

Factors Affecting Wellbeing and Mental Health of Engineering and Construction Professionals in Nigeria

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Abstract: Wellbeing and mental health is a fundamental component of occupational health and safety required for safe engineering and construction project delivery. Through a thorough literature review and questionnaire survey of 152 engineers and construction workers in the Nigerian Construction Industry (NCI), this study identified and explored the factors affecting wellbeing culture and mental health among engineering and construction professionals in Nigeria. Our findings reveal Decrease in job satisfaction and Reduction in Productivity respectively are the highest impacts of poor wellbeing culture and mental health of construction workers in Nigeria. Furthermore, Enforcement of regulations that prioritize mental health considerations in urban planning and development and Regular training and education programs should be implemented to raise awareness will help to improve wellbeing culture and mental health among construction workers in Nigeria. Hence, there is a need for regular awareness workshops and training, policies supporting work-life balance, and accessible counselling services to promote mental health and wellbeing in the Nigerian Construction Industry.

Keywords: Wellbeing Culture, Mental Health, Construction, Engineering, Nigeria.

I. INTRODUCTION

There is extensive literature on the concept of wellbeing, it has defied simple definition, because of its inherent complexity (McNaught, 2011). Contemporary discourse often initially refers to the WHO (1969: 100) definition that health is not the mere absence of diseases but a state of wellbeing. Whilst this definition links the concepts of health and wellbeing, it also has a tendency to underplay the significance and complexity of wellbeing as a concept. Health tended to be located within biomedical and positivist discourses. Wellbeing, on the other hand, was theoretically perceived as more appropriate to the domains of the emotional and psychological. As a result, wellbeing was often subsumed as one of many domains comprising the concept of health, as opposed to a phenomenon that might be analyzed separately, even if it was agreed that both were related. The idea that wellbeing lies in the objective and subjective arena influenced the argument around its measurement, for example, in the idea that it is effectively measured through finite economic and social indicators such as income, housing, and work (Diener et al., 2009). Others, veering more towards the subjective side, relied upon individual, emotional, and psychological interpretations of wellbeing (Felce and Perry, 1995).

Culture of wellness (wellbeing culture) is defined as a set of normative values, attitudes, and behaviours that promote self-care, personal and professional growth, and compassion for colleagues, and self (Bohman et al., 2017).

Nigeria has a rich cultural heritage, and its built environment reflects this diversity. The built environment includes traditional architecture, modern buildings, and informal settlements, which all contribute to Nigeria's unique cultural identity. However, rapid urbanization and globalization have led to changes in the built environment, which can affect the well-being culture of its citizens.

A study by Onibokun and Kumuyi (2005) explored the relationship between the built environment and well-being culture in Nigeria. They found that traditional architecture was associated with a stronger sense of community and social cohesion, which positively influenced well-being. In contrast, modern buildings were associated with individualism and a weaker sense of community.

Numerous studies emphasize the importance of well-being culture in promoting positive work environments. For example, Grant and Parker (2009) define well-being culture as "a pattern of beliefs, norms, and practices that promotes employee well-being as a primary organizational goal." This definition underscores the need for organizations to prioritize well-being as a core value.

Mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. Mental illness results from complex interactions between the mind, body and environment (WHO, 2004). The aim of this study is to investigate and understand the factors that influence the wellbeing culture and mental health among engineering and construction professionals in Nigeria.

II. LITERATURE REVIEW

1. Importance of Wellbeing Culture in the Construction Industry.

The construction industry is known for its physically demanding and high-stress nature, which can have adverse effects on the well-being and mental health of workers (Nwaogu et al. 2023). Therefore, establishing a well-being culture within the industry is essential for several reasons. Bakker et al. (2011) demonstrates a significant positive relationship between employee well-being and job performance. They argue that organizations that prioritize well-being experience higher levels of employee engagement, satisfaction, and productivity. A positive well-being culture fosters job satisfaction and engagement among construction workers. When employees feel supported, valued, and cared for, they are more likely to be motivated, productive, and committed to their work. Secondly, a study by Ashraf and Siddiqui (2020) highlights the impact of employee engagement like psychological capital, control at work, general wellbeing, and job satisfaction on employee retention. Organizations with a strong wellbeing culture experienced lower turnover rates and were more successful in retaining employees. Construction companies that prioritize well-being and promote a positive culture tend to attract and retain talented workers. In an industry facing a shortage of skilled labour, an emphasis on well-being can be a competitive advantage in attracting and retaining employees. Research conducted by Zohar and Luria (2010) demonstrates the link between organizational climate, safety culture, and accident prevention. They found that a positive organizational climate, characterized by a supportive and wellbeing-focused culture, was associated with improved safety practices and reduced accident rates. Wellbeing culture also extends to safety practices and accident prevention. When organizations prioritize worker wellbeing, they are more likely to invest in safety training, equipment, and protocols, leading to a safer work environment and reduced accidents (Ashraf and Siddiqui, 2020).

2. Understanding Factors that Influences Wellbeing Culture and Mental Health of Engineering and Construction Workers.

Several factors influence the development and maintenance of a well-being culture within the Nigerian built environment:

a) **Leadership and Management:** A study by Cheung et al. (2023) emphasizes the role of leadership in creating a wellbeing culture in the construction industry. They found that transformational leadership, characterized by supportive and empowering behaviours, positively influenced employee wellbeing. The role of leadership and management is crucial in shaping the well-being culture. Strong leadership that values and prioritizes worker well-being sets the tone for the entire organization, influencing policies, practices, and employee attitudes.

b) **Organizational Policies and Practices:** A study by Abdulmalik et al. (2016) highlights the importance of organizational policies in promoting wellbeing culture in the Nigerian construction industry. They found that organizations with comprehensive policies and practices related to employee wellbeing reported higher levels of job satisfaction and engagement. Wellbeing culture is reinforced through the implementation of policies and practices that support work-life balance, provide opportunities for personal and professional development, and ensure fair and equitable treatment of employees. Examples include flexible work arrangements, employee assistance programs, and recognition schemes.

c) **Communication and Employee Involvement:** Ashraf and Siddiqui (2020) emphasize the role of effective communication and employee involvement in promoting wellbeing culture in the construction industry. They found that organizations that fostered participative decision-making and encouraged employee input had higher levels of job satisfaction and wellbeing. Open and transparent communication channels facilitate employee involvement in decision-making processes and create a sense of belonging and trust. Employees who feel heard and involved in shaping their work environment are more likely to experience a positive wellbeing culture.

d) **Workload and Job Demands:** Research by Suprihartini and Suryathi (2023) highlights the negative impact of excessive workload on employee well-being in the Nigerian construction industry. They emphasize the importance of workload management and resource allocation in fostering a supportive and wellbeing-focused work environment. Excessive workload, long working hours, and high job demands can undermine wellbeing culture. Organizations need to carefully manage workloads, provide adequate resources, and address work-related stressors to promote a positive wellbeing culture.

e) **Supportive Supervision:** A study by Sommovigo et al. (2021) explores the impact of supervisory support on the wellbeing of construction workers.

They found that workers who perceived higher levels of supervisory support reported better mental health and overall wellbeing. The quality of supervision and the support provided by supervisors play a vital role in nurturing a wellbeing culture. Supervisors who demonstrate empathy, provide constructive feedback, and offer support to workers create an environment conducive to wellbeing.

f) Social Support Networks: Research by Umeokafor and Okoro (2020) emphasizes the role of social support in promoting wellbeing culture among construction workers in Nigeria. They found that workers who had access to social support networks reported higher levels of job satisfaction and overall wellbeing. Strong social support networks, both within the organization and outside, contribute to a positive wellbeing culture. Encouraging teamwork, fostering positive relationships among colleagues, and providing access to external support services can enhance worker wellbeing.

Previously, workplace health and safety within the construction industry had focused on physical safety. Over time, however, mental ill-health has become a crisis within the construction industry, and there is a need to look into employees' mental health because there is no health and safety without mental health, since it is the crucial aspect of overall human wellbeing (Nwaogu et al. 2023). It encompasses psychological, emotional and social wellbeing. Mental ill-health is a health crisis that requires construction workplace to be psychologically safe to avoid increasing rate of depression, anxiety suicidal ideation was ranked top in Nigerian construction industry (Nwaogu et al. 2023). The study also identified the nature of work, little relationship with colleagues, job insecurity, occupational injury, low income, and unsatisfactory living conditions as factors influencing mental ill-health.

III. METHODOLOGY

The methodology employed to achieve the objectives of this study, which aims to identify the factors influencing, and ways to improve the wellbeing and mental health in Nigeria's built environment. The methodology presents a systematic approach for collecting and analyzing data to generate valuable insights into the subject matter.

This study adopted a quantitative research approach which focuses solely on quantitative data collection and analysis, providing a structured and numerical understanding of the research topic. The study aimed to understand the factors that influence the wellbeing culture and mental health of construction workers in Nigeria.

The survey questions were carefully constructed following an extensive literature review and approved by a supervising researcher. The questionnaire comprises of five sections:

- Section A: This section of the questionnaire investigates the background information of the respondent by enquiring about the gender, age, years of experience, qualification and role of the respondent.
- Section B: This section focuses on understanding and perception of the built environment, well-being culture and mental health in Nigeria.
- Section E: This section of the questionnaire investigates the factors influencing wellbeing culture and mental health in Nigeria's construction workers.

The questions in the questionnaire were designed to be fixed, short, precise and easy to comprehend with each section having over 14 multiple-choice questions. Respondents utilized a 5-point LIKERT scale to rate variables, offering a numerical representation of their perspectives. The LIKERT scale had 1 denoting Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, 5 - Strongly Agree thus enabling the researcher to measure their perception about the significance of the issues under consideration. The questionnaire was administered electronically through the use of Google Forms which is a free electronic medium offered by Google, that has the ability to voluntarily collect information through the designed questionnaire with 152 respondents.

The study adopted a purposive sampling strategy, strategically selecting diverse construction professionals from various disciplines within the Nigerian construction industry. Architects, Engineers, Builders, Project Managers, Contractors, Consultants, Health, Safety and Environmental Officers, Drivers, Machine Operators, Craftsmen, were thoughtfully included to ensure a comprehensive cross-section of insights.

The data derived from the survey was analyzed using descriptive statistics, a foundational method in quantitative research. Descriptive statistics allowed for the succinct presentation and summarization of the collected data. This encompassed various measures, such as frequency, percentage, mean, and ranking. Frequency and percentage distributions revealed the prevalence of certain responses, while means and rankings provided insight into the relative importance of variables.

IV. RESULTS AND DISCUSSIONS

Relevant demographic data such as Gender, Age, Years of Experience, Academic Qualification and Professional Field of Work. The questionnaire addressed four sections which include:

- Understanding and Perception of the Built Environment, Wellbeing Culture and Mental Health in Nigeria.
- Factors Influencing Wellbeing Culture and Mental Health in Nigeria's Construction Workers.

The responses were computed based on the LIKERT Scale for quantitative analysis. (NB 1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA))

4.1.1 Distribution of respondents according to gender

Gender

152 responses

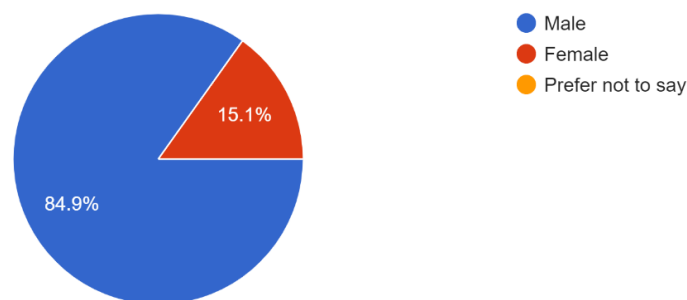


Fig. 1 Distribution of respondents according to gender

The table above shows that 84.9% of the respondents were male while 15.1% of the respondents were female. Although the number of respondents is limited, this indicates that the engineering sector is dominated by men. Which implies that most construction professionals in Nigeria are mostly male. Although it can be seen from Figure 4.1.6 that these might be significantly influenced by 55% respondents who are engineers. Onyia et al. (2023) highlights the male dominance in the Nigerian engineering sector.

4.1.2: Distribution of respondents according to age

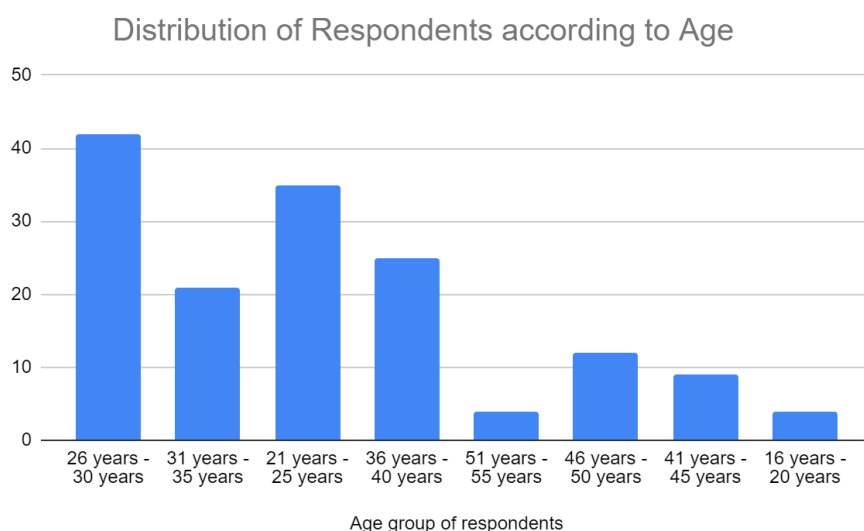


Fig. 2 Distribution of respondents according to age

According to the table, the respondents were divided into nine (9) age groups. 27.6% of the respondents were between 26 - 30 years which is the mode age group, 23.2% were 21 – 25 years, 13.8% were 31 - 35 years, and 16.4% were between 36 - 40 years. Fewer participants in this survey were from age groups 16 - 20 years, 41 - 45 years, 46 – 50 and 51 – 55 years having 2.6%, 5.9%, 7.9% and 2.6% of the respondents respectively. The survey had no participants above 55 years. This survey had 83.6% of its respondents between 16 - 40 years which indicates a strong participation of the young population of professionals.

4.1.3: Distribution of respondents according to years of working experience

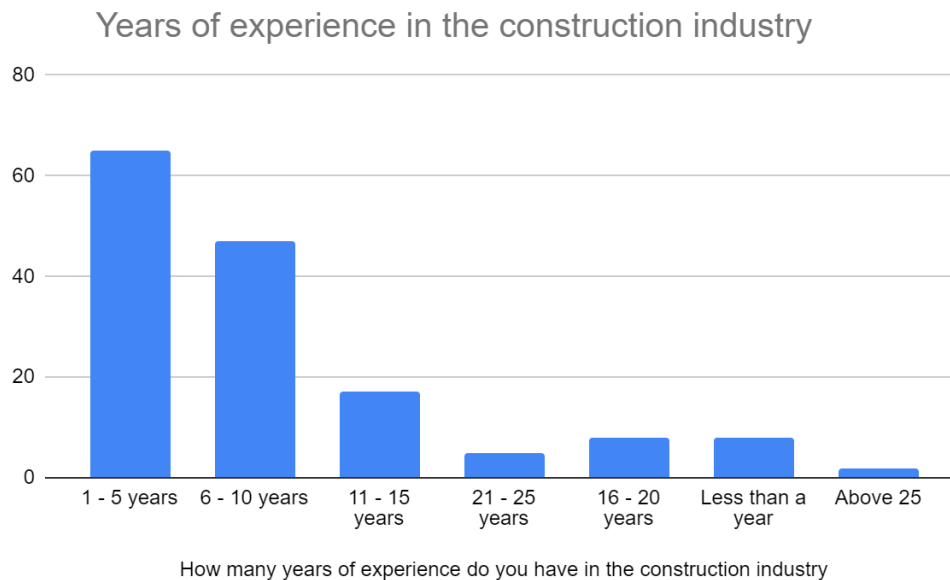


Fig. 2 Distribution of respondents according to years of working experience

From figure 2, 42.8% of respondents have a working experience of 1 - 5 years, 30.9% have a working experience of 6 - 10 years, 5.3% have working experience of 16 - 20 year, 11.2% have working experience between 11 - 15 years, 3.3% have working experience between 21 - 25 years. There were only 2 respondents with working experience above 25 years.

4.1.4: Distribution of respondents according to educational qualification

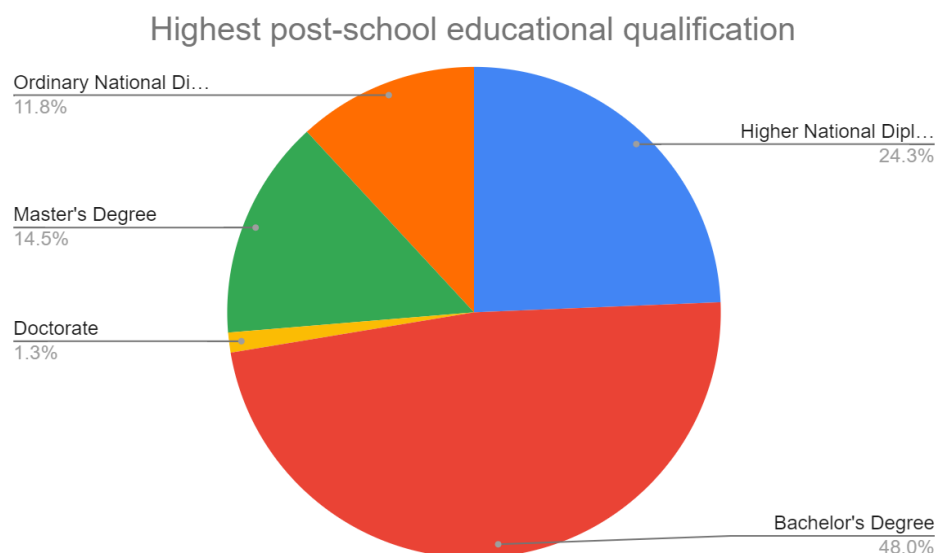


Fig. 3 Distribution of respondents according to educational qualification

From figure 3, 66.3% of the respondents have a bachelor's degree as their highest level of education, 12.3% possess a Master's degree, 5.5% of the respondents have an Ordinary National Diploma (OND), and 15.3% have a Higher National Diploma (HND) while 0.6% of the respondents have a doctorate degree.

4.1.5: Distribution of respondents according to number of employees in company

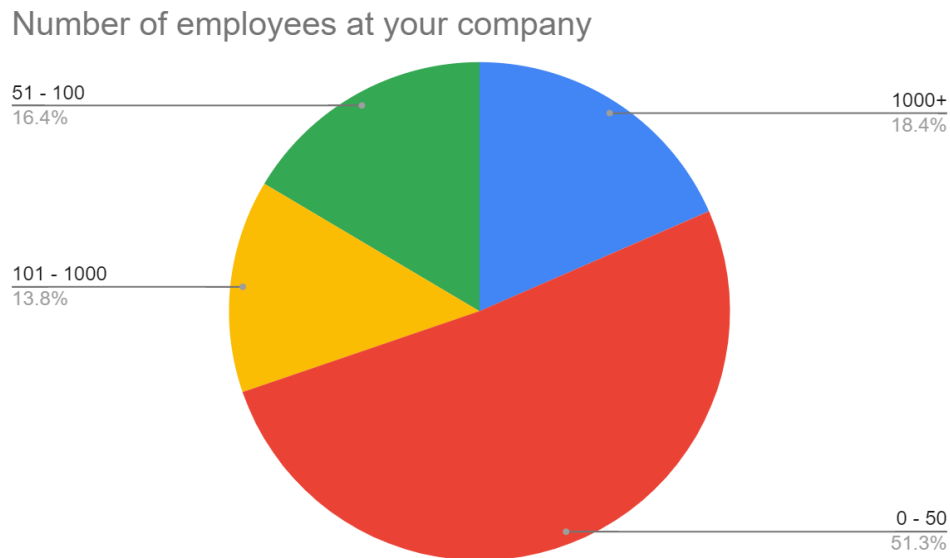


Fig. 4 Distribution of respondents according to number of employees in company

From the figure 4, 51.3% of the respondents work in organizations with 0 - 50 employees, 16.4% work in organizations with 51 - 100 employees, 13.8% work in organizations with 101 - 1000 employees, 18.4% work in organizations with over 1000 employees.

4.1.6: Distribution of respondents according to profession

Figure 4.1.6: Distribution of respondents according to profession

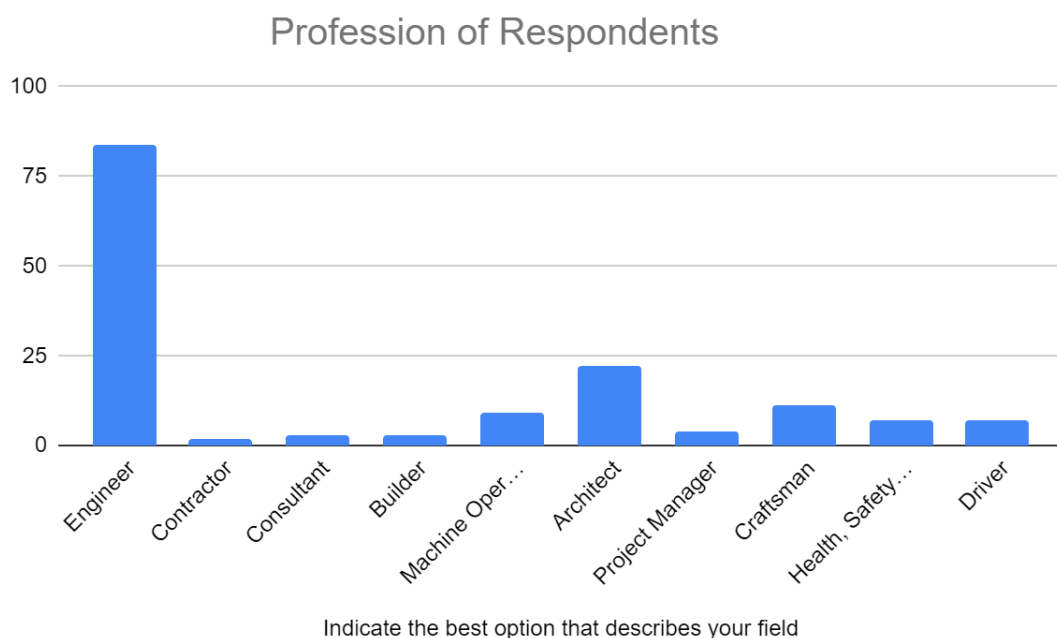


Fig. 5 Distribution of respondents according to number of employees in company

From figure 5, ten different professions in the construction industry were sampled, namely: Engineers, Consultants, Contractors, Builders, Machine Operators, Architects, Project Managers, Craftsmen, Health, Safety and Management Officers, and Drivers. 55.3% of the respondents are Engineers, 1.3% are contractors, 2% are Consultants and Builders respectively, Machine operators are 5.9%, 14.5% are architects, 2.6% are Project Managers, 7.2% are made up of Craftsmen, 4.6% of the respondents are made up Health, Safety and Management Officers and Drivers Respectively. This shows a good representation of different professionals in the construction industry who are directly affected by their wellbeing culture and mental health in Nigeria.

In order to determine the weight of the responses generated from the survey, a multi-attribute analytical method was used which involves the computation of the Mean Rating Value (MR) as well as the Relative Importance Index (RII) of each response. The MR was used to get the value of each attribute while the RII was used to rank the attributes depending on their value. The equations used for both MR and RII can be seen below;

Mean Rating (MR)

$$MR = \sum_{i=1}^n RP_i \times R_i\%$$

Where:

RP_i = Rating Point i (ranging from 1 - 5)

$R_i\%$ = Percentage response to rating point i

Relative Importance Index (RII)

$$RII = \frac{MR}{\sum MR}$$

Where:

MR = Mean Rating Value

$\sum MR$ = Sum of all Mean Rating Values

To enable the mapping of prioritization of attributes into a continuum, the 5-point Likert scale was transformed into the following band:

TABLE I RESCALED FIVE-BAND RATING

Point	Rating Scale	Minimum	Maximum
5	Very High	4.2	5
4	High	3.3999	4.1999
3	Moderate	2.5998	3.3998
2	Low	1.7997	2.5997
1	Very Low	0.9996	1.7996

[1]. 4.2.1: Understanding of the Wellbeing Culture and Mental Health in Nigeria.

The Likert five-point scale was employed to explore the respondent's opinions in relation to the questions posed in the study, where "(1)SD" represents strongly Disagree, "(2)D" represents Disagree, "(3)N" represents Neutral, "(4)A" represents Agree and "(5)SA" represents Strongly Agree. (6) T = Total, (7)WS = Weighted Sum, (8)MR = Mean Rating, (9)R= Rank

TABLE 2II UNDERSTANDING OF THE WELLBEING CULTURE AND MENTAL HEALTH IN NIGERIA.

S/N		SD(1)	D(2)	N(3)	A(4)	SA(5)	T(6)	WS(7)	MR(8)	Remark	RII	R(8)
UP-1	The NCI has a significant impact on the well-being of construction workers in Nigeria.	3	10	6	50	83	152	656	4.32	Very High	0.86316	1
UP-2	The design of construction sites in Nigeria adequately considers the physical	86	53	8	3	2	152	238	1.57	Very Low	0.31316	12

	and mental well-being of workers.											
UP-3	There is a positive correlation between a well-designed built environment and the mental health of construction workers in Nigeria	3	0 ²	61	37	31	152	529	3.48	High	0.69605	4
UP-4	The construction industry in Nigeria places enough emphasis on promoting mental health awareness and support for workers.	71	3 ⁷	2	4	2	152	249	1.64	Very Low	0.32763	10
UP-5	Adequate measures are in place in Nigeria to prevent or reduce occupational hazards that can negatively impact the mental well-being of construction workers	69	5 ⁷	2	4	2	152	251	1.65	Very Low	0.33026	9
UP-6	The work culture in the Nigerian construction industry prioritizes the mental health and overall well-being of workers	73	2 ⁷	2	2	3	152	246	1.62	Very Low	0.32368	11
UP-7	There is sufficient research and literature available on the relationship between the built environment, well-being culture, and mental health of construction workers in Nigeria.	22	5 ²	41	61	3	152	454	2.99	Moderate	0.59737	5
UP-8	Nigerian construction companies provide adequate training and resources to promote the mental health of their workers	65	7 ⁷	5	3	2	152	256	1.68	Very Low	0.33684	7
UP-9	The Nigerian government has effective policies and regulations in place to address the mental health concerns of construction workers	70	8 ⁵	10	1	13	152	285	1.88	Low	0.37500	6
UP-10	There is a stigma associated with mental health issues in the Nigerian	25	4	3	67	53	152	575	3.78	High	0.75658	2

	construction industry, which prevents workers from seeking help											
UP-11	Nigerian construction workers have access to adequate mental health support services, such as counseling or therapy	103	45	2	2	0	152	207	1.36	Very Low	0.27237	15
UP-12	The physical working conditions in the Nigerian construction industry have a direct impact on the mental well-being of workers	4	4	79	23	42	152	551	3.63	High	0.72500	3
UP-13	Construction workers in Nigeria are provided with opportunities for personal development and career growth, which positively impact their mental health	99	21	35	4	2	152	254	1.67	Very Low	0.33421	8
UP-14	There is sufficient collaboration between employers, workers, and relevant stakeholders in Nigeria to address mental health challenges in the construction industry	97	74	4	4	0	152	219	1.44	Very Low	0.28816	13
UP-15	Nigerian construction workers receive adequate support and resources to manage work-related stress and psychological pressures	99	74	3	2	1	152	215	1.41	Very Low	0.28289	14

From the results in the table above, in regard to the question: “What is your understanding and perception of Nigerian built environment, wellbeing and mental health” Of the 15 variables, 133 out of 152 (87.5%) respondents agreed or strongly agreed that the built environment has a significant impact on the well-being of construction workers in Nigeria with a Mean Rating Value (MR) and Relative Importance Index (RII) of 4.32 and 0.86316 respectively. 120 out of 152 (78.9%) respondents also agreed or strongly agreed that There is a stigma associated with mental health issues in the Nigerian construction industry, which prevents workers from seeking help with MR of 3.78 and RII of 0.75658 ranking it second. Physical working conditions in the Nigerian construction industry having a direct impact on the mental well-being of workers was ranked third with a MR and RII of 3.63 and 0.72500 respectively. Positive correlation between a well-designed built environment and the mental health of construction workers in Nigeria ranked fourth with a mean rating value of 3.48. Other skills and competencies were ranked from 5th to 15th with RII value falling between 0.59737 and 0.27237.

Over all the skills were either categorized as Very High, High, Moderate, Low, or Very Low using the rescaled five-band rating. Ten out of the variables were ranked very low indicating low level of understanding and perception and disregard of wellbeing culture and mental health in the Nigerian construction industry. Using relative importance index method to rank the perception and understanding of the built environment, well-being culture and mental health in Nigeria. The

questionnaire results suggest that there is little or no access to proper awareness or training on how to manage the factors that influence this. The importance of wellbeing culture and mental health among construction workers in Nigeria are noteworthy.

Table 3 list the Factors Influencing Wellbeing Culture and Mental Health Among Nigerian Construction Workers. The Likert five-point scale was employed to explore the respondent's opinions in relation to the questions posed in the study, where "(1)SD" represents strongly Disagree, "(2)D" represents Disagree, "(3)N" represents Neutral, "(4)A" represents Agree and "(5)SA" represents Strongly Agree. (6) T = Total, (7)WS = Weighted Sum, (8)MR = Mean Rating, (9)R= Rank.

TABLE 3 FACTORS INFLUENCING WELLBEING CULTURE AND MENTAL HEALTH AMONG NIGERIAN CONSTRUCTION WORKERS

S/N		SD (1)	D (2)	N (3)	A (4)	S (5)	T (6)	WS (7)	MR (8)	Remark	RII	R (9)
FA-1	Lack of Awareness and Knowledge	1	0	2	85	64	152	667	4.39	Very High	0.87763	5
FA-2	Availability of recreational facilities	1	1	3	66	81	152	681	4.48	Very High	0.89605	2
FA-3	Conducive work environment	0	2	1	61	88	152	691	4.55	Very High	0.90921	1
FA-4	Policies and Regulations	0	2	2	127	21	152	623	4.10	High	0.81974	11
FA-5	Adequate rest periods and breaks	1	1	1	120	29	152	631	4.15	High	0.83026	9
FA-6	Availability and Use of Personal Protective Equipment (PPE)	1	12	4	41	94	152	671	4.41	Very High	0.88289	4
FA-7	Safety inspections and audits	0	19	8	41	84	152	646	4.25	Very High	0.85000	8
FA-8	Confidential Therapy and Support Channels	0	2	3	73	74	152	675	4.44	Very High	0.88816	3
FA-9	Stigma-free Treatment Facilities	0	2	4	128	18	152	618	4.07	High	0.81316	12
FA-10	Priority on Productivity and Profit by Employers	0	2	14	59	77	152	667	4.39	Very High	0.87763	5
FA-11	Workload Distribution	0	1	21	100	30	152	615	4.05	High	0.80921	13
FA-12	Supportive supervision at the workplace.	0	3	1	120	28	152	629	4.14	High	0.82763	10

FA-13	Commute and transportation challenges.	0	2	14	79	57	152	647	4.26	Very High	0.85132	7
FA-14	Supportive Community Environment	0	1	77	62	12	152	541	3.56	High	0.71184	14
FA-15	Proper hygiene practices	2	67	43	25	15	152	440	2.89	Moderate	0.57895	15

From the results in the table above, in regard to the question: “To what extent do you agree that these various factors influence the well-being culture and mental health among construction workers in Nigeria?” Of the 15 factors, 149 out of 152 (98.0%) respondents agreed or strongly agreed that Conducive work environment is an important factor that affects the well-being culture and mental health of construction workers in Nigeria with a Mean Rating Value (MR) and Relative Importance Index (RII) of 4.55 and 0.90921 respectively. 147 out of 152 (96.7%) respondents also agreed or strongly agreed that availability of recreational facilities also highly influence the wellbeing and mental health of construction workers in Nigeria with MR of 4.48 and RII of 0.89605 ranking it second. Confidential Therapy and Support Channels was ranked third with a MR and RII of 4.44 and 0.88816 respectively. Availability and Use of Personal Protective Equipment (PPE), Lack of Awareness and Knowledge, Priority on Productivity and Profit by Employers, Commute and transportation challenges, Safety inspections and audits, also had Very High rating.

The factor least perceived by the respondents to influence the well-being culture and mental health of construction workers in Nigeria was Proper hygiene practices. It has an RII of 0.57895. This shows that respondents believe that hygiene does not in any way affect mental health and wellbeing. Other factors were ranked from 4th to 14th with RII value falling between 0.88289 and 0.71184. It is important to note that lack of awareness and knowledge, conducive work environment, and non-availability and use of PPE are the leading influences on the wellbeing culture and mental health.

V. CONCLUSION

After a detailed data analysis of data gathered from the survey among various professionals in Nigeria; the study objectives were achieved. The following points are the conclusion gathered:

Need for Awareness and Training: The investigation into the understanding, perception and factors influencing the wellbeing culture and mental health among construction workers in Nigeria, reveals the need for adequate awareness and regular training on the topic in the industry. It is recommended that industry stakeholders organize regular training and workshops. These workshops should be designed to create adequate awareness on the importance of well-being culture and mental health. By equipping professionals aware of this, the industry can position itself for greater efficiency and increase in job satisfaction.

Availability and Use of Personal Protective Equipment (PPE): The survey highlights the necessity of embedding safety through the availability and use of PPE. Governments and organizations should reinforce safety protocols and practices in its laboratories and engineering projects, ensuring that their workers prioritize safety. It is recommended that industry stakeholders enforce the use of PPE in laboratories and sites. This crucial move will reduce occupational hazards to a great extent and improve the job output. The laboratories should have access to natural light and ventilation.

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