Influence of Worker's Wellbeing Practices on Safety Performance on Construction Sites in Abuja

*Samuel P.A. & Jimoh R.A.
Department of Building, Federal University of Technology
*Corresponding author: adinoyipamte4@st.futminna.edu.ng

Received: 14/10/2025 **Revised:** 4/11/2025 **Accepted:** 30/11/2025

The construction industry drives global and national development but remain highly accident prone due to its physical demands. In Nigeria, limited wellbeing intervention and weak safety enforcement mechanism, increase worker's risk of accidents and low productivity. This research assessed the influence of workers wellbeing practices on leading indicators safety performance on construction sites in Abuja-Nigeria, focusing on the extent of workers wellbeing practices adoption and safety performance achieved based on wellbeing practices adopted. Quantitative research method was adopted for this study using the entire population of sixty-five (65) CORBON-registered firm operating in Abuja-Nigeria. Data were collected electronically (google form) using structured questionnaire and analysed with SPSS software using descriptive statistics (mean item score) and inferential statistics (correlation analysis). Findings revealed that wellbeing practices such as physical wellbeing practices (3.22) and financial wellbeing practices (3.24) were implemented moderately, while psychological wellbeing (2.98) and technology-driven wellbeing (3.02) were also moderately implemented but with lower mean score, indicating weak implementation leading to high ranking for physical focused safety performance indicators such as physical fitness assessment (3.78) and safety training (3.54) with lower mean score and moderate rating for mental health support (3.14) and safety technology integration (2.59). Pearson's correlation coefficient (r=0.864) indicates a positive and strong relationship between safety performance and wellbeing practices. Regression analysis with (74.7%) R value for overall wellbeing practices and safety performance model, indicates that workers wellbeing practices is a predictive determinant of safety performance onsite. Workers wellbeing practices highly improve safety performance on construction sites. Construction firms should adopt a holistic wellbeing practices model that encompass all aspect of wellbeing practices, while regulators should provide incentives for compliance and strengthen enforcement. Workers wellbeing practices integration into safety culture will improve overall safety performance and productivity within the Nigeria construction sector.
Keywords: Abuja, construction, performance, safety, wellbeing, mental health, stress management, work life balance

Introduction

The report from United Nation Environment Programme and Global Alliance for Building and Construction (UNEP & GlobalABC, 2025) revealed that the construction sector contributes significantly to economic growth and development of every nation. The construction sector contributes about 13% to the world Gross Domestic Product (GDP) and engaged about 7% of the world workforce (UNEP & GlobalABC, 2025). However, despite its significant contribution to economic growth and development, the sector is one of the most accident-prone industries in the world (Bowen *et al.,* 2018). This is due to the construction sector high physical demands in its work execution and complex nature of its tasks, activities and work sections (Eze *et al.,* 2020). Furthermore, the use of heavy equipment such as loaders, scrappers, dozers and cranes pose serious accidents risk on construction sites (Dardau'u *et al.,* 2025). These realities called for the need for proactive wellbeing practices that will address worker's physical and psychological fatigue arising from the stressful nature of construction works, thereby acting as proactive safety performance initiatives to curb workplace safety incidents (Abbas & Patel, 2025). Worker's wellbeing practices consists of mental, physical, economic and social condition experienced by workers on construction sites and how it significantly influences organizational safety culture and performance (ILO, 2019; Organization for Economic Co-operation and Development (OECD), 2022). Worker's wellbeing practices are crucial for addressing environmental, physical and psychological risk associated with construction work (Lingard and Turner, 2015). Globally, stakeholders in the construction sector are beginning to embrace worker's wellbeing initiatives such as work environment safety culture, mental health support and ergonomics supports to mitigate high fatigue and stress level of construction worker's which has been identified as the root cause of workplace incidents (Ajayi *et al.,* 2019; Afolabi *et al.,* 2024). In Nigeria, worker's wellbeing and productivity are compromised through poor safety management practices and improper working condition (National Bureau of Statistics (NBS), 2023). Low productivity, worker's absenteeism and occupational injuries are the results of poor wellbeing practices in an organization, therefore for organizational sustainability, workplace wellbeing practices and public health are key emerging

issues that should be prioritized across the globe (Institute for Health Metrics and Evaluation (IHME), 2023). These realities revealed an urgent need to improve worker's wellbeing practices in accident-prone sector like construction, the crucial need for worker's wellbeing practices is even more urgent especially among developing countries like Nigeria where effective and efficient implementation of workplace safety initiatives are limited by financial constraints and weak regulatory enforcement (ILO, 2016; World Health Organization (WHO), 2021).

This study assessed the influence of worker's wellbeing practices on safety performance on construction sites in Abuja-Nigeria by (1) assessing the extent of wellbeing practices adoption on construction sites (2) determining safety performance achieved based on wellbeing practices adopted. The need for this study arose from previous studies which have addressed workplace safety management, but the link between wellbeing practices such as ergonomic support, stress management, work-life balance, provision of personal protective equipment (PPE) and safety performance in developing context like Abuja-Nigeria remains underexplored (Afuye *et al.,* 2022; OECD, 2022). Existing literature revealed that wellbeing-focused initiatives and psychosocial safety climate can improve worker's safety compliance onsite, reduce worker's stress and enhance worker's mindfulness onsite (Bakker & Demerouti, 2017; Xie *et al.,* 2024). However, in most developing economies like Nigeria, workers wellbeing is usually perceived to be physical practice, thereby ignoring the social and mental aspect of wellbeing practices on construction sites (ILO, 2019). Abuja provides an ideal context for assessing how workers wellbeing practices influences safety performance outcomes among workers on construction sites, being one of the fastest growing construction hubs in Africa. This study utilised safety performance leading indicators to assess the influence of all aspects of wellbeing practices on safety performance on construction sites in Abuja thereby contributing towards the realization of Sustainable Development Goal 3: promoting wellbeing and good health (Mollo & Emuze, 2020).

Literature Review

Relationship between wellbeing practices and safety performance

ILO (2019) defined workers wellbeing practices as the general, social, mental, physical and economic condition that has effects on workers' productivity, standard of living and quality of life. Likewise, ILO (2016) defined safety performance as an indicator that revealed the efficiency and effectiveness of workplace safety management practices. Studies like Mollo and Emuze (2020) and Lingard and Turner (2017) established the positive link between wellbeing practices consisting of physical, psychological, social and organizational interventions that enhanced safety performance in the construction industry. Also, meta-analytic study and evaluation score, revealed that wellbeing practices initiatives that combine physical, psychological, organizational and social practices, result to increase in safety performance achieved when compared to singular-dimension initiatives (Dollard & Bailey, 2021). Several instances such as theoretical perspectives, physical wellbeing-safety link, psychological wellbeing-safety link and organizational wellbeing-safety link have been prevalently introduced in construction safety study to explain the effect of wellbeing factors on safety performance (Dollard & Bailey, 2021). According to Dollard and Bailey (2021), wellbeing intervention like psychosocial safety climate, encourages voice behaviours and safety related communication among workers, reducing stress level significantly and enhance safety performance on site. Physical fatigue due to poor work-life balance, leads to reduced hazards recognition and identification occurrence by 20-40%, which result to poor safety performance (Ibrahim *et al.,* 2023). In a related development, slower cognitive safety awareness in critical task is due to poor work-life balance, resulting to 30% reduction in hazards awareness under fatigue condition (Ibrahim *et al.,* 2023).

Job demands-resources theory

Bakker *et al.* (2004) introduced the job demands-resources theory and was later revised by Bakker and Demerouti (2017). According to Bakker and Demerouti (2017), workplace risk factors are categorized into two, which are job demands and job resources. Job demands can be physical demands, psychological demands, social demands and organizational demands that stress and strain workers psychologically and physiologically. In contrast, job resources are provisions put in place to mitigate job demand stress, support workers growth and development and enable workers achieve work objectives on time (Schaufeli, 2017). According to Bakker *et al.* (2023), the job demands-resources model involves two main process which are: Health impairment process: where job demands leads to workers health deterioration and exhaustion. Motivational process: where resources are provided to reduce workers stress and exhaustion, to encourage workers to be more productive. In construction, job demands include interpersonal conflicts, role ambiguity, unsafe working environment and work pressures. In contrast, job resources include wellbeing practices such as workplace safety climate, work performance feedback, workers assistance programmes and support systems (Scholze & Hecker, 2024). High job demands often increase burnout, fatigue and safety incidents among workers while resource provisions encourage

safety compliance, improve workers engagements and reduce accidents, thereby leading to improve safety performance (Mazzetti *et al.*, 2023).

Conservation of resources theory

Hobfoll (1989) proposed the conservation of resources (COR) theory, stating that individual tends to retain and protect valued resources obtained, such resources could be in the form of personal qualities, good living condition and object acquired (Farkash *et al.,* 2022). The theory postulates that stress arises when resources are invested without adequate return, lost or threatened. Stating further that individual with more resources has the ability to get more in terms of returns, gain and benefits (Farkash *et al.,* 2022). In construction setting, COR theory highlights how workers tend to allocate resources in the form of their physical energy, expertise and social support to maintain wellbeing and safety performance relationship (Zhang *et al.,* 2024). Studies revealed that workers with adequate resources through wellbeing practices such as provision of rest facilities for sufficient rest, appropriate safety training and workers support programmes, comply more with safety practices to achieve safety performance compared to workers depleted, tired and drained due to lack of resources as a result of absence of wellbeing practices, may not fully comply with safety practices which could have effects on safety performance (Zhang *et al.*, 2024).

Research Methodology

Research methods are the process and procedures adopted for data collection and analysis in a study. Examples of research methods are qualitative, quantitative and mixed method approach (Kumar, 2018). Quantitative research method was adopted for this study. Quantitative research method measures variable to examine relationships using numbers or test hypothesis (Kumar, 2018). Abuja (FCT) was chosen as the study area because it is one of Africa's fastest-growing construction hub with high concentration of construction activities. Data collected from Abuja will reflect the realities of workers wellbeing practices in a developing setting.

The target population for this study comprised of sixty-five (65) Council of Registered Builders of Nigeria (CORBON) registered firms operating in Abuja. The study adopted a census approach due to the small population of CORBON-registered firm in Abuja. Meaning instead of selecting a subset, the entire list of CORBON-registered firm were studied. This approach eliminates sampling bias and improve representativeness because every unit of the defined population were included in the data collection process. This is different from population definition in general terms which is the entire group of interest from which sample is drawn (Kumar, 2018). Instead the census approach covered every firm in the group of interest.

Structured questionnaire was used to collect data. Questionnaires were used as data collection instruments because it ensures validity, reliability, and ethical compliance (Bryman, 2016).

The instrument was developed to measure wellbeing practices (Physical, mental, social and economic dimensions) and safety performance leading indicators (work-life balance, stress management and fatigue management). The questionnaires were administered electronically using google form to construction firm representatives for accurate responses. One hundred percent (100%) response rate was achieved due to continuous reminder through emails and phone calls.

Data collected were coded and analysed using Statistical Package for the Social Science (SPSS) version 20. SPSS was used to analysed data because it can analyse data for both descriptive and inferential statistical purposes (Field, 2024). Mean item score (MIS) were used to determine the extent of wellbeing practices adopted on construction sites and safety performance leading indicators achieved based on wellbeing practices adopted. The scale intervals were interpreted as No extent (0 – 0.1.49), Low extent (1.50 – 2.49), Moderate extent (2.50 – 3.49), High extent (3.50 – 4.49) and Very high (≥ 4.50) (Bryman, 2016). Pearson's correlation analysis and regression analysis were conducted to assess the nature and strength of the relationship between safety performance and wellbeing practices on construction sites.

Results and Discussion

The results are presented below.

Respondents demographic information

Table 1 showed demographic information of respondents and their frequencies

Table 1: Demographic Information of the Respondent

Respondent		Frequency	Percentage
Firm representative years of practices in the industry	1-5yrs	11	16.7
	6-10yrs	25	37.9
	11-15yrs	16	24.2
	16-20yrs	7	10.6
	more than 20yrs	7	10.6
	Total	65	100.0
Organization years of practices in the construction industry	6-10yrs	9	13.6
	11-15yrs	14	21.2
	16-20yrs	12	18.2
	more than 20yrs	12	18.2
	Total	65	100.0
Firm representative academics qualification	HND	17	25.8
	BSc/BTech	22	33.3
	PGD	8	12.1
	MSc/MTech	18	27.3
	PhD	1	1.5
	Total	65	100.0
Average cost of project handle by firm	1m-4m	1	1.5
	5m-49m	13	19.7
	50m-99m		
	100m-500m	10	15.2
	500milion and above	16	24.2
		26	39.4
	Total	65	100.0
Organization workforce	1-9	16	24.2
	10-49	28	42.4
	50-199	14	21.2
	Total	65	100.0
Nature of work undertaking by your organization	Building	31	47.7
	Both Building and Civil Engineering	34	52.3
	Total	65	100.0

Extent of wellbeing practices on construction sites

The results presented in Table 2 showed wellbeing practices ranked from moderate to high such as physical wellbeing practices (3.22), financial wellbeing practices (3.24), Ergonomic wellbeing practices (3.47) and work environment safety culture (3.57) the moderate ranking for almost all wellbeing practice dimension indicates that wellbeing practices are mostly adopted at a moderate level on construction sites in Abuja. Furthermore, moderate ranking with lower mean scores for wearable technology utilization (3.02) and psychological wellbeing practices (2.98), indicates construction firms concentrate more on visible and economic related wellbeing initiatives more than psychological and technology-driven initiatives. This result answers the research question by revealing that while workers wellbeing practices exist, they are unevenly implemented in a developing setting like Abuja-Nigeria. These findings aligned with the report from ILO (2019) which highlighted that economic and physical wellbeing practices are the most prioritized in developing economics construction industry due to their direct link to accidents prevention and worker's productivity improvements. However, these findings are not consistent with Yahaya *et al.* (2024) and Berglund *et al.* (2025) who revealed how optimum workplace safety performance was achieved in developed economics through prioritization of all wellbeing practices dimension including technology-driven and psychological wellbeing initiatives. These outcomes are due to weak regulatory enforcement, lack of awareness and resource constraints in Nigeria construction industry.

Table 2: Extent of Wellbeing Practices on Construction Sites

Wellbeing practices	Mean	Decision from mean rating
Work Environment Safety Culture	3.57	High
Ergonomics Wellbeing Practices	3.47	Moderate
Social Wellbeing Practices	3.45	Moderate
Financial Wellbeing Practices	3.24	Moderate
Physical Wellbeing Practices	3.22	Moderate
Organization Wellbeing Practices	3.14	Moderate
Wearable technology utilization	3.02	Moderate
Psychological Wellbeing Practices	2.98	Moderate

Safety performance achieved based on wellbeing practices adopted

Table 3 revealed that physical fitness assessments (3.78), employment of safety officer (3.78) and mental health support (3.54) were ranked high, indicating that firms achieved strong physical safety performance based on wellbeing practices adopted. However, safety performance leading indicators relating to technology integration (2.59), work-life balance (3.07) and mental health support (3.41) were ranked moderate, indicating weaker performance in technology integration and psychosocial safety performance. These findings, answers the research question confirming that safety performance in developing setting like Abuja-Nigeria focused only physical aspect, this is due to wellbeing practices implemented that concentrate on physical safety, influencing safety performance outcomes in the process. These findings are consistent with Mollo and Emuze (2020) who emphasized the need to establish wellbeing-safety relationship in developing climes, but contrast with Lingard and Turner (2017) who stressed that optimum safety performance can only be achieved through holistic adoption of all wellbeing practices dimension. This contextual gap stems from awareness level, policy enforcement and funding. Practically, these findings suggest that stakeholders in the Nigeria construction sector should invest and integrate wellbeing interventions beyond physical safety, while policy makers should provide incentives to encourage firm's technology adoption and integration to enhance safety culture in Nigeria construction industry.

Table 3: Safety Performance Achieved Based on Wellbeing Practices

Safety Performance	Mean	Decision from mean rating
Physical Fitness Assessment	3.78	High
Employment of Safety Officer	3.78	High
Safety Training	3.54	High
Stress Management	3.33	Moderate
Fatigue Management	3.25	Moderate
Worker's Participation in Safety Planning	3.22	Moderate
PPE Provision and Enforcement	3.22	Moderate
Mental Health support	3.14	Moderate
Work-Life Balance	3.07	Moderate
Safety Technology Integration by Management	2.59	Moderate

Relationship between wellbeing practices and safety performance

Correlation analysis was conducted to establish the strength of the relationship between workers wellbeing practices and safety performance. Table 4 showed positive and strong Pearson's correlation coefficient (r=0.864) for wellbeing practices and safety performance. This indicates that wellbeing practices can be used to improve safety performance and also serve as a sustainable strategy to enhance workplace safety culture (Abbas & Patel, 2025).

Table 4: Correlation

Variables		SP	WP
Safety Performance (SP)	Pearson Correlation	1	.864
	Sig. (2-tailed)		.000
	N	64	60
Wellbeing Practices (WP)	Pearson Correlation	.864	1
	Sig. (2-tailed)	.000	
	N	60	62

Regression analysis was also conducted to establish the nature of the relationship between overall wellbeing practices and all aspects of wellbeing practices and safety performance. Table 5 showed the model summary from regression analysis conducted. The high R value for overall wellbeing practices and safety performance (74.7%), physical wellbeing and safety performance (74.8%), psychological wellbeing and safety performance (64.3%), social wellbeing and safety performance (64.8%), financial wellbeing and safety performance (50.5%), organization wellbeing and safety performance (62.0 %) and work environment and safety performance (54.4). These high percentages across all aspect of wellbeing practices, indicate that organization that holistically adopt all aspects of wellbeing practices has high tendency of achieving optimum safety performance (Mollo & Emuze, 2020).

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Physical-Safety Performance	.865a	.748	.743	.46340
Psychology-Safety Performance	.802[a]	643	.637	.54746
Social-Safety Performance	.805[a]	.648	.642	.54663
Financial-Safety Performance	.711[a]	.505	.497	.64448
Organization-Safety Performance	.787[a]	.620	.614	.56849
Ergonomics-Safety Performance	.582[a]	.339	.329	.74472
Work Environment-Safety Performance	.738[a]	.544	.537	.61839
Wellbeing-Safety Performance	.864[a]	.747	.743	.46982

Predictors (Constant): Wellbeing Practices
Dependent Variable: Safety Performance

Conclusion

Workers wellbeing practices influence on safety performance on construction sites in Abuja-Nigeria was assessed. Findings showed that economic and physical wellbeing practices strongly improved physical aspect of safety performance, while psychological wellbeing practices and technology-driven wellbeing initiatives were under-adopted on construction sites in Abuja-Nigeria. The findings can guide construction professionals towards evidence-based wellbeing intervention, support regulatory agencies in developing practical implementation model and inform policymakers reform. Although limited by population size and timeframe, future study should consider longitudinal research designs. This study underscored workers wellbeing practices as a crucial foundation for safe and more productive construction setting. Construction firms should integrate all aspect of wellbeing practices such as physical, mental, ergonomics, financial and technology innovation into safety culture while policymakers should incentives and promote holistic workers wellbeing practices and strengthen regulations in Nigeria construction industry. Theoretically, these findings aligned with job demands-resource model confirming the role of wellbeing practices (job resources) in mitigating job demands (stress and fatigue). Practically, construction firms must integrate technological and mental health support to complement physical wellbeing. Policy wise, broader wellbeing framework should be enforced by policy makers to enhance safety culture.

References

Abbas, Z., & Patel, H. (2025). Workplace Well-Being in High-Risk Industries: A New Metric for Evaluating Health and Safety Standards in Construction. *Safety Science* https://doi.org/10.13140/RG.2.2.23227.32807

Afolabi, A., Yusuf, A., & Akanmu, A. (2024). Human-In-The-Loop Digital Twin Framework for Ergonomic Assessment of Exoskeletons in Construction. *Journal of Information Technology in Construction*, 29.

Afuye, O., Aina, O., Oladimeji, O., & Mohammed, T. (2022). Perceptions of safety behaviour-modifying techniques in construction firms: Insights from Lagos, Nigeria. 29(1), 59–85. *Acta Structilia.* https://doi.org/10.18820/24150487/as29i13.

Ajayi, S.O., Jones, W. & Unuigbe, M. (2019) Occupational stress management for UK construction professionals. Journal of Engineering, Design and Technology, 17(04), 819–32.

Bakker, A. B., & Demerouti, E. (2017). Job Demands-Resources Theory: Taking Stock and Looking Forward. *Journal of Occupational Health Psychology*, 22, 273-285. https://doi.org/10.1037/ocp0000056.

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. (2023). Job demands–resources theory: Ten years later. *Annual review of organizational psychology and organizational behavior*, 10(1), 25-53.

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, 43(1), 83-104.

Berglund, L., Johansson, J., Johansson, M., Nygren, M., & Stenberg, M. (2025). Structures and Processes for Safety Culture? Perspectives from Safety Leaders in the Swedish Construction Industry. *Safety*, 11(2), 47.

Bowen, P., Edwards, P., Lingard, H., & Cattell, K. (2018). Occupational stress and job demand, control and support factors among construction project consultants. *International Journal of Project Management*, 36(5), 686-694.

Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.

Darda'u, A., Kado, B., Gora, A. U. M., Dalha, I. B., Haruna, S. I., Ibrahim, Y. E., & Ahmed, S. O. (2025). Caught-In/Between Accidents in the Construction Industry: A Systematic Review. *Safety*, 11(1), 12.

Dollard, M. F., & Bailey, T. (2021). Building psychosocial safety climate in turbulent times: The case of COVID-19. *Journal of Applied Psychology*, 106(7), 951.

Eze, E. C., Sofolahan, O., & Siunoje, L. (2020). Health and safety management on construction projects: The view of construction tradespeople. *CSID Journal of Infrastructure Development*, 3(2),152.(https://www.researchgate.net/publication/347645739_Health_and_Safety_Management_on_Construction_Projects_The_View_of_Construction_Tradespeople.

Farkash, H. E., Lahad, M., Hobfoll, S. E., Leykin, D., & Aharonson-Daniel, L. (2022). Conservation of resources, psychological distress, and resilience during the COVID-19 pandemic. *International Journal of Public Health*, 67, 1604567.

Field, A. (2024). *Discovering statistics using IBM SPSS statistics*. Sage publications limited.

Hobfoll, S. E. (1989). Conservation of resources: a new attempt at conceptualizing stress. *American psychologist*, 44(3), 513.

Ibrahim, A., Nnaji, C., Namian, M., Koh, A., & Techera, U. (2023). Investigating the impact of physical fatigue on construction workers' situational awareness. *Safety science*, 163, 106103.

Institute for Health Metrics and Evaluation. (2023). *11 Global Health Issues to Watch.* Retrieved from https://www.healthdata.org. Retrieved on 28th March 2025.

International Labour Organization (ILO). (2016). *Promoting occupational safety and health through workplace inspections*. Geneva: ILO. https://www.ilo.org Retrieved on 27th March 2025.

International Labour Organization (ILO). (2019). *Workplace Wellbeing Practices*. https://www.ilo.org Retrieved on 27th March 2025.

Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners* (5th ed.). Thousand Oaks, CA: Sage Publications.

Lingard, H., & Turner, M. (2015). Improving the health of male, blue collar construction worker's: A social ecological perspective. *Construction Management and Economics*, 33(1), 18-34.

Lingard, H., & Turner, M. (2017). *Work and well-being in the construction industry.* In Research Handbook on Work and Well-Being (pp. 189-215). Edward Elgar Publishing, UK.

Mazzetti, G., Robledo, E., Vignoli, M., Topa, G., Guglielmi, D., & Schaufeli, W. B. (2023). Work engagement: A meta-analysis using the job demands-resources model. *Psychological reports*, 126(3), 1069-1107.

Mollo, L. G., & Emuze, F. (2020). The Well-Being of People in Construction. *Encyclopaedia of the UN Sustainable Development Goals*, 1–10.

https://doi.org/10.1007/978-3-319-69627-0_123-1

National Bureau of Statistics. (2023). *Nigeria Labour Force Survey Annual Report 2023*. Abuja: NBS. Retrieved from https://nigerianstat.gov.ng. 17th April 2025.

Organization for Economic Co-operation and Development. (2022). *Wellbeing at Work.* OECD Publishing. Retrieved from https://www.oecd.org/els/soc/wellbeing-at-work.htm. retrieved on 3rd April 2025.

Schaufeli, W. B. (2017). Applying the Job Demands-Resources model: A 'how to' guide to measuring and tackling work engagement and burnout. *Organizational dynamics*, 46(2), 120-132.

Scholze, A., & Hecker, A. (2024). The job demands-resources model as a theoretical lens for the bright and dark side of digitization. *Computers in Human Behaviour*, 155(108177), 108177. https://doi.org/10.1016/j.chb.2024.108177

United Nations Environment Programme & Global Alliance for Buildings and Construction. (2025). *Global Status Report for Buildings and Construction 2024/2025*. Retrieved from (https://www.unep.org/resources/report/global-status-report-buildings-and-construction-20242025) 30th October 2025.

World Health Organization (WHO). (2021). *Healthy workplaces: A model for action.* Geneva: WHO. https://www.who.int. Retrieved 10th April 2025.

Xie, L., Luo, Z., & Xia, B. (2024). Influence of psychosocial safety climate on construction worker's' intent to stay, taking job satisfaction as the intermediary. *Engineering, Construction and Architectural Management*, *31*(3), 1298–1321. https://doi.org/10.1108/ECAM-12-2021-1082.

Yahaya H. L., Ayşe Y. G., & Saini, G. (2024). Occupational Health and Safety in the Construction Industry: A Comprehensive Review with Emphasis on Nigeria. *Turkish Journal of Engineering*, *8*(4), 695–711. https://doi.org/10.31127/tuje.1471660.

Zhang, Y., Deng, S., Chen, S., Yao, Z., Hou, Y., Huang, Q., & Liu, Z. (2024). The Effect of Construction Workers' Work Resilience on Their Leisure Sports Participation: The Mediating Role of Safety and Health Awareness. *Buildings*, 14(9), 2763.