CHAPTER 3
RESEARCH METHODOLOGY

3.1 RESEARCH HYPOTHESIS

In this research project, there are three main hypotheses to be tested:

(H1) There are significant differences in banking behaviour among undergraduate and post-graduate students in relation to the awareness, involvement, usage and level of satisfaction of electronic banking media.

Most researches in the past had indicated that early adopters of electronic banking were from higher education level and higher income group. Though there is a high correlation between higher education and income, but it is the purpose of this study to differentiate and determine which criterion carries more weight. The full-time undergraduate students who have higher education but have no working experience. Therefore, they are not an income earner and have yet to develop a specific buying behaviour. On the other hand, post-graduate students are also highly educated but with working experience and having their own income. Hence, they would have a peculiar buying behaviour especially in banking behaviour.

Since all respondents come from different social class, racial and cultural backgrounds, there is bound to have differences in perception on electronic banking. It is the purpose of this study to test the second hypothesis:

(H2) There are significant differences in consumer perception on electronic banking among consumers of differing gender, ethnic groups, age, marital status, education levels, field of study, income levels, occupational levels and occupational types.

It is also the purpose of this study to identify the correlation between the users of information technology and electronic banking. It is believed that IT users are
familiar with electronic devices and would have developed a trusting relation with the devices. Therefore, they would be comfortable and have less fear in using the electronic banking media. The third hypothesis to be tested is:

(H3) Those who are more inclined toward the usage of information technology tend to be the early adopters of electronic banking.

3.2 RESEARCH INSTRUMENT

A five-page close-ended questionnaire (see Appendix B) was used to enquire about the respondents’ banking behaviour and perception on the usage of electronic banking media. The questionnaire was divided in three sections. Section A tries to identify ownership of bank accounts, the level of awareness on electronic banking among the respondents, the level of involvement in searching for bank information, the frequency of usage among the services offered and the level of satisfaction of the respective electronic banking media. The next section was used to examine the perception of respondents on the benefits and weaknesses of electronic banking media. In addition, the survey also attempted to identify the respondents’ level of usage in information technology and to forecast their future usage of electronic banking media. In Section C, the respondents’ demographic profiles are tabulated for the purpose of analysing the hypotheses.

Recognising the low level of proficiency in the English language among local university students, especially the undergraduate students, the questionnaire was designed in simple communicative English so that the majority of the respondents will not have difficulty in understanding and answering the questions. The word electronic delivery channel", for example, was rephrased as “electronic banking media" to avoid any misunderstanding of the meaning. In addition, important phrases like ATM, phone banking and PC banking were standardised throughout the questionnaire to avoid confusion since these words can be interchanged with elebanking or online banking.
Similarly, the questions on banking behaviour were structured in a simple manner that requires the respondents either to choose one of the two alternatives or to indicate the general frequency of occurrence. For those questions on consumer perception an attitude rating scale such as the 5-point Likert scale and 5-point bipolar rating scale were used in the study. With the Likert scale or bipolar rating, respondents are able to indicate their attitudes by checking how strongly they agree or disagree with certain statements that range from very positive to very negative. Since individuals generally choose from five alternatives: strongly agree, agree, neutral, disagree and strongly disagree (Zigmund, 1997), a 5-point Likert scale and 5-point bipolar rating are deemed to be the most appropriate method. The usefulness of the Likert scale or bipolar rating actually lies in its ability to capture and report the psycho-graphics data of respondents.

Finally, to ensure that respondents do not fall into the trap of order bias which can distort survey results, several questions were purposely rearranged inversely to make sure that respondents do not just rate them passively in line with earlier questions. Order bias occurs when respondents answer the first few questions and then assume that the rest are more or less the same. Then they will rate the remaining questions blindly without really understand the requirements.

3.3 SAMPLING DESIGN

In this research, a convenience sampling method was used to obtain respondents within the premise of University of Malaya. The targeted respondents were undergraduate and post-graduate students from all the faculties available, except for the Medicine and Dentistry faculty because these students were not easily accessible as they were on training at University Hospital. For the rest of the faculties, this study uses a random sampling method that targets about fifteen undergraduates from each faculty but at the same time maintaining a certain balance of gender and race group. The post-graduate students came mainly from three faculties, which were the Business and Accountancy, Economics and Administration, and Education faculty.
Before the actual questionnaire was distributed, a pre-testing was done on ten respondents. As a result, several difficult or personal questions were identified and either amended or deleted from the questionnaire. Later, questions on banks' advertisement and usage of information technology were added accordingly to provide a wider scope of analysis.

3.4 DATA COLLECTION PROCEDURE

The data collection was spread over a ten-day period, commencing from the fourth week of November to the first week of December 1998. A self-administered questionnaire was personally given to respondents while they were either in class or at students' gathering places in each faculty. The answered questionnaires were collected on the spot without any delay from every respondent. To ensure strict confidentiality, the returned questionnaires from the students were unmarked and respondents could personally see their copies shuffled among other returned copies during collection.

A total of 200 questionnaires were distributed personally and some through friends in other classes. By the stipulated deadline of data collection, a total of 183 questionnaires have been received and thus providing a return rate of 91.5 percent. However, during the encoding process, about five questionnaires were found to be incomplete and had to be rejected. Finally, only a total of 178 questionnaires were considered to be valid for analysis, reflecting an actual return rate of 89 percent.

3.5 DATA ANALYSIS TECHNIQUES

In this research, the collected data was analysed using the Statistical Package for Social Sciences (SPSS) Version 7.5 for Windows. At the beginning, a simple frequency summary was used to determine the demographic profile of respondents from gender and age to occupational level. In order to test the
difference in banking behaviour between the undergraduate and post-graduate students, a cross-tabulation analysis was applied since the questions on awareness and usage of electronic banking were only required a fixed alternative answer.

In the questionnaire, the consumption frequency in electronic banking services was tested using categorical scale from “daily” to “never”. During the coding process, the “daily” and “weekly” answers were re-coded as “often” whereas the “monthly” and “seldom” were collapsed as “sometimes”. The various services that were tested include:

<table>
<thead>
<tr>
<th>Table 3.01: List of Electronic Banking Services</th>
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<tbody>
<tr>
<td>Banking Services</td>
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<tr>
<td>1. Cash withdrawal</td>
</tr>
<tr>
<td>2. Cash or cheque deposit</td>
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<tr>
<td>3. Placement of fixed deposit</td>
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<tr>
<td>4. Transfer of funds</td>
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<tr>
<td>5. Balance enquiry</td>
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<tr>
<td>6. Payment of bills</td>
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<tr>
<td>7. Payment of instalment</td>
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<tr>
<td>8. Application for share (IPO)</td>
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<tr>
<td>9. Request for cheque book</td>
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<tr>
<td>10. Request for bank statement</td>
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<tr>
<td>11. Application for banker’s cheque</td>
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<tr>
<td>12. Standing instruction</td>
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<tr>
<td>13. Interest rate enquiry</td>
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<tr>
<td>14. Foreign exchange rate enquiry</td>
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<tr>
<td>15. Overdraft facility</td>
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<tr>
<td>16. Banking information (loan etc.)</td>
</tr>
<tr>
<td>17. Buy and sell share</td>
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<td>18. Investing in unit trust</td>
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</table>

Note: X = services offered by respective electronic banking media.
For the second part of the analysis in testing for a significant relationship between consumer perception and other demographic variables, various statistical tools were employed according to the type of question and variable involved. An independent sample T-test, for example, was used to compare the means for gender differences, education levels and field of study for perceptions on the benefits of electronic banking and reasons for not using electronic banking media. For other demographic comparisons such as ethnic groups, age groups, marital status, monthly income, occupational levels and occupational types which involved more than two variables in each category, the one-way Analysis of Variance (ANOVA) was applied to compare the means. In all the analyses, a 95 percent confidence interval was used to determine the region of acceptance for hypothesis and thus, if the value for alpha, $\alpha \leq 0.05$ it is considered as a significant result.

There were two main variables to be tested on consumer perception, namely the benefits and weaknesses of electronic banking. These benefits were tested using a five-point bipolar scale from:

- Very useful to not useful at all
- Very reliable to not reliable at all
- Very secure to not secure at all
- Very private to not private at all
- Very convenient (place) to not convenient at all
- Very flexible (time) to not flexible at all
- Very efficient to not efficient at all
- Very cost effective to not cost effective at all
- Very easy to use to not easy to use
- Very personalised to not personalised at all
- Very prestigious to not prestigious at all
- Very innovative to not innovative at all

This was done by requesting respondents to rate bank's characteristics from "very important" (score 1) to "not important at all" (score 5). Later in the coding process,
the scales were re-coded in a reverse manner. For example, “very useful” was re-coded as score 5 and “not useful at all” was re-coded as score 1.

The weaknesses or reasons for not using the electronic banking media were tested using a five-point Likert scale from “very unimportant” (score 1) to “very important” (score 5). The following items were considered:

- Risk of losing PIN number
- Time consuming – too many procedures
- Lack of security – unauthorised access
- Lack of privacy – others can see or hear
- Lack of trust in unseen electronic transaction
- System breakdown
- Limited range of services
- No personal attention given
- Difficult to use the services
- High cost of owning the computer
- No time to learn how to use them
- Too embarrass to ask for help
- Don’t know how to use them
- Afraid of the Y2K problem
- I don’t need them

In the questionnaire, the positive and negative statements for the usage of information technology are arranged in an alternate manner with all odd numbers are positive statements and all even numbers are negative statements to avoid any order bias. During the coding process, these negative statements were re-coded in a reverse manner to better explain the actual situation. A five-point Likert scale from “strongly disagree” (score 1) to “strongly agree” (score 5) was used to determine their level of usage in information technology.

In addition, the reliability of scale was tested to ensure that the scales are free from error and therefore yield consistent results. A Cronbach’s Coefficient Alpha of
50 percent or more ($\alpha \geq 0.50$) is only considered as reliable. A simple test on correlation was done to understand the relationship between friendliness of IT usage and inhibition of electronic banking with positiveness of attitude towards electronic banking.

Finally, the K-means Cluster Analysis was used to classify respondents into smaller number of mutually exclusive and exhaustive groups. This analysis is important in facilitating market segmentation by identify subjects or individuals who have similar needs, lifestyles or responses to marketing strategies. With the new defined groups, we will test whether those who are more inclined toward information technology will be the likely users of electronic banking.