



Impact of Occupational Health and Safety Management on Organizational Performance: An Evidence from Pharmaceutical Industry of Karachi

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Abstract: This is a quantitative study which aims at exploring the impact of occupational Health and safety management (OHSM) on the performance of organization. For conducting this study, survey method was administered that involved 40 pharmaceutical companies of Karachi. These companies were taken as SMEs as they constituted of medium and small sizes based on their level of operations. An appropriate sample was taken which was analyzed using SPSS (Statistical Package for Social sciences). The use of simple regression was employed to see the impact of OHSM on organizational performance (OP). A positive relation was found between OHSM and OP using Pearson correlation analysis and the Cronbach's alpha was found to be 0.95 which expresses an excellent internal consistency. The results in this study depict that OHSM strongly impacts the organizational performance (OP) and there was less emphasis all implementing occupational Health and Safety by entrepreneurs.

Keywords: "Occupational Health and Safety Mgt. (OHSM), Organizational Performance (OP), Pharmaceuticals, Small & Medium Enterprises (SMEs), SPSS".

1. INTRODUCTION

Nowadays, the world is facing the major issue which is of unemployment. According to international labor organization (ILO) and United Nations (UN), there has been an increase in the unemployment from 170 million to 204million during the period ranging from 2007 to 2015 (International Labour Office, 2015). In 2015, United Nations arranged a summit regarding global sustainable development. That summit constituted the participation of leaders from 150 countries. The agenda was adopted consisting of seventeen sustainable development goals (SDGs). These sustainable development goals were aimed at boosting sustained growth of an economy accompanied with technological innovation and attainment of higher productivity level. The goal of United Nations is to attain maximum level of productivity and employment for all women and men 2030. In view of this context, SMEs can play an important role in the attainment of sustainable development goals in terms of economic growth and employment generation worldwide. The international organizations such as ILO and UN are continuously striving for promoting SMEs sector.

The OHSM should play a very important role for long term survival and sustainable development of firms. Unfortunately, the SMEs of Pakistan are not implementing the occupational health and safety

measures properly. This is because the industrialized do not pay the attention towards implementing Health Safety in firms (Farooqui, 2008) (Khan 1014). In Pakistan the annual fatal accident rate is about 7444 and 5680740 injuries which makes worker absent from work for about 3 days at least. The fatality rate per 100,000 workers is about 20.7 (Hämäläinen, 2006). The SMEs are characterized with the higher number of accidents then larger enterprises (Arocena, and Nunez, 2010) These accidents and injuries can be prevented by implementing occupational health and safety measures at the work place. Occupational health and safety are an integral part which is implemented and ensured by the top management. The top management's aim is to boost the organizational performance for which the implementation of health and safety measures is necessary because it reduces the expenses of the organization and increase the motivation of employees as well which ultimately influences their performances. The implementation of OHSM helps organizations to increase profitability, reduce costs and increase performance as well (Bakri, *et al.*, 2006). Good level of OHSM has a positive influence on the performance of an organization in terms of financial, Competitive and safety (Fernández. *et al.*, 2009). Organizations that do not implement OHSM show less performance when compared to the firms that implement organizational Health and safety measures (Bottani, *et al.*, 2009).

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2. **METHODOLOGY**

This study is based on survey design which was conducted in the pharmaceutical sector of Karachi located in the south of Sindh Province and the use of convenience sampling was made for carrying out this study. The questionnaire was consisting of two main sections. The first section of questionnaire was consisting of several items such as demographic information in respondents provided the information regarding the year of operations that firm has performed up to now, Gender, Age and Number of employees in a firm but the second part of the questionnaire has been given more importance than the first part so the second part of the questionnaire will remain under discussions throughout this paper. The second part of the questionnaire was consisting of 20 items of (OHSM) which was treated as an independent variable in our study and finally 13 items were used to major the performance of the pharmaceutical firms. The questionnaire was adopted and validated from academic and industrial experts. The items for majoring both occupational health and safety Mgt. and organizational performance were taken from reference (Makori. and Thuo. 2012) and Likert scale was used in the questionnaire ranging from 1 to 5. The options were 1=strongly disagree, 2=Disagree, 3=Not sure, 4= Agree, 5=strongly agree. The execution of this study comprises of production managers of 40 firms to serve as respondents in our study. The reason for choosing productions managers of pharmaceutical companies that they are responsible for monitoring the operational affairs during production of medicines and occupational health and safety is the major factor that is monitored by them.

The data analysis comprises of three steps which were carried out using SPSS. First part involved the use of Cronbach's alpha for the investigation of reliability of scales used to measure both OHSM and OP. This was done to see the internal consistency of items. The usage of reliability analysis is necessary statistical techniques especially for survey-based results reference (Allen, *et al.*, 2009). (Gliem, and Gliem, 2003) The range of Cronbach's alpha is from 0-1. The coefficient value greater or equal to 0.9 represent an excellent internal consistency, value equal or greater than 0.8 represents good consistency, value equal or greater than 0.7 shows

acceptable, value equal or greater than 0.6 indicates questionable and equal or less than 0.5 depicts poor and unacceptable reference (George and Mallery 2003). The second step of study involved the estimation of mean and standard deviation of OHSM and OP variables and final step consisted investigation of the relationship between OHSM and OP by using Pearson Correlation. The third step also involved the investigations of impact of OHSM on OP by using simple regression. The Correlation answers the strength of association between the independent and dependent variable reference (Malik. and Iqbal. 2010). Besides that, correlation also gives the direction between dependent and independent variable (Cohen *et al*, 2002)

3. **RESULTS AND DISCUSSIONS**

3.1 Response Rate

For conducting this study, 64 questionnaires were circulated among the respondents out of which 40(63%) were able to be counted for data analysis, 13(20%) respondents declined to respond whereas, 11(17%) questionnaires were discarded owing to having items which were properly answered.

3.2 Gender of respondents

From the collected sample of respondents, 34 (85%) were males and 6 (15%) were females.

3.3 Reliability

Using SPSS, the reliability of scale for each variable involved in the study was calculated separately. Cronbach's alpha coefficient for OHSM was calculated to be 0.95 which represents an excellent internal consistency and for OP Cronbach's alpha coefficient was found to be 0.93 which once again shows an excellent internal consistency.

3.4 Occupational health and safety mgt (OHSM) in Pharmaceuticals

Respondents were asked to fill up the questionnaires and to rate the items provided. The items were provided on Like scale ranging from least level of agreement to the highest level of agreement. The data collected from respondents was analyzed using SPSS and mean and standard deviation was calculated for each variable parameter. (Table 1) shows the list of variables of OHSM.

Table 1 Occupational Health and Safety Variables

Variable Parameters	Mean	Standard Deviation
Illumination at Operational Area	3.77	0.86
Availability of Safety manual	3.30	1.13
Firefighting skills	3.07	1.16
Directional signs	3.62	1.07
Enough toilets	3.12	1.63
First aid kits	3.47	1.13
Clean and dry floors	3.72	1.13
Clean drinking water	3.32	1.52
Waste disposal system	3.12	1.30
Cleanliness in washroom	3.15	1.56
Accident prevention measures	2.90	1.35
Protective clothing	3.6	1.17
Consistent medical check-ups	2.95	1.50

From (Table 1) the highest mean is possessed by Illumination in the area of production which is 3.77 with standard deviation of 0.86 which implies that production managers agreed that there was proper amount of lighting in their area of production. Illumination in any production area is considered to be the most important factor for work place safety as well as for employee productivity. Illumination enables an employee to carry out his/her own work efficiently and it also reduces the probability of occurrence of any accident. The previous studies have also emphasized on the importance of illumination at the work place. It has been revealed that illumination is the most important factor for workplace safety and it significantly reduces the chance of an accident (Khan, *et al.*, 2014). Study reveals the impact of illumination on productivity, performance, satisfaction and attitude of the workers (Ajala, (2012).. The mean value for clean and dry floors was 3.72 with the standard deviation of 1.13. Here the value 3.72 which is near 4 suggesting that production managers agreed that floors were satisfactorily clean and dry as the production managers in the pharmaceutical firms believed that cleanliness should be ensured at drug production areas because sometimes any type of contamination on floor may affect the drug under production. Statistical values for directional signs with a mean 3.62 and standard deviation 1.07 suggests that directional signs is the third important element of OHSM. The statistical values for first aid kits with the mean 3.47 and standard deviation 1.13 shows that production managers somewhat agreed that there was an existence of first aid kits at the workplaces. The statistical values for clean drinking water with mean 3.32 and standard deviation suggest that managers neither agreed nor disagreed regarding the availability of clean drinking water services at the workplace. The other elements of OHSM were having lower mean scores revolving round 3 which suggests that there was less availability of other elements of OHSM.

3.5 Performance indicators for pharmaceutical firms

For measuring the performance of pharmaceutical companies, data was gathered and analyzed. Respondents were asked to rate the items on five-point Likert scale. The mean and standard deviation were calculated for each variable provided in (Table 2).

Table 2 Performance indicators of pharmaceutical firms

Variable Parameters	Mean	Standard Deviation
Reputation	3.65	1.05
Productivity	3.55	1.21
Employee Satisfaction	3.45	1.37
Profits	3.70	0.88
Prompt Order Delivery	3.72	0.93
Sufficient Working	3.25	1.10
Capital Effectiveness in		
Operations of Production	3.47	0.99
Product Quality	3.50	1.13
Achievement of Targets	3.65	1.14
Number of Clients	3.62	1.07
Easiness in Supervision	3.73	1.08
Reduction in Production cost	3.0	1.24
Production Diversification	3.55	1.08

(Table 2) contains the means and standard deviations of performance indicators. Most of the data in table 2 is inclined towards 4 which implies that the production managers in pharmaceutical firms agreed that because of ensuring safety practices, there is a positive impact on supervision ease, number of clients, achievements of targets and ability of the firm to deliver order to the customer without any delay and productivity of employees as well. Besides that, the application of safety practices at workplaces also increases the firm's reputation and profitability. However, the employee satisfaction, reduction in the cost of production and working capital statistical values suggest that managers neither agreed nor disagreed about these parameters of performance.

3.6 Impact of OHSM on performance of pharmaceutical firms

The impact of OHSM was assessed using simple linear regression. The predictor namely OHSM was regressed against organizational performance. Table 3a presents the results of correlation and regression the value of correlation coefficient 'r' has been estimated to be 0.784 with $p < 0.000$ which shows that OHSM and OP of pharmaceutical firms are strongly and positively correlated with each other and there is a significant correlation between these variables. The regression coefficient of OHSM is 0.806 which implies that the change in one unit of OHSM will cause a change of 0.806 units in the OP of pharmaceutical firms. This shows that OHSM strongly contribute in case of the organizational performance of pharmaceutical firms. Consequently, the outcomes of this study align itself with the outcomes of previous studies [5, 7, 8, 9]. These studies have revealed that OP is positively affected by OHSM. Table 3b represents

the values of regression results. The value of R Square is 0.649 which implies that OHSM is the most important and plays a major role in the organizational performance of pharmaceutical firms as the value of R Square explains the variance of 64.9 percent in the dependent variable while remaining variance say 100-64.9 percent is explained by other factors in OP. These factors may be organizational politics, reward system, organizational culture or other possible factors as well.

Table 3a Model summary

Variable	Regression Coefficient, B	Standard Error, B	Pearson coefficient, r
Independent variables (OHSM)	0.86	0.057	0.784

Table 3b Regression of variable (correlation and regression of Occupational "SMS" against overall mean of Pharmaceutical firm's performance

Variable	Values
Adjusted R square	0.640
R Square	0.649
Multiple R	0.806
Standard Error	6.347
F-Value	70.244, p< 0.000
Df	1

4. CONCLUSION

The results of this study are based on the context of Karachi as this study involves the pharmaceutical firms based in Karachi. The reason for choosing Karachi is that the most of the pharmaceutical firms are located in Karachi. This study explores the impact of OHSM on OP. The results showed that OHSM positively and strongly affects the organizational performance of pharmaceuticals. Besides that, the results also showed that the overall health safety measures were not up to the satisfactory level especially the existence of accident prevention measures and consistent medical check-ups was very poor in the pharmaceutical firms. Cleanliness in washrooms and enough toilets and waste disposal system was also found with low scores of agreements. The most important and widely available measure was of illumination of at workplace. The overall scenario for OHSM shows that owners of the company are not much of attention towards the health and safety measures for employees. It is therefore recommended that government should play an active role in implementing the health and safety measures in overall pharmaceutical sector in order to make this sector compete globally and locally and to achieve sustainable development goals for the development of Pakistan.

REFERENCES:

Ajala, E. M, (2012). "The influence of workplace environment on workers' welfare, performance and productivity," In the African Symposium, Vol 12, No. 1, 141-149.

Arocena, P., and I. Nunez, (2010) "An empirical analysis of the effectiveness of OHSM systems in SMEs," *Int. Small Bus*, J. 28, 398-419.

Allen, K., T. Rhoads, R. A. Terry, T. J., Murphy, and A. D. Stone. (2009) "Coefficient alpha: An engineer's interpretation of test reliability," *J. E.E.*, 97(1), 87-94.

Bakri, R., M. Zin, and M. S. Misnan, (2006) "Occupational safety and health (OSH) towards development of safety and health " In *Proceedings of the 6th Asia-Pacific Structural Engineering and Construction Conference*, 19-28

Bottani, E., L. Monica, and G. Vignali, (2009) "SMS Performance differences between adopters and non-adopters," *Safety Science*, 47(2), 155-162.

Cohen L., L. Manion and K. Morrison (2002) *Research methods in education*. Routledge.

Farooqui. R U., F. Arif. and S. F. Rafeeqi. (2008) "Safety performance in construction industry of Pakistan," In *first International Conference on Construction*, "Research & Practice.

Fernández. M., N. Beartiz, and M. Peón, (2009) "Relation between occupational safety Mgt. and firm performance," *Safety science*, 1; 47(7):980-91.

Gliem, J. A. and R. Gliem, (2003) "Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales," *Midwest Research-to-Practice Conference in Adult, Continuing*.

George D. and P. Mallery (2003) *SPSS for window Step by Step*, Boston.

Hämäläinen, P., (2006) "Global estimates of occupational accidents," *Safety science*, 1; 44(2):137-56

International Labour Office, (2015) "Small and Medium-sized Enterprises and Decent and Productive Employment Creation, "Fourth Item on the Agenda. International Labour Office.

Khan. A. (2013) "The Significance of Commitment towards Safety in Construction Industry of Pakistan.

Khan, W. A, T. Mushtaq. and A. Tabassum. (2014). "Occupational health, safety and risk analysis," *International Journal of Science, Environment and Technology*, 3(4), 1336-1346,

Makori. E. M, and J. K, Thuo. (2012) "Influence of occupational health and safety programmers on performance of manufacturing firms in Western Province, Kenya," *African Journal of History and* 31; 4(4):46-58.

Malik. S. A and M. Z, Iqbal (2010), "TQM practices & organizational performance: evidence from Pakistan SMEs," *International Journal of Engineering & Technology*, 10(4), 26-31.