Influence of Occupational Health and Safety Protection on Performance of firms in Kenya

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Abstract
Occupational health and safety protection remains a fundamental practice in performance of firms most importantly when global economy is grappling with emerging trends for example Covid-19 pandemic. Many studies have delved into employee protection at work place however the extent to which protection influences performance of firms shaped by occupational health and safety policy regulations is limited. Occupational health and safety protection in firms in Kenya is paramount in mitigating occupational accidents that has currently witnessed an exponential growth rate of 30% per annum according to available statistics. The objective of this study was to establish the influence of occupational health and safety protection on performance of firms in Kenya. The study was founded on two theories namely: Herzberg motivation-hygiene theory and contingency theory. Positivism and Interpretivism paradigms were adopted and actualized by explanatory Research design. The target population was 2107 with a sample size of 414. Sampling technique included Stratified, simple random and proportionate. Data analysis was done by descriptive statistics, thematic content analysis and Partial Least Squares-structural equation modeling aided by Warp PLS v.5 software. The findings of the study indicated that occupational health and safety protection moderated by occupational health and safety policy regulations influenced performance of firms in Kenya at βeta coefficient -0.227, P<0.05 hence significant. Occupational Health and safety policy regulation moderation effect was at β=-0.26 P=0.01<0.05. The study recommend to the government and management of firms to institutionalize occupational health and safety protection in their firms to realize employee protection and performance of firms.

Keywords: *Occupational health, Occupational safety Protection, Occupational safety regulation, Performance*

1. Introduction

1.1 Background of the study

Occupational health and safety protection is a matter of grave concern more so at this point in time when the world is grappling with emerging negative trends like the covid-19/Corona Virus pandemic that not only put employees' life at stake but also adversely influences performance of firms.

Battaglia & Frey, Passetti (2014) and UK-HSE (2018) all attest to the fact that occupational

accidents and compensation is a costly affair that should serve to reinforce the importance placed on occupational health and safety protection. Occupational health and safety protection refers to proactive employee protection against workplace hazards (ILO 2001). According to ILO 2001 & Directorate of Occupational Safety and Health Kenya (2007), occupational hazards that employees need protection from include: Biological hazards namely the viruses, fungi, bacteria, animals and insects. Chemical hazards are characterized by inhalation and ingestion of chemicals that employees interact with, Physical hazards are about cuts, bruises injuries, burns and fatalities employees experience whereas Psychological hazards are the work inherent stress, violence and incivility (Demsky, Fritz, Hammer et al, 2018). Ergonometric hazards are associated with work station comfortability that informs cases of sprains, strains and musculoskeletal disorders (Forcier et al, 2018).

Workplace protection according to ILO (2001) Standards as domesticated by Occupational Health and Safety Act, Kenya 2007 include and not limited to the following: eye face protection namely safety spectacles, goggles, masks, shields, personal head protection involving head gear and hard hats. Foot leg protection like leggings, metatarsal guards and toe guard alongside electrically conducive safety shoes to protect from static electricity. Other forms of protections are the hand and arm protective gloves, Hearing protection namely ear muffs and ear plugs. Additional guidelines to manage workplace health and safety have also been formulated by ILO (2020) in the wake of Covid -19 pandemic to include provision of soap, running water, alcohol based sanitizers alongside ensuring social distance. The workplace health and safety protection should be a comprehensive program to incorporate proper workplace hygiene with regards to appropriate temperature, lighting and spacing (Akpan 2011).

Australian and South African Occupational safety Acts observe that the program should also provide for proper sanitation and waste disposal facilities, hand washing, sanitizers and clean water for drinking. The Acts further stipulate that employee training and education in occupational health and safety protection should take center stage. Occupational safety Act Kenya, (2007) alludes to the fact and adds that occupational health and safety protection information should be posted for employees in strategic places. Other issues of paramount importance about employee workplace protection should include proactive maintenance and repair of plant and equipment; periodic employee medical checkups and referrals. ILO (2001) observes that occupational health and safety protection program should be subjected to periodic review updates and evaluation.

1.2 Statement of the problem

Matters of health and safety protection are of global concern.

ILO and WHO issues policy guidelines periodically to streamline the Practice and Policy of Health and Safety Protection. In no uncertain terms, the current ILO - WHO (2020) Health and safety protection guidelines includes emerging negative trends, notably health and safety protection with regards to Covid-19 pandemic which has shaken the global economy. Occupational health and safety protection in Kenya is wanting considering the annual growth rate of occupational health and safety, Kenya (2019). Scholars have attempted to establish the

relationship between occupational health and safety protection on performance however very limited has been done about the extent occupational health and safety protection influences performance of firms more particularly when the relationship is anchored on moderating effect of occupational health and safety policy regulation that this study sought to do.

1.3 Research Objective

To establish the influence of Occupational Health and Safety Protection moderated by Occupational Health and Safety Policy Regulations on performance of firms in Kenya.

1.4 Research Hypothesis

H_0 There is no significant influence of Occupational Health and Safety Protection moderated by Occupational Health and Safety Policy Regulation on performance of firms.

1.5 Conceptual Framework

The conceptual framework presents the relationships amongst the study variables namely: Occupational health and safety protection (Independent variable), Occupational health and safety policy regulations (Moderator variable) and performance of firms (Dependent variable).

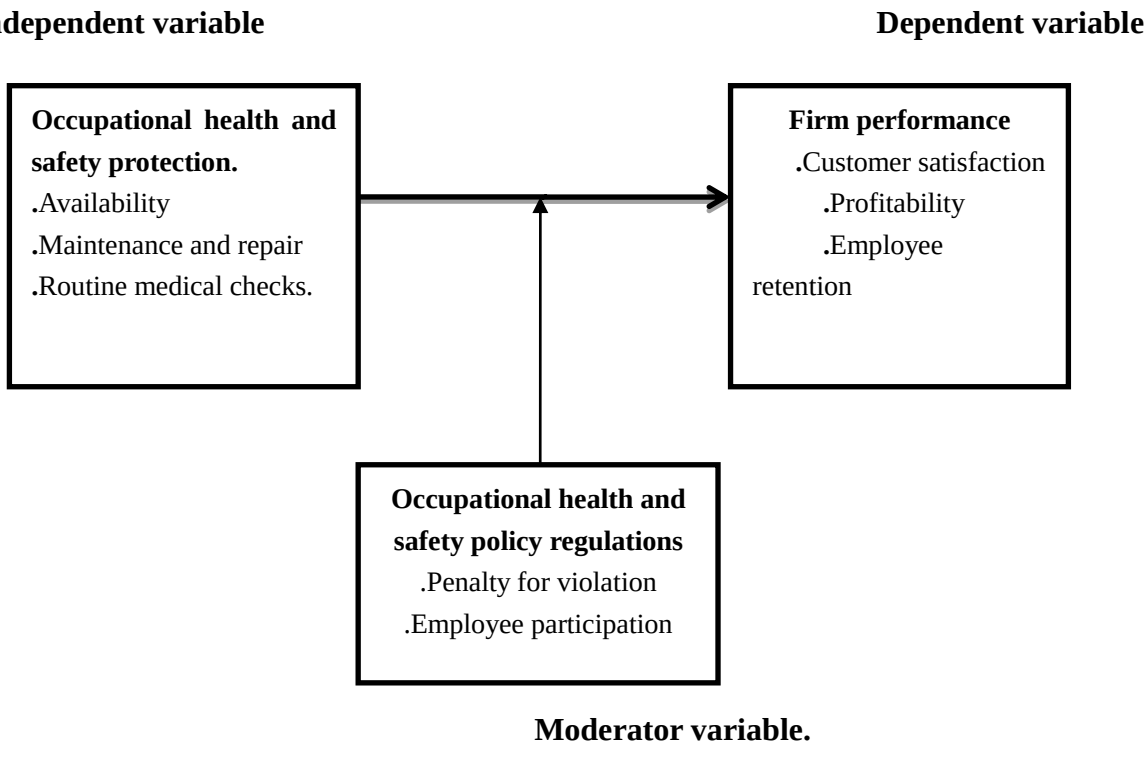


Figure 1.1: Conceptual framework (Source: own conceptualization (2019)

2. Literature review

2.1 Theoretical framework

The theoretical framework used in this study involved Contingency theory and Herzberg Motivation – Hygiene theory.

2.1.1 Contingency Theory

This is a theory by Fielder (1983) which argues against universalistic applications and automatic performance of firms. According to this theory Human resource practices like occupational health and safety protection are meaningless and useless unless premised on a strategic policy. The theory is relevant to this study since occupational health and safety protection as a human resource practice influences performance of firms when its importance is placed on occupational health and safety policy regulation.

2.1.2 Herzberg Motivation Hygiene Theory

Motivation hygiene is a behavioral theory by Fredrick Herzberg that states that factors that trigger work attitudes are twofold. Positive attitudes inform motivation factors whereas the negative attitude Hygiene factors. Motivation factors are associated with opportunities for advancement, recognition, promotion, responsibility and work relationships. Hygiene factors according to Herzberg are about firm policies, personal life, micro management, work conditions and job security. The theory is above board for considering and recognizing job attitudes in the aforementioned two dimensions. Herzberg theory is relevant for this study because occupational health and safety protection is a hygiene factor since it revolves around employee personal life and work conditions that if not considered adversely influences employees hence performance of firms.

2.2 Empirical literature review

Studies in occupational health and safety protection hitherto addressed key issues in occupational health and safety protection, Employee protection profiles of high and low risks, Occupational health and safety protection activities and programs, Risk assessment and employee protection, worker protection training and education and their subsequent direct influence on employee job satisfaction and performance. The studies mostly dwelt on isolated sectors of the economy notably manufacturing and construction sectors that were perceived to exhibit higher risks and prevalence rates of occupational accidents. This study sought to establish the extent to which occupational health and safety protection influenced performance of firms drawn from diverse sectors namely: manufacturing, agriculture, retail, construction and transport most importantly when the influence of occupational health and safety protection on performance of firms is anchored on occupational health and safety policy regulations.

Oketunji (2014) investigated influence of occupational health and safety protection with regards to information availability and use on job performance in Nigeria. The study observed that occupational health information availability and use provide a systematic management and continued improvement of health and safety that in the long run not only reduce loss of life, cost of accidents and ill-health but also improves employee and firm performance. The study findings indicated occupational health and safety information availability and utilization was statistically significant on performance of firms at $r=0.260$, $P<0.05$.

Akpan (2011) observed that effective safety and health management policy characterized by protection of workers against workplace hazards improved employee and firm performance.

The study identified employee protection to include and not limited to the following: provision of water in all places of employment, ensuring sanitary conditions, provision and maintenance of machinery and equipment, use of protection gear and availability of protection information. The study expounded on the costs of occupational health and safety accidents namely reduced staff morale, lack of employee confidence while executing work, absenteeism, staff turnover, reduced productivity, and poor quality work amongst others that adversely affected performance of firms.

Pepple, Akpan and Edem (2017) assert that employee occupational health and safety practice revolves around physical environment with respect to office design, ventilation, lighting, toilets, furniture, colors of office wall, office structure, protection from noise, spacing and room temperatures that all contribute to employee and firm performance. Further to physical environment social environment should also be considered in terms of the associated protection for example establishing and upholding employee interaction, interpersonal relationships and employee management relationships. Another consideration to get along with the social environment protections is guidance and counseling services.
In a national scan of employment standards with regards to occupational health and safety protection for immigrant employees in Canada, Agnieszka & Marni (2012) posited that immigrant employees are exposed more to occupational hazards compared to indigenous employees. The study attributed this scenario to the fact that immigrant employees out of desperation accept low quality jobs beleaguered by unsafe work practices and environment. The study goes further and observes that the situation is aggravated by the fact that there is a problem of language barrier that impedes on utilization of protective information by the immigrant employees.

Ndegwa, Guyo, Orwa & Ng'ang'a (2014) investigated influence of management support in the implementation of occupational health and safety programs in Kenya. This was a study that involved the manufacturing sector. The study underscored the complex nature of business operations that resulted to exponential rise in workplace hazards that in the long run result to economic implications to firms cost of production and contributing to the GNP of the country. The findings indicated that when top management are Committed to provision of employee protection by availability of health and safety tools and equipment, the performance of employee significantly improves as alluded to by 32% of respondents in the study. Management support to occupational health and safety programs implementation in this study depicted a significant correlation of $r=0.421$, $P<0.01$ with performance of firms.
An investigation of occupational health and safety protection awareness in Kenya was carried out by Kimeto, Kiyukia and Mukhonge in (2015). The study was occasioned by the prevalence of occupational health and safety hazards due to unguarded machinery, chemical and biological agents and unfavorable conditions of work for example high temperatures. The findings revealed that workers were not aware of emergency procedures. The study observed that management was reluctant to invest in occupational health and safety protection as such expenditure and investments traditionally are considered expenses and liability that offset productivity of the firm. The study
Recommended a proactive occupational health and safety protection in terms of policy and

practice.

Lee (2018) empirically examined effect of safety protection management and activities on performance of employees at work place in manufacturing firms in Korea. The survey was based on online data collection. The following factors relative to performance were investigated: preventive planning and control system, participation and monitoring activities. The findings indicated that work place environment safety courtesy of the said factors explained 0.963 and 0.891 variance in performance respectively which depicts a strong positive correlation of the factors with performance.
Putri (2017) investigated effect of occupational protection with respect to work health and safety environment in retail companies. This was a case study whose results revealed that work environment characterized by safety protection had a correlation coefficient of r=0.241 at t=2.302 significant at 0.026 with performance of the retail companies.
A cross sectional survey by Evans (2015) that sought to establish the relationship between firm safety climate and related events in manufacturing firms had results which indicated that safety climate at workplace explained 7.8 variance in performance. Dangerous equipment (unmaintained or not repaired) impeded on employee performance and negatively influenced performance of firms at r=0.051. The study recommended the urgent need for employee training on safety protection, resources and equipment.

Seo (2018) investigated relationship between occupational injuries and provision of health and safety protection information. The study was unprecedented by the myriad cases of employee casualties owing to lack of employee safety protection information. The findings of the study showed that use of personal protective equipment (PPE) by employees reduced occupational injuries by 21.2%. 64% respondents strongly agreed that there was incumbent need for provision of safety health information (PSHI).
Puplampu snd Quartey (2012) investigated key issues on occupational health and safety practice. The findings of the study indicated that risks and hazards employees were subjected to at workplace in Ghana was a function of lack of occupational health and safety protection. The study went further to assert that the prevalence of occupational ill health and injuries was informed by lack of occupational health and safety protection.
The study recommended a sound workplace health and safety policy that laid emphasis on employee protection most importantly with respect to occupational health and safety infustructure namely: equipment and plant maintenance alongside formal trainings that indicate safety skills and knowledge amongst the employees.

Esi (2012) investigated the effect of occupational health and safety protection on productivity of employees in Ghanaian Retailer State firms. The findings of the study showed 94.2% respondents strongly agreeing that adequate protection from noise, temperatures, light and ventilation enhanced performance. 100% respondents strongly agreed that occupational health and safety protection, education and training alongside adequate equipment maintenance and repair explained 87.5% variance in productivity and firm performance.
A study in Brazil by Garnica and Bariga (2018) occasioned by the escalating cases of occupational accidents revealed that lack of training or little experience with operation

systems slackened employee protection at workplace. The findings also indicated lack of safety practice and policy for detecting non conformities with respect to employee protection also adversely influenced performance.

3. Research Methodology

3.1 Research paradigm

The study was founded on Positivism and Interpretivism paradigms. There was objective physical interaction amongst the study variables characteristic of positivism paradigm. There was systematic scientific approach where data was collected and statistically tested to provide objective meaning to the interactions of variables under study namely occupational health and safety protection (independent variable), Occupational health and safety policy regulations (moderating variable) and performance of firms (Dependent variable). Structural contextual (historical meanings and explanations associated with the interactions of the variables reminiscent of interpretivism paradigm was also realized by interviews.

3.2 Research Design

Explanatory Research design where quantitative data was collected from employee respondents using questionnaire then analyzed followed by collection of qualitative data from the Human Resource manager respondents through administration of interviews aided by interview guide. The interviews provided explanations to the quantitative results of the study.

3.3 Target population

The target population was 2005 employees and 102 Human resource managers. The sample size was realized by Yamane (1967) formulae at 95% confidence level for both employees and Human Resource manager strata. N depicted population, n sample size whereas e sampling error

3.4 Sampling technique

Firms in each category namely Agriculture, transport, construction, retail and manufacturing were proportionately sampled. Mugenda and Mugenda (2013) assert that 30% of firms in each category give a fair representation. Consequently the sampled firms were also assigned respondents proportionately based on their number of employees. Table 3.1 is an illustration of category of firms, sample size proportion, number of firms and respondents assigned to each category.

Category of firm	Sample size proportion	No. of respondents	No. of firms respondents drawn
Retail firms	56%	186	15
Construction firms	21%	70	9
Transport firms	13%	43	2
Agricultural firms	3%	10	1
Manufacturing firms	7%	24	1
Total	100%	333	28

The employees were picked based on simple random whereas that of HR managers by purposive sampling.

3.5 Research instrument

Self-administered questionnaires were used to collect data. Questionnaire captures a lot of information about the phenomenon in question (Mugenda & Mugenda 2013). Personal interviews were used and were appropriate because it provides in depth perspective about the subject matter (Creswel 2003). Document analysis of website pages, medical records, minutes, memos and accident reports was carried put.

3.6 Data collection procedure.

The researcher was given express authority by the school of post graduate studies of Jaramogi Oginga Odinga University of Science and Technology upon approval of proposal to carry on with data collection. As a matter of policy by the Kenya Government, Permission was also sought from National Commission for Science and Technology and innovation (NACOSTI, Kenya). Quantitative data was collected from employee respondents using questionnaires whereas qualitative data from the Human resource managers by use of interview guide. Documents namely accident incident reports, minutes, memos, website pages and financial statements were analyzed.

4. Data analysis Presentations and discussions

4.1 Reliability of research instrument

Coefficient of reliability for occupational health and safety protection was 0.781, that pf occupational health safety policy regulation 0.879 and performance of firms was 0.816 all of which met the threshold of 0.7 by Fornell & Lorcher (1981).

4.2 Validity of Research Instrument

Average Variance Extracted (AVES) was used to measure validity indices of 0.740 for occupational health and safety protection 0.895 for health and safety policy regulations and 0.627 for performance. The aforementioned AVES met the threshold of 0.5 according to Fornell and Lorcher (1981).

4.3 Measurement of influence of occupational health and safety protection on performance of firms.

45.1% respondents agreed to a great extent that maintenance and repair of equipment as an indicator of occupational health and safety protection influenced performance of firms. 28.6% respondents however felt the influence was to some extent 7.0% were uncertain about the influence whereas 13.2% observed that the influence was to a small extent as 5.9% observed that there was absolutely no influence of Repair and maintenance of equipment on performance of firm.

With regards to occupational health and safety protection availability as an indicator 56.8% respondents had the opinion that the influence was to a great extent, 20.5% felt that the influence was to some extent, 6.6% were not sure whether there was an influence or not, 9.5% observed that the influence was to a small extent while 2.6% respondents noted that protection availability had absolutely no influence on performance of firms.

Routine medical checkups as an indicator of occupational health and safety protection on performance of firms exhibited the following results: 64.5% agreed to a great extent that indeed the checkups influenced performance of firms, 8.8% noted that the influence was to some extent, 10.3% were uncertain about the influence, 4.0% respondents observed that the influence was to a small extent while 8.4% disagreed that medical checkups influenced performance of firms.

Qualitative data drawn from the interviews indicated 16 informants at 27% attesting to the fact that occupational health and safety protection negatively influenced performance. A respondent observed “Our firm has invested dearly in repair and maintenance of equipment at the expense of other important factors that has made returns go down." Another respondent observed, "Equipment adds onto cost of production hence an expense." 21 informants representing 35% observed that occupational health and safety protection did not influence performance. "It is pointless since with or without protection performance is still realized" Another respondent observed "The fire extinguisher on the wall has never been put into use since i joined this firm." One respondent also remarked, "No employee has ever complained about health and safety protection, but the performance has been good generally."

From the excerpts 21 respondents (35%) observed that occupational health and safety protection positively influenced performance. "Prevention is better than cure." "Protection makes employees gain confidence while executing work." Just to cite a few. 18 out of the 22 documents associated with occupational health and safety protection all corroborated that indeed firms have spent colossal sum of money in repair and maintenance of equipment, employee protection availability and on employee routine medical checkups having realized that such investments are worthwhile if performance of firms is to be a reality.

Table 4.1: Influence of occupational health and safety protection on performance of firms.

Indicator	To great extent	To some extent	Not sure	To small extent	Not at all
Maintenance and repair of equipment and plant	123 (45.1%)	78 (28.6%)	19 (7.0%)	36 (13.2%)	16 (5.9%)
Protection availability	155 (56.8%)	56 (20.5%)	18 (6.6%)	26 (9.5%)	7 (2.6%)
Routine medical checks	176 (64.5%)	24 (8.8%)	28 (10.3%)	11 (4.0%)	23 (8.4%)

Source: (Research Data 2019)

Measurement results for moderating effect of occupational health and safety policy regulations.

Based on employee participation as an indicator of occupational health and safety policy regulations 47.6% respondents agreed to a great extent that indeed it moderates the relationship between occupational health and safety protection and performance of firms, 19.4% agreed that the effect was to some extent, 4% were not sure about the effect, 15.8% observed that the effect was to a small extent while 2.5% were of the opinion that there was no effect of the indicator of employee participation on the relationship between occupational health and safety protection and performance of firms.

With regards to penalty for violation as indicator of occupational health and safety policy regulation. 29.3% respondents agreed to a great extent that it influenced the relationship between occupational health and safety protection and performance of firms. 32.6% observed that the Influence was to some extent, 11% were not sure about the influence, 20.5% observed that the influence was to a small extent and 4.4% had the opinion that penalty for violation had absolutely no influence on the relationship between occupational health and safety protection and performance of firms.

Table 4.2: Influence of moderating effect of occupational health and safety policy regulations

Indicator	To great extent	To some extent	Not sure	To small extent	Not at all
Penalty for violation	80 (29.3%)	89 (32.6%)	30 (11.0%)	56 (20.5%)	12 (4.4%)
Employee Participation	130 (47.6%)	53 (19.4%)	11 (4.0%)	43 (15.8%)	34 (12.5%)

Source: Research data 2019

4.5 Hypothesis testing

H_0There is no significant influence of Occupational Health and Safety Protection moderated

by Occupational Health and Safety Policy Regulation on performance of firms in Kenya.

From the findings occupational health and safety policy regulation significantly influenced performance of firms in Kenya at β=-0.23, p= 0.01<0.05. The null hypothesis was rejected and alternate hypothesis accepted. The results indicate that a unit increase in occupational health and safety protection decreases performance of firms by -0.23. The result is in agreement with that of Kimeto, Kiyuka & Makhonge (2014) and Dey et, al (2014) that observed that investment in occupational health and safety is considered by firms in Kenya an extraneous obligation that offset productivity. Excerpts from the interviews vividly indicated 35% respondents did not observe occupational health and safety protection as a worthwhile venture in realization of firm performance.

Table 4.3: Hypothesis testing.

Model	Beta coefficients	P-value	Standard error	Significance
Occupational health and safety protection (OLSP)	-0.23	0.01	0.058	Significant

Source: Research data 2019

Warp PLS structural model estimation results

Warp PLS structural model results in figure 2 includes study variables namely: Occupational health and safety protection (independent variable) and performance of firms (Dependent variable). The independent variable is denoted as (Occhesap) whereas the dependent variable as (PerFirm). The model indicates a direct relationship between occupational health and safety protection and performance of firms. The estimation of study variables was based on their βeta coefficients and the corresponding P values indicating their level of significance. P values of 0.05 and below were considered ideal. The model estimation for the direct relationship of occupational health and safety protection and performance of firms was (β=-0.24, p=0.02<0.05) which was significant. This can be interpreted as the direct relationship of the variables without moderation is such that a unit investment or increase in occupational health and safety protection decreases performance by 0.24 and a unit decrease in occupational health and safety protection increase performance of firms by 0.24. The model further indicates that occupational health and safety protection explains 9% variance in performance of firms as characterized by the R^2=0.09.

Figure 3 indicates the relationship between occupational health and safety protection and performance of firms moderated by occupational health and safety policy regulation (occHeSafPol). The model results indicate occupational health and safety protection moderated by occupational health and safety policy regulation influence performance of firms at (β=-0.23 p=0.02<0.05) which is significant. The figure also indicates the moderating effect of occupational health and safety policy as β=-0.26 p=0.01<0.05) and R^2 of 0.11 that

can be interpreted to mean that with moderation of occupational health and safety policy regulation occupational health and safety protection explains 11% variance in performance.

Figure 4.1: Structural model estimation results for direct influence of occupational Health and safety protection

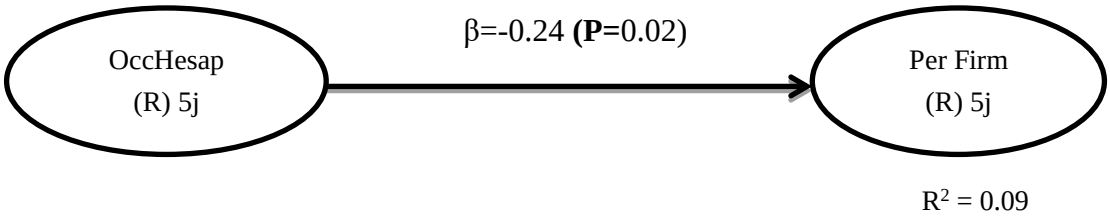
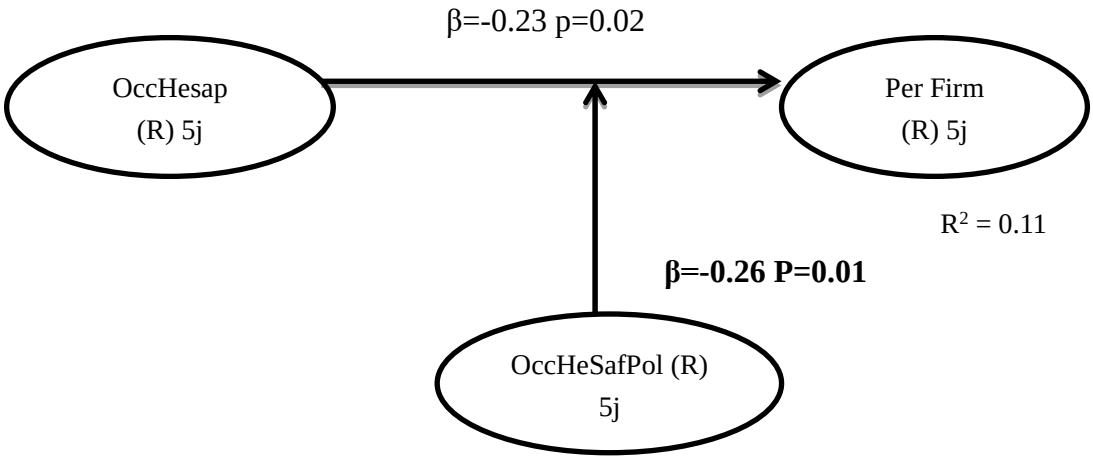


Figure 4.2: Structural model estimation results with the moderator variable effect



5. Conclusion and Recommendation

Occupational health and safety protection is a key factor that significantly influences performance of firms. From the study findings a conclusion can be drawn that occupational health and safety protection not only reduces work place injuries, fatalities and ill health, but also enhances employee confidence while executing work. The foregoing conclusion is congruent with Herzberg Motivation- Hygiene Theory in that occupational health and safety protection is a hygiene factor that if not institutionalized in a firm may demotivate employees and adversely influence performance of employee and firm.

Occupational health and safety protection indicators of maintenance and repair of plant equipment, protection availability and routine employee medical checks, should take center stage in an occupational health and safety protection program as attested to by a majority of respondents in this study if performance of firms is to be a reality. Further to this a majority of respondents studied had a feeling the practice of occupational health and safety protection should be anchored on a sound occupational health and safety policy regulations underpinned by employee participation and stringent penalty for violation. The employees had a feeling that employee participation in practice and policy of occupational health and safety protection enhanced employee ownership and accountability. Employees in the study observed that strict and heavy penalty for violation of practice and policy of occupational health and safety

protection would act as a deterrent for violation of the same by the employer and the employee.