

CHAPTER 3

RESEARCH METHODOLOGY

This chapter addresses the methodology used to examine the hypotheses proposed in the preceding chapter. It discusses the research design, population and sample, research instruments, the reliability and validity assessment, data collection, statistics and data analysis.

Research Design

This study is a cross-sectional descriptive research. The objectives are to examine the difference in organizational commitment levels based on selected demographics (age, marital status, education, type of ranger, organizational tenure and work experience), the differences in organizational citizenship behavior levels based on selected demographics (age, marital status, education, type of ranger, organizational tenure and work experience), the relationship between organizational commitment and organizational citizenship behavior, and also identify whether organizational commitment will significantly predict the organizational citizenship behavior of the rangers in the Fourth Royal Thai Army Area. To reiterate, this study answered the following four questions:

1. Are there differences in organizational commitment levels in terms of age, marital status, education, type of ranger, organizational tenure and experience in fighting, of the rangers in the Fourth Royal Thai Army Area?
2. Is there a relationship between organizational commitment and organizational citizenship behavior of the rangers in the Fourth Royal Thai Army Area?
3. Are there differences in organizational citizenship behavior levels in terms of age, marital status, education, type of ranger, organizational tenure and experience in fighting, of the rangers in the Fourth Royal Thai Army Area?
4. Is Organizational commitment significant in predicting organizational citizenship behavior of the rangers in the Fourth Royal Thai Army Area?

Population and Sample

The target population of this study are the rangers in the Fourth Royal Thai Army Area. In 2010, there are 7 ranger regiments numbered 41-47 under the Fourth Royal Thai Army area. The total number of rangers in the data base at the time of the study is 10,759. This number consisted of 2,163 uniformed military personnel (309 per ranger regiment) and 8,596 volunteer rangers (1,228 per ranger regiment) (The Royal Thai Army, 2009).

This study used a sample size by applying the Taro Yamane formulation (Yamane, 1973, p. 725) as follows: $(n = N/(1 + Ne^2))$ where as n = sample size, N = population size which in this study was 10,759 and e = error of sampling which in this study is equal to 5 percent (.05). Thus, 399 rangers were used as

the sample for the study. The sample of this study was selected randomly by using a stratified random sampling in proportional sizes from the 7 ranger regiments in the Fourth Royal Thai Army Area. Accordingly, from each regiment, 57 subjects were selected, composed of 11 uniformed military personnel and 46 volunteer rangers.

Research Instruments

This research will implement a survey instrument consisting of questions focused on the hypotheses developed to address the research questions. The instrument used to examine the relationship of organizational commitment and organizational citizenship behavior, and additional factors to organizational commitment and organizational citizenship behavior in the present study's sample is a questionnaire, composed of 3 parts.

Part one included a number of demographic questions. The survey gathered personal data by asking 9 questions namely, age, marital status, the highest completed educational level, type of ranger, year of service in the Thai Army, current ranger regiment service, years of service with current ranger regiment, and experience in fighting the unrest in the three southernmost provinces.

Part two dealt with organizational commitment. Measurement of respondents' organizational commitment was made using the three-component scale of affective, normative and continuance commitment developed by Meyer and Allen in 1997. It included 18 items covering all three types of

commitment, while each component consists of six items to measure. It was designed to solicit a measure of the degree to which subjects feel committed to the organization for which they work. This organizational commitment questionnaire is one of the most important and frequently used measures of organizational commitment in the literature. It is also a comprehensive measurement tool to determine relationships between organizational commitment and other variables (Hollman, 2008) and the three constructs, affective, continuance, and normative commitment provided the opportunity to assess the full spectrum of organizational commitment (McMurray, Scott, & Pace, 2004). Moreover, Meyer and Allen (1997) suggested that this model is suitable to the military, all three components of commitment (affective, continuance, and normative) could increase the likelihood of soldiers remaining in the army.

Part three included the organizational citizenship behavior which was adapted from Podsakoff et al. (1990) organizational citizenship behavior scale (OCBS). The items included in this scale were based on the definitions of the five dimensions of organizational citizenship behavior described by Organ (1988). The OCB survey items based on Organ's dimensions created by Podsakoff et al. (1990) was widely used in a large number of empirical OCB studies. Besides, Organ's dimensions are beneficial across situations and organization, that over the long term it was assumed by OCB scholars (LePine et al., 2002). This study modified the items to tap only the three dimensions namely altruism, conscientiousness and civic virtue. In addition, this present study identified appropriate specific items of the Organizational Citizenship

Behavior questionnaire and modified the number of items and the statements to fit the context of the organizational citizenship behavior of the rangers in the Fourth Royal Thai Army Area. This measure consisted of 26 items that describe how individuals behave in their organization, specifically the three dimensions of organizational citizenship behavior (altruism, conscientiousness and civic virtue). While 10 items were used to measure altruism, 8 items were used to measure conscientiousness and 8 items were used to measure civic virtue.

The survey of organizational commitment and organizational citizenship behavior instrument (see Appendix A) used a seven point Likert scale for all questions in order to solicit responses that were usable in statistical analysis. A 7-point Likert scale (1-7) ranging from strongly disagree, disagree, slightly disagree, neutral, slightly agree, agree and strongly agree was used. A number of the questions which were negatively phrased, were scored in reverse in order to reduce response bias. All questions offer the opportunity to decline a response or to indicate if the question is not applicable in the case of that particular respondent. Respondents were asked to indicate the extent of their agreement with each statement. Because the original survey instrument was developed in English, the English questionnaire was first translated into Thai and then translated back into English.

The Reliability and Validity Assessment

A systematic pilot test was conducted to ascertain the reliability and validity of the instruments used to measure the variables of this research. Prior

to data analysis, the research instrument was assessed for its reliability as well as construct validity. The questionnaire was pretested with 200 rangers who work in the ranger regiment in the Fourth Royal Thai Army Area. These participants were not included in the final study.

Reliability Analysis

Reliability indicates dependability, stability, predictability, consistency and accuracy, and refers to the extent to which a measuring procedure yields the same results on repeated trials (Carmines & Zeller, 1979, p. 11; Kerlinger, 1986, p. 404). Cronbach's alpha coefficient was computed for each variable to test for reliability. Nunnally (1976, p. 274) states that alpha value of 0.7 is often considered the criterion for internally consistent established scale. The value of Cronbach's alpha 0.80 or more is very reliable. In all cases in this study the reliability exceeded the satisfactory level. The reliability or Cronbach's alpha for organizational commitment measures range between 0.751 and 0.812. Cronbach's alpha for organizational citizenship behavior measures range between 0.888 and 0.960 (see Table 1). These are values that provide a form of confidence of the data gathered and its results. The questionnaires were chosen because of their proven track record and the valid reliability was greater than 0.7.

Table 1*Reliability Level of Instruments-during Pilot Study*

Scale	Number of Items	Cronbach's Alpha
Organizational Commitment		
1. Affective Commitment	6	.775
2. Continuance Commitment	6	.751
3. Normative Commitment	6	.812
Organizational Citizenship Behavior		
1. Altruism	10	.960
2. Conscientiousness	8	.923
3. Civic Virtue	8	.888

Construct Validity

Construct validity measures the extent to which the items in a scale all measure the same construct. In other words, construct validity is a measure to determine the consistency of the items with the theory and concepts as designed. Factor analysis can be used to measure construct validity of a document when a Likert-type scale is being used in the research study (Munro, 2001, p. 309). In this study, a confirmatory factor analysis with a specified factor pattern is applied for Organizational Commitment (OC) and Organizational Citizenship Behavior (OCB) in order to confirm whether the data support the conceptual structure. Although the OC and OCB measures were developed by Meyer and

Allen (1997), and Podsakoff et al. (1990) respectively in the United States, they were validated to ensure that they can be applied cross-culturally.

Organizational Commitment Scale. The construct validity of the organizational commitment scale which used the three-component scale developed by Meyer and Allen (1997) was determined by means of factor analysis. The Kaiser-Meyer-Olkin (KMO) and Bartlett’s test of sphericity were conducted to test whether the data was suitable for factor analysis. It is evident from table 2 that factor analysis can be reasonably used as the KMO test of sampling adequacy, .670 and Bartlett’s test of sphericity has a very small probability level, $p = 0.00$. The closer to 1 the KMO is the better and if the significant level of the Bartlett’s test of sphericity is smaller than 0.05, the null hypothesis that the correlation is an identity matrix has to be rejected (Norusis, 2004, p. 143).

Table 2

KMO and Bartlett’s Test for Organizational Commitment

Measure		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.670
Bartlett’s Test of Sphericity	Approx. Chi-square	1679.028
	Df	153
	Sig.	.000

The data was extracted through principal component analysis by a fixed number of factors equal to 3, due to this organizational commitment

scale using the three-component scale developed by Meyer and Allen (1997). The varimax rotated principal components factor analysis revealed a three factor structure that explained 51.169% of the variance. Total variance explaining organizational commitment is presented in Table 3.

Table 3
Total Variance Explaining Organizational Commitment

Component	Initial Eigen Values			Extraction Sums of Squared			Rotation Sums of Squared		
				Loading			Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.834	21.298	21.298	3.834	21.298	21.298	3.203	17.793	17.793
2	2.923	16.237	37.535	2.923	16.237	37.535	3.067	17.036	34.830
3	2.454	13.634	51.169	2.454	13.634	51.169	2.941	16.340	51.169
4	1.901	10.563	61.733						
5	1.224	6.801	68.533						
6	.903	5.017	73.550						
7	.798	4.436	77.985						
8	.752	4.179	82.165						
9	.631	3.504	85.669						
10	.466	2.589	88.258						
11	.379	2.107	90.364						
12	.349	1.940	92.305						
13	.307	1.705	94.010						
14	.276	1.533	95.543						
15	.254	1.414	96.957						
16	.238	1.323	98.279						
17	.184	1.021	99.300						
18	.126	.700	100.000						

Extraction Method: Principal Component Analysis.

The three factors extracted were affective commitment, continuance commitment and normative commitment. Only factor loadings of at least 0.40 for specific items were included in the factor. This is in accordance with Stevens (1992, p. 383) suggestion that factor loadings greater than .40 are considerable values. So, on the format subcommand the option blank (.40) was used, which tells SPSS not to print any of the correlations that are .4 or less. This makes the output easier to read by removing the clutter of low correlations that are probably not meaningful anyway. The three factor structures and item loadings are displayed in Table 4.

Table 4

Factor Loadings for Organizational Commitment

Item Wording	Item Codes	Factor		
		1	2	3
		Normative Commitment	Affective Commitment	Continuance Commitment
I would feel guilty if I left the ranger regiment now.	b15	.808		
Even if it were to my advantage, I do not feel it would be right to leave the ranger regiment now.	b14	.791		
I would not leave the ranger regiment right now because I have a sense of obligation to the people in it.	b17	.758		
The ranger regiment deserves my loyalty.	b16	.749		
I do not feel any obligation to remain with my current employer.	b13.1*	.641		

Table 4 (continued)

Item Wording	Item Codes	Factor		
		1	2	3
		Normative Commitment	Affective Commitment	Continuance Commitment
I owe a great deal to the ranger regiment.	b18	.518		
I do not feel like a part of the family of the ranger regiment.	b5.1*		.846	
I do not feel emotionally attached to the ranger regiment.	b4.1*		.809	
I do not feel a strong sense of belonging to the ranger regiment.	b3.1*		.739	
I really feel as if the ranger regiment's problems are my own.	b2		.623	
I would be very happy to spend the rest of my career with the ranger regiment.	b1		.532	
The ranger regiment has a great deal of personal meaning for me.	b6		.508	
I feel that I have too few options to consider leaving the ranger regiment.	b10			.820
Too much of my life would be disrupted if I decided I wanted to leave the ranger regiment right now.	b9			.737
It would be very hard for me to leave the ranger regiment right now, even if I want to.	b8			.679
Right now, staying with the ranger regiment is a matter of necessity as much as desire.	b7			.632

Table 4 (continued)

Item Wording	Item Codes	Factor		
		1	2	3
		Normative Commitment	Affective Commitment	Continuance Commitment
If I had not already put so much of myself into the ranger regiment, I might consider working elsewhere.	b11			.629
One of the few negative consequences of leaving the ranger regiment would be the scarcity of available alternatives.	b12			.511

*Items are reverse scored

The organizational commitment scale (Meyer & Allen, 1997) was designed to assess three components of organizational commitment namely, affective commitment, continuance commitment and normative commitment. The data from this research fit the three factor structure as the designed concept shown in Table 4. It confirms that this organizational commitment scale measures the three different dimensions of organizational commitment as expected. It can also confirm that taken together, it appears that the three commitment constructs are likely to be conceptually and functionally similar (e.g. generalisable) across cultures.

Organizational Citizenship Behavior Scale

Initially, the data was assessed as factorable via the KMO test of sampling adequacy and Bartlett’s test for sphericity. The values of the KMO

measure and Bartlett's test of sphericity are presented in Table 5. The results of these tests imply that the data can be evaluated with a factor analysis.

Table 5

KMO and Bartlett's Test for Organizational Citizenship Behavior

Measure		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.740
Bartlett's Test of Sphericity	Approx. Chi-square	5969.500
	<i>Df</i>	325
	Sig.	.000

The data was extracted through principal component analysis by fixed number of factors equal to 3, as adapted from Podsakoff et al. (1990) Organizational Citizenship Behavior Scale (OCBS). The items included in this scale were based on the definitions of the five dimensions of organizational citizenship behavior described by Organ (1988). This study modified the items to tap only the three dimensions namely altruism, conscientiousness and civic virtue. The varimax rotated principal components factor analysis revealed a three factor structure that explained 68.912% of the variance. Total variance explaining organizational citizenship behavior is presented in Table 6.

**Table 6***Total Variance Explaining Organizational Citizenship Behavior*

Component	Initial Eigen Values			Extraction Sums of Squared			Rotation Sums of Squared		
				Loading			Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.837	30.142	30.142	7.837	30.142	30.142	7.622	29.317	29.317
2	6.862	26.392	56.534	6.862	26.392	56.534	5.483	21.088	50.405
3	3.218	12.378	68.912	3.218	12.378	68.912	4.812	18.508	68.912
4	1.262	4.853	73.765						
5	1.000	3.846	77.612						
6	.854	3.284	80.896						
7	.775	2.981	83.877						
8	.676	2.598	86.476						
9	.574	2.207	88.683						
10	.503	1.935	90.618						
11	.400	1.538	92.156						
12	.344	1.322	93.479						
13	.300	1.155	94.634						
14	.214	.823	95.457						
15	.200	.768	96.225						
16	.175	.672	96.879						
17	.152	.584	97.481						
18	.125	.481	97.962						
19	.113	.435	98.398						
20	.108	.415	98.812						
21	.080	.309	99.121						
22	.061	.234	99.355						
23	.058	.223	99.578						
24	.053	.204	99.782						
25	.039	.151	99.932						
26	.018	.068	100.000						

Extraction Method: Principal Component Analysis.

The three factors extracted were altruism, conscientiousness and civic virtue. Only factor loadings of at least 0.40 were included in the factor. Table 7 displays the factors and their loadings.

Table 7
Factor Loadings for Organizational Citizenship Behavior

Item Wording	Item Codes	Factor		
		1	2	3
		Altruism	Conscientiousness	Civic Virtue
I can trust my comrades to risk their lives to protect me.	c3	.900		
I would help a comrade if his/her work load is heavy.	c10	.899		
I am willing to do another soldier's job if he/she is not around.	c9	.890		
I would willingly take risks to protect my comrades.	c2	.879		
I am prepared to risk my life to protect civilians.	c1	.870		
Enemies are enemies whether they are women, children, old or young. They all deserve to die.	c6.1*	.861		
I cannot trust anyone in my unit.	c7.1*	.820		
The teaching of religion not to harm others is not possible when you are in an army.	c8.1*	.816		

Table 7 (continued)

Item Wording	Item Codes	Factor		
		1	2	3
		Altruism	Conscien- tiousness	Civic Virtue
I think that no one would risk their lives for others.	c4.1*	.811		
When you come across an injured enemy you have no responsibility to help them.	c5.1*	.804		
My first allegiance is to my king and my country.	c11		.854	
I take excessive time off from work	c15.1*		.846	
I take extra breaks.	c17.1*		.823	
I follow the policies, procedures, and regulations of the ranger regiment.	c12		.801	
I believe in giving an honest day's work for an honest day's pay.	c18		.795	
I fulfill my assigned duties and accept responsibilities for my actions.	c13		.749	
I attend to work above what is expected.	c16		.739	
I respond in a timely manner to requests by comrades and/or commanders.	c14		.723	
I keep up with developments in the ranger regiment and attend work-related activities.	c20			.815
I feel a strong sense of commitment to the ranger regiment.	c25			.803
I share my knowledge and expertise with others in order to help the ranger regiment.	c24			.789

Table 7 (continued)

Item Wording	Item Codes	Factor		
		1	2	3
		Altruism	Conscien- tiousness	Civic Virtue
I feel the ranger regiment provides a sense of meaning and belonging for me.	c26			.746
I attend functions that are not required, but help the regiment's image.	c19			.726
I keep up with changes in the ranger regiment and attend required meetings.	c22			.717
I make suggestions to improve the ranger regiment processes, policies, and practices.	c23			.703
I am willing to risk disapproval in order to express my beliefs about what is best for the ranger regiment.	c21			.579

*Items are reverse scored

The data in this research used a three factor structure as a designed concept shown in Table 7. It confirms that this organizational citizenship behavior scale measures the three different dimensions of organizational citizenship behavior as expected.

Data Collection

The present study was conducted in 7 ranger regiments, Numbers 41-47 in the Fourth Royal Thai Army Area. The researcher first asked the

commanding officer of the southernmost provinces' ranger forces and the ranger regimental commanding officer from regiment numbers 41-47 to consent to this study. After receiving this consent from seven ranger regiments, the sample for this study was selected randomly by using a stratified random sampling in proportional sizes from 7 ranger regiments in the Fourth Royal Thai Army Area. This study used the paper-based survey to collect data. Before formal distribution, the researcher conducted a pilot test to ensure the face validity of the questionnaires. For formal distribution, participants completed the questionnaires at the location of their task forces of the Ranger Regiment Numbers 41-47 in the three southernmost provinces. All information were treated confidentially. The rangers participated in the survey after an explanation of its usefulness and impact within the ranger regiment and the Fourth Royal Thai Army Area. A total of 399 surveys were given with a 100% completion rate.

Statistics and Data Analysis

Once all of the surveys were completed and returned, the data analysis began. A review of all surveys initially took place during the data input process using the Statistical Program for the Social Sciences (SPSS). This software program was used during this phase of the project for both descriptive and analytical analysis. All statistical analyses employed a 95% confidence limit. The statistical software SPSS v.12.0, descriptive statistical analysis, reliability analysis, correlation analysis, regression analysis and other statistical methods were used to analyze the following data:

1. Descriptive statistics was used to analyze sample distributions based on the questions about demographics, organizational commitment and organizational citizenship behavior. The parameters used for demographic analysis (age, years of service in the Royal Thai Army and years of service with current regiment) were frequency, percentage and mean. Marital status, highest educational level completed, current regiment service, type of ranger and experience in fighting the unrest in the three southernmost provinces, were analyzed by frequency and percentage. Organizational commitment and organizational citizenship behavior were analyzed by mean and standard deviation.

Descriptive analysis refers to the transformation of the raw data into a form that will make them easy to understand and interpret. Describing responses or observations is typically the first form of analysis. The calculation of averages, frequency distribution, and percentage distributions is the most common form of summarizing data (Zikmund, 2000, pp. 436-437). Frequency distribution were obtained for all the personal data or classification variables, but descriptive statistics such as means and standard deviations were obtained for the interval-scaled independent and dependent variables (Sekaran, 2000, p. 313).

2. The independent t test was used to determine organizational commitment due to the differences in marital status, type of ranger and experience in fighting. And it was also used to determine organizational citizenship behavior due to the differences in marital status, type of ranger and experience in fighting. The independent t test was used in this analysis because the independent variable is nominal/ordinal and the dependent is

interval/ratio. The independent samples *t* test compares the mean scores of two groups on a given variable. It answers the question of whether the difference between means is statistically significant in the population of interest (assuming good sampling) or whether the difference is due to sampling error (Davis & Cosenza, 1993, pp. 376-377). Whereas, One-way analysis of variance--ANOVA is used in order to compare whether two or more groups differ on a specific dependent variable. To do these tests, the independent variable is nominal/ordinal and the dependent is interval/ratio (Davis & Cosenza, 1993, p. 395). Therefore, this statistic was used to find out if there are significant differences in the organizational commitment due to the differences in age, educational level and organizational tenure. And it was also used to find out if there are significant differences in the organizational citizenship behavior due to the differences in age, educational level and organizational tenure. The Scheffe multiple comparison post hoc tests were used to simultaneously infer all pair-wise comparisons. (When significant means differences among the groups as indicated by the *F* statistic result, there is no way of knowing from the ANOVA results alone as to where they lie. The Scheffe post hoc test is necessary to find out which pairs of means differ. This procedure of multiple comparisons involves computing the *F* value for each combination of two means (Davis & Cosenza, 1993, p. 395).

3. The relationship between organizational commitment and organizational citizenship behavior was analyzed by applying Pearson's product moment correlation coefficient. For the reason that when the data collected possess the properties of interval measurement, the appropriate indicator of association between the two variables is the Pearson's Product

Moment Correlation Coefficient. The coefficient, denoted by r , represents the degree of closeness to a perfect linear relationship. The range of r is from -1 to $+1$ with $+1$ indicating the degree to a perfect linear relationship and zero indicating no relationship (Davis & Cosenza, 1993, p. 369). Interpreting the correlations considers the range 0-.20 to be small; 0.21-0.40, medium; and above 0.40, large (Cohen, 1969, p. 277).

4. Regression analysis was used to explore the extent of the influence of organizational commitment on the overall measure of organizational citizenship behavior. Linear regression in the analytical procedure that is widely used to predict or estimate how one or more variables will lead to another. It is a method of analyzing the change (variability) of a dependent variable by using information available on one or more independent variable, given certain linear assumptions (Davis & Cosenza, 1993, pp. 412-413).

Summary

This chapter provides an outline of the study design, the survey instrument, the reliability and validity assessment, data collection techniques, and the statistical analyses used in the research. The survey asked about organizational commitment and organizational citizenship behavior of the rangers in the Fourth Royal Thai Army Area and how they are related. The SPSS software provides the numbers analyses necessary to evaluate the hypotheses. These results are discussed in Chapter IV.