Workplace Ergonomics and Employee Performance in Registered Private Security Firms in Kenya

Martina Wato Yattani
PhD Scholar, Human Resource Management, Jomo Kenyatta University of Agriculture and Technology, Kenya

Prof. Wario Guyo, (PhD)
Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

Dr. Kepha Ombui, (PhD)
Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

Dr. Samson Paul Nyang’au, (PhD)
Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

Abstract:
Employee performance in private security firms in Kenya is facing numerous challenges frequently emanating from workplace environment. Therefore, this study sought to assess the effect of workplace ergonomics on employee performance in private security firms in Kenya. The study was anchored on the Two-Factor Theory of Motivation. The study utilized positivism research approach. The study used descriptive and correlation research designs. The study population was 13,484 drawn from the Kenya Security Industry Association (KSIA) and Protective Security Industry Association (PSIA). The sample size was 180 respondents established by use of Slovin sample size determination formulae. Questionnaires were used as instruments for obtaining the data required. Validity and reliability of the questionnaire were enhanced by carrying out a pilot study prior to data collection. The study adopted regression analysis to establish the effect of workplace ergonomics on employee performance in private security firms in Kenya. The study findings indicated that workplace ergonomics had a positive and significant relationship with employee performance in private security firms in Kenya. Therefore, the relationship between workplace ergonomics and employee performance is crucial as it can have far-reaching implications for both employees and organizations. The positive and significant relationship between workplace ergonomics and employee performance suggests that private security firms should consider investing in ergonomic improvements to create a healthier, more productive, and engaged workforce. It can have a cascading effect on various aspects of organizational success. Therefore, the implications of workplace ergonomics on employee performance in private security firms in Kenya are diverse and can positively impact both the physical and psychological well-being of employees. Private security firms need to recognize and invest in ergonomic principles to create a healthier, more productive, and more satisfying work environment. This, in turn, can contribute to the overall success and sustainability of private security firms in Kenya.

Keywords: Workplace Ergonomics, Security Firm, Employee Performance.
Introduction

Background Information

Globally, employees in many organizations are encountering with problems at workplace related to workplace environmental and physical factors (ILO, 2017). It has been argued by Pech and Slade (2016), that employee disengagement is increasing and it has become important to make workplaces that positively influence workforce due to workplace environmental factors in the USA (Collins, 2018). Employees’ comfort on the job, determined by work environment, has been recognized as an important factor for measuring their productivity in UK firms (Leblebici, 2012). In today’s dynamic and competitive business world, a healthy workplace environment makes good business sense. Managers should not just focus on the employees’ pay packet with the assumption that it is proportionate to performance (Heath, 2016). Organizations deemed as a positive place to work will have a competitive edge over the others in the most Chinese organizations (Wu & Hung, 2018).

In Kenya, the employees in many private security firms are encountering with working problems related to workplace ergonomics. Phua (2018) posit that employee disengagement due to poor workplace ergonomics is increasing and has become important to make workplaces Employees’ comfort on the job, determined by workplace ergonomics and environment, has been recognized as an important factor for enhancing their productivity (Leblebici, 2017). In today’s dynamic and competitive business world, a healthy workplace ergonomics makes good business sense. Managers should not just focus on the employees’ pay packet with the assumption that it is proportionate to performance (Heath, 2016). Organizations deemed as a positive place to work will have a competitive edge over the others.

In many security firms in Kenya, most establishments are beginning to reconsider how their work environment is designed and what facilities they offer to staff has far-reaching effects on their general performance. An enabling workplace environment must thus be the key feature to improving performance. Workplace ergonomics is a concept, which has been operationalized by analyzing the extent to which employees perceive the immediate surroundings’ as fulfilling their intrinsic, extrinsic and social needs and their reason of staying with the organization (Haynes, 2018). Heath (2016) states, the biggest goal of all the private security firms are to increase their performance, thus making high profits.

Statement of the Problem

Successful organizations are increasingly realizing that workplace ergonomics is clearly the most critical element in ensuring employee performance (Murray, 2018). Private security firms are spending huge amount of resources to get a committed workforce and to retain them. Empirical evidences show that employee performance of security sector is a function of their workplace ergonomics. According to (El-Zeiny, 2013), improved workplace ergonomics accounts for 40% of the employee performance. Likewise, a study by Shikdar and Shawaqed; (2018) shows that majority of the private security firms with satisfactory employee performance attributes their result to workplace ergonomics.

It is therefore a general knowledge that private security firms have not performed optimally and is seldom attained (Onditi et al. 2020). This is indicative that performance is poor in majority of private security firms especially in economically developing regions of the world. However, Ojiambo, Francis and Joseph (2020) contend that in Kenya there has been a rise in complaints by the public, professionals and other stakeholders about the employee performance in the private security firms (Kavila, Mwambia, & Baimwera, 2017). In the pursuit of improved employee performance of private security firms have turned towards workplace ergonomics (Chinwokwu, 2018). However, the link between workplace ergonomics and its effect on the employee performance of private security firms is yet to be established. It is on this premise the current
study sought to examine the relationship between workplace ergonomics and employee performance in the registered private security firms in Kenya.

**Research Objective**

The objective of the study was to examine the relationship between workplace ergonomics and employee performance in the registered private security firms in Kenya.

**Research Hypothesis**

The study hypothesized $H_0$: There is no significant relationship between workplace ergonomics and employee performance in the registered private security firms in Kenya.

**Theoretical Review**

The study was based on the Two-Factor Theory of Motivation developed by Frederick Herzberg in 1959. He did this by interviewing over 200 professionals. The interviews revealed that the interviewees were most and least happy with their jobs. The theory suggests that human beings have two different sets of needs and different elements of work situation satisfies or dissatisfies these needs. The first set concerns the basic needs of a person; the hygiene factors (Herzberg, 1971; Mausner & Snyderman, 2014). These factors are not directly related to the job itself, but concern the conditions that surround when performing a job. These factors are company policies such as reward system, salary, job security, personal life, work conditions, status and interpersonal relations with supervisor, peers and subordinates (Asante, 2019). According to Herzberg, these factors can cause dissatisfaction when not satisfied. They operate primarily to dissatisfy employees when they are not present, however, the presence of such conditions does not necessarily build strong motivation, (Osoro & Kanyajua, 2019). However, when satisfied these factors do not motivate or cause satisfaction, they only prevent dissatisfaction (Mausner & Snyderman, 2015).

The second set of needs is growth needs, which refers to factors intrinsic within the work itself, such as; recognition of a task completed, achievement, responsibility, advancement, work itself and personal growth. These factors are according to Herzberg, are the motivating factors, which implies that human beings try to become all that they are capable of becoming and when satisfied they work as motivators (Punadi, 2018). According to Herzberg, content of work such as opportunities for responsibility and career advancement is the only way to increase satisfaction and thereby enhance work motivation (Kahare, 2018). However, when the growth factors are missing this does not cause dissatisfaction, simply an absence of satisfaction (Pickson, Bannerman & Ahwireng, 2017).

According to Dessler (2013) Fredrick Herzberg said that the best way to motivate someone is to organize the job, so that doing it provides the feedback and challenge that helps satisfy the person’s higher-level needs for things like accomplishment and recognition. The managers ‘role is to make sure their work environment deficiency needs are met. The model also implies that creating a proper climate in which employees can develop their fullest potential; managers should recognize their employees’ multiple simultaneous needs. Relying on financial incentives only is risky. Therefore, the employer should provide both intrinsic and extrinsic incentives. For example, intrinsic incentives may include recognition and challenging work that most people desire. The theory contributes positively to the study as it provides knowledge on how workplace ergonomics plays great role on improving employee performance. The theory was adopted to expound the relationship between workplace ergonomics and employee performance in registered private security firms in Kenya.

**Conceptual Model and Hypothesis**

A conceptual framework is a concise description of the phenomenon under study accompanied by a graphical or visual description of the major variables of the study (Cooper & Schindler, 2008). Michelle (2017) states that a conceptual framework is a diagrammatic representation that shows the relationship between the dependent variable and independent variables. This study’s conceptual framework sought to demonstrate the relationship between workplace ergonomics and employee performance in registered private security firms in Kenya.
security firms in Kenya. The conceptual framework is illustrated in Figure 1.

![Figure 1. Conceptual Framework](image)

### Literature Review

For the purpose of this study work ergonomics was used an indicator in relation to tools of work, physical environment and personal protective equipment. Ergonomics is all about making the work environment as conducive as possible to avoid injuries, stress and other long-term conditions that may have an effect on the well-being of an employee. Without proper ergonomics, there is increased absenteeism and sick leaves which ends up reducing the productivity of the employees and eventually affecting the profitability of the company (Gyekye, 2016). For instance, an employee who is constantly experiencing back pain because of the office chairs will miss work on some days to seek medical attention which means that sometimes targets will not be met (Kirsh, & Mckee, 2017). Through ergonomics, employers, as well as employees, can collectively brainstorm on ways to transform the work environment to be conducive for everyone without affecting productivity in the process. To better understand how ergonomics affects the productivity of employees in any company, it is important to first understand what ergonomics is in the first place (Griffitt, 2019).

The ultimate aim of workplace ergonomics is to generally ensure employee safety and enhance performance. Beyond these objectives, many other benefits are known to accrue to an organization when management commits to the development and maintenance of ergonomics in the workplace. These benefits according to McSmith (2017) include increased productivity, increased work quality, reduced turnover, and reduced absenteeism, increased morale. From a safety perspective, Gyekye (2016) emphasizes that environmental conditions affect employee safety perceptions which impacts upon employee commitment. Similarly, extensive scientific research conducted by Roelofsen (2015) has also yielded indications suggesting that improving key ergonomics factors in working environment results in reduction in a number of complaints and absenteeism and an increase in productivity which means service delivery is improved.

### Empirical Review

Pickson, Bannerman and Ahwireng (2017) study sought to investigate the effect of ergonomics on the employee productivity focusing on the Butchering and Trimming Line of Pioneer Food Cannery Limited (PFC) in Ghana. Research questionnaires were developed and distributed to a sample of 134 workers consisting of workers...
in charge of butchering, trimming as well as supervisors. It was evident from the findings that all the indicators explaining work ergonomics from the perspective of the employees of PFC were satisfactory despite the few respondents who indicated unsatisfactory to the general design and workplace décor, and conducive nature of the room temperature and air quality respectively. It was established that all the indicators of work ergonomics have a significant positive correlation with employee productivity of PFC.

Apparently, lack of ergonomic awareness and concern in the physical environment setting has triggered the rise in cost, injuries, illness and discomfort that may lead to poor work quality and employee performance. Relatively, many organizations disregard, ignore due to time, cost factor and consider it as a complex battlefield for management with the recent economic conditions. Hence, with proper planning and ergonomic concern the above risk could be reduced. Therefore, Punadi (2018) study focused on the relationship between physical environment setting and academician performance in the PHEI (Private Higher Education Institution). Using a formulated questionnaire, a total of 250 samples aimed and only 183 completed and were gathered among academicians from numerous Private Colleges and Universities in the area of Subang Jaya. Through findings and discussion, this research found that physical environment factors such as building aesthetic, furniture arrangement, facilities and ventilation are considered essential, but facilities aiding staff considered important which contributes 41% to employee performance.

Asante (2019) study assessed the impact of office ergonomics on the performance of Ghana National Petroleum Corporation (GNPC) employees at the Petroleum House in Tema and finally propose specific ergonomically based interventions that would address employee health, comfort and wellbeing and thereby enhance optimum performance. The study was based on a sample of 88 GNPC staff randomly drawn from various departments and units at the Petroleum House, as well as 10 senior managers. The study identified considerable office ergonomic deficiencies which included uninspiring and old-fashioned office design and décor (largely cellular offices), use of dark wooden partitions resulting in poorly illuminated offices, and continuous use of unergonomic furniture at the Petroleum House. The study also confirmed that the ergonomic deficiencies have had varying adverse effects on the performance of GNPC employees by between 20-80 percent.

Onero and Kanyajua (2019) sought to establish the extent to which ergonomics influence the performance in State Corporations a case study of Kenya Bureau of Standards. This research was to specifically seek to evaluate how office furniture, spatial arrangement, lighting and office equipment affects performance of employees at KEBS. The study used a descriptive research design to give the actual picture of how things look presently. The study target population was 400 employees of Kenya Bureau of Standards headquarters, and used both correlation and linear regression analyses to test for the relationship between independent and dependent variables. The study established that office furniture affects employee performance to a great extent and the study findings shows that office furniture is significant determinant of employee performance and office furniture contributes significantly to employee performance. The findings revealed that spatial arrangement affects employee performance to a moderate extent. Results indicate a strong positive correlation between spatial arrangement and employee performance; the study also established that office lighting affects employee performance to a great extent and also findings reveal that office equipment affects employee performance at KEBS to a great extent.

Research Methodology

The current study adopted a descriptive design, which took into consideration of the analysis of the relationship between workplace ergonomics and employee performance in registered private security firms in Kenya. A descriptive research design was useful in capturing unbiased
representation of perceptions and experiences research design enables the researcher to fully describe how workplace ergonomics influences employee performance in registered private security firms in Kenya. The study was based on the positivism philosophy. Positivism is a philosophy that seeks real facts of social phenomena that are objective, neutral and predictable with little regard for the subjectivity of individuals (Argaw, Desta, & Mamo, 2021). The target population were members of Kenya Security Industry Association (KSIA) and Protective Security Industry Association (PSIA), since they had representation in Private Security Regulatory Authority (PSRA) board in Kenya. The Private Security Regulatory Authority (PSRA) is the one which regulates private security firms in Kenya. The target population therefore was employees from the two institutions.

Table 1. Target Population

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of Employees(N)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSIA</td>
<td>8654</td>
<td>64.3%</td>
</tr>
<tr>
<td>KSIA</td>
<td>4830</td>
<td>35.7%</td>
</tr>
<tr>
<td>Total</td>
<td>13484</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Kenya Private Security Regulatory Authority (2023)

Fishers formula was adopted to determine sample size for the study. The study assumes 95% desired level of confidence, which is equivalent to standardized normal deviate value of 1.96, and an acceptable margin of error of 5% (standard value of 0.05). The formula for calculating sample size for a large population is as follows:

\[ n = \frac{Z^2pq}{e^2} \] (1)

Where \( n \) = required sample size

\( p \) and \( q \) = Population proportions which are set at 0.5 each

Z = Level of confidence

Typically, the level of confidence for surveys is 95% in which case Z is set to 1.96.

\( e \) = Sets the margin of error of the sample proportion. This will be set at 5% or 0.05.

The study has a population of over 1,000 but less than 10,000.

This being a large (binomial) population, the sample will, therefore be worked out as follows:

\[ n = \frac{Z^2pq}{e^2} = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} = 509 \]

Therefore, the study used a sample of 224 respondents. A stratified random sampling technique was used to select the respondents from each stratum as suggested by Fink (2019) and Portney (2020). Other prior studies that have successfully used stratified random sampling to select a sample with satisfactory results include studies by Repko and Szoztak (2020) and Callanan (2020). Therefore, the sample size of the study was calculated from the Slovin’s formula given as:

\[ n = \frac{N}{1+N\cdot e^2} \] (2)

Where: \( n = \) Sample size,

\( N = \) Total population and

\( e = \) Error tolerance (confidence level).

Since the population \( N = 509 \),

Error tolerance = 0.05,

The sample size is determined as:

\[ n = \frac{509}{1+509 \cdot 0.05^2} = 224 \]

The sample size therefore was 224.
Table 2. Sample Size Distribution

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of Employees (N)</th>
<th>Sample (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSIA</td>
<td>8654</td>
<td>159</td>
</tr>
<tr>
<td>KSIA</td>
<td>4830</td>
<td>65</td>
</tr>
<tr>
<td>Total</td>
<td>13484</td>
<td>224</td>
</tr>
</tbody>
</table>

Research Findings

Regression analysis was conducted to determine the proportion of employee performance in registered private security firms in Kenya (dependent variable) which could be predicted by workplace ergonomics (independent variable). Therefore, to test this hypothesis, the model \( Y = \beta_0 + \beta_1X_1 + \varepsilon \) was fitted. Where \( Y \) is Employee Performance and \( X_1 \) is workplace ergonomics. The R-Squared tends to depict the variation in the dependent variable that can be explained by the independent variables: the greater the value of R-squared the greater the effect of independent variable. The R Squared can range from 0.000 to 1.000, with 1.000 showing a perfect fit that indicates that each point is on the line.

Table 3. Model Summary for the Workplace Ergonomics with Employee Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.555(^a)</td>
<td>0.308</td>
<td>0.289</td>
<td>0.35125</td>
</tr>
</tbody>
</table>

As indicated in Table 3, the R-squared for the relationship between workplace ergonomics and employee performance in registered private security firms in Kenya was 0.308; this is an indication that at 95% confidence interval, 30.80% variation in employee performance in registered private security firms in Kenya can be attributed to changes in workplace ergonomics. This means that the remaining 69.20% are other factors associated with employee performance in registered private security firms in Kenya which were not explained by the model. The correlation coefficient of 0.555 indicates workplace ergonomics had a positive correlation with employee performance in registered private security firms in Kenya. Therefore, workplace ergonomics was an important factor that could be considered in the employee performance in registered private security firms in Kenya.

The ANOVA results in Table 4 shows that (\( F(1,185) = 82.629, p <0.05 \)). This shows that the overall model is significant. The findings imply that workplace ergonomics was statistically significant in explaining employee performance in registered private security firms in Kenya. Therefore, at \( p <0.05 \) level of significance, null hypothesis “There is no significant relationship between workplace ergonomics and employee performance in the registered private security firms in Kenya” is not supported thus rejected and the alternative hypothesis (\( H_{a1} \)) which states that “There is significant relationship between workplace ergonomics and employee performance in the registered private security firms in Kenya” is accepted implying that workplace ergonomics played a significant role in employee performance in registered private security firms in Kenya.

Table 4. Analysis of Variance for Workplace Ergonomics with Employee Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>7,354</td>
<td>1</td>
<td>7,354</td>
<td>82.629</td>
<td>0.000(^p)</td>
</tr>
<tr>
<td>Residual</td>
<td>16,522</td>
<td>185</td>
<td>0.089</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23,876</td>
<td>186</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The coefficients or beta weights for each variable allows the researcher to compare the relative importance of each independent variable. In this study the unstandardized coefficients and standardized coefficients were given for the multiple regression equations. The regression equation revealed that holding workplace ergonomics to a constant zero, employee performance in registered private security firms in Kenya would be at a constant value of 2.876.

Table 5: Beta Coefficients for Workplace Ergonomics with Employee Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.876</td>
<td>0.118</td>
</tr>
<tr>
<td>Workplace Ergonomics</td>
<td>0.673</td>
<td>0.134</td>
</tr>
</tbody>
</table>

Therefore, the regression of coefficients results in Table 5 shows that there is a significant and positive relationship between workplace ergonomics and employee performance in registered private security firms in Kenya as supported by a p<0.05 and a beta coefficient of 0.673. This implies that a unit increase in workplace ergonomics would increase the employee performance in registered private security firms in Kenya by 0.673 units. This was supported by the t values whereby t cal= 24.372 > t critical =1.96 at a 95 percent confidence level which depicts that we reject the null and accept the alternate hypothesis. Further, this confirms the positive effect of workplace ergonomics in employee performance in registered private security firms in Kenya. The fitted equation is as shown below: Y= 2.876 + 0.673X₁, that is, Employee Performance = 2.876 + 0.673 Workplace Ergonomics.

Discussion

The effect of workplace ergonomics on employee performance is multifaceted, influencing physical health, cognitive performance, job satisfaction, and overall private security firms dynamics. Actual findings in the Kenyan context find a positive correlation between ergonomic design and physical well-being of the employees in the private security firms. Ergonomically designed work spaces, which include adjustable chairs, proper desk heights, and adequate lighting, can reduce the risk of musculoskeletal disorders and discomfort affecting employee performance in the private security firms. The employees with improved physical health are likely to experience less fatigue and pain, contributing to enhanced performance and productivity. The study findings corroborate with the findings by Gitahi (2014) that ergonomics also plays a role in cognitive performance. Comfortable and well-organized workstations can reduce distractions and help employees maintain focus on their tasks. Proper ergonomic adjustments, such as monitor placement and keyboard height, contribute to a more comfortable and efficient work environment, positively impacting cognitive performance.

According to Aziz (2015) employee engagement and satisfaction findings often indicate that a focus on workplace ergonomics is associated with higher levels of employee engagement and job satisfaction. When employees feel that their workplace cares about their well-being and provides a comfortable environment, they are more likely to be satisfied with their jobs, leading to increased commitment and performance. Amusa et al. (2013) posit that there is reduced absenteeism and turnover since the ergonomics can have implications for attendance and turnover rates. Comfortable work environments that prioritize employee health are associated with lower rates of absenteeism and turnover. Employees are more likely to stay with a...
company that invests in their well-being, leading to greater continuity and stability in the workforce. Further, the adaptability to diverse workforce highlight the importance of ergonomics in accommodating a diverse workforce with varying physical abilities, ages, and cultural backgrounds of the security firms. Awan and Tahir (2015) opines that workplace that considers diverse ergonomic needs fosters inclusivity, contributing to a positive and supportive organizational culture. Lastly, the study findings are in tandem with the findings by established that employee morale and motivation is enhance since the ergonomically designed workplaces contribute to positive employee morale and motivation. The feeling supported by the private security firms through ergonomic initiatives can boost morale, making employees more motivated to perform at their best.

**Conclusion and Recommendations**

Based on the study findings, the study concludes that there exists a positive and significant relationship between workplace ergonomics and employee performance in the registered private security firms in Kenya. The results reveal that workplace ergonomics is statistically significant in explaining employee performance in the registered private security firms in Kenya. The study recommends that there is need to review the workplace ergonomics policy in the registered private security firms to enhance performance of employees. The workplace ergonomics policy should improve the technical support and the development of evidence based workplace environment.

**References**


Kinyua (2015). Research Methodology: Methods and Techniques (Second Revised)

Kirsh, B. &Mckee, P. (2017). The needs and experiences of injured workers: A
participatory research study. *Journal of Ergonomics*, 2(1), 221-231


