# Factors Affecting Decision Making on University Choice of Graduate Students in Education: A Multiple Discriminant Analysis*

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## ABSTRACT

The purposes of this research were (1) to study the relationship between the background of graduate students in the field of education and decision making on university choice, (2) to study the predictability of factors affecting decision making on university choice of graduate students in the field of education, and (3) to study factors which discriminate decision making on university choice of graduate students in the field of education. The participants of this research were 423 graduate students in the field of education from 9 universities under the jurisdiction of the Office of Commission on Higher Education in Bangkok metropolitan area. The research instrument was a questionnaire. Descriptive statistics, Cramer's V correlation coefficient, Pearson's correlation coefficient, Multiple Discriminant Analysis (MDA), and Confirmatory Factor Analysis (CFA) were used to analyze the collected data.

The research findings were as follows:

(1) All background indicators of graduate students in the field of education positively related to decision making on university choice at .01 level of statistical significance. Age had quite strong relationship with decision making on university choice with correlation coefficient of 0.609. Work experience, graduate students' marital status, distance from residence to university, guardians' marital status, number of guardians' children and gender had quite poor relationship with decision making on university choice with a correlation coefficient of 0.394, 0.371, 0.357, 0.353, 0.331, and 0.218, respectively.

(2) From studying the predictability of factors affecting decision making on university choice of graduate students in the field of education, there were 3 multiple discriminant functions i.e. function I, function II, and function III. It was found that function I discriminated graduate students into 2 main groups i.e., (1) graduate students of Chulalongkorn University, Srinakharinwirot University Prasanmit, and Kasetsart University, and (2) graduate students of Rajabhat Universities. The best three predictors of this function were university quality, external influences involving decision making on university choice, university curriculum, respectively. The poorest predictor of this function was university environment. Function II discriminated the graduate students into 2 main groups i.e., (1) graduate students of Kasetsart University, and (2) graduate students of Chulalongkorn University, Srinakharinwirot University Prasanmit and Rajabhat Universities. The best three predictors of this function were external influences involving decision making on university choice, university environment, and university curriculum, respectively. The poorest predictor of this function was university tuition fee and grants. Function III discriminated graduate students into 2 main groups i.e., (1) graduate students of Srinakharinwirot University Prasanmit and Kasetsart University and (2) graduate students of Chulalongkorn University and Rajabhat Universities. The best three predictors of this function were individual ability, university curriculum, university tuition fee and grants, respectively. The poorest predictors of this function were expectation of graduate students and guardians on university.

(3) As for function I, the significant multiple discriminators were university quality and graduate students selection. As for function II, the significant multiple discriminators were external influences involving decision making on university choice, socio-economic status, university environment, expectation of graduate students and guardians on university and graduate students' background. As for function III, the significant multiple discriminators were university tuition fee and grants, university curriculum and individual ability. In the overview, the multiple discriminant functions were 45.20 percent of original grouped cases correctly classified.

## Background

In daily life, people always face the conditions or situations that require them to make decisions. Therefore, decision making in one thing affects both decision makers and stakeholders on many kinds of result continuing to the longtime future (Kaemkate, 1993). In addition, decision making is an inevitable part of life and the problems are usually complicated for making decisions. Thus, decision making with trail and error is always abortive because the effective decision making indicates that people will or will not succeed in their life (Tansirikongkol, 2000).

One of the important decisions in daily life is on education. It is the way that people make a plan for their future careers. Education is a part of human needs and basic security in life; besides, education leads people to have careers and high social status (Maslow, 1970). Furthermore, education is a key to raise the social status because the educated people always have better chances to work and achieve higher position (Horton & Hunt, 1984). Therefore, people should make the best decision about education by carefully considering it for the success in their future.

The decision making on university choice is important in both practical and theoretical ways for researchers studying real-life decision making. It is an important and difficult decision, faced by many adolescents and their families. In the United States, over two million students, their families, and relevant school personnel confront the problems of this time-consuming and expensive decision each year, spending over 50 hours investigating information about university (exclusive of campus visits), and approximately $1,500 in direct costs of preparing material and gathering information. This decision also has ramifications for family ties, friendships and vocation, as well as career plans (Litten, 1981 cited in Galotti & Mark, 1994).

Students' decision making on university choice have not only impacts on themselves, family members, and stakeholders, but also on the education organizations and institutions. According to the economical concept of Shmanske (2002) noted that the impacts followed decreasing enrollment and not the expected, the university administrators were suffered from decreasing enrollment rate and educational service. Thus, departments or schools

must investigate the ways to improve the programme which increase the enrollment rate. The problems were tackled in many ways that were more flexible than in the past, such as opening the executive programmes for students who cannot study in the work time; admission in the second semester (normally opening admission on the first semester); decreasing some requirements, such as a major specific test, decreasing the criteria of English Test level; or providing distance learning.

The concept of Shmanske (2002) was in line with the problems in Thailand at present. Chulalongkorn University (2004) indicated that the enrollment rate in some programmes increased but in some programmes were decreased especially in Faculty of Education. Thus, the university budgets were decreased. These may have resulted from providing graduate programmes in too many universities. In addition, some universities in Thailand have cooperated with universities in the foreign countries in providing dual degree graduate programmes in many fields of study.

For these reasons, the study of factors affecting university choice would be advantageous to the administrators of universities in planning and determining their policies on recruitment and course design.

## Population and Participants

The population of this study were all graduate students in the field of education of all of the universities in Thailand. Thus, there were 37 parameters to be estimated in the proposed LISREL model. The sample size required for this study was 370 subjects, based on the ratio of 10 subjects for one parameter as stated by Hair et al., (1998). The sample was selected from 423 graduate students studying in the Faculty of Education of public universities under the jurisdiction of the Office of Commission on Higher Education in Bangkok metropolitan area These were:

- Chulalongkorn University
- Srinakharinwirot University Prasanmit
- Kasetsart University
- Chandrakasem Rajabhat University
- Dhonburi Rajabhat University

- Ban Somdejchaopraya Rajabhat University
- Phanakhon Rajabhat University, Suan Dusit Rajabhat University
- Suan Sunandha Rajabhat University

# Method

## Development of Conceptual Framework

The conceptual framework of this research was developed from eight theories in the field of psychology, education, and social science consisting of:

- Social Actioned Theory (Reeder, 1971)
- Reason Actioned Theory (Fishbein & Ajzen, 1975)
- Human Motivation Theory (Maslow, 1970)
- Expectancy Theory (Vroom, 1964)
- Social Stratification (Horton & Hunt, 1984),
- University Atmosphere (Astin, 1993 cited in Saithongkham, 1996)
- Difficulty of Curriculum (Shmanske, 2002)
- University Quality (Wiratchai & Wongwanich, 1998).

The conceptual framework was also developed from the following research articles:

- Chapman (1981)
- Litten (1982) Valerie
- Christoper & Helen (1993)
- Garotti & Mark (1994)
- McLanahan & Sandefur (1994)
- McDonough (1994), Stantion-Salazar & Dornbusch (1995)
- Targonski (2000) Perna (2000)
- Gonzalez & DesJardins (2002), Kim (2004)
- Morse & Flanigan (2004)

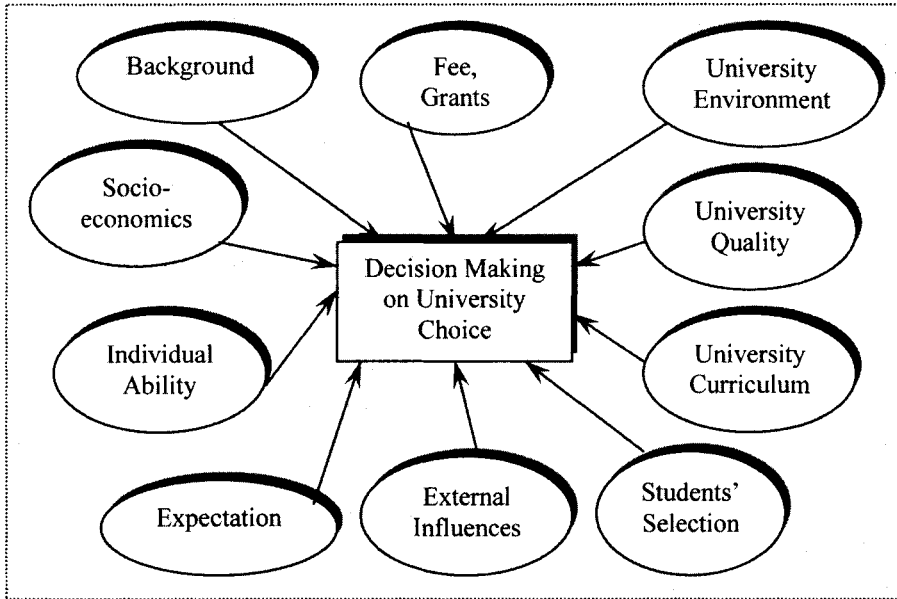The developed conceptual framework is as shown in Figure 1.



**Figure 1** Conceptual Framework

## Variables

In this study, there were ten independent variables that were factors affecting decision making on university choice, which were synthesized from 19 research articles. These variables consisted of :

- Graduate students' background (BAC)
- Socio-economic Status (SES)
- Individual Ability (ABI)
- Expectation of Graduate students and Guardians' on University (EXP)
- External Influences Involving Decision Making on University Choice (EXT)
- Graduate Students Selection (SEL)
- University Curriculum (CUR)
- University Quality (UNQ)
- University Environment (UNE)
- University Grants and Tuition Fees (FEE).

The independent variables were latent variables measured by 37 indicators as the observed variables. The dependent variable was a Decision Making on University Choice. The details of factors and indicators are as shown in Table 1 (see next page)

**Table 1** Factors and Indicators

| Factors | Indicators |
| --- | --- |
| 1) Graduate students' background (BAC) | 1.1. gender |
| | 1.2. age |
| | 1.3. number of guardians' children |
| | 1.4. graduate students' marital status |
| | 1.5. guardians' marital status |
| | 1.6. distance from residence to university |
| | 1.7. work experience |
| 2) Socio-economic Status (SES) | 2.1. family's monthly income |
| | 2.2. guardians' career |
| | 2.3. guardians' educational level |
| 3) Individual Ability (ABI) | 3.1. undergraduate learning achievement |
| | 3.2. academic ability |
| | 3.3. interested field of study |
| 4) Expectation of Graduate students and Guardians' on University (EXP) | 4.1. expectation of graduate students on future income |
| | 4.2. expectation of graduate students on future career path |
| | 4.3. expectation of guardians on graduate students' future career path |
| 5) External Influences Involving Decision Making on University Choice (EXT) | 5.1. guardians' support |
| | 5.2. friends' convincing |
| | 5.3. advisory of the former university lecturers |
| | 5.4. university programmes information |
| 6) Graduate Students Selection (SEL) | 6.1. graduate students qualification |
| | 6.2. number of enrollment |
| 7) University Curriculum (CUR) | 7.1. type of offering curriculums |
| | 7.2. curriculum quality |
| | 7.3. level of course works difficulty |
| | 7.4. difficulty of graduation |
| 8) University Quality (UNQ) | 8.1. reputation of the university |
| | 8.2. quality of faculties |
| | 8.3. the success of alumni |
| | 8.4. job offered for graduate students |
| 9) University Environment (UNE) | 9.1. surroundings of the university |
| | 9.2. graduate students' life style |
| | 9.3. university learning resources |
| | 9.4. university facilities |
| 10) University Grants and Tuition Fees (FEE) | 10.1. tuition fee |
| | 10.2. university scholarship |
| | 10.3. research grants |

## Research Instruments

The research instrument was a questionnaire divided into two parts. The first part was a checklist for measuring personal data i.e., background, and decision making on university choice. The second part was a 5-level rating scale for measuring 10 factors affecting decision making on university choice. The questionnaire was examined for content validity by calculating Item-Objective-Congruence Index (IOC). In addition, the questionnaire was tried out with 30 participants to examine the reliability by calculating Cronbach's alpha value. The IOC of the questionnaire ranged from 0.5-1.00 and Cronbach's alpha was .9730.

## Data Collection and Analysis

The questionnaires were distributed to 528 graduate students in 9 universities and 423 questionnaires were finally returned. The research data from questionnaires were edited and cleaned for analyzing. Firstly, the descriptive statistics (mean, SD, Ku, Sk, C.V.) were analyzed by employing SPSS for Windows version 11. Secondly, Cramer's V correlation coefficient was used to study the relationship between the background of graduate students in the field of education and decision making on university choice. In this step, SPSS for windows version 11 was also used. Thirdly, a Confirmatory Factor Analysis (CFA) was employed to validate the measurement models and express the factor scores of each factor. In this step, LISREL version 8.54 was used. Finally, Multiple Discriminant Analysis (MDA) was employed to study factors discriminating decision making on university choice of graduate students in education.

## Results

*(1) The relationship between the background of graduate students in the field of education and decision making on university choice*

It was found that all background indicators of graduate students in the field of education positively related to decision making on university choice at .01 level of statistical significance. Age had quite strong relationship with decision making on university choice with a correlation coefficient of 0.609. Work experience, graduate students' marital status, distance from residence to university, guardians' marital status, number of guardians'

children and gender had quite poor relationship with decision making on university choice with a correlation coefficient of 0.394, 0.371, 0.357, 0.353, 0.331, and 0.218, respectively. The details of the relationship between graduate students' background and decision making on university choice are as shown in Table 2.

**Table 2**  The relationship between graduate students' background and decision making on university choice

| Indicators of Background Variables | Cramer's V Correlation Coefficient | p-value |
|---|---|---|
| 1) gender | 0.218 | 0.010 |
| 2) age | 0.609 | 0.000 |
| 3) number of guardians' children | 0.331 | 0.000 |
| 4) graduate students' marital status | 0.371 | 0.000 |
| 5) guardians' marital status | 0.353 | 0.001 |
| 6) distance from residence to university | 0.357 | 0.000 |
| 7) work experience | 0.394 | 0.000 |

*(2) The measurement model validation*

Confirmatory Factor Analysis (CFA) was employed to validate all measurement models. Generally, the result of CFA gives the information concerning the importance of each indicator and ensures that all measurement models are based on theoretical literatures reviewed before. Finally, the researcher expressed and calculated the summation linear equation of raw score of factor score and factor score regression of each measurement model. The researcher used these factor scores for conducting a Multiple Discriminant Analysis (MDA) in the next step. However, there were two phases of analysis consisting of the analysis of correlation between indicators in the measurement models, and the measurement model validation. The details are as follows:

*(2.1.) The analysis of correlation between indicators in the measurement models.*

In this phase, the researcher examined the relationship between the indicators in each measurement model before validated the measurement models by employing CFA. Therefore, the relationship between indicators should be strong. If they have no relationship

between each other, it is a disadvantage for any further analysis (Wiratchai, 1999). After the correlation between indicators was tested, it was found that all measurement models were appropriate for an analysis. Bartlett's test of sphericity of all measurement models were statistical significant at .01 level. It indicated that the correlation matrix of all measurement models were different from the identity matrix (all indicators had no relationship). Kaiser-Meyer-Olkin measures of Sampling (KMO) of all measurement models varied from 0.500 to 0.831. This showed that all indicators of all measurement models had high relationship with one another (KMO was not lower than 0.500). The details are as shown in Table 3.

**Table 3** Bartlett's Test of sphericity, Kaiser-Meyer-Olkin measures of Sampling (KMO) and Pearson's correlation coefficient of factors affecting decision making on university choice

| Factors | Pearson's Correlation Coefficient | Bartlett's Test of sphericity | KMO |
|---------|-----------------------------------|-------------------------------|-----|
| BAC | 0.229-0.732 | 1145.062** | 0.831 |
| SES | 0.501-0.726 | 590.000** | 0.651 |
| ABI | 0.239-0.576 | 229.226** | 0.608 |
| EXP | 0.425-0.614 | 345.906** | 0.666 |
| EXT | 0.212-0.493 | 275.904** | 0.705 |
| SEL | 0.721 | 309.095** | 0.500 |
| CUR | 0.300-0.847 | 762.203** | 0.695 |
| UNQ | 0.674-0.918 | 1473.982** | 0.780 |
| UNE | 0.491-0.723 | 701.651** | 0.749 |
| FEE | 0.564-0.808 | 651.464** | 0.682 |

** $p < .00$

### (2.2.) The measurement model validation

#### (2.2.1) Graduate Students' Background (BAC)

It was found that the measurement model of graduate students' background was fit with empirical data (Chi–Square = 1.42, df = 5, p–value = 0.92221, GFI = 1, AGFI = 0.99, RMR = 0.0073). It revealed that all indicators were statistically significant. Therefore, graduate students' marital status (BAC4) was the most important, followed by gender (BAC1), which was as important as number of guardians' children (BAC3). Work experience was the least important. The factor loadings of the measurement model ranged from 0.34 to 0.76 and accounted for the variance of *Graduate Students' Background* from 12% to 58%. The analysis details are shown in Table 4 and Figure 2. The factor score equation of graduate students' background are expressed as follow:

$$BAC = 0.44(BAC1) - 0.12(BAC2) + 0.18(BAC3) + 0.38(BAC4)$$
$$+ 0.23(BAC5) + 0.07(BAC6) + 0.02(BAC7)$$

**Table 4** The BAC Model Validation

| Factor | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---|---|---|---|---|---|---|
| 1) BAC | BAC1 | 0.74** | 0.06 | 13.15 | 0.55 | 0.44 |
| | BAC2 | 0.64** | 0.05 | 12.73 | 0.41 | −0.12 |
| | BAC3 | 0.74** | 0.05 | 14.96 | 0.55 | 0.18 |
| | BAC4 | 0.76** | 0.05 | 15.53 | 0.58 | 0.38 |
| | BAC5 | 0.73** | 0.05 | 14.54 | 0.53 | 0.23 |
| | BAC6 | 0.42** | 0.05 | 8.52 | 0.18 | 0.07 |
| | BAC7 | 0.34** | 0.05 | 6.52 | 0.12 | 0.02 |
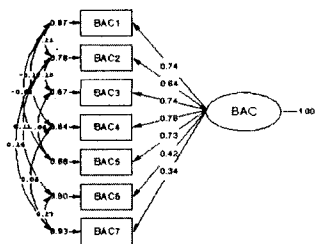
Chi–Square = 1.42, df = 5, p–value = 0.92221, GFI = 1, AGFI = 0.99, RMR= 0.0073



*Figure 2.* BAC Model

**p< .001, FSR=Factor Score Regression
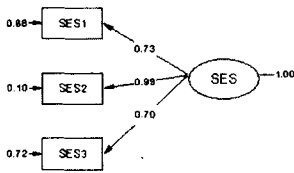
*(2.2.2) Socio-economic Status (SES)*

It was found that the measurement model of Socio-economic Status was fit with empirical data (Chi-Square = 0.09, df = 1, p-value = 0.76556, GFI = 1, AGFI = 1, RMR = 0.0029, RMSEA = 0.000). It showed that all indicators were statistically significant. Therefore, guardians' career (SES2) was the most important, followed by guardians' monthly income (SES1), and guardians' educational level (SES3), respectively. The factor loadings of the measurement model ranged from 0.70 to 0.99 and accounted for the variance of *Socio-economic Status* from 48 % to 99 %. The analysis details are shown in Table 5 and Figure 3. The factor score equation is expressed as follows:

$$SES = 0.02(SES1)+0.97(SES2)+0.01(SES3)$$

**Table 5** The SES Model Validation

| Factor | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---|---|---|---|---|---|---|
| 2) SES | SES1 | 0.73** | 0.04 | 17.44 | 0.53 | 0.02 |
| | SES2 | 0.99** | 0.03 | 28.76 | 0.99 | 0.97 |
| | SES3 | 0.70** | 0.04 | 16.38 | 0.48 | 0.01 |



Chi-Square = 0.09, df = 1, p-value = 0.76556, GFI = 1, AGFI = 1, RMR=0.0029, RMSEA= 0.000

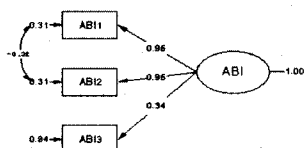*Figure 3.* SES Model

**p< .001, FSR=Factor Score Regression

*(2.2.3) Individual Ability (ABI)*

It was found that the measurement model of Individual Ability was fit with empirical data (Chi-Square = 1.60, df = 1, p-value = 0.20559, GFI = 1, AGFI = 0.98, RMR = 0.0016, RMSEA = 0.038). Thus, all indicators were statistically significant. Therefore, undergraduate learning achievement (ABI1) and academic ability (ABI2) were the most important, and aptitude on interesting field of study (ABI3) was the least important. The factor loadings of the measurement model ranged from 0.34 to 0.95 and accounted for the variance of *Individual Ability* from 11 % to 90%. The analysis details are shown in Table 6 and Figure 4. The factor score equation is expressed as follow:

$$ABI = 0.61(ABI1)+0.61(ABI2)-0.05(ABI3)$$

**Table 6** The ABI Model Validation

| Factor | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---|---|---|---|---|---|---|
| 3) ABI | ABI1 | 0.95** | 0.04 | 26.16 | 0.90 | 0.61 |
| | ABI2 | 0.95** | 0.04 | 26.15 | 0.90 | 0.61 |
| | ABI2 | 0.34** | 0.04 | 7.56 | 0.11 | −0.05 |



Chi-Square = 1.60, df = 1, p-value = 0.20559, GFI = 1,
AGFI = 0.98, RMR= 0.0016, RMSEA = 0.038

*Figure 4. ABI Model*

**p< .001, FSR=Factor Score Regression

*(2.2.4) Expectation of Graduate students and Guardians' on University (EXP)*

It was found that the measurement model of Expectation of Graduate students and Guardians' on University was fit with empirical data (Chi-Square = 0.01, df = 1, p-value = 0.90361, GFI = 1, AGFI = 1, RMR = 0.0024, RMSEA = 0.000). It indicated that all indicators were statistically significant. Therefore, expectation of graduate students on future career path (EXP2) was the most important, followed by expectation of graduate students on future income (EXP1), which was as important as expectation of guardians on graduate students' future career path (EXP3), respectively. The factor loadings of the measurement model ranged from 0.69 to 1.00 and accounted for the variance of *Expectation of Graduate students and Guardians' on University* from 42 % to 90 %. The analysis details are shown in Table 7 and Figure 5. The factor score equation is expressed as follows:

$$EXP = 0.07(EXP1)+0.76(EXP2)+0.19(EXP3)$$

**Table 7** The EXP Model Validation

| Factor | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---|---|---|---|---|---|---|
| 4) EXP | EXP1 | 0.69** | 0.04 | 19.16 | 0.42 | 0.07 |
| | EXP2 | 1.00** | – | – | 0.90 | 0.76 |
| | EXP3 | 0.69** | 0.07 | 13.11 | 0.42 | 0.19 |
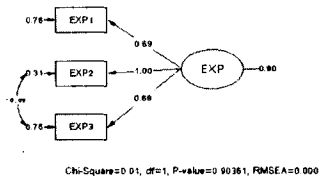


Chi–Square = 0.01, df = 1, p–value = 0.90361,

GFI = 1, AGFI = 1, RMR=0.0024, RMSEA = 0.000

*Figure 5.* EXP Model

**p< .001, FSR=Factor Score Regression

*(2.2.5) External Influences Involving Decision Making on University Choice (EXT)*

It was found that the measurement model of External Influences Involving Decision Making on University Choice was fit with empirical data (Chi–Square = 1.41, df = 2, p–value = 0.49438, GFI = 1, AGFI = 0.99, RMR = 0.0012, RMSEA = 0.000). All indicators were statistically significant. Therefore, advice from former university lecturers (EXT3) was the most important, followed by friends' influence (EXT2), and university programme information (EXT4), respectively. Guardians' support (EXT1) was the least important. The factor loadings of the measurement model ranged from 0.34 to 0.73 and accounted for the variance of *External Influences Involving Decision Making on University Choice* from 12 % to 53 %.The analysis details are shown in Table 8 and Figure 6. The factor score equation is expressed as follows:

*EXT = 0.11(EXT1)+0.34(EXT2)+0.43(EXT3)+0.24(EXT4)*

**Table 8** The EXT ModelValidation

| Factor | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---|---|---|---|---|---|---|
| 5) EXT | EXT1 | 0.34** | 0.06 | 6.11 | 0.12 | 0.11 |
| | EXT2 | 0.67** | 0.05 | 12.34 | 0.45 | 0.34 |
| | EXT3 | 0.73** | 0.06 | 13.16 | 0.53 | 0.43 |
| | EXT4 | 0.58** | 0.05 | 10.81 | 0.34 | 0.24 |
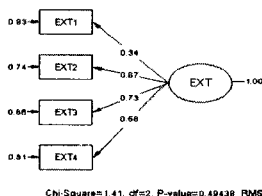


Chi−Square = 1.41, df = 2, p−value = 0.49438, GFI = 1,
AGFI = 0.99, RMR=0.0012, RMSEA = 0.000

*Figure 6.* EXT Model

**p< .001, FSR=Factor Score Regression

*(2.2.6) Graduate Students Selection (SEL)*

It was found that the measurement model of Graduate Students Selection was fit with empirical data (Chi−Square = 2.14, df = 1, p−value = 0.14333, GFI = 0.99, AGFI = 0.98, RMR = 0.042, RMSEA = 0.052). Two indicators were statistically significant with graduate students qualification (SEL1) and number of enrollment (SEL2) being the most important. The factor loadings of the measurement model was 0.98 and accounted for the variance of *Graduate Students Selection* from 91 % to 100 %. The analysis details are shown in Table 9 and Figure 7. The factor score equation is expressed as follow:

$$SEL = 0.47(SEL1)+0.67(SEL2)$$

**Table 9** The SEL Model Validation

| Factor | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---|---|---|---|---|---|---|
| 6) SEL | SEL1 | 0.98** | 0.3 | 3.81 | 0.91 | 0.47 |
| | SEL2 | 0.98** | 0.3 | 3.81 | 1.00 | 0.67 |



Chi–Square = 2.14, df = 1, p–value = 0.14333, GFI = 0.99, AGFI = 0.98, RMR=0.042, RMSEA = 0.052

*Figure 7.* SEL Model

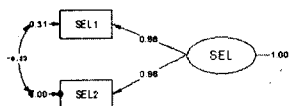**p< .001, FSR=Factor Score Regression

*(2.2.7) University Curriculum (CUR)*

It was found that the measurement model of University Curriculum was fit with empirical data (Chi–Square = 1.14, df = 1, p–value = 0.28584, GFI = 1, AGFI = 0.99, RMR = 0.012, RMSEA = 0.018). This showed that all indicators were statistically significant. Therefore, the perceived level of difficulty of the course (CUR3) was the most important, followed by difficulty of graduation (CUR4) and curriculum quality (CUR2). The type of curriculum (CUR1) was the least important. The factor loadings of the measurement model was 0.47 to 0.93 and accounted for the variance of *University Curriculum* from 22 % to 86 %. The analysis details are shown in Table 10 and Figure 8. The factor score equation is expressed as follow:

*CUR = 0.09(CUR1)+0.06(CUR2)+0.49(CUR3)+0.44(CUR4)*

**Table 10** The CUR Model Validation

| Factor | Indicators | b | SE$_b$ | t | R$^2$ | FSR |
|---|---|---|---|---|---|---|
| 7) CUR | CUR1 | 0.47** | 0.05 | 9.51 | 0.22 | 0.09 |
| | CUR2 | 0.56** | 0.05 | 12.08 | 0.31 | 0.06 |
| | CUR3 | 0.93** | 0.04 | 22.26 | 0.86 | 0.49 |
| | CUR4 | 0.91** | 0.04 | 21.73 | 0.83 | 0.44 |



Chi-Square=1.14, df=1, P-value=0.28584, RMSEA=0.018

Chi-Square = 1.14, df = 1, p-value = 0.28584, GFI = 1,
AGFI = 0.99, RMR=0.012, RMSEA = 0.018

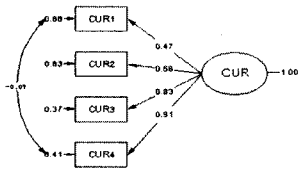*Figure 8.* CUR Model

**p< .001, FSR=Factor Score Regression

### (2.2.8) University Quality (UNQ)

It was found that the measurement model of University Quality was fit with empirical data (Chi-Square = 1.37, df = 1, p-value = 0.24161, GFI = 1, AGFI = 0.98, RMR = 0.0089, RMSEA = 0.030). All indicators were statistically significant. Therefore, the success of alumni (UNQ3) was the most important, followed by quality of faculties (UNQ2), then job offers to graduates (UNQ4). The reputation of the university (UNQ1) was the least important. The factor loadings of the measurement model was 0.73 to 0.99 and accounted for the variance of *University Quality* from 53 % to 99 %. The analysis details are shown in Table 11 and Figure 9. The factor score equation is expressed as follows:

$$UNQ = -0.22(UNQ1)+0.59(UNQ2)+0.81(UNQ3)-0.07(UNQ4)$$

**Table 11** The UNQ Model Validation

| Factors | Indicators | b | SE$_b$ | t | R$^2$ | FSR |
|---------|-----------|------|------|-------|------|-------|
| 8) UNQ | UNQ1 | 0.73** | 0.04 | 17.82 | 0.53 | −0.22 |
| | UNQ2 | 0.95** | 0.04 | 26.18 | 0.90 | 0.59 |
| | UNQ3 | 0.99** | 0.04 | 27.55 | 0.99 | 0.81 |
| | UNQ4 | 0.92** | 0.04 | 24.42 | 0.85 | −0.07 |



Chi–Square = 1.37, df = 1, p–value = 0.24161, GFI = 1, AGFI = 0.98 ,RMR=0.0089, RMSEA = 0.030

*Figure 9.* UNQ Model
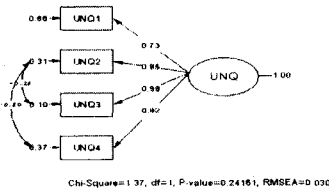
**p< .001, FSR=Factor Score Regression

*(2.2.9) University Environment (UNE)*

It was found that the measurement model of University Environment was fit with empirical data (Chi–Square = 0.31, df = 1, p–value = 0.57898, GFI = 1, AGFI = 1, RMR = 0.0056, RMSEA = 0.000). It indicated that all indicators were statistically significant. Therefore, graduate students' life style (UNE2) was the most important, followed by university facilities (UNE4) then university learning resources (UNE3); surroundings of the university (UNE1) were the least important. The factor loadings of the measurement model was 0.61 to 0.88 and accounted for the variance of *University Quality* from 38 % to 90 %. The analysis details are shown in Table 12 and Figure 9. The factor score equation is expressed as follow:

$$UNE = -0.14(UNE1)+0.70(UNE2)+0.16(UNE3)+0.50(UNE4)$$

**Table 12** The UNE Model Validation

| Factors | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---------|-----------|-----|------|------|------|-------|
| 9) UNE | UNE1 | 0.61** | 0.04 | 14.48 | 0.38 | −0.14 |
| | UNE2 | 0.95** | 0.04 | 26.18 | 0.90 | 0.70 |
| | UNE3 | 0.82** | 0.05 | 27.79 | 0.68 | 0.16 |
| | UNE4 | 0.88** | 0.05 | 19.16 | 0.77 | 0.50 |



Chi–Square = 0.31, df = 1, p–value = 0.57898, GFI = 1,
AGFI = 1, RMR=0.0056, RMSEA = 0.000

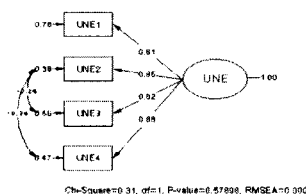*Figure 10.* UNE Model

**p< .001, FSR=Factor Score Regression

*(2.2.10) University Grants and Tuition Fees (FEE)*

It was found that the measurement model of University Grants and Tuition Fees was fit with empirical data (Chi–Square = 0.35, df = 1, p–value = 0.55322, GFI = 1, AGFI = 1, RMR = 0.0042, RMSEA = 0.000). It revealed that all indicators were statistically significant. Therefore, university scholarship (FEE2) was the most important, followed by research grants (FEE3). Tuition fee (FEE1) was the least important. The factor loadings of the measurement model were 0.65 to 0.95 and accounted for the variance of *University Grants and Tuition Fees* from 42 % to 90 %. The analysis details are shown in Table 13 and Figure 11. The factor score equation is expressed as follows:

*FEE = 0.08(FEE1)+0.71(FEE2)+0.23(FEE3)*

**Table 13** The FEE Model Validation

| Factors | Indicators | b | $SE_b$ | t | $R^2$ | FSR |
|---------|-----------|-----|-------|------|-------|------|
| 10) FEE | FEE1 | 0.65** | 0.04 | 14.56 | 0.42 | 0.08 |
| | FEE2 | 0.95** | 0.04 | 26.15 | 0.90 | 0.71 |
| | FEE3 | 0.85** | 0.04 | 21.45 | 0.73 | 0.23 |

Chi-Square = 0.35, df = 1, p-value = 0.55322, GFI = 1,
AGFI = 1, RMR=0.0042, RMSEA = 0.000

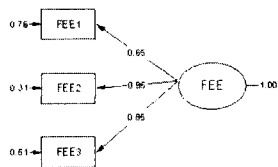*Figure 11.* FEE Model

**p< .001, FSR=Factor Score Regression

*(2.3) Relationship among 10 factors affecting decision making on university choice of graduate students in the field of education*

Among 10 factors, it was found that the correlation of all factors positively related to one another at .01 level of statistical significance. The correlation coefficient ranged from .110 to .602. University curriculum (CUR) and graduate student selection (SEL) had the strongest relationship; graduate students' background (BAC) and university quality (UNQ) had the poorest relationship. There were two pairs of factors, which had no statistical significance. The first pair consisted of graduate students' background (BAC) and expectation of students and guardians on university (EXP). The second pair consisted of graduate students' background (BAC) and university environment (UNE). There was only pair of factors, which had statistical significance at .05 level. This pair consisted of graduate students' background (BAC) and university quality (UNQ). Bartlett's test of sphericity indicated that the correlation matrix among 10 factors was different from the identity correlation matrix with statistical significance and KMO of 0.808, revealing that 10 factors had strong relationship. Therefore, all factors were appropriate to analyze by Multiple Discriminant Analysis (MDA) in the next stage. The details are as shown in Table 14.

**Table 14** Means, Standard Deviation, Pearson's Correlation Coefficient of Factors Scores of Factors Affecting on University Choice of Graduate Students in The Field of Education

| Factors | BAC | SES | ABI | EXP | EXT | SEL | CUR | UNQ | UNE | FEE |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| BAC | 1,000 | | | | | | | | | |
| SES | 0.467** | 1.000 | | | | | | | | |
| ABI | 0.236** | 0.351** | 1.000 | | | | | | | |
| EXP | 0.078 | 0.303** | 0.340** | 1.000 | | | | | | |
| EXT | 0.383** | 0.380** | 0.313** | 0.191** | 1.000 | | | | | |
| SEL | 0.164** | 0.256** | 0.458** | 0.270** | 0.379** | 1.000 | | | | |
| CUR | 0.210** | 0.192** | 0.444** | 0.278** | 0.407** | 0.602** | 1.000 | | | |
| UNQ | 0.110* | 0.127** | 0.194** | 0.277** | 0.343** | 0.394** | 0.398** | 1.000 | | |
| UNE | 0.058 | 0.130** | 0.215** | 0.215** | 0.286** | 0.466** | 0.357** | 0.451** | 1.000 | |
| FEE | 0.163** | 0.168** | 0.285** | 0.192** | 0.337** | 0.346** | 0.384** | 0.252** | 0.494** | 1.000 |
| MEAN | 2.51 | 2.30 | 3.87 | 3.96 | 3.07 | 3.74 | 3.58 | 4.16 | 4.30 | 3.06 |
| SD | 1.23 | 1.29 | 1.07 | 0.87 | 1.01 | 1.05 | 0.89 | 1.08 | 1.16 | 1.12 |

Kaiser-Meyer-Olkin : Measure of Sampling Adequacy = 0.808
Barlett's Test of Sphericity Approx.Chi-Square = 1197.256
df = 55   Sig = 0.000

** p < .01, * p<.05

### (3) A Multiple Discriminant Analysis (MDA)

In this phase, the result was divided into five parts consisting of :

    (3.1) analysis of variance of the multiple discriminators

    (3.2) the quality of multiple discriminant functions

    (3.3) the predictability of factor affecting decision making on university choice of graduate students in the field of education

    (3.4) factors discriminating decision making on university choice of graduate students in education

(3.5) the original group cases correctly classified. The details are as follow:

### (3.1) analysis of variance of the multiple discriminators

From the result of 10 measurement model validation, the researcher used the factor score regression of all indicators in each factor to express the factor score calculating from indicators of each factor, and used them as the multiple discriminators. These multiple discriminators were independent variables of this research. The dependent variable was decision making on university choice (categorical variable) measuring by groups of graduate students in different universities consisting of 4 groups:

(1) Chulalongkorn University                                   123 students (29.10%)

(2) Srinakharinwirot University Prasanmit              100 students(23.60%)

(3) Kasetsart University                                          81 students (19.10%)

(4) 6 Rajabhat Universities in Bangkok metropolitan area    119 students (28.20%)

From the result of analysis of variance of the multiple discriminators among groups of students in each university, it was found that the means of nine multiple discriminators: BAC, SES, ABI, EXP, EXT, SEL, UNQ, UNE, and FEE were different at .05 level of statistical significance. The exception was CUR, which was not different at .05 level of statistical significance. Therefore, nine appropriate multiple discriminators were used in this research. From the result of the variance–covariance matrix examination among 4 groups of graduate students in different universities, it was found that it was different at .05 level of statistical significance. The Box's M of 247.076 and the p–value of less than .000 indicated that the analysis violated the assumption of homogeneity of covariance matrix. However, a multiple discriminant function analysis is robust even when the homogeneity of variance assumption is not met, provided the data do not contain important outliers. Also, when the sample size is large, as in this research (N=423), small deviations from homogeneity will be found significant (Huberty, 2004). The details are as shown in Table 15 (see next page).

**Table 15** Means, Standard Deviations and The result of Multiple Discriminators Selection

| Multiple Discriminators | Decision Making on University Choice | | | | | | | | | | Wilks' Lamda | F | Sig |
| | Chula (N=123) 29.10% | | SWU (N=100) 23.60% | | KU (N=81) 19.10% | | Rajabhat (N=119) 28.20% | | TOTAL (N=423) 100.00% | | | | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | | | |
| BAC | 2.32 | 1.15 | 2.34 | 1.17 | 2.77 | 1.33 | 2.69 | 1.24 | 2.51 | 1.23 | 0.974 | 3.716 | 0.012 |
| SES | 2.37 | 1.30 | 2.04 | 1.24 | 2.83 | 1.22 | 2.09 | 1.26 | 2.30 | 1.29 | 0.951 | 7.271 | 0.000 |
| ABI | 4.08 | 1.06 | 3.68 | 1.21 | 3.97 | 0.99 | 3.74 | 0.98 | 3.87 | 1.07 | 0.976 | 3.479 | 0.016 |
| EXP | 4.06 | 0.84 | 3.86 | 0.96 | 4.20 | 0.77 | 3.79 | 0.85 | 3.96 | 0.87 | 0.968 | 4.607 | 0.003 |
| EXT | 2.89 | 0.92 | 2.81 | 0.99 | 3.51 | 1.03 | 3.17 | 1.00 | 3.07 | 1.01 | 0.937 | 9.426 | 0.000 |
| SEL | 3.84 | 1.13 | 3.69 | 1.17 | 3.97 | 0.93 | 3.51 | 0.87 | 3.74 | 1.05 | 0.974 | 3.753 | 0.011 |
| CUR | 3.52 | 0.98 | 3.68 | 0.97 | 3.62 | 0.87 | 3.53 | 0.72 | 3.58 | 0.89 | 0.995 | 0.768 | 0.513 |
| UNQ | 4.45 | 1.05 | 4.14 | 1.18 | 4.27 | 0.99 | 3.80 | 0.96 | 4.16 | 1.08 | 0.945 | 8.064 | 0.000 |
| UNE | 4.34 | 1.20 | 4.27 | 1.16 | 4.81 | 0.95 | 3.95 | 1.14 | 4.30 | 1.16 | 0.937 | 9.412 | 0.000 |
| FEE | 3.07 | 1.19 | 3.12 | 1.06 | 3.40 | 1.12 | 2.75 | 1.01 | 3.06 | 1.12 | 0.960 | 5.829 | 0.001 |

Box's M = 247.076    F Approx = 1.433    df1 = 165    df2 = 315333.00    Sig = .000

## (3.2) The quality of multiple discriminant functions

The result of multiple discriminant function quality testing gave 3 multiple discriminant functions. It was found that all functions were able to discriminate groups of graduate students. From the testing of Function I, it was found that this had the highest quality indicated by Chi-square of 142.127, degree of freedom of 30 at .01 level of statistical significance. The eigen value of 0.191, which was less than 1 indicated that Function I, had more between-group variance than within-group variance. The multiple discriminators of Function I had the relationship between function indicating by a canonical correlation of 0.410. Function I accounted for 36.90 % of variance.

From the testing of Function II, it was found that this function had the second highest quality indicated by Chi-square of 69.551, degree of freedom of 18 at .01 level of statistical significance. The eigen value of 0.136, which was less than 1 indicated that Function II had more between-group variance than within-group variance. The multiple discriminators of Function II had the relationship between function indicating by a canonical correlation of 0.346. Function II was accounted for 36.90 % of variance.

From the testing of Function III, it was found that this function had the least quality indicating by Chi-square of 16.694, degree of freedom of 8 at .05 level of statistical significance. The eigen value of 0.041, which was less than 1 indicated that Function II had more between-group variance than within-group variance. The multiple discriminators of Function II had the relationship between function indicating by a canonical correlation of 0.199. Function III was accounted for 11.20 % of variance. The details are as shown in Table 16.

**Table 16** Test of Multiple Discriminant Function Quality

| Function | Eigen Value | % of Variance | Comulative % | Caconical Correlation | Wilks' Lambda | $\chi^2$ | df | Sig. |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.191 | 51.90 | 51.90 | 0.401 | 0.710 | 142.127 | 30 | 0.000 |
| 2 | 0.136 | 36.90 | 88.80 | 0.346 | 0.846 | 69.551 | 18 | 0.000 |
| 3 | 0.041 | 11.20 | 100.00 | 0.199 | 0.961 | 16.694 | 8 | 0.033 |

*(3.3) The predictability of Factors Affecting Decision Making on University Choice of Graduate Students in Education*

From the result of predictability testing, the researcher considered a standardized canonical discriminant function coefficient of the multiple discriminators, which served the same purpose as beta weights in multiple regression. These indicated the relative importance of the independent variables in predicting the dependent (Hair et al. 1998 and Huberty, 2004). Therefore, the standardized canonical discriminant function coefficients (without the consideration of operational symbols +,-) should tell the predictability of the multiple discriminators. The analysis result found that Function I discriminated graduate students into 2 main groups consisting of group (1) graduate students of Chulalongkorn University, Srinakharinwirot University Prasanmit, and Kasetsart University (group centroid of 0.529, 0.002, and 0.096, respectively) and group (2) graduate students of Rajabhat Universities (group centroid of -0.614). The best three predictors of this function were university quality, external influences involving decision making on university choice, and university curriculum, with a standardized canonical discriminant function coefficient

of 0.739, 0.606, and 0.488, respectively. The poorest predictor of this function was university environment, with a standardized canonical discriminant function coefficient of 0.020. Function II discriminated graduate students into two main groups consisting of group (1) graduate students of Kasetsart University (group centroid was 0.731) and group (2) graduate students of Chulalongkorn University, Srinakharinwirot University Prasanmit and Rajabhat Universities (group centroid of -0.161, -0.316, and -0.065, respectively). The best three predictors of this function were external influences involving decision making on university choice, university environment, and university curriculum, with a standardized canonical discriminant function coefficient of 0.664, 0.564, 0.462, respectively. The poorest predictors of this function were university tuition fee and grants, with a standardized canonical discriminant function coefficient of 0.020.

Function III discriminated graduate students into two main groups consisting of group (1) graduate students of Srinakharinwirot University Prasanmit and Kasetsart University (group centroid of 0.318 and 0.091) and group (2) graduate students of Chulalongkorn University and Rajabhat Universities (group centroid of -0.177 and - 0.147). The best three predictors of this function were individual ability, university curriculum, and university tuition fee and grants, with a standardized canonical discriminant function coefficient of 0.788, 0.692, 0.494, respectively. The poorest predictor of this function was expectation of graduate students and guardians on university, with a standardized canonical discriminant function coefficient of 0.002. The details are as shown in Table 17.

**Table 17** Standardized Canonical Discriminant Function Coefficient

| Multiple Discriminators | Standardized Canonical Discriminant Function Coefficient | | |
|---|---|---|---|
| | Function I | Function II | Function III |
| BAC | −0.400 | 0.064 | −0.043 |
| SES | 0.436 | 0.324 | 0.123 |
| ABI | 0.292 | −0.177 | −0.788 |
| EXP | 0.043 | 0.287 | −0.002 |
| EXT | −0.606 | 0.664 | −0.370 |
| SEL | 0.259 | 0.077 | −0.040 |
| CUR | −0.488 | −0.462 | 0.692 |
| UNQ | 0.739 | −0.356 | −0.246 |
| UNE | 0.020 | 0.564 | 0.306 |
| FEE | 0.343 | 0.020 | 0.494 |

|  | | |
|---|---|---|
| | Function I | Chula = 0.529  SWU = 0.002  KU = 0.096 Rajabhat = − 0.614 |
| group centroid | Function II | Chula = − 0.161 SWU = − 0.316  KU = 0.731 Rajabhat = − 0.065 |
| | Function III | Chula = − 0.177 SWU = 0.318  KU = 0.091 Rajabhat = − 0.147 |

*(3.4) Factors discriminating decision making on university choice of graduate students in education*

From the analysis, it was found that Function I discriminated graduate students into two groups, consisting of group (1) graduate students of Chulalongkorn University, Srinakharinwirot University Prasanmit, and Kasetsart University and group (2) graduate students of Rajabhat Universities. In this phase, the researcher considered a structure coefficient. It was the relationship between multiple discriminators and multiple discriminant functions and served as a factor loading in a factor analysis. It indicated that which multiple discriminators were significant and important for the function. Furthermore, it showed the best of multiple discriminator of the function (Hair et al., 1998 and Huberty, 2004). Therefore, the significant multiple discriminators of Function I were university quality (UNQ) and graduate students selection (SEL), with a structure coefficient of 0.546 and 0.303, respectively.

After the operational symbols (+,−) of group centroid, were considered it was found that graduate students deciding to choose Chulalongkorn University, Srinakharinwirot University Prasanmit and Kasetsart University had the same reason to choose their desired universities. They considered the importance of university quality (UNQ), and graduate students selection (SEL) but these factors were less important for graduate students deciding to choose Rajabhat Universities. The multiple discriminant equations both of raw score and standardized score were analysed. The details of the result are as shown in Table 18.

Multiple Discriminant Equation of Function I (raw score)

$$\hat{D} = -2.264 - 0.329(BAC) + 0.346(SES) + 0.275(ABI) + 0.050(EXP) - 0.617(EXT)$$
$$+ 0.250(SEL) - 0.550(CUR) + 0.704(UNQ) + 0.018(UNE) + 0.312(FEE)$$

Multiple Discriminant Equation of Function I (standardized score)

$$Z = -0.400(ZBAC) + 0.436(ZSES) + 0.292(ZABI) + 0.043(ZEXP) - 0.606(ZEXT)$$
$$+ 0.259(ZSEL) - 0.488(ZCUR) + 0.739(ZUNQ) + 0.020(ZUNE) + 0.343(ZFEE)$$

Function II discriminated graduate students into two main groups consisting of group (1) graduate students of Kasetsart University, and group (2) graduate students of Chulalongkorn University, Srinakharinwirot University Prasanmit and Rajabhat Universities. The researcher considered a structure coefficient. It was found that the significant multiple discriminators were external influences involving decision making on university choice (EXT), socio−economic status (SES), university environment (UNE), expectation of graduate students and guardians on university (EXP), and graduate students' background (BAC), with a structure coefficient of 0.660, 0.552, 0.515, 0.347, and 0.335, respectively.

After the researcher considered the operational symbols (+,−) of group centroid, it was found that graduate students deciding to choose Kasetsart University considered the importance of external influences (EXT), socio−economic status (SES), university environment (UNE), expectation of graduate students and guardians on university (EXP), and graduate students' background (BAC). These factors were more important for them than for graduate students in the other universities. The multiple discriminant equations both of raw score and standardized score were analysed. The details of the result are as shown in Table 18.

Multiple Discriminant Equation of Function II (raw score)

$$\hat{D} = -2.678 + \mathbf{0.052(BAC)} + \mathbf{0.257(SES)} - 0.167(ABI) + \mathbf{0.334(EXP)}$$
$$+ \mathbf{0.676(EXT)} + 0.074(SEL) - 0.520(CUR) - 0.339(UNQ) + \mathbf{0.499(UNE)} + 0.018(FEE)$$

Multiple Discriminant Equation of Function II (standardized score)

$$Z = \mathbf{0.064(ZBAC)} + \mathbf{0.324(ZSES)} - 0.177(ZABI) + \mathbf{0.287(ZEXP)} + \mathbf{0.644(ZEXT)}$$
$$+ 0.077(ZSEL) - 0.462(ZCUR) - 0.356(ZUNQ) - \mathbf{0.564(ZUNE)} + 0.020(ZFEE)$$

Function III discriminated graduate students into two main groups consisting of group (1) graduate students of Srinakharinwirot University Prasanmit and Kasetsart University, and group (2) graduate students of Chulalongkorn University and Rajabhat Universities. When a structure coefficient was considered, it was found that the significant multiple discriminators were university tuition fee and grants (FEE), university curriculum (CUR), and individual ability (ABI), with a structure coefficient of 0.497, 0.419, and 0.365, respectively.

After the researcher considered the operational symbols (+,-) of group centroid, it was found that graduate students deciding to choose Srinakharinwirot University Prasanmit and Kasetsart University had the same reasons. They considered the importance of university tuition fee and grants (FEE), and university curriculum (CUR). These factors were more important for them to choose their universities than graduate students deciding to choose Chulalongkorn University and Rajabhat Universities. However, individual ability (ABI) was the only factor important to graduate students deciding to choose Chulalongkorn University and Rajabhat Universities. The analysis result was able to express the multiple discriminant equations both of raw score and standardized score. The details of the result are as shown in Table 18.

Multiple Discriminant Equation of Function II (raw score)

$$\hat{D} = -0.317 - 0.035(BAC) + 0.098(SES) - \mathbf{0.740(ABI)} - 0.002(EXP) - 0.376(EXT)$$
$$- 0.039(SEL) + \mathbf{0.779(CUR)} - 0.234(UNQ) + 0.271(UNE) + \mathbf{0.450(FEE)}$$

Multiple Discriminant Equation of Function II (standardized score)

$$Z = -0.043(ZBAC) + 0.123(ZSES) - \mathbf{0.788(ZABI)} - 0.002(ZEXP) - 0.370(ZEXT)$$
$$- 0.040(ZSEL) + \mathbf{0.692(ZCUR)} - 0.246(ZUNQ) + 0.306(ZUNE) + \mathbf{0.494(ZFEE)}$$

**Table 18**  Multiple Discriminators, Multiple Discriminant Function Coefficient of graduate students in different universities

| Multiple Discriminators | Function I | | | Function II | | | Function III | | |
|---|---|---|---|---|---|---|---|---|---|
| | CDFC | SCDFC | SC | CDFC | SCDFC | SC | CDFC | SCDFC | SC |
| BAC | −0.329 | −0.400 | −0.239 | 0.052 | 0.064 | **0.335*** | −0.035 | −0.043 | −0.105 |
| SES | 0.346 | 0.436 | 0.231 | 0.257 | 0.324 | **0.552*** | 0.098 | 0.123 | −0.101 |
| ABI | 0.275 | 0.292 | 0.281 | −0.167 | −0.177 | 0.139 | −0.740 | −0.788 | **−0.419*** |
| EXP | 0.050 | 0.043 | 0.295 | 0.334 | 0.287 | **0.347*** | −0.002 | −0.002 | −0.034 |
| EXT | −0.617 | −0.606 | −0.196 | 0.676 | 0.664 | **0.660*** | −0.376 | −0.370 | −0.159 |
| SEL | 0.250 | 0.259 | **0.303*** | 0.074 | 0.077 | 0.254 | −0.039 | −0.040 | 0.110 |
| CUR | −0.550 | −0.488 | 0.002 | −0.520 | −0.462 | 0.010 | 0.779 | 0.692 | **0.365*** |
| UNQ | 0.704 | 0.739 | **0.546*** | −0.339 | −0.356 | 0.071 | −0.234 | −0.246 | 0.002 |
| UNE | 0.018 | 0.020 | 0.358 | 0.499 | 0.564 | **0.515*** | 0.271 | 0.306 | 0.410 |
| FEE | 0.312 | 0.343 | 0.296 | 0.018 | 0.020 | 0.331 | 0.450 | 0.494 | **0.497*** |
| **Constant** | **−2.264** | | | **−2.678** | | | **−0.317** | | |

| group centroid | Function I | Chula = 0.529 | SWU = 0.002 | KU = 0.096 | Rajabhat = − 0.614 |
|---|---|---|---|---|---|
| | Function II | Chula = − 0.161 | SWU = − 0.316 | KU = 0.731 | Rajabhat = − 0.065 |
| | Function III | Chula = − 0.177 | SWU = 0.318 | KU = 0.091 | Rajabhat = − 0.147 |

CDFC=Canonical Discriminant Function Coefficient

SCDFC=Standardized Canonical Discriminant Function Coefficient

SC=Structure Coefficient

*(3.3) Original Group Cases Correctly Classified*

It was found that the multiple discriminant function was 45.2% of original grouped correctly classified in the over view. It was possible to correctly classify the group of graduate students of Chulalongkorn University at 40.70%, graduate students of Srinakharinwirot University Prasanmit at 36.00%, graduate students of Kasetsart University at 53.10%, and graduate students of Rajabhat Universities at 52.10%. The details are as shown in Table 12.

**Table 19** The Result of Original Group Cases Correctly Classified

| Real Groups | N | Classified Groups | | | |
|---|---|---|---|---|---|
| | | Group I | Group II | Group III | Group IV |
| Group I Chulalongkorn University | 123 | **50** (**40.70%**) | 21 (17.10) | 31 (25.2) | 21 (17.10) |
| Group II Srinakharinwirot University Prasanmit | 100 | 20 (20.00) | **36** (**36.00%**) | 15 (15.00) | 29 (29.00) |
| Group III Kasetsart University | 81 | 16 (19.80) | 10 (12.30) | **43** (**53.10%**) | 12 (14.80) |
| Group IV Rajabhat Universities | 119 | 11 (9.20) | 22 (18.50) | 24 (20.20) | **62** (**52.10%**) |

Original Grouped Cases Correctly Classified = **45.20%**

# Discussion

(1) The correlation coefficient between age and decision making on university choice was quite strong ($r = 0.609$), whereas the other background indicators had quite poor relationships with decision making on university choice because Cramer's V correlation coefficients were used in this study. It was the test of relationship between categorical and categorical variables. Therefore, the reason that age had quite a strong relationship with decision making on university choice was because graduate students in different age ranges had different decision making parameters. According to the result of descriptive statistics. It was found that graduate students at the age of 21-30 mostly decided to choose Kasetsart University (80.20%), graduate students at the age of 31-40 mostly decided to choose Srinakharinwirot University Prasanmit (26%) but graduate students at the age of over 41 mostly decided to choose Rajabhat Universities.

(2) Function I, graduate students who decided to choose Chulalongkorn University, Srinakharinwirot University Prasanmit, and Kasetsart University had the same reason to choose their desired universities. They considered the importance of university quality

(UNQ) and graduate students selection (SEL). Although, these two factors were important to the majority of graduate students, they were less important to graduate students of Rajabhat Universities. Actually, all graduate students of Rajabhat Universities studied in the executive programmes (100.00%). Their programmes provided the instructions for the weekend. They were mostly 41 to 50 years old, and they had work experience (90.80%). Moreover, most of them were teachers, school administrators, and educational supervisors, who had high level of work positions, so that they just wanted to improve their educational qualifications and they would not study in full time programmes. The executive programme was suitable and flexible for them. On the other hand, graduate students in the other universities were younger. They were mostly fresh graduates without any work experiences. All of them decided to further their study after graduation because they would like to earn more and increase their job opportunities. Therefore, their choice was based on the quality and reputation of the university.

(3) Function II, graduate students who decided to choose Kasetsart University considered the importance of external influences involving decision making on university choice (EXT), socio-economic status (SES), university environment (UNE), expectation of graduate students and guardians on university (EXP), and graduate students' background (BAC). These factors were more important than graduate students of the other universities because graduate students of Kasetsart University's guardians mostly lived together (82.70%) and they mostly had no work experiences (48.10%). Therefore, socio-economic status, expectation of graduate students, and guardians on university and graduate students' background were important to them. In addition, external influences were important to them. These factors indicated that Kasetsart University successfully include these aspects in their marketing. It is one of the biggest university in Bangkok metropolitan area in a green location, thus university environment was important for the graduate students who sought admission there.

(4) Function III, graduate students who decided to choose Srinakharinwirot University Prasanmit and Kasetsart University had quite the same reasons for their choice. They considered the importance of university tuition fee and grants (FEE), university curriculum (CUR). These factors were more important to them than graduate students

who decided to choose Chulalongkorn University and Rajabhat Universities. On the other hand, individual ability (ABI) was less important to graduate students who decided to choose Srinakharinwirot University Prasanmit and Kasetsart University because they were mostly fresh graduates. Their individual abilities were not different. In addition, Chulalongkorn University is the oldest university in Thailand and has long been considered to be one of the country's most prestigious universities (Wikipedia, 2006). There are many applicants in competition for places. Thus, individual ability was important to the applicants. Furthermore, graduate students who decided to choose Rajabhat Universities were mostly mature and had not studied for some time; they wanted to be sure of completing their studies. Both graduate students of Chulalongkorn University and Rajabhat Universities were mostly mature and had high work positions, so the university curriculum was not as important to them.

## Further Consideration

(1) Data was collected from the participants in Bangkok metropolitan area and did not include all of the participants in other areas that offered the master's degree programme in the field of education. This research was also specific only the public universities. Although, the private universities in Thailand do not provide an undergraduate programme in the field of education, they have provided a master's degree programme especially educational administration. For this reason, the further study should collect data from both public and private universities.

(2) This research focused on the participants studying in the masters degree programme only. In the other views, there were many people who applied for the master's degree programme in the field of education but they were not qualified and not admitted to their desired programmes. In this case, the people would like to further their study in masters degree and make their decision on university choice. Moreover, the fourth year undergraduate students who will finish their bachelors degree should be selected for further study because some of them decided to further their studies after their graduation. Consequently, they will be making decisions on university choice.

(3) Further research should focus on the study of the causal relationship among variables which affect decision making on university choice of graduate students in the

field of education, I order to provide information concerning direct or indirect effects of these variables. Furthermore, invariance testing of the causal relationship across the different groups of graduate students is also important. .It should provide useful information to inform the admission and curriculum policies of all universities which intend to provide graduate programmes in the field of education. This information should lead to increase the number of applicants of all universities.

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