

Research Article

Work Place Ergonomics on Employee Performance in Kisii County Government, Kenya

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Abstract

The significance of the workplace environment on employees' performance has garnered considerable attention in organizational research. However, within the context of County Governments in Kisii, there exists a noticeable gap in understanding the interplay between work place ergonomics on employee performance. Despite the acknowledged importance of conducive work environments, there remains a dearth of empirical evidence and comprehensive studies focusing specifically on the impact within this regional administrative framework. It is on this ground that this study sought to evaluate the effect of the work place ergonomics on employee performance in Kisii County Government, Kenya. This study was significant as by investigating its impact on employees' performance within the Kisii County Government, we can identify factors that enhance or hinder productivity. The study was anchored on safety climate theory. The study was anchored on the survey research design. The target population was 336 while a suitable sample of 183 was selected to represent the study in data collection. The survey questionnaire was used to collect data and validity and reliability was endured by use of Cronbach's scales. Data was coded and analysed both through descriptive statistics and regression. Construct validity and reliability was used to validate the tool. The study shows a strong positive relationship between workplace ergonomics and employees' performance in the County Government of Kisii, as indicated by a high Pearson regression coefficient. The study concluded that work place ergonomics is a significant positive predictor of employee performance in Kisii County Government, Kenya. Based on the conclusion, the study recommends that organizations should prioritize ergonomic assessments and interventions to improve the overall work environment. Regular ergonomic evaluations are necessary to identify and address risk factors and discomfort in the workplace.

Keywords: Employee Performance, Work Place Ergonomics, Employee Productivity, Administrative Framework.

Introduction

Monitoring the environment is crucial for a company to demonstrate its commitment to its employees, who are recognized as essential assets (Bhatti *et al.*, 2018). Given that employees dedicate a significant portion of their lives to their jobs (Mattson *et al.*, 2016), the conditions in which they work profoundly impact their emotional and cognitive well-being, concentration, behaviour, actions, and skills. This, in turn, significantly influences employee engagement and performance. Therefore, the ability of an organization to maintain high levels of performance, and consequently its overall performance, is heavily reliant on the quality of the environment (Sullivan *et al.*, 2013). County governments in Kenya have taken some steps toward optimizing the work environment to boost employee performance and well-being. According to a report by the Ministry of Public Service, Youth, and Gender Affairs (2020), county governments have been investing in infrastructural development, including the renovation of office spaces to enhance comfort and accessibility. These efforts are part of a broader public service reform agenda aimed at improving public service delivery.

A study by Kamau and Wanjiru (2021) explored the barriers faced by county governments in enhancing environments. They identified budget constraints, lack of expertise in ergonomics, and insufficient awareness of the link between design and employee performance as key obstacles. Despite these challenges, there is growing recognition among county government officials of the need to create workspaces that

support employee well-being. Muturi and Kamau (2020) investigated the evolving efforts of county governments in Kenya to enhance employee well-being by focusing on improved conditions. Their study revealed that targeted interventions-such as enhanced lighting, noise reduction measures, and the provision of ergonomic furniture-were well-received by staff and played a significant role in lowering stress and boosting overall job satisfaction. These findings highlight a growing recognition within local government institutions of the importance of the work environment in promoting employee health and productivity.

Objective of the Study

The objective of the study was to establish the effect of work place ergonomics on employee performance in Kisii County Government, Kenya.

Theoretical Framework

Cognitive-Ergonomic Theory is a broad framework that integrates principles from cognitive psychology and human factors engineering to understand how the design of work tasks and environments influences cognitive processes and performance. While there isn't a single author or specific year associated with the development of this theory, it has evolved over time through contributions from various researchers in fields such as psychology, ergonomics, and human-computer interaction. The core proposition of cognitive-ergonomic theory is that the design of work tasks, tools, and environments significantly influences cognitive processes such as attention, memory, decision-making, problem-solving, and learning. By optimizing the design of work systems to support these cognitive processes, organizations can enhance employee performance, reduce errors, and improve overall well-being.

Proponents of cognitive-ergonomic theory include researchers and practitioners from disciplines such as cognitive psychology, human factors engineering, industrial design, and organizational psychology. Some influential figures in this field include Donald Norman, Gary Klein, Erik Hollnagel, and Jens Rasmussen, among others. One critique of cognitive-ergonomic theory is that it may oversimplify the complexities of human cognition and its interaction with the work environment. Human cognition is influenced by a multitude of factors beyond just the immediate task and environment, including individual differences, social context, and organizational culture. Additionally, the theory may not fully account for the dynamic nature of cognitive processes and their interaction with changing work demands and environmental conditions.

Cognitive-ergonomic theory is highly relevant to ergonomics as it provides a framework for understanding how the design of work systems can impact cognitive processes and, consequently, employee performance. By applying principles derived from this theory, organizations can design workspaces, tasks, and technologies that support cognitive abilities such as attention, memory, and decision-making, leading to improved performance, reduced errors, and enhanced job satisfaction. For example, designing interfaces that present information clearly and intuitively can reduce cognitive load and improve decision-making. Similarly, organizing work tasks to minimize interruptions and distractions can enhance concentration and productivity. Overall, cognitive-ergonomic theory underscores the importance of considering cognitive factors in the design of work systems to optimize employee performance and well-being.

Literature Review

Sinno and Ammoun (2019) observed a rising trend of employee disengagement, emphasizing the increasing significance of fostering positive environments in the USA due to various environmental factors. The UK has recognized the pivotal role of employees' comfort at work, as determined by the work environment, in measuring productivity within firms (Leblebici, 2012). According to Sinno and Ammoun (2019) today's dynamic and competitive business landscape, the value of a conducive environment for overall business success is evident. Therefore, managers should shift their focus beyond mere compensation, understanding that it alone does not necessarily correlate with performance.

Amusa *et al.*, (2023) argue that focusing on ergonomics can lead to decreased absenteeism and turnover. By creating comfortable work environments that prioritize employee health, organizations can experience lower rates of absenteeism and turnover. Employees are more inclined to remain with a company that invests in their welfare, promoting greater stability within the workforce. Additionally, accommodating diverse workforce needs, including varying physical abilities, ages, and cultural backgrounds, underscores the importance of ergonomics in fostering inclusivity within security firms. A study by Alzahrani (2019) evaluated how office ergonomics influence the performance of Ghana National Petroleum Corporation employees at the Petroleum House in Tema. Findings revealed significant ergonomic shortcomings, such as outdated office design, dimly lit spaces due to dark wooden partitions, and the continued use of non-

ergonomic furniture. Moreover, the study confirmed that these deficiencies negatively impacted GNPC employees' performance by varying degrees, ranging from 20% to 80%.

A study by Yattani *et al.*, (2024) on ergonomics and employee performance in registered private security firms in Kenya revealed a significant and positive correlation between ergonomics and employee performance, underscoring its importance for both employees and organizations. This relationship highlights the necessity for private security firms to prioritize investments in ergonomic enhancements to foster a healthier, more productive, and engaged workforce. A study by Osoro and Kanyajua (2019) which investigated the impact of ergonomics on the performance of State Corporations, focusing on the Kenya Bureau of Standards as a case study. The research specifically examined the influence of office furniture, spatial arrangement, lighting, and office equipment on employee performance at KEBS. Employing a descriptive research design, the study provided an overview of the current situation. The findings indicated that office furniture significantly influences employee performance, emphasizing its importance in this regard.

Research Methodology

The research design constituted a comprehensive framework that guided the processes of collecting, analyzing, and interpreting data throughout the research project (Sekaran and Bougie, 2016). In line with the quantitative approach adopted in this study, a survey design was utilized (Creswell, 2013). The unit of observation consisted of all staff members working across the departments involved in the devolved functions, which included the departments of sub-county administration, finance, enforcement, agriculture, health, education, water, physical planning, public works, trade and industry, roads and infrastructure, procurement, and social services a total of 336 individuals. The study adopted the Yamane (1967) formula for determining an appropriate sample size of 183 respondents to represent the study population. Stratified sampling was employed to ensure that each member from the various departments had a chance to participate in the study (Krejcie and Morgan, 1970). Thereafter, a random sampling technique was applied to give each individual within the respective departments an equal opportunity. Data were collected through questionnaires, validated for reliability and analyzed using construct validity and Cronbach alpha coefficient of 0.71 and above considered reliable. Before data collection, researcher applied for a research permit from the National Commission for Science, Technology and Innovation to allow for data collection. Data was collected using a questionnaire. Quantitative data collected was coded, entered into the Statistical Package for Social Sciences (SPSS) then analysed both descriptively, through frequencies, percentages, means and standard deviations where applicable, and through regression analysis.

Results

The researcher targeted 183 respondents to collect data however only 177 successfully filled and returned the questionnaires which the following analysis was based on. The study aimed to assess the effect of ergonomics on employees' performance in the County Government of Kisii. The responses obtained were recorded and summarized in Table 1.

Table 1. Ergonomics programs.

Statements	N	Minimum	Maximum	Mean	Standard deviation
The furniture in my workspace is adjustable to accommodate my comfort needs.	177	1	5	3.12	1.392
The furniture in my workspace enhances my overall comfort while working.	177	1	5	3.14	1.367
The layout of my workspace allows for easy movement and accessibility.	177	1	5	3.20	1.365
The arrangement of furniture in my workspace promotes productivity.	177	1	5	3.16	1.353
The positioning of my monitor(s)/computers allows for comfortable viewing angles.	177	1	5	3.15	1.404
The placement of my monitor(s) enhances my overall work experience.	177	1	5	3.07	1.429
The lighting in my workspace is sufficient for my tasks.	177	1	5	3.46	1.450
The task lighting contributes to a comfortable and visually pleasant environment.	177	1	5	3.43	1.468

Table 1 observed that majority of the respondents with a mean of 3.12 (SD = 1.392) undecided to whether the furniture in my workspace is adjustable to accommodate my comfort needs. The study also revealed that majority of the respondents with a mean of 3.14 (SD = 1.367) were undecided to whether furniture in my workspace enhances my overall comfort while working. The study further revealed that majority of the respondents with a mean of 3.20 (SD = 1.365) were undecided to whether the layout of my workspace allows for easy movement and accessibility. The study also revealed that majority of the respondents with a mean of 3.16 (SD = 1.353) undecided to whether the arrangement of furniture in my workspace promotes productivity. The study also revealed that majority of the respondents with a mean of 3.15 (SD = 1.404) undecided to whether positioning of my monitor(s)/computers allows for comfortable viewing angles. The study also revealed that majority of the respondents with a mean of 3.07 (SD = 1.429) undecided to whether placement of my monitor(s) enhances my overall work experience.

The study also revealed that majority of the respondents with a mean of 3.46 (SD = 1.450) were in agreement that lighting in my workspace is sufficient for my tasks. The study additionally revealed that majority of the respondents with a mean of 3.43 (SD = 1.468) were in agreement that task lighting contributes to a comfortable and visually pleasant environment. The study was in agreement with the study done by Amusa *et al.*, (2023) who in their finding argue that focusing on ergonomics led to decreased absenteeism and turnover which in return led to better organisational performance. The study was also in agreement with a study by Alzahrani (2019) who evaluated how office ergonomics influence the performance of Ghana National Petroleum Corporation employees and found a significant positive association between ergonomic and performance. Further, the study is in line with a study done by Yattani *et al.*, (2024) who looked into ergonomics and employee performance in registered private security firms in Kenya and found a significant and positive correlation between ergonomics and employee performance. Finally, the study is in tandem with a study by Osoro and Kanyajua (2019) whose study investigated the impact of ergonomics on the performance of state corporations, focusing on the Kenya Bureau of Standards and found that office furniture significantly influenced employee performance.

Regression

The study conducted a linear regression analysis to help make inferences from the descriptive analysis between ergonomics programmes influence employees' performance in the County Government of Kisii. The following statistics were produced as shown in Table 2, 3 and 4.

Table 2. ANOVA summary for ergonomics and performance.

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	248.020	1	248.020	104.415	.000 ^b
	Residual	41.637	175	.238	-	-
	Total	289.657	176	-	-	-
a. Dependent variable: Employee performance						
b. Predictors: (Constant), Workplace ergonomics						

Table 2 indicates that the ANOVA (the F-statistics) measures the overall significance of the model. It provides information levels of variability within the regression model and hence forms a basis for tests of significance. The results confirm that the regression model is significant for the data as captured by the ANOVA (F-statistic) value of 104.415 and is associated probability value of 0.000 (F=104.415, $p < 0.05$) that was found to be significant at 5% significant level.

Table 3. Model summary for ergonomics.

Model	R	R-square	Adjusted R-square	Standard error of the estimate	Durbin-Watson
1	.925 ^a	.856	.855	.48778	.022
a. Predictors: (Constant), Workplace ergonomics					
b. Dependent variable: Employee performance					

Table 3 shows that the R^2 value of 0.856, which implies that 85.6% of changes in employee performance are explained by the independent variable, ergonomics, while 14.4% is explained by the error term. The adjusted R^2 value of 0.855 shows that 85.5% changes in employees' performance in the County Government of Kisii are explained by the ergonomics while the difference, 14.5% is captured by the error term hence showing a model with a good fit at 85.6% (Cohen, 1988).

Table 4. Coefficients of regression for ergonomics.

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B	
		B	Standard error	Beta			Lower bound	Upper bound
1	(Constant)	1.123	.093	-	12.011	.000	.938	1.307
	Workplace ergonomics	.863	.027	.925	32.286	.000	.811	.916
a. Dependent variable: Employee performance								

Table 4 represents the coefficient of regression where interpretation is made at the unassimilated coefficients that depict the estimated coefficients which show the size or the magnitude of the change and the t-statistics which tests the statistical significance of the individual regression coefficient as compared to the *p*-value. Therefore, the study reveals that the ergonomics Pearson regression coefficient value was found to be 0.863 which shows that a unit increase ergonomics on average, increases employees' performance in the County Government of Kisii by 0.863 units hence, a direct positive correlation between ergonomics and employees' performance in the County Government of Kisii.

The study also observed that the calculated t-value for the relationship ergonomics and employees' performance in the County Government of Kisii was 32.286 with an associated *p*-value of 0.000 since the *p*-value <0.05 at 5% level of significance. Therefore, the study concludes that ergonomics have a significant positive effect on employees' performance in the County Government of Kisii. Hence, the null hypothesis, there is no significant effect between the ergonomics and employees' performance in the County Government of Kisii, is rejected since $p < 0.05$ and the alternative hypothesis, ergonomics have a significant effect on employees' performance in the County Government of Kisii adopted. The regression equation for predicting employees' performance in the County Government of Kisii from ergonomics was $Y = 1.123 + 0.863X$ implying that ergonomics has significant positive effect on employees' performance in the County Government of Kisii ($B = 0.863$, $p < 0.05$).

Conclusion

Based on the study findings, the study concludes that improvements in workplace ergonomics are likely to lead to more positive evaluations of the overall work environment.

Recommendations

Based on the conclusion, the study recommends that organizations should prioritize:

- ☞ Ergonomic assessments and interventions to improve the overall work environment. Regular ergonomic evaluations are necessary to identify and address risk factors and discomfort in the workplace.
- ☞ Ergonomic training should be mandatory for both employees and supervisors to raise awareness and promote active participation.
- ☞ Investment in ergonomic furniture, adaptive equipment, and supportive technologies is essential. These practices enhance employee well-being, increase productivity, and reduce work-related musculoskeletal disorders.

Declarations

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