CHAPTER 4

RESEARCH METHODOLOGY

This chapter outlines the methodology employed in the study. The study was carried out by utilizing the survey approach. This section provides a description of the sampling procedure, the design of the research instrument, and the data collection procedures.

4.1 Research instrument

4.1.1 Selection of Measures

The survey instrument was an eight-page questionnaire (Refer Appendix A: Survey questionnaire English version). The two main construct of interest in this study are "customer expectation" and "customer satisfaction" with special focus on product quality. The dimensions of product quality as proposed by Deming (1982) and Juran (1988) were developed. Items for the statements utilized in the study were derived from mainly previous satisfaction studies done by Nurizan, Juliana and Nurfaizura (1998); Lee and Ng (1996); Krishnan (1995); Treloar, Western and Yeh (1970); Yeh (1972); Yeh (1975) and also the interview carried out by the researcher with PKNS officials and a few house buyers. A seven-point scale from 'highly dissatisfied' to 'highly satisfied' and "highly disagree" to "highly agree" is utilized to measure the satisfaction level of consumer satisfaction.

4.1.2 Questionnaire Design

The questionnaire was divided into six parts with strict instruction that the questionnaire is only eligible for original house buyers who bought their house directly from PKNS. The questionnaire is self-administered either by the wife or
husband because they are the ones most involves during the pre-purchase until the post-purchase. Rental units are ignored.

Part 1 of the questionnaire aims to know more about description of the home. This section measures the house types by cost, by type of home, place of residence and renovation works. It is designed in such a way to suit the stratified sampling by cost type. Place of residence is also determined due to the vast area of PKNS development and both areas are considered justified for their representation of an old development area and a new development area. This approach is chosen to eliminate any time element problem that might occur. Some of the questions chosen for this part are:

1. Type of house  
   [ ] Low cost  
   [ ] Medium cost  
   [ ] High cost

2. Area of dwelling  
   [ ] Shah Alam  
   [ ] Kota Damansara

Part 2 of the questionnaire hopes to identify the house owners' expectations and needs before he made the decision to purchase a house. The measurement includes such attributes as price, house facade, location, floor area, construction quality, construction materials, delivery date, housing environment and neighborly relationship. The statements are measured with a seven-point scale from "1= highly disagree" to "7= highly agree". Statement chosen for this scale satisfies the three approaches of:

- Equitable performance as proposed by Adams (1963). There are three items in this category, namely:
  
  "To me, the house price must be equivalent with the house value"
  
  "I do not mind to paying a little more expensive as long as the house design is nice"
  
  "Construction quality and building materials used must be equivalent to
the price"

- Ideal product performance as proposed by Holbrook (1984). There are five items in this category, namely:
  "To me, a nice and beautiful design is important when choosing my ideal home"
  "A large floor area is important to me during deciding for my ideal house"
  "To me, timely delivery period portrays the ideal characteristics that I want"
  "Clean, peaceful and safe environment are the ideal characteristics that I wanted"
  "Good neighborly relationships are the ideal characteristics that I wanted"

- Expected product performance proposed by Tolman (1932). There are six items in this category, namely:
  "I would rather choose a good and safe location such as not a flood-proned area"
  "I would rather choose a location with strategic and investment potential"
  "I would rather choose a location which is far away from busy town"
  "To me, a nice house design is not as important as a large floor area"
  "To me, the construction quality is not important"
  "To me, the building materials used is not important"

The third part of the questionnaire measures the satisfaction level of consumer after the post-purchase. The thirteen-item features derived for this scale was based on studies done by Nurizan, Juliana and Nurfaizura (1998); Krishnan (1995); Treloar, Western and Yeh (1970); Yeh (1972) and also from personal interviews with PKNS officials and house buyers. Briefly the features are numbers and size of bedrooms, size of living area, numbers and size of bath and toilets, kitchen, building materials, construction quality, internal finishes and safety features. The satisfaction level of the house quality was measured using a seven-point scale from "1= highly dissatisfied" to "7= highly satisfied".
Part 4 aims to identify the satisfaction level of consumer towards the housing area and facilities that is available in their housing estates. The fifteen-item features for this scale was also derived from Nurizan, Juliana and Nurfaizura (1998); Krishnan (1995); Yeh (1975) as well as personal interviews with PKNS officials and house buyers. Briefly the features are parking lot, road system, common facilities, safety features, cleanliness of housing area, pollution and neighborly relationships. The satisfaction level of the housing environment was measured with a seven-point scale from "1= highly dissatisfied" to "7= highly satisfied".

Part 5 of the questionnaire measures the post-purchase satisfaction on general issues such as price, delivery period, location and overall satisfaction. The seven-item statement derived for this scale was mainly from Lee and Ng (1996) and also personal interviews with PKNS officials and house buyers. A seven-point scale was used to measure the opinion of respondent with "1=highly disagree" to "7= highly agree".

Lastly, Part 6 aims to collect information regarding respondent's demographic profile. Some of the questions asked were:

1. Race:  
   [ ] Malay  
   [ ] Chinese  
   [ ] Indian  
   [ ] Others

2. Number of occupants: ................. people

3. Age of family head:  
   [ ] 20 to 29 years old  
   [ ] 30 to 39 years old  
   [ ] 40 to 49 years old  
   [ ] 50 to 59 years old  
   [ ] Above 60 years old
4.2 Sampling design
As to date about 22,578 unit of houses was completed by PKNS in Shah Alam. Out of the total 29% were low cost, 59% medium cost and 12% high cost. On the other hand Kota Damansara, has to date completed about 2,870 unit of houses. Out of the total 24% are low cost, 39% medium cost and 37% high cost. From the above given statistics the researcher has determined to collect 300 samples, out of which 200 samples to be collected in Shah Alam and 100 samples from Kota Damansara. The researcher felt that the sample size of 300 was big enough to represent the actual population as well as due to pragmatic reasons such as budget and time constraints.

There are several alternative ways of taking a sample. A nonprobability sampling whereby the selection of sampling units is quite arbitrary, as researchers rely heavily on personal judgement or convenience (Zikmund, 1997) was considered as appropriate for this study. One of the nonprobability sampling procedure known as quota sampling (Zikmund, 1997) was chosen due to the fact that the population are divided into certain characteristics of low cost, medium cost and high cost types of housing.

4.3 Data collection procedure
Questionnaires was distributed in PKNS’s concentration development areas such like Shah Alam, due to its development which is nearing completion and Kota Damansara, which is 20% completed. The researcher felt these two development areas are appropriate for sampling because Shah Alam is a good representation of an old and fully developed area whereas Kota Damansara is a new development area. This sampling approach can help solve any time element problem if any.

The eight-page questionnaire was self-administered by respondent. The researcher chose this approach because the respondents need to have the true
feeling and full understanding of the flow of the whole questionnaire in order for them to mark it diligently.

In order to ensure a high response rate, field interviews were done during weekends and weekdays. Respondents were first checked for their eligibility before a questionnaire was given out. As mentioned earlier the criteria for eligibility are house owners who bought their house from PKNS and they are either the wife or the husband. If they were not able to do so, their adult children are allowed to help out in explaining the questions.

Field interviews were done by a group of PKNS staffs. This group was first briefed about the purpose of this study. The group was chosen because they have done some fieldwork before although at a smaller-scale. Nevertheless they have some practical experience in handling field interviews. The researcher makes it a point to brief the fieldwork group regarding the content of the questionnaire as well as the do’s and don’t during the field interview. Completed questionnaires were collected on the same day from the field-workers. Overall, the field-workers took two weeks to complete the exercise.

The structured questionnaires were handed over to the eligible respondents personally and the respondents were requested to complete the questionnaire immediately. If they were not able to do so, arrangements were made to collect the completed questionnaire personally at a later time or date.

To fulfill the quota sampling procedure, it was planned that 200 samples should come from Shah Alam and 100 samples from Kota Damansara. From the determined sample size, it is decided that 40% should be from the low cost house, 50% medium cost and balance of 10% high cost.
4.4 Data analysis

The questionnaire was first edited to avoid mistakes such as a respondent might answer "No" for the question "Have you done any renovation" but they tick the question on "Which part of the house did you renovate". Editing is done in the field to catch technical omissions such as a blank page on the questionnaire, check legibility of handwriting, and clarifying responses that are logically or conceptually inconsistent.

Data were later coded to permit the transfer of data from the survey forms to the computer. Data entry was done by the researcher using the Statistical Package For Social Science 7.5. Data were later checked for errors during data entry. Only after the data have been satisfactorily cleaned the researcher continued with the data analysis as discussed in the next chapter.

The researcher employed several analysis techniques available in SPSS, namely:

- Housing and Demographic Profile: The researcher tabulated a frequency table on this information. The frequency table was chosen because it was simple and was able to perform the task that is needed by the researcher.

- Objective 1: To identify the attributes that the potential house owners consider important. The researcher calculated the mean value on ideal home. The researcher chose this approach because it can objectively identified the attributes while giving the standard deviation value that is a test for vulnerability of the data.

- Objective 2: To determine the satisfaction level of PKNS house owners the researcher calculated mean value on house quality and housing area features according to type of house, type of residence and area of dwelling. One-way ANOVA was used to test the significant level of the cross-tabulation table developed. In ANOVA, F-test is the procedure used to determine if there was more variability in the scores of one sample than in the scores of another sample. The larger F value will likely show a significant result.
- Reliability Analysis: The researcher also runs reliability analysis on the House Expectation Scale, House Quality Scale and Housing Environment Scale. This analysis is important for validity because it shows the degree to which measures are free from error and therefore yield consistent result. An alpha values that is more than 0.5 is considered to be reliable.