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**MODERATING EFFECTS OF DEMOGRAPHIC VARIABLES ON THE  
RELATIONSHIP BETWEEN WORKING CONDITIONS AND WORK  
SAFETY AMONG HOUSEKEEPERS OF BUDGET HOTELS**

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**Abstract**

This study seeks to determine the moderating effects of hotel housekeeper demographic variables on the relationship between working conditions and safety among budget hotels in the Eastern Region of Ghana. This is carried out with the aim of promoting occupational health and safety among hotel housekeepers as they are classified among the staff who are most at risk in the hotel industry. The descriptive survey design was used. A total of 393 housekeepers were sampled through simple random sampling technique and their data analysed using the hierarchical regression model. The results indicate that while education and income were not statistically significant moderators in the relationship between working conditions and work safety, age and gender were enhancing moderators in the housekeeping department. This calls for all stakeholders involved in the recruitment and training of housekeepers, especially managers and hoteliers to ensure that the right mix of staff in terms of gender and age are taken into consideration since these variables are critical moderating factors with enhancing effects.

**Key Words:** Moderating effects, analysis of moderating variables, hotel housekeeper demographic variables, working conditions and work safety

**1. Introduction**

Analysis of moderating variables are critical in determining the strength of the relationship between dependent and independent variables on any phenomenon under study (Marshet *al.*, 2011). In this study, the effects of the demographic background of housekeepers (Moderating Variables) on the relationship between working condition and work safety are examined to determine how safe the housekeeping department of budget hotels are. Many studies have established that hotel housekeepers are the most vulnerable as their injuries and illnesses surpass the national average of other service staff. (Buchanan *et al.*, 2010; Bureau of Labour Statistics (BLS), 2013; Krause and Lee, 2014).

The relationship between working conditions and safety of hotel housekeepers have been established by many: for instance good working practices and conditions have a direct relationship with work safety as it directly reduces potential health harming hazards (Burgard and Liu, 2010; Oxenbridge and Moenstead, 2011; ILO, 2015).The effects of the moderating variables on the relationship between working conditions and work safety is being sought to determine the extent to which such variables contribute to the over all safety of housekeepers.

## **2.Methods**

### **2.1 Study design**

The descriptive survey design was used for the study. Data were collected using questionnaires and the hierarchical multiple regression model was used to examine the moderating effects of housekeepers' demographic variables on the relationship between working conditions and hotel housekeepers' work safety in the Eastern Region of Ghana. Two separate regression analysis were conducted. The first was conducted to examine the ability of working conditions to predict work safety of budget hotel housekeepers. The second analysis also examined the ability of the independent variable (working conditions) and the moderating variable (demographic factors) to predict work safety.

The 393 respondents for the study were drawn from housekeepers in budget hotels in the Eastern region of Ghana using Fisher *et al.*, (1983) sample size determination formula. This research design is considered appropriate as it provides the basis for describing health related issues relating to peoples' knowledge, attitude and practices as is popularly done in "KAP" surveys (Abrahamson & Abrahamson, 2000; Fink 2003; Mugenda & Mugenda 2008).

### **2.2 Setting**

The study was conducted in the Eastern Region of Ghana. The region covers an area of 19,323 square kilometres, which is about 8.1% of Ghana's total landform. It has a population of 2,106,696 which represents 11.1% of the total population of Ghana (Ghana Statistical Service, 2010). The Region is located in southern Ghana and is one of ten administrative regions. The Region consists of 26 districts which are home to 182 licensed Budget Hotels (Ghana Tourism Authority Hotel Directory, 2011). The region was chosen for the study due to the proliferation of budget hotels in the area.

### **2.3 Sampling Technique**

Simple random sampling employing the lottery method was used to select a third of the budget hotels in the region, amounting to a total of 61 budget hotels. Of these hotels, a total number of 393 housekeepers were drawn for the study.

### **2.4 Data collection and Analysis**

Data derived from these questionnaires were analysed using the hierarchical multiple regression to predict the moderating effects of housekeepers' demographic variables on the relationship between working conditions and housekeepers' work safety. This was carried out using the Betas, coefficients and the p-values of each demodraphic variable.

### **2.5 Ethical Issues**

Ethical clearance was sought from Ghana Tourism Authority before the study began. In addition, permission was also sought from the Eastern Regional branch of Ghana Hoteliers Association, and finally ethical consent was also sought from the housekeepers.

### 3.0 Results

The results of the study were derived from hierarchical multiple regression analysis at two levels and the results for both models are presented in Table 1.

Table 1. Hierarchical Regression Models' Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F	Change	df1	df2
1	.776 <sup>a</sup>	.602	.602	.079	.602	4.429	1	391	.000
2	.884 <sup>b</sup>	.781	.452	.773	.781	9.413	4	387	.000

a. Predictor(s): (Constant), Working conditions

b. Predictors: (Constant), Working conditions, age, gender, education, income

**Source: Researcher from Analysis of Survey Data (2016)**

The hierarchical regression analysis at stage one showed that, working conditions contributed significantly to the first regression model,  $F(1, 391) = 4.43, p < .001$  and accounted for about 60.2% of the variation in work safety in the housekeeping department. In stage two of the analysis, the introduction of housekeepers' demographic factors (age, gender, education, and level of income) explained about 78.1% of variation in work safety in the housekeeping department. This change in  $R^2$  was statistically significant,  $F(4, 387) = 9.413, p < .001$ . Adding participants' demographic factors (age, gender, education, and level of income) to the regression model at stage two, explained an additional 17.9% of the variation in work safety of hotel housekeepers.

However, education ( $B = .437, P = .221$ ) and income ( $B = .587, P = .255$ ) were not statistically significant moderators in the relationship between working conditions and work safety in the housekeeping department (see Table 2). The hierarchical regression analysis at stage 2 further indicated that age ( $B = -.351, P < .001$ ) and gender ( $B = -.101, P < .001$ ) were enhancing moderators in the relationship between working conditions and work safety in the housekeeping department.

Table 2. Hierarchical Regression Coefficients

	Unstandardized Coefficients		Standardized	T	Sig.
	B	Std. Error	Coefficients		
1 (Constant)	.300	.062		4.855	.000
Working Conditions	-.510	.088	.516	5.826	.000
(Constant)	.290	.060		1.514	.000
Age	-.351	.076	.355	-4.635	.000
2 Gender	-.101	.088	.104	-1.144	.000
Education	.437	.074	.536	6.739	.221
Level of Income	.587	.036	.636	8.739	.255

a. Dependent Variable: Work Safety

Source: Researcher from Analysis of Survey Data (2016)

#### 4.0 Discussions

Gender is an important variable in this study as it helps provide an understanding of the contributions each sex has on work safety in the housekeeping department. The results in Table 2 revealed a significant moderating effect of gender on work safety ( $B = -.101, p < .001$ ). This indicated that being a male or female has a significant relationship on work safety of housekeepers. This finding is consistent with Hsieh *et al.*, (2013) and Gautie (2010) studies which revealed that female housekeepers outnumber their male counterparts and that most females work under adverse conditions which easily predispose them to hazards in the housekeeping department and that irrespective of a housekeeper's gender, the supervisor would ensure that there is no discrimination between gender and that work quota for each housekeeper should be met.

In addition, age was found to have a significant moderating effect ( $B = -.351, p < .001$ ) on work safety of housekeepers in the investigated budget hotels. The reason underlying this significance is that majority of workers were aged between 20-29 years. This suggested that, they were relatively younger and had not worked in the housekeeping department for long and so they were inexperienced. For that matter, they were more susceptible to hazards than the elderly who had been on the job for long. This finding is in line with CCOHS (2007), MacDonald and Oakman (2015), Okunribido and Wynn (2010), and THOR (2015) who found that hotel housekeepers were predominantly women who were young and working under adverse conditions such as long hours of work, ergonomic strain, chemical exposures, poor pay, low job control, job insecurity and a wide array of other physical and mental health risks. The implications of the effects of age on work safety are numerous. The first of such implications is that there is the tendency for managers to be biased against other age categories such as those between 30-39, 40-49 years. Findings of this current study and other studies such as CCOHS (2007), MacDonald and Oakman (2015), and THOR (2015) have all found that most managers prefer recruiting young females to work in the housekeeping department than the elderly ones.

In order to have a fair balance in recruitment, the right mix of all age groups must be taken into consideration as Alli (2008) and Hsieh *et al.*, (2013) have stressed the need to respect the experienced workforce due to their long years of service on the job in the housekeeping department. Another implication of age on work safety is that, the 20-29 age cohort form the critical mass of employees in the housekeeping department in the study area; as such managers

should take advantage of their numbers and train them in order to improve on their efficiency as well as reduce hazards in the study area as many are not trained.

The results of housekeepers level of income was found not to have significant moderating effect on work safety ( $B = -.586, p = .255$ ). The implication of this result is that irrespective of the housekeepers' income level which is often very low, the housekeepers increased workload would predispose them to physical pains such as back pains, waist and shoulder pains. The current finding is in line with Gautie (2010) who noted that hotel housekeepers' work is very important, but they are considered among the lowest paid in the hotel industry, which results in high burden of illness, injury and disability. Research has shown that housekeepers have an increased risk for musculoskeletal disorders (Krause, 2014) and that there is evidence that a low-paid job results in high burden of accidental injury or work-related ill health. Other investigations have also shown, however, that housekeepers are at risk of developing MSDs of the back, neck, shoulders, elbow, hands and lower limbs as a result of their work (WRMSDs Statistics, 2015).

The theoretical models used for this study which include epidemiologic model and the concept of the 4E's, have emphasized that education plays a major role in hazard prevention and therefore the higher the level of education of a worker, all things being equal, the lower a worker is predisposed to hazards (WRCIP, 2008). From Table 2 it can be seen that education of housekeepers has no statistical significance on work safety.

The likely reason accounting for the non-significance of this result is that management does not employ professionals whose educational background could help them be abreast with the challenges of working conditions and the health hazards at the housekeeping department. The current results demonstrate that the higher the housekeepers' educational level, the more effective they could identify and control hazards. This finding is consistent with several studies such as those of Lunberg and Karlsson (2011) and Wial and Rickert (2012), which found that housekeepers have low level of education thereby having less control over work safety.

Inferences drawn from literature on the reasons underlying non-adherence to safety standards, guidelines and code of practices for housekeeping staff, are attributed to low level of education which often reduces people's self-worth, promote ignorance, reduce individual's decision making capacity as well as reduce ability to perceive threat (Buchanan, 2010; BLS, 2013; Hsieh, 2013; Krause and Lee, 2014). The major consequences that are often associated with high level rate of injuries from work related hazards in the housekeeping department could again be attributed to low level of education.

## **5. Conclusions, recommendations, areas of further research**

### **5.1 Conclusions**

The moderating effect of the socio-demographic variables (gender, age, income and education) on working conditions and work safety in the housekeeping department were explored and found that two out of the four variables (gender and age) were found to be significant in influencing work safety thereby acting as enhancers of work safety. It was also found that the remaining two variables (income and education) were not significant in influencing work safety in the housekeeping department.

### **5.2 Recommendations**

Based on the fact that gender and age of housekeepers were found to be significant in influencing work safety by acting as enhancers, all stakeholders involved in the recruitment and training of housekeepers, managers and hoteliers especially, must ensure that the right mix of staff in terms of gender and age are taken into consideration since these variables are critical moderating factors with enhancing effects.

### **5.3 Areas of further study**

A further study could be carried out on the various age cohorts and gender categories to determine the specific age cohorts and gender category that gives the best mix with the highest enhancing modifying on working conditions and safety.

### **5.4 Limitations**

This study results are limited to Budget hotels. As such the findings cannot be generalized on all hotels in the study area. Notwithstanding this weakness, the findings of the study offer useful interventions in addressing health hazards among housekeepers.

### **Statement on conflict of interest**

The researchers do declare that they do not have any direct interest apart from promoting health and safety among housekeepers in various hotels. They have not received any sponsorship from any institution competing with the hotel industry to publish this work. They are just honoring their responsibility as occupational health researchers.

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