



The Impact of Safety Management Practices on Safety Compliance: The Mediating Role of Employees' Safety Knowledge in Sri Lankan Large Apparel Firms

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Abstract

This paper focus the impact of safety management practices on safety compliance and the mediating role of employees' safety knowledge in large apparel firms in Sri Lanka. The methodology of this study was grounded on the quantitative approach and the type of investigation was correlational. The respondents were limited to 300 machine operators who were engaged during the period of the study in the large apparel firms in Sri Lanka. Data composed of a self-administered questionnaire containing 48 closed statements with a five point Likert type scale. Data was analysed through Statistical package of Social Science 23 and mediator examined through Sobel test. The results exposed significant impacts among safety management practices, safety compliance and safety knowledge constructs. Safety knowledge fully mediated the association among safety management practices and safety compliance. Results were imitative from the cross sectional technique and generalizability of the results to other groups of employees may get restricted as the sample contained only machine operators. This paper improves realistic confirmation in Sri Lankan context to approve the mediating role of employees' safety knowledge between safety management practices and safety compliance.

keywords: Large Apparel Firms, Safety Compliance, Safety Knowledge, Safety Management Practices

1.INTRODUCTION

In today's Covid 19 pandemic environment safety management practices (SMP), safety compliance (SC) and employees' safety knowledge (SK) play very vital roles in any business atmosphere. In the prevailing global situation any workplace need to pay more attention on SMP and enlarge enhanced working environment, reduce hazards and risk specially in the large apparel sector. To creating SMP employees should have and update safety related knowledge and enhance the safety compliance in the workplace. Hence, if SMP is applied and extremely considered by the workplace, it is expected that SMP would avoid and shrink the incidence of safety and health problems in the workplace (Mihiravi and Perera, 2016). Through the avoidance of the incidence of such difficulties in the workplace, SMP upsurges the employee SK also since SC is ensured (Perera,2006). Safety compliance is following to SMP, procedures and carrying employees' day to day work in a safe style. Employees' SK is very crucial for smooth functioning of the work environment.

A worthy SMP would be fully incorporated with the workplace and with mandatory power; a consistent system of guidelines, approaches and actions offers regularity and management (Fernández-Muniz et al., 2009). Health and safety policy and procedures are essential measure of efficient SMP framework (Ramazan, et al.2016). General health and safety policies determine the management's readiness to offer the workforces with a healthy and safe workplace (Christian et al., 2009). As said by Neal, Griffin and Hart (2000), SC is demarcated as following to safety measures and functioning work in a safe way. Inness et al. (2010), SMP encloses the essential safety events that need to be confirmed to keep workplace safety. When employees fulfil with safety rules and procedures in the course of completing their work, workplace accidents can be reduced (Subramaniam et al. 2016). SK is an employee knows how to use equipment's, tools safely, improve safety awareness and reduced injuries in the workplaces (Vinodkumar and Bhasib (2010). In Sri Lankan context, few studies conducted on SMP related to other variables such as job performance and job satisfaction of employees (Kularathna and Perera, 2016; Mihiravi and Perera, 2016; Perera 2019).

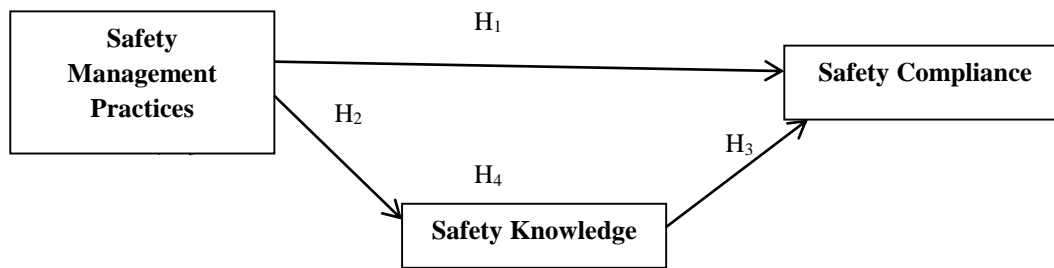
Few studies have been done with regard to the impact of SMP on SC in the world and difficult to find a study of considering three main variables -SMP, SC and SK within one model in Sri Lankan context. As above proofs, this study would like to conduct a research in order to realise the theoretical and empirical knowledge gaps in linking with the main variables. Therefore, the

objectives of this study are to examine the impact of SMP on SC and SK, impact of SK on SC and mediating effect of SK between the SMP and SC in Sri Lankan large apparel firms.

II. CONCEPTUAL FRAMEWORK

Studying the prevalent literature conceptual framework of the study illustrated in Figure 1, safety management practices as the independent variable, safety compliance as the dependent variable and safety knowledge as the mediator variable.

Figure 1: Conceptual Framework



Safety management practices and safety compliance

Shannon et al. (1996) and DePasquale and Geller (1999) exposed that better SMP in a workplace have a positive impact of SC. The study of Vinodkumar and Bhasib (2010) revealed that SMP also enhance SC Hence, the first hypothesis is developed as follows:

Hypothesis 1 (H₁): Safety management practices has a positive impact on safety compliance

Safety management practices and safety knowledge

Burke et al. (2002), and Smith-Crowe et al. (2003) identified the positive impact of SMP and SK. Further Vinodkumar and Bhasib (2010) explained six factors of SMP positively impact on employees SK. Accordingly, the second hypothesis is formulated as follows:

Hypothesis 2 (H₂): Safety management practices has a positive impact on safety knowledge

Safety knowledge and safety compliance

Vinodkumar and Bhasib (2010) described the SK has a positive impact on SC. Hence; the third hypothesis can be developed as follows:

Hypothesis 3 (H₃): Safety knowledge has a positive impact on safety compliance

Safety knowledge mediates the relationship between Safety management practices and safety compliance

Neal et al. (2000) described the mediating role of SK on the relationship between SMP and SC. Also Vinodkumar and Bhasib (2010) explained the similar results. Accordingly; the fourth hypothesis can be formulated as follows:

Hypothesis 4(H₄): Safety knowledge mediates the relationship between safety management practices and safety compliance

III. METHODOLOGY

This is an analytical study and investigation type is co-relational. This study selected five large apparel firms in Sri Lanka to collected data from the 300 machine operators chosen from the considering the convenience of the data collection and easier to access the firm. 60 machine operates were selected from each firm and initially developed the questionnaire in English. After approval of the human resource manager distributed the Sinhala language questionnaire to respondents. Validity and reliability of the constructs were measured and the descriptive analysis done for the demographic profile. Data analysed through Social Sciences version 23 and mediating effect was analysed through Sobel test method.

Measures

First part of the questionnaire used to gather data about demographic information of the employees such as gender, age group, marital status, number of children and work experience.

Second part of the questionnaire consist data about SMP scale was measured with Vinodkumar and Bhasib (2010) thirty-five item scale. The instrument emphasizes on the six dimensions of SMP, i.e. as management commitment (09 items), Safety training (06 items), Workers' involvement (05items), Safety rules and procedures (05items), Safety communication and feedback (05 items) and Safety promotion policies (05 items), on a 5-point Likert-type scale that ranged from 1 "strongly disagree" to 5 "strongly agree." The sample item is "Safety is given high priority by the management."

Third part of the questionnaire consists of data about SC aspects of the employees measured with Vinodkumar and Bhasib (2010) six item scales. All questions were measured with 5-point Likert-type scale that ranged from 1 "strongly disagree" to 5 "strongly agree." The sample item is "I use all necessary safety equipment's to do my job."

Fourth part of the questionnaire consists of data about SK aspects of the employees measured with Vinodkumar and Bhasib (2010) seven item scales. All questions were measured with 5-point Likert-type scale that ranged from 1“strongly disagree” to 5“strongly agree.” The sample item is “I know how to perform my job in a safe manner.”

Working Definitions

Safety Management Practices: SMP are combined tools planned to control the hazards and risks that may impact worker health and safety in workplaces and at the same time to confirm that the workplace fulfils with the regulations.

Safety Compliance: SC as safety measures, precautions carryout to smooth functioning, reduces the hazards and accidents in the workplace.

Safety Knowledge: SK is how the employee performs his or her work safe manner to reduce the accidents and hazards in the workplace.

IV. RESULTS

The Kaiser-Mayer-Olkin (KMO) measure of sampling accuracy was 0.890 and Barlett’s test of sphericity was significant (p.0.001) signifying that the data were suitable for further analysis. Factor loading values in this study exceed the required level 0.50, according to the Hair et al (1998). As per the Table1 the Cronbach alpha values have been exceeded 0.7 which is at the acceptable level and, in a consequence the reliability of the study constructs is ensured (Wickramaaratchi and Perera, 2020).

Table 1: Reliability Assessment

Constructs	Items	Cronbach Alpha
Safety management practices	35	0.891
Safety compliance	6	0.843
Safety knowledge	7	0.871

The study marked high content validity as hypothesized by basing on quality literature and specially conceptualized and operationalized based on literature (Kaushalya and Perera, 2018). The construct validity of the variables of this study was confirmed as the correlation analysis (Wickrانياaratchi and Perera,2016).To ensure the internal consistency of measures Composite Reliability(CR) and Average Variance Extracted(AVE) were computed.CR is a measure of an internal consistency in scale items (Netemeyer et al., 2003).To ensure CR for the construct the value should be greater than 0.6 and AVE should be greater than 0.5(Hair et al., 2014). As Table 2 indicates these criteria were met and the internal consistency of these measures was ensured.

Table 2: Measure of Internal Consistency

Variable	CR	AVE
Safety management practices	0.826	0.544
Safety compliance	0.911	0.601
Safety knowledge	0.981	0.750

Questionnaires were circulated among 300 machine operators and 88 valid replies were not received, yielding a reply rate of 71%.

Considering the demographic factors, 92% of the respondents’ fits to female classification and 88% goes to 35-40 years of age cluster.4% of respondents belongs to more than 50 years of age level.90% of machine operators were married and 87% has 2 children.84% has three to five years’ work experience and 3% has a more than seven years work experience.

Hypothesis 1 (H₁): Safety management practises has a positive impact on safety compliance

Table 3: Model Summary H₁

Model	R	R Square	Adjusted R Square	Std. Error of the estimate	Constant	b value	Sig.
1	0.596 ^a	0.357	0.352	0.18110	2.210	0.496	.000

As per Table 3 that the multiple regression coefficients (R) of the SMP related independent variables and SC was 0.596 and the R Square was 0.357. It specifies that about 35.7% of the variance in the SC is explicated by SMP. Accordingly, regression equation of SC of machine operator is: $SC=2.210+0.496(SMP)$. The p-value is below 0.05 which confirms that SMP can be used to forecast SC.

Hypothesis 2 (H₂): Safety management practises have a positive impact on safety knowledge

Table 4: Model Summary H₂

Model	R	R Square	Adjusted R Square	Std. Error of the estimate	Constant	b value	Sig.
2	0.752	0.565	0.562	0.39677	0.193	0.642	.000

According to Table 4 that the multiple regression coefficients (R) of the SMP related independent variables and SK was 0.752 and the R Square was 0.565. It specifies that about 56.5% of the variance in the SK is explicated by SMP. Accordingly, regression equation of SK of machine operator is: $SK=0.193+0.642(SMP)$. The p-value is below 0.05 which confirms that SMP can be used to forecast SK.

Hypothesis 3 (H₃): Safety knowledge has a positive impact on safety compliance

Table 5: Model Summary H₃

Model	R	R Square	Adjusted R Square	Std. Error of the estimate	Constant	b value	Sig.
3	0.751	0.564	0.565	0.3967627	2.327	0.642	.000

According to Table 5, R value which is multiple regression coefficient of the SC and SK is 0.751 and R square value is shown as 0.564. That means, approximately 56.4% of the variance which is R square elaborated by the SC. This positive impact is highly significant as sig. value is .000 and this value is less than .05. This, in turn, the regression equation of SK can be demonstrated as, $SC = 2.327 + 0.642(SK)$.

Hypothesis 4(H₄): Safety knowledge mediates the relationship between safety management practises and safety compliance

Table 6: Sobel Test

Item	Value
Test Statistics	12.520648
Std. Error	0.3065
P value	0.000

According to the Table 6, Sobel test statistic indicates as 12.520648 and to complete the mediating effect, the 2-tailed p value falls below 0.05 (Bontis, Booker, & Serenko, 2007) and this study indicates as 0.003 which fulfilled the mediating effect. Therefore, SK mediates the SHP and SC.

V. DISCUSSION

The empirical evidence recommends that there is a positive impact of SMP on SC in large apparel firms in Sri Lanka. This result confirms the first hypothesis of the study. SMP are the main elements to the success of the SC in the workplace. Results of this findings constant with prior studies which suggested that SMP impact on SC of the workplace (Shannon et al. 1996; DePasquale and Geller; Vinodkumar and Bhasib ,2010).

Also results maintenance to SMP impact on SK and support to the second hypothesis of the study. Employees recognise the existing SMP helps to enhance their SK in a workplace activity. This finding was steady with previous studies which suggested that SMP impact on SK (Burke et al. 2002; Smith-Crowe et al. 2003; Vinodkumar and Bhasib 2010).

The results further support to the third hypothesis of the study, specify SK impact on SC in a workplace. If the employee understands the safety related practices and improve his or her safety knowledge, it enhances the SC in the workplace. This results consistent with the previous studies relating to SK impact on SC (Vinodkumar and Bhasib 2010; Kularathna and Perera, 2016).

Furthermore, this study is testing the mediating effect of SK between the SMP and SC in the large apparel firms. The outcomes of this study empirically support for the established of final hypothesis based on the literature survey. Therefore, findings were matches with the previous studies relating to the SK mediates the relationship between SMP and SC (Neal et al. 2000; Vinodkumar and Bhasib 2010)

VI. Conclusion

The outcomes of this paper focus strong empirical support for the conceptual framework that, elements and components of SC are closely related. The study confirmed the validity and reliability of the six dimensions - 35 items of SMP, 06 items of safety performance and 07 items of SK. The study also confirmed that the SMP impacts on SC and SK. Also SK mediates the SMP and SC in the large apparel firms. The findings of this study also highlight the need of SK of the workforce. These results provide valuable direction for experts in the field and researchers for recognising the appliances by which they can expand safety of workplace.

This study contributes to the existing literature specially related to the safety management area. Further findings are essential for the human resource managers, safety managers or safety compliance managers to improve their SMP as well as SK and SC in their workplace. This study was conducted in a Sri Lankan large apparel firm. Therefore, future studies should be considering for other sectors as well as other countries. Additionally, future researchers should be considering on a longitudinal study and other mediators such as safety climate, safety participation and safety performance.

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