CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter describes the methodological aspects of this study. The chapter begins with an explanation of the research paradigm and research design applied in this study. Following this, the chapter describes the population and the sample of this study. Then, the chapter explains the data collection method and procedure, and the instruments included in the study. Finally, the chapter describes the procedure for analyzing the data of this study.

3.2 Research Paradigm

Ticehurst and Veal, (2000) stated, paradigms reflect the basic set of philosophies that are related to the nature of the world. These fundamental philosophical beliefs of the researcher reveal the perception he holds of the world, reality and how he understands this reality along with the methods that assist him in obtaining the knowledge regarding a particular reality (Thomas, 2003). Scholars have the view of justifying a particular approach to reality, ontological, epistemological and methodological basis is necessary (Zalan and Lewis, 2004; Banister et. al., 2011). For any research paradigm, four main points have to be elaborated upon by the researcher. These points are related to the nature of the phenomenon under study, the relationship of the researcher with the phenomenon, the methodology to study the phenomenon and the method or technique to study the phenomenon (Easterby-Smith et. al., 2012; Gringeri et. al., 2013).

The concept of reality or the social phenomena under investigation depends on the

researcher's understanding of nature and issues and how he/she will gather knowledge and information. Ekanem (2007) argues that the research approach that is explicit will lead to an appropriate research design. Researchers also hold the view that all research approaches like ontological, epistemological, theoretical and methodological are interrelated with one another (Hesse-Biber and Leavy, 2010). Therefore, it is better for the researcher to be clear about the method that best suited to answer the research question. Majority of researchers favor quantitative methods for their robustness and scientific approach (Saunders et. al., 2012; Ghauri and Grønhaug, 2005). For the present study, the researcher used a quantitative method approach of data collection.

3.2.1 Positivist

A positivistic approach can be termed as a philosophical tradition or as a set of scientific practices also known as methodological positivism (Long et. al., 2007). The positivist school of thought dominates the field of science, and according to the positivistic philosophy, science can measure the facts in quantitative terms and are detached from the study they investigate (Guba and Lincoln, 1994; Tsoukas, 1989). In simple terms, it means that data and its analysis are value-free and do not change with the researcher's perspective Guba and Lincoln, 1994) and also consider social sciences to be a new field with a promising future (Healy and Perry, 2000). Thus, in positivist philosophy, social science should also be studied in quantitative terms as positivism brings neutrality and can quantify observable phenomena through the use of experimentations, surveys, and statistics (Becker, 2012; Biga and Neuman, 2006). For the positivists, quality of research comes with the validity and reliability (Healy and Perry, 2000).

3.3 Research Design

The research design refers to the overall strategy that researcher chooses to accommodate the different elements of the study coherently and logically, for effectively addresses the research problem; it constitutes the blueprint for the collection, measurement, and data analysis (de Vaus, 2006). Neuman (2003) suggested researchers must decide what results to expect at the conclusion of a study based on quantitative or qualitative. The choice of performing a quantitative versus a qualitative research design provided results based on statistical calculations. Research method application depends upon the nature of the research, as some researches require in-depth data while others may only entail the quantitative data (Mujis, 2010).

This study applied the quantitative research design. The quantitative research design primarily follows the confirmatory scientific method because its focus is on hypothesis testing and theory testing. In another word, this type of research design enables the researcher to test the proposed hypotheses with empirical data to see if they are supported. Quantitative research methods fall under the broad heading of detailed research. This type of research is survey research as a study on large and small populations. By selection of samples from the desired population and to discover relative incidence, distribution, and interrelations (Mathiyazhagan & Nandan, 2010; Kerlinger, 1973). Survey research typically employs face-to-face interviews, telephone interviews or the standard approach using questionnaires.

The questionnaire is an efficient data collection strategy. It is because when the researcher knows how to measure the variable of interest and what is the requirements in this study. There are researchers in the field of employee retention (Syahreza et. al., 2017; Astuti & Panggabean, 2014; Hong et. al., 2012; Zaniboni et. al., 2011; Yamnill & McLean, 2005) have been used this approach because of the effectiveness in assessing the relationship between the variables of interest.

A cross-sectional survey would be appropriate in this study in order to fulfill the needs of this study as a pool of opinions and practices. A researcher collects information from a sample drawn from a population, and it comprises compiling data at one point in time. Other than that, the period of data collection can vary, and it depends on the study weight.

3.4 Population and Sample

The population of this study is the supporting staff employees (Grade 1-40) working in the public sectors and based in Putrajaya, Malaysia. This study focuses on public sector employees that are based in Putrajaya because Putrajaya was regarded as the headquarters of the public sector in Malaysia. All ministries are located here including the ministry of education, the ministry of tourism and culture, the ministry of foreign affairs, the ministry of health, minister of human resources, the ministry of transport, the ministry of energy, communications, and multimedia and many more. The population of the supporting staff for public sector employees in this context is 16,488.

Stratified sampling involves subdividing the population into homogeneous non-overlapping groups (i.e., strata), selecting a sample from each group, and conducting a simple random sample in each stratum (Cochran, 1963). By information available from a frame, units are allocated to strata by placing within the same stratum, those units which more-or-less similar are concerning the characteristics being measured. If this can be reasonably achieved, the strata will become homogenous, i.e., the unit-to-unit variability within a stratum will be small. Surveyors use various sample allocation techniques to distribute the samples in the strata. In proportional allocation, the sample size in a stratum is made proportional to the number of units in the stratum (Taro Yamane, 1967; Des Raj, 1972; Sukhatme, 1957).

In equal allocation, the same number of units is taken from each stratum irrespective of the size of the stratum (Des Raj, 1972). In Neyman (1938) allocation, the number of units in

the sample from a stratum is made proportional to the product of the stratum size and the stratum standard deviation (Taro Yamane, 1967; Sukhatme1957). In Des Raj (1972), it is proved that Neyman's allocation is the best when a sample of specified size is to be allocated to the strata. The previous study which employed the same method of sampling in the area of employee retention is Khan and colleague (2011), Ramlall, (2003), Pietersen and Oni (2014), Nyanjom and colleague, (2013) and Choong and colleague (2013).

In this study, twenty-four ministries have been selected as the stratum by using stratified sampling method. Each ministry (stratum) contributed 100 of its total number of ministries to the overall sample. The final respondents were picked randomly from each stratum. The population size is 16,488, according to Krejcie and Morgan (1970) table (See Appendix 4) the sample size would be 377. In this thesis, the sample size obtained from the respondent was 1110 and met the requirement of Krejcie and Morgan (1970).

The sample of data was chosen from federal agencies consisting of ministries with the position status for the public employee is the permanent term, and all the samples are from the supporting staff level (Grade1-40). The stratified sampling was used to obtain a higher degree of representation (decreasing the sampling error). This technique was appropriate where various public service existed in a public sector organization while functions between public sector organizations were almost similar. Stratified random sampling has been implemented by choosing twenty-four ministries in Putrajaya, Malaysia as shown in table 3.2.

Table 3.2: Sample Size Based on Ministry

No.	List of Ministry in Malaysia	Population	Sample Size
1	Ministry of Education	3024	69
2	Ministry of Health	768	18
3	Ministry of Women, Family & Community Development	432	10
4	Ministry of Domestic Trade, Cooperative, and Consumerism	744	17

5	Ministry of Human Resources	768	18
6	Ministry of Rural and Regional Development	696	16
7	Ministry of Agriculture and Agro-Based Industry	600	14
8	Ministry of Urban Wellbeing, Housing, and Local Government	456	10
9	Ministry of Home Affairs	888	20
10	Ministry of Transport	384	9
11	Ministry of Higher Education	552	13
12	Ministry of Plantation Industries and Commodities	408	9
13	Ministry of Youth and Sports	552	13
14	Ministry of Tourism and Culture Malaysia	576	13
15	Ministry of International Trade & Industry	768	18
16	Ministry of Science, Technology, and Innovations	696	16
17	Ministry of Works	480	11
18	Ministry of Natural Resources and Environment	624	14
19	Ministry of Foreign Affairs	456	10
20	Ministry of Defence	648	15
21	Ministry of Federal Territories	696	16
22	Ministry of Finance	504	12
23	Ministry of Communication and Multimedia Malaysia	600	14
24	Ministry of Energy, Green Technology, and Water	168	4
	Total	16488	377

* Source: Public Service Department of Malaysia

3.5 Data Collection Method and Procedure

Before the collection of data, the researcher acknowledges a formal letter to seek permission from the management of each Ministry in Putrajaya. After getting the permission, the questionnaire has been distributed to the selected respondent at each ministry in person. Questionnaires were anonymous and delivered personally to the enumerators. The enumerators are an appropriate person who can distribute the questionnaire to every department in a particular organization. The enumerators have been trained the purpose of this study before distributing the questionnaire to the relevant employees (i.e., the supporting staff) in the organization. It was decided to deliver the survey personally because the respondents were

located in a local area and the researcher had obtained approval to meet them (Cavana et. al., 2001; Sekaran & Bougie, 2010). This approach could collect the completed responses within a short period (Cavana e.t al., 2001).

Also, Thomas and Smith (2003) mention it is allowed for the researcher to control the conditions under which questionnaires were completed to ensure the actual respondents completed them and to reduce opportunities for shared responses. There was a high possibility in term of return rate and completed the questionnaire in a given time (Tay, 2008). A brief description of the study was presented including the study aims and background.

Furthermore, the issue of anonymity, confidentiality, and voluntary participation was highlighted. This approach is useful for clarifying any doubts that respondents may have concerning the questionnaire and subsequently, could motivate them to offer honest answers (Liu & Ding, 2011; Sekaran & Bougie, 2010). Each respondent was provided with an envelope to put the completed survey in and directly submit to the researcher. According to previous researchers (e.g., Cook & Verma, 2002; Liao, 2011; Yamnill & McLean, 2005), requesting respondents to place the completed questionnaire in an envelope and then sealed it can ensure anonymity and confidentiality. Next, the data were gathered by the researcher after two months (November 2016- December 2016) and preceded the next step for data cleaning and data analysis.

3.6 Surveys development process

The researcher adopted the questionnaire from the previously developed questionnaire and customized the items to suit this particular study. Since most of the questions were initially developed in English language, then, the questions were translated into the Malay language. A professional translator did this at the Malaysian Translation Institute (Institut Terjemahan Negara Malaysia). This institute was established by the Malaysian government to

deal with matters relating to translation at all levels. The use of the translated version was to increase the readability among the participants (Bates & Khasawneh, 2005) and increase the likelihood the instrument would operate in a new target culture much as it did in the original culture in which it was developed (Velada et. al., 2009). After completed the customization process, the questionnaire has been sent to the selected panel of experts for pre-testing. The panel of experts involved in the content validity assessment, while the language expert to direct the face validity, and the measurement expert to assess the criterion validity of the instruments (Zainudin, 2010; 2012).

A pilot study was conducted involving 43 respondents from the target population in May 2016. This sample size was adequate for pilot study purposes according to Isaac and Michael (1995) and Hill (1998) which suggested 10 – 30 participants for the pilot study in survey research. This pilot test was conducted to ensure that the translated instructions, questions, and scale items were clear and well understood by the respondents (i.e., there was no ambiguity in the questions), no problems with the wording or measurement and helped to rectify any questionnaire to the actual respondents. For bias (Pallant, 2007; Sekaran & Bougie, 2010; Velada et. al., 2009).

Besides, a pilot test can provide a reliability value of the measurement, which can be assessed based on the alpha result, with higher results indicating greater reliability (Pallant, 2007). Hair and colleague (2011) recommended a minimum level of Cronbach's coefficient alpha of 0.70. Moreover, conducting a pilot of content validity of the translated instrument (Creswell & Creswell, 2017; Velada et al., 2009). Establishing the validity of the survey helps to identify whether an instrument is appropriate for use in this study (Creswell & Creswell, 2017).

The pilot study result (see table 3.3) showed that the alpha values for the seven measures exceeded the cutoff point, Cronbach-alpha of 0.70. Individually, the Cronbach alpha values for

the measures are 0.765 for compensation, 0.798 for appraisal, 0.79 for training and development, and 0.905 for safety & health. The overall, Cronbach alpha value for human resource management practice is 0.754. Other than that, Cronbach alpha values were 0.956 for peer support, 0.70 for organizational citizenship behavior, 0.751 for job embeddedness, 0.975 for organizational learning culture, 0.70 for employee retention and 0.944 for transformational leadership.

Table 3.3: Reliability of Each Variable.

Reliability results of the variables and its dimensions	**Number of items**	**Cronbach's Alpha**
Human Resource Management Practice	19	0.754
Peer Support	14	0.956
Organizational Citizenship Behavior	13	0.70
Job Embeddedness	7	0.751
Organizational Learning Culture	21	0.975
Employee Retention	5	0.70
Transformational Leadership	7	0.944

Besides, most of the pilot test sample agreed the questionnaire was readable and easy to understand, needing on average of 15 minutes to answer all the questions provided. According to Punch (2003), a questionnaire taking less than 20 minutes to complete is more desirable. Some minor modifications were made to the items of retention and compensation variables based on the comments and suggestions from respondents in order to better suit the context of this study. Overall, there are no problems detected in the questionnaire, and therefore the survey was finalized.

3.7 Measures

Seven measures have been used in this study to test the proposed hypotheses. These include measures of human resources management practices, transformational leadership, peer

support, organization learning culture, health and safety, employee retention, organizational citizenship behavior and job embeddedness. Below are the details;

3.7.1 Human resource management practices

In this study, human resource management practices consist of four practices; compensation reward and benefit, performance appraisal, training and development and safety and health. Each practice has been measured with the specific item as detail below:

3.7.1.1 Compensation, reward, and benefit

Compensation, reward, and the benefit were measured with five items developed by Jun and colleague (2006). This dimension consists of five items as Table 3.4.

Table 3.4: Compensation, Reward and Benefit Items.

HRMPcomp 1	I am satisfied with the pay that I receive.
HRMPcomp 2	I earn more than others who do similar work at other organization.
HRMPcomp 3	My pay encourages me to improve the quality of my work.
HRMPcomp 4	I will receive a reward if I do something to improve my work.
HRMPcomp 5	The benefits, such as vacation time and medical insurance that I receive here are better than those I could get at the similar organization.

The five items apply to measure compensation, reward, and benefit and have been empirically used in previous studies (Jun et. al., 2006; Kooij et. al., 2010; Hong et, al., 2012). With the reliability of 0.808, the Likert scale used from 1- strongly disagree to 5- strongly agree.

3.7.1.2 Performance Appraisal

Performance appraisal practice was measured with three items developed by Whiting and colleague (2008) as below:

Table 3.5: Performance Appraisal Items.

HRMPapp 6	My current performance appraisal system is useful.
HRMPapp 7	My current performance appraisal system is fair.
HRMPapp 8	I am satisfied with my current performance appraisal system.

The three items apply to measure performance appraisal practice dimension which items have been empirically used in previous studies with a reliability of 0.85 in the studies of Whiting and colleague (2008) and 0.774 in the study by Aladwan and colleague (2014). The Likert scale used is from 1- strongly disagree to 5- strongly agree.

3.7.1.3 Training & Development

Training and development practice was measured with five items developed by Edgar and Geare (2005) as below:

Table 3.6: Training & Development Items.

HRMPtrain 9	My employer encourages me to extend my abilities.
HRMPtrain 10	This organization has provided me with training opportunities enabling me to extend my range of skills and abilities.
HRMPtrain 11	I get the opportunity to discuss my training and development requirements with my employer.
HRMPtrain 12	My work pays for any work-related training and/or development I want to undertake.
HRMPtrain 13	This organization is committed to the training and development of its employees.

The five items apply to measure training and development practice dimension and have been empirically used in previous studies with a reliability of 0.707 in the studies of Aladwan and colleague (2014) and 0.90 in the study by Edgar and Geare (2005). The Likert scale used is from 1- strongly disagree to 5- strongly agree.

3.7.1.4 Safety and Health.

Safety and health practice was measured with six items developed by Amick (2000), (see table 3.7).

Table 3.7: Safety and Health Items.

HRMPsafe 80	Unsafe working conditions are identified and improved promptly
HRMPsafe 81	My company maintains excellent housekeeping.
HRMPsafe 82	Equipment is well maintained.
HRMPsafe 83	The action is taken when safety rules are broken.
HRMPsafe 84	Supervisors/managers confront and correct unsafe behaviors and hazards when they occur.
HRMPsafe 85	Supervisors/managers are trained in job hazards and safe work practices for jobs they supervise.

The six items apply to measure safety and health practice which have been empirically used in previous studies with a reliability of 0.95 in the studies of Amick and colleague, 2000 and Habeck colleague, 1998. The Likert scale used is from 0- never to 4- Always.

3.7.2 Peer support (PS).

Peer support is measured by 14 items by Settoon and Mossholder (2002). As shown in table 3.8.

Table 3.8: Peer Support Items.

PS14	My peers assist me with heavy workloads.
PS15	My peers go out of their way to help me with work-related problems.
PS16	My peers help me out when things get demanding.
PS17	My peers help me when I am running behind my in work.
PS18	My peers help me with difficult assignments, even when I do not directly request assistance.
PS19	My peers show me where things are that I need to do my job.
PS20	My peers compliment me when I succeed at work.
PS21	My peers listen to me when I have to get something off my chest.
PS22	My peers make an effort to make me feel welcome in the work group.
PS23	My peers make an extra effort to understand my problems and concerns.
PS24	My peers show concern and courtesy toward me, even when things are difficult.
PS25	My peers take a personal interest in me.
PS26	My peers take time to listen to my concerns.
PS27	My peers try to cheer me up when I'm having a bad day.

The 14 items apply to measure peer support in the context of public sector organization. These 14 items have also been empirically used in previous studies with the reliability of exceeding 0.70 studies by Settoon and Mossholder (2002), and 0.87 in the study by Tews et. al. (2013). The Likert scale used is from 1- strongly disagree to 5- strongly agree.

3.7.3 Organizational citizenship behavior (OCB).

Organizational citizenship behavior was measured based on the 13 items developed by Podsakoff and MacKenzie (1994). Organizational citizenship behavior consists of four dimensions named as altruism, helping behavior, civic virtue and sportsmanship. Each dimension was measured with a specific item or detail below.

3.7.3.1 Altruism

Altruism was measured with two items as below:

Table 3.9: Altruism Items.

OCB28	I give my time to help colleagues who have work-related problems.
OCB29	I am willing to take time out of my busy schedule to help new colleagues.

3.7.3.2 Helping Behavior

Helping Behavior was measured with four items as below:

Table 3.10: Helping Behavior Items.

OCB30	I take steps to try to prevent problems with other personnel in the company.
OCB31	I act as a 'peacemaker' when others in the company have disagreements.
OCB32	I am a stabilizing influence in the company when dissention occurs.
OCB33	I 'touch base' with others before initiating actions that might affect them.

3.7.3.3 Civic Virtue

Civic Virtue was measured with three items as below:

Table 3.11: Civic Virtue Items.

OCB34	I attend functions that are not required but help the organization's image.
OCB35	I attend information sessions that agents are encouraged but not required to attend.
OCB36	I attend and participate actively in organization meetings.

3.7.3.4 Sportsmanship

Sportsmanship was measured with four items as below:

Table 3.12: Sportsmanship Items.

OCB37	I consume a lot of time complaining about trivial matters.
OCB38	I tend to make 'mountains out the molehills.'

OCB39	I always focus on what is wrong with my situation rather than the positive side of it.
OCB40	I always find fault with what the company is doing.

These 13 items have been empirically used in previous studies to measure organizational citizenship behavior with a reliability of 0.85 in a study by Islam and colleague (2012) and 0.80 in a study by Podsakoff and MacKenzie (1994), 0.69 in study by Paillé and colleague (2010) and 0.71 in study by Paillé (2013). The Likert scale used is from 1- almost never to 6-almost always.

3.7.4 Job embeddedness (JE).

Job embeddedness was measured with seven items developed by Crossley and colleague (2007) as in table 3.13.

Table 3.13: Job Embeddedness Items.

JE41	I feel attached to this organization.
JE42	It would be difficult for me to leave this organization.
JE43	I am too caught up in this organization to leave.
JE44	I feel tied to this organization.
JE45	I simply could not leave the organization that I work for.
JE46	It would be easy for me to leave this organization.
JE47	I am tightly connected to this organization.

These seven items have been empirically used in previous studies to measure job embeddedness with a reliability of 0.88 in a study by Crossely and colleague (2007) and 0.80 in the study by Welty and colleague (2014). The Likert scale used from 1- strongly disagree to 5- strongly agree.

3.7.5 Employee retention.

Employee retention was measured with five items developed by Jun and colleague (2006) as table 3.14.

Table 3.14: Employee Retention Items.

ER 54	I am prepared to put in a great deal of effort beyond what is normally expected in order to help this organization to be successful.
ER 55	I plan to make this organization my career.

ER 56	I feel a lot of loyalty to this organization.
ER 57	This is the best organization for me to work for.
ER 58	I would recommend this organization to a friend if he/she is looking for a job.

These five items have been empirically used in previous studies to measure employee retention with a reliability of 0.792 in a study by Jun and colleague (2006), 0.70 in study by Ng'ethe and colleague (2012), Syahreza and colleague (2017), Hong and colleague (2012) and Astuti, & Panggabean (2014). The Likert scale used is from 1- strongly disagree to 5- strongly agree.

3.7.6 Organizational learning culture (OLC).

Organizational learning culture was measured with 21 items of Dimensions of Learning Organization Questionnaire (DLOQ) that was developed by Watkins and Marsick (1993, 2003) and Yang, (2003). The organizational learning culture consists of three dimensions that are individual level, team level, and organization level.

3.7.6.1 Individual level

Individual-level was measured with six items as below.

Table 3.15: Individual Level Items.

OLC 59	In my organization, people help each other learn.
OLC 60	In my organization, people are given time to support learning.
OLC 61	In my organization, people are rewarded for learning.
OLC 62	In my organization, people give open and honest feedback to each other.
OLC 63	In my organization, whenever people state their view, they also ask what others think.
OLC 64	In my organization, people spend time building trust with each other.

3.7.6.2 Team level

Team level was measured with three items as below.

Table 3.16: Team Level Items.

OLC 65	In my organization, teams/groups have the freedom to adapt their goals as needed.
OLC 66	In my organization, teams/groups revise their thinking as a result of group discussions or information collected.

OLC 67	In my organization, teams/groups are confident that the organization will act on their recommendation.

3.7.6.3 Organizational level

The organizational level was measured with twelve items as below.

Table 3.17: Organization Level Items.

OLC 68	My organization creates systems to measure gaps between current and expected performance.
OLC 69	My organization makes its lessons learned available to all employees.
OLC 70	My organization measures the results of the time and resources spent on training.
OLC 71	My organization recognizes people for taking the initiative.
OLC 72	My organization gives people control over the resources they need to accomplish their work.
OLC 73	My organization supports employees who take calculated risks.
OLC 74	My organization encourages people to think from a global perspective.
OLC 75	My organization works together with the outside community to meet mutual needs.
OLC 76	My organization encourages people to get answers from across the organization when solving problems.
OLC 77	In my organization, leaders mentor and coach those they lead.
OLC 78	In my organization, leaders continually look for an opportunity to learn.
OLC 79	In my organization, leaders ensure that the organization's actions are consistent with its values.

These 21 items have been empirically used in previous studies to measure organizational learning culture with a reliability of 0.95 (Egan et. al., 2004; Marsick and Watkins, 2003; Kim et. al, 2005). The Likert scale used is from 1- never to 5- always.

3.7.7 Transformational Leadership (TL).

Transformational leadership was measured with seven items that based on The Global Transformational Leadership Scale (GTL) validated by Carless and colleague (2000) as table 3.18 below.

Table 3.18: Transformational Leadership Items.

TL86	My supervisor communicates a clear and positive vision of the future.
TL87	My supervisor treats staff as individuals, supports and encourages their development.
TL88	My supervisor gives encouragement and recognition to staff.
TL89	My supervisor fosters trust, involvement, and cooperation among team

	members.
TL90	My supervisor encourages thinking about problems in new ways and questions assumptions.
TL91	My supervisor is clear about his/her values and practices what he/she preaches.
TL92	My supervisor instills pride and respect in others and inspires me by being highly competent.

These seven items have been empirically used in previous studies with a reliability of 0.91 in a study by Perko and colleague (2014) and 0.93 in a study by Tonkin (2013). The Likert scale used is from 1- never to 5- always.

The overall measures of the study can be summarized in Table 3.19 with the original measure source and the total number of each measures items.

Table 3.19: Measures of The Study

Variable		Measure Source	Total number of items
Human Resources Management Practice	Compensation, Benefits, and Rewards	Jun et. al., (2006)	5
	Performance Appraisal	Whiting et. al., (2008)	3
	Training & Development	Edgar & Geare, (2005)	5
	Health & safety practices	Amick et. al., (2000)	6
Transformational leadership		The Global Transformational Leadership Scale (GTL; validated by Carless et al., 2000)	7
Organizational Learning Culture		Dimensions of Learning Organization Questionnaire (DLOQ) developed by Watkins & Marsick (1993, 2003) and Yang (2003)	21
Peer support		Settoon & Mossholder (2002)	14
Employee Retention		Jun et. al., (2006)	5
OCB		Podsakoff & MacKenzie (1994), Paille (2009)	13
JE		Crossley et al., (2007)	7
Total Items			86

3.8 Data Analysis Procedure

First, the data analysis begin with the data screen, 27 cases with missing value and uncompleted were deleted because it is the safest method because it is not prone to Type I errors, where a correct null hypothesis was incorrectly rejected thus, more likely to produce accurate estimates of standard error, confidence interval and p-values of the analysis (Allison, 2002).

Second, analysis on demographic and profile detail of respondents was the second steps in this study. The demogra phics of respondents was obtained with the sample comprised 1110 employees.

Third, is the descriptive statistic of variables included in this study. The data of this study were analyzed using structural equation modeling (SEM) technique and using AMOS 23 software. SEM is a multivariate statistical analysis tool that provides researchers with a thorough method for the examination and quantification of theories (Jöreskog & Sörbom, 1996). It enables researchers to explicitly examine measurement error and tests of both direct and indirect structural hypotheses. SEM technique also enables the researcher to specify, estimate, assess and present models to show hypothesized relationships among variables.

Besides, the technique also allows the researcher to build models more accurately than with standard multivariate statistic techniques. Moreover, the SEM technique enables the researcher to test several structural relationships simultaneously (Prajogo & McDermott, 2005). Individually, below are the procedures applied by this study to analyze the data of this study (Hair et. al., 2010).

Step 1: Defining individual variables

As discussed previously in this chapter (Section 3.7), the measures used in this study was based on reliable and valid measures previously used and reported in the literature. The human

resource management practices were measured with four dimensions (compensation, benefits and rewards, performance appraisal, training and development, and safety & health practice). Compensation, benefits, and rewards measure whether the organizational management provided a proper compensation program and practiced in recognizing employees for their hard work with questions developed by Jun and colleague (2006). The performance appraisal measures the degree to which performance appraisals focus on output or results rather than on behavioral measures with the questions developed by Whiting and colleague (2008). Training and development measure the management offers training adequacy and internal career ladder or opportunities with questions developed by Edgar and Geare (2005). Safety and health measure the practices that an organization engages in to protect employee safety, including maintaining safe work environments and taking corrective and proactive actions to rectify unsafe conditions with questions developed by Amick and colleague (2000) with six items.

Transformational leadership measures employees' perceptions of transformational leadership, using The Global Transformational Leadership Scale validated by Carless and colleague (2000). Organizational learning culture to measure the extent to which each of the questions reflects their organization in the aspects of learning the culture. The dimensions of a Learning Organization Questionnaire (DLOQ) developed by Watkins and Marsick (1993, 2003) and Yang (2003) was used to measure the organizational learning culture.

Peer support, to measure instrumental and emotional support received by employees with the questions developed by Settoon and Mossholder (2002). Employee retention measures the intention to stay with the organization with item questions developed by Jun and colleague (2006). Organizational citizenship behavior measures with four dimensions (altruism, helping behaviors, civic virtue, and sportsmanship) with the item questions developed by Podsakoff and MacKenzie (1994). Job embeddedness shows employee attitude

in the organization with the item questions developed by Crossley and colleague (2007). All eight measures have been adopted, and pilot tested and indicated satisfactory results.

In analyzing the data, the assumptions are essential to test because any violation of these assumptions could affect the validity of the results (Schreiber et. al., 2006).

a) The normality assessment

In assessing the first assumption, multivariate normality, the focus is on the value of kurtosis, in particular, the multivariate kurtosis because it can severely affect tests of variance and covariances (Byrne, 2010). The standardized kurtosis index in a normal distribution has a value of 3 (Byrne, 2010), while the standard multivariate kurtosis value is 5, where values exceeding 5 are indicative of data that are non-normally distributed (Bentler, 2005). Researchers have argued that with a large sample (200 and more), the effect of non-normal data on the result can be minimized (Hair et. al., 2010; Tabachnick & Fidell, 2007).

b) Outliers

Outliers which represent cases whose scores are substantially different from all the others in a particular set of data (Byrne, 2010). This assumption is critical to assess because it can influence the parameter estimates (Schumacker & Lomax, 2004). The assessment of this assumption is based on the assessment of multivariate outliers, the cases that have extreme scores on two or more variables (Kline, 2005) based on the squared Mahalanobis distance (D2) value for each case. The cases are considered outliers if the squared Mahalanobis distance value exceeds the critical chi-square value using an alpha level of 0.001 as suggested by Tabachnick and Fidell (2007). Tabachnick and Fidell (2007) strengthen the observation with cook distance's value more significant than one found a potential problem, but if the cook

distance's value is less than 1, the observation should be retained because there is no major problem (Pallant, 2011).

c) Linearity and Homoscedasticity

Linearity and homoscedasticity were tested by examining a scatterplot of the standardized residuals (Bates, Holton & Burnett, 1999; Pallant, 2011). When the scores are concentrated in the center (along with the 0 points), the linearity and homoscedasticity have been met (Pallant, 2011).

d) Multicollinearity

Multicollinearity refers to the component of variable items which are close to being equal (Zainudin, 2015). The assumption of multicollinearity was also assessed based on the correlation matrix, with correlations above 0.85 confirming the violation of this assumption (Zainudin, 2015).

Step 2: Developing and measuring the overall measurement model

In this study, the researcher employed a reflective form in order to develop the model. All the latent constructs (human resources management practices, peer support, organizational learning culture, transformational leadership, employee retention, organizational citizenship behavior and job embeddedness) were tested together in one measurement model to verify the relationship between the indicators of different constructs (Hair et. al., 2010). This approach can confirm the validity and unidimensionality of the constructs in the context of this study (Hair et. al., 2010), as applied in the recent study by Gracia and colleague (2010).

Before analyzing the measurement model, this study has conducted an exploratory factor analysis using the SPSS software. Below are the steps:

Step 1: Assessment of the suitability of the data for EFA

There are two methods apply in this study to assess the suitability of the data for EFA. First, the correlation between variables. Second, the tests of Kaiser-Mayer-Olkin (KMO) and Bartlett's Test of Sphericity.

Factorability of the correlation matrix used in EFA to determine the relationship between each variable. It is recommended by Tabachnick and Fidell (2007) observing the correlation matrix for correlation coefficients over 0.30. In case there is no correlations go beyond 0.30, then the researcher should reconsider whether factor analysis is the appropriate statistical method to utilize.

In the context of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity, the KMO index should range from 0 to 1, with 0.50 considered suitable for factor analysis (Hair et. al., 1995; Tabachnick, 2007). The Bartlett's Test of Sphericity should be significant ($p<.05$) for factor analysis to be suitable (Hair et. al., 1995; Tabachnick, 2007).

Step 2: The Factor Extraction

Rotation aims to simplify the factor structure of a group of items, or in other words, high item loadings on one factor and smaller item loadings on the remaining factor solutions. This study has applied the Principal Component Analysis (PCA) is the default method in many statistical programs, and thus, is most commonly used in EFA (Pett et. al., 2003). PCA also is recommended when no prior theory or model exists.

Step 3: Criteria assist in determining factor extraction

The data extraction aims to reduce a large number of items into factors. In order to produce scale unidimensionality, and simplify the factor solutions several criteria are available to researchers. This study has applied the Kaiser's criteria (eigenvalue > 1 rule) in determining factor extraction (Hair et. al., 1995).

Step 4: Selection of rotational method

Rotation maximizes high item loadings and minimizes low item loadings, therefore, producing a more interpretable and transparent solution. This study applied the Varimax rotation. It is the most common rotational technique used in factor analysis, which produces factor structures that are uncorrelated (Costello & Osborn, 2005).

Step 5: Interpretation and labeling

The Cronbach's alpha was used to measure the extent to which the multiple items for a latent construct belong together. A Cronbach's alpha value of 0.70 was used as the cut-off point (Hair et. al., 2011).

After finalizing the item for each construct in EFA, the next step is to test the measurement model. This study applied maximum likelihood estimation (MLE) as the estimation technique to test the measurement model. This is the most common SEM estimation procedure, which provides valid and stable results with the sample size of this study (Hair et. al., 2010).

The assessment of the measurement model validity is based on the overall model fit and construct validity. In regard to the overall model fit, this study followed the recommendations of Hair and colleague (2010) and Tabachnick and Fidell (2007), which have been applied in recent studies (e.g., Bordia, Restubog, Bordia & Tang, 2010; Ito, 2003; Stewart, Volpone, Avery & McKay, 2011) for selecting which fit indices to examine and report. The model fit is assessed based on values of chi-square ($\chi 2$), degrees of freedom (df), $\chi 2/df$, root mean square error of approximation (RMSEA), comparative fit index (CFI) and Tucker-Lewis Index (TLI). Combinations of these elements provide sufficient unique information to evaluate a model fit (Hair et. al., 2010). A well-fitting model will have the $\chi 2/df$ smaller than 2 (while scores between 2 and 5 are acceptable, Hair et. al., 2010; Zainuddin, 2010; Lei & Wu, 2007; Arbuckle, 2006; Tanaka, 1987),

RMSEA value is below 0.08, CFI and TLI values that are 0.90 or higher (Hair et. al., 2010; Tabachnick & Fidell, 2007; Williams et. al., 2009). The combination of multiple fit indexes (based on values of $\chi 2$, degrees of freedom (df), $\chi 2/df$, CFI, and RMSEA) has been applied in recent studies (e.g., Beausaert, Segers & Gijselaers, 2011; Gegenfurtner et. al., 2009; Alexander Hamwi, Rutherford & Boles, 2011).

In order to assess construct validity, this study examines the convergent and discriminant validity of the constructs. Convergent validity is the extent to which the construct is positively correlated with other measures of the same construct (Hair et. al., 2011). The construct convergent validity is examined based on three criteria; (1) the loading estimates are statistically significant; (2) the loading estimate should be at least 0.50 for loading estimates to be regarded as a useful item; and (3) the result of average variance extracted (AVE) should equal or exceed 50 percent (Hair et. al., 2010). Discriminant validity is the extent to which the construct does not correlate with other measures that are different from it (Hair et. al., 2011). The construct discriminant validity is examined by comparing the square root of AVE estimates for each construct with the inter-construct correlations with that factor. The discriminant validity is confirmed if the square roots of AVE estimates are higher than the corresponding inter-construct correlations estimates (Hair et. al., 2010).

Step 3: Specifying the structural model

Following confirmation of the measurement model, the structural model is specified by assigning relationships from one construct to another based on the conceptual framework developed previously in Chapter 2. The conceptual framework consists of two equations. In the first equation, the independent variable is human resource management practices, organizational learning culture, transformational leadership and peer support. The dependent

variable is employee retention. In the second equation, the independent variable is employee retention, and the dependent variable is organizational citizenship behavior and job embeddedness. While employee retention is acted as a mediator variable.

Step 4: Assessing the structural model validity

At this stage, the structural model's validity is examined using the same criteria as the measurement model. Following this, the individual parameter estimates that represent each specific hypothesis are examined. According to Hair and colleague (2010), the proposed framework is considered valid to the extent that the parameter estimates are statistically significant and in the predicted direction. If the model fits the data and the parameter estimates are significant and in the predicted direction, assessing the structural model's validity can be concluded and the results reported (Tabachnick & Fidell, 2007).

Step 5: Analyzing the mediating variable in a model

In analyzing the mediating effect, this study applied the procedure proposed by Zainudin (2015) and Baron and Kenny (1986). According to Zainudin (2015), there are four requirements to identify the mediate variable is a mediator or not as details below:

i. The direct effect of the independent variable on the dependent variable is significant.
ii. When M (mediator variable) enter the model, the direct effect would be reduced. It is because the effect has moved through the mediator.
iii. Partial mediation occurs when the direct effect is significant, and M (mediator variable) reduced the mediation effect.
iv. Meanwhile, full mediation occurs when the direct effect is not significant, and M (mediator variable) reduced the mediation effect.

This study is also using the step outlined by Baron and Kenny (1986) to confirm the test for mediation. The steps are:

i. The predictor is related to the dependent variable.

ii. The predictor is related to the mediator.

iii. The mediator affects the dependent variable when the predictor is controlled for and reduces the relationship between the predictor and the dependent variable.

The summaries of data analysis section with fourteen hypotheses were shown in the table 3.20 below.

Table 3.20: Summary of Data Analysis Section

No	Hypothesis	Method of Analysis
H1	Human resource management practice is positively related to employee retention.	Regression (Structural Model Equation Technique)
H2	An organizational learning culture is positively related to employee retention.	
H3	Transformational leadership is positively related to employee retention.	
H4	The peer support is positively related to employee retention.	
H5	Employee retention is positively related to job embeddedness.	
H6	Employee retention is positively related to organizational citizenship behavior.	
H7	Employee retention will mediate the relationship between human resource management practice and organizational citizenship behavior.	Regression (Based on Zainudin, 2015 and Baron & Kenny,1986)
H8	Employee retention will mediate the relationship between organizational learning culture and organizational citizenship behavior.	
H9	Employee retention will mediate the relationship between transformational leadership and organizational citizenship behavior.	
H10	Employee retention will mediate the relationship between peer support and organizational citizenship behavior.	
H11	Employee retention will mediate the relationship between human resource management practice and job embeddedness.	
H12	Employee retention will mediate the relationship between	

	organizational learning culture and job embeddedness.
H13	Employee retention will mediate the relationship between transformational leadership and job embeddedness.
H14	Employee retention will mediate the relationship between peer support and job embeddedness.

3.9 Conclusion

This chapter has provided detailed information on the methodological issues in order to test the conceptual framework of this study. The issues concerning research design, the population and the sample of this study, the data collection method and procedure and the measurement of the variables of this study have been addressed. An explanation of the analysis techniques that will be applied to test the hypotheses developed previously in Chapter 2 has also been provided. The detailed discussion of the analysis results, mainly the result of analysis of assumptions, exploratory factor analysis, measurement model validity and structural model validity will be provided in the next Chapter 4. Throughout the discussion, the conceptual framework will be tested in order to examine whether the hypotheses are supported or not by the data of this study. Chapter 4 also will provide demographic information about the respondents and other aspects of their profile.