

## **CHAPTER 3**

### **METHODOLOGY**

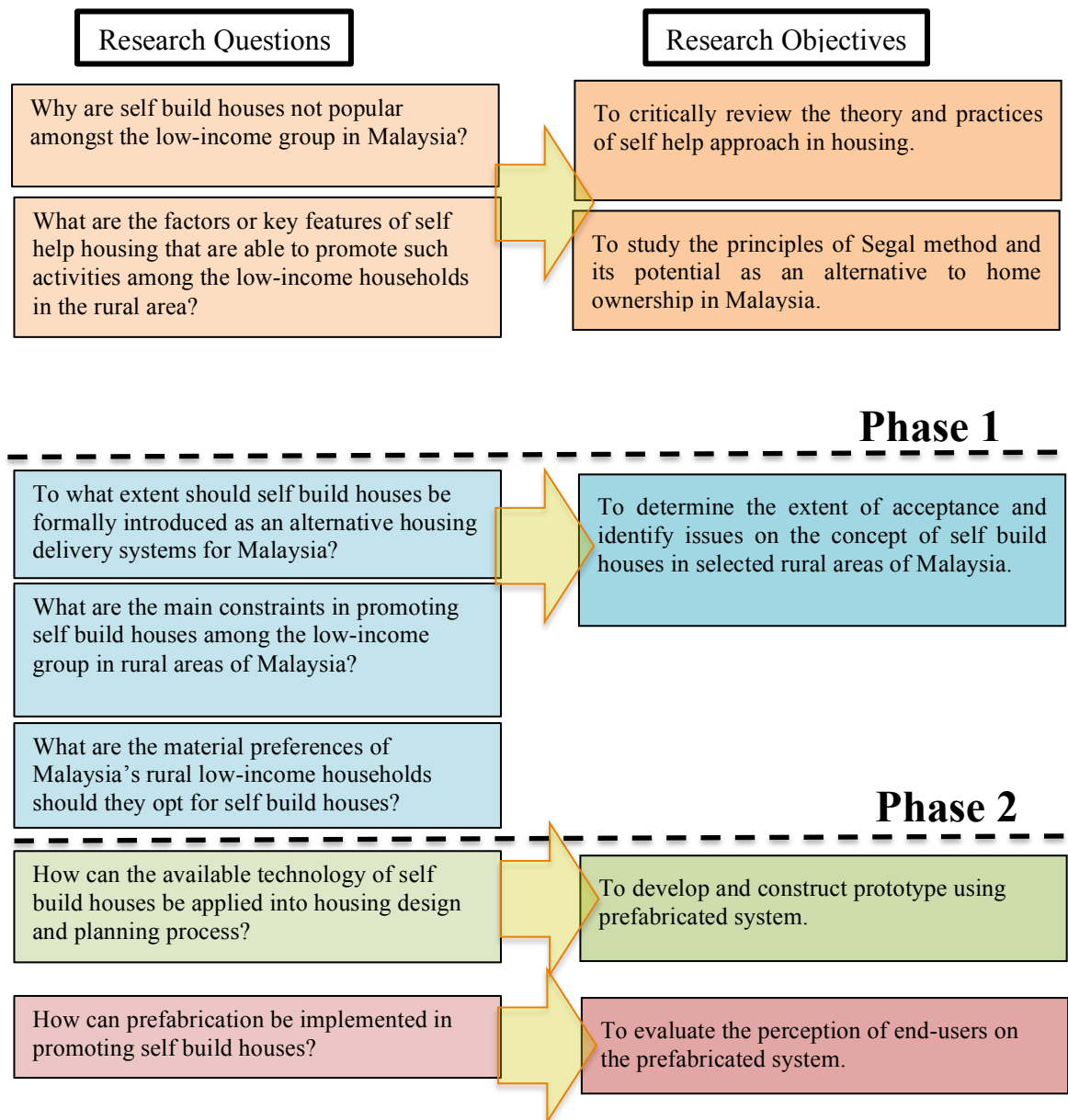
#### **3.1 Introduction**

This chapter aims to explain the techniques and the design of empirical research methodology employed in this study. Taking into consideration the availability of various research methods, their advantages and disadvantages, the study opted for quantitative approaches with a limited amount of qualitative.

#### **3.2 Purpose Of Study**

The purpose of the general survey was to determine why self help housing lacks popularity as compared to housing supplied by private and public sectors and also to experiment the idea of self build housing system among the low-income households. This study is divided into two main phases. The first phase is a general survey in selected rural areas of Malaysia, followed by the second phase, which is the development of a prototype and its assessment in a smaller group of participants. This first phase of the study examined the data collected for trends, differences between independent variables of area, gender, experience, skill and preferences. As for the second phase, which is the prototype development and assessment, was to evaluate people's participation using a simplified construction approach in relation to self build method. The second phase of the study examined data collected for trend of willingness in participation as well as response on the self build housing system itself. Data collection and analysis assisted in determining of a simplified construction system could

encourage self build as an option in housing supply. Research questions were developed to seek problems or solutions in this topic.



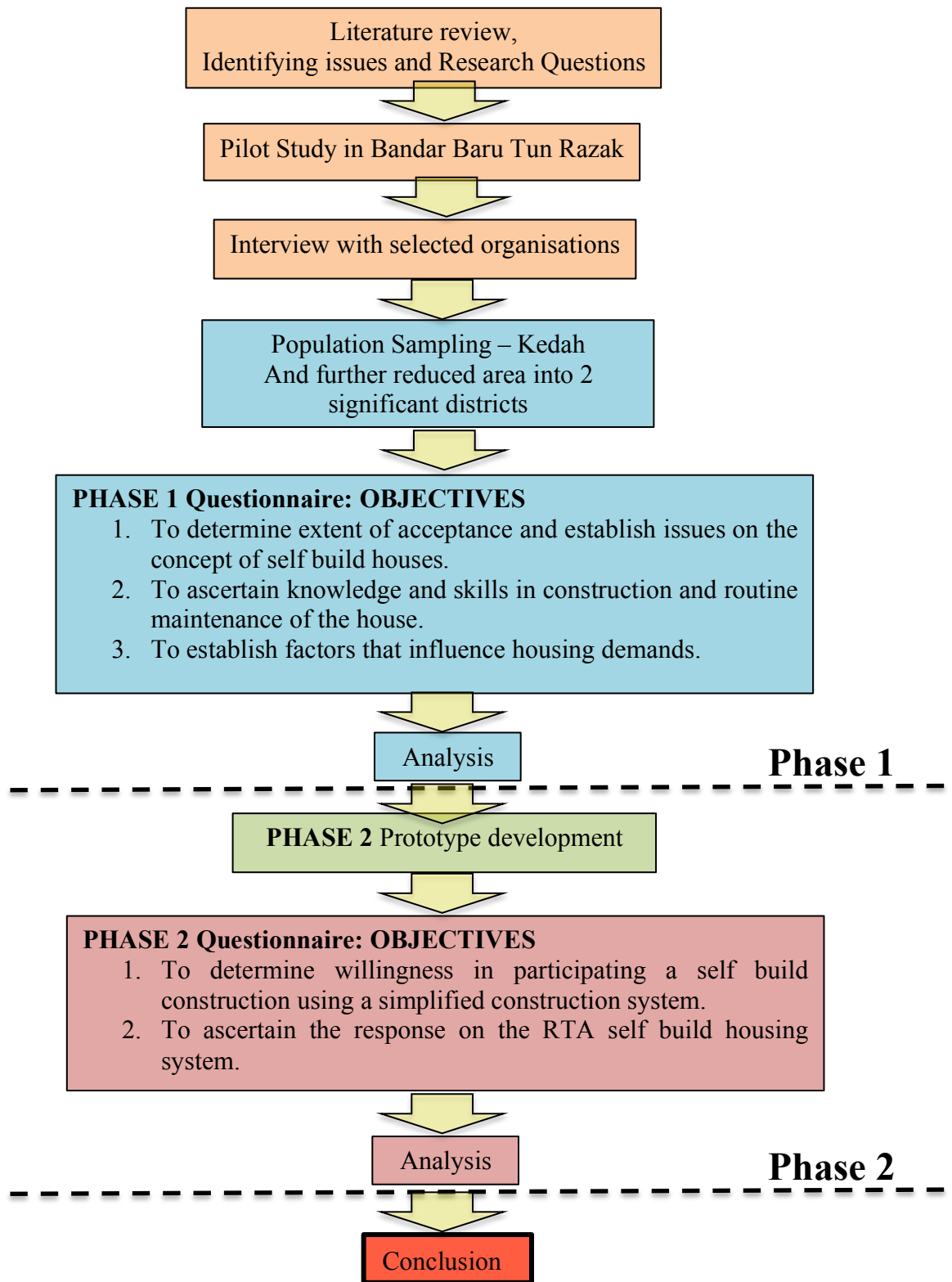
**Figure 3.1: Development of Research questions in relation to Objectives**

### 3.3 Research Design

There is great opportunity for applied social study using a qualitative open-ended research strategy, which can be geared towards answering policy questions or making future design decisions. The research design employed quasi-experimental research, whereby the sampling group are people who have experienced it in their own natural setting (Gray, 2009: p.27). The methodology adopted to carry out is a combination of a few methods used by social scientists that could assist the research, mainly the quantitative and qualitative methods. The preceding paragraphs set out the details of the methods that are used in conducting this research from inception to successful completion.

This mixed approach is selected to overcome many shortcomings that would allow inductive and deductive reasoning, build a general image through interviews and drawings with additional numbers of statistics (O’Leary, 2004). These methods work well with each other to validate the data, thus providing triangulation in the methodology. Burns (2000: p.11) states “After an initial period of clarification concerning the features of each paradigm, there emerged by the end of the 1970s a situation of détente wherein scholars began to agree that both approaches are needed, since no methodology can answer all questions and provide insights on all issues”.

The procedures for selecting the sample has also been outlined and justified based on feedbacks of interviews from the selected organisations. The following chart (Figure 3.2) demonstrated the progression of the research methodology and each phase’s objectives.



**Figure 3.2: Methodology Flow Chart**

This research is designed into two phases. The first phase involved a survey to collect information about respondents' background and inclination as well as experience and skills in self build housing. The sample size is 10% among the population of low-income group in Kedah. The research instrument used is a structured questionnaire for the probability random sampling and semi-structured interviews for selected organisations, which involved in housing. The respondents were asked to give their opinion on self help housing issues using the Likert scale to interpret items in the questionnaire. There were instances that respondents were asked to rate the effectiveness of public housing implementations, preferences of acquiring a house and type of construction materials. The range and interpretation of the 4-point Likert Scale is shown in Table 3.1. The 4-point Likert Scale was favoured since it would precipitate answers and terminate lengthy discussions in an attempt to acquire their preferences. The respondents were also asked to evaluate a simple housing plan shown during the survey. This is to establish their knowledge and skills in housing construction.

**Table 3.1: The Four-Point Likert Scale**

<b>Scale</b>	<b>Range</b>	<b>Interpretation</b>
4	3.01 – 4.00	Very Agree
3	2.01 – 3.00	Agree
2	1.01 – 2.00	Disagree
1	0.01 – 1.00	Very Disagree

In phase 2 of the research a housing prototype using simple prefabricated system was developed and manufactured. Later it was tested among a selected group for installation to demonstrate ease of construction for self build houses. Each respondent was briefed by enumerators on the objectives of the study and was asked to give their consent verbally. As for the second phase, an additional range of Likert scale is included in the second questionnaire over and above the earlier range, which investigates on the ease of construction of the system. The additional range and interpretation of the 4-point Likert Scale is shown in Table 3.2.

**Table 3.2: The Four-Point Likert Scale**

<b>Scale</b>	<b>Range</b>	<b>Interpretation</b>
4	3.01 – 4.00	Easiest
3	2.01 – 3.00	Easy
2	1.01 – 2.00	Difficult
1	0.01 – 1.00	Very Difficult

Time of gathering data was 6 months for the structured questionnaire, 3 months for the interviews with selected bodies, plus 3 months of prototype development, another 3 months for manufacturing and 1 month of collecting data through public participation during the testing of the prototype. The survey was carried out from March – August 2010. Due to the delay of approval of research grant to build the prototype, the manufacturing of the prototype was done from June – August 2011. Furthermore, there were delays in initiating the manufacturing process because of payments for purchasing timber. With all these delays, it was already taking another 6 months to complete the cycle.

In housing, public participation is useful in evaluating future or proposed designs to be implemented, studying residents' needs, access to resources and physical solutions. It is extremely useful in investigating the composition of community organisations in existing settlements which can be harnessed to assume the duties local housing authorities, arranging assistance for individual families, and even resolving the problems involved in site layouts and housing construction (Sinha, 1991). Tan (1992), in his Phd thesis, has actually developed a program, which uses case studies as literature review, then tested with pilot project and later improved the method of investigation through using a prototype program in the field, specifically in Victoria, Australia. The stages involved were:

1. Establishment of the program
2. Development of Victorian Model

3. Prototype program development
4. Implementation, review and evaluation of prototype
5. Setting up the mainstream self build program

The shortcoming of using this research method is the lengthy research period. An initial exploration or pilot survey was followed by months and even years spent in the field. This form of research is also more heavily influenced than other research methods by the researcher's bias, world-view and personality.

Surveys and formal interviews may not yield consistent and true answers on the part of the respondents, but as Whyte (1984) points out:

If we insist on asking people what is going on and why they are acting as they do, at best we get formalised explanations; the interpretations people give to outsiders. If we are successful in establishing a social base, we may find quite suddenly that we have broken through the superficial level, that we begin to see patterns and movements, which were not evident before, and at last we begin to get a vision of what it is we are really studying.

Hence it is necessary to build a rapport with the respondents. The physical environment, especially housing, forms the context for everyday behaviour and may be taken for granted to such an extent that the user is hardly aware of his/her surroundings.