

**STUDY OF SAFETY PRACTICE AT CONSTRUCTION  
SITE IN AFGHANISTAN**

**BY**

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the degree of Master of Science in Building Services  
Engineering**

**Kulliyyah of Architecture and Environmental Design  
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## **ABSTRACT**


The importance of a safe construction strategy at Afghanistan building sites is not an overstatement. It plays a critical role on project delivery timeliness. Although good construction safety management is vital, the literature reveals that safety lacks serious attention in the Afghanistan construction industry. As a result, the goal of this study was to evaluate safety practices in building construction sites in Kabul. Its objectives include determining the current safety practices at construction sites, investigating the level of safety performance in the construction industry, identifying the types of accidents that occur in the industry in Afghanistan, and identifying areas which can improve safety practices. The survey questionnaire and case study were used to obtain data. A total of 55 questions were asked from 120 contractors, with 12 building companies' construction sites in Kabul targeted. However, only 52 individuals responded to the survey. The quantitative descriptive statistics in Microsoft Excel and the Statistical Package for the Social Sciences (SPSS) were used to analyse the data. The findings show that Kabul's safety practices in building construction sites fall short of expectations, as the current safety practices in Afghanistan's construction industry is deplorable. Most of the companies do not practice effective safety management, and although the majority of contractors are informed and aware of safety concerns, they do not apply safety practices in building construction. This is due to the lack of upper management control and monitoring. The absence of any safety training as well as policy is absent in some companies. Similarly, meetings held at construction sites rarely touched upon the matter of safety. This study further finds that the effect of the natural environment, illiteracy, and a lack of skilled labour on safety and three other vital aspects influence safety performance throughout construction. Additionally, the study identifies the types of accidents in construction sites. They are deaths, permanent inability, partial inability, and light injury. The result shows partial inability recording the highest percentage of calamity in construction sites by 69.2%. This is attributed to the lack of safety training, lack of skilled labour, lack of the employment or presence of a safety officer, lack of safety policies, lack of personal protective equipment, and lack of experience in using the equipment. Therefore, practical safety training, allocating funds for safety management, and imposing penalties on workers who violate safety rules and regulations are the suggested measures to improve safety in construction sites in Afghanistan.

## خلاصة البحث

إن أهمية وجود استراتيجية بناء آمنة في مواقع البناء في أفغانستان ليست مبالغة في تقديرها. بل إنها تلعب دوراً مهماً في توقيت تسليم المشروع. على الرغم من أن الإدارة الجيدة لسلامة البناء أمر حيوي ، إلا أن الأدبيات تكشف أن السلامة تفتقر إلى الاهتمام الجاد في صناعة البناء في أفغانستان. نتيجة لذلك ، كان الهدف من هذه الدراسة هو تقييم ممارسات السلامة في مواقع تشييد المباني في مدينة كابول. وتشمل أهدافها تحديد ممارسات السلامة الحالية في مواقع البناء ، والتحقق في مستوى أداء السلامة في صناعة البناء ، وتحديد أنواع الحوادث التي تحدث في الصناعة في أفغانستان ، وتحديد المجالات التي يمكن أن تحسن ممارسات السلامة. تم استخدام استبانة المسح ودراسة الحالة للحصول على البيانات. تم طرح مجموعه من الاسئلة مكونة من ٥٥ سؤالاً موجهاً الى ١٢٠ مقابلاً ، مع استهداف ١٢ موقع بناء لشركات البناء في كابول. ومع ذلك ، استجاب ٥٢ فرداً فقط على الاسئلة. تم استخدام الإحصاء الوصفي الكمي في برنامج Microsoft Excel والحزمة الإحصائية للعلوم الاجتماعية (SPSS) لتحليل البيانات. تظهر النتائج أن ممارسات السلامة في كابول في مواقع تشييد المباني لا ترقى إلى مستوى التوقعات ، حيث أن ممارسات السلامة الحالية في صناعة البناء في أفغانستان مؤسفة جداً. لا تمارس معظم الشركات إدارة فعالة للسلامة ، وعلى الرغم من أن غالبية المقاولين على علم ودراية بمخاوف السلامة ، إلا أنهم لا يطبقون ممارسات السلامة في تشييد المباني. ويرجع ذلك إلى عدم وجود رقابة ومراقبة من الإدارة العليا. غياب أي تدريب على السلامة وكذلك السياسة غير موجود في بعض الشركات. وبالمثل ، نادراً ما يتم التطرق إلى الاجتماعات التي تُعقد في مواقع البناء بشأن مسألة السلامة. كما توصلت هذه الدراسة إلى أن تأثير البيئة الطبيعية والأمية ونقص العمالة الماهرة على السلامة وأخرى الحيوية التي تؤثر على أداء السلامة في جميع مراحل البناء. بالإضافة إلى ذلك ، تحدد الدراسة أنواع الحوادث في مواقع البناء. إنها حالات وفاة وعجز دائم وعجز جزئي وإصابة طفيفة. وأظهرت النتائج عدم قدرة جزئية مسجلة أعلى نسبة كارثة في مواقع البناء بنسبة ٦٩.٢٪. ويعزى ذلك إلى نقص التدريب على السلامة ، نقص العمالة الماهرة ، نقص التوظيف أو وجود ضابط سلامة ، نقص سياسات السلامة ، نقص معدات الحماية الشخصية ، ونقص الخبرة في استخدام المعدات. لذلك ، فإن التدريب العملي على السلامة ، وتخصيص الأموال لإدارة السلامة ، وفرض عقوبات على العمال الذين ينتهكون قواعد وأنظمة السلامة هي التدابير المقترحة لتحسين السلامة في مواقع البناء في أفغانستان.

## APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Science in Building Services Engineering.

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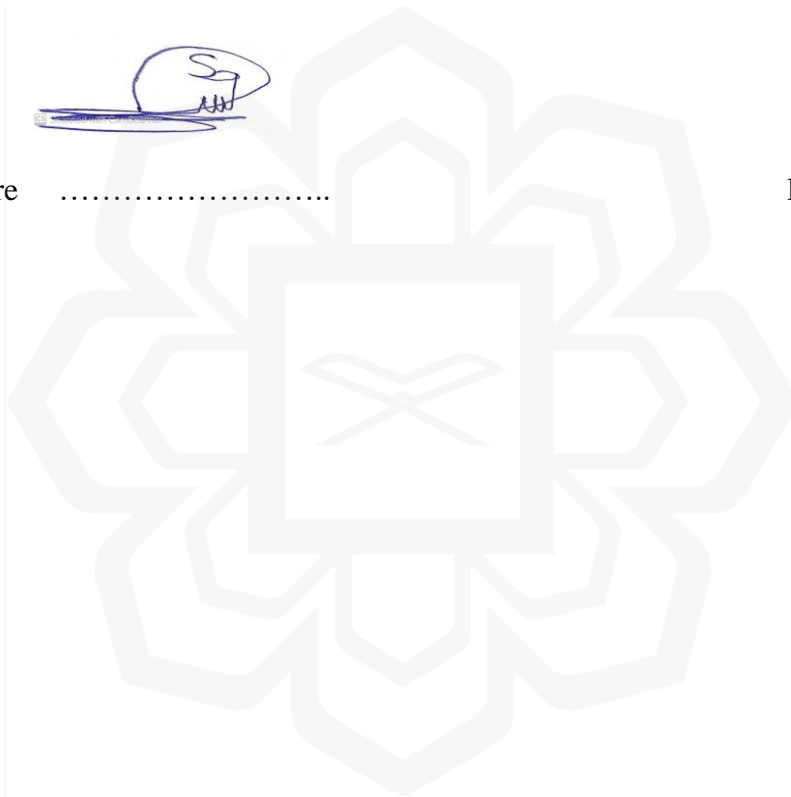
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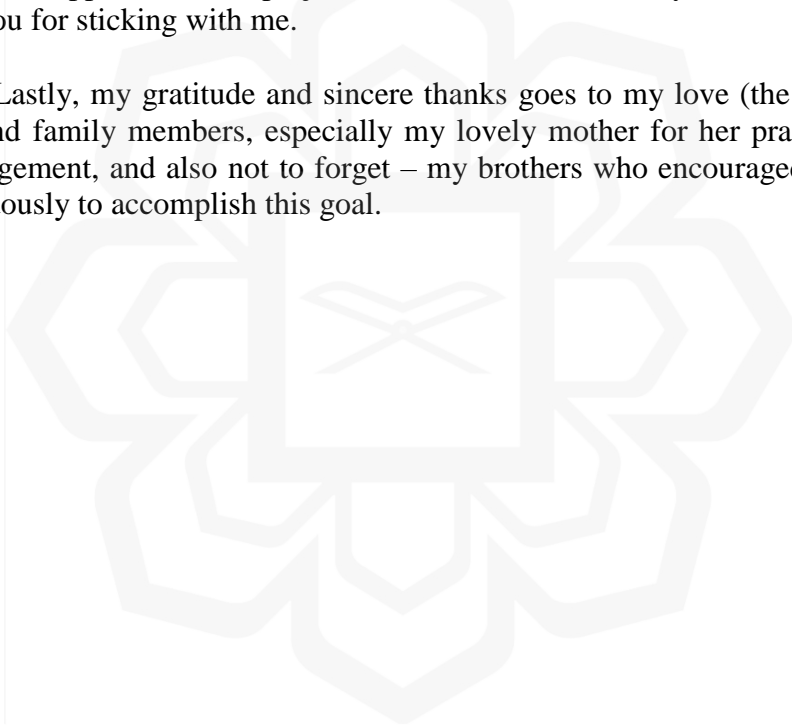
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## LIST OF ABBREVIATIONS

DOSH	Department of Occupational Safety and health
H&S	health and safety
HSE	Health and Safety Executive
hse	health, safety, and environment
ILO	International Labour Organisation
ISO	International Organisation for Standardisation
MUDA	Ministry of Urban Development Affairs
OSH	occupational safety and health
PPE	personal protective equipment
SHO	Safety and Health Officer
SP	safety practice

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 INTRODUCTION**

This study focuses on safety practices in Afghanistan's construction project sites. The construction industry is an entire sector that helps grow the country's GDP (Gross Domestic Product). More construction projects have been completed over time to facilitate the development and expansion of the human population. However, in the construction sector, unforeseeable accidents can occur during the construction process. Thus, the lives of the labourers are at risk. According to the International Labour Organisation (ILO), the activity in question should be safe. Labour environment on the building site should not jeopardise the life, health, or professional skills (International Labour Organisation, 1995). Unfortunately, in most developing countries, safety practice in construction has not received much attention from the management level (Le, Shan, Chan, and Hu, 2014). This because such countries lack safety regulations. In China, for example, the building business has a higher death toll than coal mining (Shuai & Li, 2013). General safety practice is one of the massive issues facing Afghanistan's construction industry. Construction workers can be injured or killed due to inadequate safety management and a failure to control safety during construction activities. As a result, good safety management is essential to avoid injuries and deaths.

The research will describe the research aims and objectives and the methods used in a later chapter. The scope and limitations of the research have been established in this research to guarantee a comprehensive study direction on a well-defined

methodological approach. In this study, the researcher looks at safety procedures in the building construction project in Afghanistan. The research therefore illuminates construction safety practices, types of construction events, and essential aspects that influence safety performance at construction sites in Afghanistan. This chapter will be ended with reasonable conclusions and recommendations.

## **1.2 BACKGROUND**

Construction projects are the various processes that involve during constructing a building or infrastructure. It begins with project preparation, structure, and funding and ends with project completion. Dams, bridges, refineries, highways, and power plants all require diverse engineering skills that include:

- infrastructure design and implementation
- environmental effects on the local area
- project scheduling
- construction-site protection

Indeed, safety practice remains a problem and a challenge for scholars and scientists. Because of the construction industry's dismal record on safety, both society and the economy in Afghanistan have suffered human and financial losses. The Guide to the Project Management Body of Knowledge recognises safety practice as fundamental knowledge in the project management field (PMBOK Guide, as cited from Cretu et al., 2011)

Incidents and situations that could put project personnel in danger must be considered by health and safety management. However, in hazardous situations, such as the construction industry, where everyday tasks are dangerous, H&S plays a vital

role. As a result, it is critical to define appropriate safety practices and strategies, considering the possibility of significant H&S issues (Twort & Rees, 2011).

According to Khalid (1996), robust safety systems would undoubtedly aid in the reduction of accidents on construction sites. It will also reduce construction costs, boost efficiency and benefit, and, most importantly, it can save workers' lives. As a result, it would positively impact the construction industry and the country as a whole.

Construction sites are typically complex and often dangerous to staff and the community. Because of the high amount and diversity of injuries, it is among the most dangerous workplaces (Guo, Li and Li, 2013). As a result, construction safety accounts for the most critical performance in the construction industry worldwide, particularly in massive undertakings. This is due to the project's large workforce, modern construction techniques, several techniques and expensive factories, a large number of materials and equipment used, complex construction activity, multi-interface, and multiple disciplinary aspects, as well as the project's large workforce and modern construction techniques (Guo, Li and Li, 2013). All of these factors contribute to a higher rate of construction-related accidents (Guo, Li and Li, 2013). Falling workers from the top floor crash collapse and electric shock are among the most common types of injuries, falling from great heights and collisions being the most common (Guo, Li and Li, 2013).

The lack of safety practice in the workplace is the leading cause of injuries and accidents, especially in high-risk sectors such as construction (Choudhry, Fang, and Mohamed 2007; Cooper, 2000). Scholars have been paying more attention to the idea of safety culture in recent years, owing to its critical position in reducing injuries and deaths on construction sites (Choudhry, Fang, and Mohamed 2007; Cooper, 2000). In



hazardous areas, such as construction sites, safety practice is linked to accidents and injuries.

### **1.3 PROBLEM STATEMENT**

Safety practice in Afghanistan has become a focal point for all industries and has gotten much attention in recent years, especially in the construction industry. According to Choudhry et al. (2007), safety practice is the most critical factor that affects employee attitudes and behaviours in terms of an organisation's overall safety efficiency. Since safety practice is inextricably linked to the organisation, it has attracted a diverse range of industries.

Afghanistan has had the misfortune of living through decades of civil war, which resulted in tragedies and badly harmed the country's infrastructure. The building construction sites have been insufficiently steady to support sustained growth. Regrettably, the building construction project in the country has been severely wounded by violence and a lack of authority. Nevertheless, the construction industry began to re-establish itself gradually following the formulation of a new government in 2002.

The problem with construction sites in Afghanistan is that although many contractors are supposed to follow the contract safety rules, they infrequently do so, causing widespread injuries and fatalities among construction workers. Worse, there is an absence of government records to document statistics on severe injuries and deaths. Companies tend to persuade wounded workers not to file claims as it will jeopardise their chances of landing a new contract Amiri and Hamidi (2015). In this case, the contractors will pay the workers a small amount of money as a bribe. As most workers

are poor, they always would accept the offer Amiri and Hamidi (2015). Assessing the safety practices at construction sites in Afghanistan is an essential step in identifying possibilities for enhancing safety efficiency and, as a result, enhancing an organisation's potential success. There is a significant need to recognise how safety practice affects construction safety efficiency, including their safety behaviours (Ibrahimkhil, 2017). Construction sites in Afghanistan is regarded as one of the most dangerous places to operate.

Special Inspector General for Afghanistan Reconstruction (SIGAR) identified multiple violations of safety requirements during the construction of a high school in Kapisa province in 2009. Workers reported the absence of Personal Protective Equipment (PPE) such as head, eye, and hand protection, despite safety standards explicitly specified in the contract. The simple use of PPE within working hours was frequently ignored, resulting in a slew of safety issues for numerous projects in terms of time, money, and human lives lost (Mittal, 2016).

It will take time and effort to efficiently monitor the safety output of employees who conduct challenging and hazardous work. Studying safety practices as a significant indicator of safety success will add to our understanding of construction health and safety practices. Studies have shown that promoting safety practices fosters management processes and reduction strategies focused on increasing organisational engagement and awareness of safety, contributing to improved preparedness for unsafe situations (Pidgeon, 1998).

Safety concerns are only addressed once an incident happens at a construction site, with subsequent initiatives to enhance the workplace, particularly in the developing world. Therefore, proper and effective safety practice in the construction industry is critical. Similarly, it is important to identify a method for assessing

construction safety practice using a proposed practical safety assessment. A survey of people involved in construction projects will investigate essential factors that influence construction safety performance. The purpose of this work is to look at how building construction site management can improve protection. Essentially, the proposed structure could aid construction safety practices. The number of accidents can minimise when safety factors are well-handled. As a result, this study aims to evaluate safety practices within construction project sites in Afghanistan to set goals for safety practices growth and shed more light on areas where safety improvements are required.

#### **1.4 SIGNIFICANCE OF STUDY**

Many construction companies do not follow a systematic approach to construction safety. As a result, building site injuries continue to be in the news. In this case, the seriousness of the problem threatens human life by failing to adopt appropriate safety practises in Afghanistan's construction industry.

##### **1.4.1 Towards the Construction Industry in Afghanistan**

The conclusions of this research assist for the government and organisations associated with building construction safety projects and improving safety practices in the construction industry. The research findings could also assist Afghanistan's construction companies in properly managing safety during construction projects, which encourages them to create guidelines and restrictions to practice safety in the right way.

##### **1.4.2 Towards Society and Community**

This project will increase community awareness of the reasons for the poor safety practices on construction sites, encouraging them to reduce the issue. Furthermore, this will increase public perception of the activities in the environment and safety practices on the project site.

### **1.5 RESEARCH AIM AND OBJECTIVES**

The aim of this thesis is to assess the safety practice of construction of building in Afghanistan.

The objectives of this research are:

1. To determine the current safety practices at construction sites in Kabul, Afghanistan.
2. To identify the types of accidents in the construction industry in Afghanistan.
3. To examine the factors influencing safety performance in Afghanistan's construction industry.
4. To suggest areas to improve safety practice in the country's construction industry.

### **1.6 RESEARCH QUESTIONS**

1. What are the current safety practices at construction sites in Kabul, Afghanistan?
2. What are the types of accidents in the construction industry in Afghanistan?
3. What are the factors affecting safety performance in Afghanistan's construction industry?

4. What are the strategies to improve safety practice in the country's construction industry?

### **1.7 SCOPE OF STUDY**

The focus of this research is on building construction site safety practices. This research will attempt to place safety practices in building construction projects as a critical component of project performance and progress. The focus of the research will be on a case study on building construction project sites in Afghanistan.

### **1.8 STRUCTURE OF THE DISSERTATION**

This research report has five chapters. Thus, as a result, the structure is described below, along with a brief overview of the research.

#### **Chapter One: Introduction**

The introduction, historical background, statement of the problem, research questions, study objectives and goals, and other related analytical issues are covered in the first chapter.

#### **Chapter Two: Literature Review**

The second chapter focuses on the literature review. In this chapter, different perspectives will be analysed from the literature on construction project sites.

#### **Chapter Three: Research Methodology**

The research methods used in the data collection and analysis process will be discussed in the third chapter.

#### **Chapter Four: Findings and Analysis**

The data gathered are thoroughly explained in this chapter in order to solve the research questions. The collected data will be analysed to find the cases of improper safety practices at construction sites in Afghanistan.

#### **Chapter Five: Conclusion and Recommendation**

The study's overview of results, conclusion, and recommendations are all contained in the last chapter. There will be possible solutions and suggestions to eliminate or minimise accidents during the construction at project sites in Afghanistan.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

Safety is the state of not being in danger or at risk or the practice of taking safety precautions or actions to guarantee that something is safe (Dictionary of Human Resource and Personnel Management, 2003).

The primary purpose of conducting a literature review is to gather data about the research subject. The word ‘safety’ is a regular terminology in many construction projects in any country. As a result, safety practice stresses the importance of ensuring the implementation and enforcement of safety at worksites are carried out with significant commitment by all construction practitioners. It is therefore not just a term. Workplace injuries are typically caused by a lack of expertise and monitoring, a shortage of means to perform a task safely, mistakes in judgment, carelessness in decision-making, or absolute lack of responsibility (Wang, Zou and Li, 2016). Furthermore, the lack of a regulated working atmosphere and the complexity and variety of organisational sizes have impacted companies’ safety efficiency (Muiruri & Mulinge, 2014). Also discovered are insufficient safety procedures, non-compliance with laws, a lack of experience, and unskilled employees which contribute to unforeseen construction project incidents.

Construction has the highest rate of incidents, including fatalities and disabling injuries, of any industry in the world (Priyadarshini, 2013). Many attempts have been made to mitigate the issue, but the results are far from acceptable, as construction

accidents remain the most common cause of death and injury (Priyadarshani, 2013). Despite numerous national federal programmes and private sector initiatives, the majority of construction incidents stay shockingly high. These efforts are insufficient to reduce the number of dangerous activities and unsafe working conditions at work sites.

The distinction between appropriate and unacceptable actions on construction sites must be spelt out and recognised for safety culture practices to be successful. An effective safety culture programme should concentrate on reducing site injuries by having practical engineering of vital elevator lifts, stopping falls from heights, being hit by a moving vehicle, trench collapse, and being exposed to hot or hazardous substances, among other items (Reason, 1998).

According to Idoro (2004), construction site damages and incidents are substantially greater in developing countries than in European nations. In many other developing nations, safety does not prioritise construction projects, and enforcing safety measures on the job is a burden (Mbuya, 1996).

## **2.2 CONSTRUCTION SAFETY RESEARCH IN AFGHANISTAN**

After creating a new regime in 2002, several scholars from various fields have begun publishing their research in international journals. While these research studies cover a wide range of subjects, only a few are essential to safety performance. As a result, the following are the minimal significant research related to safety in the Afghan construction industry that has been found to date.

Amiri, Darvish, Akbar, and Sarafrazi (2016), investigated construction site safety and health management. This study surveyed a total of 80 contractors. According to the report, construction managers and engineers are ignorant of safety management, and two-thirds of construction workers do not attend safety training workshops. In