espousing performance-avoidance goals reportedly have low academic self-efficacy and apply a disorganized process that brings about uncompleted tasks (Coutinho & Neuman, 2008). Based on this concept, Model 1 was proposed in which achievement goals were placed as the first variable. Self-efficacy was demonstrated as a mediator. Finally, academic achievement was portrayed as a dependent variable.

***Proposed Model 2 (Relationship between academic self-efficacy and academic achievement, being mediated by achievement goal)***

Expectancy-value theory explains the tendency to engage in tasks depending on the expectation of individuals valuing the outcome (Bandura, 1999). Self-efficacy refers to the source of people’s judgment of their ability to successfully perform a task (Schunk, Pintrich, & Meece, 2008). In effect, people with low self-efficacy are more likely to espouse performance-avoidance goals to avoid doing tasks, whereas, those who have high self-efficacy reportedly endorsed mastery-approach goals or performance-approach goals to readily engage in challenging tasks with confidence (Hsieh et al., 2007; Coutinho & Neuman, 2008). In support of this, the second model posited self-efficacy as the first variable and achievement goal as mediator. Academic achievement was presented as a dependent variable.

***Proposed Model 3 (Relationship between academic self-efficacy and achievement goal with academic achievement)***

The third alternative model also relates to social cognitive learning theory which proposed that

achievement goal operates together with academic self-efficacy to regulate one’s motivation to accomplish a task. Furthermore, the research results of Bong (2008) demonstrated self-efficacy and achievement goal as sources of personal motivation. Based on this concept, the two variables (achievement goal and academic self-efficacy) were, likewise, arranged as first row independent variables with academic achievement as the dependent variable. No mediator was proposed for this model.

**Research Question**

Based on the hypothesized academic achievement model presented in Models 1, 2, and 3, the following research questions were proposed: What is the pattern of relationship among achievement goal, academic self-efficacy, and academic achievement of Thai undergraduate students?

**Method**

*Participants*

Participants comprised 988 undergraduate students enrolled in three universities in Songkhla Province during the 2011 academic year (November 2011 to May 2012). All participants willingly agreed to complete the survey questionnaire. Their mean age was 20 (SD = 0.99), ranging from 18 to 27 years. About 76% were female and 24% were male. Most of the students were from the Business Administration Department and the Science Department.

*Instrumentation*

The research instruments consisted of the following:

*Background Information Questionnaire.* This researcher-constructed questionnaire consisted of two parts: (1) Personal information section designed to tap the respondent’s demographic characteristics; and (2) Academic achievement section which served to indicate the student’s GPA and subject grades of First Year (1<sup>st</sup> and 2<sup>nd</sup> semesters).

*Achievement Goal Questionnaire-Revised (AGQ-R).* The 12 item of AGQ-R was developed by Elliot and Murayama (2008). Participants responded on a scale of 1 (*Strongly disagree*) to 5 (*Strongly agree*). The calculated Cronbach’s alpha value obtained from this study’s reliability analysis was .72.

*Academic Self-Efficacy Scale.* This 79-item was adapted from a Thai questionnaire developed by Ngamsiri (1997). Respondents were asked to rate themselves using a 10-Likert-type scale from 0 (*Uncertain*) to 9 (*Extremely certain*). The calculated Cronbach’s alpha value obtained from this study’s reliability analysis was .98.

### *Procedure*

The achievement goal questionnaire was translated and back-translated by two independent bilingual experts. Discrepancies between the original version and the back-translated version were discussed and resolved. Idioms and complicated words were adjusted accordingly for simpler communication (e.g., “I am striving to do well” was modified to “I try very hard to do well”). A pilot test was conducted on the bilingual experts using both English and Thai versions. The second comparison supported the proposition that the modified English and back-translated versions were similar to each other. Furthermore, it was not necessary to translate the academic self-efficacy questionnaire because it was originally in Thai language. The Thai version was then examined further, using direct contact, on second year students. The targeted students’ GPA and subject grades for the two continuous semesters of their first year studies were obtained from the Registrar’s Office of their respective universities. Prior to actual participation, the students were fully notified about the purpose of the study via an informed consent form, and that the obtained GPA and subject grades were to be kept strictly confidential.

### **Results**

To achieve this, three different order constructions of academic achievement models were proposed to identify the best fitting model which could explain the relationship among achievement goals, academic self-efficacy, and academic achievement. Appropriate statistical methods were introduced to verify the purpose of the research. First, three different proposed structural models were compared by means of chi-square values and incremental fit indices (NFI, IFI, TLI, CFI, and the Akaike information criterion). Second, multi-model testing was employed, to test and to compare the path fit model representing the direct and indirect structural relationship among the five independent variables (mastery-approach goals, mastery-avoidance goals, performance-approach goals, performance-avoidance goals, and academic self-efficacy) that impact on academic achievement.

### *Evaluation of the Measurement*

Before evaluating and comparing the fit of path models 1, 2, and 3, it was essential to corroborate that the measurement variable written to reflect the ten latent constructs (achievement goals consisted of mastery-approach goal, mastery-avoidance goal, performance-approach goal, and performance-avoidance goal; academic self-efficacy consisted of learning, thinking, calculating, performing an exam, reading, and writing). However, the six latent constructs of ‘academic self-efficacy’ were treated as a single construct. This is because the six latent constructs did not fit well with

the model.

Each latent construct was represented by three computed indicator variables (item parcels). For the constructed measurement model, all factor loadings were freed, items were allowed to load on only one construct, and latent constructs were allowed to correlate. A chi-square goodness-of-fit test was employed to test the null hypothesis that the sample covariance matrix was obtained from a population that has the proposed model structure. Results indicated that the model fit the data well. Although the overall chi-square value was significant,  $\chi^2$  (360,  $N=494$ ) = 903.50,  $p < .001$ , the incremental fit indices of NFI, IFI, TLI, and CFI are above 0.90 (range: 0.93-0.96). The RMSEA value of 0.06 indicated that the model fit the population covariance matrix well. The standardized regression coefficients (factor loadings) for the measurement indicators were all positive and significant using the critical ratio test ( $C.R. \geq \pm 1.96$ ,  $p < .001$ ). Standardized loadings ranged from 0.56 to 0.97 ( $M = 0.80$ ). These values indicated that the indicator variables hypothesized to represent their respective latent constructs did so in a reliable manner. The percentage of residual (unexplained) variances for the 30 indicator variables ranged from 6% (i.e., 94% of the variance was explained; learn1) to 68% (i.e., 32% of the variance was explained; AGQ11).

### *Evaluation and Comparison of the Structural Models*

Five latent constructs (mastery-approach goals, mastery-avoidance goals, performance-approach goals, performance-avoidance goals, and academic self-efficacy) in the posited path models were associated with academic achievement. The three path models presented in Models 1, 2, and 3 were used to examine the pattern of relationship. Although the order of configuration of these three path models was different, they were based on the same measurement variables and were derived from the same sample. Thus, with different degrees of freedom, direct comparison of these three models was possible.

The results showed that the three models fit the data very well, relative to the null model. Although their chi-square values were significant for all three models (Model 1 and Model 3:  $\chi^2$  (194,  $N = 988$ ) = 1104.55,  $p < .001$ ; Model 2:  $\chi^2$  (200,  $N = 988$ ) = 1280.75,  $p < .001$ ), their incremental fit indices of NFI, IFI, TLI, and CFI ranged from 0.89 to 0.92). Results of chi-square difference tests comparing the three models indicated that Model 1 and Model 3 fit the data significantly better than Model 2,  $\chi^2$  (6,  $N = 988$ ) = 176.2,  $p < .001$ . Moreover, comparing the AIC measures for the three models, it is evident that the AIC for Model 1 and Model 3 (1222.55) is lower than that for Model 2 (1386.75). This suggests that Model 1 and Model 3 are both more parsimonious and better fitting than Model 2.

**Table 1: Chi-square Goodness-of-fit Value, Incremental Fit Indices (NFI, IFI, ILI, CFI, RMSEA, Akaike Information Criterion or AIC), and Model Comparison**

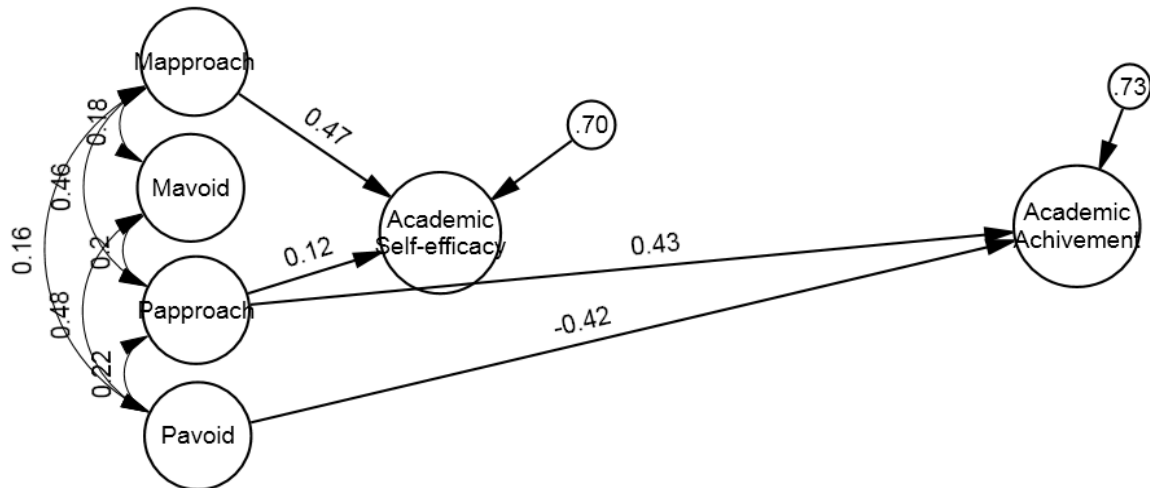
Model	$\chi^2$ (N=988)	df	P	NFI	IFI	TLI	CFI	RMSEA A	AIC
Model 1 (Self-efficacy is mediator)	1104.55	194	<.001	0.90	0.92	0.90	0.92	0.069	1222.55
Model 2 (Achievement goal is mediator)	1280.75	200	<.001	0.89	0.90	0.89	0.90	0.074	1386.75
Model 3 (no mediator)	1104.55	194	<.001	0.90	0.92	0.90	0.92	0.069	1222.55
Model Comparison									
Model 1 vs Model 2	176.2	6	<.001	0.001	0.002	0.001	0.002	0.005	164.2
Model 2 vs Model 3	176.2	6	<.001	0.001	0.002	0.001	0.002	0.005	164.2

#### Model Testing

The fit of the path model representing the direct and indirect structural relationships among the five independent variables affecting academic achievement was executed by using the statistical program AMOS. The standardized path coefficients for the three models are shown in Figures 1, 2, and 3, respectively.

(See Figure 2 and 3 on the next page)

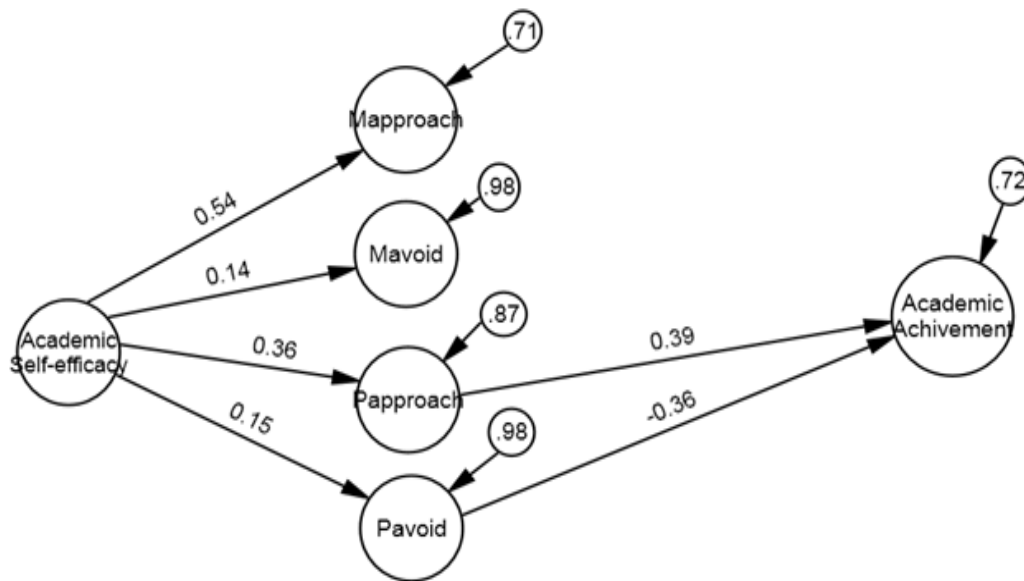
adopted performance-approach goals, the higher their reported level of academic achievement. In contrast, the more the students adopted performance-avoidance goals, the lower their reported level of academic achievement. Second, for Model 1 only, the achievement goals of mastery-approach goal and performance-approach goal are positively associated with academic self-efficacy. Thus the more the students adopted mastery-approach goals and performance-approach goals, the higher their reported level of



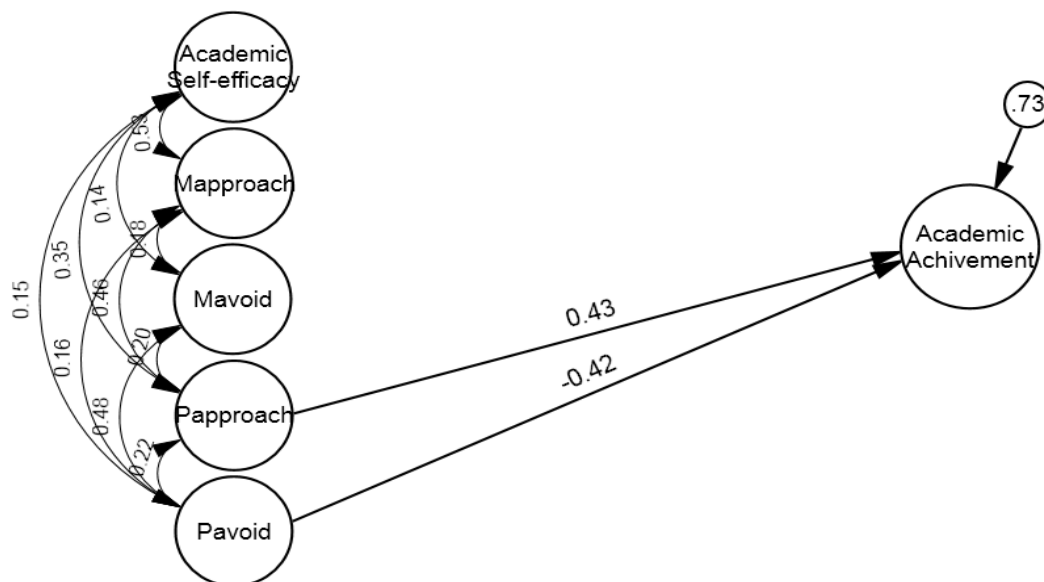
**Figure 1: Model 1-Relationship between Achievement Goal and Academic Achievement Being Mediated by Academic Self-Efficacy**

Those coefficients are significant, as computed by the critical ratio test. Results revealed the following findings. First, there were direct relationships between achievement goals and academic achievement for both Models 1 and 3. Thus, the more the student participants

academic self-efficacy. Third, for Model 2 only, academic self-efficacy was found to be positively related to achievement goals of mastery-approach goal and mastery-avoidance goals. Thus, the more the students reported higher level of academic self-efficacy,



**Figure 2: Model 2- Relationship between Academic Self-Efficacy and Academic Achievement, Being Mediated By Achievement Goal**



**Figure 3: Model 3- Relationship between Academic Self-Efficacy and Achievement Goals with Academic Achievement**

the more they endorsed both mastery-approach goals and mastery-avoidance goals. Fourth, for Model 2 only, academic self-efficacy was found to be indirectly related to academic achievement being mediated by achievement goals of performance-approach goals and performance-avoidance goals. Thus, the more the students reported higher level of academic self-efficacy, the more they endorsed both performance-approach goals and performance-avoidance goals; the more they endorsed performance-approach goals, the higher their reported level of academic achievement; the more they endorsed performance-avoidance goals, the lower their

reported level of academic achievement.

The standardized residual indicated the proportion of variance predicted by the respective models. These coefficients indicated that (a) Model 1 accounted for 30% of the variance in participants' academic self-efficacy and 27% of the variance in academic achievement; (b) Model 2 accounted for 29% of the variance in mastery-approach goals, 2% of the variance in mastery-avoidance goals, 13% of the variance in performance-approach goals, 2% of the variance in performance-avoidance goals, and 28% of the variance in academic achievement; and (c) Model 3 accounted for 27% of the

variance in academic achievement.

### Discussion

This study attempted to compare three models (Models 1, 2, and 3) based on social cognitive theory and expectancy value theory as well as examine the pattern of relationship between achievement goal and academic self-efficacy and its influence on academic achievement. The results showed that the three models fit well with empirical data. Moreover, the finding of relationship patterns and the adoption of different achievement goals showed both negative and positive relationships with academic achievement.

The goodness-of-fit of competing models can also be compared by means of the Akaike Information Criterion (AIC) measure (Akaike, 1987). In evaluating hypothesized models, this measure takes into account both model parsimony (i.e., achieving a higher degree of fit per degree of freedom used) and model fit. Simple models that fit well receive low scores, whereas poorly fitting models get high scores. Comparing the AIC measures for the three models, it is evident that the AIC for Model 1 and Model 3 (1222.55) is lower than that for Model 2 (1386.75), indicating that Model 1 and Model 3 are both more parsimonious and better fitting than Model 2. Therefore, Model 1 and Model 3, which were based on social cognitive theory, fit the empirical data better than Model 2, which was based on expectancy value theory. It could be that students espousing different achievement goals tend to realize how important academic goal is to them. As a result, they are better able to decide which type and method of goal pursuit is relevant to their type of achievement goal. For example, individuals who advocate performance goals motivate themselves to succeed by competing with others; consequently, they choose to complete a task in order to gain acceptance from others (Elliot, 2005). This implies that, when students realize how important goals are for them, they would strive to improve themselves in order to achieve their academic goals more efficiently and effectively than simply emphasizing expectation of outcome only.

With regard to the relationship between achievement goal and academic achievement, it was found that mastery-approach goal is not significantly related to academic achievement; however, it was found to be positively related to academic self-efficacy. In the same token, a number of previous researches found mastery-approach goals to be positively related to task involvement but not significantly related to academic achievement (Elliot & Church, 1997; Elliot & Murayama, 2008). This result may be attributed to the proposition that students holding mastery-approach goals pursue tasks in order to develop their knowledge and skills by acquiring much deeper knowledge which may prove to be of little benefit at examination time

(Elliot & Church, 1997). Moreover, the current study used grade point average (GPA) and subject grades as indicators of academic achievement which involved normative evaluation or social competition (Deutsch, 1979, as cited in Pulfrey, Buchs, & Butera, 2011). Social competition, in this context, is linked to individuals with performance-oriented goals who demonstrate their competence relative to others more than that of individuals with mastery-oriented goals who develop their competence through task mastery (Pintrich, 2000).

The current study also demonstrated that performance-approach goals were positively related to academic achievement, a finding supported by a number of previous researches (e.g., Elliot & Church, 1997; Elliot & Murayama, 2008). It had been mentioned that individuals with performance-approach goals tended to fear or avoid failure; they attempted to demonstrate competence by being superior to others (social comparative or normative standards) in order to gain a positive self-judgment. This outcome was supported by the fact that this research was involved with university students who were more likely to put importance on social acceptance, especially from their peers. An alternative underlying factor could be cultural collectivism in cases when students strive to achieve high scores in order to maintain harmonious relationship with their parents; as a result, students adopt performance-approach goals in order to pursue high scores (Pomerantz et al., 2005; Bong, 2008). In contrast, performance-avoidance goal had been shown to be negatively correlated with academic achievement. Previous research reported performance-avoidance goals as being associated with negative outcomes such as cheating during examination (Bong, 2008) and procrastination (Wolters, 2004). These negative results supported the antecedence of performance-avoidance goals derived from an escaped negative judgment by withdrawing from competitive tasks.

Finally, the current study revealed that mastery-avoidance goal is not significantly associated with academic achievement; this outcome echoes that of Elliot and Murayama (2008) who found that mastery-avoidance goals proved to be insignificant for both intrinsic motivation and exam performance. The researchers asserted that mastery-avoidance goal is the most recent additional domain, yet remains to be the least understood type of goal (Elliot & Murayama, 2008).

### *Limitations of the Study*

There are procedural limitations that should be noted which should warrant more cautious interpretation of the present findings. First, this research involved only sophomore students studying in universities located in Songkhla Province; therefore, the results cannot be

generalized to other Thai undergraduate students elsewhere. Second, this research used GPA and subject grades as indicators of academic achievement which may have reduced the adoption of mastery-approach goals which were subsequently found to show nonsignificant relationship with academic achievement. Perhaps, adding more meaningful measures of academic achievement which involved deeper learning processes (e.g., project base) could have led to a better understanding of mastery-approach goals, relative to academic outcomes. Lastly, the percentage of endogenous variables explained by the models was not that high (26% for Model 1, 28% for Model 2, and 27% for Model 3). It can be inferred that there were other factors that influenced academic achievement which were not included in the scope of this research.

### *Conclusions and Implications*

It can be concluded that social cognitive theory underlying the proposed academic achievement model stands to benefit students through the development of effective intervention programs by educators and counselors, aimed at facilitating the learning process. Through such programs, these school-based professionals may enhance the cognitive, social, and behavioral skills of students in the pursuit of their goals. For example, students may be motivated to understand and appreciate how important academic achievement is, not only for themselves but also for significant others. Furthermore, such interventions encourage students to be more self-monitoring, relative to what knowledge and skills are needed in order to deal with life's difficulties. This cognitive enhancement may help sustain the quality and quantity of student learning, more than just giving importance to the expectations of others.

### *Avenues for Future Research*

To better understand the factors that influence academic achievement, there are issues that need to be addressed by future researchers. Since this research found that performance-approach goals are positively associated with academic achievement, whereas, performance-avoidance goals are negatively related to the same; therefore, examination of the factors that influence individuals in adopting these two goals may enlighten our understanding of how to encourage students to pursue their academic goals more efficiently and effectively.

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