

Risk Management in the Construction Industry of Saudi Arabia

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Abstract

The awareness about risk management in the construction industry is relatively low in Saudi Arabia in the construction and consulting companies while numerous projects being done in Saudi Arabia has made it more crucial. The objective of this project is to identify and prioritize common risks, management techniques, status of risk management system of the organization and barriers to effective risk management in the construction industry of Saudi Arabia. To achieve the objectives, a survey questionnaire is finalized to collect information from owners, consultants, and contractors about construction risk management. An interview guide is also finalized to conduct interviews with experts to understand risk management in the construction industry. The methodology is described to collect data from the construction industry stakeholders. Techniques for gathering the required data are identified, which comprises interviews and the questionnaire survey. The data were collected from the questionnaire survey by google forms and is analyzed by SPSS software. Interviews were conducted and analyzed. The results and analysis revealed that awareness about risk management in the construction industry of Saudi Arabia is not very high. Some contractor organizations lag behind in risk management. Several key findings have been drawn based on the results and analyses regarding the importance of risks, the application of risk management techniques, the status of the risk management system, and the barriers to risk management in the construction industry in Saudi Arabia. These conclusions are complemented by the interviews conducted with professionals in the field of risk management in construction. The objectives of the graduation project have been successfully achieved, and the recommendations arising from this study, as well as potential areas for further work have been documented.

Problem Statement

Risks may be handled in a variety of ways depending on the circumstances. Poor risk management may lead to failure, resulting in financial issues, harm to individuals, the environment, society, and reputations. The difficulty with risk management in construction is that it must be handled individually for each project. In construction, it has a beginning, an end, and teams creating it, judging plans, and anticipating the future. Poor risk management may fail to meet the project's objectives, resulting in increased costs, delays, and a lack of quality. To classify risks, we need to take into account the project's stakeholders' requirements. These factors aid us in our investigation of risk management approaches and procedures in the Saudi construction sector. The goal of this project is to identify and prioritize common risks, risk management methodologies, the condition of the organization's risk management system, and impediments to successful risk management in the Saudi construction industry.

Aim

The aim of this project is to identify and prioritize common risks, management techniques, status of risk management system, and barriers to effective risk management in the construction industry of Saudi Arabia.

Literature Review

► Risk management process:

- Risk identification
- Risk analysis
- Risk response
- Risk monitoring & control

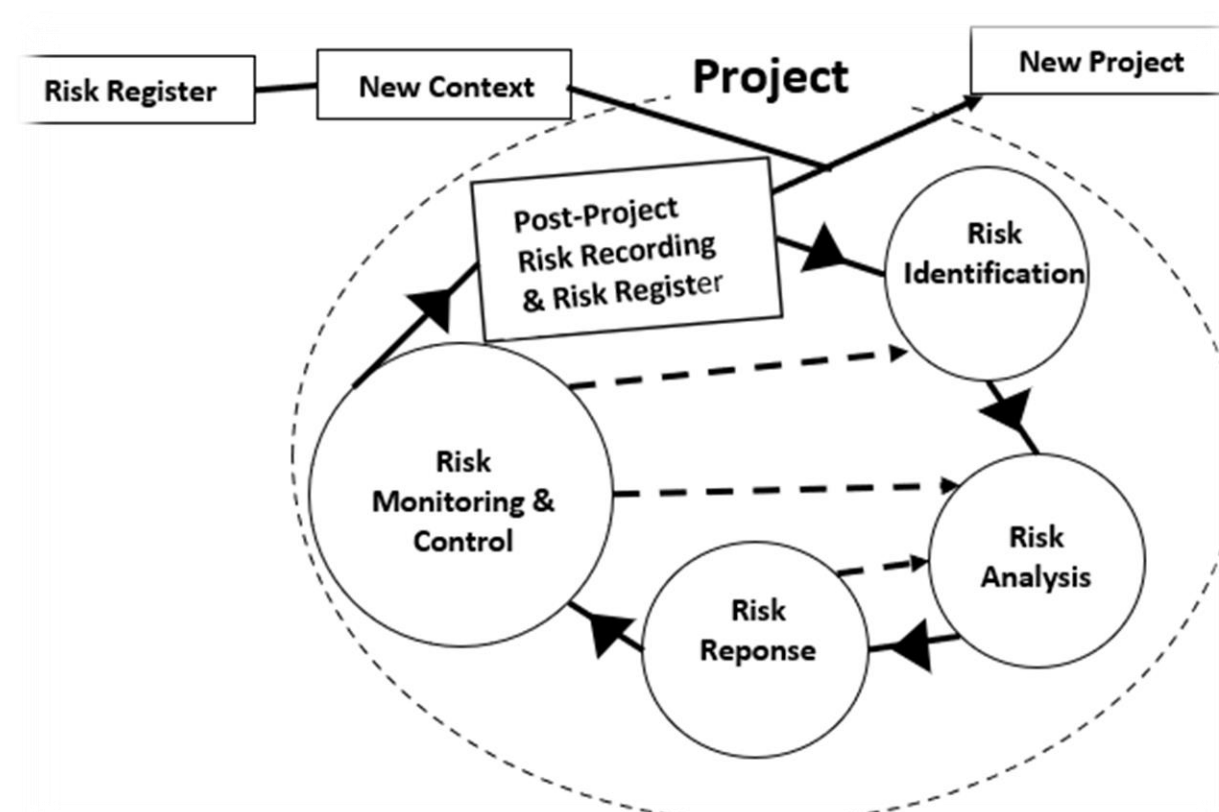


Figure 1. A systematic cycle of risk management

Objectives

- Finalize a survey questionnaire, collect information from owners, consultants, and contractors about construction risk management.
- Analyze the collected data from the survey questionnaire to investigate risk management on construction sites.
- Finalize an interview guide to conduct interviews with experts to understand risk management in the construction industry.
- Analyze the conducted interviews and document results.
- Identify and prioritize common risks, their management techniques, status of risk management system, and barriers to effective risk management in the construction industry of Saudi Arabia.

Methodology

The process of conducting graduation project research (RM in construction industry in Saudi Arabia) is carried out in several steps. We defined risk management in the construction industry, learned the background of RM and identified the project aim. We have read some research thesis and many articles about risk management in construction industry to understand it more and the applications of RM. We finalized the questionnaire, which is mainly adopted from the study of (Iqbal, 2011) and after that a pilot survey was conducted in the construction industry in Saudi Arabia. Information from stakeholders were collected through the survey questionnaire. An interview guide is also finalized from the questionnaire survey to conduct interviews with the experts. Collected data were analyzed by a software SPSS.

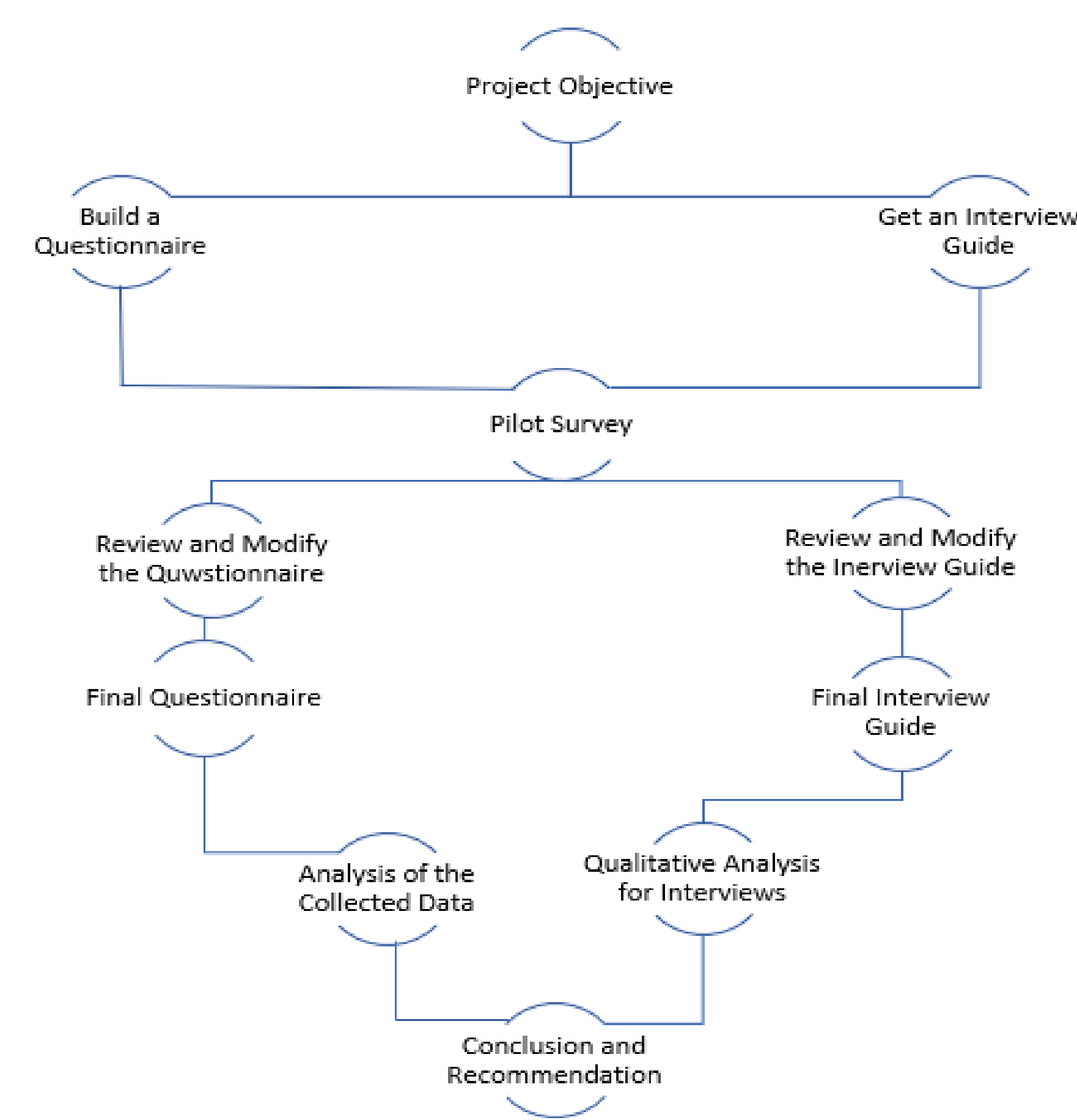


Figure 2. Research methodology flow chart

Results and Analysis

Analysis of the Questionnaire Survey

Designation of the respondents was checked for the questionnaire survey. Their positions in the project helped us to define the status of risk management in the construction field. Figure 3 shows that there were 34 respondents who were project managers, 64 were engineers, 18 were section managers and 4 were supervisor/ workers.

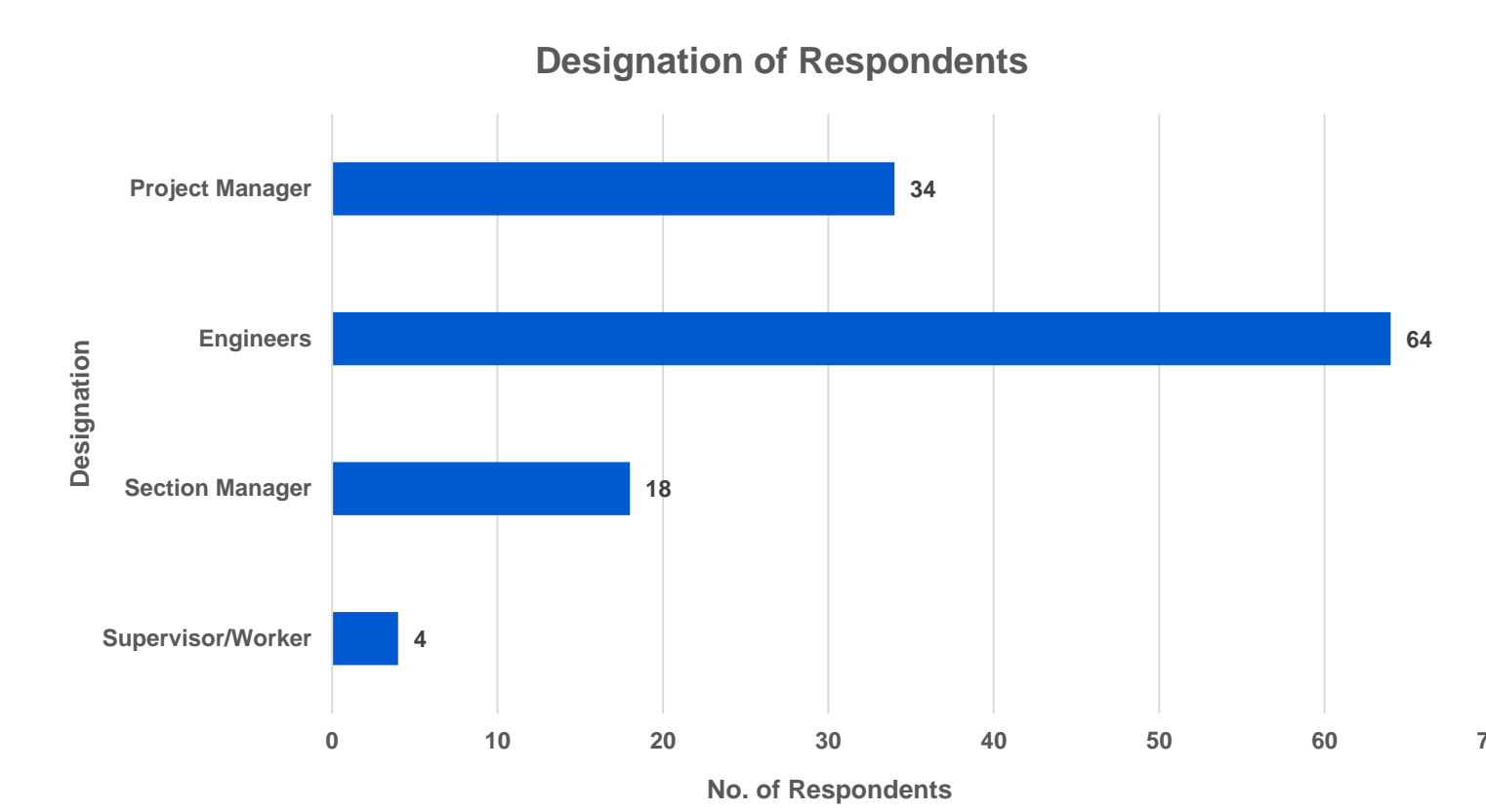


Figure 3. Designation of respondents

Work experience of respondents is important for the project. Figure 4 shows that there were 19 respondents who has less than 2 years of experience, 52 respondents have 3 to 5 years of experience, 18 had 6 to 8 years of experience, 4 had 8 to 10 years of experience and 27 were having more than 10 years of experience.

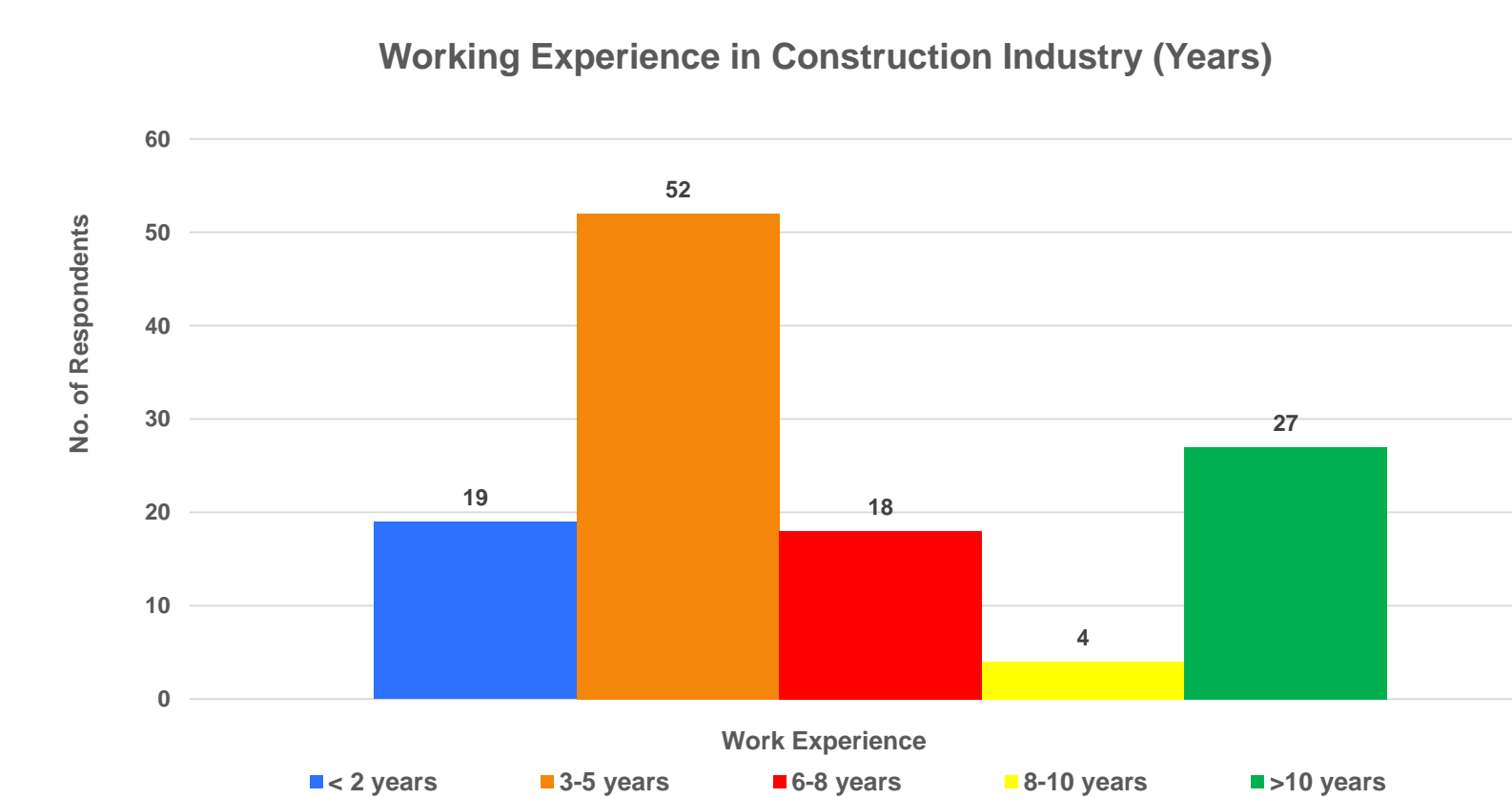


Figure 4. Working experience in construction industry (Years)

Roles and responsibility are important because it explain results in the perspective. Different stakeholders i.e., clients, consultant, and contractors may be having different views of seeing the risks because of their differences in the project roles that they face. Figure 5 shows that there were 60 respondents that are client, 38 were consultants and 22 were contractors.

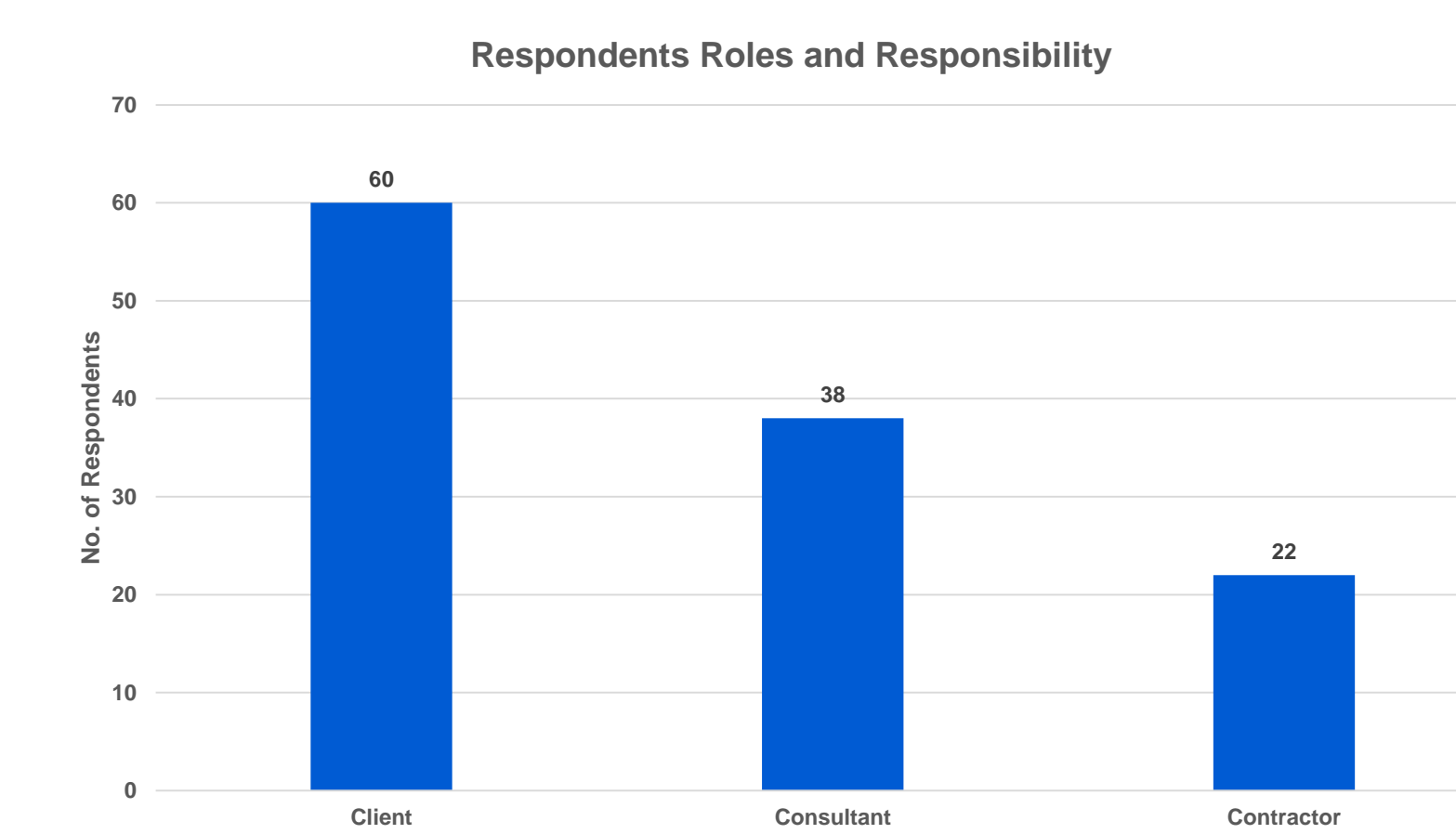


Figure 5. Respondents' roles and responsibility

Numerous experts and professionals in the field of risk management within the construction industry of Saudi Arabia, have actively participated in the questionnaire survey. Data from owners, consultants, and contractors were collected, entered in SPSS software, and analyzed. Results of the study were presented in the report via Tables, for example, Ranking of Important risks, ranking of risk management techniques, status of risk management system, and barriers to risk management. Additionally, six interviews with experts in this field were conducted and subsequently analyzed and documented in 6 Tables I the report.

Conclusion

Importance of Risk

Among the 20 important risks, the top 3 project risks in order of priority are: unrealistic contract duration, poor quality control, and inadequate planning. Perspectives on key risks vary among clients, consultants, and contractors, with a focus on contract duration and planning for clients, financial risks and safety for consultants, and quality control and on-site rework for contractors. Overall, stakeholders risk management should address these diverse concerns to ensure project success.

Risk Management Techniques

Construction industry often adopts checklists for risk identification and seldom carries out semi quantitative risk analysis. Whereas it often reduces the consequences of risks or avoids them. Risks could be shared with the other parties who have the experience. The industry sometimes carries out incident investigation mainly for fixing the responsibility and not for monitoring the risks.

Status of Risk Management System

Overall, the results show that most consultant organizations have more experience with risk management in the construction industry, and most of them operate in the private sector. In contrast, clients predominantly represent the public sector in Saudi Arabia. Consultant organizations demonstrate a higher level of attentiveness and concern regarding this issue compared to client organizations. On the other hand, clients place more emphasis on the formality of the risk management system. Consequently, it can be concluded that the status of the risk management system is more informal but adequate among consultants, contractors, followed by clients respectively.

Barriers to Risk Management

The primary barrier to implementing an effective risk management system is the lack of historical data for risk trend analysis, followed by the absence of mechanisms for joint risk management by the parties.

Findings of Interviews

In the Saudi Arabian construction sector, interviews with stakeholders highlighted the diverse nature of risk management strategies. These insights empower company owners to evaluate projects collaboratively, considering challenges tied to risk management. The absence of a universal system underscores the need for customized approaches, with organizations employing various techniques to address risks caused from factors such as economic downturns, and community opposition. The response to the COVID-19 pandemic exemplifies adaptive measures, including remote work arrangements and stringent safety protocols. Effective risk management involves addressing challenges like unrealistic contract durations, poor site management, unclear documentation, and changes in design, employing strategies such as resource assessments, quality control measures, clear communication, and change management processes.

Recommendations

- Unrealistic contract duration or ineffective planning and scheduling of the project is the major risk categorized at the top.
- Poor quality control and assurance risk has a very strong effect on construction, according to what was concluded from this study.
- The 3rd most significant risks to the construction sector are lack of planning and management due to lack of experience and competence.
- The Saudi Arabia risk management standards for industries may be developed in line to international standards.
- Awareness must be increased in terms of risk management in general and particular in construction.