

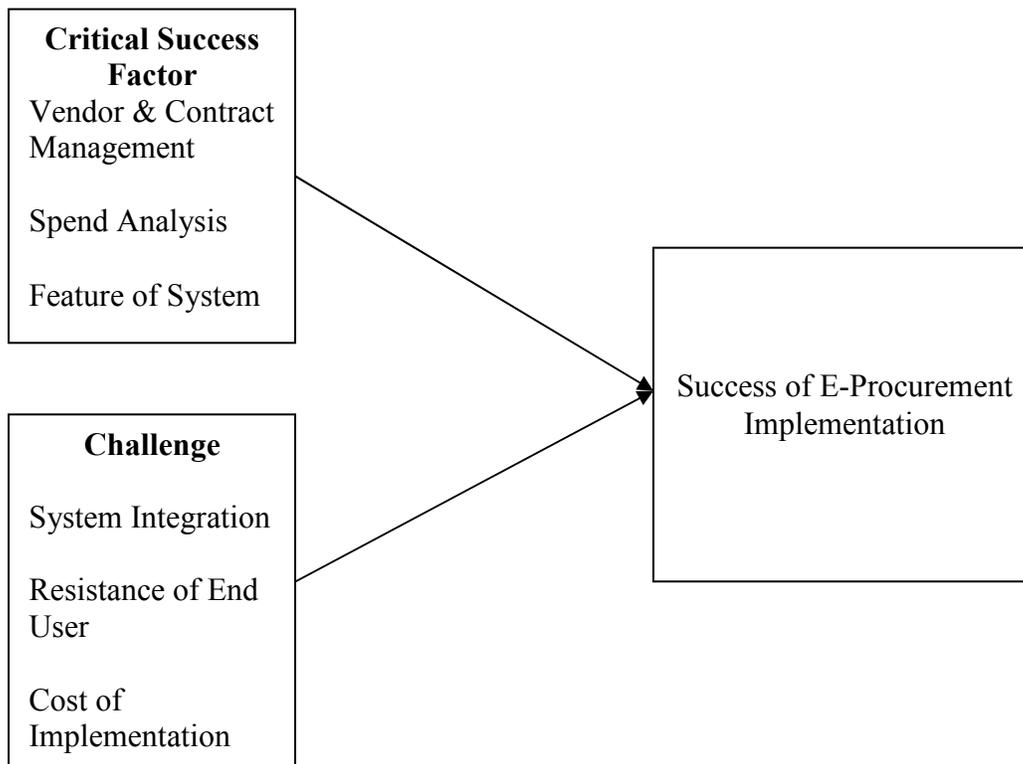
## CHAPTER 4- RESEARCH METHODOLOGY

This chapter outlines the methodology employed in the study. It begins with a review of the research framework. Then, it provides the hypotheses developed in this study. Thereafter, the design of the research instrument, scales and measurements, and the data collection procedure will be discussed. Finally, the data analysis techniques used are also presented.

### 4.1 Research Framework

Based on the related theories and literature presented in the previous chapter, a framework has been developed to investigate the relationship among factors and challenges and the e-procurement implementation.

**Figure 4.1: Research Framework**



## **4.2 Hypothesis Development**

Based on the findings from previous studies, this study attempts to investigate the relationship between success factors, challenges and e-procurement implementation. Therefore, the following hypotheses are formulated:

***H1: Success factors have a significant impact on the implementation of e-procurement***

*H1a: Vendor Management has a significant impact on implementing e-procurement*

*H1b: Contract Management has a significant impact on implementing e-procurement*

*H1c: Spend Analysis has a significant impact on implementing e-procurement*

*H1d: Features and infrastructure of E-procurement have a significant impact on implementing e-procurement*

***H2: Challenges have a significant impact on the implementation of e-procurement***

*H2a: System Integration has a significant impact on implementing e-procurement*

*H2b: Resistance of end user and immaturity of e-procurement-based market service have a significant impact on implementing e-procurement*

*H2c: Cost of implementation has a significant impact on implementing e-procurement*

### **4.3 Research Design**

This study was confined to companies who are registered suppliers with Genting Malaysia Berhad via the Ariba procurement system.

The Ariba procurement system provides a full solution e-procurement system including upstream processes, which include supplier, pre-qualified supplier, self register and sourcing tools. Also, for the downstream process it includes purchase requisition approval, internal purchase catalogue, contract management, spend analysis and auto purchase order process as well. In Malaysia, there are only three companies using the Ariba procurement system. The Sunway group implement an upstream process and Maxis Bhd. implement a downstream process. Genting Malaysia Berhad is integrating the backbone system "SAP R/3" with the Ariba procurement system to further enhance their e-procurement system. The reasons for selecting companies that are registered with the Ariba procurement system is because they are experienced in dealing with e-procurement systems and the respondents have a significant impact on my study.

This study used convenience sampling to conduct the research. A sample size of 300 respondents was targeted. Questionnaires were distributed to companies who have registered with the Ariba procurement system.

In terms of data collection technique, the study utilized the self-administration questionnaire method. The data was collected over a period of two weeks.

Questionnaires were distributed to companies, either through email or hardcopy, until the targeted sample size was collected. Then, the questionnaires were collected from the respondents after the completion of the questionnaire.

#### **4.4 Measurement Instrument**

The survey instrument is a seven-page questionnaire (see Appendix A). The questionnaire relevant to this research consists of four sections. Part one measures the respondents company background or company information; Part two measures the frequency of dealing with international business partners; Part three measures success factors in implementing e-procurement within the organization; Part four measures challenges of implementing e-procurement.

The first section was designed to collect the demographic information of the respondents. Examples of the company information variables measured include type of business, paid up capital, annual turnover and company size. The demographic variables were measured using closed-ended multiple-choice format.

Section two includes the frequency the respondents deal with international business partners, as well as patronage habits and value of contract for each deal. Among the questions asked in this section are: the frequency the respondents deal with overseas business partners, the amount of time the respondents spend in dealing with business each time, the value of each dealing

with overseas business partners and which country business partners they are dealing with. To determine the respondents' preference among the various countries they are asked to rank the format choice according to their preference (1 being the most preferred and 4 being the least preferred).

In the third section, the questionnaire sought to measure the respondent's perception concerning implementing the e-procurement system. Lastly, items were selected from numerous sources to examine the key challenges to implementing e-procurement systems. These items cover a variety of possible reasons that may effect the decision not to implement an e-procurement system. All of the items in the third section are measured on a five-point Likert-type scale, ranging from "Not Important at all" (1), "Important" (2), "Neutral" (3), "Important" (4) and "Extremely Important" (5).

Section four of the questionnaire measures the respondent's intention towards implementing the e-procurement system. Twelve items using a five-point Likert-type scale, ranging from "strongly disagree" (1), "disagree" (2), "neutral" (3), "agree" (4) and 'strongly agree" (5) are used. The items in this section were taken from Debra and Cass (2005); and Koo (2003). Three items were derived from the study of Koo (2003), and another three items were derived from the study of Debra and Cass (2005).

#### 4.5 Data Analysis Techniques

The statistical analysis of the data collected from the survey was accomplished using the statistical package for social sciences – SPSS version 15.0 software. Data was first entered into the software and was then screened to exclude any incomplete response or correct the errors found in the data file.

**Table 4.1: Summary of Types of Analysis Used for Questionnaire**

<b>Type of Analysis</b>	<b>Type of Statistics</b>	<b>Section of Questionnaire</b>	<b>Objective of Analysis</b>
Descriptive	Frequency Analysis, mean and standard deviation	Section 1: Company Information respondents Section 2: Business Pattern respondents	To understand the profile of the respondents and their business pattern
Normality Test	Kurtosis, skewness analysis and histogram chart	Section 3: Success Factors Section 4: Challenges	To ensure that the data collected is normally distributed
Reliability Test	Cronbach's alpha	Section 3: Success Factors Section 4: Challenges	To ensure the scale of the measurement are reliable
Bivariate and multiple analysis	Pearson's correlation and multiple regression	Section 3: Success Factors Section 4: Challenges	To understand the relationship between success factors and challenges in implementing e-procurement system

The normality test was performed at the beginning stage by using SPSS software to determine whether the variables are normally distributed and to determine whether the parametric or non-parametric test could be used in this study.

Cronbach's Alpha was conducted to ensure that all the variables are valid and reliable. This is to ensure that the variables are not correlated with one another and the scale of measurement is reliable.

Regression analysis was performed in order to test the relationships of the dependent variables and independent variables. In this study, simple linear regression and multiple linear regressions with stepwise method was used. Pearson correlation was used to evaluate the linear relationship between two variables. In addition, multiple linear regressions were used to explore the relationship between one dependent variable and a number of independent variables.

#### **4.6 Conclusion**

This chapter provides an overview of the research design, framework and hypothesis developed for the study. An overview of the questionnaire was also discussed. This chapter also discusses the research instrument, sampling procedure, data collection and data analysis used to conduct the study.

In the following chapter, the findings of the research will be discussed. It also identifies the significance of each of the hypotheses as stated in the chapter.