CHAPTER 3   RESEARCH METHODOLOGY

3.1   Research Methodologies and Design

Due to CRM being at its infancy stage in the operation of the Malaysian business, there is hardly any study done in the CRM in the automobile industry in Malaysia. This study therefore adopts the exploratory research on CRM to be conducted to provide an insight into automobile marketers' usage of CRM as well as the component systems of an effective CRM and to analyse the relationships between its contributions to customer retention and the level of adoption of information technology to support the effective CRM component system.

3.2   Hypothesis

The following proposed hypotheses, which are the predictive statements about the outcome, would be tested in the research:

Hypothesis 1:

H_{01}:   There is a significant relationship between the comprehensiveness of CRM programme and the **customer retention**

H_{a1}:   There is no relationship between the comprehensiveness of CRM programme and the **customer retention**

Hypothesis 2:

H_{02}:   There is a significant relationship between the implementation level of CRM programme and the **customer retention**

H_{a2}:   There is no relationship between the implementation level of CRM programme and the **customer retention**

3.3   Sampling Design

In this study, a "non-probability sampling" procedure called convenience sampling is used. This is the sampling procedure of obtaining the people who are most conveniently available from the following departments:

     i.   Strategic Planning Department

ii. Customer Service/CRM Department

iii. Information Technology (IT) Department

iv. Sales/Marketing Department

These departments are chosen for this survey because of the important roles they play in CRM programme at the headquarter level:

i. Strategic Planning Department, which formulates and introduces some CRM concepts and ideas to the company.

ii. Customer Service/CRM Department, which has regularity in dealing with their customers.

iii. Information Technology (IT) Department, which is the facilitator for the implementation and functionality of the CRM initiatives.

iv. Sales/Marketing Department, which is the initiator and planner for the implementation of CRM programme as part of a marketing plan.

The convenience sampling procedure is used because of the lack of time on the part of the managers of the selected automobile companies.

3.3.1 Sampling Size

The target population are the franchise holders or distributors or agents of various makes of motor vehicles operating their businesses in the automobile industry in the Klang Valley region. For the purpose of this study, the target population excludes those motor traders of commercial vehicles, which are involved mainly in bulk purchases or fleet sales.

All the 24 respondents as reflected in Appendix I were used as target population.

3.3.2 Sampling Frame

The sampling frame for this research was obtained from the Malaysian Automotive Association (MAA), which consists of a list of all the approved

members in the non-national car sector. The national car sector, which consists of Proton and Perodua, are non-MAA members. These two local franchises were added to the list to make up a total of 24 respondents.

Because of the special tariff benefits being enjoyed by the national sectors, the national car local franchise holders or distributors are therefore excluded from being MAA members The passenger car franchise holdings by country origin in the Klang Valley region as at end February 2004 are as follows:

Franchise holdings by country origin	Total number of companies involved
Malaysia	2
Japan	8
German	3
France	3
South Korea	4
Sweden	1
Italy	2
United Kingdom	1
Total:	24

3.4   Selection of Measures

3.4.1 Independent variables:

The study is carried out using the survey approach. Questionnaire will be a useful instrument in an exploratory study, as it would capture the views of a wide spectrum of respondents. A questionnaire is designed to ask the respondents to evaluate each statement in the questionnaire in about 18 minutes' time. The questionnaire is divided into three main sections as indicated below:

Section I is designed to obtain the user profile and the company particulars regarding the nature of franchise and mode of execution.

Section II relates to the effective CRM programme and is divided into six parts as follows:

Part 1 looks into the CRM programme usage and the automobile marketers' concept on CRM.

Part 2 attempts to identify the relationship between effective CRM programme and its contribution to company's profitability.

Part 3 looks at the availability of information technology used in CRM programmes to support the execution of an effective CRM programme in the automobile industry. Therefore this part looks into the comprehensiveness of the CRM programme.

Part 4 tries to identify the various factors affecting the implementation of CRM by the automobile marketers in their company, which includes both the benefits and barriers of implementing a CRM programme. This is the implementation level of the CRM in the company.

Part 5 looks into the various instruments that could be used in measuring the effectiveness of CRM programme.

3.4.2 Dependent variable

Part 6 endeavours to determine the customer retention rate (CR), which is used to measure customer turnover. It shows how large a percentage of its customer portfolio the company retains yearly. The lost relationship, which shows the churn rate, on the other hand, shows how large a percentage of its customer portfolio the company loses every year.

Over time, depending on the overall length of the relationship (retention) and the mutual benefits achieved, the lifetime value can be determined to show how much the customer would buy in his lifetime. When a company operates

with a churn rate of say, 20% or at a retention rate of 80%, it means that it replaces one customer in five every year, meaning it would completely replace all its customers over a period of 5 years. The lifetime value of the company's customers, in this case is only 5 years (Anderson; Jacobson, 2000).

As there are different churn rates over different time frames, the respondents were also probed to provide the churn rates for the short term which covers the period of 1st and 2nd year, the intermediate term which covers the period of 3rd and 4th year and long term, which covers the 5th year and above.

Section III contains questions to find out from the sample automobile companies whether they are satisfied with the current implementation of the CRM programme.

The actual survey questionnaire is attached as Appendix II.

3.5   Data Collection Procedure

In this study, 24 survey questionnaires were mailed or faxed to the marketers at the headquarters of the automobile industry in the Klang Valley region as per Appendix I. They are the CEO, Directors, Divisional Managers, General Managers, Marketing Managers, CRM Managers, Customer Service Managers and IT Managers. Some of the staff in the headquarters who are directly or indirectly involved in marketing or CRM are also asked to answer the questionnaires. This is to avoid the possibility of a bias response.

Follow-up personal interviews were conducted after ten days when completed questionnaires were collected from these companies. Being a front-end system in function, the branch offices are not playing a critical role related to CRM concepts and introduction, and are therefore not invited for this survey.

3.5.1 Pilot Test

Before a questionnaire is ready for use, it has to be pre-tested. The main purpose of the pre-test is to check whether the ideas in each question are clear to the respondents.

The attached example questionnaire was pre-tested on a small sample of 3 automobile companies in the Klang Valley region. The vehicle makes relevant to this study are Mercedes-Benz, Mazda and Peugeot. Through the pre-test, some indications of the range of responses to expect for each question were obtained. It showed that there was little ambiguity in the questions, which were subsequently eliminated.

It was also noted that the respondents took about 15 minutes to complete the questionnaire.

3.6   Data Analysis Technique

Responses from the survey were checked and coded for statistical analysis. Data collected were analysed using the Statistical Package for the Social Sciences (SPSS) computer programme.

3.6.1 Analysis of Responses
Section I:

The user profiles of respondents were developed using the frequency distribution.

Section II:

Part 1: The statements from A01 to A10 in the questionnaire are used to measure the usefulness of CRM programme to the company. The mean analysis is used for displaying the variable, which reflects the highest frequency of occurrence.

Part 2: The statements from B01 to B09 aim to identify the relationship between the CRM programmes and its contribution to profitability of the company. Ranking of the variables will be carried out to analyse the degree of importance of the respective variables as compared to others.

Part 3: Statements form C01 to C10 attempt to capture the level of comprehensiveness of an effective CRM programme in the company. This construct is named Progcom. The maximum and minimum analysis will be used to indicate the maximum and minimum values selected for each variable. The mean analysis will also be used to find out the level of adoption of the variable by an automobile company on an average basis.

Part 4: Statements from D01 to D17 aim to capture the factors affecting the implementation level of CRM programme and the construct is named as Progimp Frequency analysis will be used to show the analysis of the list of data values.

Part 5: Statements from E01 to E04 try to discover the various instruments that the automobile marketers could use to measure the effectiveness of the CRM programme. Frequency analysis is used here to display the variables.

Part 6: Statements from F01 to F03 aim to find out the customer base and the average percentages of new customer relationship built and the lost relationship recorded on a yearly basis. The lost relationship records will give us an indication on the customer retention rate.

As there are different churn rates over different time frames, the respondents were also probed to provide the churn rates for the short term which refers to 1st and 2nd year (F_{031}), the intermediate term which refers to 3rd and 4th year (F_{032}) and long term, which refers to the 5th year and above (F_{033}).

Section III attempts to discover whether the company is satisfied with their current CRM programme implemented so far.

Reliability analyses were run to test the reliability of the data for hypothesis testing. Linear regression method was used to test the relationship of Customer Retention (CR) scale in relation to Proguse, Progcom and Progimp. Further analyses using the correlation analysis were done to test the significance of the hypothesis.

3.6.2 Reliability Analysis

Reliability applies to a measure when similar results are obtained over time and across situations or is the degree to which measures are free from random error and therefore yield consistent results (Zikmund, 2000).

It is important to test the reliability of the measurement. The value to examine is generally called the coefficient of reliability, which ranges from 0 to 1, with 0 being perfectly unreliable and 1 being perfectly reliable. The guide in general for reliability measure are:

0.7 is to be used for exploratory research

0.8 is to be used for basic research

0.9 is to be used for applied research

The method that is used in this study is called Cronbach-alpha method, which computes the mean reliability coefficient estimates for all possible ways of splitting a set of items in half. Analyses were then performed on the usage of CRM programme (Proguse), the comprehensiveness of CRM programme (Progcom), and implementation level (Progimp) constructs.

3.6.3 Regression Analysis

Regression analysis uses the values of several predictor variables (IV) to estimate values on a criterion variable (DV). In this study, the DV is the customer

retention (CR) scale whereas the predictor variables are comprehensiveness of CRM programme (Progcom), implementation level of CRM programme (Progimp) and usage of CRM programme (Proguse). The relationship between DV and IV can be shown by an equation:

<u>DV</u>   <u>IV</u>

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + E$$

Where,

Y = customer retention
α = constant
X_1 = comprehensiveness of CRM programme (Progcom)
X_2 = implementation level of CRM programme (Progimp)
X_3 = usage of CRM programme (Proguse)
β = regression coefficient of X_i where i=1, 2, 3
E = error term

The overall objectives of regression analyses are:

1. To determine whether a relationship exists between DV and IV.

2. To describe the nature of the relationship, if there is, in the form of mathematical equation.

3. To assess the degree of accuracy of description or prediction achieved by the regression equation.

4. To assess the relative importance of the various prediction variable in their contribution to variation in the criterion variable.

3.6.4 ANOVA

Anova begins with the independent variable that accounts for the most variance in the dependent variable, and then one at a time, add the variables, which account for the most of the remaining variance. The stepwise regression is stopped at the point where the introduction of another variable which accounts for only a statistically insignificant portion of the unexplained variance.