



## **Analyzing the causes of accidents in construction projects in 22nd District of Tehran with risk management approach**

**Pedram Eslami<sup>1</sup>, Steve Markarian<sup>2</sup>**

**1- Pedram Eslami, Bachelor of Architecture Engineering, Kashan Branch, Islamic Azad  
University, Isfahan, Iran  
Eslami.pedram@yahoo.com**

**2- Steve Markarian, Master of Science, Faculty of Civil, Water and Environmental Engineering,  
Shahid Beheshti University, Tehran, Iran  
s.markarian@mail.sbu.ac.ir**

### **Abstract**

Injury in this industry leads to death, serious occupational injuries, and wasted time due to its particular nature. Construction workshops are characterized by many special factors such as successive changes in work environment, reversal of teamwork, poor working conditions, exposure to different climates, high number of amateur workers and temporary troops. Hence, the analysis of occupational and safety risks in large construction workshops is a major step toward achieving the appropriate safety and a basis for safety management, forming part of the safety management system. The purpose of this study is to evaluate and analyzes the causes of accidents in construction projects with the risk management approach in the 22nd district of Tehran. So, 40 contractors, employers, consultants and workers were selected by Cochran formula to fill out the questionnaire. The risks identified in this study are through expert library studies including fire and explosions, falling buildings, falling from the scaffolding, collapse or collision with objects, electric shock and getting stuck between objects. The results of the risks and accidents ranking in construction projects in 22nd district of Tehran indicate that slipping, stuck between objects and fire and explosions ranked first to third in terms of the importance of risks and accidents. The risks of electric shock and falling from scaffolding have the least importance among these risks.

**Keywords: Construction accidents - Construction projects - Risk management.**

### **1. INTRODUCTION**

Injury in the industry leads to death, serious occupational injuries, and time-consuming work due to its particular nature. Construction workshops are characterized and described by many special factors such as the successive changes in the work environment, the reversal of my teamwork, the poor working conditions, exposure to different climates, the high number of amateur workers and temporary troops. Characteristics cause a lot of accidents in the industry. Hence, the analysis of safety and occupational risks in large construction workshops is a major step towards achieving the appropriate level of safety and the basis of safety management in construction, which forms part of the safety management system (Pinto et al., 2011). Occupational accidents cause over 300,000 deaths and injure more than 300 million people worldwide (Ilo, 2013). This large number of accidents cause severe human and financial damage to communities (Warch, 2012). Previous studies have shown that, workers in various industries have different levels of occupational accidents (Dudarev et al., 2013). In the meantime, the construction industry is known as one of the most dangerous industries in the world. Construction has a varied nature (Cheng et al., 2010). These constant changes, along with the use of different resources, poor working conditions, instability in employment, lack of training and a harsh environment, are among the characteristics of this industry (Pinto et al., 2011). Project risk management plays a key role in the success of the project as one of the nine elements of project strategic management. One of the methods of proper project management has proven its ability to demonstrate its use in various projects. During the project, there are risks and the project risks and uncertainties for increasing value, which may not increase the value of the opportunity with greater risks (Sadeghi et al., 2009). Accidents causing death in the work environment can be done by eliminating 6 to 7 working days (Ravanshadnia, 1394). According to UN, it is possible to prevent 98% of the work-related accidents in the