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## **Chapter 3: Research Methodology**

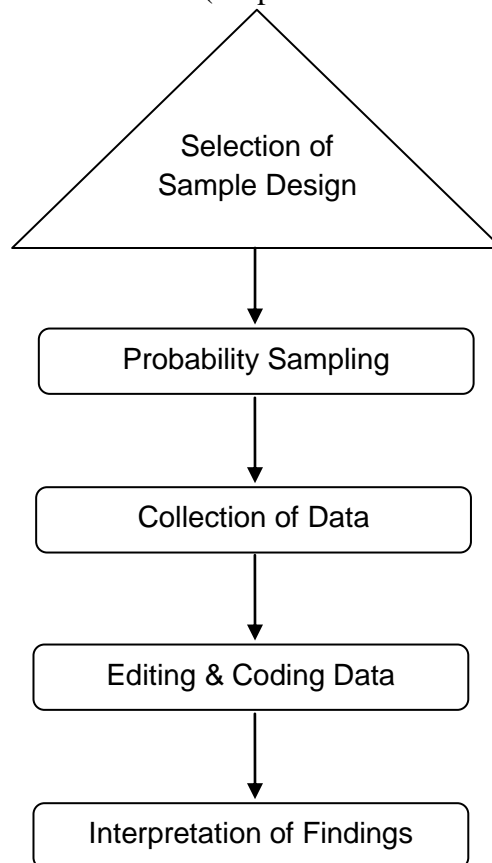
### **3.0 Introduction**

This chapter will discuss the methodological approach of the research study. The quantitative method has been adopted for this study. The researcher decided to use questionnaire for gathering data for the research study. This method has proved to be economical and time saving (Shamsuri, 2009:80). All survey questionnaire sets were distributed using the non-probability sampling based on the convenience method. There was no pilot study being done for this research study because the researcher has adopted from a proven questionnaire of a study by Zhu (2010). This chapter explains the research design of this study to identify the variables on the research problem which refers to the conceptual framework in Chapter 1.

### **3.1 Research Design**

Chapter 2 identified the variables for this study and has also developed the conceptual framework. A proper planned research design is needed in order to ensure the variables that can be accepted and recognized as a theoretical model and deliver accuracy data (Emory & Cooper, 1992; Gauthier, 1997). This study proposes to determine the linkage between the HR practices and organizational performance, mediated by the company's policy on innovation in SMEs in the Klang Valley. There variables are incentive compensation; training; selective hiring; performance evaluation; organization of work; sharing information; job security; social activities and sports (independent variables, IVs), company's policy on innovation (mediator variable, MV), and organizational performance (dependent variable, DV) as the sources of competitive advantage (Ordonez de Pablos & Lytras, 2008; Collin, 2007; Chew & Basu, 2005; Khandekar & Sharma, 2005). A proper designed and planned research design is essential in order to deliver accuracy as well as a true and fair view of the study. The generalized research process can be explained as in Figure 2.1 below.

Figure 2.1 Generalized Research Process (adapted from Zikmund, 2010)



The sampling design chosen for this research study is convenient sampling. The populations in this study are respondents who are owners and employees, both middle and top managements in cross-section SMEs located in the Klang Valley. The research strategy used is the quantitative approach moving towards the positivism paradigm. The positivism paradigm is an approach of social research seeking for the natural science model of research to investigate the social phenomena and explanations of the social world (Denscombe, 2003). The main reason of the researcher to select the quantitative approach in this study is to determine the relationship between HR practices, company's policy on innovation towards organizational performance. A structured questionnaire as the survey instrument is modelled from the study done by Zhu (2010) in the context in China.

### **3.2 Research Instrument**

One method of data collection that offers some advantages such as quick response rate, cost-saving and easy to organize is a structured questionnaire which is normally used as the core instrument. This researcher chose the questionnaire method to measure the relationship between HR practices and organizational performance, mediated by the company's policy on innovation.

### **3.3 Selection of Measurement Scales**

From the data of the questionnaires for human resource practices, the company's policy on innovation and organizational performance of the SMEs surveyed in the Klang Valley, it was possible to monitor the trends. Respondents were requested to answer all the 32 questions which covered organizational performance as the dependent variable, human resource practices as the independent variables and the company's policy on innovation as the mediator variable. They were requested to respond to these questions by using the five-point Likert-type Scale ranging from 1 "Not at all Implemented" to 5 "Strongly Implemented". Thus, a total numerical value will be calculated from all the responses using a measurement scale on the individual variables (Sekaran, 2003). The questionnaire covered human resource practices, company's policy related to innovation and organizational performance.

A summary of types of variables, section of questionnaire and reference sources is found in Table 3.3

**Table 3.3 Summary of Types of Variables, items and Reference Sources**

| Types of Variables          | Items   | Reference Sources   |
|-----------------------------|---|---|
| Independent Variables (IVs) | Section A: Human Resource Practices <ul style="list-style-type: none"> <li>• Incentive Compensation</li> <li>• Training</li> <li>• Selective Hiring</li> <li>• Performance Evaluation</li> <li>• Organization of work</li> <li>• Sharing information</li> <li>• Job Security</li> <li>• Social Activities &amp; Sports</li> </ul> | <ul style="list-style-type: none"> <li>• Yan Zhu, 2010</li> <li>• Ordonez de Pablos &amp; Lytras, 2008; Collins, 2007; Chew &amp; Basu, 2005; Khandekar &amp; Sharma, 2005</li> <li>• Bowen et al., 2002</li> </ul>   |
| Mediator Variable (MV)      | Section B: Company's Policy on Innovation   | <ul style="list-style-type: none"> <li>• Yan Zhu, 2010</li> <li>• Budhwar &amp; Khatri, 2001; Teo, 2002; Budhwar, 2000</li> <li>• Mosadeghrad et al., 2008</li> <li>• Pfeffer, 1994</li> <li>• Damanpour, 1991</li> </ul>   |
| Dependent variable (DV)     | Section C: Organizational Performance   | <ul style="list-style-type: none"> <li>• Yan Zhu, 2010</li> <li>• De Cieri et al., 2008</li> <li>• Chiesa, Coughlan &amp; Voss, 1996; Griffin &amp; Page, 1993; Hudson, Smart &amp; Bourne, 2001; Kanji &amp; Sá, 2002; Kaplan &amp; Norton, 1996a, 1996b; Verhaeghe &amp; Kfir, 2002</li> <li>• Terziovski &amp; Samson, 1999</li> </ul> |

### 3.4 Questionnaire Design

A structured questionnaire was designed in order to gather data for this research study.

The questionnaire is divided into four sections.

Section (A) Questionnaire on Human Resource Practices

Section (B) Questionnaire on the Company's Policy on Innovation

Section (C) Questionnaire on the Organizational Performance (Self-Evaluation)

Section (D) General Information of the Respondents

The questionnaire began with two general questions as opening questions to access the respondents' general knowledge on the definition of Innovation (Drucker, 2002). The questionnaire consisted of 25 questions which covered eight independent variables, one mediator variable and a dependent variable.

These data were measured based on the five-point Likert-type Scale ranging from 1 "Not at all Implemented" to 5 "Strongly Implemented" which respectively represented the human resource practices in the organizations' policy related to innovation.

| Not at all Implemented | ← | Moderately Implemented | → | Strongly Implemented |
|------------------------|---|------------------------|---|----------------------|
| 1                      | 2 | 3                      | 4 | 5                    |

**Fig. 2: Likert's Scale used to measure independent variables (human resource practices) and mediator variable (company's policy on innovation)**

Section A: Human Resource Practices

The researcher has used 8 independent variables which include (i) incentive compensation – through a fair monetary or non-monetary compensation scheme; (ii) training – provides "soft" or "hard" skill

training programmes or other new enhancement program for employees. The purpose is to retrain and retain the employees (iii) selection hiring - through a structured interview or external recruitment activities. This may gather the right and talented employees (iv) performance evaluation – uses as a measurement tools for individual performance and objectives evaluation as well as to observe their past work behavior; (v) organization of work – work as teams to resolve problems with project teams and consult among departmental for knowledge or skills exchange; (vi) sharing information – through an informal or formal communication way to deliver message regarding organizational performance review such as financial information, objectives and goals; (vii) job security – as for inner job protection; (viii) social activities and sports – holds outdoors or indoors social activities for employees as a network platform. Hence, for the above establishment of human resource practices and organizational performance as determinant of the relationship via mediated by the company's policy on innovation. In order to understand the relationship between these variables, the researcher has been successful to find supporting evidence in the previous research work of Ordonez de Pablos & Lytras, (2008); Collins, (2007); Chew & Basu, (2005); Khandekar & Sharma, (2005) on the human resource practices implementation. Their findings have shown that human resource practices act as a key source of competitive advantage. An effective implementation of HRM practices is essential in organizations and it has shown a positive relationship to organizational performance as cited in the research work by the above researchers. All of these factors are related to the independent variables of the Malaysian SMEs and hence were included in this research study.

#### Section B: Company's Policy on Innovation

In this study, the company's policy on innovation is the mediator variable (MV). The studies of previous researchers such as Boxall, (1990); Budhwar and Khatri (2001); Teo (2002); Budhwar (2000); Mosadeghrad et al. (2008); as well as Damanpour (1991) have shown that to implement a company's policy on innovation has not only helped company's organizational performance by using

bivariate correlations and by computing the partial correlation between the independent variables (i.e human resource practices) and dependent variable (i.e organizational performance) which in turn controlled the mediating variable (i.e company's policy on innovation). There are 2 questions on the mediating variable and they were designed in the ordinal scale to allow the respondents to give his or her own opinions.

### Section C: Organizational Performance

In this study, the organizational performance is the dependent variable. According to De Cieri et al. (2008); Chiesa, Coughlan & Voss (1996); Griffin & Page (1993); Hudson, Smart & Bourne, (2001); Kanji & Sa (2002); Kaplan & Norton (1996, 1996b); Verhaeghe & Kfir (2002) as well as Terziovski & Samson (1999) established a relationship between human resource practices and organizational performance.

There are 7 questions using the five-point Likert-type Scale in this research study. The respondents were asked to rank their company's organizational performance over the past three (3) years. They were requested to rank each of the statements by marking [X] where applicable.

The company's organizational performance was rated as follows:

- "1" Decreased more than 20 percent
- "2" Decreased 1 – 20 percent
- "3" Unchanged / Status-quo
- "4" Increased 1 – 20 percent
- "5" Increased more than 20 percent

| Decreased more than 20 percent | Decreased 1 - 20 percent | Unchanged / status - quo | Increased 1 – 20 percent | Increased more than 20 percent |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------------|
| 1                              | 2                        | 3                        | 4                        | 5                              |

**Fig. 3: Likert's Scale used to measure organizational performance over the past three years**

In the final Section D, the questionnaire composed of questions on the background of the respondents. They were asked about their gender, age, ethnic background, education level, management role, department, length of service, number of employees in the organization, industry sector and the annual turnover. All these questions were aimed to obtain background feedback from the respondents. (Questionnaire is attached in Appendix 1)

### **3.5 Population of the Study**

This study is based on a quantitative approach which is moving towards the positivism paradigm. According to Saunders (2007), in conducting the positivism approach, the researcher would most likely use an existing theory to develop the hypotheses. Also, further investigation on any social phenomena is needed in order to look for any explanation. Hence, the data collection will be achieved through self-administration of a structured questionnaire. The targeted respondents are top-management; senior managers and middle-management, and other administrative supports from several departments in SMEs in Klang Valley. Their responses to the questionnaires were based on their knowledge and their experiences. The respondents were asked to express their agreement or disagreement to the questions by giving a numerical value ranging from one to five on the Likert's Scale.

### **3.6 Development of the Research Hypotheses**

There are five objectives in this research study. There is used to identify the cause-and-effect relationship between two or more variables (Zikmund, 2010). This study objective is to determine the relationship between the variables of human resource practices (i.e. independent variables, IVs); company's policy on innovation (i.e. mediator variable, MV) towards organizational performance (i.e. dependent variable, DV). In order to achieve the objectives of this study, the research objectives as the following:



1. To determine which of the HR practices have the most effect on organizational performance in SMEs in the Klang Valley
2. To determine whether there is a significant relationship between incentive compensation; training and organizational performance mediated by the company's policy on innovation in SMEs in the Klang Valley
3. To determine whether there is a significant relationship between selective hiring; performance evaluation and organizational performance in SMEs in the Klang Valley
4. To determine whether there is a positive relationship between sharing information, job security, social activities and sports and organizational performance in SMEs in the Klang Valley
5. To determine whether there is a significant relationship between organization of work and organizational performance, mediated by the company's policy on innovation in SMEs in the Klang Valley

Before the researcher to proceed the research hypotheses, there are five research questions as the following:

1. What the HR practices which has the most significant effect on organizational performance in SMEs in the Klang Valley?
2. Is there a significant relationship between incentive compensation; training and organizational performance, mediated by the company's policy on innovation in SMEs in the Klang Valley?
3. Is there a significant relationship between selective hiring; performance evaluation and organizational performance in SMEs in the Klang Valley?
4. Is there a positive relationship between sharing information; job security; social activities and sports and organizational performance in SMEs in the Klang Valley?
5. Is there a significant relationship between organization of work and organizational performance, mediated by the company's policy on innovation in SMEs in the Klang Valley?

### *Hypotheses*

Hypothesis no. 1 H<sub>0</sub>: There is no relationship between human resource practices and organizational performance in SMEs in the Klang Valley

H<sub>1</sub>: There is relationship between human resource practices and organizational performance in SMEs in the Klang Valley

Hypothesis no. 2 H<sub>0</sub>: There is no significant relationship between incentive compensation; training and organizational performance, mediated by the company's policy on innovation in SMEs in the Klang Valley.

H<sub>1</sub>: There is significant relationship between incentive compensation; training and organizational performance, mediated by the company's policy on innovation in SMEs in the Klang Valley.

Hypothesis no. 3 H<sub>0</sub>: There is no significant relationship between selective hiring; performance evaluation and organizational performance in SMEs in the Klang Valley.

H<sub>1</sub>: There is significant relationship between selective hiring; performance evaluation and organizational performance in SMEs in the Klang Valley.

Hypothesis no. 4 H<sub>0</sub>: There is no positive relationship between sharing information; job security; social activities as well as sports and organizational performance in SMEs in the Klang Valley.

H<sub>1</sub>: There is a positive relationship between sharing information; job security; social activities as well as sports and organizational performance in SMEs in the Klang Valley.

Hypothesis no. 5 H<sub>0</sub>: There is no significant relationship between the organization of work and organizational performance, mediated by company's policy on innovation in SMEs in the Klang Valley.

H<sub>1</sub>: There is a significant relationship between the organizational of work and organizational performance, mediated by company's policy on innovation in SMEs in the Klang Valley.

### **3.7 Data Collection Procedure / Sampling Method**

The researcher distributed the questionnaires to the targeted groups through hand-outs and via e-mail. For this study, non-probability sampling was adopted in selecting samples (Hair et al., 2009). The researcher also used personal contacts and networks to access SMEs organizations in the Klang Valley. Although Robson (2002) has argued that the un-specifiable biases or influence could set in when conducting convenience sampling, this was unavoidable due to time constraints. This method has allowed the researcher to obtain respondents' opinions within a short time span and economically. A total 213 sets of the questionnaire were returned (45% response rate) out of 475 questionnaire sets distributed. Consequently 213 were usable as the sample size (i.e. N) for this research study.

### **3.8 Data Analysis Techniques**

The questionnaire was a self-administered survey carried out by the researcher herself. The data were pre-screened in order to withdraw any outliers and missing values. All data collection was analyzed using the Statistical Package for Social Sciences (SPSS) Windows Version 18. Data analysis techniques used in this study consisted of Cronbach's Alpha reliability test (Nunnally, 1994), normality test (Hair et al., 2006), Pearson's correlation and multiple regression test and Sobel Test (Baron & Kenny, 1986; Frazier et al., 2004).

The research study questionnaire began by asking respondents two general knowledge questions in order to test their understanding of the level of awareness about innovation. The data were analyzed using the nominal scale on descriptive analysis presented by the histogram chart on how many respondents had heard about innovation (Rogers & Singhal, 1996).

The researcher has used the normality test to establish the kurtosis and skewness analysis in order to detect normality between the variables. From the data, the researcher would look at each level of

explanatory variables showing a normal distribution (Hair et al., 2006). A normality test obtains kurtosis and skewness values and these values fall between -2 to 2 (refer to table 4.2). They are considered as normal distribution (Sekaran, 2003). If non-normality is found, a data transformation technique is requested to transform the data into normality (Newell & Rosenbloom, 1981).

In order to ensure that the data collected are normally distributed, a normality test was performed. The normality test was carried out at the beginning stage in order to determine whether the variables were normally conforming to a normal distribution (Hair et al., 2006) and which data were parametric or non-parametric to be used in this study.

Next, the Cronbach's Alpha reliability test was carried out using the correlation analysis method. It was used in this study to determine the individual relationship between the independent variables, mediator variable and dependent variable.

Furthermore, Pearson's correlation and multiple regression analyse was also performed to determine whether human resource practices have positive effects on organizational performance. The regression analysis was performed by using the SPSS to evaluate the prediction behaviour between dependent variable and one or more independent variables. Moreover, the Pearson's correlation of multiple linear regression analysis was used to analyze the relationship between a single dependent variable and more than two independent variables (Hair, Black, Babin, Anderson & Tatham, 2006). The multiple linear regression analysis was not only used to generate a useful model for predicting human resource practices affecting on organizational performance but also for the hypothesis testing purpose.

To determine whether the mediator variable has any strong influence on the independent variables (IVs) to the dependent variable (DV), the Sobel Test was used. The intervening effect (i.e. mediator variable) can be used in this study to determine the effect of influence between innovation as well as

human resource practices (i.e. independent variables) and organizational performance (i.e. dependent variable) as suggested by Baron and Kenny (1986) as well as Frazier et al. (2004). Also, the mediation could show how strong the independent variables affect the dependent variable (Baron & Kenny, 1986).

The reliability test was used to determine whether the scales of the measurement were reliable and Cronbach's Alpha was applied. The data collected from the questionnaire on human resource practices, company's policy on innovation, organizational performance of the SMEs surveyed in the Klang Valley were tested for reliability. Therefore, if the higher scores have been achieved then they are more reliable from this generation of the scale which means that there is a high degree of inter-collection and since it indicated more than 0.7, it is an acceptable reliability coefficient (Nunnally, 1994).

Similarly, in order to understand the individual relationships respectively between incentive compensation, training, selective hiring, performance evaluation, organization of work, job security, social activities as well as sports and organizational performance, the researcher has used Pearson's correlation and multiple regression tests to perform the bivariate and multiple analysis of data collected from the returned questionnaires.

Furthermore, in order to understand the relationship between HR practices and organizational performance, mediated by the company's policy on innovation of the SMEs surveyed in the Klang Valley, the researcher used the Sobel Test to establish the coefficient standard errors of the coefficients of the data collected from the questionnaire on human resource practices, company's policy on innovation and organizational performance through measuring the significance on the intervening effect. The errors were tested on the procedure as outlined by Baron and Kenny (1986) as well as Frazier et al., (2004). Finally, to understand the respondents' profile and background, the researcher carried out a frequency analysis, mean and standard deviating description of the data

collected from the questionnaire on the general information of the respondents of the SMEs surveyed in the Klang Valley.

The summary of the SPSS analysis used for the questionnaire is in Table 3.8

**Table 3.8 Summary of SPSS Analysis Used for Questionnaire**

| Type of Analysis  | Type of Statistics (SPSS)                                   | Section of Questionnaire  | Objective of Analysis  |
|---|---|---|--|
| Descriptive   | Frequency Analysis  | Introduction: General knowledge of respondents  | To understand the respondents' level of awareness on innovation  |
| Normality Test (Hair et al., 2006)                          | Kurtosis and skewness analysis, mean and standard deviation | Section A: Human Resource Practices<br>Section B: Company's Policy on Innovation<br>Section C: Organizational Performance | To ensure that the data being collected are normally distributed   |
| Reliability Test (Nunnally, 1994)                           | Cronbach's Alpha  | Section A: Human Resource Practices<br>Section B: Company's Policy on Innovation<br>Section C: Organizational Performance | To ensure the scales of the measurement are reliable   |
| Bivariate and multiple analysis                             | Pearson's correlation and multiple regression               | Section A: Human Resource Practices<br>Section B: Company's Policy on Innovation<br>Section C: Organizational Performance | To understand the individual relationship respectively between IVs (Incentive compensation, Training, Selective Hiring, Performance evaluation, Organization of work, Sharing Information, Job Security, Social Activities & Sports) and DV (Organization Performance) |
| Sobel Test (Baron and Kenny, 1986 and Frazier et al., 2004) | Coefficient and standard errors of the coefficients         | Section A: Human Resource Practices<br>Section B: Company's Policy on Innovation<br>Section C: Organizational Performance | To understand whether the respondents' awareness of company's policy on Innovation mediate the relationship between Human Resources Practices and the Organizational performance   |

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|             |   |   |   |
|-------------|---|---|---|
| Descriptive | Frequency Analysis, mean and standard deviation | Section D: General Information of respondents | To understand the respondents' profile and background |
|-------------|---|---|---|

### 3.9 Conclusion

This chapter has outlined the research method used in this research study. The research questions and hypotheses testing were developed for the measurement of the variables. Also, this chapter has covered the development of the research hypotheses, selection of population, sampling design, data collection, check procedure and data analysis techniques.

The following Chapter 4 will analyze data collected from the questionnaire distributed to 213 respondents. Data were tested according to the statistical procedures mentioned earlier. The findings and results were interpreted and presented in this research study.