

3 RESEARCH METHODOLOGY

This chapter describes the research methodology employed in the study. It starts off with some basic questions, which have developed the objectives of this study. Then it discusses the sampling design and data collection procedures used to obtain data from the respondents in the study. Finally, it highlights some data analysis techniques employed to produce the research findings.

3.1 Research Questions

The study will answer the following research questions:

- What are the types of IT applications and infrastructures currently used by MSC companies as KMS tools? How many of them intend to use these in the future?
- What are the characteristics of organisations that are most likely to use KMS? Similarly, what of those, which do not?
- What are the perceived benefits, challenges and importance of KMS to these organisations?
- What types of knowledge are important to these organisations that would be incorporated into KMS?
- Which categories of employees require KMS? Who will benefit from KMS?
- What are the current KM strategies being adopted in these organisations and who should initiate them?

3.2 The Investigation

The study is aimed to unveil the current practices and initiatives of KMS in MSC companies. Basically four main objectives have been clearly identified. The first objective of the study is to identify the various types of information technology (IT) applications and infrastructures that these companies have implemented and/or intend to implement in their organisations as enabling tools for effective KMS implementation. The second objective is to carefully study the organisational characteristics that are most likely to employ the various types of IT in adopting KMS. The third objective is to look at the various perceptions, benefits, challenges and importance of using KMS from its business point of view that are crucial to their KMS initiatives in these organisations. The fourth objective of the study is to investigate whether Malaysian MSC companies, in general, are prepared for the upcoming knowledge-based economy from the IT perspective to competitively respond to the intensifying business challenges in the twenty first century and beyond.

3.3 Sampling Design

As the research of KMS is quite new in Malaysia and the purpose of the study is to gain an insight of KMS implementation, a sample of 370 MSC status companies in Malaysia have been selected from the MDC list of MSC companies and used as the unit of analysis. The list consists of companies as on 1 December 2000.

3.4 Data Collection Procedure

The study was conducted using survey method of respondents' primary data. A questionnaire was used as instrument in the study. It was divided into five sections. Section A was developed to obtain data with regard to the organisational characteristics. Section B was divided into two parts, asking the respondents for the various IT infrastructures and applications that they currently have. Section C and Section D highlighted the perceptions of KMS benefits and challenges. Section E laid out some questions to unveil the KMS importance, the current KMS initiatives being conducted in these companies and K-Economy readiness.

Both mailed-questionnaire survey and personal interview methods were used. The respondents were the IT or MIS Heads or Consultants of the organisations. The responses were self-collected, returned via e-mail or by attaching a self-addressed and stamped envelope to the mailed-questionnaire.

3.5 Data Analysis Techniques

Data collected from the survey was analysed using statistical software SPSS Version 9.0. Among the analysis that were carried out included frequency analysis, chi-square, t-test, reliability test, simple correlation coefficient and regression analysis (Zikmund, 1997).

Frequency was used to analyse the distribution of responses to the items in the questionnaire; namely the organisation characteristics and IT infrastructures that are currently in place. Cross tabulations were run to examine the frequency of responses as far as the IT applications and tools that these organisation currently have, do not have or intend to use in future. In addition, cross tabulation could

also be used to inspect the differences among organisations that have Internet as KMS infrastructures and the characteristics.

Chi-square (χ^2) was used to determine the significance in the frequency analysis. In particular, it is to identify statistical differences in the number of companies using, intending and not intending to use the technologies for their KMS.

The reliability of items measured used in perceptions of benefits and challenges of KMS, and the importance of KMS will be examined using reliability test with Cronbach's Alpha model suggested by Nunnally (1978).

The t-test (samples less than 30) will be used to examine difference of means between two independent samples of groups on interval-scaled variables. In particular the items in benefits, challenges, importance variables will be tested in order to determine whether these organisations are ready for the K-Economy.

Correlation coefficient will be adopted to measure association between variables; namely, importance, challenges, benefits, annual IT budget, ownership and annual turnover. While simple regression will be used to analyse the relationship between one dependent variable and one independent variable. In specific, the importance of KMS (dependent variable) will be analysed against benefits and challenges of KMS independently.

In addition, further analysis with regard to perception of respondents toward their organisation preparedness for the K-Economy will be carried out.