Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

Mediating Role of Work Motivation Effect of Physical Work Environment on Employee Productivity

Idris Adamu Alhaji, Kabiru Muhammad Lame, Mohammed Inuwa
Department of Accounting and Taxation Abubakar Tatari Ali Polytechnic Bauchi, Nigeria
Department of Business Administration Abubakar Tatari Ali Polytechnic Bauchi, Nigeria
Department of Business Administration, Bauchi State University Gadau, Nigeria[2]
Corresponding Author's email: alhajiidris05@gmail.com

Abstract

The study explores the effect of physical work environments on employee productivity through mediating role of work motivation among Bauchi state civil servants. The study adopt questionnaire survey method and data was collected from 372 employees working in ministries, departments, and agencies (MDAs) of Bauchi state. Data was analyzed using SPSS and PLS SEM. 4 software. The study findings show that there is a positive and significant of physical work environment on employee productivity. Also, work motivation does not mediate between physical work environment and employee productivity. The study will be significant to the management of the organization and policy makers in government agencies. The study recommends organization should develop effective means which can give room for employees to develop positive work attitudes as well as a conducive physical working environment that will enable outstanding employee performance. The result of this study helps the state government or policy makers to draft an action plan to identify and prioritize effective work environment that will bring about effective productivity. It will also further make contribution in the field of human resource management and organizational behavior.

Keywords: Employee Productivity, Work Motivation, Physical Work Environment

1.1 Introduction

Organizations in the twenty-first century have prioritized human capital and labor over all other resources due to its capacity to achieve greater and faster levels of effectiveness through dedication and output. Mayowa-Adebara and Oyerinde (2019) assert that ineffectiveness has far-reaching effects because it affects people even outside of organizations. Employees of these organizations may be viewed as incompetent and unable to thrive in a cutthroat environment if they are unable to meet the demands of a changing society. In a similar vein, motivation raises their degree of output. Daniel (2019), speculates that employees in conducive working environment and condition feels safer and display better health status on the job which consequently enhances employees' comfort and motivation which increases their productivity level. Also, Agba, Ochimana and

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

Abubakar (2013), assert that when the work environment is conducive the employees would have no choice but to ensure that the overall effectiveness of the organization is met. In the same vein, Thomas (2018) portrayed an unconducive work environment as one that experiences high turnover, especially in terms of voluntary and involuntary actions. The involuntary turnover is exhibited when organizational core is unstable, lacks strategic planning, ill-equipped managers or poor recruiting practices while the voluntary turnover is exhibited when employees in an organization engage in interpersonal conflict or do not align with the company culture.

Further, employee productivity is the most important aspect of an organization, as it is one of the defining factors in achieving organizational mission and vision (Khaksar., et al 2023). Management experts state that productivity is measured by the quality of employee (Coraggio et al., 2023). Purwanto et al., (2020) states that employee productivity is what influences how much they contribute to the organization, including the quantity or quality of output, duration of output, workplace attendance and cooperative attitude. The work environment of any organization or institution generally comprises physical work environment. These are physical work environment comprises tools, equipment, infra-structure and other technical elements, (Awak & Augustine, 2021).

While all workers in Bauchi state government are (34,303.00), (Source field survey, office of Bauchi state Head of civil Service 2022). Review of literature have shown that employee productivity in the public sector have great impact on economic growth and development of a nation (Kravariti et al., 2023). Public sector in Nigeria is faced with many problems because of low employee productivity. These problems are mostly attributed to lack of good working environment and low employee morale. Consequently, the problem of physical work environment in Ministries, Departments, and Agencies in Bauchi state government in Nigeria has been a topic of concern (Knight and Haslam 2019). The environment where employee work, most especially in public service (MDAs) is unsafe, with challenges such as poorly designed office layout, ergonomic design, air quality, noise control, and lighting quality, workstations, unsuitable furniture, lack of ventilation, inappropriate lighting, excessive noise, insufficient safety measures in fire emergencies and lack of protective equipment (Oriaku 2022). The issue of physical work environment to workers has really generated a strong argument and counter argument on the part of government, labour and workers. Workers through their labour representatives have always asked for improved conditions of services and can go to any length to press home their demands (Ulloa-Unanue 2023).

Based on the above, this study examine the effect of work environments on employee productivity, with mediating effect of work motivation. The study also aimed to discover the challenges faced by employees in civil service settings and explore the potential implications that affects

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

employees' productivity. Although, most of the studies were conducted in developed and other developing countries. Hence the current study is determined to be conducted to fill the research gap from Nigeria context particularly Ministries, Department and Agencies in Bauchi state government, Nigeria.

2.1 Literature Review

2.1.1 Employee Productivity

Employee productivity is what influences how an employee contributes to the organization in relation to the quantity of output, quality of output, duration of output, workplace attendance and cooperative attitude (Ratnasari et al., 2023). Individual productivity is important in terms of accomplishing goals with feelings of mastery and pride (Meece 2023). Fernandez and Arun (2023) postulate that organizations require highly performing individuals to reach their objectives, provide goods and services to their clients and have competitive advantage over others. Magnan (2023) Productivity is basically what employees do or don't do. Bulińska- Stangrecka and Iddagoda (2020), assert that the success of an organization is influenced by the productivity of its employees; an organization will seek to improve the productivity of its employees in the hope that organizational goals can be achieved.

2.1.2 Physical Work Environment

Physical work environment is a subset of work environment which consist of physical and Behavioural work environment (Bradley et al., 2023). Piao et al. (2022) Physical work environment is an aspect of work environment. Hafeez et al. (2019) Physical work environment components consisting of natural light, cleanliness, ventilation, heating/cooling facilities, comfortable working environment, informal meeting area, office layout, working desk/ area and general and personal storage space. Basically. Babapour et al. (2022) the physical work environment such as meeting the needs for employee work equipment, work space arrangement, lighting and so on. Therefore, it is proper for organisational leaders to be able to create conducive conditions in their activities the more conducive the physical work environment, the more comfortable employees will be in carrying out their duties and functions and the better the achievement of the employee's productivity will be (Kurniawanto et al., 2022).

It is supported by Abidin, et al. (2022) who said that a comfortable physical work environment is not only influenced by lighting and sound, but also air circulation and safety. Yamagishi et al.

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

(2023) rooms that are too hot or too cold can affect employees. Air that is too humid can disrupt employee productivity and damage documents or files faster (Zargar et al., 2023). Substitution of

fresh and clean air must be considered by the administrative manager because it affects the health level of employees (Brindhadevi et al., 2023).

2.1.3 Work Motivation

A person's behavior is influenced and stimulated by wants, needs, goals and satisfaction. Stimulation arises from yourself and from outside. This stimulation will create motives and motivation that encourage people to work (Novitasari et al., 2021). Motivation is different from one employee to another; this is due to differences in motives, goals and needs of each employee. According to Girdwichai, and Sriviboon (2020) "the motivation concept referred to internal factors that impel action and to external factors that can act as inducements to action. Kumari et al., (2021) motivation is operationally defined as the inner force that drives individuals to achieve personal and organizational goals. Guterresa et al., (2020) Work motivation is someone's desire that causes that person to act. People act for one reason, namely to achieve goals. So, work motivation is a drive that is set by goals and rarely appears in a vacuum. Widowati and Satrya (2023) Work motivation is an inner strength that encourages employees to achieve personal and organizational goals. Work motivation can take a very central role in increasing productivity Previous findings have proven that individuals who are motivated in their work will have a positive impact on improving their productivity; (Guterresa et al., 2020).

2.2 Hypotheses Development

2.2.1. Physical Work Environment and Employee Productivity

The current study contains and tests the following hypothesis, which has derived from the previous literature and is also justified in the literature review. Research from Tsai (2023) states that the physical work environment has a positive effect on employee productivity in public service in Nigeria. A study conducted by Obamiro and Kumolu-Johnson (2019), reveals a strong relationship of physical workplace setting and job satisfaction in beverage firm in Ado-Odo. Schilleci (2022) Physical work environment is positively associated with Employee productivity, to improve the productivity of the employees for getting better commitment and results, assurance of the adequate facilities must be provided to employees. Kiiru (2022) Findings of the results showed that physical environment (comfort level, temperature) strongly influences the employee productivity.

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

H1 *There is a significant relationship between physical Work environment and employee productivity in some (MDA) of Bauchi state.*

2.2.2 Work Motivations has a mediating effect on the relationship between Physical work environment and employee productivity.

Academicians and practitioners advocate the important of mediating role of work motivation in an organizational to improve employee productivity (Onubi et al., 2023). Based on the description below, it is suspected that the physical work environment has a direct effect on employee productivity shows that there is a significant influence between the physical work environment, and employee productivity. The results of the research conducted by Ajegbomogun, et al., (2022), showed that physical work environment variables influence work motivation where the atmosphere of a comfortable and conducive physical work environment can make employees more motivated to work. Maryani et al., (2021) indicated that the Work Motivation as mediating variable has a significant influence between physical work environments on Employee productivity. Therefore, each employee will be able to achieve high productivity by having good work motivations from both within and outside themselves. Yildiz (2020) in his study on the impact of work motivation on employee productivity at a Bank in Estonia finds out that there is a significant relationship work motivation as mediating variable physical work environment and employee productivity and it is quite natural. He further stated that employees tend to perform better when they receive extra work motivation in form of the stated motivational factors such as salary, good relationship with superiors, a suitable working environment and or some challenges and cooperation.

H2: There is a significant mediating role of work motivations between physical work environment and employee productivity in some (MDA) of Bauchi state.

2.3 Research Framework

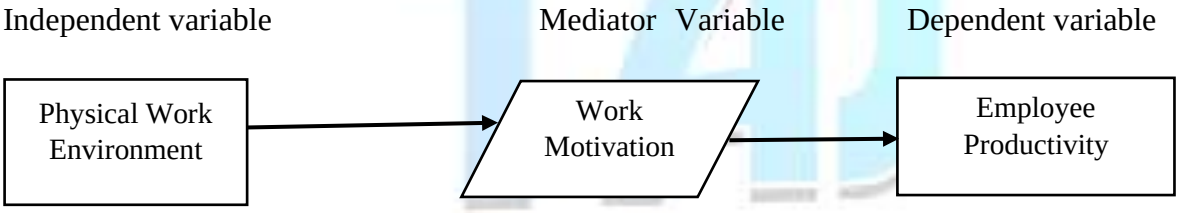

Figure 1 Framework of the study

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

3.1 Methodology

The purpose of the study is to investigate how work motivation indirectly affects the physical workspace and worker productivity in Nigeria's public sector. The quantitative positivist theory that underpins the study seeks to verify cause-and-effect connections. Purposive sampling was the method of sampling that was employed in this investigation. This study employed purposive sampling to determine worker productivity in MDAs. This approach is suitable in situations when the research emphasizes the importance of controlling particular factors (Klar & Leeper, 2019; Oribhabor & Anyanwu, 2019; Pandey & Pandey, 2021). The most common method for purposive sampling in research conducted between 2019 and 2020 is Maulana (2020). SMART-PLS 4 was then used to obtain and evaluate the completed questionnaire. Moreover, five items that measure the physical work environment—an independent variable—were modified from research by (Iqra et al 2019). Based on a 5-point Likert scale with a range of 1 to 5, the items were

For work motivation, the mediating variable, comprising five measures, were adapted from the studies of (Emmanual 2020). The items were as well based on a 5-point Likert scale from 1 to 5. Employee productivity measurements were also adopted from the work of li (2022), which comprises 5 items. Additionally, prior to the administration of the questionnaire, the research instruments were thoroughly examined by human resource management specialists to guarantee that the questionnaire's phrasing and comprehension are appropriate for the study. Focus groups with the respondents were also chosen in order to double-check the items for any corrections or observations. Subsequently, adjustments were made to guarantee the questionnaire's quality and prevent response bias. 34,303.00 people are part of the state civil service in Bauchi. Employees in MDAs are used as the analytical unit to calculate the sample size.

Therefore, in line with the study of Krejcie & Morgan (1970), a sample size of 379 is accepted to represent the population. Further, Previous studies such as Isreal (1996); Mirzaei et al (2021); Hanaysha, and Alzoubi (2022) recommended 30% to be added to the minimum sample size in order to take care of incomplete responses so that the needed statistical power would be achieved. Therefore, on the basis of the rule of thumb that "the larger the sample size the better the result, this present study would add 30 % (114) of the 379 minimum sample size obtained from Krejcie and Morgan, (1970). Hence the sample size for the study is 493 respondents. A total number of 493 questionnaire were administered, among which a total of 372 questionnaire were retrieved representing 84.8% percent of the total questionnaire administered, after following-ups. While for further data analysis only 372 were found usable which represents 75.5% percent of the returned sampled respondents, and were analyzed. Retrieved but Invalid 46 representing 9.3%, while not retrieved were 75 representing 15.2%. Hence, Baruch (1999) posits that social and management

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

sciences research frequently has a 55.6% response rate. Likewise, others have considered a 60% good response rate (Babbie, 2007; Grove, 2006). Following the debate, this study's response rate of 94.4% is quite tolerable and suitable for data analysis.

4.1 Data analysis

Data was entered using Statistical Package for Social Science (SPSS). Also, data screening was carried out to spot and confirm that the data is cleansed and can reflect the actual phenomenon of the study. Descriptive statistics, frequencies, and percentages were used to analyses the demographic variables of the respondents, as presented in the table below. Also this study used SmartPLS4 software by Ringle, Wende, and Becker (2022) was used to analyze data. Applying a two-stage analytical procedure consisting of (a) measurement models assessment and (b) evaluations of current structural models was applied after carrying out descriptive analyses (Anderson & Gerbing, 1988; Hair, Hult, Ringle, & Sarstedt, 2017).

4.1.1 Descriptive Statistics of Respondents

The findings show gender, age, marital status, educational qualification, working experience, employee grade and staff department, The statistics show that from the 372 participants, 316 (84.9%) are male, while the female figure stands at 56 (15.1%). In terms of age, the highest respondents 128 (34.4%) are between the age of 41 to 50. 62 respondents (16.7%) are within the age range of 18 -30, while 106 respondents (28.5%) fall within the age range of 31-40 and 76 respondents (20.4%) fall above the age 51 and above. 153 (41.2%) respondents have working experience between 11- 20 years in service, while 146 (39.2%) have a working experience between 21-35 years in service and 73 respondents (19.6%) are between 1-10 years in service. Regarding to educational qualification, it was found that 107 (28.8%) of the respondents fall within the category of Secondary education (SSCE), 161 (43.3%) have National diploma (ND)/ NCE. BSC/HND respondents are 72 (19.4%), MSC/MBA respondents are 21 (5.6%) and PhD respondents 11 (3%) respectively. Furthermore marital status 299 (80.4%) respondents are married, 60 (16.1%) respondents are single while 13 (3.5%) respondents are divorce. Employee grade 219 (58.9%) respondents are lower management, 94 (25.2%) respondents are middle management and 59 (15.9%) respondents are top management. Staff department other department has the highest respondents 170 (45.7%) Administration department 121 (32.5 %) respondents, logistic department 30 (8.1%) respondents, service department 28 (7.5 %) and finance department 23 (6.2%) respondents.

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

4.1.2 Assessment of Measurement Model

This study Smart PLS-SEM 4 software by Ringle, Wende, and Becker (2022) the measurement models are outer models that describe the relationship between the construct and their indicators (Daoud et al., 2023). The acceptable value for outer loading must be above 0.50 (Hair et al., 2015) Alpha coefficient in this study is within the range of 0.914 and 0.726 which is within the accepted value (Hair et al., 2020; Hair, et al., 2019). Also the value of every composite reliability (CR) factor fell in-between 0.919 and 0.755, as specified by Hair et al. (2019), with values between 0.70 and 0.90 ranging from "satisfactory to good. To assess convergent validity, the value for every AVE fell in-between 0.936 to 0.814, which is within the suggested value of 0.50 and above (Hair et al., 2015). Discriminant validity assessment is calculated using the Heterotrait-Monotrait Ratio (HTMT) criterion, which is considered a stronger method (Inuwa, et al., 2022) stated that all the values above 0.90 show discriminant validity issues.

Table 4.1.2 Convergent Validity of Measurement Model

Construct	Item	Loadings	CA	CR	AVE
Employee Productivity (EP)	EP1	0.840	0.909	0.914	0.933
	EP2	0.893			
	EP3	0.828			
	EP4	0.904			
	EP5	0.818			
Physical Work Environment (PWE)	PWE1	0.857	0.726	0.775	0.814
	PWE2	0.593			
	PWE4	0.638			
	PWE5	0.768			
Work Motivation	WM1	0.837	0.914	0.919	0.936
	WM2	0.848			
	WM3	0.892			
	WM4	0.868			
	WM5	0.867			

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

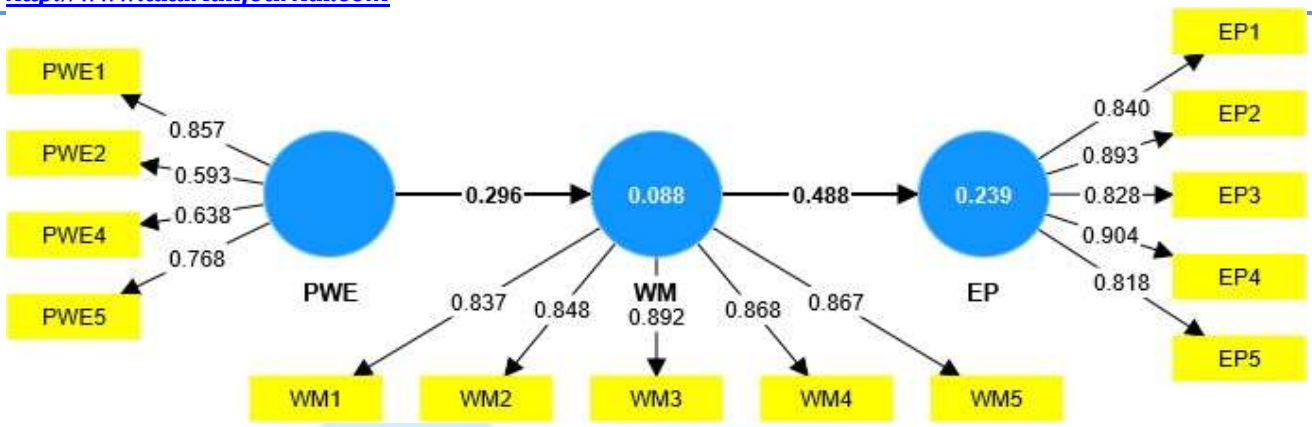

Figure 2. Measurement Model

Discriminant validity assessment is calculated using the Heterotrait-Monotrait Ratio (HTMT) criterion, which is considered a stronger method (Inuwa, Islam & Male, 2022; Henseler, Ringle & Sarstedt, 2015). Henseler, Ringle and Sarstedt (2015) stated that all the values above 0.90 show discriminant validity issues. In the same vein, Kline (2011) submits that a value not above 0.85 shows there is no issue of discriminant validity in such data. Therefore, Table 4.1.3 shows that all the constructs have achieved the requirement of discriminant validity, being empirically distinct from one another.

Table 4.1.3 Discriminant Validity (HTMT) Matrix

Constructs	EP	PWE	WM
Employee Productivity (EP)			
Physical Work Environment (PWE)	0.547		
Work Motivation (WM)	0.528	0.313	

4.2 Assessment of Structural Model

After the measurement model assessment, where convergent and discriminant validity of the items and constructs were validated, the next stage examines the structural model. In the process of examining the structural model aimed at confirming the research model empirically. Some fundamental analyses must be performed in the model, which includes collinearity assessment, assessing the significance of the path coefficients, the coefficient of determination (R^2) values, the effect size (F^2) as well as the predictive relevance (Q^2). Regarding R^2, it is argued by Hair et al. (2017) that there is no standard threshold, while Hair, Sarstedt, Hopkins, & Kuppelwieser (2014) postulated that an R2 at 0.20 is high in organizational studies. Therefore, it can be deduced that this study has achieved an acceptable R^2 of 0.239 effects on the endogenous construct of employee productivity. Regarding effect size (f^2), Cohen (1988) asserts that 0.02, 0.15, and 0.35 are slight,

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

moderate, and large effect sizes. Hence, any predicting construct having an effect size (f^2) value lower than 0.02 does not affect the related endogenous construct in the model. This study's effect size shows that physical work environment has 0.096. Also, work motivation and employee performance has an (f^2) of 0.061. Hence, (f^2) all exogenous constructs have shown an acceptable effect size range (f^2) on the endogenous variables. The variance inflation factor (VIF) was used in assessing multi-collinearity among the constructs under investigation. Hair et al. (2019) suggested that VIF values should be close to 3 and lower. The result shows that the multi-collinearity assessment of work Environment on work motivation and employee productivity is 1.00, respectively. . It shows that the VIF values among all the constructs are lower than the threshold, which shows an absence of collinearity amongst the constructs of this study.

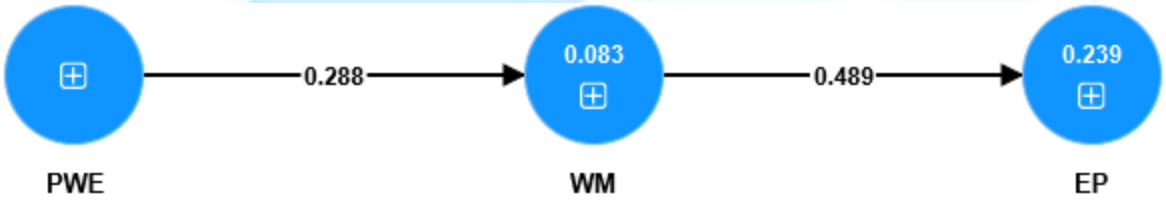

Figure 3. Structural Model

Table 4.2.1 Effect Size (F^2)

Constructs	Employee Productivity	Effect Size
Physical Work Environment (PWE)	0.096	Medium
Work Motivation (WM)	0.061	Small

4.2.2 Direct and Indirect Path Coefficient

First hypothesis (H1): states "There is a significant relationship between physical Work environment and employee productivity in some (MDA) of Bauchi state". The results of standardized regression weights from Table 4.4.1 suggested a positive and significant relationship between PWE and EP ($\beta = 0.111$, $t = 1.343$, $p = 0.090$). In other words, the regression weight for PWE in the prediction of EP is significantly different from zero at the p-value of 0.090. Based on the results, it can be concluded that PWE has an insignificant relationship with EP.

Second hypothesis (H2) Work Motivation (WM) x Physical Work Environment (PWE) -> Employee Productivity (EP): presumed that, work motivation mediate the relationship between PWE and EP, but the results ($\beta = 0.023$, $t = 1.124$, $p = 0.130$) also suggests that there is a positive relationship between physical work environment (PWE) and employee productivity (EP). The t-

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

value shows that the sample mean is 1.124 standard deviations away from the population mean, that is the sample is very different from the population. The p-value of 0.130 shows that the results are highly statistically insignificant. In essence Work Motivation has no mediating effect on the relationship between PWE and EP

Table 4.2.3 Significance Effects of Direct and Indirect Path Coefficient

Constructs	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
PWE -> EP	0.234	0.233	0.059	3.961	0.000
PWE -> WM -> EP	0.021	0.023	0.019	1.124	0.130

4.5 Importance-Performance Map Analysis Matrix (IPMA) Assessment

In order to present the findings of this study more precisely, importance-performance map analysis (IPMA) was conducted. IPMA analysis aims to identify constructs with high importance and low performance (Schloderer, Sarstedt, & Ringle, 2014). The outcome of the analysis aids high level management in identifying key forces within organization that need more attention and improvement (Shafaei & Razak, 2015). Hence, scores for importance were extracted from the total effects of the estimated relationships in the structural model. Similarly, the performance scores or index values computation was conducted through rescaling the latent variables scores to range from 0 as the lowest performance to 100 as the highest performance. The result of the IPMA reveals performance of the construct as Physical Work Environment (PWE) (83.258), Work Motivation (WM) (86.545), while the importance results shown that Physical Work Environment (PWE) (0.255) Work Motivation (WM) (0.192). Figure 4 and Table 4.4.7 shows the detailed IPMA result for all the constructs. Given the above, Hence, it can be suggested that Work Motivation (WM) are particularly important for explaining the target construct. Impliedly, a one-unit increase in the performance of Work Motivation (WM) increases employee productivity (EP) by the value of the total effect, which is 0.255, 0.192, respectively.

Table 4.5.1 IPMA Results

Constructs	Importance	Performance
Physical Work Environment (PWE)	0.255	83.258
Work Motivation (WM)	0.192	86.545

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

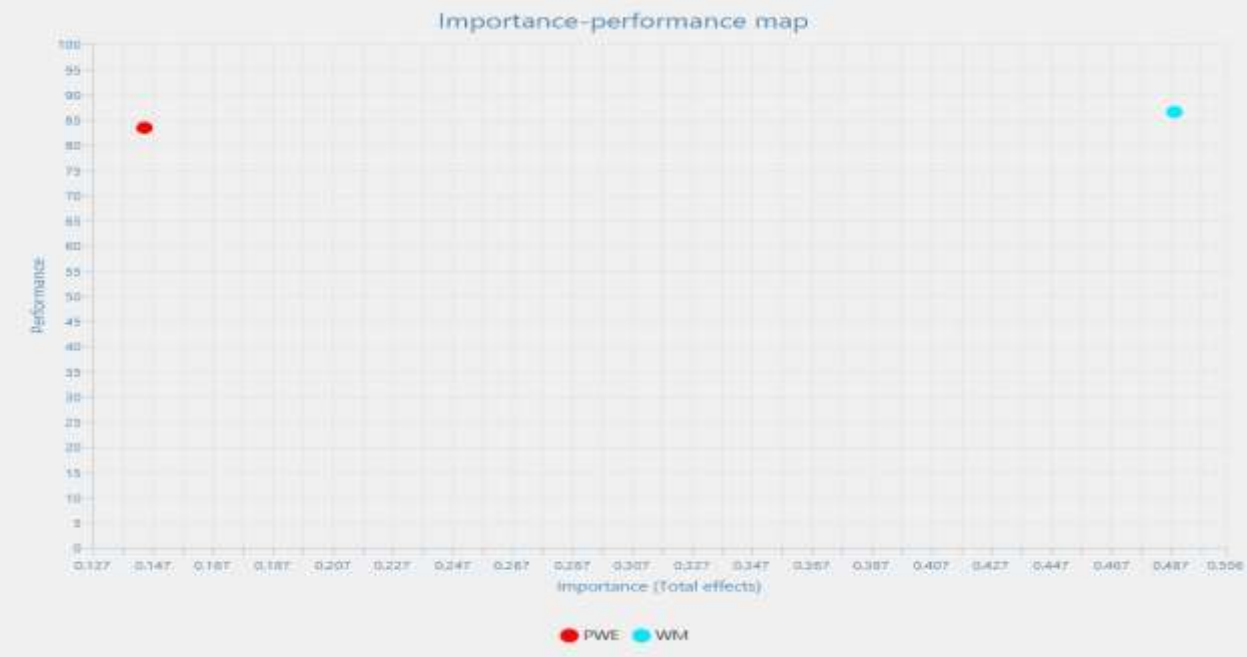

Figure 4: Importance Performance Map

4.6 Discussion of Findings

This study was primarily designed to examine the Relationship between work environment on employee productivity in Bauchi state Ministries, Departments and Agencies. The mediating role of work motivation. There were several outcomes the study found with the help of data analysis. (H1): states "There is a significant relationship between physical work environment and employee productivity in some (MDA) of Bauchi state". This result is in line with the finding of Wagner (2022) in his study The Role of Physical Work Environment in Employee Productivity stated that There is no relationship between physical work environment and employee productivity. In the same vain Vannatta (2019) in his study The Impact of Physical Work Environment on Employee Productivity who has challenged the hypothesis that physical work environment has a significant relationship with employee productivity, Vannatta argues that while physical work environments can have some impact on employee productivity. Thus, based on the finding of this study is in line with the above findings of Wagner 2022 and Vannatta 2019 the hypothesis (H_1): that states there is positive relationship between relationship between physical work environment and employee productivity is hereby Rejected.

(H2) Mediating effect of work motivation (H2) Work motivations (WM) x physical work environment (PWE) -> employee productivity (EP): presumed that, Work motivations mediating the relationship between physical work environment (PWE) and employee productivity (EP). But

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

the results (β = 0.023, t = 1.124, p = 0.130) also suggests that there is a strong but insignificant relationship between physical work environment (PWE) and employee productivity (EP). This finding collaborates with the finding of Hao and Chen (2021) in there study The impact of green office design on employee productivity: The moderating role of job crafting. found that the relationship between green office design (a physical work environment factor) and employee productivity was direct and did not require work motivation as a mediator. Also in same vain the study of Liu and Zhang (2020) in there study The effects of physical work environment on employee creativity: The mediating role of job satisfaction and the moderating role of organizational culture found that the relationship between physical work environment (a physical work environment factor) and employee creativity was indirect and mediated by job satisfaction.. However, they did not find evidence to support the hypothesis that work motivation mediated this relationship. Hence this finding is in accordance with Hao and Chen (2021) and Liu and Zhang (2020) stated that the hypothesis that states Work Motivation mediate the relationship between PWE and EP is hereby Rejected.

5.0 Research Implication

The findings of the study substantiate the conceptual model and provide a number of managerial implications, theoretical and methodological implications. Firstly, it offers a practical approach for ministries, departments and agencies of Bauchi state government as decision-makers., Secondly, the study stressed the effectiveness of work environment in increasing the employee productivity, therefore, decision-makers should adopt work environment. Policy makers the finding of this study may guide government on possible way of improving employees' productivity and communicate back to the organization for implementations. This study will contribute empirically by establishing the direct and indirect relationships between physical work environment and employee productivity.

5.1 Conclusion and Recommendations for Future Research

The study conclude that Ministries, Departments and Agencies should develop a platforms on which physical work environment can be improved to enable employees contribute toward achieving desired goals set by the organizations. The study recommends that Ministries, Departments and Agencies should develop and improve work motivation in an organization in order to achieve their set goals. Future studies may consider other predictor other than physical work environment, and use work motivation as moderator rather than mediator as used in this study. Or future study can add other dimension of work environment as a predictor.

Tatari Ali Academic Journal
November, 2025, Vol. 3 No. 1, pp. 16 - 33
ISSN - Online: 2006-6427
http://www.tatarialijournal.com

References

Agba, M. S., Ochimana, G, E., & Abubakar, Y. I. (2013). Public service ethics and the fight against corruption in Nigeria: ACritical analysis. *International Journal of Public Administration and Management Research (IJPAMR), 2*(1), 112 – 118.

Ajala, E. M. (2012). The influence of workplace environment on workers' welfare, performance and productivity. The African Symposium: An online J. African Educational Res. Network, 12(3), 141-149

Ajegbomogun, V. O., Ajegbomogun, F. O., & Nz, E. D. (2022). Motivational strategies and physical work environment as correlates of job productivity. Library workers in colleges of education, s*outh-west Nigeria. African Journal of library, Archives & Information Science, 32*(1).

Asmussen, K. E., Mondal, A., Bhat, C. R., & Pendyala, R. M. (2022). On modeling future workplace location decisions: An analysis of texas employees. Technical paper, Department of civil, Architectural and environmental engineering, The University of Texas at Austin.

Awak, A. S., & Augustine, A. L. S. (2021). Training and career development on employee performance in micro-finance institutions in Bambili, Cameroon. *International Journal of Empirical Research Development, 103*.

Bradley, L., McDonald, P., & Cox, S. (2023). The critical role of co-worker involvement: An extended measure of the workplace environment to support work–life balance. Journal of Management & Organization, 29(2), 304-325.

Bulińska-Stangrecka, H., & Iddagoda, Y. A. (2020). The relationship between inter-organizational trust and employee engagement and productivity.

Chandrasekar, K. (2011). Workplace environment and its impact on organizational performance in public sector organization. *International Journal of Enterprise Computing and Business System, 1*(1), 1-19. Retrieved from http://www.ijecbs.com

Daniel, C. O. (2019). Influence of work environment on employees productivity in Nigeria. *International Journal of Research in Management, 2*(9), 10-18.

Hair, J. F., Hult, G. T. M., Ringle, C. M. &, & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Thousand Oaks, CA: Sage.

Hair, Joe F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing Theory and Practice. https://doi.org/10.2753/MTP1069-6679190202

Hair, Joseph F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203://doi.org/10.1108/EBR-11-2018-0203

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hanaysha, J. R., & Alzoubi, H. M. (2022). The effect of digital supply chain on organizational productivity. : An empirical study in Malaysia manufacturing industry. *Uncertain Supply Chain Management, 10*(2), 495-510.

Hanaysha, J. R. (2016). Testing the effectiveness of employee engagement, work environment, and organizational learning on organizational commitment. *Procedia Social and Behavioral Science, 229*, 289-297.

Iqra H, Rafiq M, Saba H and Khaliq ur R (2019) Impact of workplace environment on employee productivity. : Mediating role of employee health in business management and education. doi: 10.3846/bme.2019.10379

Jain, R. & Kaur, S. (2014). Impact of work environment on job satisfaction. *International Journal of Scientific and Research Publications, 4*(1), 1-8.

Kajwang, B. (2022). Implications of youth workforce on employee engagement in the insurance sector. *Journal of Human Resource and Leadership, 7*(1), 1-7.

Kiiru, D. K. (2022). Work environment and productivity of employees in public health sector in Nairobi country, Kenya.

Klar, S., & Leeper, T. J. (2019). Identities and inter-sectionality: A case for purposive sampling in survey-experimental research. Experimental methods in survey research: Techniques that combine random sampling with random assignment, 419-433.

Krejcie, R. V, & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 38*, 607–610.

Lee, Y., Kim, H. L., & Hyun, S. S. (2022). Effect of intrinsic and extrinsic motivations on service productivity after parental leave. *International Journal of Environmental Research and Public Health, 19*(5), 2715.

Mangkunegara, A., & Agustine, R. (2016). Effect of training, motivation and work environment on physicians' performance. *Academic Journal of Interdisciplinary Studies, 5*(1), 173-188.

Maryani, Y., Entang, M., & Tukiran, M. (2021). The relationship between work motivations, work discipline and employee productivity at the regional secretariat of Bogor city. *International Journal of Social and Management Studies, 2*(2), 1-16.

Maulana, N. (2020). Research trends in marketing science before Covid-19 outbreak: A literature review. *Management & Marketing, 15*, 514-533.

Mayowa-Adebara, O., & Aina, F. R. (2016). Work environment and organizational commitment of staff in academic libraries in Lagos State, Nigeria. *Journal of Applied Information Science and Technology, 9*(1), 39 – 48.

Mbah, S., & Ikemefuna, C. (2012). Job satisfaction and employees turnover intentions in total Nigeria plc in Lagos State. International Journal of Humanities and Social Science, 2(14), 275-278.

Mirzaei, A., Carter, S. R., Patanwala, A. E., & Schneider, C. R. (2022). Missing data in surveys: Key concepts, Approaches, and applications. Research in social and administrative pharmacy, 18(2), 2308-2316. 7.

Meece, J. L. (2023). The role of motivation in self-regulated learning. In *Self-regulation of learning and performance* (pp. 25-44). Routledge.

Mohsan, F. (2012). Impact of job rotation on employee motivation, commitment and job involvement in banking sector of Pakistan. *African Journal of Business Management, 6* (24).

Nasution, M. I., & Priangkatara, N. (2022). Work discipline and work motivation on employee productivity. *International Journal of Economics, Social Science, Entrepreneurship and Technology, 1*(1), 50-64.

Nasution, M. I., & Priangkatara, N. (2022). Work discipline and work motivation on employee productivity. *International Journal of Economics, Social Science, Entrepreneurship and Technology, 1*(1), 50-64.

Obamiro, J. K., & Kumolu-Johnson, B. O. (2019). Work environment and employees' performance: Empirical evidence of Nigerian beverage firm. ACTA Universitatis Danubius 15(3).

Onubi, H. O., Hassan, A. S., & Carpio, M. (2023). Bridging the gap between perceived benefits and pro environmental behavior: Mediating roles of green work climate and pro environmental training. *Journal of Management in Engineering, 39*(2), 04022080.

Oriaku, U. (2022). Impact of organizational structure and work environment on staff job satisfactionin dangote cement company. *Sapientia Global Gournal of Arts, Humanities and Development Studies, 5(2)*

Oribhabor, C. B., & Anyanwu, C. A. (2019). Research sampling and sample size determination: A practical application. *Journal of Educational Research (Fudjer), 2*(1), 47-57.

Oswald, A. (2012). The effect of working environment on workers performance: The case of reproductive and child health care providers in Tarimedistrict (Masters Dissertation). Retrieved from ihi.eprints.org/1658/1/Asigele_Oswald.pdf. (1658).

Oyerinde, O. F., & Mayowa-adebar, O. (2019). Work environment and institutional effectiveness of polytechnic libraries in South-West, Nigeria. *Unizik Journal of Research in Library and Information Science, 4*(1).

Padi, A., Ansah, W. O., & Mahmoud, M. A. (2022). Corporate entrepreneurship and employees' competencies: do employees' perceived feasibility and desirability matter. *Cogent Business & Management, 9*(1), 2102129.

Pandey, P., & Pandey, M. M. (2021). Research methodology tools and techniques. Bridge center.

Purwanto, A., Kusumaningsih, S. W., & Prasetya, A. B. (2020). Did transformational leadership elitist and antidemocratic? A literature review. *International Journal of Social, Policy and Law, 1*(1), 1-11.

Riyanto, S., Endri, E., & Herlisha, N. (2021). Effect of work motivation and job satisfaction on employee productivity: Mediating role of employee engagement. *Problems and Perspectives in Management, 19*(3), 162-174.

Schloderer, M. P., Sarstedt, M., & Ringle, C. M. (2014). The relevance of reputation in the non profit sector: the moderating effect of socio-demographic characteristics. *International Journal of Nonprofit and Voluntary Sector Marketing, 19*(2), 110–126.

Thomas, I. (2018). The top three symptoms of a toxic workplace environment (and three cures). Retrieved f r o m http://www.forbes.com/sites/forbeshumanresourcescouncil/2018/01/22/the top three symptoms-of-a-toxic-workplace-environment.

Tsai, H. Y. (2023). Do you feel like being proactive day? How daily cyberloafing influences creativity and proactive behavior: The moderating roles of work environment. *Computers in Human Behavior, 138*, 107470.

Ulloa-Unanue, E. (2023). 7. Tu respuesta sindical YA: a new tool to meet the demands of workers engaged through digital platforms. Contingent workers' voice in southern europe: Collective experiences of protection and representation, 111.

Wahyudi, W. (2022). Five components of work motivation in the achievement of lecturer productivity.. Scientific *Journal of Reflection: Economic, Accounting, Management and Business*, *5*(2), 466-473.

Yildiz, E. (2020). Impact of motivation on employee productivity at a bank in Estonia.

Yolah, S. A., Hyginus, O. O., & Eke, G. J. (2021). Effect of workplace physical environment on the productivity of employees in public organization: A study of the Central Bank of Nigeria, Jalingo branch, Taraba State. *Noble International Journal of Business and Management Research, 05*(01), 01-13.