

# INFLUENCE OF OPEN WORKING ENVIRONMENT OFFICE ON EMPLOYEES' PRODUCTIVITY IN GOVERNMENT INSTITUTIONS IN KENYA: A CASE OF TEACHERS SERVICE COMMISSION

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**Abstract:** The study was aimed at establishing the influence of open plan working environment on employees' productivity in government institutions in Kenya, a case of Teachers Service Commission. Specific objectives were; to find out the influence of employees' health issues on employees' productivity in government institutions. The study adopted the social exchange theory; Herzberg two factor theory; Lynch's theory and person-environment fit theory. The social exchange theory states that working environment determines the employees' workplace behavior which affects the employees' relation in an organization. Social exchange involves a series of interactions that generate obligations amongst employees and these influence employees' relations. The Herzberg two factor theory states that there are certain factors in the workplace that cause job satisfaction, while a separate set of factors cause dissatisfaction such as pay, working conditions and benefits. The Lynch's theory of office environment states that office environments namely closed office, open plan office and landscape office determine how office designs influence employees to communicate in an organization and this affects team cohesion. The person-environment fit theory was used to explain illnesses related to working conditions. The theory states that an individual's wellbeing is compromised when there is a mismatch between the person and the environment and this has inversely had an impact on their productivity and these affect employees' health. The study adopted a descriptive research design since the research variables were identified and to thus determine their relationship with the dependent variable. The target population was to be a total of 920 staff working at TSC offices in Nairobi. The study applied a stratified sampling technique to select a total of 120 staff as the study respondents. Questionnaires were used as the main data collection instruments and a pilot study was conducted to pretest questionnaires for reliability. Descriptive statistics and multiple regression analysis were used to analyze the gathered data and the results were presented on tables, figures and graphs. This contributed towards making the summary of findings, conclusion and recommendation of the study. The study was also of great significance to the policy makers since it highlighted some of the critical issues on open plan working environment on employees' productivity in government institutions in Kenya.

**Keywords:** Employee Productivity, Employee Health Issues.

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## 1. INTRODUCTION

Work environment is about creating conditions in which an employee can perform his/her duties comfortably. Effective application of ergonomics can achieve a balance between workers' task and demands. This enhanced operator productivity, provide worker safety and physical and mental well-being and job satisfaction thus enhanced organizational performance (Garbie, 2014). Physical environment as an aspect of the work environment have directly affected the human sense and subtly changed interpersonal interactions and thus productivity. This is so because the characteristics of a room or a place of meeting for a group have consequences regarding productivity and satisfaction level.

The workplace environment is the most critical factor in keeping an employee satisfied in today's business world. Today's workplace is different, diverse, and constantly changing. The typical employer/employee relationship of old has been turned upside down (Dalton, 2008).

The American Society of Interior Designers, ASID (2010) carried out an independent study and revealed that the physical workplace design is one of the factors, which affect job satisfaction thus organization performance. The study results showed that 31 percent of people were satisfied with their jobs and had pleasing workplace environments. 50 percent of people were seeking jobs and said that they would prefer a job in an institution where the physical and psychosocial environment is good.

In any business, situated in any industry, it is clear that all sorts of work-environments was to be evident. Holistically speaking the term "work-environment" can be defined as follows: A work-environment involves the physical geographical location as well as the immediate surroundings of the workplace, such as a construction site or office building" (Business Dictionary, 2014). In addition, Armstrong (2012) avers that the term "work-environment" does not only include the physical location of an office or the area around an office building, but also involves the office design, office culture and the practices shared between employees in relevant offices. As such, stemming from the latter, and for the sake of this paper, the term "work-environment" can be viewed as the physical geographical location and immediate surroundings, including office culture and office collaboration between colleagues. As such, it is no surprise that the World Green Building Council (2014) found that the work-environment of any organization has a large impact on the health, wellness and productivity of its employees (Dolliver, 2007).

An open office plan work environment is an office space plan without enclosed spaces like separate cubicles for each employee, or often even without partitions between workstations. At its most basic form, open offices consist of rows of desks and chairs where employees do their work. But more advanced open office designs use low partitions and surrounding environment to create unique work environments, suited for individual businesses. Open offices provide more opportunities for communication and collaboration among the employees. Since you've (literally) torn down the walls, it becomes easier for coworkers to interact regularly in an informal setting. Your employees can turn to each other without having to knock on doors or schedule meetings. Information flows more easily via word of mouth as opposed to stuffy emails and official notices. Since all you need to do is stretch your neck muscles a bit to see your coworker, communication becomes easier and more frequent (Sclafane, 2009).

Since your staff members are regularly interacting with each other in the office, it fosters a sense of team cohesion among your employees. Everybody knows everybody, so your employees can help or get help from each other more easily. It opens up more avenues for teamwork and encourages a sense of camaraderie among the staff since everybody feels like they're part of a team (Dolliver, 2007).

A study by Oshagbemi (2008) showed that one of the major advantages of open office plan is that it makes the most use of available space. It allows you to spend less of your budget on office space (which is ridiculously expensive in most major cities) and more on other aspects of your business. Open offices are a lot more egalitarian than traditional office plans. There is no corner office to fight over since everybody works in the same space. The hierarchy is less obvious as your position on the corporate totem pole depends on the work that you put out rather than place where you work. It encourages employees to focus more on their work and less on one-upping their coworkers.

Wells (2009) observed that in an open office, everyone can see what you're doing. So, you are less likely to slack off or waste time on things that are not related to work. In cubicles, you might get away with constantly scrolling through your Facebook feed or wasting five minutes (or fifty) playing Candy crush. But in an open office, you will be less likely to kill

time and more likely to work on office related projects. Nearly 70% of American businesses have an open office plan now. Tech giant Facebook is currently building an open office space to house 2800 engineers. Google, Yahoo, eBay, Goldman Sachs, American Express all have open office plans in their campuses. For all these big businesses to switch to open office space, the concept must be working (Wells, 2009).

Open plan office leads to work disruptions since with more people in the same room and no walls in between, open plan office create a lot of distractions for workers, making them unable to focus on their work. In professions that need a lot of concentration while working, like programmers, engineers and workers in creative fields, the quality of the work might suffer due to the frequent interruptions. This will decrease the productivity of the staff and ultimately affect the bottom-line of the company (Dalvinder, 2011).

Open offices will obviously have less privacy than cubicles or private offices and this lowers the level of employees' job satisfaction. While it might not have much effect on employers or managers, the general staff will feel a psychological disadvantage due to the lack of visual and auditory privacy. And anything that discomfits an employee will ultimately affect their productivity. Due to the frequent auditory and visual distractions in an open office, the creativity of the staff might be compromised. Open offices are likely to generate higher stress and decreased concentration among workers due to high levels of noise, constant interruptions and lack of privacy. All these hinder the creative process and create a detrimental effect on a creative team (Arnold & Feldman, 2009).

Employee productivity sometimes referred to as workforce productivity is an assessment of the efficiency of a worker or group of workers. Productivity may be evaluated in terms of the output of an employee in a specific period of time. Typically, the productivity of a given worker will be assessed relative to an average for employees doing similar work. Because much of the success of any organization relies upon the productivity of its workforce, employee productivity is an important consideration for businesses (Arnold & Feldman, 2009).

Many authors have noted that, the physical layout of the workspace, along with efficient management processes, is playing a major role in boosting employees' productivity and improving organizational performance. An independent research firm conducted a research on US workplace environment (Gensler, 2006). In March 2006, a survey was conducted by taking a sample size of 2013. The research was related to; workplace designs, work satisfaction, and productivity. 89 percent of the respondents rated design, from important to very important. Almost 90 percent of senior officials revealed that effective workplace design is important for the increase in employees' productivity. The final outcome of the survey suggested that businesses can enhance their productivity by improving their workplace designs. A rough estimation was made by executives, which showed that almost 22 percent increase can be achieved in the company's performance if their offices are well designed. But practically, many organizations still do not give much importance to workplace design (Williams, 2010).

In many organizations worldwide, work environment plays a major role in determination of the state of employees' productivity. Many organizations therefore adopt different work environments and for the last two decades, open plan work environment has become very popular in many organizations. According to Armstrong (2012) over 30% of employees in UK firms expressed dissatisfaction with introduction of open plan office environment and open plan office environment affected employees' productivity in jobs where much employees concentration is required. According to Murphy (2009) open-plan offices are generally associated with greater employee stress, poorer co-worker relations and reduced satisfaction with the physical environment. Paul (2009) study further confirmed that open plan office environment creates much noise and encourages excessive employees' movement and these leads to work disruption.

A more recent study by the Dublin Institute of Technology (2012) confirmed this point of view. In a survey of 150 knowledge workers across various age groups and industries, 63% of those working in an open plan environment said that the design of their office space had a negative impact on their ability to focus and concentrate hence leading to declined employees' productivity. According to Oshagbemi (2008) 80% of survey respondents admitted that an open plan had a positive impact on collaboration with others in regard to team cohesion, knowledge sharing and social interaction. According to World Health Report (2010) poor workforce productivity can be as result of health issues in open work environment. According to an American psychological organization (2009) 69 % of organizations report that open plan work environment is a significant source of non-productivity and 41% say they typically find the organizations struggling due to poor work environment.

The Kenyan government acknowledges that over the years there has been poor performance in the public sector, especially in the management of public resources which has hindered the realization of sustainable economic growth (GoK, 2009). As a measure to encourage employees' productivity open plan office work environment was adopted in many Kenyan government institutions. The above foregoing reveals there lacks a local study that has established the influence of open plan office work environment employees productivity in government institutions in Kenya Previous studies such as by Oshagbemi (2008) and World Health Report (2010) were undertaken in different countries and organizations and cannot be generalized to reflect the influence of open plan office work environment on employees productivity in Government institutions in Kenya. This study therefore sought to determine the influence of open plan office work environment on employees' productivity in Government institutions in Kenya, a case study of Teachers Service Commission. The Specific Objective Was To find out the influence of employees' health issues on employees' productivity in Teachers Service Commission.

## 2. EMPLOYEES HEALTH ISSUES

Employees health issues are employees related health problems that are contributed by open plan office environment. The key notable employees health issues that negatively affects employees productivity in an open plan office layout includes; risk of disease infections; sick leaves; light and temperature ;air quality and noise; work stress and employees wellbeing (Uzee, J. 1999). Work is important to most of us on many levels. Doing a job we enjoy and find satisfying can provide a meaningful focus for our lives, as well as bringing in an income.

Our standard of living hinges on the money we make, while employment often contributes to our self-image and self-esteem (Tayler, Beth 2012). Shikdar, A.A. (2009). Work-related problems can affect our physical, emotional and mental health. Common issues include job dissatisfaction, workplace injury, stress, discrimination and bullying, violence, accidental death and retirement. Job loss, retrenchment or unexpected loss of income can also cause distress and hardship.

The cost of workers compensation claims for stress-related conditions in Australia is very high. Common causes of work-related stress include long hours, heavy workload, job insecurity and conflicts with co-workers or bosses. On a strictly business level, workplace conflict leads to downturns in productivity and increases in absenteeism. It is in an organization's best interests to ensure that employees are happy at work (Newsham, G. 2007). Bodin, L. (2008).

Shift work – a person working the night shift is at greater risk of a range of disorders, accidents and other effects. These may include obesity, cardiovascular disease, gastrointestinal problems, transport accidents, work-related accidents, family problems and divorce. Workplace injuries may occur as a result of Overuse or poor handling techniques, Moving objects, Noise or air pollution, Vehicle accidents, Tool or machine failure or misuse, Falls Electrocution, Drowning, Accidents with dangerous goods or hazardous substances – for example, a liquid splash and Suffocation or Infection and Violence.

The theoretical and empirical review shows that past major studies and theoretical issues explored work environment in general and thus failed to link open plan office and employees productivity. This therefore, demonstrates that past empirical and theoretical literature is of little significance towards establishing the influence of open plan office work environment on employees' productivity in government institutions in Kenya. This study unlike, studies in the literature review specifically narrow its research undertakings to establishing the influence of open plan office work environment on employees' productivity in government institutions in Kenya using a case of TSC and hence contribute towards adding value to the theory and practice of open plan office work environment and employees' productivity.

## 3. METHOD

The study adopted a descriptive research design. The target population was a total of 920 staff working at TSC offices situated in Nairobi and the target population was categorized as 200 top management procurement staff; 320 middle level management procurement staff and 400 lower management procurement staff. The study applied a stratified random sampling technique that brought to a total of 120 respondents. Questionnaires were the main data collection instruments. Open ended and close-ended questionnaires were to be used. The aim of pilot study is to test the validity and reliability of the questionnaires. The use semi structured questionnaires were to facilitate gathering of both quantitative and qualitative data. Quantitative data analysis method was therefore applied to analyze quantitative data through calculating responses frequencies, percentages and means. The Statistical Package for Social Sciences computer software were used specifically for the purpose of analyzing the quantitative data and presenting it in form of tables and pie charts and bar charts in order to give graphical representation of research findings. ANOVA test was also done to test the variance. Further inferential statistics were to be done using multiple regression models to establish the relationship between the research variables.

#### 4. DISCUSSION

Employees health issues are employees related health problems that are contributed by open plan office environment. The key notable employees health issues that negatively affects employees productivity in an open plan office layout includes; risk of disease infections; sick leaves; light and temperature ;air quality and noise; work stress and employees wellbeing (Uzee, J. 1999). The study sought to examine the influence of employees' health issues on employees' productivity in Teachers Service Commission. The findings are presented in a five point Likerts scale where SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree and T=total.

From table 4.1 below, the respondents were asked whether employees health issues are employees related health problems that are contributed by open plan office environment exposing them to high risks of disease infections. The distribution of findings showed that 30 percent of the respondents strongly agreed, 36.4 percent of them agreed, 17.3 percent of the respondents were neutral, 10.9 percent disagreed while 5.5 percent of them strongly disagreed. These findings implied that employees health issues are employees related health problems that are contributed by open plan office environment exposing them to high risks of disease infections.

The respondents were also asked whether work-related problems can affect our physical, emotional and mental health. The distribution of the responses indicated that 30.9 percent strongly agreed to the statement, 16.4 percent of them agreed, 30.9 percent of them were neutral, 16.4 percent of them disagreed while 5.5 percent of them strongly disagreed to the statement. These findings implied that work-related problems can affect our physical, emotional and mental health.

The respondents were also asked whether the cost of workers' compensation claims for stress-related conditions is very high. The distribution of the responses indicated that 19.1 percent strongly agreed to the statement, 41.8 percent of them agreed, 32.7 percent of them were neutral, 6.4 percent of them disagreed while 0 percent of them strongly disagreed to the statement. These findings implied the cost of workers' compensation claims for stress-related conditions is very high.

The respondents were further asked whether there is risk of disease infections; sick leaves; light and temperature ;air quality and noise; work stress and employees wellbeing. The distribution of the responses indicated that 8.2 percent strongly agreed to the statement, 51.8 percent of them agreed, 28.2 percent of them were neutral while 5.5 percent and 6.4 percent of them disagreed strongly and disagreed to the statement respectively. These findings implied that there is risk of disease infections; sick leaves; light and temperature; air quality and noise; work stress and employees wellbeing.

Finally, the respondents were asked whether work-related stress include long hours, heavy workload, job insecurity and conflicts with co-workers or bosses makes the wellbeing of employees less catered for. The distribution of the responses indicated that 27.3 percent strongly agreed to the statement, 50.9 percent of them agreed and 21.8 percent of them were neutral. None of the respondents disagreed or strongly disagreed to the statement respectively. These findings implied that work-related stress include long hours, heavy workload, job insecurity and conflicts with co-workers or bosses makes the wellbeing of employees less catered for.

**Table 4.1: Employees' health issues on employees' productivity in Teachers Service Commission**

Statements		SA	A	N	D	SD	T
Employees health issues are employees related health problems that are contributed by open plan office environment exposing them to high risks of disease infections	%	30	36.4	17.3	10.9	5.5	100
Work-related problems can affect our physical, emotional and mental health	%	30.9	16.4	30.9	16.4	5.5	100
The cost of workers' compensation claims for stress-related conditions is very high	%	19.1	41.8	32.7	6.4	0	100
There is risk of disease infections; sick leaves; light and temperature ;air quality and noise; work stress and employees wellbeing	%	8.2	51.8	28.2	5.5	6.4	100
Work-related stress include long hours, heavy workload, job insecurity and conflicts with co-workers or bosses makes the wellbeing of employees less catered for	%	27.3	50.9	21.8	0	0	100

#### 4.1 Inferential Statistics:

##### 4.1.1 Pearson Correlation

The study sought to establish the strength of the relationship between independent and dependent variables of the study. Pearson correlation coefficient was computed at 95 percent confidence interval (error margin of 0.05). Table 4.2 illustrates the findings of the study.

**Table 4.2: Correlation Matrix**

		Organisational Performance
Employee's Health Issues	Pearson Correlation	.801**
	Sig. (2-tailed)	.000
	N	118

As shown on Table 4.2 above, the p-value for employees' health issues was found to be 0.000 which is less than the significant level of 0.05, ( $p < 0.05$ ). The result indicated that Pearson Correlation coefficient (r-value) of 0.801, which represented a strong, positive relationship between employees' health issues on employees' productivity in Teachers Service Commission.

##### 4.1.2 Multiple Linear Regression

Multiple linear regressions were computed at 95 percent confidence interval (0.05 margin error) to show the multiple linear relationship between the independent and dependent variables of the study.

##### 4.1.3 Coefficient of Determination ( $R^2$ )

Table 4.3 shows that the coefficient of correlation (R) is positive 0.527. This means that there is a positive correlation between influence of open working environment office on employees' productivity in government institutions in Kenya, at TSC Nairobi Headquarters. The coefficient of determination (R Square) indicates that 25.9% of employees' productivity in government institutions in Kenya, at TSC Nairobi Headquarters is influenced by open working environment office. The adjusted  $R^2$  however, indicates that 30.2% of employees' productivity in government institutions in Kenya, at TSC Nairobi Headquarters is influenced by open working environment office leaving 69.8% to be influenced by other factors that were not captured in this study.

**Table 4.3: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.527 <sup>a</sup>	.259	.302	5.13216

a. Predictors: (Constant), employee relation, employee job satisfaction, team cohesion, health issues

##### 4.1.4 Analysis of Variance:

Table 4.4 shows the Analysis of Variance (ANOVA). The p-value is 0.000 which is  $< 0.05$  indicates that the model is statistically significant in predicting how open working environment office influence employees' productivity in government institutions in Kenya, at TSC Nairobi Headquarters. The results also indicate that the independent variables are predictors of the dependent variable.

**Table 4.4: ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	705.798	4	181.608	30.109	.000 <sup>b</sup>
	Residual	1882.304	118	17.905		
	Total	3459.000	120			

#### 4.1.5 Regression Coefficients:

From the Coefficients table (Table 4.5) the regression model can be derived as follows:

$$Y = 43.561 + 1.404$$

The results in table 4.5 indicate that all the independent variables have a significant positive effect on organizational performance. The most influential variable is employee health issues with a regression coefficient of 1.404 (p-value = 0.000). According to this model when all the independent variable values are zero, employees' productivity in government institutions in Kenya, at TSC Nairobi Headquarters will have a score of 43.561.

**Table 4.5: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	43.561	2.803		13.275	.000
Health Issues	1.404	.172	.744	5.942	.000

#### 4.1.6 Hypothesis Testing:

**Ho<sub>4</sub>:** Employees' health issues does not have a significant influence on employees' productivity in teachers service commission.

From Table 4.5 above, Employees' health issues ( $\beta = 1.404$ ) was found to be positively related to employees' productivity in teachers service commission. From t-test analysis, the t -value was found to be 5.942 and the  $\rho$  -value 0.000. Statistically, this null hypothesis was rejected because  $\rho < 0.05$ . Thus, the study accepted the alternative hypothesis and it concluded that Employees' health issues have a significant influence on employees' productivity in teachers service commission.

## 5. CONCLUSION AND RECOMMENDATION

The following conclusions were made;

Employees' health issues ( $\beta = 1.404$ ) was found to be positively related to employees' productivity in teachers service commission. From t-test analysis, the t -value was found to be 5.942 and the  $\rho$  -value 0.000. Statistically, this null hypothesis was rejected because  $\rho < 0.05$ . Thus, the study accepted the alternative hypothesis and it concluded that Employees' health issues have a significant influence on employees' productivity in teacher's service commission.

Based on the findings, the researcher recommended the following:

The organisation management should have an effective communication process to avoid communication problem and create a good interpersonal interactions among the members, encourages cohesions among the employees to work. The management should also embrace the employees' team spirit and management talent among employees to encourage employees' motivation. As much as it is open space working environment, the management should encourage confidentiality and privacy among the employees. They should focus on employee welfares to enable the organisation to have happy, health and a conducive working environment.

Employees should be provided with room for interactions and flexibility since cohesion is the key to employee motivation and high performance. The organisation should provide a conducive environment to reduce high risks of disease infections and lessen work-related problems can affect the employees' physical, emotional and mental health. The wellbeing of employees should be catered for by the management to avoid the cost of workers' compensation claims for stress-related conditions

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