

The Relationships between Academic Self-efficacy and Academic Achievement for Business Finance Course

Areerat Leelaphunt

Faculty of Business Administration

Thai-Nichi Institute of Technology

177/1 Pattanakarn Road, Suanluang, Bangkok, 10250, THAILAND

areerat@tni.ac.th

Abstract— This study is to ascertain the relationships between an academic self-efficacy and academic achievement among the undergraduate students who are enrolled in this Business Finance course. Besides, an academic self-efficacy is divided into three dimensions as persistence, self-determination and self-reliance which could affect either an academic success or failure of the students. In additional, the past record has shown that the students who have no confidence in their academic capabilities, they tend to withdraw from this course before ending the semester. Therefore, there are two research objectives. First, it is to explore the relationships of each dimension of self-efficacy towards the academic achievement. Second, it is to find solution for increasing their academic self-efficacies. Consequently, the student would more persist in studying until end of semester and withdrawer rate will be decreased. The data were in-class collection of 94 students and they were then analysed by using Multiple Regression analysis with moderating effect of academic background of Art and Science major. The research findings are persistence and self-reliance have positive and significant effect toward academic achievement, and an interaction effect is significant then moderation is present.

Keywords-- Self-efficacy, Academic achievement, Persistence, Self-determination, Self-reliance, Moderating effect, Academic background

I. INTRODUCTION

Business Finance is one of the main functions in any organization in order to run a business in a competitive globalization. Thus, the faculty of business administration has provided this Business Finance course to be one of the major fundamental courses for all Business Administration undergraduate students and is striving to prepare the students for business career especially any entrepreneurs. According to course structure, the students have to take this Business Finance course in the 2nd academic year so that they can complete all undergraduate courses within 4 academic years generally.

However, the past records have shown that a small number of the student, about 24 percent of the total student, got the grade of B and above. Moreover, there are some failure students about 31percent. According to Brakke and Halpern [1], failure student is defined as the student who has completed the course with grades of D, F, or W (withdrawn). In more serious circumstance, the number of withdrawn student is higher than the number of

student who got grade of F. Beyond this failure student record, those students will return to take this Business Finance course of the 2nd semester in their 4th academic year. It is quite stressful for both student and lecturer. Consequently, some student can not complete undergraduate degree within 4 academic years, then they are less confidence on both study and future career. Thus, it comes to author's attention on what reason that the student do not persist in studying until end of semester and/or why they would wait to take this Business Finance course in the last semester of the 4th academic year. After talked to those failure students, it found that they are lack of self-efficacies in term of no confidence and trust in their academic capabilities and concern that the grade of this Business Finance course would reduce their present GPA. One more essential finding, those failure students have faced the same scenario with the other pre-requisite courses.

Therefore, the first objective of this study is to explore the relationship between the academic self-efficacy and academic achievement. Based on prior study of Najafabadi et al. [2] and Verma and Sharma [3], the author has adapted by categorizing the related academic self-efficacy into three factors: Persistence, Self-determination, and Self-reliance. Those three factors would determinant the academic achievement as the dependent variable. For the second objective, the author would like to find solution for increasing their academic self-efficacies as well.

Finally, the findings would contribute to student in order to more confidence and trust on their capabilities in studying Business Finance course by increasing their academic self-efficacies. Consequently, the student would more persist in studying until end of semester and grade of W will be decreased.

II. RESEARCH METHODOLOGY

A. Measures

Based on the study of Verma and Sharma [3], they conducted a study of "Construct Validation of Self-Efficacy Scale" by using the original 10-item scale of Schwarzer and Jerusalem [4] in the regard of persons' perception towards his/her self-efficacy. Their descriptive statistics and Confirmatory Factor Analysis outcomes are acceptable. Besides, Tipton and Worthington [5] also stated that the rational of the self-efficacy questionnaire is to measure an individual's expectation of how that person

is likely to perform in a wide variety of situations. In this reason, the author has modified and consist with their findings of the 3 extracted variables as '4-item scale represents persistence', '2-item scale represent self-determination', and '3-item scale represents self-reliance' as the latent factors of self-efficacy in order to predict the academic achievement. However, in order to make more validity in self-determination variable, the author has modified 1-item scale from the study of Leal et al. [6] that they conducted a study of "Self-Determination Theory: An Analysis of Student Motivation in an Accounting Degree Program" into this study.

B. Control variables

According to the previous studies, they have indicated that numerous demographic variables could affect the academic achievement. However, in this study, the author would only focus on some control variables which tend to match with this scenario such as course enrolment, post high school academic major, post GPA and gender.

Course enrolment was measured as dummy variable (first time=1; not first time=0). Post high school academic major was measured as a dummy variable (art=1; science=0). Post GPA was measured at certain grade point and gender was measured as a dummy variable (male=1; female=0).

C. Sample and data collection

The participants in this study were 99 students enrolled in Business Finance course taught by the author in the 2nd semester of 2014 academic year. Based on the data of student such as grade achievement, post GPA, and course enrolment can be reached by the author's record. The questionnaire was contained with three parts as demographic factor, academic achievement factor and self-efficacy perception. For the students' self-efficacy perception data, a self-administered questionnaire was used to collect data by in-class collection and sending them an e-mail to fill-in. A total of 99 questionnaires were distributed to students and 5 questionnaires were eliminated as they were incomplete. The response rate was 94.95 percent which is acceptable.

D. Analysis technique

The author uses multiple regression for the analysis since it offers more flexibility in comparison the degree of relationship of each independent variable towards academic achievement. Moreover, multiple regression allows smaller sample sizes compared to other SEM techniques. Multiple regression was conducted by using IBM SPSS Statistics version 20.

In order to identify significant relationships between academic achievement and the 3 dimension variables of self-efficacy and other 3 control variables, thus Pearson Bivariate Correlation test had been taking in this analysis. Then, a few steps need to be conducted before performing the regression analysis. First, construct the normality check for all dependent and independent variables to test whether the data are normal distribution or not. Second, construct reliability check by using Cronbach alpha coefficient. Final step, the regression

analysis was performed and evaluated the Variance Inflation Factor (VIF) in order to avoid any possible multicollinearity problem.

For the moderating effect, it was measured by multiply the post high school academic major variable with self-efficacy variable, then it was analysed the degree of moderating effect by regression analysis.

III. RESULTS

The 94 completed questionnaires were collected which yielded to 94.95 percent. Descriptive statistics for the respondents are reported in Table 1.

Table 1: Descriptive statistics of respondents

| | |
|------------------------|--|
| Gender | Male: 46 (48.9%) Female: 48 (51.1%) |
| Age (in years) | Mean: 20.62 Standard deviation: 1.21 |
| Course enrolment | First time: 64 (68.1%) Not first time: 30 (31.9%) |
| Post high school major | Science: 52 (55.3%) Art: 42 (44.7%) |
| Post GPA | Mean: 2.4766 Standard deviation: .49736 |
| Grade achievement | Mean: 1.9894 Standard deviation: 1.21810 |

Based on the Table 1, the final sample is composed of 46 males and 48 females. Mean age is 20.62 years old and standard deviation is 1.21. For course enrolment, there are 64 students who enrolled this course for the first time and 30 students who enrolled this course more than one time. For the post high school major, there are 52 science major students and 42 art major students. The mean post GPA of the respondent is 2.4766 and standard deviation is 0.49736. The mean of grade achievement for this Business Finance course is 1.9894 and standard deviation is 1.21810.

Then, the correlation analysis was performed in order to explore the one-on-one relationship between all 8 variables such as grade achievement, the 3 dimension variables of self-efficacy and the other 4 control variables. The results have shown that the 3 dimension variables of self-efficacy have significant positively relationship towards grade achievement and the other 3 control variables also have significant positively relationship towards grade achievement. But, only one control variable as gender has non-significant negative relationship towards grade achievement. Besides, the relationship between self-determination and grade achievement have

Pearson correlation score at .842** which is the strongest relationship, and there is not only 95% confidence but also 99% confidence (1% significant chance of being incorrect). It would interpret that the student who have achieved a good grade, they have some kind of their self-determination to feel competent and trust on their capabilities to accomplish their academic goals. In additional, self-determination has strongest positive relationship among all three dimension variables of self-efficacy as well.

Prior to conduct the regression analysis, it needs a few steps to be performed. First, the normality check has been performed for all variables as grade achievement, persistent, self-determination, self-reliance, course enrolment, high school major and post GPA, the result reported that all variables are normal data distribution as a comparison of the share of sample distribution to the shape of a normal curve. Second, construct reliability check for 10 questions of self-efficacy perceptions by using Cronbach alphas coefficient test, it shows that Cronbach alphas coefficient is 0.916 which is exceed the widely suggested value of 0.7 [7]. This indicates that the normality and reliability of all constructs are acceptable.

Table 2: Regression analysis

| | Grade achievement (Dependent variable) | p-value | VIF |
|------------------------|---|---------|-------|
| Constant | -1.967 | .000 | |
| Persistence | 0.402* | .005 | 5.381 |
| Self-Determination | 0.257 | .111 | 7.102 |
| Self-Reliance | 0.332* | .007 | 5.409 |
| Course enrolment | -0.240 | .245 | 2.433 |
| High school major | 0.094 | .675 | 3.314 |
| Post GPA | 0.275 | .176 | 2.641 |
| Gender | 0.088 | .502 | 1.126 |
| R-square | 0.780 | | |
| Number of observations | 94 | | |

Notes: Unstandardized beta coefficients are reported.

*p < 0.05

Based on the Table 2, it consisted of 1 dependent variable as “grade achievement” and 6 independent variables, which can be explained at 78% for this relationship prediction model. In additional, the all VIF values are significantly below the critical value of 10 as suggested by Hair et al. [8]. This implies no serious multicollinearity issue in this analysis. However, there are only 2 significant independent variables as persistence and self-reliance. Thus, the Figure 1 is presented the results from this study.

Given the statistical analysis results, the three hypotheses either met or did not meet the criteria for statistical significance as illustrated below.

Hypothesis 1: Persistence variable would be positively related to academic achievement. The results indicated a positive and significant relationship between them ($\beta=.402$; $p<.05$). Thus, hypothesis 1 is supported.

Hypothesis 2: Self-determination variable would be positively related to academic achievement. The results indicated a positive and non-significant relationship between them ($\beta=.257$; $p>.05$). Thus, hypothesis 2 is rejected.

Hypothesis 3: Self-reliance variable would be positively related to academic achievement. The results indicated a positive and significant relationship between them ($\beta=.332$; $p<.05$). Thus, hypothesis 3 is supported.

In order to gain more understanding of the degree of effect on each variable towards the academic achievement, the hypothesis prediction model can be expressed as below:

$$Y = -1.967 + .402(X_1) + 0.332(X_2) + \varepsilon$$

Y = Academic achievement

X_1 = Persistence

X_2 = Self-reliance

ε = error

Finally, the relationship between the four control variables and dependent variable in this regression analysis is non-significantly.

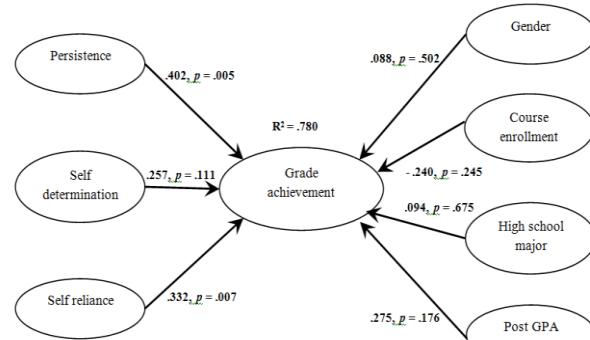


Figure 1. Multiple regression results

A. Academic background as a Moderator

According to DemirciGuler [9], he conducted a study of “Success and failure in science education” and he found that students have two basic views as “Can” and “Try”. Even through, “Can” is more involved with background knowledge that lead to the solution of the problem. But, “Try” is more depending on intention. For the academic background of student who enrolled in this course, there are two major of post high school as Art and Science. For the science background student, they tend to persist in studying until end of semester and achieve an academic goal. However, most of the failure student who drop-out this Business Finance course before ending the semester, they mentioned that they have lack of solid

background of mathematic and accounting concept and very concern that they would not achieve the grade of C or above. Then, their present GPA would reduce. So, it would imply that science background student may have stronger positive relationship between self-efficacy towards academic achievement. Therefore, the result of moderating effect is stated in Table 3.

Table 3: Regression analysis for moderating effect

| | Grade achievement | p-value | VIF |
|--------------------------------------|-------------------|---------|-------|
| Constant | -0.635 | | |
| Self-efficacy(Z) | 0.951* | .000 | 4.377 |
| Self-efficacy(Z) x high school major | -0.311* | .040 | 3.073 |
| Course enrolment | -0.244 | .136 | 2.382 |
| High school major | 0.078 | .662 | 3.250 |
| Post GPA | 0.329 | .054 | 2.896 |
| Gender | 0.101 | .329 | 1.108 |
| R-square | 0.790 | | |
| Number of observations | 94 | | |

Notes: Dependent variable : Grade achievement (standardized)

* $p < 0.05$

Given the statistical analysis results, it indicated that moderating effect of post high school major on self-efficacy is less positive effect for Art background student as compared to Science background student. This would imply that being an Art background student negatively moderates the relationship between self-efficacy and academic achievement and the interaction is significant then moderation is present. The hypothesis either met or did not meet the criteria for statistical significance as illustrated below.

Hypothesis 4: The positive relationship between Self-efficacy and academic achievement is weaker in Art background student. The results indicated less positive effect and significant relationship between them ($\beta = -.311$; $p < .05$). Thus, hypothesis 4 is supported.

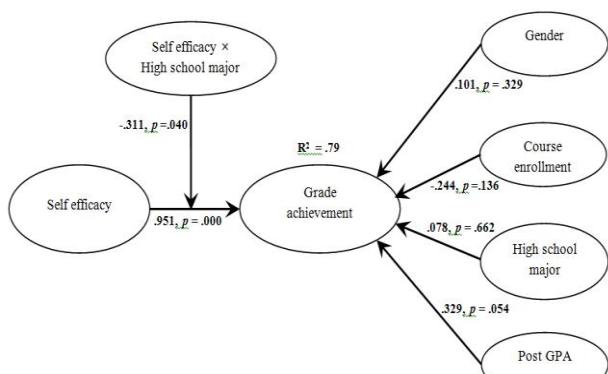


Fig. 2 Multiple regression results for moderating effect

IV. DISCUSSION

This study is to explore the relationship between the academic self-efficacy and academic achievement of the student who were enrolled in this Business Finance course. As the past record shown that there are a lot of student who not persist in studying until end of semester. Regarding the 3 dimensions of this academic self-efficacy as persistence, self-determination, and self-reliance, it found that 'student persistence' is the strongest effect toward the grade achievement. This means that student who persists in studying until end of semester, they tend to achieve a good grade or success in studying this course. This finding is consistent with the finding of Tinto [10] and Napali & Wortman [11] that they study about the students who have academic goal commitment, they tend to persist in studying until end of semester and achieve their academic goal commitment. In this reason, student should have their own academic goal commitment and believe in their capability to accomplish the goal. Besides, mentoring program as mentioned by Stuber [12] and Crisp & Cruz [13] would also engage the students to persist in their studies. So, college or institute should emphasize on this kind of activity as well.

The second finding, 'self-reliance' has also positive relationship with an academic achievement. It is consistent with the study outcome of Byerly [14] and Zagzebski [15]-[16] that they mentioned about student who have trust in their ability and they exercise their competency in order to accomplish the cognitive achievement. Moreover, student must have high self-reliance in order to complete the education task.

Even though, the result of self-determination is not significant, but it has positive relationship with academic achievement and it correlates with persistence and self-reliance as well. It can imply that students who have high academic persistence and self-reliance, they tend to have high self-determination in order to determine themselves to persist in studying and rely on themselves to overcome the obstacles.

For the first regression analysis, four control variables as course enrolment, high school academic major, post GPA and gender, their statistic outcomes are not significant. So, it can imply that they would not affect the grade achievement.

However, the author has continued to analyse the moderating effect of post high school major on self-efficacy variable towards an academic achievement. The result indicated that moderating effect is less positive effect on academic achievement and met the criteria for statistical significance as well. This can imply that student who has Science background major tends to achieve more in the academic goal in this Business Finance course.

A. Limitation and future research directions

Although this study makes some contribution to both students and lecturer in term of gaining more understanding on why some student lack of self-efficacy and what the lecturer or institute can support those failure students. However, there are some limitation regarding time-limited study and self-reports of their perceptions toward their academic self-efficacies. Because, some

students might either overestimate or underestimate their self-efficacies. Moreover, this study based on small-scale data collection from only the class that conducted by author, it may limited to represent the result in general. Therefore, cross-sectional data study is needed that only gather quantitative data but also explore the perception of their self-efficacies from a qualitative methodology.

v. CONCLUSION

In conclusion, this study provides in-depth understanding about what causes the student to not persist in studying this Business Finance course until the end of semester. As the author has mentioned earlier that the cause of failure student does not totally involve with academic capability, but it does also involve with his/her academic self-efficacy as well. Therefore, at the beginning step, student should have their own academic goal commitment and believe in their capabilities to accomplish the goal. Secondly, student must have high self-reliance in order to complete the education task. Lastly, lecturer or Institute should provide related psycho-education to build up those academic relationships, particularly the mentoring program to the freshman and sophomore undergraduate students who might be facing some difficulty in adjusting to college, which is caused by different educational background as science or art majors. And another one more essential element, positive academic self-efficacy is still paying a major role and would engage the student to persist in studying until being able to accomplish the academic goal at the end.

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