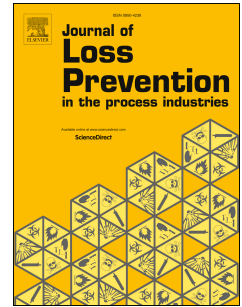


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# A new scoring system for assessing the risk of occupational accidents: A case study using data mining techniques with Iran's Ministry of Labor data

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**Abstract.** The main purpose of reviewing occupational accidents is not only to prevent the accidents but also to minimize the physical and financial damage caused by them. It is obvious that identifying the main risk factors and determining their qualitative and quantitative rates is essential to the implementation of effective safety management. The main purpose of this study is to use the new risk management methods for occupational accidents and improve work safety. Recent research shows that data mining techniques are powerful tools in assessing the risk of occupational accidents; by combining previous methods, such as the coefficients of accident assessment—which are used to assess an organization's safety—and data mining models. This study attempts to present a new risk assessment method for occupational accidents. The results show that the proposed method could identify and evaluate critical points with a high level of accuracy. A practical application of the method is also presented in which the workplaces at most risk in 2010 are identified and the risk level for each category is determined. Then, repeating the procedure for 2011, critical points based on previous data are determined, and a list of workplaces requiring periodic inspections in 2012 is produced.

**Keywords:** *Risk assessment, Occupational safety, Data mining*

## 1. Introduction

Every year, accidents across some industries cause considerable financial, physical, and environmental damage to companies, organizations, and the injured persons and their families. In addition to the direct and obvious damages, there are costs and other consequences, such as

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