

Workplace Environmental Conditions and Employee Engagement of Public Universities in River State, Nigeria

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Abstract

The study investigated the link between workplace environmental conditions and employees' engagement in public universities in Rivers State, Nigeria. It used the quasi-experimental survey design. The study population was 1346 non-teaching senior staff from three public universities in Rivers State. A sample size of 302 was determined with the aid of Krejcie and Morgan table of sample size determination. Questionnaire was given to the 302 respondents from where 211 representing 70% were found valid for investigation. The Spearman's Rank Order Correlation Coefficient was used for the bivariate analysis and computed with the help of SPSS. Results showed positive correlation between workplace environmental conditions and employee engagement (vigor, dedication). This study recommended that the the Federal and State Governments should provide adequate and conducive quality user-friendly lighting and temperature regulating devices to augment natural environmental conditions for employees' safety, comfort and heightened work engagement levels.

Keywords: employee dedication, employee engagement, employee vigor, workplace environmental conditions

INTRODUCTION

Engaged employees are crucial to achieving organisational goal. An engaged worker is active and totally devoted to the organisation (Madu, Asawo and Gabriel, 2017). Employee engagement is a notion that covers different means organisations can get the best out of their employees. It occurs when organisations provide employees with adequate and favourable environmental conditions suitable to employees' comfort and well-being. In return, employees' go beyond the call of duty to help their employers achieve its goal. Employee engagement according to Armstrong and Taylor (2014) is about providing the conditions vital and necessary to elicit unrestricted work behavior that ensures employees work effectively and are fully involved in all activities of the organisation geared towards the achievement of its vision. Extant studies reveal that employee engagement is more beneficial to organisations. For example, it has been shown to lead to increased productivity, profitability, positive financial performance, reduced absenteeism (Robinson, Perryman and Hayday, 2004, Stairs and Galpin, 2010, cited in Armstrong, 2014). Despite the widely acknowledged benefits, studies also established employee disengagement at workplaces. For instance, Towers-Perrin (2003) reports 70-80% employees are disengaged globally and the US spends \$450,000,000,000 - \$500, 000,000 yearly due to work disengagement. In Nigeria, Oyeyinka (2010) established work disengagement and noted that most senior administrators of government tertiary institutions exhibit laissez faire attitude towards statutory

tasks, lack sensory connection and understanding of their work schedules. The work disengagement attitudes of most public establishment employees were described as worrisome and awful (Jaja, 2003, Nwachukwu, 2000).

Going by these findings, this study assumed that the work disengagement behaviours exhibited by most non-teaching senior employees of public universities could be due to the non-conducive environmental conditions of the workplace that employees work in. This assumption was due to that an average Nigerian public university is known to have unfavorable, inappropriate environmental conditions such as lighting and indoor temperature that are most often not suitable to employees' comfort and well-being. Workplace environmental conditions according to Madu et.al. (2017) include temperature, lighting, ventilation, acceptable noise level etc. It entails manipulating the immediate work environment in order to have favourable indoor temperature and lighting appropriate to employees' comfort. Suitable lighting boosts visibility and eye health, enables work to be carried out quickly and decreases the rate employees make mistakes on their job while a conducive indoor temperature energizes employees to work at their best while guaranteeing employees comfort, high performance and increased work engagement (Gyeke, 2006, Charles, Readon and Magee, 2005). This explains that conducive workplace environmental conditions are vital and cannot be overemphasized. Chandrasekhar (2011) opined that in order to realize employees' work engagement, the provision of a conducive indoor environmental conditions at workplaces is key to achieving employees' engagement owing to the fact that it stimulates employees into being energetic, engrossed and devoted to their jobs and the organisation. It is against this backdrop and the need to add to literature, that, this study sought to ascertain if a correlation exists between workplace environmental condition and employee engagement, using senior registry staff in public universities in Rivers State, Nigeria, as referents.

Research Questions

- (i) Is there a correlation between workplace environmental condition and employee vigor in Rivers State public universities?
- (ii) Is there a link between workplace environmental conditions and employee dedication in Rivers state public university?

Hypotheses of the Study

- (i) H0₁: There is no significant correlation between workplace environmental conditions and employee vigor of public universities in Rivers State?
- (ii) H0₂: There is no link between workplace environmental conditions and employee dedication.

LITERATURE REVIEW

Theoretical Foundation: Social Exchange Theory

According to Nunkoo (2016), social exchange theory creates exchanges and obligations between or among people and best explains the concept of employee engagement. The theory postulates that social behavior is a product of an exchange process, between or among individuals or groups. In organisations, social exchanges are between workers, the employers and other stakeholders of the business. It expounds how employees connects with one another and substitute what one does not have for that which the other has or needs (Nunkoo, 2016). The social exchange theory assumes that human behavior is more of communal connections and exchanges of material or immaterial things and/activities (Madu, Oparanma and Gabriel, 2019). It explains that social exchanges between or among individuals trigger behavioral compliance for an exchange to that which is perceived to be more beneficial or treasured to the party who receives (Ahiauzu and Asawo, 2016). The relevance of social exchange theory to this study suggests that if employers provide adequate and conducive environmental conditioning devices, employees would be cheerful, active and fully dedicated and perform their duties satisfactorily. It further proves that the provision of lighting and temperature regulating devices would stimulate and energize employees into being dedicated, vigorous, engrossed and determined to complete daily tasks. For instance, work environment that is equipped with the right mix of indoor environmental conditioning regulating gadgets offers employees the freedom to adjust the immediate work environmental condition suitable to their psychological, mental or emotional well-being. In addition, the employees would have better and clearer visibility and comfort and concentrate on tasks with less error rates. More importantly, tasks would be carried out without negative impact on both the employee and organisation. It is safe to posit that, the balance of social exchanges of obligations and responsibilities between parties leads to efficient, effective and fully engaged employees, increased profits, job performance, improved work attendance and service delivery.

Employees Engagement

Madu, Asawo and Gabriel (2017) described employee engagement as the fuel that propel the intangible assets of the organisation and pledges organisational success made possible by employees who are driven by the work environment, HR practices, feeling of being involved, treasured, empowered and cared for. In a work setting, employees' engagement takes place when employees physically, psychologically and cognitively attach or connect to their duties, when they know what is expected of them, have the appropriate and adequate work tools/materials required to carry out their tasks, when employees derive satisfaction or fulfillment from work or with the general state of the work environment etc. Employee engagement is the extent to which employees use physical, cognitive and emotional aspects of their lives during work role performances and that it draws on cognitive,

psychological and behavioural components rolled into one. The cognitive feature of engagement describes the attention, absorption that employees put into work in their quest to acquire knowledge, work by the rules of the organisation as a means of helping the organisation to attain its goal and objectives. The psychological aspect contextualizes the emotions that employees bring to work and exert on their jobs, in addition to the positive attitude and feelings they have about the work environment and the organisation. The behavioural part describes employees' willingness to exert vigor into task performance and the desire to work in positive ways to the benefit of the organisation (Khan, 1990). Employee engagement is characterized by vigor, dedication and absorption (Madu, Asawo and Gabriel, 2017). Vigor means stamina, strength or vitality and reflects as an intensified determination exhibited through the application of inner strength and level of focus employees put on the job or other affairs of the organisation. Dedication means to be devoted or committed to a cause that someone has interest or passion for.

Workplace Environmental Conditions

Environmental conditions include temperature, lighting, air, and other thermal condition of an immediate surrounding that can be manipulated so as to have the right combination of its elements (Madu, Asawo and Gabriel, 2017). Workplace environmental conditions refers to temperature, lighting, air quality, color, ventilation, noise and other thermal conditions within workspaces that could be natural or artificially designed, installed and manipulated (Sarode and Shirsath, 2014, Chandrasekhar, 2011). It describes the warmth or coldness of an environment. Two forms of environmental conditions were considered in this study, namely lighting and temperature:

Lighting

Lighting refers to light effects that enable individuals have better and clearer sight (Madu, Asawo and Gabriel, 2019). Lighting is very important in workplaces because it aids visibility and visual performance (Juslen, Wouters and Tenner, 2007). Existing literature reveals that quality lighting system boosts visual performance, quickens work pace, reduces error margins and accident rates, triggers positive mood such as happiness, mental alertness (Juslen, 2007, Juslen, Wouters and Tenner, 2007, Kamarulzaman, Saleh, Hashim, Hashim and Abdul-Ghani, 2011). Quality lighting is required for clear visibility of the environment and is expected to produce tolerable bright environment favorable to humans and the environment (Juslen, 2007, Sivaji, Shopian, Nor, Chuan and Bahri, 2013). Two sources of light are natural and man-made. The natural sources of light are sunlight, moon, stars, other galaxies and are generated naturally at no cost and without manipulations. They create glare, reflections, shadow and when inappropriate causes discomfort, irritability, distraction, eyestrain, headaches, blurry visions capable of leading to reduced productivity and work performance (Juslen, 2007, Sarode and Shirsath, 2012). The man-made or artificial form of light is designed and operated to generate light through

electronic gadgets such as lamps, light bulbs, tubes or boards with the aim of augmenting or replacing natural form of light due to seasonal changes of day and night (Madu, Asawo and Gabriel, 2017).

Sunlight is the major source of day light on earth that enables view and produces glare, shadow, heat, reflection. At workplaces, moderate lighting penetration is reported to be suitable to employees' vision, well-being, comfort and safety (Juslen, Wouters and Tenner, 2007a). Hammed and Amjad (2009) and Julen, Wouters and Tenner (2007b) in their studies found lighting as the most vital office environmental conditions that aids vision to employees, energizes and positively influences productivity. Sarode and Shirsatch (2012) noted that tolerable lighting improves employees' health, safety and comfort by reducing eye strain, aches or blurriness. Numerous research findings caution against poor lighting conditions in workplaces arising from its negative effects on employees' task performance, productivity, health and safety. Poor-quality lighting is reported to harmfully impact on employees cognitive, problem-solving abilities, visual performance which in turn impact on employees' task performance (Boyce, Veitch, Meyer, Hunter, 2003, Sivaji, Shopaian, Nor, Chuan and Bahri, 2003) and the manner employees function and relate with clients. Nevertheless, in as much as lighting is a necessity at workplaces, it is vital for organisations to be on the side of caution in determining tolerance light levels. This is on the view that individuals have different preferences over lighting penetration levels (Sivaji et.al, 2003) and the eye sensitivity of an individual determines the level and type of lighting that one prefers or is comfortable with (Boyce et.al., 2003). Therefore, the need to have quality lighting in its appropriate level of brightness in workplaces is commendable.

Temperature

The quality of workplace environmental conditions like indoor temperature is argued to affect employees physical and mental processes and in turn impact on employees' performance and productivity (Tanabe, Kobayashi, Kayota and Haneda, 2009). Madu, Oparanma and Gabriel (2019) described temperature as the hotness, warmth or coldness of an immediate surrounding of a particular place and time. Regulating devices such as oscillating fans, air conditioners, heat conditioning regulating devices enable employees to control workplace temperatures. The temperature within an environment impacts on its occupant whether it is conducive or not. When it is conducive, it makes employees feel cozy, energized and attentive to the business case of organisations (Lorsch and Abdou, 1994) and when it is unconducive, it causes mental exhaustion and affects productivity (Tanabe et.al., 2009). The importance of having conducive environmental conditions at workplaces cannot be overemphasized due to its numerous benefits both to employees and employers. Madu, Asawo and Oparanma (2017) opined that suitable workplace temperature rejuvenates, boosts employees' physical, mental and emotional comfort, wellbeing, performance and work engagement. This shows that suitable workplace environmental condition is vital, consequently, installing or providing functional artificial environmental conditioning regulating gadgets like air condition systems, oscillating fans, heaters, light

bulbs, tubes or lamps, heat evacuators, with ergonomically fitted regulators to augment natural conditions would enable employees to regulate and maintain an acceptable level of temperature and airflow suitable to their physiological make up and health.

Empirical Review of Workplace Environmental Conditions and Employee Engagement

Research findings indicate significant correlation between workplace environmental conditions and employee engagement and that work environmental conditions that is too low or high generally meddles with employees' vision, work performance, productivity and work engagement. Tanabe, Nishihara and Haneda (2007) established significant relationship between indoor temperature and productivity workplaces. The authors stated that an increase in indoor temperature by twenty-six point zero Celsius decreases employees work performance and output. Lorsch and Abdou (1994) established a positive significance of air-conditioning systems on employees' productivity and concentration levels. The study reported that conducive air-conditioning systems made employees feel comfortable to work at their best with a 15% increase on productivity and concentration, suggesting that when employees are comfortable with the environmental conditions within the workspace, they perform tasks better and are less distracted. Vimalanathan and Babu (2014) established that the impact of indoor temperature was more than that of illumination in their study. Kamarulzaman et.al. (2011) demonstrated that indoor temperature to a large extent influence employees' well-being, attitude, behaviors, performance and satisfaction which as a result affect productivity. Linhart and Scartezzini (2011) established that lighting system is important and directly impact on employees' visual comfort, energy and performance. Roelofsen (2002) reported moderate impact of office environments on employee performance and called for employees to be given the freedom to regulate their indoor work environment so as to have improved employee work performance and productivity.

Methodology

The research design used in this study was quasi-experimental method. One thousand three hundred and forty-six senior administrative employees of three public universities in Rivers state were the population of the study. A sample size of three hundred and two (302) respondents were calculated with the aid of Krejice and Morgan (2002) table on sample size determination. 302 copies of questionnaire were personally administered to respondents out of which 211 representing 70% were found valid for analysis. In operationalizing the variables, this study, adopted a 5-Point Likert Scale questionnaire with weights assigned to each response in the range of 5 – 1, in a continuum of very low extent to very high extent. The questionnaire adopted the Face validity content method and was validated by the researchers superior Scholars who confirmed and ensured that each item on the instrument fits into the conceptual definition of the study constructs and adequately covered all features of the variables investigated. The questionnaire was sectioned into section 'A' which covered respondents' demographic information

while section 'B' comprised of multiple questions that sought participants' response on workplace environmental conditions and employee engagement. All items on the questionnaire had a reliability threshold of 0.7% and above as confirmed by the Cronbach's Alpha test tool programmed in the SPSS data editor. Measurement scales of Schaufeli et.al (2002) for work engagement and Naharuddin and Sadegi (2013) for environmental conditions was modified and used to operationalize variables of this study. Descriptive statistics was used for the univariate analysis while Spearman rank correlation computed with the aid of SPSS was used for the bivariate analysis. The choice for Spearman rank order correlation test tool was to test the hypotheses of this study and ascertain the strength of correlation between the variables of this study. Trochim (2006) asserts that it is best used for non-parametric tests to ascertain the strength and direction of association between two ranked variables without conditional emphasis on linearity or homogeneity of variance.

Results and Discussions

Univariate Analysis

The demographic data of this study showed that: (a) 79% females and 21% male respondents participated in this study, meaning that they were more female employees in public universities in Rivers State (b) majority of the respondents were between age 40 – 49 years old representing 46%, while the least age group were 50years and above (12%), explaining that the highest number of senior administrative employees of public universities in Rivers State are in their forties (c) 68% respondents had Bachelor degrees while 32% had post graduate degrees, indicating that all the respondents are graduates and are qualified for administrative positions in the universities investigated (d) 45% of participants were administrative officers while (4%) the least respondents were within the directors/deputy registrars administrative levels. This agrees with Obeki (2016) who opined that administrative officers are baby administrators and are usually more in number than any other job designations in tertiary institutions while the directors/registrar are relatively few in number (e) 83% of participants had permanent employment status while 17% were on contract, implying that majority of the administrators have job security and more number of years of service to render to their employers.

Univariate Data

This study adopted Neuman (2006) criteria for univariate results interpretation where $x \leq 2.00 = \text{low}$, $2 < x \leq 4 = \text{moderate}$ and $4 < x \leq 5 = \text{high}$. The summary mean values of this study variables are shown in table 1:

Table 1 Summaries of mean values of Study Variables

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
WEC	211	2.8714	.56509	-.348	.167	1.203	.333
Engagement	211	2.5744	.54168	1.339	.167	4.476	.333
Valid N (listwise)	211						

Source: Survey Data, 2024

Table 1 shows summary mean results of workplace environmental conditions as ($x = 2.8714$) and employee engagement ($x = 2.5744$). It shows moderate evidence of features of workplace environmental conditions and moderate evidence of expression of vigor and dedication in the public universities.

Bivariate Data

Table 2: Correlation results between WEC and Employee Engagement

			Workplace Evt.Cond.	Employee Vigor	Employee Dedication
Rho	Workplace Evt. Cond.	Correlation Coefficient	1.000	.250**	.578**
		Sig. (2-tailed)	.	.000	.000
		N	211	211	211
	Employee Vigor	Correlation Coefficient	.250**	1.000	.271**
		Sig. (2-tailed)	.000	.	.000
		N	211	211	211
	Employee Dedication	Correlation Coefficient	.578**	.271	1.000
		Sig. (2-tailed)	.000	.000	.
		N	211	211	211

**Correlation is significant at the 0.01 level (2-tailed)

Source: Survey data

This result was interpreted using Neuman (2006) criteria for understanding bivariate investigation using rho where (reject null hypotheses if $P < 0.05$, accept null-hypotheses if $P > 0.05$, and strength of association thresholds of .20 - .39 = low, .40 - .59 = moderate, .60 - .79 = high). Results in Table 2 show significant association between the variables at $P < 0.05$, implying that there is a significant correlation between the two variables. The correlation at (rho 0.250, $n = 211$, p . value = 0.000), indicate positive but weak relationship between workplace environmental conditions and employee vigor. Hence, the rejection of the null hypothesis 1 of this study, and paraphrased as follows: There is a significant association between workplace environmental conditions and employees’ vigor. The association between workplace environmental conditions and employees’ dedication is significant at ($r = 0.578$, $n = 211$, p . value = 0.000) and the strength of association is moderate. Therefore, the second null hypothesis

is rejected and rephrased thus, there is a significant relationship between workplace environmental conditions and employees' dedication.

Discussion of Results

The results of this study shows that an association exists between workplace environmental conditions and employee engagement of non-teaching senior administrative employees of public universities in Rivers State, Nigeria. As shown in table 1, lighting and temperature regulating devices are moderately evident in the public universities investigated. The moderate evidence of workplace environmental conditions in public universities in Rivers State, calls for greater provision of workplace environmental conditions devices, particularly, as Nigeria, is a tropical country, the climate condition requires sufficient and conducive work environmental condition regulating systems for utmost task performance and employee engagement. The outcome of the bivariate data in Table 2 confirms significant relationship between variables of this study. The results show low but significant influence of workplace environmental conditions on employee vigor and moderate influence on employee dedication of the non-teaching senior staff of public universities in Rivers State. The significance indicates that lighting and temperature within work spaces moderately impact on the rate and manner these employees' express physical stamina, energy and pace on tasks and make meaningful contribution to organisational success. This further implies that if the Federal and State Governments substantially improve the workplace environmental conditions of employees' workspaces, it would lead to heightened employee engagement of the senior administrative employees. The results of this study are in the same direction with the empirical findings of Chandrasekhar (2011) and Roelofsen (2002) The authors established significant moderate impact of lighting and temperature on workers' performance. Chandrasekhar (2011) reported that employees indoor work environment conditions need to be conducive and adequate in order to stimulate them into being energetic, engrossed and devoted to their jobs and the organization while Roelofsen (2002) reported moderate impact of lighting on employees and attributed it to the human eye being able to adapt to a wide range of lighting effects while thermal condition had moderate effects on employees. The empirical evidence of this study implies that, employees would work or act according to the limitations imposed by the components of the work environment which as proven by this study, hinder employees' quality service delivery, collaboration, interaction with students and colleagues, hampers ease of mobility or access to work files or materials and at the same time cause discomfort to employees. It is therefore safe to posit that, these constraints lead to work disengagement attitudes put up by most senior staff administrators of public universities in Rivers State and by extension, other public enterprises in Nigeria. Therefore, if the Federal and State governments, being owners of public universities, greatly improve on existing workplace environmental conditions by

providing employees with aesthetic and ergonomically designed air-conditioners, lighting bulbs and oscillating fans, it would help elicit employees' physical stamina, energize employees' sensory and mental connection to tasks, and strongly impact on employees' service delivery, concentration, dedication to tasks and also help build positive public image of public educational organisations.

Conclusion

The findings of this study confirm generally held opinion that the nature of workplace environmental conditions which employees work in, determines their comfort and level of engagement. Thus, having a conducive and user-friendly lighting and temperature regulating devices in public universities is central to achieving employees' engagement while reducing work disengagement behaviors that most non-teaching employees of public universities and other Nigerian public organisations are known to exhibit. Conclusively, workplaces should be designed to be comfortable to breed cheerful and vigorous employees while taking into account the needs and limitations of the occupants.

Recommendations

This study recommends that: (i) the Federal and State Governments should provide adequate and conducive quality user-friendly lighting and temperature regulating devices such as electric bulbs, solar bulbs, ACs, fans to augment natural environmental conditions for employees' safety, comfort and heightened work engagement levels (ii) The works and services Departments of public universities should be equipped with competent human resources and sophisticated materials and ensure that prompt attention is given to dysfunctional environmental condition regulating devices in order not to impede employees' workflow and work engagement (iii) Educational organisations should see workplaces as an extension of the home that should to an extent, be cozy, pleasant, friendly and ergonomically built to aid the occupiers perform at their best.

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