CHAPTER 4

Methodology

This chapter describes the research design and methodology that was implemented to examine the relationships amongst all constructs in the conceptual model. As this study is a mixed method research design, the methodology uses in both qualitative and quantitative methods. In the qualitative stage, this chapter begins by describing the data collection process, followed by the sampling plan and concluded with the analysis procedure. In the quantitative stage, we first describe the pretest study, followed by the main study. For main study, we begin by discussing the data collection process, sampling plan, the instruments used, the control variables, the scale evaluations, the assessing validity and the common method bias. Finally, this chapter describes the data analysis procedures uses in each study. Figure 4.1illustrates the method used in this study.

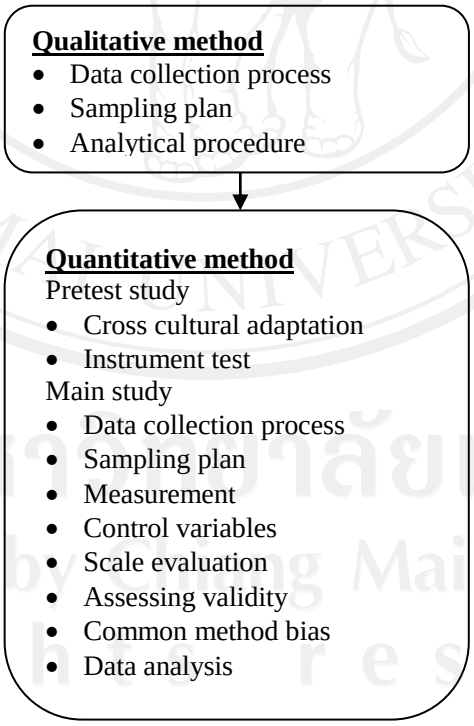

Figure 4.1 The diagram of methods used

4.1 Qualitative Stage

The context of this study - a high contact service in Thailand with high social interaction between customer and frontline employee may differ from western countries (where most of the previous research has been conducted). Therefore in-depth interviews were conducted prior to designing the survey instrument (questionnaire). The purposes of this stage were to gain insight into the phenomena of FLEs dealing with customer aggression and to find out whether there are other constructs or dimensions of constructs that should be included in the model.

4.1.1 Data collection process

For this study, involving high contact and social interactions between customers and FLEs, we adopted the critical incident technique (CIT), which supported an exploration of dynamic cognitive appraisals and emotional response processes during the service encounter (Patterson et al., 2009). The CIT comprises of procedures for collecting direct observations of human behaviour which are useful for solving problems and developing psychological principles (Flanagan, 1954). Bitner et al. (1990) cite, as one form of critical incident, the specific interaction between a customer and employee that is especially satisfying or dissatisfying. That is, only particularly memorable service incidents are classified as critical. Application of this technique allowed us to study an employee's perceptions and cognitive appraisal of a particular stressful incident in the service encounter (Bitner et al., 1994; Reynolds and Harris, 2006). This in-depth interview technique has been widely used to examine human behaviour for gaining insight regarding the phenomenon of interest in service marketing and management issues such as customer rage, switching behaviour and the drivers of successful service encounters (Fisk et al., 2010; Patterson et al., 2009 and Chung Herrera et al., 2004).

Critical incident technique (CIT) is vital and well suited to this study as it allows us to gain insight regarding the FLEs cognitive appraisals and their outcomes when encountered with customer aggression. In this study, participants were asked to recall a recent past experience when dealing with an aggressive customer. The time frame for the occurrence of the specific incident described was to be within the previous six months as Keaveney (1995) recommended that it is recent enough to reliable recall past

events. The questions prompted respondents to describe situations in detail, such as, "Please tell us a story about this experience when you faced an aggressive customer". They were then asked (and probe extensively) for the following additional questions such as, "What were you thinking?" "How did you feel?" "What did you do?" and "Why did you behave that way?".

4.1.2 Sampling plan

Considering the relative lack of understanding of how FLEs respond to aggressive customer behaviour, we considered an exploratory research design, using the critical incident technique and content analysis. Thirty-five FLEs in various professions (cashiers in department stores, salespersons, pharmacists, retail bank customer service officers, waiters, receptionists in hotels and hospitals, and nurses) in a major urban area in Thailand, who had a recent experience in dealing with customer aggression, were recruited as participants. They received financial remuneration of 200 Thai Baht (US$7), to encourage them to share their stories and experiences. The interviews ranged from 50 to 90 minutes and were digitally recorded. Participants included 28 female and 7 male FLEs, ranging in age from 20 to 45 years, with work experience between 1–18 years.

4.1.3 Analytical Procedure

We halted the data collection at the point of theoretical saturation, when no new insights emerged (Strauss and Corbin, 1998). The interviews were recorded and transcribed. To classify the collected data, we followed an inductive thematic analysis approach (Patton, 2002). We began with annotated transcripts, and then two researchers classified the data into categories on the basis of recommendations from prior cognitive appraisal and customer aggression literature (Lazarus and Folkman, 1984; Reynolds and Harris, 2006; Schneider and Bowen, 1995). Next we identified various themes and sub-themes. Through another review of the transcripts, we coded all data and applied the identified sub-themes. To confirm the accuracy of our findings, the themes and data coding were revised by another researcher, and the specific themes that emerged were verified by three frontline retail supervisors as offering face validity (Creswell, 2003).

4.2 Quantitative Method

The quantitative method consists of two phases; pretest study and main study. The following describes these two phases.

4.2.1 Pretest study

The purpose of this stage was to check content and face validity of the scales, and check ambiguous wording of the items in the questionnaire.

1) Cross cultural adaptation

Following the qualitative study, the questionnaire was developed. As most of constructs measurement were adopted from studies conducted in western countries, cross cultural adaptation was necessary to ensure the meaning of words and phrases in Thai had an equivalent meaning . We followed the phases of cross cultural adaptation of Sperber A.D, (2004). The figure 4.2 illustrates the phases of cross cultural adaptation.

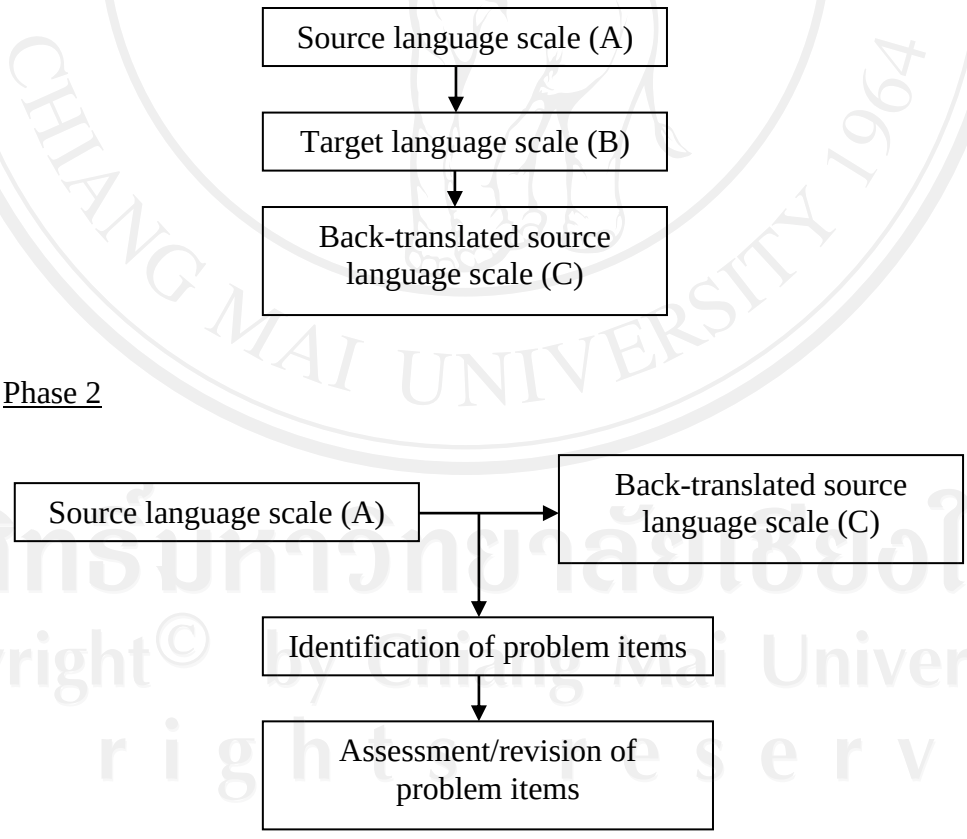

Figure 4.2 Cross cultural adaptation (Sperber, 2004)

In phase 1, the questionnaire first was translated from source language (English) to target language (Thai) by a bilingual Thai translator from the Humanities Academic Center (Chiang Mai University). Then, a Thai version was translated back to English version by another bilingual Thai translator from the Language Institute (Chiang Mai University). In phase 2, the author compared the translated back version with the original version (English). It was found that most of the items in source language scale (A) and the back-translated source language scale (C) were consistent. There were only some items that required minor wording modifications which was accomplished by going back to the source language and back-translated source.

2) Instrument test

After completing the cross cultural adaptation, pretesting of the questionnaire was conducted by sending it to 18 frontline employees (cashier in department store, sale force in specialty store, frontline employees in hotel and hospital). All questionnaires were tested for reliability in order to evaluate the stability of instrument. Since threat to physical well-being, threat to goals at work, attribution of blame and "customer is always right" organizational philosophy are single items, there was no need to test reliability for these constructs. Need for control construct consists of two items and secondary appraisal construct is a normative scale, thus they were included in the test. The Cronbach's alphas (α) of each constructs were as follows; emotional exhaustion (α) = 0.856 , regulation of emotion (α) = 0.883, threats to self-esteem (α) = 0.772, and threats to fairness (a) = 0.773. The coefficient alphas of all constructs are acceptable, since they are over the cut-point 0.07 which is recommended by Kline (1999).

4.2.2 Main study

1) Data collection process

After the pretest study, minor adjustments were made to the questionnaire. Retailers were the target organizations of this study. We began by sending a letter describing the purpose of research to the Personnel section of department stores asking for permission and participation in this research. Then, we went to the all research sites and explained to the personnel manager, the conditions for distributing questionnaires, e.g., the participants had to have experience in confrontation with customer aggression in the preceding 6 months. We offered financial remuneration of 100 Thai Baht for each

participant. We left 400 self-completion questionnaires with the personnel managers. We let them distribute questionnaires to FLEs for a week. After that we went to the research sites and collected the completed questionnaires. The total number of questionnaires returned was 319 which represented a response rate of 79.75 %.

2) Sampling plan

Frontline employees of retail department stores in Thailand are participants in this research. This study only targeted the FLEs who had experience in facing aggressive customers in the past 6 months as this time frame is recent enough for reliable recall past event (Keaveney, 1995). Thus the sampling method used is purposive non-probability. Since this study employed the structural equation model to test the conceptual model, Bagozzi and Yi (2012) recommended that the sample size should be above 100, preferably above 200. This aligns with Kline (2010) who suggested that sample size of 200 or greater is needed for a complicated model path. Moreover, Yuan et al., (2010) indicated that the appropriate number of sample sizes of SEM is between 300 to 400. Thus the sample size of 319 in this study can achieve the respect to recommended sample sizes of structural equation model testing.

The reasons for selecting the FLEs in retail stores to be participants of this study are : 1) the nature of frontline employees work entails, they have high contact with the various kinds of customers; 2) the jobs characteristics in various retail department stores are similar such as cashiers, customer assistants ; 3) organizational structures and employee training are quite similar; 4) retailing provides a context where FLEs have many (hundreds in some instances) of service encounters with customers on a daily basis. This may suggest that frontline employees in retail department stores are likely to regularly encounter customer aggression.

3) Questionnaire and measurement scales

For the main study, a self-administered questionnaire was distributed to all participants. This section describes parts of questionnaire and constructs measurement.

3.1) Questionnaire

The questionnaire comprised two parts. They are the following;

Part A: Open ended questions

Respondents were asked to recall an incident in which they had an experienced in dealing with aggressive customers. Then, the respondents were asked to answer the questions about the incident that they had just recalled. To answer the questions, respondents were asked to take themselves back to the time that the experience took place with the aggressive customers and answer questions about their thoughts, feelings and behavior.

Part B: Demographic information

This section asked the respondents to give demographic information such as gender, age, education and experience.

A copy of the final questionnaire is included in Appendix A.

3.2) Measurement

The constructs proposed in the model are measured by scales previously tested and shown to have construct validity and reliability in the literature.

Customer Aggression Construct

Customer aggression was operationalized by multiplying intensity of anger variable with the anger expression variable. As these two variables transmit the meaning of aggression from the customer, we multiplied them together to form a single construct. The resultant construct is called customer aggression. This multiplicative construct therefore captures both the nature and intensity of customer aggression. We captured the intensity of anger by asking FLEs to indicate the degree to which he/she agreed with "To what extent was the customer angry during this incident". The item is a 5 points Likert scale format (1=mildly angry, 5 = extremely angry). Whereas we captured the anger expression by asking respondents to indicate whether customer expressed anger with the following: (1) "*Shouting or screaming at you*" (2) "*Using bad language towards you*" (3) "Physically threatening you" (4) "*Made insulting remarks to me*"(5)"Promising to make trouble for you by complaining to your supervisor" (6) "Threw an object at me". This scale adapted from McColl-Kennedy et al.,(2009). The respondents asked to answer "yes" if a respondent exhibited that behavior and "no" if they did not exhibit that behavior during the critical incident that is the focus of the

questionnaire. The "yes" answers were coded "1" and the "no" answers were coded "0".Then the anger expressions were summed to compute the anger expression variable. Finally we computed multiplicative function between intensity of anger and the summed anger expressions, and labeled it as customer aggression.

Emotional exhaustion

The extent of FLEs emotional exhaustion (dependent variable) after the incident is captured. Emotional exhaustion scale was adopted from the study of Wharton (1993). The emotional exhaustion measurement uses 6 items. Examples of the items are I felt: *"Used up at the end of the day " "Dread getting up in the morning and having to face another" "Burned out", and "Emotionally drained"* The item is in a 5 point Likert scale format ranging from 1 = Strongly disagree, and 5 = Strongly agree.

Primary appraisal

As previously stated, FLEs appraised customer aggression in the forms of threats or violations to their values or needs. Primary appraisal was assessed with 12 items that described five kinds of threats namely; threats to self-esteem (5 items), threats to physical well-being (1 item), threats to fairness (3 items), threats to goal at work (1 item) and need for control (2 items). To measure the primary appraisal, this study took relevant items from the study of Folkman et al., in 1986 (α = .76 - .78) and Patterson et al., (2009) and some of them are slightly modified. Respondents indicate on 5 points Likert scale (1 = did not apply at all to 5 = applied a great deal) the extent to which threat was involved in the stressful situation he or she faced with. A sample item from threats to self-esteem is *"The customer showed me no respect"*. A sample item from threats to physical well-being is *"My physical well-being was threatened"*. A sample item from threats to fairness is *"What happened to me was simply not fair"*. A sample item from threats to goal at work is *"I felt I was losing an ability to achieve my goal"*. A sample item of need for control is *"I felt I had no control over what was happening"*.

Attribution of blame

Attribution of blame measure is captured by a single item adopted from the study of Harris et al., (2006). This scale measures how much the subjects agree that firstly, they themselves are to blame, and secondly, the firm is to blame. For the current study,

the customer is relevant and has chances to be at fault during the service encounter. Thus, the item measured is *"How likely is it that customer was to blame?"* It adopted a 5 point Likert scale ranging from Not at all likely = 1, to Very likely = 5.

Secondary appraisal

Secondary appraisal was assessed with four items that describe coping options when FLEs faced with aggressive customers. In secondary appraisal, the person evaluates what if anything can be done to overcome or prevent harm or to improve the prospects for benefit (Folkman et al., in 1986). The respondents were asked to indicate on a 5-point Likert scale to what extent the incident happened was one "that you could change or do something about" "that you had to accept" "in which you need needed to know more before you could act" and 'in which you had to hold yourself back from doing what you wanted to do".

Customer is always right philosophy

Customer is always right philosophy is measured in the self- administered survey using a single item measure. Respondents indicated the degree that their companies have the policy of customer is always right measured on the 5 point Likert scale ranging from Not at all = 1, to a Large extent = 5. The item is "To what extent does your company have a customer is always right philosophy"

Emotional Intelligence

Regulation of emotion is one of the dimensions of the broader emotional intelligence construct which comprises self-emotion appraisal, others-emotions appraisal, use of emotions and regulation of emotion (Wong and Law, 2002). The current study employed the regulation of emotion dimension from Wong and Law's (2004) EI Scale (WLEIS) since it described the ability of FLEs to regulate his or her emotions when they have to confront an aggressive customer. There are four items of this construct. The coefficient alpha is 0.72. Respondents were asked to indicate their degree of agreement with each item on a 5 points Likert scale (1 = Strongly disagree to 5 = Strongly agree). Sample items are "I am able to control my temper so that I can handle difficulties rationally" and "I am quite capable of controlling my own emotions".

4) Control variables

Age, gender and frequency of customer aggression were included as control variables to provide a more robust test of the model. Frequency of customer aggression refers to the number of interactions of FLEs when dealing with an aggressive customer. Prior research revealed that an individual who experiences a high frequency of customer aggression is more likely to be fearful at work (Barling et al., 2001). Furthermore, Grandey et al., (2004) found that call center staff who reported higher number of interactions with aggressive customer were more likely to feel stressful.

5) Scale evaluations

All constructs were subjected to purification using exploratory and confirmatory factor analysis.

5.1) Exploratory factory analysis (EFA)

Exploratory factory analysis (EFA) allows the researcher to explore the nature and number of underlying factors (dimensions) in a battery of items (questions) (Henson and Roberts, 2006). According to the questionnaire the items of emotional exhaustion, primary appraisal, regulation of emotion were subjected to exploratory factor analysis to extract fewer and more meaningful factors to be used in the regression analysis. The other variables such as customer aggression, attribution of blame, 'customer is always right' philosophy are single items.

Hair et al., (2010) suggested that for testing EFA, the sample size should be more than 100, since our sample size is 319 it was defined as acceptable. Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity was used to assess the suitability of the respondent data for factor analysis. The KMO index ranges from 0 to 1, with 0.50 considered suitable for factor analysis (Hair et al., 2010). The Bartlett's Test of Sphericity should be significant ($p < .05$) for factor analysis to be suitable (Hair et al, 2010). Hence, before the extraction of the factor, the KMO and Bartlett's test were estimated in this study. The results found that the KMO index of all constructs was 0.89 and were shown significant ($p < 0.05$) in Barlett's test. From the results indicated that samples in this study was adequate and suitable for factor analysis.

Table 4.1 Exploratory Factor Analysis Estimates

Constructs and items	Factor loading	Variance Explained (%)
Emotional exhaustion		
1. I felt emotionally drained	0.81	
2. I felt used up at the end of the day	0.55	
3. I felt dread getting up in the morning and having to face another day on the job	0.84	
4. I felt burned out	0.89	
5. I felt frustrated	0.89	
6. I felt not appreciated by my customers	0.60	60.86
Primary appraisal		
1. The customer showed me no respect	0.78	
2. I felt I was losing self-respect	0.85	
3. I was made to feel like I was an unimportant	0.79	
4. I felt the customer was looking down on me	0.82	
5. I felt I was incompetent	0.66	
6. I felt a sense of injustice	0.75	
7. I felt was being cheated	0.70	
8. What happened to me was simply not fair	0.79	
9. I felt I had no control over what was happening	0.69	
10. I was left with no options	0.73	58.07
Secondary appraisal		
1. That you could change or do something about	0.48	
2. That you had to accept	0.73	
3. That you need to know more before you could act	0.71	
4. That you had to hold yourself back from doing what wanted to do	0.66	43.18
Emotional intelligence (regulation of emotion)		
1. I am able to control my temper so that I can handle difficulties rationally	0.837	
2. I am quite capable of controlling my own emotions	0.872	
3. I can always calm down quickly when I am very angry	0.881	
4. I have good control of my own emotions	0.901	76.18

After testing KMO and Bartlett's test, the factor analysis was conducted. A varimax rotation factor extraction of variables using 1.0 Eigenvalue cut-off criterion

was used. Table 4.1 illustrates factor loadings of each constructs. Referring to Table 4.1 emotional exhaustion, six items loaded onto one component. The factor loadings ranged between 0.60 to 0.89. The primary appraisals construct are measured by 5 variables: threats to self-esteem, threats to physical well-being, threats to goal at work and needs for control. Since, threats to physical well-being and threats to goal at work is single item, these variables were not included for EFA testing. Thus, ten items of primary appraisal were subjected to EFA. All ten items of primary appraisal loaded in one factor with factor loadings between 0.66 to 0.85. The secondary appraisal loaded cleanly in one component which factor loadings ranged between 0.48 to 0.73. The factor loading of item no.1 of secondary appraisal was 0.48 is minimally acceptable (Hair et al., 2010). However, as this item was not consistent with others, we decided to delete item 1. Secondary appraisal is treated as a formative scale and hence was not subjected to EFA or CFA. Finally, four items of emotional intelligence (regulation of emotion) were tested. The result showed that they were loaded cleanly in one factor which factor loadings ranged between 0.83 to 0.90.

5.2) Confirmatory factor analysis (CFA)

Before subjecting the data to structural equation modeling, we needed to further assess the validity of the measures by using confirmatory factor analysis. CFA tests proposed model and has assumptions and expectations based on priori theory regarding the number of factors (Williams et al., 2012).

As the priori theory stated that primary appraisals are categorized into several kinds of threats, we divided them into five threats namely; threat to self-esteem, threat to physical well-being, threat to goal at work, threat to fairness and need for control. According to the conceptual model proposed, 11 constructs were measured in structural equation model. As 5 of them: customer aggression, attribution of blame, threats to goal at work, threats to physical well-being are single items, and secondary appraisal is a formative scale, all stated constructs didn't need to be assessed for convergent and discriminant validity. While the remaining five: threats to self-esteem, threats to fairness, need for control, emotional exhaustion and emotion regulation constructs were subjected to confirmatory factor analysis (CFA) to provide support for the issues of discriminant validity. One item from threats to fairness and two items from emotional

Table 4.2 Scale items, composite reliability, and confirmatory results

Scale items	Standardized loading	composite reliability
Threats to self-esteem		0.89
The customer showed me no respect.	0.75	
I felt I was losing self-respect.	0.91	
I was made to feel like I was an unimportant.	0.80	
I felt the customer was looking down on me.	0.80	
I felt I was incompetent.	0.63	
Threats to fairness		0.90
I felt a sense of injustice.	0.85	
What happened to me was simply not fair.	0.96	
Needs for control		0.81
I felt I had no control over what was happening.	0.77	
I was left with no options.	0.89	
Emotional exhaustion		0.90
I felt emotionally drained.	0.74	
I felt dread getting up in the morning and having to face another day on the job	0.79	
I felt burned out.	0.91	
I felt frustrated.	0.89	
Emotional intelligence (Regulation of emotion)		0.90
I am able to control my temper so that I can handle difficulties rationally.	0.76	
I am quite capable of controlling my own emotions.	0.81	
I can always calm down quickly when I am very angry.	0.85	
I have good control of my own emotions.	0.89	
Model fit statistics		
$\chi^2 = 278.52$, df = 108; $\chi^2/df = 2.57$,		
GFI = 0.90		
NFI = 0.92		
TLI = 0.94		
CFI = 0.95		
RMSEA = 0.07		

Notes: Each item is measured on a five-point scales

exhaustion were deleted due to poor standardized loadings (<.40). The results of the confirmatory factor analysis demonstrated relatively a very good fit of the five factors model to the data on the basis of a number of fit statistics ($\chi^2 = 278.52$, df = 108; $\chi^2/df = 2.57$, GFI = 0.90, NFI = 0.92, TLI = 0.94, CFI = 0.95, RMSEA = 0.07) are shown in Table 4.2. The standardized loadings of all constructs ranged from 0.63 to 0.96. Standardized loadings for all items for each constructs were significant at $p < 0.01$. As

Bagozzi and Yi (2012) stated that no universally accepted standards as to what minimally acceptable composite reliabilities, they recommended that using the oft-cited classic reliability standard of .70. From table 4.2 all of the composite reliability estimates were greater than 0.70 which means they were above cut-off value.

6) Assessing validity

The following tests assessed validity. Fornell and Larker (1981) suggested that this test assesses whether the constructs (threats to self-esteem, threats to fairness, needs for control, emotional exhaustion and regulation of emotion) are conceptually distinct from each other. The average variance extraction (AVE) and discriminant validity are estimated.

6.1) Average variance extraction (AVE)

Average variance extraction was employed to check construct validity. AVE measures the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error and its value greater than 0.7 is considered very good, whereas the value above 0.5 is acceptable (Fornell and Larker, 1981; Hair et al., 2010). The AVE can calculate as the following equation:

$$AVE = \frac{\sum[\lambda i^2]}{\sum[\lambda i^2]+\sum[Var(\varepsilon i)]}$$

Table 4.3 shows the AVE value and discriminant validity. From table 4.3 indicates that the AVE values of constructs range between 0.61 to 0.82, all of them are above the cut-off value of 0.50. This means that the average percentage of variation explained among the items of each construct is greater than 50%.

6.2) Discriminant validity

To test discriminant validity, we compare AVE and the squared correlation between two constructs. Fornell and Larker (1981) suggested that the square root of the AVE of each construct should be greater than the correlation of any two constructs. Table 4.3 showed the correlation of each constructs, we insert the squared root of AVE value on the diagonal and compare it with all correlations. The results show that the square root of the AVE of all constructs are greater than 0.5 and moreover, it is higher than the correlation between any pair of constructs.

Table 4.3 Correlation Among Constructs, AVE Analysis and Discriminant Validity

Constructs	AVE	1	2	3	4	5	6	7	8	9	10	11
1. Emotional exhaustion	0.70	**0.83**										
2. Customer aggression	-	0.40	-									
3. Attribution of blame	-	0.39	0.41	-								
4. Threats to self -esteem	0.61	0.56	0.62	0.46	**0.78**							
5. Threats to physical well-being	-	0.40	0.55	0.34	0.44	-						
6. Threats to goal at work	-	0.53	0.47	0.35	0.66	0.43	-					
7. Threats to fairness	0.82	0.42	0.56	0.48	0.64	0.40	0.54	**0.90**				
8. Need for control	0.69	0.49	0.54	0.37	0.60	0.48	0.65	0.55	**0.83**			
9. Secondary appraisal	-	0.33	0.37	0.23	0.40	0.22	0.31	0.41	0.30	-		
10. Customer is always right	-	0.13	0.16	-0.06	0.12	0.07	0.22	0.14	0.15	0.25	-	
11. Emotional intelligence	0.69	0.13	0.22	0.13	0.20	0.17	0.22	0.18	0.07	0.17	0.17	**0.89**

* 2,3,5,6,10 are single items, *9 is a formative scale
* Diagonal elements report the $\sqrt{\boldsymbol{AVE}}$ and other matrix entries report the correlations between all pairs of constructs

7) Common method bias

As this study, all constructs were self-reported by frontline service employees. Thus, data collected from single source can produce common method bias. Method bias is one of the source of measurement error (Podsakoff et al., 2003) which is likely to confound on result (Campbell and Fiske, 1959). Therefore, to examine whether the common method bias is present in this study, the Harman's one factor test and confirmatory factor analysis was conducted to test the common method effect. Podsakoff et al., (2003) suggested the basic assumption of this technique is that if the presence of common method variance exists, either a single factor will emerge from factor analysis or one general factor will explain the majority of the variance among measures. All constructs of this study were entered into an exploratory factor analysis and constrained the number factor to be just one (rather than extracting via eigenvalues)

with unrotated factor solution. The results indicated total variance was 39.49 percent. This described that a single factor did not account for the majority variance in the model and the results are unlikely to be affected by common method bias.

We took several additional measures to mitigate any bias. Following Podsakoff, MacKenzie and Podsakoff's (2003) suggestions we separated measures of the independent variables from FLE performance by inserting them in separate sections of the instrument. We also let FLEs know that their anonymity would be assured, thereby reducing any evaluation apprehension and demands for social desirability bias.

8) Data analysis Technique

Two set of tests were adopted in order to examine the conceptual model using structural equation model (SEM) and moderator regression.

8.1) Structural equation modeling.

To examine the relationship of all constructs in the model proposed under this study, we employed the structural equation model (SEM). Structural equation modeling seeks to explain the relationships among multiple variables in path model sequence (Hair et al., 2010). The entire model proposed can be tested statistically, unlike multiple regression analysis, in one simultaneous analysis (Byrne, 2010). More specifically, it was used for testing the research hypotheses.

The entire model is appraised by indices of goodness-of-fit. Indices determine how well the priori model fits the sample data (McDonald and Ho, 2002). Bagozzi et al., (2012) suggested that model fit is obtained when chi square statistic (χ^2) is not significant. Usually path models with more observations do not perfectly fit the data, thus it is reasonable to measure degree of fit of model (Kline, 2005). Other fit indexes are commonly recommended (Bagozzi et al., 2012). RMSEA (root mean square error of approximation) gives the average amount of misfit for a model per degree of freedom. NNFI or terms as TLI (Tucker and Lewis index) is used for model parsimony in the model complexity. GFI (goodness of fit index) was the first standardized fit index (Jöeskog and Sörbom, 1981). GFI is similar to a squared multiple correlationR^2 except that GFI is a kind of matrix proportion of explained variance (Kline, 2005). CFI

(comparative fit index) assesses the relative improvement in fit of the researcher's model compared with a baseline model (Kline, 2005).

8.2) Test of the moderating roles using moderator regression

A moderator is a variable that strengthen or weaken the relationship between independent and dependent variable (Baron and Kenny, 1986). The framework of moderating effect is summarized in figure 4.3.

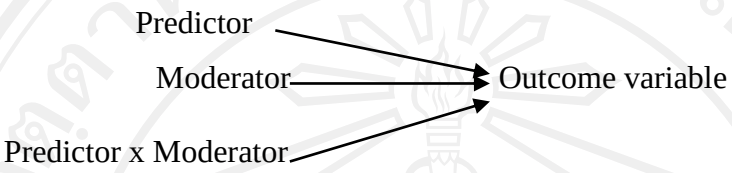

Figure 4.3 Moderator model (Baron and Kenny, 1986)

Before testing the moderator regression, it is recommended that all variables involved in the interaction effect should be mean centered in order to reduce multicollinearity issues (Howell et al.,1986). Next the interaction term is created by multiplying a centered predictor variable with centered moderator variable. Then regression model 1 is run by inserting independent variables and moderator and observe the R^2 (the coefficient of determination). Finally, regression model 2 is run by adding the interaction term and observe whether the R^2 change and significance level. If the result is shown to be significant, it indicates that the interaction term explains variance of dependent variable.