Safety Science 93 (2017) 127–133

Contents lists available at ScienceDirect

Safety Science

journal homepage: www.elsevier.com/locate/ssci

An assessment of occupational health and safety measures and performance of SMEs: An empirical investigation

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ARTICLE INFO

Article history:
Received 30 April 2016
Received in revised form 4 October 2016
Accepted 29 November 2016

Keywords:
Occupational health and safety
OHSMs
Performance of SMEs
OHS impact
Empirical study

ABSTRACT

An empirical study was undertaken to identify the relationship between occupational health and safety measures (OHSMs) and performance of small- and medium-sized enterprises (SMEs). Survey data was collected from 35 SMEs located at S.I.T.E. Kotri, Sindh Pakistan, through questionnaire. Appropriate sampling of the collected data was carried out and analyzed in two stages using SPSS (statistical package for social sciences) software. Initially, reliability of the data was checked with the help of Cronbach's alpha coefficient, which was 0.80; and that reflects good and consistent. Afterward, descriptive statistics (mean and standard deviation) and then inferential statistics techniques (Pearson correlation and simple regression) were used. Results revealed a moderate positive correlation among OHSMs and performance of SMEs. This reflects that OHSMs were not properly carried out which influenced the performance of SMEs. Therefore; Pakistani SMEs need to pay a serious attention towards proper implementation of the OHSMs.

1. Introduction

In recent years, there have been major employment challenges worldwide. According to United Nations (UN) and International labor organization (ILO), globally, during the period from 2007 to 2015, unemployment increased from 170 million to 204 million and by 2030 this number is anticipated to reach 470 million (International Labour Office, 2015; UN, 2016). In 2015, UN held a summit about global sustainable development, wherein 150 leaders participated and adopted new agenda that includes seventeen sustainable development goals (SDGs). Aim of these SDGs was to boost sustained economic growth with the innovation of technology and attaining higher levels of productivity. Key of Success to this aim lies in promoting policies which create jobs and encourage entrepreneurship. Keeping these targets in mind, goal of UN is to achieve full and productive employment for all men and women by 2030, which is known as decent work for all.

In this context, small- and medium-sized enterprises (SMEs) can play vital role for the achievement of SDGs in terms of employment generation and economic growth worldwide. Many international organizations such as UN and ILO are working to promote SMEs sector. This sector has outreached the potential to create qualitative and quantitative employment generation. Worth of this sector can be estimated that it contributes to one third of the global employment (International Labour Office, 2015).

In Pakistan, according to an authority for development of small and medium enterprises (SMEDA), 90% establishments are SMEs (SMEDA, 2007). These contribute approximately 40% to the gross domestic product (GDP), 30% to the country's export and 80% to employment excluding agricultural workforce (Syed et al., 2012; Khan and Ghouri, 2011). These statistics indicate that SMEs are playing active role in boosting economy, prosperity and employment generation in the country (Marri et al., 2011; Nebhwani et al., 2011). Unfortunately, 90–95% of SMEs fail at their initial stages due to competitive environment (Khalique, 2011). In such competitive environments, occupational health and safety (OHS) should play a key role for the sustainable development and long term survival of the SMEs. SMEs of Pakistan have been lacking in efforts towards implementation of health and safety due to a lesser attention by industrialists to this significant factor (Farooqui, 2008; Khan, 2013). Most recently, statistical reports from ILO indicate that around 317 million occupational accidents occur globally every year out of which approximately 6300 people die (Danjuma et al., 2016; International Labor Organization, 2016). Also, Global Reporting Initiative, in its G4 development, formed an occupational health and safety working group for promoting sustainability and transparency in the organizations (GRI, 2012).

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http://dx.doi.org/10.1016/j.ssci.2016.11.024
0925-7535/

OHS situation in establishments vary country to country, but both death toll and injuries take place at larger extent in the developing countries. In Pakistan, working deaths are reported higher than in other developing economies (Hassan, 2012). In Pakistan, approximately 7444 fatal accidents and 5,680,740 occupational accidents take place annually, which keep workers away from work at least for 3 days. However, fatality rate and accident rate per 100,000 workers are approximately 20.7 and 16,000 respectively (Hämäläinen et al., 2006). It has been observed that work related accidents are higher in SMEs as compared to larger enterprises (Arocena and Nunez, 2010).

In an economic perspective, occupational accidents, injuries and diseases are obviously unwanted by organizations due to extra expenses incurred to both employees and employers (Gopang, 2015). Costs paid by employees are in terms of loss of wages, medical treatments, pain and reduction in life quality. Whereas, costs paid by employer include monetary compensation, equipment or plant damage and loss in terms of production interruption. Another type of cost incurred to employer is replacement and training of a new employee in case an employee is expired or disabled. These costs can be reduced by improvement in health and safety conditions at the workplaces (Thomason and Pozzebon, 2002).

Working conditions can be improved with the effective implementation of OHS management at workplace. OHS management is a part of the organizational management that is executed through safety measures by the top management. It considers the prevention of occupational accidents and injuries on top priority. As a result, workplace conditions are improved and floor accidents and injuries are reduced (Vinodkumar and Bhasi, 2010). Thus, OHSMs bring safer workplaces which can also help to improve productivity, reduce costs, increase profitability and performance (Bakri et al., 2006).

Fernández-Muñiz et al. (2009) have discovered that good occupational safety management (OSM) practices have impact on overall performance (competitive, financial and safety) of SMEs. These reduce the rate of accidents, material damage, personal injuries and absenteeism of employees, and improve the working conditions, productivity, sales and profit. These practices also have positive influence on the reputation, productivity, sales and profit. Diugwu (2011) has also reported that a good occupational safety management culture improves reputation, lowers costs and sustains the competitiveness of SMEs. Similarly, Bottani et al. (2009) have provided evidence that companies which do not adopt safety management systems have lower performance as compared to those which do.

This paper is an extended effort in the above context wherein results of a survey based empirical investigation on occupational health and safety measures (OHSMs) and their effect on the performance of SMEs in Pakistan are presented and statistically analyzed.

2. Methodology and methods

This research study was conducted through a survey at one of the industrial zones of Pakistan located in Sindh province, known as Kotri S.I.T.E. Area. Unit of analysis was SMEs, and convenience sampling technique was used to collect the data, through a modified questionnaire obtained from the study of Makori (2012), given in Appendix A. Likert scale, as stated by Likert (1932), was used in the questionnaire having range 1–5, wherein 1 = strongly disagree 2 = disagree, 3 = Not Sure, 4 = agree and 5 = strongly agree.

Analysis of data was carried out in three stages. At first stage, reliability was checked by using Cronbach's alpha, which indicates the internal consistency of items and is essential statistical technique for survey based studies (Allen et al., 2008; Gliem and Gliem, 2003). Cronbach's alpha coefficient ranges from 0 to 1. Value of the Coefficient: $\geqslant 0.9$ indicates excellent internal consistency of items, $\geqslant 0.8$ indicates good consistency, $\geqslant 0.7$ indicates acceptable, $\geqslant 0.6$ reflects questionable, and $\leqslant 0.5$ indicates poor and unacceptable (George and Mallery, 2003).

At second stage, descriptive statistics, i.e. frequency, percentage, mean and standard deviation were measured. At third stage, inferential statistical tools (Pearson correlation and simple Regression) were used to analyze the data with the help of SPSS. In the Pearson correlation analysis, correlation assesses the strength of relationship between dependent and independent variables (Malik et al., 2010). Further, it also answers to three basic questions about these variables. That is, (a) whether there is any relationship between variables, and if there is any, (b) what is its direction of the relationship and (c) what is magnitude of the relationship (Cohen et al., 2005). Whereas, regression analysis indicates the extent of variance in dependent variables due to independent variables, which is determined by R-square, coefficient of determination (Malik et al., 2010).

3. Results and discussion

Before further analysis, reliability of the data was computed with the help of Cronbach's alpha coefficient which yielded 0.80 which was good and consistent.

3.1. Rate of response

Total survey questionnaires were sent to 65 SMEs in the selected region, out of which 16 (24.61%) did not respond due to their policies, 14 (21.53%) of the questionnaires received back were discarded because those were partially completed and remaining 35 (53.84%) completed questionnaires were used for analysis purpose as shown in Fig. 1.

3.2. Demographics of respondent SMEs

Demographic characteristics of respondent SMEs comprises of the field of the SMEs, operational period and number of employees there in. The results are discussed below.

3.2.1. Field of responding SMEs

According to statistical analysis, out of 35 SMEs, 17 (48.57%) were Textile Manufacturing, 4 (11.43%) were Pipe Manufacturing, 5 (14.29%) were Mechanical Works, 4 (11.43%) were Tobacco, 2 (5.78%) were Civil Works and 3 (8.57%) were Floor Mills as shown in Fig. 2.

3.2.2. Operation period of the firms

According to collected data, it was observed that all of the respondent SMEs had history of more than 10 years of the opera-

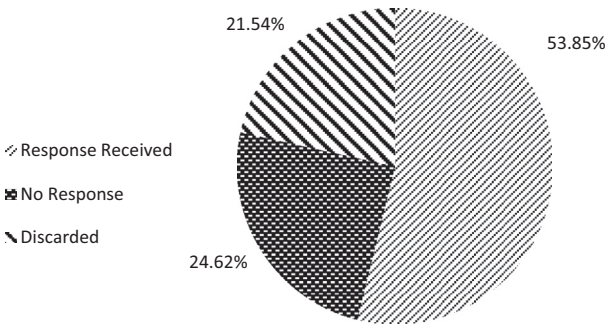

Fig. 1. Response from SMEs.