

3.4 Pilot Survey

Preliminary investigation was conducted to test the research proposition. A pilot study (refer to Appendix 1) often provides ideas, approaches and clues that may have been overlooked before conducting the main survey. These ideas and clues increases the chances of getting clearer findings as well as eliminate questions that are likely to mislead in the main research project (Collins, 2010; Gray, 2009).

The questionnaire was pre-tested on 20 persons comprising of residents in Bandar Baru Tun Razak. Bandar Baru tun Razak was chosen as this is where the core housing was first introduced. Core housing is one of the methods under typologies of self help housing. It was conducted in a community hall whereby a briefing was done earlier to explain on the objectives of the research for about 15 minutes. The survey was conducted by means of distributing it in the hall and allowed them to read through for 10 minutes. After that, the researcher went through the questionnaire with them all one by one, clarifying doubts and ensure that the questions are properly understood by repeating or rephrasing the questions when needed. Respondents were reminded of the objectives of the questionnaire and to evaluate them based on the Likert Scale.

After the pilot study was done, it is found that a few aspects in the format and some of the questions are too difficult for respondents to understand let alone to answer them. The time taken to answer the questionnaire was average 50 minutes. Taking into consideration of their education background, some of the terminologies and the structure of the questions, such as questions 30-35 needed to be simplified. The format of the questionnaire was confusing as there were no specific instructions were given. Moreover, the mix of 5-point Likert scale alternately placed with semi-structured

questions lead to confusions among the participants. Most of the feedback would mark at scale 3 leaving researcher in a perplexed situation. Therefore the usage of 4-point likert scale was an acceptable method in getting the actual answer from the respondents as it would make them decide (Gray, 2009). The length of the questionnaire is too long and compartmentalised making the respondents lost interest and at the end, most of them would leave it blanks. Total duration of conducting pilot survey was within 3 months that included analysing and making amendments on the questionnaire.

3.5 Population And Sampling

The sampling in **Phase One** was done using a non-probabilistic purposive sampling. The justification of choosing the non-probability purposive sampling was to assist the researcher to investigate the targeted low-income household on their perception and awareness on self build housing. This approach succeeded in achieving a true cross-section of certain population as the research is more concerned to discover useful patterns of information about targeted groups of the population. Baker (1999) stressed the limitation of using the non-probability sampling is that it cannot be generalised to a broader population. On the other hand, it is a notable method to investigate a certain experimental group of interest.

The research of housing for the poor has led to the finding of a division under the Ministry of Housing and Local Government called Housing Loan Scheme Division (Bahagian Skim Pinjaman Perumahan referred to SPP) that assist financially those who need to build their own houses in the rural area. Based on the data gathered from this department, the highest number of applicants are from Kelantan State and second highest is Kedah. Due to logistics and time constraints in this research, it is best to use

Kedah as a case study (refer to Figure 3.6). Two particular districts that has the utmost applicants are from Padang Terap and Baling districts with 415 and 152 consecutively (Refer to Figure 3.4).

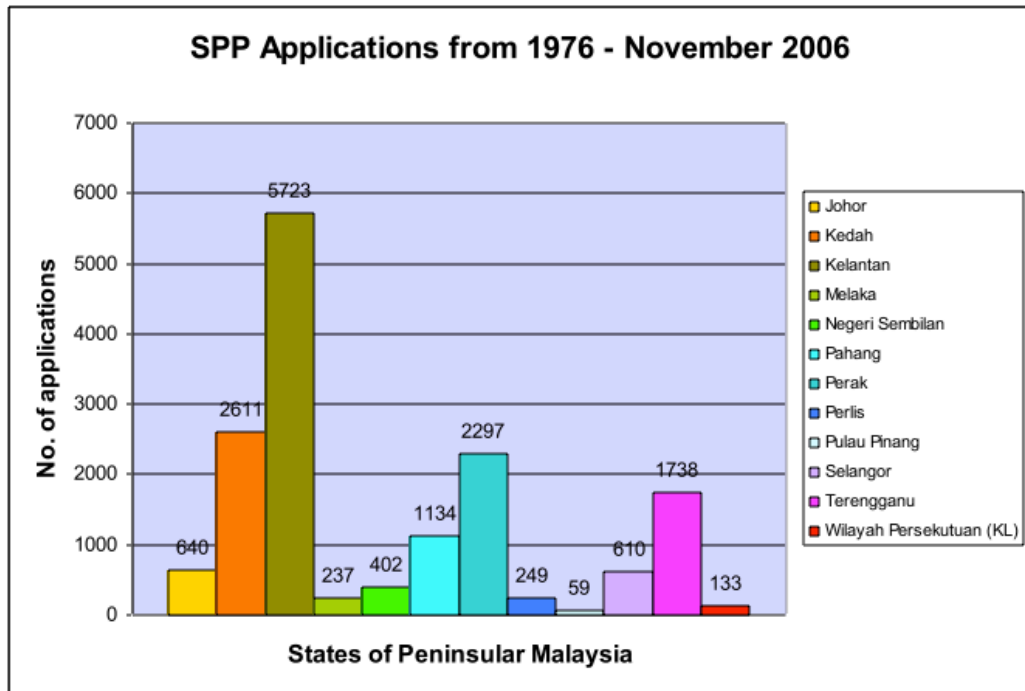


Figure 3.4: SPP Applications from 1976 – November 2006
Source: NHD, SPP Division (2006)

The secondary data obtained from SPP illustrates the rationale behind the selection of case study area:

1. Data gathered from SPP identifies 3 of the highest number of applicants to build their own houses (not including Sabah and Sarawak). First is Kelantan, second is Kedah and third is Terengganu. As accessibility as well as limitation of time and logistics restriction has to be carefully planned, Kedah State has been chosen as the basis for this study.
2. Padang Terap and Baling Districts of Kedah are the two case studies which has highest applications for government financial assistance to build houses (Refer to Figure 3.5).

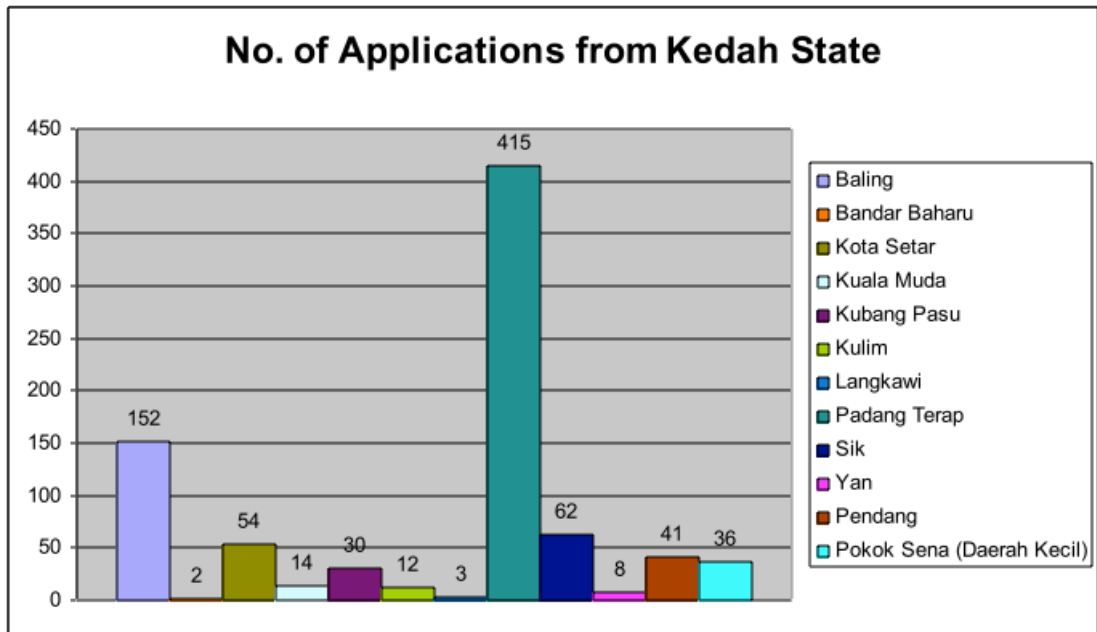


Figure 3.5: SPP Applications from Kedah State
Source: NHD, SPP Division (2006)

3. The villages chosen in each of the districts are at random. The selection of respondents consisted from unplanned and planned settlements.
4. During the survey, a diagram illustrating a simple house plan was used to assist in the questioning. Please refer to Appendix 2.

In this research, a pilot survey was done to initiate the development of the questionnaire. Later for the actual survey, it is divided in two major phases, which involved the following:

1. Questionnaire survey and,
2. Prototype testing with public participation through questionnaire survey.

Nesbary (2000) supported that survey research is a process of collecting representative sample data from a larger population and using the sample to infer attributes about the population. Surveys are designed to provide an indication of the way things are at a specific point in time. Dilman (2000) confirmed that the main purpose of a survey is to estimate, with significant precision, the percentage of

population that has a specific attribute by collecting data from a small portion of the total population. Therefore, this study involved a quantitative and qualitative research, included both secondary and primary data, whereby the sample design is a random sampling in selected rural area of Kedah.

Two districts were selected as both displayed a high number of applications for housing loan. Within each of the districts, there are few areas that consist of several villages. The District Office has helped to identify local Headsmen to assist in this study.

**Table 3.3: KEDA Categorisation Level of Poverty is
Based on the Family Monthly Income.
Source: KEDA (2008)**

Level of Poverty	Monthly Income (RM)
Hardcore Poor	416 and below
Poor	416 - 1200
Medium Poor	1200-1500

The research addressed the issue of housing for the medium poor and poor families only as these groups are more committed in building houses. This is based on the applications from SPP data whereby they have already obtained land either individually or as a group for housing. The hardcore poor group is listed under special housing schemes under the government, which has supplied them quite a number of low-cost houses (Refer Table 3.3).

Target sampling group consists of Malay in rural areas due to evidence of high incidence of poverty, whereby rural population is 60% and urban is 21% (Idris, 2009). This indicates the indigenous population/Malays as the majority with low productivity & low income, hence creating economic imbalances.

In the objectives of the study in **Phase Two**, a quota sampling method was conducted to establish the samples of respondents to be interviewed. Quota sampling is a form of non-probability sampling in which sub-samples are selected from a clearly defined group (Baker, 1999: p.139). In this research, one particular ethnic group – Malay, is the defined group. Gray (2009: p.153) stated that the advantage of quota sampling is that each group is of equal size, which can be important for certain inferential statistical tests. This type of sampling is convenient where small group participation is crucial. It is also used due to time and financial limitation. The only disadvantage is it does not accurately indicate the general population.

As for **authorities** or **related organisations**, a judgment sampling was employed. Judgment sampling involves the selection of subjects which particular organisations or authorities are in most advantageous situation that possessed the knowledge and information sought for this research (Sekaran, 1999: p.236). Although judgement sampling may reduce a comprehensive result of the findings because the sample of authorities consists of conveniently available people, nevertheless this is a viable method to extract certain types of information. The following sections are the two main groups involved:

3.5.1 THE PUBLIC

The first sample group for **Phase One** consists of the public which are 100% Malays. This is due to the fact that 100% Malays are the ones that applied for financial assistance through government agencies to build their own houses. They live in Kedah state, in particular, the district of Baling and Padang Terap, as these districts are quite remote from urban infrastructures. Interviews were carried out by the researcher and appointed enumerators. The sampling size was based on one particular ethnic (Malay)

population in Kedah that are considered under the low-income household. Despite the financial and time constraints, a total of 501 respondents were interviewed. This number is deemed sufficient based on statistical table by Yamanae (1973), that displays if the population (N) is more than fifty thousand, the sample size (n) with precision (e) of 5% is 400.

The second sample group for **Phase Two** are pre-selected by the headsman with certain criteria such as gender, physical fitness, age, skills, experience and most importantly willingness. As women were not committed and willing to participate, only men were present during the further investigation of the prototype.

3.5.2 SELECTED ORGANISATIONS

The questionnaire consists of open-ended questions administered to the related officer in-charge of supplying low-income houses for the poor. The open-ended questions were developed based on their accounts of identifying issues of housing affordability, involvement of participatory projects construction techniques in rural area and most importantly the exposure of self build housing using prefabricated system.

A few local authorities have been identified in the process of obtaining and understanding the background of housing issues provided in Kedah. It is imperative to examine the solutions and decisions made by different government agencies. This would give an overview of the objectives, involvement and development towards provision of housing for the low-income households.

The second group represents the authorities, such as district offices, state office and ministry that are involved and familiar with the issues, demand and supply as well as

financial aid in low-cost housing. Biasness is avoided through these two selections of different groups so as to check and balance what are planned by authorities corresponds with what has been received by end-users.

This group are interviewed at their offices, at times convenient to them, after confirming appointments through telephone calls. This focus group has a different sets of open-ended questions based on their roles in housing provision at different levels in state as well as federal. The information received from this group would indicate their involvement and commitment in housing provision for those in need. The researcher personally conducted the interview.

3.6 Instrument Design And Development

As mentioned earlier, the whole research process consisted of two distinctive phases that aim to determine the important factors that affect low-income households' decisions in choosing an alternative approach to own a house. However, before the questionnaire was formulated, a pilot study was conducted to initiate related and important issues that could be useful for further investigation. Collins (2010) listed pilot survey as one of the testing to refine the questionnaire whereby small-scale trial prior to the main survey is conducted.

The **First Phase** targets to determine extent of acceptance and establish issues on the concept of self build houses, in addition to ascertain knowledge and skills in construction and routine maintenance of the house. Furthermore, it clarifies and establishes factors that influence housing demands among the rural households. Therefore the questionnaires were designed to evaluate respondents' experience and suitability for self build houses as an alternative. The questionnaire had five main

sections. The first focused on obtaining socioeconomic and biographical information of each respondent. The second section focused on obtaining information about the issues related to needs for physical changes in their homes. Dweller's perception to gauge acceptance level to self build housing concept was operationalised by means of a 4-point Likert scale in the third section. The fourth section provides a combination of yes and no answer to identifying their levels of experience and skills, together with questions that require them to rank by numbers on preferences of construction materials. In this section, a simple house plan was shown to determine their basic ability in reading graphic representations of a house. The final section aims to investigate the factors that affect the housing demand and reasons for choosing their answers. In order to gain a better understanding, in-depth interviews were conducted in this final part with open-ended questions.

The **Second Phase** of the research is the development of a system based on prefabricated self build houses which has similar aspects in constructions to Malay traditional houses. The design decision made takes into account the earlier analysed data from the first phase. The prototype is based on a set of principles, which not only encourage sustainability but also availability of the construction and materials in the local context. The testing of the prototype was conducted with public participation installing the unit through reading a set of graphic instructions. A different set of questionnaire was designed with an objective to seek response on the system itself and willingness of participation in self build construction using a simplified system. Video recording was done during that 4-day testing in the field. This is to assist the study on how the respondents react to such a system. The site chosen for this final phase was based on the existing infrastructure and responsiveness of the local headsman in the

village. Kampung Tanjung Luar of Pedu District was chosen to participate in the investigation.

There is also the interview with selected organisations that are related to housing supply. This allows further investigation on the approaches or programs that have been executed to allow access for affordable houses among the low-income household. Most of the questions asked are semi-structured whereby it is focused on certain issues in housing and allowed the respondents to express themselves at certain length.

3.6.1 Selection Of Enumerators

During the period of data collection in Kedah for phase one, two enumerators were hired to conduct the survey, besides the researcher herself. Both enumerators were graduates of different background from UiTM. They were briefed by the researcher on ethics and methods to conduct the interviews. They were also pre-trained on expectations of public. This ensured that fewer external interpretation aspects came to the fore. The enumerators were asked to introduce themselves and explain the objectives of the interview. Each enumerator was expected to cover at least 6-7 persons per day from 2 selected villages.

Phase two does not require any enumerators since the amount of respondents per day was limited to 7-8 persons per day for 4 days only. Hence, the researcher herself was completely involved during the data collection.

3.6.2 Ethical Considerations

The prime duty of a researcher is to explain her mission and to obtain answers to the questions in a transparent manner. What is important is to get the data needed without

violating ethical standards. Equally important for a researcher is to report the findings objectively and correctly based on the information received. Two ethical issues as mentioned by McNamara (1994) on protection of the respondent's identity and of informing prospective respondents about the purpose of the survey and the organization that is sponsoring it were observed and explained to the respondents.

The aim and purpose of the study was made clear to the respondents. The author reassured respondents of their feedback anonymity and confidentiality. Furthermore, it was important to stress that the results of the study would only be used for this thesis. It was also explained to the respondents that their participation and answers to questions were voluntary without any compulsion giving them the freedom to bypass questions with which they felt uncomfortable, although the subject area was such that this explanation was only a formality.

Settings were flexible: In the case of interviews with selected organisations, some preferred the more neutral setting of a quiet restaurant, while others preferred their offices. As for the general survey, Initially it was conducted in the privacy of their own homes but at a later stage, the researcher organized with the respective headsmen to meet at community halls or suraus to conduct the interviews. At the beginning, the researcher explained that the interviews would take approximately 10-15 minutes per person, however in some cases there were a few that desire to talk longer.

According to Gay & Airasian (2003), all researchers must be aware of and attend to the ethical considerations related to their studies. They further posit that research studies are built on trust between the researcher and the participants; researchers have a responsibility to maintain that trust, just as they expect participants to maintain it in the

data they provide. Thus, it is important to remain cognisant to the fact that as a researcher, any unethical and biased treatment of any research participant(s) must be avoided.

3.7 Survey Administration

There were 2 types of surveys performed during both phases of this investigation, which took about accumulatively 12 months. Sapsford (2006) described a survey as a detailed and quantified description of population, whereby it involves systematic collection of data, whether through interviews, questionnaires or observation methods. The **First Phase** of the study, which involved interview with selected organisations and the 10% sampling of low-income population, has opted a descriptive survey to measure the characteristics of certain sampling group on self build housing issues. Descriptive surveys are often undertaken to ascertain attitudes, values and opinions towards certain issues and in this case it is on self build housing as an alternative. The disadvantage of this survey is that there may be differences between the opinions or perceptions and the actual reality of practice (Black, 1993). Hence, discretion needs to be exercised in drawing conclusions from such surveys.

The **Second Phase** of the investigation involves analytical survey whereby a prototype of self build housing system was tested in the field to explore between variables either dependent or independent. Involvement of public participation was coordinated for 4 consecutive days under site supervision by the researcher's construction expert team and through the use of questionnaires. The questionnaire was distributed among the respondents only after their involvement in assembling the prototype. The whole duration of this survey process took about 5-6 hours a day, commencing from the completion of fabricating the prototype until the return of the

distributed questionnaire. Each respondent was given a monetary token of appreciation for their time and cooperation as some had to take off from work.

3.7.1 The Interview Survey With Selected Organisations

It is necessary to conduct some interviews with relevant organisations or authorities before engaging in further decision. This section presents the background of the selected government agencies and organisations that are involved directly in providing affordable housing for the low-income households. It also combined with analysed data collected from interviews. It ascertained the results pertaining to the qualitative aspect of the data. The approach for the analysis uses descriptive content analysis. This qualitative research is applied in a mixed mode with quantitative method to support the findings and put them into context.

3.7.2 The Actual Survey

There are many research that recommends the administration of surveys as one of the best tools to access people's perception on their environment (Sapsford, 2006 and Fink, 2002). Surveys can be used to provide information that public perceives. This procedure can be used to record the issues and importance of self build housing among the public. Saunders et. al. (2007) described that the design of a survey questionnaire depends on methods to administer, either self-administered or interviewer-administered. Refer Figure 3.7. Through the pilot survey, it is clear that a structured, face-to-face interview is probably the most effective method for asking questions and for eliciting more detailed responses. The response rates for this method are usually higher and response bias is fairly low because refusals are equally spread across all types of respondents (Gray, 2009).

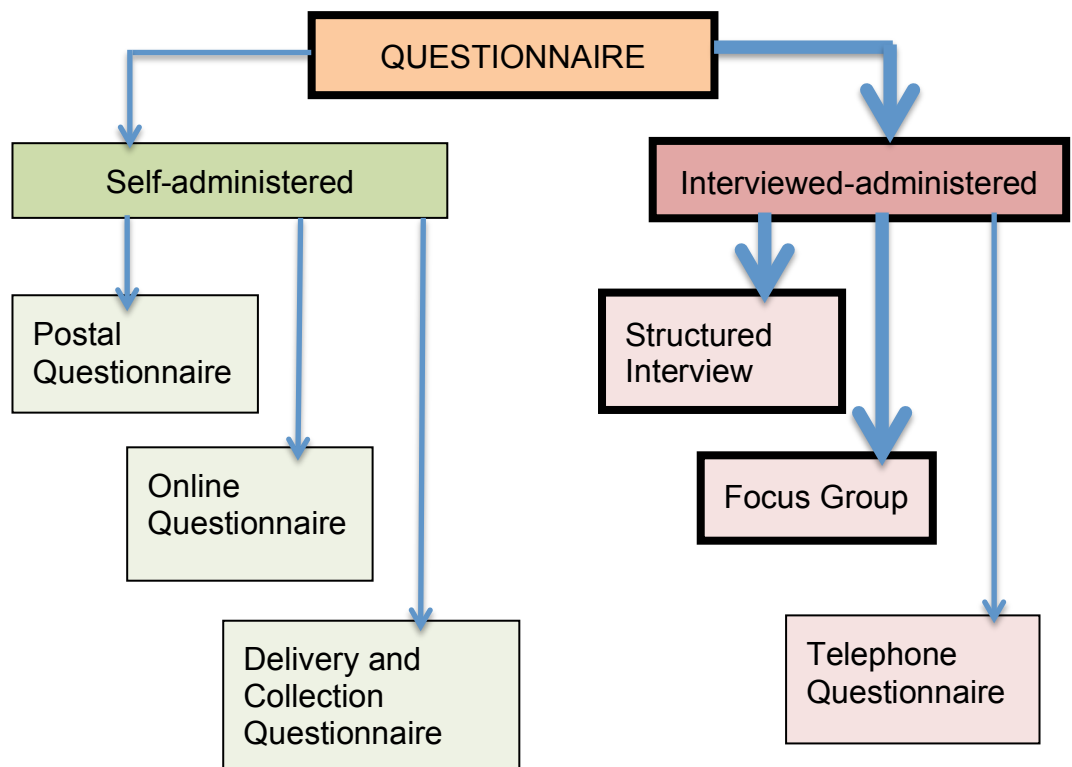


Figure 3.7: Types of Questionnaires (Adapted From Saunders et. al., 2007), Gray, 2009.

The researcher administered the survey within 6 months from March till August 2010, of which during this period, the first 3 months were allocated in Baling district and the other second 3 months in Padang Terap district. For each of the districts the researcher managed to get 250 respondents for the first and 251 for the latter one. The questionnaire included a simple lined drawing of a house plan as to measure the respondents' literacy in reading any drawing presented to them. Each district consisted of 15-20 kampungs, in which each kampong has about 25-30 houses. The researcher and enumerators travelled from house to house at random to cover all the kampungs in each of these districts. Each respondent was briefed verbally on the objectives of the study. Only voluntary households were interviewed. Initially the interview was conducted at individual homes but later on, the researcher approached respective headsmen to announce and gather about 5-7 households in either community halls or suraus

3.8 Data Analysis Strategy

The raw data that was collected had to be arranged and organised to identify significant results. Yin (1994; p.125) encouraged to “play with data” in exploring and developing a sense of what is worth analysing and methods to analyse. The quality of analysis relies on the methods used as well as how issues are being established in the analysis. For this objective, the Statistical Packaging for Social Science (SPSS) version 10.0 was used to accomplish the analysis of the data. Firstly, the characteristic of the data was examined, in which a variety of statistical methods are applied for an unbiased quantitative analysis.

The descriptive statistics are tools that allowed the researcher to summarise the general data in an orderly manner (Baker, 1999; p.394). Frequency tabulation and means are used at the early stage of the data analysis to extract notable data. For this study, the demographic characteristics were compared between the two districts. In addition, investigations on relationships between levels of satisfaction on current situations are also compared with awareness of self build housing as an alternative way to own a house. The factor analysis were calculated using two statistical measurements, which are Kaiser-Meyer-Olkin (KMO) for sampling adequacy and Bartlett’s test for sphericity. Such statistics can be used to test hypothesis and correlation.

An F-test is any statistical test in which the test statistic has an F-distribution under the null hypothesis. It is most often used when comparing statistical models that have been fit to a data set, in order to identify the model that best fits the population from which the data were sampled.

The F-test in one-way analysis of variance is used to assess whether the expected values of a quantitative variable within several pre-defined groups differ from each other. For example, suppose that a medical trial compares four treatments. The ANOVA F-test can be used to assess whether any of the treatments is on average superior, or inferior, to the others versus the null hypothesis that all four treatments yield the same mean response. This is an example of an "omnibus" test, meaning that a single test is performed to detect any of several possible differences. Alternatively, we could carry out pairwise tests among the treatments (for instance, in the medical trial example with four treatments we could carry out six tests among pairs of treatments). The advantage of the ANOVA F-test is that we do not need to pre-specify which treatments are to be compared, and we do not need to adjust for making multiple comparisons. The disadvantage of the ANOVA F-test is that if we reject the null hypothesis, we do not know which treatments can be said to be significantly different from the others - if the F-test is performed at level α we cannot state that the treatment pair with the greatest mean difference is significantly different at level α .

The formula for the one-way ANOVA F-test statistic is

Or
$$F = \frac{\text{Explained variance}}{\text{Unexplained variance}}$$

$$F = \frac{\text{Between-group variability}}{\text{Within-group variability}}$$

The "explained variance", or "between-group variability" is

$$\sum_i n_i (\bar{Y}_i - \bar{Y})^2 / (K - 1)$$

where \bar{Y}_i denotes the sample mean in the *i*th group, n_i is the number of observations in the *i*th group, and \bar{Y} denotes the overall mean of the data.

The "unexplained variance", or "within-group variability" is

$$\sum_{ij} (Y_{ij} - \bar{Y}_{i.})^2 / (N - K),$$

where Y_{ij} is the j th observation in the i th out of K groups and N is the overall sample size. This F-statistic follows the F-distribution with $K - 1, N - K$ degrees of freedom under the null hypothesis. The statistic will be large if the between-group variability is large relative to the within-group variability, which is unlikely to happen if the population means of the groups all have the same value. Note that when there are only two groups for the one-way ANOVA F-test, $F = t^2$ where t is the Student's t statistic.

3.9 Chapter Summary

The methodology applied in this study was based upon the standard procedures of scientific research to ensure that the results are justifiable and reliable. The methods opted may have limitations, but the researcher feels that this is the best way to explore and collect as much information from the public and selected organisations with restricted time and cost. Despite the limitations mentioned earlier, the research was completed satisfactorily. Following this chapter is the statistical analysis on the extent of acceptance of self build housing and establishing issues on the concept among the respondents as well as the summary of interview survey from selected authorities.