

## Chapter 3

### Preliminary Data Analysis

In this chapter we describe the preliminary data analysis based on the records obtained from Prince of Songkla University in 2002. The subjects investigated in this study sample comprised 307 graduates who agreed to complete the questionnaire out of 733 who graduated from the graduate school at Prince of Songkla University and gave permission to attend the graduation ceremony in September 2002. The proportions of respondents from degrees or areas of study (this areas of study is concerned with major and is listed in the appendix) with more than ten students graduating are shown in Table 3.1.

Area of study	Graduates	Responded	% responded
MPA	219	53	24.2
Education	179	48	26.8
Chemistry	27	26	96.3
Environment	37	26	70.3
Natural Resources	31	23	74.2
Nursing	36	23	63.9
MBA	42	21	50.0
Humanities	27	19	70.4
Engineering	21	17	81.0
Agric. Industry	64	14	21.9
Bio-Science	12	11	91.7
Others	38	26	68.4
Total	733	307	41.9

Table 3.1: Response distribution of study sample

Of the 307 respondents, 221 had done a thesis as part of the requirement for their degree and 86 had not done a thesis because it was not required.

#### 3.1 Distributions of Variables

The roles of the variables may be classified as determinants, intervening variables, and outcomes. The main outcome is the time taken to complete the degree. The other outcomes are the levels of satisfaction stated in the questionnaire responses. These variables and their roles and data types are listed in tables 3.2-3.4 (determinants), 3.5

(intervening variables) and 3.6 (satisfaction outcomes). For convenience of statistical analysis, variables taking integer values on a range (such as the degree of agreement with a statement on a five-point scale (1= very little to 5 = very much)) were classified as continuous data type.

Variable	Role	Type
subject number	identifier	
major group	determinant	nominal
program (full-time or part-time)	determinant	binary
gender	determinant	binary
marital status	determinant	nominal (3)
age group	determinant	ordinal (3)
occupational status	determinant	nominal (3)
prior research experience	determinant	nominal (3)
prior knowledge of methodology	determinant	ordinal (3)
computer skill for data acquisition and analysis	determinant	ordinal (3)
ability to search articles or report in English for research	determinant	ordinal (3)
ability to search articles or reports at other institutes	determinant	binary
family, work or financial problem	determinant	ordinal (3)
thesis timing	determinant	ordinal (3)

Table 3.2: Determinant variables associated with student

Variable	Role	Type
subject number	identifier	
gender	determinant	binary
age group	determinant	ordinal (3)
position	determinant	nominal (4)
degree	determinant	nominal (3)
marital status	determinant	nominal (3)
work place	determinant	nominal (4)
administration position	determinant	binary
responsibility	determinant	ordinal (4)
follow up on progress of thesis	determinant	ordinal (4)
knowledge in thesis topic	determinant	ordinal (4)
availability of time for advice	determinant	ordinal (4)
gave help to student in progress on thesis	determinant	ordinal (4)
suggestion to student in independent study	determinant	ordinal (4)

Table 3.3: Determinant variables associated with student's advisor

Variable	Role	Type
number of credits in program	determinant	continuous
faculties library	determinant	binary
common room for graduate student	determinant	binary
quality of equipment and service for doing research	determinant	ordinal (5)
availability of articles	determinant	ordinal (5)
computer service for search and analysis	determinant	ordinal (5)
activity management knowledge to do research	determinant	ordinal (5)
procedure to evaluate thesis of Graduate School	determinant	ordinal (5)
procedure to check correctness of complete thesis	determinant	ordinal (5)

Table 3.4: Determinant variables associated with institute

Variable	Role	Type
doing thesis or not?	intervening	binary
how many previous studies about this topic?	intervening	nominal (3)
what methods are used in research?	intervening	nominal (3)
what knowledge in research?	intervening	binary
is it a part of advisor's research?	intervening	binary
research equipment construction	intervening	binary
difficulties about research design	intervening	ordinal (5)
frequency of meetings with advisor	intervening	ordinal (4)
relation between advisor and student	intervening	ordinal (5)
conflict between advisor and student	intervening	ordinal (5)
problem about appointment with advisor	intervening	ordinal (5)

Table 3.5: Intervening variables

Variable	Role	Type
satisfaction of major in master degree	outcome	ordinal (5)
satisfaction of subject in program	outcome	ordinal (5)
satisfaction of content in program	outcome	ordinal (5)
satisfaction of modern program	outcome	ordinal (5)
satisfaction of the dept of content in subject	outcome	ordinal (5)
satisfaction of credit in program	outcome	ordinal (5)
satisfaction of useful in daily life	outcome	ordinal (5)
satisfaction of human need in program	outcome	ordinal (5)
satisfaction of knowledge of lecturer	outcome	ordinal (5)
satisfaction of attempt to teach of lecturer	outcome	ordinal (5)
satisfaction of expert of lecturer	outcome	ordinal (5)
satisfaction of relationship between lecturer and student	outcome	ordinal (5)
satisfaction of a good characteristics of lecturer	outcome	ordinal (5)
satisfaction of equipment	outcome	ordinal (5)
satisfaction of prepare of lecturer	outcome	ordinal (5)
satisfaction of teaching technique / use method of lecturer	outcome	ordinal (5)
satisfaction of how to use technology for teaching	outcome	ordinal (5)
satisfaction of activity about subject in program	outcome	ordinal (5)
satisfaction of the dept of teaching about subject	outcome	ordinal (5)
satisfaction about environment and classroom	outcome	ordinal (5)
satisfaction about participation in group working	outcome	ordinal (5)
satisfaction about measurement	outcome	ordinal (5)
satisfaction about the library resource sufficiency	outcome	ordinal (5)
satisfaction about computer service sufficiency	outcome	ordinal (5)
satisfaction about lab equipments	outcome	ordinal (5)
satisfaction about union and relationship among student	outcome	ordinal (5)
satisfaction about relationship with classmates	outcome	ordinal (5)
satisfaction about participation in activity among classmate	outcome	ordinal (5)
satisfaction about exclusive knowledge among classmate	outcome	ordinal (5)
satisfaction about helping each other	outcome	ordinal (5)
satisfaction about reputation of university	outcome	ordinal (5)
satisfaction about reputation of faculties	outcome	ordinal (5)
satisfaction about reputation of department or program	outcome	ordinal (5)
satisfaction about reputation of lecturer	outcome	ordinal (5)
satisfaction about up to date of equipment	outcome	ordinal (5)
satisfaction about lecturer scholarly	outcome	ordinal (5)
satisfaction about university management system	outcome	ordinal (5)
satisfaction about study and teaching management system	outcome	ordinal (5)
satisfaction of the beauty of building and environment	outcome	ordinal (5)

Table 3.6: Outcome variables related to satisfaction

### 3.2 Frequency Distributions of the Determinants

The distribution of the students' major groups is given in Table 3.1. Table 3.7 shows the frequency distributions of the other student-related determinants.

Determinant	Category	Count	Percent
program	full-time	199	65.5
	part-time	105	34.5
gender	male	125	40.7
	female	182	59.3
marital status	single	210	68.6
	married	92	30.1
	separate	4	1.3
age group	less than 30	181	59.0
	30-40	102	33.2
	more than 40	24	17.8
occupational status	unemployed	97	36.9
	part-time	36	13.7
	full-time	130	49.4
prior experience about research	chief	25	8.2
	assistance	86	28.2
	no experience	194	63.6
prior knowledge about statistics and methodology	study enough	36	11.9
	need some additional knowledge	160	52.8
	need much additional knowledge	107	35.3
computer skill for data acquisition and analysis	can use computer	156	51.3
	need additional knowledge	135	44.4
	can not use computer	13	4.3
ability to search articles or reports in English for research	pretty good	112	37.0
	good, but need much attention	107	35.3
	can, but not confident	84	27.7
ability to search about articles or reports at other institute	no	31	10.4
	yes	267	89.6
have any problem such as family, work or financial problem	a lot	49	16.1
	a little	136	44.6
	very little	120	39.3
thesis timing (determination on thesis completion)	not continuously	13	5.9
	stop for a while	79	35.8
	continuously	129	58.4

Table 3.7: Frequency distributions of the determinant variables associated with student

The totals do not add up to the number of students because of incomplete responses. The proportions of incomplete responses are small, except for the question concerning occupational status, which was misunderstood by many students due to poor questionnaire design.

Tables 3.8 and 3.9 give the distributions of the advisor-related determinants. These determinants (like the last question in Table 3.7) only apply to the 221 thesis-doing students. For convenience of statistical analysis, variables taking integer values on a range (such as the degree of agreement with a statement on a five-point scale) were classified as continuous data type in Table 3.9.

Determinant	Category	Count	Percent
gender	male	120	54.8
	female	99	45.2
age group	less than 40 years	17	7.9
	40-50 years	134	62.3
	more than 50 years	64	29.8
position	teacher	26	12.0
	assistant professor	85	39.4
	associate professor	103	47.7
	professor	2	1.0
degree	bachelor	1	0.5
	master	63	29.2
	PhD	152	70.4
marital status	single	55	25.5
	married	157	72.7
	separate	4	1.9
work place	inside department	188	85.8
	outside department	6	2.7
	outside faculty	23	10.5
	outside university	2	1.0
administrative position	no	87	41.2
	yes	124	58.8

Table 3.8: Frequency distributions of the determinant variables associated with advisor

Variable	Count					Percent				
	1	2	3	4	5	1	2	3	4	5
Advisor is responsible	1	3	21	67	127	0.5	1.4	9.6	30.6	58.0
Follows up on progress in thesis	1	7	23	81	107	0.5	3.2	10.5	37.0	48.9
Has knowledge of thesis topic	0	2	16	82	119	0	1.0	7.3	37.4	54.3
Gives time for advice	1	9	33	93	82	0.5	4.1	15.1	42.7	37.6
Helps student to progress with thesis	1	8	23	103	84	0.5	3.7	10.5	47.0	38.4
Helps student to study independently	1	4	38	118	58	0.5	1.8	17.4	53.9	26.5

Table 3.9: Frequency distributions of the determinants associated with student-advisor characteristics

Tables 3.10 and 3.11 give the distributions of the determinants associated with the degree, the study facilities, and the institution. For convenience of statistical analysis, variables taking integer values on a range (such as the degree of agreement with a statement on a five-point scale) were classified as continuous data type in Table 3.11.

Determinant	Category	Count	Percent
Number of credits	15-35	17	8.3
	36	61	29.8
	37-41	31	15.1
	42	30	14.6
	43-44	5	2.4
	45	41	20.0
	46-72	20	9.8
Faculty library	no	66	30.6
	yes	150	69.4
Common room for graduate student	no	99	45.8
	yes	117	54.2

Table 3.10: Frequency distributions of the determinants associated with study facilities

Variables	Count					Percent				
	1	2	3	4	5	1	2	3	4	5
Quality of equipment for doing research	9	43	87	70	8	4.2	19.8	40.1	32.3	3.7
Available of research articles	11	30	92	78	6	5.1	13.8	42.4	35.9	2.8
Computer service for search and analysis	6	32	83	78	18	2.8	14.8	38.3	35.9	8.3
Knowledge of how to do research	10	53	100	50	4	4.6	24.4	46.1	23.0	1.8
Procedure to evaluate thesis	9	22	74	101	9	4.2	10.2	34.4	47.0	4.2
Procedure to check correctness of thesis	2	19	68	110	15	0.9	8.9	31.8	51.4	7.0

Table 3.11: Frequency distributions of determinant variables associated with institute

Tables 3.12 and 3.13 show the distributions of the intervening variables.

Determinant	Category	Count	Percent
How many previous studies about this topic	a lot of study	11	5.1
	some study	113	52.3
	a little study	92	42.6
Method used in doing research	document, survey study	94	43.5
	experimental research	100	46.3
	establishment research	22	10.2
Type of research	basic research	110	51.6
	applied research	103	48.4
Related to advisor's research	no	164	79.3
	yes	44	20.7
Research equipment construction	not spend a lot of time/cost	122	56.7
	spend a lot of time/cost	93	43.3
Frequency of meetings with advisor	2+ months	37	17.1
	2 months	26	12.0
	1 month	60	27.8
	< 1 month	93	43.1

Table 3.12: Frequency distributions of intervening variables (1)



Variable	Count					Percent				
	1	2	3	4	5	1	2	3	4	5
Difficulties about research design	0	4	128	79	5	0	1.9	59.3	36.6	2.3
Relation between advisor and student	0	2	24	114	76	0	0.9	11.1	52.8	35.2
Conflict between advisor and student	102	75	31	6	1	47.4	34.9	14.4	2.8	0.5
Problem about appointment with advisor	77	73	42	19	3	36.0	34.1	19.6	8.9	1.4

Table 3.13: Frequency distributions of the intervening variables (2)

### 3.3 Frequency Distributions of the Outcomes

Figure 3.1 shows the distribution of the time in months for the students in the study sample to complete their degree. The number of months ranges from a minimum of 18 months (one graduating students) to a maximum of 84 months (three graduating students). The distribution is skewed to the right, having skewness coefficient 1.007. The mean time taken by the students to complete their degree was just over three years (38.2 months). The most population time to completion is two years, taken by 70 graduating students (22.8%).

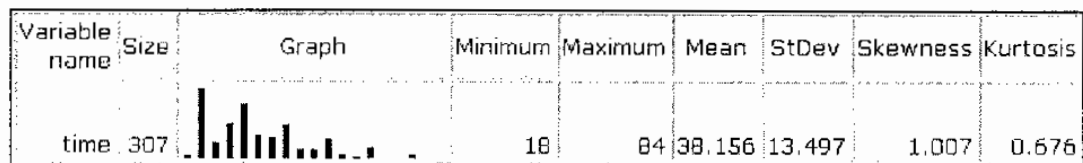


Figure 3.1: Distribution of time for completion of degree

Table 3.14 shows the distributions of the satisfaction outcomes. The aspect that the graduates most satisfied was their lecturers' knowledge (mean rating 4.06), followed by relationships with other students in general (4.05), their study major (4.03), their lecturers' teaching attempts (4.02), their lecturers' character (4.00), help from classmates (3.99), their lecturers' expertise (3.99), and their classmates (3.96). The aspects that satisfied the graduates least were computer services (3.19), laboratory equipment (3.20), lack of up-to-date equipment (3.24), university management (3.29), library resources (3.38), teaching technique (3.40), equipment (3.40), and activities (3.42).

Variable	Count					Percent				
	1	2	3	4	5	1	2	3	4	5
Major area of study	0	1	53	188	65	0.0	0.3	17.3	61.2	21.2
Subject area of study	1	7	100	186	13	0.3	2.3	32.6	60.6	4.2
Content of program	1	10	109	175	12	0.3	3.3	35.5	57.0	3.9
Up-to-date program	1	9	135	143	19	0.3	3.0	44.0	46.6	6.2
Depth of content	1	10	119	156	21	0.3	3.3	38.8	50.8	6.8
Number of credits	2	5	101	168	30	0.7	1.6	33.0	55.0	9.8
Practical usefulness	1	12	79	159	56	0.3	4.0	25.7	51.8	18.2
Expectation	0	13	92	164	35	0.0	4.3	30.3	54.0	11.5
Lecturer's knowledge	1	1	39	204	62	0.3	0.3	12.7	66.5	20.2
Lecturer's attempt	0	3	54	183	67	0.0	1.0	17.6	59.6	21.8
Lecturer's expertise	1	5	53	185	62	0.3	1.6	17.3	60.5	20.3
Lecturer-student contact	1	12	84	149	61	0.3	3.9	27.4	48.5	19.9
Lecturer's character	1	8	56	167	74	0.3	2.6	18.3	54.6	24.2
Equipment	2	24	150	110	21	0.7	7.8	48.9	35.8	6.8
Lecturer's preparation	1	7	84	185	30	0.3	2.3	27.4	60.3	9.8
Teaching technique	1	6	137	141	22	0.3	2.0	44.6	46.0	7.2
Lecturer's kn technology	4	16	159	109	19	1.3	5.2	51.8	35.5	6.2
Activities	0	25	141	129	12	0.0	8.1	45.9	42.0	4.0
Depth of teaching	0	10	116	154	24	0.0	3.3	38.2	50.7	7.9
Environment / classroom	1	11	148	126	19	0.3	3.6	48.5	41.3	6.2
Group participation	3	5	87	177	35	1.0	1.6	28.3	57.7	11.4
Measurement/evaluation	1	11	106	167	21	0.3	3.6	34.6	54.6	6.9
Library resources	7	40	123	102	34	2.3	13.1	40.2	33.3	11.1
Computer services	11	54	125	99	18	3.6	17.6	40.7	32.3	5.9
Laboratory equipment	11	44	143	90	18	3.6	14.4	46.7	29.4	5.9
Classmates	0	10	65	158	73	0.0	3.3	21.2	51.6	23.9
Students generally	0	5	52	172	77	0.0	1.6	17.0	56.2	25.2
Class participation	1	10	78	153	65	0.3	3.3	25.4	49.8	21.2
Class knowledge	1	13	85	151	56	0.3	4.3	27.8	49.4	18.3
Class help for each other	0	7	65	158	77	0.0	2.3	21.2	51.5	25.1
University's reputation	0	3	90	171	43	0.0	1.0	29.3	55.7	14.0
Faculty's reputation	1	12	110	154	30	0.3	3.9	35.8	50.2	9.8
Department's reputation	2	12	114	149	29	0.7	4.0	37.3	48.7	9.5
Lecturer's reputation	0	7	117	150	32	0.0	2.3	38.2	49.0	10.5
Up-to-date equipment	6	30	167	89	14	2.0	9.8	54.6	29.1	4.6
Lecturer scholarly	1	20	120	134	29	0.3	6.6	39.5	44.1	9.5
University management	3	29	169	89	17	1.0	9.5	55.1	29.0	5.5
Management system	2	15	174	105	11	0.7	4.9	56.7	34.2	3.6
Building/environment	0	17	136	132	22	0.0	5.6	44.3	43.0	7.2

Table 3.14: Frequency distributions of satisfaction outcomes