

## **4. RESEARCH METHODOLOGY**

### **4.1 Introduction**

The conception of a study strongly influences the way in which the research methodology is selected. This chapter describes the research design and methods used, including the sampling frame, procedures for data collection, and representativeness of the sample, the measures used in the survey instrument, including assessments of validity and reliability. In formulating the research design, the study attempted to answer the research questions outlined in Chapter 3 (3.2).

### **4.2 Research Design**

The study attempted to answer the research questions with quantitative methods, using questionnaire survey to obtain the primary information. The sampling method used was random sampling. A survey questionnaire is designed to capture information about attitudes, behaviours, and beliefs (Babbie, 2004). Questionnaire surveys were used to source primary data from a sample population on issues relating to the extent Malaysians make financial preparations and their readiness for retirement i.e. their attitudes and state of preparedness relating to the need for personal financial planning, EPF, current pension and retirement schemes in the country. Questionnaire surveys were selected for several reasons. First, respondents can complete the questionnaire at their own convenience. As the topic of personal finance is somewhat sensitive, respondents are more likely to feel at ease that there is more confidentiality in the

survey exercise than a face-to-face personal interview or a telephone survey. Second, surveys are flexible in that they allow several different issues to be captured in the same document and allow for standardized information to capture concepts (Higgins, 2009). Third, questionnaire surveys are an efficient way of collecting quantitative information from a large number of respondents. Survey questionnaires were used because the survey could easily be completed via distribution by research assistants. Statistical techniques can be used to determine validity, reliability and statistical significance. Finally, questionnaire surveys permit a large number of respondents to be sampled in a relatively short period of time for comparatively little costs compared to telephone or face-to-face interviews. In-person interviews are considered more time-consuming to conduct and more costly. Web-based are inexpensive but web surveys have a disadvantage because of the problem of sample representativeness. Individuals and families without computers or access to the web will not have the opportunity to participate.

The reason that quantitative research is typically considered to be the more “scientific” approach to doing social science lies in its predictive advantages (Worrall, 2000 as cited in Tewksbury, 2009). Quantitative methods allow researchers to be deductive in stating their research questions and hypotheses a priori from established theory, allowing researchers to test theories and examine relationships for cause and effects. The issues of reliability are important in research; reliability being the consistency of a result over time (Babbie, 2004). The use of quantitative methods is more likely to generate results that are consistent over time - reliability (Higgins, 2009).

Quantitative research is designed to test hypotheses. Factors to be considered in assessing quantitative research designs include external validity (does a proxy really approximate what it is supposed to?), the construction of the sample, the presence of confounding factors, the appropriateness of the pool from which the sample is drawn, selection effects that may arise in forming a sample, the generalizability of the findings, the falsifiability of the hypotheses to be tested, the replicability of the study. These factors center on whether or not the “test” conditions – whether experimental, a survey, or an aggregate data set – accurately mirror broader reality.

#### **4.3 Secondary Research**

The study has sourced secondary data from government statistics, EPF annual reports, Malaysia economic reports, Tenth Malaysia Plan 2011-2015; miscellaneous research reports were also used. Extensive references were made to relevant books, refereed journals and research papers, to obtain background information and literature relating to the theories of life-cycle hypothesis, savings, investments, personal financial planning, provident funds, pension schemes, population aging, economic issues relating to consumption, and issues relating to the research topic. Together, these materials and literature provided the necessary foundation to construct a conceptual framework as outlined in Figure 3.2 (Chapter 3), relating to the present study of life-cycle financial planning in Malaysia.

#### **4.4 Questionnaire Design**

The first step before conducting a questionnaire survey is the planning and designing of the relevant questions for the survey. Questions have to be phrased in a simple and easy to understand format. The questions were developed based on the literature review and the reading of various journals and articles relating to life-cycle theories, savings and consumption, financial and retirement planning (Punch, 2005). The questions were mostly developed and modified from questionnaire surveys from two different studies (Maser & Pineau, 1999; La Trobe University, 2003). The questionnaire total eight pages that take approximately 20-30 minutes to complete and consisted of mainly Likert-like and close-ended questions (see Appendix B and C for a copy of the questionnaire in English and in Bahasa Malaysia).

For the research to be accurate, within the limits of the study, the findings must be valid and reliable. Findings are only acceptable to the degree to which they are determined valid. Kelly (1999 as cited in Mohammadi, 2008) defines validity as: “the degree to which the data support the inference that are made from the measurement”; i.e. validity refers to the accuracy of a measurement, and a measurement is valid when it measures what it is supposed to measure (Mohammadi, 2008). In addition, the research findings should be reliable i.e. the degree of consistency within the measurement. Joppe (2000 as cited in Golafshani, 2003) defines reliability as: “the extent to which results are consistent over time and accurately represent the total population under study and if the results of a study can be reproduced under similar methodology, then the research instrument is considered to be reliable”.

It was important that the questionnaire survey would gather valid response and address the issue of reliability. It was imperative to ascertain whether the same response was or would be given, if the respondent had answered the questionnaire earlier or later? The instrument's ability to accurately measure variability in stimuli or responses was also significant. To reflect subtle attitude changes, instead of a dichotomous response category such as "agree or disagree", a more sensitive measure would involve the use of one with numerous items on the scale such as the following: "neither strongly agree", "mildly agree", "neither agree nor disagree", "mildly disagree" and "strongly disagree" in order to increase a scale's sensitivity. The majority of the survey questions in this study had been structured to fall within the Likert-like response categories. This approach assumed that each item had about the "same intensity" as the rest, and that the overall scores (summation of weights) were used for analysis purposes resulting in the selection of the best items. In the course of subsequent analysis, each of the items was correlated with the composite measure, while items, correlating highest with the composite measure were assumed to provide the best indicators of the variable, which will in turn be included in the index ultimately used for analyses of the variable. The study had also used the itemised rating scale offering a category of responses out of which the respondent would be able to pick the one being the most relevant to him/her for answering the question.

The questions in the questionnaire are structured and standardized. The structure is intended to reduce bias; for example, questions are structured in such a way that they do not influence the response to subsequent question. Questions are also standardized to ensure reliability, generalizability, and validity. Every respondent is presented with

the same questions and in the same order as other respondents. The questionnaires were formulated in such way as to guide data collection and analysis. The choices of answers may be a simple Yes/No, Male/Female or may involve a range of different choices. The questionnaire consisted of primarily closed-ended questions, limiting the possible answers to those identified. This can be more manageable at the analysis stage. However, closed questions may lead to bias because respondents are led by the answers supplied for each question. This can be removed by using “other” option included which allow for any answer that has not been thought of. In addition, the study would use as many “multiple choice” questions as possible, so that respondents would have a choice to pick only those, which were considered most appropriate.

For this study, the questionnaire was printed in two languages for distribution to maximise response probability, i.e. in English (see Appendix B) and Bahasa Malaysia (see Appendix C). The questionnaire was first prepared in English and then translated into Bahasa Malaysia. The questionnaire was divided into seven parts:

- Section A      Demographics.
- Section B      Satisfaction with life.
- Section C      Income sources.
- Section D      Expenditures (consumption).
- Section E      Financial Planning.
- Section F      Savings and Investments.
- Section G      Retirement Expectations.

In designing the questionnaire, first, the study focus on the research objectives outlined in Chapter1 (1.4), and consider how the data is to be analyzed before collecting it. This

is to ensure that the questions are in a format which is suitable for analysis by the statistical package chosen. The three main elements to consider are: (1) determine the questions to be asked; (2) select the appropriate question type and wording for each question; and (3) the overall layout and question sequence. The questions asked relate directly back to the research objectives. For example, in seeking answers relating to life-cycle financial planning, answers pertaining to the demographics of the sample population are particularly relevant. Therefore, questions included are:

- (1) What is your age?
- (2) Are you male or female?
- (3) What is your ethnicity?
- (4) What is your present marital status?
- (5) What is the education level achieved?

Ranked responses are also useful to indicate the strength of respondent's preferences.

For example, please rank the following of what worries you most about retirement?

(indicate 1 – least worried to 5 = being the most worried):

- (1) Poor health;
- (2) Financial problems;
- (3) Boredom;
- (4) Alienation; and
- (5) Neglected.

Rated responses like the Likert scale are also a good complement to ranked responses.

The respondent considers each option individually and can give a more accurate response. For example, compared to your parents' generation, do you expect to be

worse off or better off in the following areas during your retirement? (Tick: “very bad”; “little worse”; “uncertain”; “little better”; and “much better”):

- (1) Health Care;
- (2) Being Independent;
- (3) Having Enough Money;
- (4) Personal Health; and
- (5) Ability to stay involved.

A variety of question formats were used so that the respondents don’t get bored or mechanically tick the same boxes for all questions. Whichever format is chosen, the wording of the questions had to be clear, unambiguous, and jargon free, being specific rather than vague. It is important to avoid asking too many questions as this will put respondents off and end up with a lot of (probably irrelevant) data to analyse.

Among the advantages of using questionnaires are:

- (1) data gathered is standardised and therefore, easy to analyze with software packages such as Statistical Package for Social Scientists (SPSS);
- (2) data can be gathered more quickly from a large number of respondents;
- (3) questionnaires are less intrusive and reduce bias; respondents can answer anonymously which may produce more honest and reliable answers;
- (4) questionnaires are cost effective when compared to face-to-face interviews, especially for large sample sizes, and written questionnaires become even more cost effective as the number of research questions increases.

This has to be measured against the following disadvantages of using questionnaires:

- (1) responses may be inaccurate, especially through mis-interpretation of questions in self-completing questionnaires;
- (2) a reasonable sample size is needed before the responses can be used to represent the population as a whole; and
- (3) although respondents chosen to participate in surveys are randomly sampled, errors due to nonresponse may exist; response rates can be poor, people may lack the motivation to complete or return the questionnaire. Consequently, some sort of incentive may have to be included.

The link between each section of the Questionnaire to the Research Questions is summarised in Table 4.1 below:

**Table 4.1: Linkage of Questionnaire Section to Research Questions**

<b>Section</b>	<b>Research Questions</b>
Section A: Demographics	RQ 1, 2, 3, 4, 5, 6, 7
Section B: Satisfaction with life.	RQ 1, 4
Section C: Income sources	RQ 4, 5
Section D: Expenditures (Consumption)	RQ 6, 7
Section E: Financial Planning	RQ 1, 2, 3, 4, 5
Section F: Savings and Investments	RQ 2, 4
Section G: Retirement Expectations	RQ 1, 2, 3, 4, 6, 7

#### **4.5 Data Collection**

Well-established data collection protocols were followed (Babbie, 2004). All potential respondents were sent an accompanying letter explaining the nature and purpose of the study and why it is important, so that the respondents can see that it is a worthwhile exercise, together with a copy of the questionnaire, and a return envelope with prepaid postage (see Appendix A for a copy of the letter). The accompanying letter includes guarantees of confidentiality to reassure respondents. Questionnaires were mainly distributed by research assistants. These research assistants were engaged to hand out questionnaires to target sample population and to collect them back after completion. A return rate of 55.2% was achieved. To prevent any likely error to occur in the designing of the questionnaire, proper steps were taken to ensure the credibility of the following: (1) the question must be read; (2) the question must be understood; (3) the respondent must create a response; and (4) the response must be translatable into the categories or values present for the question.

In using questionnaires, the honesty and accuracy of participants' responses has to be relied on. Although this limits the usefulness of questionnaires for delving into the tacit beliefs and deeply held values, there are still many occasions when surveying can be useful. The questions are examined (quite vigorously) for bias, sequence, clarity, and face-validity. Surveys may result in an invasion of privacy or produce questionable effects in the respondents or the community. Information of a personal or highly sensitive nature may be difficult to obtain from respondents. Examples of sensitive topics include money, family life, political and religious beliefs, and

involvement in accidents or crimes. The respondents may be embarrassed to answer such questions because accurate responses may threaten their prestige of self-image. To increase the likelihood of obtaining sensitive information, such topics were placed at the end of the questionnaire. By then, rapport has been created and legitimacy of the project established, making respondents more willing to give information. Where appropriate, sensitive information was obtained in the form of response categories rather than asking for specific figures. They may be willing to check the appropriate income category.

#### **4.6 Sample**

For this study, the survey was designed as random sampling, targeting the different major ethnic groups in the country, Malay, Chinese, and Indian. This is a sampling method of gathering representative data from the population. A questionnaire survey was conducted from a sample size of about 990 Malaysians residing in the Klang Valley area. Klang Valley in Malaysia is an area comprising of the federal capital city of Kuala Lumpur and its suburbs, and adjoining cities and towns in the adjacent state of Selangor. Klang Valley is diverse in terms of economic, occupation, and personal characteristics. Financial planning, particularly life-cycle is connected with urban economics. This study helps policy makers to address the retirement income shortfall in urban areas. Rural areas basically can sustain their daily needs more easily as many of them grow their own food on their family land. It was also selected because people in this area were expected to be inclined to participate in a study conducted by a local university. This metropolitan area is the heartland of Malaysia's industry and

commerce and was selected because people in this area represent the demographics of the country; Malaysians coming from all over the country for their tertiary education and seeking employment opportunities and career advancement, and were expected to be more inclined to participate in a research study relating to financial planning for retirement. The public in the US tend to be more educated than in Malaysia; so collecting samples from the rural areas is more difficult. The population in the Klang Valley had expanded from 4.7 million in the last population census in 2000 to an estimated 8.0 million in 2010, about 29% of the country's total population (Department of Statistics, Malaysia). By targeting the different major ethnic groups, Malay, Chinese and Indians, it was anticipated that the study design will result in a diverse sample and in a large enough representative sample to test the conceptual model.

The sample population are adult Malaysian individuals above age 26 years old living and working in the Klang Valley. Those over 26 years old are targeted as there is a higher chance that this age group has started thinking and preparing for their retirement compared to a younger age group. The sampling frame refers to the respondents from age 26 upwards and designated into five Age Cohorts i.e. age 26-35, 36-45, 46-55, 56-65, and age above 65 years. Invariably, the target population had most likely included persons who were inaccessible or unidentifiable in advance, with the result that compromises were sometimes required to be made in developing the sampling frame (Diamond, 1986). Notwithstanding these weaknesses, the questionnaire survey had only involved a sample population, not the entire Malaysian

population residing and working in the Klang Valley, and conducted on the basis of the following selection criteria:

- (1) Coverage of Malaysian households residing in the Klang Valley;
- (2) The head of the households (or the spouse/partner) would be responsible for answering the household questionnaire; and
- (3) All working Malaysian adults age 26 years and above would be included in the sampling frame.

Accordingly, questionnaires were distributed to Malaysian individuals by research assistants at numerous locations such as shopping complexes and other “heavy” traffic areas. At the shopping mall, all kinds of people congregate there as it is the culture of Malaysians to frequent and visit such large shopping malls. This multi-pronged approach method had significantly increased the response rate.

In order to have confidence that the survey results are representative, it is crucial that a large enough number of randomly-selected respondents are selected. According to Creative Research Systems (2003), a random sample of at least 363 people was as valid as it is “equally useful in examining the opinions of a state of 15,000,000 as it would a city of 100,000”, with the margin of error of  $\pm 5\%$ , provided that the sample was truly random. Drawing on the previous research findings, this study used a sample of Malaysians residing in the Klang Valley as representative of the Malaysian population.

It is important to note that design differences still influence response rates and should be considered when interpreting rates based on initial contact (e.g., length of field

period and survey subject). The missing by design items confound the choice for measuring item “missingness” because they are handled by a logical assignment of values just like missing items can be. Item non-response reflects very different measures each having a unique set of assumptions and definitions. The challenge is to establish common definitions and uses across surveys so that the same concepts are applied and the resulting measure serves as an appropriate data quality indicator. A prerequisite for the statistical treatment of missing data is that more is known on how and why the missing data occur. For instance, a missing value that originates from the purely accidental skipping of a question differs from a missing value that originates from the reluctance of a respondent to reveal sensitive information. Reduction of item non-response will lead to less imputation in a data set, to more data to investigate patterns of item non-response and select the best treatment, and finally do more data to base a correct imputation on.

#### **4.7 Representativeness of Sample**

The study chooses probability sampling procedures because they satisfactorily meet the sampling objectives and there are technical advantages of probability sampling over nonprobability sampling (Cooper and Schindler, 2003). A random sample will give a true cross section of the population. The total population may not be available for study in certain cases. If a sample has the same distribution on these characteristics, then it is likely to be representative of the population regarding other variables which we have no control. For example, as an exploratory research on life-cycle financial planning for the post-retirement period, the sampling objective is focused on certain

age cohorts i.e. Malaysian individuals age 26 years and above, working and residing within the Klang Valley area.

Random sampling was chosen as probability samples provide better estimates of precision (Cooper and Schindler, 2003). Sample characteristics are important to examine because they contribute to external validity, or the degree to which findings can be generalized to the population from which the sample was taken (Berk, 1983; Henry, 1998). Respondent characteristics are compared to those of the Klang Valley population. A higher proportion of Chinese in the survey responded, while a lower proportion of Malay and Indians responded. While there is a wide range of education levels, the sample contains more well-educated individuals than in the population. The higher levels of education correspond to a higher proportion of respondents in the Klang Valley being in the professional and managerial sector, with lower proportions in the service sector and the production, transportation, and material moving sector. Consistent with these biases, the sample's median income is slightly higher than the population from which the sample was drawn. Findings will be interpreted with these biases in mind.

#### **4.8 Pilot Study**

For the purpose of eliciting feedback on clarity and the communication of instructions and survey instrument items to respondents, a pre-test of the initial questionnaires was carried out and all constructive comments and suggestions from the feedback were incorporated into the final questionnaire in order to improve its format, content and

quality to facilitate easier understanding and comprehension by them. A pilot study was conducted as a trial run of the questionnaire designed to spot any flaws which can be corrected before going to the expense of implementing the main survey. The following are some of the questions included in the survey questionnaire: (1) age grouping of respondents; (2) ethnicity; (3) level of education; (4) household size; (5) income level; (6) consumption expenditure; (7) state of financial planning; (8) sources of expected retirement income; (9) savings and asset allocation; and (10) expected retirement age.

The pilot included the questionnaire completion, analysis and feedback from respondents. Personal interviews were conducted in the pilot for data collection. Questions that were complex and vague were identified and studied. Feedback was received from 61 interviewees. This feedback was used to gauge the extent of redesigning the questionnaire to gather data, test the research hypotheses, and validate the scientific approach and methodology in the main survey.

The pilot study is used as a feasibility study in preparation for the main study and for the pre-testing or trying out of a particular research instrument (van Teijlingen and Hundley, 2001). A pilot study precedes the main research study and form an important component for the research design (Forgasz and Kaur, 1997). Wiersma (1991 as cited in Forgasz and Kaur, 1997) considered a pilot study as a small-scale study of the major study, conducted for the purpose of gaining additional information by which the main study can be improved, for example, an exploratory use of the measurement instrument with a small group for the purpose of refining the instrument. Henk (1987

as cited in Forgasz and Kaur, 1997) noted that the research methodology can be enhanced considerably by conducting pilot studies.

#### **4.9 Data Coding**

Data extracted from useable questionnaires were coded into a SPSS for Windows data sheet, which had a fixed column format. The first column was for the order in which the returned questionnaires were received. From the second column onwards, actual data were entered according to the questionnaire's question numbers. All the missing values were coded as 99 in the SPSS data sheet.

#### **4.10 Dummy Variables**

For regression analysis, several demographic variables need to be recoded as dummy variables. The coding was accomplished by assigning "1" if the respondent was a member of a group and "0" for non-membership. The questionnaire has included five categories of marital status: married, single, widowed, separated/divorced, and co-habitat. Marital status has been combined into two groups: single and non-single. Because the majority of the respondents were single, single was coded as "1". Respondents that were married or fall under all other categories were assigned "0" (DMarr1). Education level has also been combined into two groups: tertiary level and non-tertiary level. In view of the majority of the respondents being at the tertiary level, tertiary level was coded as "1". In the event of the respondents having secondary, primary or no education, they were assigned "0" (DEduc).

Similarly, employment type has also been combined into two groups: private sector and non-private sector. As the majority of the respondents were in the private sector, private sector was coded as “1”. If, on the other hand, the respondents were public sector employees, self-employed and others, they were assigned “0” (DEmp 1). To check whether the public sector was a significant variable, employment type has been further combined into two groups: public sector and non-public sector, with the public sector being coded as “1” and the other sector as “0” (DEmp2). Age group categories have been combined into two groups for each dummy variable resulting in five dummy variables, age groups 26-35, 36-45, 46-55, 56-65, and over 65.

#### **4.11 Data Transformation**

Some of the questionnaire items were computed to create indexes or scales. Those items related to the main areas of research: current financial resources, consumption, financial planning, savings, risks management, and confidence in the economy, all of which were discussed below and further refined into sub-scales after various tests have been conducted.

#### **4.12 Measurement of Variables**

The main variables are measured in this section, namely: age cohorts, parental retirement planning, demographics, and current financial resources as independent variables and personal orientations to financial planning as dependent variable. The eight-page survey instrument included questions to measure all components in Figure

3.2 (Chapter 3). Multiple indicators of constructs were included wherever possible. Priority was given to constructs that were of central interest and that were not likely to be as reliable with one or two items (for example, age versus orientation toward financial planning). A pilot survey was conducted to assess the suitability of the questionnaire designed. The pilot study was conducted with a convenience sampling of 100 respondents, with diverse personal characteristics and work backgrounds, using the “snowballing” technique with 61 usable questionnaires returned. Personal interviews were conducted after completing the survey to understand how the respondents understood and interpreted the various questions, to learn whether they had difficulty with any question, items, and to receive suggestions to improve the quality and understanding of the survey questionnaire (Sudman, Bradburn and Schwarz, 1996). Questions that were found to be complex and vague were identified and redesigned more precisely for the main survey. The pilot study proved invaluable in improving the questionnaire for the final survey that more accurately measured constructs and that are more user-friendly for respondents.

#### **4.13 Establishing Validity and Reliability of Measures**

Before examining the study hypotheses, the reliability and validity of measures were assessed. Measures, consisting of multiple indicators whose psychometric properties have been established, were selected when possible because single items are generally less reliable than composite scales (Kercher, 2000). To establish construct validity (Cronbach and Meehl, 1955), these measures were first examined using exploratory factor analysis (EFA) and then with confirmatory factory analysis (CFA). Factor

analysis is a data reduction technique used to determine the number and nature of factors (i.e. latent constructs). Factor analysis identifies clusters of items that are highly correlated, with each cluster thought to represent a distinct construct. Each set of items hypothesised to form a distinct scale were tested first separately with exploratory factor analysis. After these preliminary examinations of factor structures, items from all composite scales were examined with EFA together to test the distinctiveness of the factors from other constructs. Only those scales believed to be reflector indicators were examined with EFA. EFA assumes that items forming a factor are caused by a common force, so the items are thus the outcome of the underlying latent constructs (that is reflector or effect indicators). In some cases, items drive or cause an underlying factor rather than being caused by an underlying construct; these are called cause or producer indicators (Bollen and Lonnex, 1991). For cause indicators, items may not even be much correlated, so EFA is not appropriate. In this, a mix of cause and effect indicators exists.

For each EFA, multiple factor solutions were tested, with the cleanest, most theoretically and logically based factor solution chosen. In addition to logic, theory, and prior empirical evidence, the scree plot and the residual correlation matrix were used to help identify good fitting factor solutions. The scree plot indicates the approximate number of factors underlying a set of indicators. The residual correlation matrix is used to help determine the correct number of factors and the items to be retained for each factor. This is a less often used approach that McDonald (1999) has recently advocated as being helpful in determining the fit of factor solutions. The residual correlations reflect the difference between the reproduced/implied (the

correlations when the factor loadings for pairs of indicators are multiplied) and the observed correlations.

Items with primary factor loadings greater than 0.4 with no substantial secondary loadings (less than 0.3) on other factors were judged as sufficient (Fabrigar *et al.*, 1999). Once indicators of constructs were identified, examination of how the scales correlated with other variables was undertaken to establish that the latent constructs are indeed unique (“external correlate tests”) (Carmines and Zeller, 1979). Once EFA and external correlate tests were completed, confirmatory factor analysis (CFA) was conducted. CFA is part of structural equation modelling packages, so both the measurement and structural models can be simultaneously tested, and measurement error is corrected. Reliability of scales was examined with Cronbach’s alpha. Cronbach alpha coefficient for reliability analysis (internal consistency) of above 0.6 is used (Nunnally, 1978). EFA and CFA results are summarised below under descriptions of particular measures. When creating composite scales resulting from the factor analysis solutions, the mean score was typically taken.

#### **4.14 Life-Cycle Variables**

##### **4.14.1 Cohort/Life Stage**

The study identifies five age cohorts as described in Chapter 3 i.e. Cohort 1 (ages 26-35), Cohort 2 (ages 36-45), Cohort 3 (ages 46-55), Cohort 4 (ages 56-65), and Cohort 5 (ages 65+). Five dummy variables were created, from Cohort 1 to Cohort 5 as the reference category in multivariate analyses, depending on the nature of the analysis.

#### **4.14.2 Work & Family**

Current employment status was ascertained using the following three categories: working (full-time), working (part-time) or not employed. Respondents were asked to describe the type of occupation; whether they are self-employed, professional or non-professional, junior or temporary staff, non-executive or executive/management category. Respondents were also asked whether they have any health condition which may limit their ability to work. Similarly, respondents were asked to state whether their spouses are presently employed: full-time, part-time, or not employed; the type of spouse's employer: government, private sector, non-profit institution or self-employed.

#### **4.14.3 Social Location**

Gender, race/ethnicity, and education level were ascertained. Respondents were requested to indicate their gender – male/female; and race/ethnicity: Malay, Chinese, Indian, and Others. This study will focus on the three major ethnic groups in the country i.e. Malay, Chinese, and Indian. Respondents were asked on their education level attained: primary, secondary, and tertiary.

#### **4.14.4 Household Composition**

The marital status of respondents and the number of children they have (if any) were asked. Marital status was classified as: married, single, widowed, separated/divorced,

or co-habitat. Household composition gives an indication of the level of responsibility and financial commitments that the respondent or spouse may need to undertake.

#### **4.14.5 Parental Retirement Planning**

The extent parents planned for their retirement financial needs was measured on a scale ranging from (1) “very poor”; (2) “poor”; (3) “neutral”; (4) “good”; to (5) “very good.” Respondents were asked how financially well-off they think their parents are and whether their parents need not depend on them for financial support from a scale ranging from (1) “very poor” to (5) “very good”.

#### **4.14.6 Confidence in the Economy**

Respondents were asked, “How confident are you with the present economy?” which was measured on a scale ranging from (1) “not confident at all”; (2) “little confident”; (3) “neutral”; (4) “confident”; to (5) “very confident”. The other two questions were “At what rate do you expect the economy to grow on an average over the next 10 years?” and “At what rate do you expect the inflation rate to grow on an average over the next 10 years?” Exploratory and confirmatory factor analyses indicate that these three items tap an underlying attitude about the current economic conditions.

#### **4.14.7 Current Financial Resources**

Respondents indicated their “gross salary for the current year” and their “estimated total gross income from all sources for the current year.” Five response options were provided, ranging from (1) “less than RM24,000”; (2) RM25,000 to RM49,000; (3) RM50,000 to RM74,000; (4) RM75,000 to RM99,000; to (5) “more than RM100,000.” The same questions were posed for their spouse’s income. Respondents were asked the percentage of their “total income from all sources that they estimate to save or invest” and whether they are eligible for government pension or contribute to the employees provident fund (for employees in the private sector). Respondents were asked about household debts (if any): credit cards; bank loans; and mortgage loans with a dichotomous “Yes or No”. Another question asked the respondents on what percentages of their household income go towards repaying their debts under five categories: (1) “less than 20%”; (2) “21-40%”; (3) “41-60%”; (4) “61-80%”; and (5) “81-100%”. In the case of mortgage loans, respondents were asked the remaining tenure and balance of their loans.

#### **4.15 Outcomes: Retirement Orientations, Expectations, and Plans**

##### **4.15.1 Personal Orientations to Financial Planning**

The personal orientation outcomes include: confidence in the social security and pension systems, attitude toward retirement, and future orientation.

#### **4.15.2 Confidence in Social Security and Pensions**

Confidence in social security and pension system was measured through four questions. Respondents indicated what percentages they expect their EPF contributions or the government pension to provide for their retirement income: from “less than 50%” to “more than 50%”. Another two questions asked concern the respondent’s and his spouse’s expected monthly EPF withdrawal or government pension benefit at retirement. Response categories range from (1) “less than RM1,000”; (2) “RM1,001-2,000”; (3) “RM2,001-3,000”; (4) “RM3,001-4,000”; and (5) “more than RM4,000”. Respondents were also asked whether “uncertainty over the future of the EPF and government pension system likely influence their expected retirement age”. Response categories range from (1) “yes, will delay”; (2) “uncertain”; (3) “No, even though expect level to be lower”; (4) “no, even though structure remains unchanged”; and (5) “no, do not need it”.

#### **4.15.3 Attitudes toward Retirement**

Attitudes toward retirement were measured by four questions. Respondents indicated whether they “ever think about retirement at all in the last five years with a simple dichotomous response: “Yes” or “No”. The second question on what worries them most about retirement concerning the following factors i.e. “poor health”, “financial problems”, “boredom”, “alienation”, and “neglected” was measured on a five-point scale from (1) “least worried” to (5) “most worried”. Respondents were asked to indicate that compared to their parents’ generation, whether they expected to be worse

off or better off in the following areas during their retirement: “healthcare”, “being independent”, “having enough money”, “personal health” and “ability to stay involved”, measured on a five-point scale from (1) “very bad”; (2) “little worse”; (3) “uncertain”; (4) “little better”; and (5) “much better”. Respondents were asked to indicate from a range of activities what they think they will be spending on after retirement: reading, concerts/theatres/movies, volunteer work, sports/exercise, travel, spectator sports, part-time employment, continuing education, and others.

#### **4.15.4 Future Orientations**

Respondents were asked to rank on a five-point scale from “1 = least important” to “5 = most important” on a range of factors that are important in your retirement decision: (1) health status; (2) dissatisfaction with job/superiors; (3) qualify for retirement benefits; (4) financial ability to retire; (5) more leisure time/time for family; and (6) pursue other employment activity. Respondents also indicated whether they expect their retirement income to be adequate to meet their family’s current standard of living during retirement on a five-point scale ranging from: (1) “very inadequate”; (2) “inadequate”; (3) “neutral”; (4) “adequate” to (5) “very adequate”.

#### **4.15.5 Expected Retirement Age**

Respondents indicated the expected age they plan to retire: (1) less than 56 years old; 56-60; 61-65; 66-70; and more than 70 years. Respondents were asked whether

uncertainty over the future of the EPF and government pension system will likely influence their expected retirement age.

#### **4.16 Financial Planning**

##### **4.16.1 Preparatory Activities**

The perceived preparedness for retirement is not presented in Figure 3.2 (Chapter 3) because the main focus of this study is examining the extent Malaysians make financial preparations for their retirement and the predictors of retirement plans. However, questions measuring financial preparedness were included in the survey questionnaire because of the following important research questions: (1) “How much should Malaysians save for retirement over the course of their working career?” and (2) “Do Malaysian retirees have enough income for retirement without relying on their children or the government for support?”

Questions on the following retirement planning actions are used to assess the extent respondents engage in retirement planning actions: (1) “figured out how much money they would need in retirement to be able to maintain the standard of living they want”; (2) “prepared an estimate of likely retirement income and expenses”; (3) “established a program to save for retirement (other than EPF and government pension)”; (4) “looked into healthcare coverage they will have during retirement”; (5) “decide where to live in retirement”; (6) “purchased long-term insurance”; and (7) “have a formal financial plan prepared by a professional financial planner”.

Respondents indicated whether they generally make some kind of plan before they spend their money based on a simple dichotomous: “yes or no”; the time period any such plan cover: “few days”, “few weeks”, “few months”, “one year”, or “more than one year”. To measure overall perceived adequacy of retirement income, respondents indicated whether they expect their EPF contributions or government pension to provide more or less than 50 percent of their retirement income: “less than 50 percent” or “more than 50 percent”. Respondents were asked to mark out their major sources of expected retirement income: government pension, EPF, help from family members, private savings, private pension, rental income, dividends from shares, and interest income.

#### **4.16.2 Plan Initiation**

Respondents were asked on a range of financial planning activities and whether they have started making any financial plans for retirement ranging from a five-point scale ranging from (1) “not planning to do”, (2) “not certain”, (3) “planning to do in few years time”, (4) “planning to do very soon” and (5) “already done”.

#### **4.16.3 Asset Accumulation**

Respondents were asked five questions. One is to estimate what they expect the total value of all their personal savings and investments to be when they retire ranging from: (1) “less than RM200,000”; (2) “RM201,000-RM400,000”; (3) “401,000-RM600,000”; (4) “RM601,000-RM800,000”; and (5) “more than RM800,000”.

Second, to give an approximate distribution of their savings and investments in percentages into: (1) property; (2) shares; (3) unit trusts; (4) savings, fixed deposits, cash; (5) unlisted company shares/business; and (6) others.

Third, respondents were asked to indicate the estimated value of their spouse's personal savings and investments ranging from (1) "less than RM200,000" to (5) "more than RM800,000". Four, respondents were asked to identify among eight possible sources of their expected retirement income, namely: (1) government pension; (2) EPF; (3) help from family sources; (4) private savings; (5) private pension; (6) rental income; (7) dividend income; and (8) interest income. Finally, respondents were asked to indicate whether they expect their EPF withdrawal or government pension (if any) would provide more or less than 50 percent of their retirement income.

#### **4.17 Scale Development from Sample**

The main thrust of the research questions was the life-cycle financial planning of Malaysians and how they make financial preparations for their retirement during the life span of the individuals. Within this context, the issue of financial well-being during the post-retirement period was the dependent variable for the formulation of some of the hypotheses as the fundamental basis for the study. In this respect, efforts were principally focused on the construction of various constructs applicable for use in the study. Factor analysis has helped determine the number of latent constructs underlying a set of items (variables). This variable reduction technique has identified

the number of latent constructs and the underlying factor structure of a set of variables as can be seen from the constructs or scale mentioned in the subsequent sub-sections.

#### **4.17.1 Financial Planning Index**

In constructing the Financial Planning Index (FPI), respondents were required to answer a number of questions (Section E, Appendix B) and rank 5 of them on a five-point scale ranging from – “Not planning to do = 1” to “Already done = 5”. For purposes of consistency, the results of the five-point scale were checked for internal consistency using the Cronbach’s alpha coefficient. Cronbach’s Alpha was the most popular measurement to test the internal consistency of instrument’s reliability (Peterson, 1996). The FPI was found to have a Cronbach Alpha of 0.848 indicating its high reliability. Applying the Factor Analysis Test to the FPI using Kaiser-Meyer-Olkin Measure of Sampling Adequacy or the rotated component matrix (KMO – 0.854), it was found that there were two components which fitted well separately as shown in Table 4.2. This had given rise to the following two scales (which had in turn further led to the testing of two sub-hypothesis as discussed later) (questionnaire items used are quoted in parenthesis):

- (a) Financial Planning Self Index (Q.E1 to E6) (Coded as “FinPISelfIndex”);  
and
- (b) Financial Planning Professional Index (Q.E7) (Coded as  
“FinPIProfIndex”).

**Table 4.2:**  
**Factor Analysis – Financial Planning**

Kaiser-Meyer-Olkin Measure – Fin Planning		.854
Bartlett's Test of Sphericity	Approx. Chi-Square	1306.389
	Df	28
	Sig.	.000
Rotated Component Matrix		
	1	2
E1	.821	
E2	.855	
E3	.775	
E4	.798	
E5	.710	
E6	.679	
E7	.523	
E9		.837

#### 4.17.2 Financial Resources Scale

The study had also used the Financial Resources Scale consisting of 12 questionnaire items (Section F, Appendix B) such as the following questions: (a) “What do you expect your personal savings and investments to be when you retire?”; (b) “How are your savings and investments distributed?”; (c) “What do you expect your spouse’s personal savings and investments to be when you retire?”; (d) “What is your monthly EPF or other pension withdrawals to be at retirement?” and others. These items were used to measure the respondent’s financial resources from their regular income as well as income from other sources. The Cronbach Alpha of 0.879 shows high reliability. Applying the Factor Analysis Test using the rotated component matrix (KMO – 0.809) as stated earlier, the study had found two components or scales which had fitted well separately as displayed below in Table 4.3. The two scales which would subsequently be used to test two sub-hypotheses as explained in the subsequent paragraphs are (questionnaire items used are quoted in parenthesis):

- (a) Saving Portfolio Index (Q.F2(i) to F2(vi)) (Coded as “SavPortIndex”)
- (b) Saving Valuation Index (Q.F1, F3, F6) (Coded as “SavValIndex”)

**Table 4.3:**  
**Factor Analysis – Financial Resources**

Kaiser-Meyer-Olkin Measure – Fin Resources			.809
Bartlett’s Test of Sphericity	Approx. Chi-Square		681.664
	Df		55
	Sig.		.000

	Rotated Component Matrix	
	1	2
F2ii	.807	
F2iii	.743	
F2vi	.662	
F2iv	.762	
F2v	.701	
F2i	.639	
F4		.803
F6		.730
F3		.771
F5		.669
F1		.700

#### 4.17.3 Consumption Scale

The study had used the Consumption Scale (briefly referred to as the ‘CS’ construct) to deal with the issue of different levels of consumption from the respondent’s perspective. For purposes of measuring the different levels of consumption by different age cohorts at different times in their life, the CS was devised and found appropriate. The CS construct would be used to cover expenditures for 13 items (Section D, Appendix B) of various categories of value such as: (a) Accommodation, (b) Car Instalments, (c) Education Fund, (d) Life Assurance, (e) Food & Drinks, (f) Utilities, (g) Telephone, (h) Personal Accident Insurance, (i) Gifts, (j) Medical, (k)

Entertainment, and (l) Holidays. In analysing the data on the issue of consumption at various levels relative to their confidence in the economy, the Cronbach Alpha had shown 0.884 indicating fairly high reliability. Applying the rotated component matrix (KMO - 0.852), the results had also revealed three different components referred to as scales which had fitted well separately. The three scales (extracted from Table 4.4 below), which would be discussed later in this section, are tabulated below (questionnaire items used are quoted in parenthesis):-

- (a) Consumption Low Value Index (Q.D3(v) to (xiii)) (Coded as “ConsLowIndex”);
- (b) Consumption Medium Value Index (Q.D3(v), (vi), (xi) to (xiii)) (Coded as “ConsMedIndex”); and
- (c) Consumption High Value Index (Q.D3(i) to (iv)) (Coded as “ConsHighIndex”).

**Table 4.4:**  
**Factor Analysis - Consumption**

KMO – Consumption			.852
Bartlett’s Test of Sphericity	Approx. Chi-Sq.	2562.685	
	df	78	
	Sig.	.000	
	Rotated Component Matrix		
	1	2	3
D3i	.668		
D3ii	.758		
D3iii	.782		
D3iv	.677		
D3v	.546		
D3vi	.544		
D3vii		.885	
D3viii		.900	
D3ix		.762	
D3x		.597	
Dxi			.679
Dxii			.862
D3xiii			.842

#### **4.17.4 Income Scale**

The study had used the Income Scale consisting of five questionnaire items (Section C, Appendix B) such as the following: (a) Gross annual salary; (b) Income from all sources; (c) Spouse gross annual salary; (d) How much is saved; and others. These statements were used to measure the respondent's income sources from their regular income as well as income from other sources. The Cronbach Alpha has shown 0.693 indicating high reliability. Applying the Factor Analysis Test using the rotated component matrix (KMO – 0.703) as stated earlier, the study had found that the scale had fitted well. Hence, no variable was discarded.

#### **4.18 Summary**

This chapter has described the procedures used for research design, secondary research, questionnaire design, sample selection and data collection. It also detailed the scale development from the survey items used to measure each financial planning orientation, financial resources, consumption, and income. In the following Chapter 5, the survey results are analysed and the research findings summarised, including a description of the sample population and the tests of the conceptual model outlined in Figure 3.2 (Chapter 3).