

Workplace Design and Employee Well-Being in the Organization: A Study on Academic Staff of Tertiary Institutions in Bayelsa State, Nigeria

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Abstract: This study's main goal was to investigate the connection between workplace design and worker well-being, with a focus on academic staff at Bayelsa State's higher education institutions. In order to acquire quantitative data from 145 academic staff members selected from Niger Delta University using stratified random selection, a descriptive survey research design was used. To ensure validity and reliability, data were collected using structured questionnaires that were modified from proven tools in employee well-being and workplace design research. The Pearson Product-Moment Correlation Coefficient was utilised to evaluate the association between workplace design and employee well-being, while descriptive statistical methods such as mean scores, frequencies, and percentages were employed to characterise workplace design variables. The physical work environment ($r = 0.536$), ergonomics ($r = 0.572$), and technological integration ($r = 0.504$) were found to have strong positive associations with employees' physical health. These results suggest that workplace design improvements have a significant impact on workers' general health and well-being. In addition to investing in ergonomic furniture, adjustable workstations, and posture training, the study concludes that workplace conditions are important factors that affect employee well-being in postsecondary institutions. It also suggests that institutional management give priority to better lighting, ventilation, and efficient use of space. Overall, by providing empirical data from the Nigerian higher education sector, the study contributes to the body of knowledge on workplace design and employee well-being and emphasises the need of giving workplace design top priority as a tactic for fostering employee productivity, happiness, and health.

Key words: Workplace design, employee well-being, ergonomics, physical work environment, technology integration, tertiary institutions.



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1. Introduction

Employees' psychological and physical health are significantly influenced by the way their workplace is designed. Workplace design features like lighting, ventilation, ergonomic furniture, and spatial layout have a big impact on academic staff members' well-being in academic environments, where cognitive performance and job satisfaction are especially crucial. Numerous

higher education institutions in Nigeria are still dealing with design and infrastructure issues, which can have a detrimental impact on students' academic achievement, job happiness, and mental health. A well-planned workplace improves psychological well-being, productivity, safety, and comfort.

The relationship between the physical workspace and employee pleasure, motivation, and mental health is receiving more attention in today's fiercely competitive organisational climate. Veitch (2011) points out that because population-wide health issues are usually given more attention, workplace design has frequently gotten less attention, despite its potential to improve employee mental health. In a similar vein, Fayyad et al. (2024) note that the importance of workplace design in reducing mental health issues among employees is not given enough consideration. The International Labour Organisation (ILO, 2018) claims that employee well-being includes all facets of working life, from perceptions and experiences within the workplace to working conditions including working hours.

Additionally, organisational culture is physically expressed in the office setting (Fayyad et al., 2024). Retaining current employees and luring in fresh talent depend on maintaining workspaces that suit their demands (Fayyad et al., 2024; Gallup, 2017; Vischer, 2008). Flexible layouts that are easy to adjust to changing needs and provide cost savings should be a feature of such environments (Charles & Veitch, 2002; Haynes et al., 2017; Pejtersen et al., 2006). In order to achieve both practical efficiency and desired aesthetic quality, workplace design entails the strategic use of space, lighting, surface finishes, furniture, and accessories (Ching & Binggeli, 2012). Interior design features are more flexible and may be altered to better reflect and promote employee well-being, but structural and technical building components are frequently hard to change.

Because workplace design affects both physical and mental health, it has a significant impact on employee well-being, which in turn affects engagement and productivity. While a poorly designed workplace may lead to increased absenteeism, burnout, and poor performance, a well-planned workplace can boost morale, decrease stress, and promote teamwork. In addition to physical aspects, workplace design entails setting up the workspace to improve worker performance and safety in both low-risk (like offices) and high-risk (like construction sites) contexts.

Many Nigerian higher education institutions still have outdated, poorly maintained workplaces that do not take ergonomics into account, despite the fact that academic staff play a crucial role in teaching, research, and innovation in tertiary institutions. There is a substantial research gap that this study aims to fill because there is no empirical data on how workplace design affects academic staff members' well-being. Furthermore, a lot of businesses still use shoddy workspaces that raise stress levels, cause pain, and lower employee morale. Examining how particular aspects of workplace design impact employee well-being is consequently crucial, especially with regard to job satisfaction, stress management, productivity, and general physical, mental, and psychological health at work..

1.2 Objective of the Study

The main objective of the study is to investigate the relationship between workplace design and employee well-being in the organization focus on academic staff of tertiary institutions in Bayelsa State. Specifically, the study will address the following:

1. To examine the relationship between physical work environment and employee physical health among academic staff of tertiary institutions in Bayelsa State.
2. To investigate the relationship between ergonomics and employee physical health among academic staff of tertiary institutions in Bayelsa State.

3. To assess the relationship between technology integration and employee physical health among academic staff of tertiary institutions in Bayelsa State.

1.3 Hypotheses

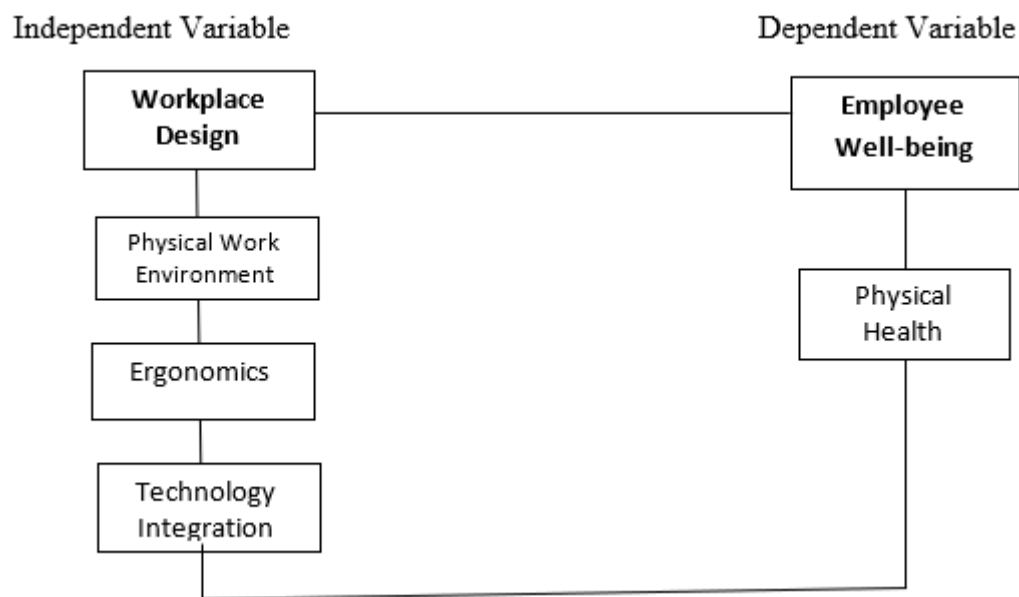
The following null hypotheses was tested:

H₀₁: There is no significant relationship between physical work environment and employee physical health among academic staff of tertiary institutions in Bayelsa State.

H₀₂: There is no significant relationship between ergonomics and employee physical health among academic staff of tertiary institutions in Bayelsa State.

H₀₃: There is no significant relationship between technology integration and employee physical health among academic staff of tertiary institutions in Bayelsa State.

1.4 Conceptual Framework on Workplace Design and Employee Well-being



Source: Adapted (Fayyad et al., 2024)

2 Literature Review

2.1 Workplace Design

Workplace design can be described by a set of characteristics that influences how employees feel about their jobs, and how well they perform. A happy employee can put in his or her best practices towards organization set goals. Financial package most times cannot meet the inner desires of an individual. Employees spends most part of the day in the workplace out of their domestic domain and are denied of social comfort, occupied in the workplaces all day long continually which could affect their physical health, mental, and emotional well-being. It is important that job security is imperative, as it sustains the lively hood of mankind. A healthy worker performance leads to higher level of productivity, and creativity. Designing a workplace, employee well-being is considered paramount as it involves the office layout, ergonomics, and technology infrastructures to align with the individuals' functions. This well-being involves six pillars of concern in the workplace design structure as in job security, financial security, health, support, protection, and work life balance. The workplace design incorporates all of these pillars through its strategic arrangement and functionality of workspaces, to improve productivity, creativity, and employee satisfaction. Retrieved 16th June 2024 Google Scholar online

A well design workplace includes the office design, flexible workplaces that can easily adapt to different tasks, within the specific offices. The well-being of employee is important, as the workplace design incorporates all these as it affects employee motivation and job satisfaction, giving a work life balance and stress management situation that can impact on organizational success. The individuals' physical, mental, and emotional health in relation to their work environment in most times not considered in workplace design. Creating areas for social interactions, like break rooms or lounges, can foster a sense of community and reduce feelings of isolation and fatigue. Sense of community encourages social interaction and sense of belonging which can positively impact employee morale and reduce feelings of loneliness, intimidation and rejections, which sometimes could lead to employee untimely end due to emotional depression degrading the health condition of an individual. By gradually creating a healthy, supportive, and inspiring work environment, organizations can attract and retain top talent, boost productivity, and foster a positive and thriving culture. Incorporating well-being concepts into workplace design goes beyond just protecting their physical health. For purpose of achieving well-being from a holistic view in the workplace design process, it addresses the physical and psychological health in the well-being of the workplace. The lack of control over work spaces, poorly lit spaces, noise within the environment, causes interruptions in concentration affect the mental health conditions of employee (Gilbert, Kiss, Nagy & O'Neill 2015). Environmental control is about providing people a workplace design, inclusively; ergonomics, technology, and work spaces (Gilbert, Kiss, Nagy & O'Neill 2015). Availability of environmental control factors can contribute to numerous benefits, such as employee engagement and job satisfaction through workplace flexibility, e.g. adjustable furniture's like seating, adjustable work surface, shelving, flexible task lighting enable employees control the brightness and positions of lighting resources and other forms of display (Patel et al., 2010).

Social interactions among employees are vital issues for well-being, where loneliness can lead to high levels of stress hormone cortisol, poor immune function, high blood pressure, and depression (Kiss et al., 2015). Quite a number of individuals (employees) get stuck in their feelings of loneliness or rejection in the workplace, with this level of anxiety and fear individuals are lead to become more socially isolated, that can result to their untimely end. Kiss, et al, (2015) stated that loneliness is the new smoking that kills. When well-being is built into the design face it can be very effective, as the satisfaction, and happiness of the workforce impaired people to be more engaged, leading to higher organizational performance.

Physical work environment

The physical work environment is a vital aspect of work design that directly influences employee well-being. It encompasses factors such as lighting, ventilation, noise levels, office layout, temperature, ergonomics, and overall workspace design. A well designed physical environment fosters employee motivation, safety, comfort, and ultimately improves organizational performance. Herzberg's Two-Factor Theory posits that environmental conditions are hygiene factors that, when inadequate, can lead to job dissatisfaction (Herzberg et al., 1959). Poor lighting especially lack of natural light leads to eye strain, headaches, and fatigue (Al Horr et al., 2016). Employee well-being, also includes physical health, psychological state, job satisfaction, and overall quality of work life. Access to natural daylight is associated with improved mood and sleep patterns (Boubekri et al., 2014). Indoor air quality significantly affects cognitive performance and comfort. Poor ventilation can cause drowsiness, respiratory issues, and decreased productivity (Allen et al., 2016). Noise pollution is a common complaint in educational and office settings. Excessive noise leads to stress, and reduced concentration (Jensen et al., 2009). Ergonomically inappropriate furniture can result in musculoskeletal disorders and chronic pain (Robertson et al., 2009). Adjustable chairs, appropriate desk heights, and proper computer cups contribute to physical well-being. Open plan offices, while encouraging collaboration, may

hinder privacy and concentration. Kim & De Dear, (2013) suggest that personal space and quiet zones enhance satisfaction and mental health. A visually appealing, clean, and organized environment boost morale and lowers stress (Knight & Haslam, 2010).

Ergonomics

This is about designing the workplace, equipment, and tasks to fit the capabilities and limitations of workers. It aims to optimize employee well-being and overall systems performance. Poor ergonomic conditions such as inappropriate seating, inadequate workstations, and repetitive tasks contribute significantly to physical discomfort, musculoskeletal disorders (MSDs), stress, and decreased productivity on organizational performance. Hedge (2016) emphasized that ergonomic furniture and adjustable workstations can reduce repetitive strain injuries in office workers. Conversely, proper ergonomic design promotes health, safety, comfort, and efficiency, all of which are components of employee well-being. Ergonomics can be divided into physical ergonomics, cognitive ergonomics, and organizational ergonomics.

Physical ergonomics focuses on body posture, workstation design, chair and desk dimensions, keyboard/mouse placement, and lifting techniques. Poor physical ergonomics causes back pain, eye strain, repetitive stress injuries, and general fatigue. Ergonomics practices can positively impact on lecturers' well-being in most public Nigerian universities (Akinwale & George 2020).

Cognitive ergonomics relates to how mental processes (perception, memory, reasoning), interact with the workplace. Kogi (2006) emphasized on participatory ergonomics in improving workplace design in developing countries, enhancing workers' health and performance. Poor interface design, information overload, or distracting environments affects decision making on employee mental well-being.

Organizational ergonomics includes systems design, work hours, shifts, and teamwork. These aspects influence psychological well-being, job satisfaction, and employee engagement. Robertson & Huang (2006) assert that ergonomics training and interventions can lead to reduced discomfort and increase worker satisfaction.

Technology Integration

Implementing digital tools and systems is crucial on employee well-being. Technology offers numerous benefits such as flexibility, speed, and innovation. The way digital tools are introduced and managed can either support or harmful to employees' physical, psychological, and emotional health. Better managed digital tools, allow for remote work, flexible hours, and better time management which support autonomy and reduces work conflict (Hill et al., 2003). Technology enables automation, faster communication, and simplified administrative processes for more meaningful work flow (Bloom et al., 2014). Employees can be negatively influenced by the constant technological changes that could lead to information overload, or the need for continuous learning (Tarafdar et al., 2015). Excessive screen time on digital facilities, and lack of physical movement can contribute to fatigue, stress, and burnout (Ayyagari et al., 2011).

Physical Health

The physical environment of a workplace plays a vital role in supporting or undermining employees' physical health and well-being. Workplace design includes the planning and arrangement of physical space, lighting, furniture, ventilation. Boubekri et al., (2014) opined that poor lighting can result in eye strain, and headaches. Noise control, and other environmental features like poor air circulation and exposure to pollutants can cause respiratory issues, and headaches (Allen et al., 2016). When poorly designed these elements can lead to physical discomfort, injury, fatigue, and chronic health issues. A well designed workplace enhances comfort, reduces risk, and promotes healthy behaviors, making physical well-being a critical concern in organizational management especially in academic institutions where staff spend long

hours sitting, lecturing, or working on computer systems. The continuous use and long stay on the screen can cause neck stiffness, back pain, and eye strain (Hedge, 2016).

2.2 Theoretical Framework

The theoretical framework provides a conceptual foundation for elucidating the relationship between employee well-being and workplace design. The Person-Environment Fit Theory and Herzberg's Two-Factor Theory are used as the main lenses in this study to investigate how workplace design's psychological and physical elements impact workers' well-being in organisational contexts.

The Two-Factor Theory of Herzberg

According to Herzberg's Two-Factor Theory, often known as the Motivation–Hygiene Theory, several types of workplace characteristics have an impact on employee contentment and discontent. According to Herzberg (1968), motivators that increase job satisfaction include accomplishment, acknowledgement, and the inherent value of labour. On the other hand, rather than directly boosting motivation, hygiene factors—which include physical working conditions, organisational policies, and the general work environment—primarily serve to prevent unhappiness.

In the context of workplace design, elements such as lighting, spatial arrangement, noise control, ergonomic furniture, and access to natural ventilation fall under hygiene factors. When these environmental aspects are poorly designed, employees may experience stress, fatigue, or dissatisfaction, which undermines their well-being (Bakotić & Babić, 2013). Conversely, a well-designed workspace can eliminate discomfort and create an enabling environment where motivators such as productivity, collaboration, and innovation can thrive. Thus, Herzberg's theory helps to explain how workplace design functions as a critical hygiene factor influencing employee well-being within organizations.

Person-Environment Fit Theory

The Person-Environment (P-E) Fit Theory posits that employee well-being is strongly influenced by the degree of compatibility between individuals and their work environment (Kristof-Brown, Zimmerman, & Johnson, 2005). The theory asserts that when the work environment aligns with employees' values, needs, and abilities, positive outcomes such as satisfaction, engagement, and psychological well-being are enhanced. Conversely, misfit between employees and the workplace design—such as overcrowding, lack of privacy, or limited access to resources leads to stress, disengagement, and diminished well-being (Edwards et al., 2006).

Workplace design directly affects the P-E fit by shaping how employees interact with their environment. For example, open-plan offices may enhance collaboration for extroverted employees but cause distraction and stress for those who value privacy. Similarly, access to quiet zones, green spaces, and flexible workstations improves the alignment between employee preferences and workplace design, thereby fostering higher well-being (Oseland, 2009). By applying P-E Fit Theory, organizations can better understand how to tailor workplace design to support the diverse needs of their workforce, ultimately enhancing employee health, satisfaction, and performance.

Together, Herzberg's Two-Factor Theory and the Person-Environment Fit Theory provide a comprehensive lens for understanding the relationship between workplace design and employee well-being. Herzberg's framework emphasizes the role of physical and environmental conditions as hygiene factors that prevent dissatisfaction, while the P-E Fit Theory highlights the importance of alignment between the individual and the workplace environment in promoting well-being. Integrating these perspectives suggests that organizations must not only provide basic, well-

designed facilities but also ensure that workplace environments are adaptable to employees' diverse needs and preferences.

2.3 Empirical Studies

Vischer (2007) investigated the effects of the physical environment on job performance and found that employees who have control over their physical environment report with a higher comfort and lower stress. Al-Omari and Okasheh (2017); Oluwumi et al., (2022) examine the effect of work environment on job performance and found that office furniture, light, ventilation and noise are some physical environmental factors on employees well-being. Seghal (2012) examine the relationship between workplace design and staff efficiency, and established its findings on ergonomics, noise, lighting, and the physical arrangement can have a significant impact on employee well-being. Salah (2010); Oluwunmi et al., (2022) conducted a study on workplace design and its impact on employees at the administrative block of the university of Gaza, the study shows a significant relationship between the physical environment on employee well-being. Adeoye & Olaoye (2021) investigated on digital transformation and workplace well-being in Nigeria's public sector discovered that poorly managed technology institutions contribute to stress among staff. Dery et al., (2017) studied on the digital workplace is key to digital innovation, emphasized that successful integration of digital tools enhances well-being only when accompanied by cultural and managerial support. Eze & Ofoegbu (2019) examine office space design and lecturer morale in public universities in Nigeria reported that lecturers in poorly designed offices with inadequate lighting and ventilation expressed feelings of frustration and low morale. Lee & Brand (2010) in their study on personal control over the physical environment ease distractions in office workplaces reveals that employees in offices with user centered design reported better psychological engagement and lower stress. Robertson et al., (2009) determine improving computer workstations to reduce musculoskeletal symptoms demonstrated that ergonomic interventions significantly reduce physical complaints and improve posture in office environments. Hedge (2016) found that improved seating and monitor placement reduces the risk of back and neck pains. Eze & Nnaji (2020) determine the effects of workplace environment on academic staff productivity in public universities in Nigeria revealed that overcrowded, poorly ventilated university offices contributed to fatigue and illness among academic staff. Al Horr et al., (2016) examine the impact of indoor environmental quality on occupant well-being and linked to physical health, showing better ventilation and lighting reduces fatigue and sick leave. Amabile et al., (1996). Assessing the work environment for creativity demonstrated that an environment that supports concentration and creativity improves both individual and performance and well-being.

2.4 Gaps

Workplace design measures have been given scant attention as it leads to mental health conditions of employee, rather emphasis is laid more on health population of a nation. Mental health condition of employee gains scant attention to the potential contribution of workplace design in preventing mental health problems of employees (Fayyad, et al., 2024). Existing studies often treat workplace design as a single dimensional construct (mainly physical). Few studies consider its multidimensional nature that is (physical, ergonomic, psychological, social, and technological). Also there is a shortage of quantitative studies in Nigeria linking specific design elements to measure well-being outcomes (e.g., stress, satisfaction, and physical health). The study lacks a well established theoretical framework specific to the interplay of workplace design and employee well-being in tertiary academic contexts. While digital technology is transforming global workspaces, there is little assessment of how digital tools influence academic wellbeing in Nigerian institutions.

3. Methodology

In order to examine the connection between workplace design and employee well-being in organisational contexts, this study uses a descriptive survey research design. The survey approach is thought to be appropriate since it makes it easier to gather quantitative data from a large number of workers, allowing an evaluation of how different aspects of workplace design impact their social, psychological, and physical well-being (Creswell & Creswell, 2018). Employees of Niger Delta University in Bayelsa State make up the study population. A sample of 145 academic staff members was chosen using stratified random sampling to guarantee sufficient representation across departments and job categories. This sample strategy was used to take into consideration potential variances in workplace design elements between units as well as variations in employee views according to job categories. Structured questionnaires with both closed-ended and Likert-scale items was used to collect primary data. These tools are intended to record respondents' experiences with aspects of workplace design, including lighting, ventilation, spatial arrangement, noise control, and ergonomics, as well as their self-reported health, stress, and job satisfaction. The questionnaire was modified from known measures utilised in earlier research on workplace design and employee well-being (e.g., Kristof-Brown et al., 2005; Bakotić & Babić, 2013) in order to improve the instrument's validity and reliability. A small selection of respondents will participate in a pilot study before the questionnaire is improved by making the required changes. While inferential analysis using the Pearson Product-Moment Correlation Coefficient was used to investigate the relationship between workplace design and employee well-being, descriptive statistics such as means, frequencies, and percentages was used to describe workplace design characteristics.

4. Results and Discussions

This section deals essentially with statistical testing of the hypotheses formulated for this study and also interpreting the result. The inferential analysis was adopted using Pearson Moment Correlational Coefficient to test the relationship between the research hypotheses established in introduction.

Table 1: Correlation Outcome between physical work environment and employee physical health among academic staff of tertiary institutions in Bayelsa State

Correlations			
		Physical Work Environment	Employee Physical Health
Physical Work Environment	Pearson Correlation	1	.536**
	Sig. (2-tailed)		.000
	N	145	145
Employee Physical Health	Pearson Correlation	.536**	1
	Sig. (2-tailed)	.000	
	N	145	145

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

Source: SPSS Computation, 2025.

Table 1: Interpretation of the Physical Work Environment and Physical Health of Employees The physical work environment and employee physical health among academic staff at tertiary institutions in Bayelsa State are positively and statistically significantly correlated, according to Table 1's correlation result ($r = 0.536$, $p < 0.01$). This suggests that better physical health outcomes for employees are substantially correlated with improvements in the physical work environment, such as ergonomic amenities, enough workspace, ventilation, and illumination. This

result is consistent with Chandrasekar's (2011) research, which highlighted that a suitable physical work environment improves employee well-being by lowering stress and occupational dangers. Similarly, academic personnel who worked in well-structured environments reported increased job satisfaction and fewer health difficulties (Al-Omari and Okasheh, 2017). Although the physical workplace has a significant impact on employees' physical health, other factors may also have an impact on health outcomes, according to the study's moderately strong connection. Overall, the results show how crucial it is to keep a physically favourable workplace in order to support employees' well-being in higher education.

Table 2: Correlational Outcome between ergonomics and employee physical health among academic staff of tertiary institutions in Bayelsa State.

Correlations			
		Ergonomics	Employee Physical Health
Ergonomics	Pearson Correlation	1	.572**
	Sig. (2-tailed)		.000
	N	145	145
Employee Physical Health	Pearson Correlation	.572**	1
	Sig. (2-tailed)	.000	
	N	145	145

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

Source: SPSS Computation, 2025.

Table 2 shows that among academic staff at tertiary institutions in Bayelsa State, ergonomics and employee physical health have a positive and statistically significant association ($r = 0.572$, $p < 0.01$). This indicates that superior ergonomic practices—such as appropriate furniture design, workplace arrangement, posture support, and a decrease in physical strain—are closely associated with employees' improved physical health. The results of Robertson, Ciriello, and Garabet (2013), who found that ergonomics treatments greatly decreased musculoskeletal problems and enhanced employee comfort in educational settings, are in line with this outcome. Similarly, ergonomically constructed workplaces lower employee weariness, absenteeism, and long-term health issues (Wahab, 2016). Although other factors might possibly be involved, the study's moderate to strong correlation strength indicates that ergonomics is a significant element in improving academic staff members' physical well-being. Overall, the results highlight how giving ergonomic workspaces top priority can greatly improve worker productivity and well-being in postsecondary institutions.

Table 3: Correlational Outcome between technology integration and employee physical health among academic staff of tertiary institutions in Bayelsa State.

Correlations			
		Technology Integration	Employee Physical Health
Technology Integration	Pearson Correlation	1	.504**
	Sig. (2-tailed)		.000
	N	145	145
Employee Physical Health	Pearson Correlation	.504**	1
	Sig. (2-tailed)	.000	
	N	145	145

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

Source: SPSS Computation, 2025.

Technology integration and employee physical health among academic staff at tertiary institutions in Bayelsa State are positively and statistically significantly correlated ($r = 0.504$, $p < 0.01$), according to the correlation finding in Table 3. This suggests that by lowering workload strain, minimising repetitive stress, and fostering more productive work environments, efficient use of technology in the workplace—such as digital teaching tools, automated systems, and supportive ICT facilities—is somewhat linked to better physical health for employees. This result is consistent with the findings of Tarafdar, Tu, Ragu-Nathan, and Ragu-Nathan (2007), who observed that while improper use of technology might lead to more stress, proper use improves productivity and lowers stress-related health issues. In a similar vein, Akinwale and George (2020) found that when combined with ergonomic support, technology adoption in Nigerian higher education institutions greatly enhanced the performance and well-being of academic staff. Thus, the findings imply that technology integration contributes significantly to the improvement of academic staff members' working circumstances, enhancing other elements including ergonomics and the physical workspace.

5. Conclusion

The findings of this study revealed significant positive correlations between workplace factors (physical work environment, ergonomics, and technology integration) and employee physical health among academic staff of tertiary institutions in Bayelsa State. Specifically, the results showed that a conducive physical work environment ($r = 0.536$), ergonomic practices ($r = 0.572$), and effective technology integration ($r = 0.504$) all have strong to moderate associations with improved employee health outcomes. These results align with previous research which emphasizes that conducive workplace design, ergonomic interventions, and efficient use of technology not only enhance comfort and safety but also reduce stress, musculoskeletal disorders, and other health risks (Chandrasekar, 2011; Robertson, Ciriello & Garabet, 2013; Akinwale & George, 2020). Overall, the study concludes that workplace conditions are critical determinants of employee physical health and should be prioritized in tertiary institutions to improve staff well-being, efficiency, and productivity.

6. Recommendations

1. University management should ensure proper lighting, ventilation, space utilization, and safe facilities to create a healthier workplace and reduce occupational hazards.
2. Institutions should invest in ergonomically designed furniture, adjustable workstations, and staff training on posture and safe work practices to minimize strain and musculoskeletal issues.
3. While technology reduces physical workload, institutions should provide ergonomic support alongside ICT tools to prevent health problems such as eye strain, fatigue, and repetitive stress injuries.
4. Management should periodically evaluate work conditions to identify risk factors and make timely improvements for the benefit of academic staff.
5. Institutions should establish staff wellness initiatives (e.g., fitness breaks, counseling, and medical checks) to sustain the health benefits of workplace improvements.

7. Contribution to Knowledge

This study contributes to knowledge by empirically demonstrating the significant role of workplace factors in shaping employee physical health within the context of tertiary institutions in Bayelsa State, Nigeria. While previous studies have highlighted these relationships in general organizational settings, this research provides context-specific evidence in the academic sector, showing that ergonomics has the strongest influence on health compared to physical work

environment and technology integration. The study therefore extends existing literature by highlighting the comparative strength of these factors and providing data that can inform institutional policy, workplace design, and health promotion strategies in Nigerian higher education institutions.

References

1. Adeoye, A. O., & Olaoye, O. B. (2021). Digital transformation and workplace well-being in Nigeria's public sector. *Journal of African Management Studies*, 9(1), 55-69.
2. Ajayi, K. O., & Ojo, A. O. (2020). Workplace design and interpersonal relationships among academic staff in Nigerian universities. *African Journal of Workplace Studies*, 5(1), 55-145.
3. Akinwale, A. A., & George, A. O. (2020). Workplace ergonomics and job satisfaction among academic staff of selected Nigerian universities. *African Journal of Management Research*, 26,(1), 92-106.
4. Al Horr, Y., Arif, M., Katafygiotou, M., et al., (2016). Impact of indoor environmental quality on occupant well-being. *Sustainable Built Environment*, 5(1), 1-11.
5. Allen, J. G., MacNaughton, P., Satish, U., Santanam, S., Vallarino, J., & Spengler, J. D. (2016). Associations of cognitive function scores with CO₂, ventilation, and VOC exposures. *Environmental Health Perspectives*, 12(4), 805-812.
6. Al-Omari, K. & Okasheh, H. (2017). The influence of work environment on engineering company in Jordan. *International Journal of Applied Engineering Research*, 12(24), 15544-15550
7. Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39(5), 1154-1184. <https://doi.org/10.5465/256995>
8. Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly*, 35(4), 831-858.
9. Bakotić, D., & Babić, T. (2013). Relationship between working conditions and job satisfaction: The case of Croatian shipbuilding company. *International Journal of Business and Social Science*, 4(2), 206–213.
10. Boubekri, M., Cheung, I. N., Reid, K. J., Wang, C. H., & Zee, P. C. (2014). Impact of windows and daylight exposure on overall health sleep quality of office workers. *Journal of Clinical Sleep Medicine*, 10(6), 603-611.
11. Chandrasekar, K. (2011). Workplace environment and its impact on organizational performance in public sector organizations. *International Journal of Enterprise Computing and Business Systems*, 1(1), 1-16
12. Charles, K., & Veitch, J. (2002). Environmental satisfaction in open-plan environments: Effects of work station size, partition height and windows. Institute of Research in Construction.
13. Ching, F. D. K., & Biriggeli, C. (2012). Interior design illustrated. Wiley Hoboken, United States.
14. Cummins, R.. A. (2010). Subjective wellbeing, homeostatically protected mood and depression: A synthesis. *Journal of Happiness Studies*, 11(1), 1-17.
15. De Kort, Y. A. W., & Smolders, K. C. H. J. (2010). Effects of dynamic lighting on office workers: Firsrt results of a field study with monthly alternating settings. *Lighting Research and Technology*, 42(3), 345-360 <https://doi.org/10.1177/1477153510378150>

16. De-Been, I., & Beijer, M. (2014). The influence of office type on satisfaction and perceived productivity support. *Journal of Facilities Management*, 12(2), 142-157. <https://doi.org/10.1108/JFM-02-2013-0011>
17. Dery, K. Sebastian, I., & van der Meulen, N. (2017). The digital workplace is key to digital innovation. *MIS Quarterly Executive*, 16(2), 135-152.
18. Dodge, R., Daly, A., Huyton, J., & Sanders, L. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing*, 2(3), 222-235. <https://doi.org/10.5502/ijw.v2i3.4>
19. Edwards, J. R., Caplan, R. D., & Van Harrison, R. (2006). Person-environment fit theory: Conceptual foundations, empirical evidence, and directions for future research. In C. L. Cooper (Ed.), *Theories of Organizational Stress* (pp. 28–67). Oxford University Press.
20. Elsbach, K. D., & Beachky, B. A. (2007). It's more than a desk: Working smarter through leveraged office design. *California Management Review*, 49(2), 80-101.
21. Eze, M. O., & Nnaji, C. O. (2020). Effects of workplace environment on academic staff productivity in public universities in Nigeria. *African Journal of Management Studies*, 8(3), 52-64.
22. Eze, M. O., & Ofoegbu, I. N. (2019). Office space design and lecturer morale in public universities in Nigeria. *The Nigerian Journal of Educational Management*, 17(2), 45-59.
23. Fayyad, N., Lam, B., Evans, R. & Choi, Y. (2024). Workplace wellbeing and interior design: A systemic Literature Review, in Gray, C., Cillotta Chehade, E., Hekkert, P., Forlano, L., Ciuccarelli, P., Lloyd, P. (eds.), *DRS 2024*: Boston, 23-28 June Boston, USA <https://doi.org/10.21606/drs.2024.901>
24. Gallup, (2017). State of the global workplace. GALLUP PRESS. In Fayyad, N., Lam, B., Evans, R. & Choi, Y. (2024). Workplace wellbeing and interior design: A systemic Literature Review. <https://doi.org/10.21606/drs.2024.901>
25. Haynes, B. P. (2008). Impact of workplace connectivity on productivity. *Journal of Corporate Real Estate*, 10(4), 286-302. <https://doi.org/10.1108/14630010810925144>
26. Haynes, B., Suckley, L., & Nunnington, N. (2017). Workplace productivity and office type. *Journal of Corporate Real Estate*, 19(2), 111-138.
27. Hedge, A. (2000). Where are we in understanding the effect of where we are? *Ergonomics*, 43(7), 1010-1029. <https://doi.org/10.1080/001401300409336>
28. Hedge, A. (2016). *Ergonomic workplace design for health, wellness, and productivity*. CRC Press.
29. Herzberg, F. (1968). *Work and the nature of man*. Cleveland: World Publishing.
30. Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The Motivation to Work*. New York: Wiley
31. Hills, E. J., Ferris, M., & Martinson, V. (2003). Does it matter where you work? *Journal of Vocational Behavior*, 63(2), 220-241.
32. ILO. (2018). Workplace wellbeing. International Labour Organization. <https://www.ilo.org/global/topics/safety-and-health-at-work/areasofwork/workplace-health-promotion-and-wellbeing/wcms-118396/lang-en/index.htm>
33. Jensen, K. L., Arens, E., & Zagreus, L. (2009). Acoustical quality in office workstations, as assessed by occupant surveys. *Proceedings of Indoor Air*, 19, 11-16.

34. Kim, J., & de Dear, R. (2013). Workplace satisfaction: The privacy communication trade-off in open-plan offices. *Journal of Environmental Psychology*, 36, 18-26.
35. Knight, C., & Haslam, S. A. (2010). Your place or mine? Organizational identification and comfort as mediators of workspace satisfaction. *British Journal of Management*, 21(3), 717-735.
36. Kogi, K. (2006). Participatory ergonomics: Support from action-oriented methods. *Applied Ergonomics*, 37(4), 547-554.
37. Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology*, 58(2), 281-342.
38. Lamb, S., & Kwok, K. C. S. (2016). A longitudinal investigation of work environment stressors on the performance and wellbeing of office workers. *Applied Ergonomics*, 52, 104-111.
39. Lee, S. Y., & Brand, J. L. (2005). Effects of control over office workspace on perceptions of the work environment and work outcomes. *Journal of Environmental Psychology*, 25(3), 323-333. <https://doi.org/10.1016/j.jenvp.2005.08.001>
40. Lee, S. Y., & Brand, J. L. (2010). Can personal control over the physical environment ease distractions in office workplaces? *Ergonomics*, 53(3), 324-335.
41. Oluwunmi, A. O. & Gbarayeher, N. V. (2022). Influence of office layout on academic staff performance in covenant university. Ota. <https://dx.doi.org/10.4314/etsjiv13i1.8>
42. Oseland, N. (2009). The impact of psychological needs on office design. *Journal of Corporate Real Estate*, 11(4), 244-254.
43. Pejtersen, J., Allerman, L., Kristerisen, T. S., & Poulsen, O. M. (2006). Indoor climate, psychosocial work environment and symptoms in open-plan offices. *Indoor Air*, 16(5), 392-401.
44. Robertson, M. M., & Huang, Y. H. (2006). Effects of a workplace ergonomic intervention on health and productivity: A randomized controlled trial. *Journal of Occupational and Environmental Medicine*, 48(5), 518-525.
45. Robertson, M. M., Huang, Y. H., & Lee, J. (2009). Improving computer workstations to reduce musculoskeletal symptoms. *Journal of Occupational Health Psychology*, 14(2), 131-143.
46. Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological wellbeing. *Journal of Happiness Studies*, 9(1), 13-39. <https://doi.org/10.1007/s10902-006-9019-0>
47. Salah, A. A.E. R. A. (2010). The impact of workplace design on employees' performance (an empirical study of the administration building of Islamic university of Gaza). <https://mobt3at.com/uplode/boos/book-13980.pdf>.
48. Sehgal, S. (2012). Relationship between work environment and productivity. *International Journal of Engineering Research and Applications*, 2(4), 1992-1995.
49. Sfeatcu, R., Cernusca-Mitariu, M., Ionescu, C., Roman, M., Cernusca-Mitariu, S., Coldea, L., Bota, G., & Bota, G. (2014). PJI management view project, The concept of wellbeing in relation to health and quality of life. In *European Journal of Science and Technology*, Vol. 10, Issue 4, <https://www.researchgate.net/publication/29-8026525>

50. Sundstrom, E., Town, J. P., Rice, R. W., Osborn, D. P., & Brill, M. (1994). Office noise, satisfaction, and performance. *Environment and Behavior*, 26(2), 195-222.
51. Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. S. (2015). Technostress: Negative effect on performance and job satisfaction. *Information Systems Journal*, 25(2), 103-132.
52. Thanyer, J. F., Verkuil, B., Brosschtj, J. F., Kevin, K., West, A., Sterling, C., Christie, I. C., Aberinethy, D. R., Sollers, J. J., Cizza, G., Marques, A. H., & Sternberg, E. M. (2010). Effects of the physical work environment on physiological measures of stress. *European Journal of Preventive Cardiology*, 17(4), 431-439. <https://doi.org/10.1097/HJR.06013e3283369239>
53. Veitch, J. A., Newsham, G. R., Boyce, P. R., & Jones, C. C. (2008). Lighting appraisal, wellbeing and performance in open-plan office: A linked mechanisms approach. *Lighting Research and Technology*, 40(2), 133-148. <https://doi.org/10.1177/1477153507086279>
54. Viola, A. U., James, L. M., Schlangen, L. J., & Dijk, D. J. (2008). Blue-enriched white light in the workplace improves self-reported alertness, performance and sleep quality. *Scandinavian Journal of Work Environment & Health*, 34(4), 297-306.
55. Vischer, J. C. (2007). The effects of the physical environment on job performance: Towards a theoretical model of workspace stress. *Stress and Health*, 23(3), 175-184. <https://doi.org/10.1002/smi.1134>
56. Vischer, J. C. (2008). Towards an environmental psychology of workspace: How people are affected by environments for work. *architectural Science Review*, 51(2), 97-108
57. Wang, B., Liu, Y., Qian, J., & Parker, S. K. (2020). Achieving effective remote working during the COVID-19 pandemic: A work design perspective. *Applied Psychology*, 70(1), 16-59.