

# **CHAPTER THREE**

## **Material And Method**

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### **3-1 material:**

The study area which the researcher thereon is the State of Khartoum for the seven localities, terms Khartoum state is located at the confluence of the Blue and White Niles in the northeastern part of the country between middle latitudes (15-16) degrees N and longitude (21-24) degrees E longitude, and a length of 250 kilometers, at an estimated area (20 736) square kilometers.

Most of the Khartoum state located in the climatic semi-desert region, while North are located in desert areas, and the climate of the state hot to very hot and rainy summers and warm to cool and dry in winter, rainfall (100-200 mm) in the north-eastern regions, (200-300) mm in the north-western regions between (10-100) mm.

Temperatures ranging in the summer between (25-40) degrees in the months from April to June, and (20-35) in the months from July to October and temperatures continue to fall in the winter between the months of November to March from (15-25) degree.



Map.No(3-1) : World Map



Map. No (3-2): Show Seven Localities for Khartoum state

## **3-2 Methods :-**

### **3-2-1General:**

The field study is a way to gather information from the target group by the researcher in order to try survey the extent of knowledge of construction companies in Sudan risks of construction and over assurance is to adjust the administration and what are the obstacles that prevent the use of the application of risk management tools also tries to look to explore the most appropriate policy to counter expected losses in construction projects the lowest possible cost for the project in a scientific way is correct.

A questionnaire also aims to deal with expert systems in risk management and related scientific and experience scientific enable them to make appropriate decisions and the availability of free of all risk work environment rehabilitation to see how much the engineers' skills and abilities where workers can do the work in the best and knowing their personal safety and the safety of the workplace and the continuity of the project, which provides them with daily income.

### **3-2-2 Study Approach:**

a Researcher relied on information collection and that a survey and questionnaire based on the circumstances of companies in the construction industry in Sudan and then use the descriptive approach, which can be defined as (a way to describe the phenomenon studied and photographed quantified by data and information codified problem, classification and subjected minute of the study have been using the questionnaire as a tool to achieve objectives of the study).

Questionnaire consists of three parts:

- The first part has a range of primary data and the nature of the movements developed to assist in the understanding and clarity landmarks entry through the characteristics of the sample.
- Part Two managerial is a set of questions to a number of themes in order to clarify the matter and axes statement specialist.
- Part Three of art to illustrate the depth of the study and related aspects and cross-cutting them and find out why and where weaknesses and shortcomings.

### **3-2-3 Method of determining the study population:**

Random sample was selected from the statistical community engineering companies with specialization in Khartoum state construction projects in the projects carried out or supervised by. Where were 80 copies of the questionnaire distributed to the owners of the institution jurisdiction which are grouped then 70 copy number by 87.5% .

### **3-2-4Method of data collection:**

The researcher collects information through the target sample directly interview, which was randomly selected to distribute Aquestionnaire by hand so as to allow for filling the questionnaire asking about the questionnaire to increase the greatest understanding of the answers to the target sample and explain any ambiguity in the questionnaire which ensures confirmed him for information have tried researcher avoid disadvantages of this method, a sample members are forwarded to a specific answers or influence in their answers and it's commitment to neutrality as much as possible to respond to their inquiries and not directed to any specific answers when you reply to their questions.

### **3-2-5 Statistical methods:**

For the analysis of quantitative data and access to the interpretation has been used:

4-1-4-1manual unloading.

4-1-4-2 Use the computer to analyze and organize Showing results using a program (EXCEL and SPSS).

### **3-2-6 Difficulties faced researcher:**

Summed up Difficulties faced this study in its various stages in the following:

1. Engineers obsess and frequency fill out the questionnaire for fear of accountability from the company she works for, because of the compromising the reputation of the company.
2. The difficulty of access and prevent or documenting some of the risks that have been projects with pictures of her before Responsible companies because of the show along with default by the administration to have.

3. Scarcity of Arab and foreign references that cover the field of study.
4. The lack of statistics for the risks to construction projects in Sudan
5. Scarcity provide Sudanese Studies, which covers the field of study directly or indirectly.