

## **CHAPTER THREE**

### **METHODOLOGY**

This chapter discusses the methodology which is used in this research. The methodology in this research included research method, flow chart, respondent's questionnaire design, data analysis, and the method of processing and analyzing the data, questionnaire content.

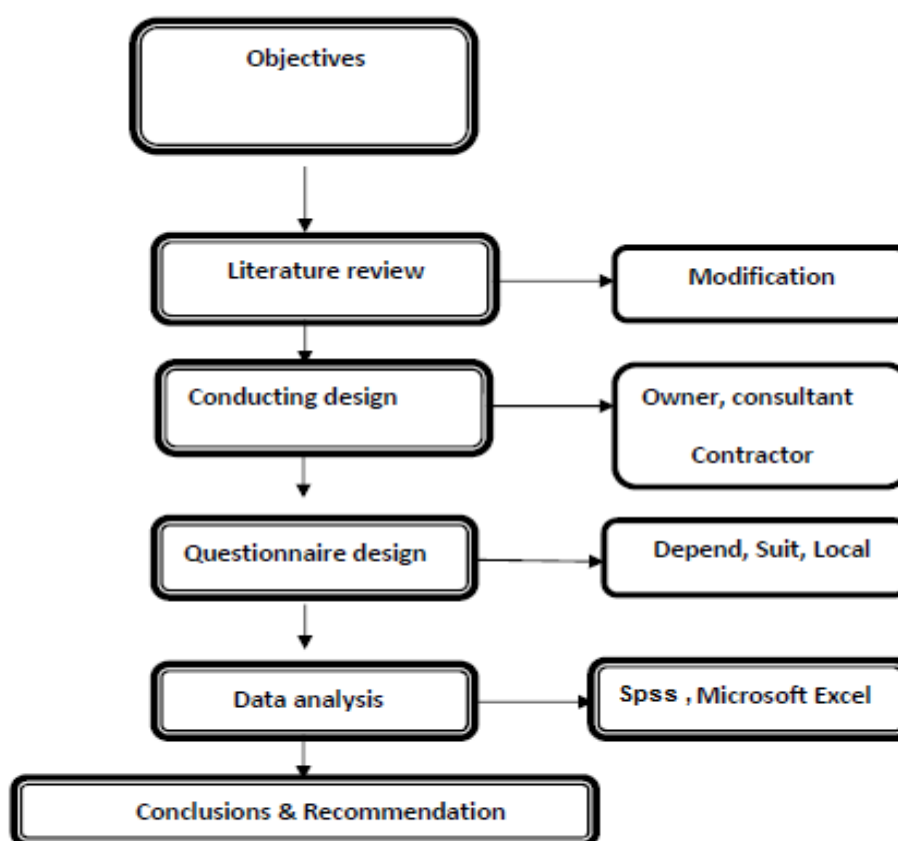
#### **3.1 Research Method**

Both two types of research method are used they are, the qualitative and quantitative approaches are used in this research, and compare the results in this research with other research to access to the fact. Both two type of research method are used for to realize the real safety problems and danger that occur in the Khartoum State, to investigate safety procedures, regulations and policies prevention methods related to the construction projects in the Khartoum State, to provide methods and suggestions to improve the safety performance in construction projects in Khartoum State.

#### **3.2 Flow Chart**

Methodology flow chart (see figure 3.1) which included key word for the end step, started with objectives, and literature review with key word modification the questionnaire to suit the construction projects in Khartoum State, and conducting design on the two part of the respondents, namely., consultants, contractors, also questionnaire design depend on the natural of work and issues safety in the construction projects in Khartoum State, also data analysis there

are three type of analysis in this research included: Microsoft excel, and SPSS ,and a few questions analysis separately, finally conclusion and recommendation.



**Figure 3.1 Methodology flow Chart**

### 3.3 Respondents

Three types of respondents are considered in this study. The first respondents is the contractors in the Khartoum state they executed so many projects during the last five years. The second type of respondents is consultants and executed so many construction projects during the last five years, the samples are selected randomly from each type of construction professionals'

contractors and consultants, also the experience of the respondents more than ten years, and number of projects executed in the last five years more than thirty projects with the different of size of those projects.

### **3.4 Questionnaire Design**

Questionnaire is used to collect the data. The designed questionnaire mainly depended on suit the local construction industry in Khartoum.

### **3.5 Data Analysis**

To the quantitative and qualitative analysis in this study use Microsoft Excel spreadsheet computer program for most of the questions in first part which is to realize the information of candidates. And part two about the discipline of the companies'

Real safety problems and danger of injuries that occur in Khartoum to provide methods and suggestions to improve the safety performance in construction projects in the Khartoum. few open questions in questioner , however, analyzed separately. SPSS used to analyze questions which are investigate safety procedures, regulations, policies and accident prevention method related to the construction industry in the Khartoum, and part of question table where in this part Likert Scale questions are used.

The main principle used in the analysis is the SPSS and the percentage weight to obtain the perfect solution for the respondents.

### 3.6 Questionnaire Content

#### Section I:

Includes data on members of the study sample: a description of the personal data on a sample of the study:

1. sex.
2. Academic qualification.
3. Age
4. Years of experience.
5. years of experience

#### Section 2

The study includes basic phrases: are the themes of which are recognized as the study hypotheses, and includes a number of this section (13) is representing the axes of the study according to the following:

- The first axis: the "axis of rehabilitation and training (and consists of three phrases).
- The second axis: the axis provides Regulations (consists of 5 phrases).
- The third axis: the focus of the work on the development of rules and regulations and laws (and consists of a 5 phrases).

The questionnaire included three types of questions. These types are:

- Close questions, which are used in questions number 1, 2, 3, 4, 5, 6, 7, 8, and 10 (See appendix I).
- Likert scale questions, which are used in part four, five and six of the questionnaire.
- Rating scale questions, which are used in question number 9 and 11 in part three of the questionnaire.

The aim of the questionnaire used in this study is to realize the real safety problems and danger of injuries that occur in construction projects in the Khartoum state, and to investigate safety procedures, regulations, policies, and accident prevention methods related to the construction projects in the Khartoum there; and to provide methods and suggestion to improve the safety performance in construction projects in the Khartoum state.