

Employee engagement as a catalyst for upskilling blue-collar construction workers towards a sustainable built environment in Nigeria

Journal of
Engineering,
Design and
Technology

Received 3 July 2026
Revised 12 August 2026
Accepted 13 September 2026

Isaiah Igbinoba Omoregie 

*Department of Construction Management and Quantity Surveying,
University of Johannesburg, Johannesburg, South Africa, and Department of
Building, Faculty of Environmental Studies, Ambrose Alli University,
Ekpoma, Nigeria*

Clinton Ohis Aigbavboa 

*Department of Construction Management and Quantity Surveying,
University of Johannesburg, Johannesburg, South Africa, and*

Godwin Ehis Oseghale

*Department of Building, Faculty of Environmental Design and Management,
Obafemi Awolowo University, Ife, Nigeria*

Abstract

Purpose – The Nigerian construction industry continues to experience a shortage of skilled labour despite the growing demand for a sustainable built environment. Rapid technological advancements and sustainability requirements have increased the need for continuous workforce upskilling. While previous studies have focused on technical training, limited attention has been given to employee engagement as a catalyst for enhancing workforce competencies. This study aims to explore employee engagement as a catalyst for upskilling blue-collar construction workers towards a sustainable built environment in Nigeria.

Design/methodology/approach – A qualitative phenomenological approach was adopted. Data were collected through semi-structured interviews with construction managers, engineers, builders, architects, skills educators and skilled blue-collar workers in Lagos State, Nigeria. Using purposive sampling, 25 participants with relevant industry experience were selected. The data were analysed using manual thematic analysis.

Findings – The findings revealed that employee engagement motivates participation in upskilling programmes, improves productivity, strengthens organisational commitment and enhances adaptability to modern construction technologies and sustainable practices. Major barriers included poor working conditions, inadequate funding for workforce development, weak organisational support, poor communication systems, limited access to vocational training and unstable employment. Continuous vocational training, improved

© Isaiah Igbinoba Omoregie, Clinton Ohis Aigbavboa and Godwin Ehis Oseghale. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licences/by/4.0/>

Disclosure statement: The authors declare no competing financial or non-financial interests that could have influenced the work reported in this study. No potential conflict of interest was reported by the authors.



Journal of Engineering, Design
and Technology
Emerald Publishing Limited
1726-0531
DOI 10.1108/JEDT-07-2026-0490

welfare packages, participatory decision-making, recognition and reward mechanisms and stronger collaboration between construction firms and vocational institutions were identified as key strategies for improvement.

Originality/value – This research contributes to the existing body of knowledge by providing practical insights for construction organisations, policymakers and vocational training institutions seeking to strengthen blue-collar workers' capacity and promote sustainable development in the built environment in developing economies.

Keywords Blue-collar workers, Employee engagement, Sustainable built environment, Upskilling, Workforce development, Construction management, Project management, Sustainable construction, Construction project management

Paper type Research paper

1. Introduction

The construction industry contributes substantially to economic growth, infrastructure development, employment and urban transformation in developing nations. In Nigeria, it provides housing, transport, commercial and industrial infrastructure essential to national development (Omoriege *et al.*, 2026). However, the industry continues to face productivity, project-delivery and workforce challenges, including a persistent shortage of skilled labour, particularly among blue-collar workers responsible for construction execution. Inadequate workforce competence constrains construction productivity and sustainable development in Nigeria (Tope, 2024; Windapo, 2026).

Saari *et al.* (2021) described blue-collar workers as employees engaged mainly in manual, technical and craft-based operations requiring practical competence and physical labour. In construction, they include masons, carpenters, electricians, welders, plumbers, steel fixers, painters, machine operators and tilers. Their technical performance influences workmanship, productivity, safety and project outcomes (Kenku, 2025; Oke *et al.*, 2023).

Nigeria continues to experience shortages of skilled blue-collar workers because of weak vocational training systems, limited technical education, inadequate workforce-development policies and declining interest in craft occupations. Many workers rely on informal apprenticeship with limited exposure to modern technologies, sustainable methods and digital construction practices (Idowu *et al.*, 2024; Ebekozi *et al.*, 2026).

Growing emphasis on sustainable built environments has intensified the need for a competent and continuously developing construction workforce. Sustainable development encompasses environmental protection, economic efficiency and social well-being, while also requiring workforce competence, occupational well-being, organisational learning and human-capital development (Hill *et al.*, 2023; Opoku, 2019; Agyekum *et al.*, 2025). Sustainable construction therefore requires workers capable of applying modern and sustainability-oriented practices.

In response to changing construction demands and technological advancement, upskilling has emerged as an important strategy for workforce improvement and organisational competitiveness. The International Labour Organisation (ILO, 2021) conceptualises upskilling as a continuous process of developing workers' existing knowledge, competencies and technical capabilities to enhance employability, adaptability, productivity and innovation in changing work environments. Within the context of this study, upskilling refers specifically to the continuous development of blue-collar construction workers' existing competencies to enable them to respond effectively to technological changes, modern construction methods and sustainability requirements (ILO, 2021). Similarly, Li *et al.* (2025) argued that industries experiencing technological transformation require continuous workforce upgrading to prevent skills obsolescence and declining productivity. Within the

construction sector, upskilling involves exposing workers to modern construction methods, digital technologies, occupational safety procedures, green building practices and specialised vocational training necessary for sustainable project delivery.

Although technical training and workforce development remain important for improving construction productivity, a study by [Surikova \(2024\)](#) increasingly emphasised that effective workforce upskilling depends significantly on employee engagement and organisational support systems. In the context of this study, employee engagement specifically concerns blue-collar construction workers who are already engaged in employment or work arrangements within construction organisations and project environments. It does not refer to prospective workers who are yet to enter the construction workforce. Accordingly, the study focuses on how organisational practices, workplace experiences and employer–worker relationships influence currently engaged workers’ motivation and willingness to participate in upskilling and continuous workforce development. [Turner \(2020\)](#), and [Ameen and Baharom \(2019\)](#) described employee engagement as the physical, emotional and psychological involvement employees demonstrate during work performance. [Saks \(2019\)](#), and [Aujla and McLaren \(2020\)](#) further argued that engaged employees often display stronger commitment, motivation, participation and willingness to contribute towards organisational growth and continuous improvement initiatives.

Within the construction industry, employee engagement may influence workers’ readiness to participate in vocational training programmes, adopt innovative construction methods and improve their technical competencies. Studies have maintained that engaged employees are generally more willing to embrace organisational learning opportunities and workforce development initiatives than disengaged employees ([Nikolova et al., 2019](#); [Helalat et al., 2025](#)). However, poor working conditions, weak communication systems, inadequate organisational support and unstable employment continue to affect employee engagement in many construction organisations in Nigeria. These challenges may discourage workers from participating actively in upskilling programmes and sustainable workforce development initiatives. In this study, the relationship between employee engagement and workforce stability is considered primarily at the organisational level. Engaged blue-collar workers are more likely to demonstrate stronger organisational commitment and participate in continuous learning and development initiatives, thereby supporting workforce retention and competency development within construction organisations. Although such organisational efforts may help strengthen the industry’s skilled workforce, this study does not directly examine employee turnover or labour mobility. Rather, it investigates employee engagement as a mechanism to encourage currently employed blue-collar workers to participate in upskilling and acquire the competencies required for contemporary, sustainable construction practices.

Existing construction management research has established important knowledge concerning labour productivity, workforce shortages, occupational safety, sustainable construction, technical training and vocational education. For example, [Afolabi \(2023\)](#) examined labour productivity challenges in the Nigerian construction industry, while [Ofori \(2026\)](#) explored sustainable construction development in developing economies. Similarly, [Ebekozen et al. \(2024\)](#) and [Aduloju et al. \(2026\)](#) investigated technical training and vocational education within the built environment. Although these studies emphasise workforce competence and skills development, they focus predominantly on training provision and technical capability, with comparatively little attention to the organisational and behavioural conditions that influence workers’ willingness to participate in continuous upskilling. In particular, the role of employee engagement as a mechanism linking

organisational support, worker motivation and participation in skills development remains insufficiently understood within the Nigerian construction context.

This study addresses this gap by providing qualitative, multi-stakeholder evidence on the relationship between employee engagement and the upskilling of blue-collar workers. It contributes to construction management knowledge by demonstrating that effective upskilling depends not only on training opportunities but also on supportive organisational conditions such as employee engagement. Contextually, the study provides evidence from Nigeria, where informal skills acquisition, unstable employment arrangements and persistent skilled labour shortages continue to challenge workforce development, thereby strengthening the discourse on sustainable built environment development in developing economies.

2. Literature review

2.1 *Concept of employee engagement*

Employee engagement is important in organisational management because it influences productivity, commitment, motivation and performance. [Kahn and Heaphy \(2013\)](#) defined engagement as the harnessing of employees' physical, cognitive and emotional energies towards work, while [Aujla and McLaren \(2020\)](#) and [Turner \(2020\)](#) associated it with personal investment, dedication and absorption. Engagement is also viewed as a mechanism supporting efficiency, innovation, retention and continuous learning ([Ameen and Baharom, 2019](#); [Saks, 2019](#); [Helalat et al., 2025](#)).

Within construction, employee engagement supports productivity, teamwork, safety compliance and professional development. However, poor working conditions, unstable employment, limited organisational support and inadequate career development constrain engagement in Nigeria ([Afolabi, 2023](#); [Uusitalo et al., 2024](#); [Tope, 2024](#)).

2.2 *Blue-collar workers in the construction industry*

Blue-collar workers remain essential contributors to construction production activities because they directly execute manual and technical operations associated with project delivery. These workers include carpenters, masons, plumbers, electricians, welders, steel fixers, painters, scaffolders, machine operators, and other blue-collar workers involved in practical construction activities. According to [Saari et al. \(2021\)](#) and [Kenku \(2025\)](#), blue-collar workers form the operational backbone of the construction industry because project quality and productivity depend significantly on their technical competence and workmanship. Similarly, [Windapo \(2026\)](#) maintained that blue-collar workers influence construction efficiency, project quality, occupational safety and overall project success within the built environment sector.

Many Nigerian blue-collar workers continue to operate with inadequate technical knowledge, outdated methods and limited exposure to modern sustainable technologies. Increasing project complexity and sustainability requirements therefore strengthen the need for continuous workforce development ([Opoku, 2019](#); [Idowu et al., 2024](#); [Ebekozen et al., 2026](#)).

2.3 *Workforce upskilling in the construction industry*

Workforce upskilling is increasingly important as construction organisations respond to technological advancement, digital transformation and sustainability requirements. It involves continuous development of existing competencies through modern construction methods, digital technologies, occupational safety, green building practices and equipment handling ([ILO, 2021](#)). For blue-collar workers, technological and sustainability changes

increasingly demand competencies beyond conventional craft practices. Limited exposure to modern technologies and structured workforce development creates risks of skills obsolescence, making continuous upskilling central to workforce adaptability (Idowu *et al.*, 2024; Ebekozen *et al.*, 2026; Li *et al.*, 2025; Helalat *et al.*, 2025).

Existing literature predominantly emphasises technical training, vocational education and skills acquisition, with less attention to organisational and behavioural conditions affecting workers' willingness to participate. Training availability may not produce effective upskilling where workers experience poor conditions, weak organisational support, poor communication or limited workplace participation. Thus, engagement may influence whether workers actively use available development opportunities.

2.4 *Role of employee engagement in workforce upskilling*

Employee engagement promotes workforce learning, motivation and professional development. Employees who feel valued and supported are generally more willing to participate in training and continuous learning, strengthening technical capabilities (Sakthimala and Deepalakshmi, 2023). Saks (2019) and Nikolova *et al.* (2019) similarly associated engagement with commitment and participation in organisational development. In construction, engagement can encourage participation in technical training, sustainability education, digital methods and vocational development.

Employee engagement also enhances workforce productivity, adaptability and readiness for organisational change. Sakthimala (2026) reported that engaged employees display higher efficiency, innovation and commitment, whereas Anitha (2014) linked engagement to improved productivity, work quality and organisational loyalty. As construction increasingly adopts building information modelling, automation and green building practices, Albrecht *et al.* (2023) and Salvadorinho and Teixeira (2023) emphasised that engaged employees are more willing to embrace technological innovation and organisational transformation. Likewise, Opoku (2019) highlighted that workforce engagement and continuous learning are fundamental to achieving sustainable construction objectives. Consequently, organisations that invest in employee well-being, communication and participation are better positioned to strengthen workforce competence, organisational commitment and a continuous learning culture that supports sustainable workforce development.

2.5 *Barriers militating against effective employee engagement*

Several barriers constrain employee engagement in the Nigerian construction industry. Poor working conditions, including irregular salaries, inadequate healthcare, unsafe workplaces and unstable employment, can reduce morale, organisational trust and participation in workforce development (Ornek *et al.*, 2022; Mabindisa and Legoabe, 2021; Tope, 2024). Inadequate funding also restricts investment in structured training and competency development (Bristol-Alagbariya *et al.*, 2024; Kelechi, 2026).

Weak organisational support limits learning opportunities and career development, while poor communication and limited employee involvement weaken belonging and commitment (Sakthimala, 2026; Olanrewaju *et al.*, 2025; Anitha, 2014). Limited access to vocational and modern technical education further constrains upskilling because many workers rely on informal apprenticeship with inadequate exposure to contemporary technologies (Oke *et al.*, 2023; Glover *et al.*, 2024; Ebekozen *et al.*, 2026).

2.6 *Strategies for improving employee engagement towards workforce upskilling*

Several strategies can strengthen employee engagement and workforce upskilling. Continuous vocational and technical training can improve competence, adaptability and

confidence (Ebekozen *et al.*, 2026; Idowu *et al.*, 2024), while sustained investment in learning supports performance and innovation (Helalat *et al.*, 2025). Improved welfare, including fair remuneration, healthcare and safe working environments, can strengthen morale and organisational commitment (Anitha, 2014; Ebekozen *et al.*, 2024; Nikolova *et al.*, 2019).

Participatory decision-making and recognition systems can strengthen trust, inclusion and commitment. Workers may respond positively when their contributions and development are acknowledged through promotion, certification support, incentives and other rewards (Aujla and Mclarney, 2020; Anitha, 2014; Sakthimala, 2026; Saks, 2019). Effective communication also supports organisational trust and workforce inclusion (Olanrewaju *et al.*, 2025).

Furthermore, collaboration among construction organisations, vocational institutions, government agencies and professional bodies is essential for expanding access to modern construction knowledge, sustainability education and technical development opportunities. As Ofori (2026) argued, coordinated investment in workforce training and continuous professional education is fundamental to developing a competent and sustainability-oriented construction workforce.

2.7 Theoretical framing

This study was anchored in social exchange theory and human capital theory because they are relevant to explaining employee engagement and workforce upskilling in construction environments.

2.7.1 Social exchange theory. Social Exchange Theory, developed by Blau (1964), explains social relationships as reciprocal exchanges between individuals and organisations. Employees are more likely to demonstrate commitment and supportive behaviours when organisations provide recognition, welfare, communication and development opportunities. The theory is relevant because perceived organisational support may encourage blue-collar workers to participate in upskilling, whereas weak support may reduce commitment to workforce development (Yamao, 2024; Mabindisa and Legoabe, 2021; Tope, 2024; Nikolova *et al.*, 2019; Helalat *et al.*, 2025).

2.7.2 Human capital theory. Human capital theory, developed by Becker in 1964, emphasises that investment in education, training, skills acquisition and workforce development enhances employees' productivity, competence and economic value (Dobbs *et al.*, 2008). The theory posits that organisations achieve improved performance and competitiveness through sustained investment in human resources. It is particularly relevant to this study because workforce upskilling in the construction industry depends on continuous investment in employee development and technical training. Ofori (2026) argued that sustainable built environment development requires a competent workforce capable of adapting to technological innovation and changing project demands. Accordingly, organisations that invest in employee engagement, vocational training and professional development are more likely to strengthen workforce competence, productivity and sustainable construction outcomes (Idowu *et al.*, 2024; Ebekozen *et al.*, 2026).

2.7.3 Integration of the theoretical perspectives and conceptual framework. The integration of social exchange theory and human capital theory, therefore, provides a comprehensive theoretical foundation for understanding how employee engagement influences workforce upskilling and the development of sustainable built environments within the Nigerian construction industry.

Figure 1 presents the conceptual framework developed through the integration of social exchange theory and human capital theory. Social exchange theory explains how organisational support such as recognition, communication, welfare and participation foster

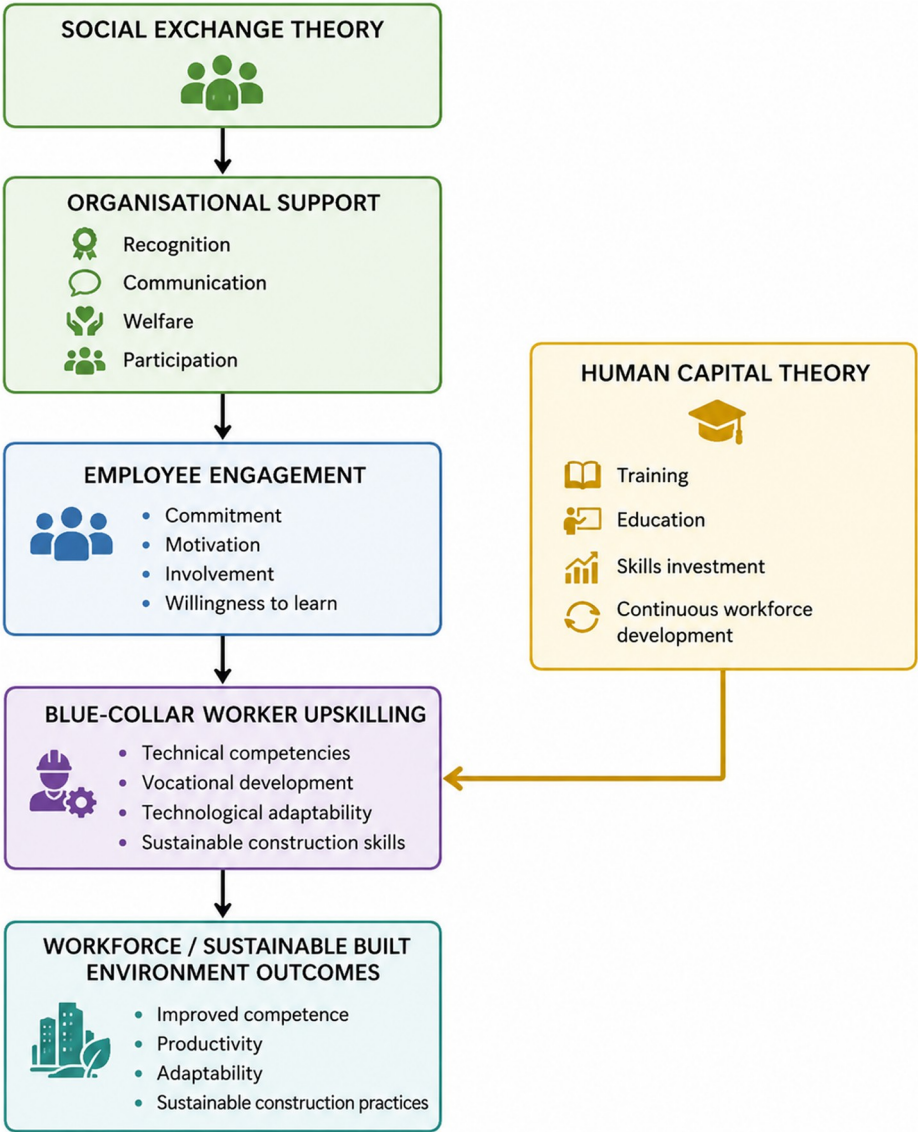


Figure 1. Conceptual framework
Source: Authors' own work (2026)

employee engagement, thereby strengthening blue-collar workers' commitment, motivation and willingness to participate in continuous learning and upskilling. Human capital theory complements this perspective by explaining how investment in training, education and skills development enhances workers' competencies and adaptability. Together, the framework conceptualises employee engagement as a catalyst for workforce upskilling, while human

capital investment provides the developmental pathway through which enhanced competencies contribute to sustainable built environment development.

The reviewed literature indicates that, although employee engagement and workforce upskilling have received considerable scholarly attention, limited research has examined the influence of employee engagement on workforce upskilling in the Nigerian construction industry. Existing studies have primarily focused on technical training, vocational education, skills shortages and competency development, while employee engagement has been examined mainly in relation to organisational performance and commitment. Consequently, little is known about how employee engagement influences blue-collar workers' participation in continuous skills development, particularly in Nigeria. Furthermore, limited evidence exists on the barriers and strategies influencing this relationship. Addressing these gaps provides the rationale for the present study.

3. Research methodology

3.1 Research approach and design

This study used a qualitative research methodology to gain a detailed understanding of participants' experiences, perceptions and views regarding employee engagement and the upskilling of blue-collar workers in the Nigerian construction industry. The approach was considered appropriate because the study sought to understand employee engagement and upskilling among blue-collar construction workers through the lived experiences of skilled blue-collar workers and the complementary organisational and training perspectives of construction professionals and skills educators within the Nigerian construction industry. [Creswell and Poth \(2018\)](#) argued that qualitative research enables researchers to explore social phenomena through participants' lived experiences and subjective interpretations. Similarly, [Tisdell et al., \(2025\)](#) maintained that qualitative inquiry is suitable for studies seeking an in-depth understanding of human experiences and organisational realities. The study adopted a primarily inductive analytical orientation, allowing patterns, categories and themes to emerge from participants' accounts rather than imposing predetermined thematic categories on the data. However, the study objectives and theoretical framing provided sensitising concepts that guided the overall focus of the interviews and subsequent interpretation of the emergent themes. The study specifically adopted phenomenological approach to explore participants' lived experiences of employee engagement as a catalyst for workforce upskilling in the Nigerian construction industry. The approach was appropriate because it provides rich insights into how individuals perceive and interpret a phenomenon within its natural context ([Dodgson, 2023](#); [Lim, 2025](#)).

3.2 Study area and participant population

The study was conducted in Lagos State, Nigeria. Lagos was selected because it remains one of Nigeria's largest commercial and construction centres, with a high concentration of building and infrastructure projects ([Ebekozen et al., 2024](#)). The state hosts numerous construction firms, vocational institutions, built-environment professionals and skilled blue-collar workers who are actively involved in construction and workforce development initiatives. The rapid urbanisation and infrastructural expansion within Lagos have equally intensified demand for a competent workforce and sustainable construction practices. Consequently, the state provided a suitable environment for examining employee engagement and workforce upskilling within the construction sector. The population of the study comprised construction managers, engineers, builders, architects, skills educators and skilled blue-collar workers operating within Lagos State, Nigeria. Although blue-collar construction workers were the primary focus of this study, a multi-stakeholder perspective

was adopted because employee engagement and upskilling are influenced by organisational, educational and workplace factors. Construction professionals provided managerial and supervisory perspectives on workforce policies and training practices, while skills educators contributed insights into vocational education and competency development. Skilled blue-collar workers offered first-hand experiences of workplace engagement and participation in upskilling. Together, these complementary perspectives provided a comprehensive understanding of the organisational and training conditions influencing workforce upskilling in the Nigerian construction industry. Accordingly, the study examined construction organisations and project environments broadly rather than limiting its scope to contractor firms.

Human resource personnel were not included because the purposive sampling focused on stakeholders directly involved in construction operations, workforce supervision, vocational training and blue-collar work. Their exclusion is acknowledged as a study limitation when interpreting the organisational and workforce-management implications.

3.3 Sampling strategy and participant selection

Purposive sampling was used to select information-rich participants with relevant knowledge and experience of employee engagement, workforce development, vocational training and construction practices (Tajik *et al.*, 2025). As presented in Table 1, 25 participants were selected: ten construction professionals, five skills educators and ten skilled blue-collar workers.

Table 1. Profile of participants

Participant code	Stakeholder category	Primary role	Years of experience
P1	Construction professional	Construction manager	18
P2	Skilled blue-collar worker	Mason	15
P3	Construction professional	Civil engineer	12
P4	Skilled blue-collar worker	Carpenter	14
P5	Construction professional	Quantity surveyor	16
P6	Skilled blue-collar worker	Electrician	13
P7	Construction professional	Builder	17
P8	Construction professional	Architect	15
P9	Skilled blue-collar worker	Plumber	11
P10	Construction professional	Construction manager	20
P11	Skilled blue-collar worker	Steel fixer	12
P12	Skills educator	Vocational instructor	18
P13	Skilled blue-collar worker	Welder	16
P14	Construction professional	Civil engineer	14
P15	Skills educator	Technical trainer	15
P16	Skilled blue-collar worker	Tiler	10
P17	Construction professional	Builder	19
P18	Skills educator	Technical education specialist	21
P19	Skilled blue-collar worker	Painter	13
P20	Skills educator	TVET coordinator	17
P21	Construction professional	Construction manager	18
P22	Skilled blue-collar worker	Mason	15
P23	Skills educator	Technical trainer	12
P24	Skilled blue-collar worker	Carpenter	14
P25	Construction professional	Quantity surveyor	16

Source(s): Authors' own work (2026)

The sample was considered adequate because phenomenological studies commonly use relatively small groups to generate rich qualitative data. Data collection reached thematic saturation at the 22nd interview, after which no significant new information emerged. Three additional interviews were conducted to verify the consistency of the identified themes.

3.4 Data collection and interview protocol

Primary data were collected through semi-structured interviews, as they enabled participants to describe their experiences and perceptions of employee engagement and workforce upskilling, while allowing the researcher to use probing questions to explore emerging issues in greater depth. The interview questions were developed from the literature review and theoretical framework to ensure alignment with the study objectives. As noted by [Karatsareas \(2022\)](#), semi-structured interviews facilitate rich participant narratives while maintaining focus on predetermined research objectives. The interview protocol was deliberately bounded by the three objectives of the study and therefore concentrated on participants' experiences and perceptions of the role of employee engagement in upskilling, barriers affecting effective engagement, and strategies for strengthening engagement and workforce development. Broader organisational variables such as leadership style, organisational culture and technological readiness were not investigated as independent areas of inquiry because they were outside the defined objectives and would have substantially broadened the analytical scope of the study. Where participants referred to related organisational or technological issues in explaining their experiences, these were considered within the relevant emerging themes rather than treated as separate predetermined constructs. The interviews were conducted physically and electronically, depending on participants' availability and convenience. Each interview session lasted approximately 30–45 min. With participants' consent, interview responses were audio-recorded, while supplementary notes were equally taken to ensure accurate documentation of participants' experiences and viewpoints. A sample of the semi-structured interview guide is provided in the [Appendix](#) to enhance methodological transparency and demonstrate the alignment between the interview questions and the study objectives.

3.5 Data analysis

The collected data were analysed using manual thematic analysis. Thematic analysis was considered appropriate because it enabled systematic identification, organisation, interpretation and reporting of recurring themes and patterns emerging from participants' responses. [Clarke and Braun \(2017\)](#) described thematic analysis as a flexible qualitative analytical method suitable for identifying meaningful patterns within textual data. The analysis process involved several stages. Firstly, the recorded interviews were transcribed *verbatim* to ensure accurate representation of participants' responses. Secondly, the researcher repeatedly reviewed the transcripts to achieve familiarity with the data. Thirdly, meaningful statements and relevant expressions related to employee engagement and workforce upskilling were systematically coded. The coding process generated 90 initial codes from the interview transcripts. Following repeated review and constant comparison, conceptually similar codes were merged and refined into 34 final codes. These final codes were organised into ten categories (sub-themes) based on shared meanings and recurring patterns across participants' accounts. Through an iterative process of abstraction and interpretation, the categories were further synthesised into three overarching themes:

- (1) the role of employee engagement in workforce upskilling;
- (2) barriers to effective employee engagement; and
- (3) strategies for improving employee engagement to support workforce upskilling.

This systematic progression from codes to categories and themes enhanced the credibility and transparency of the thematic analysis. Finally, the identified themes were interpreted and discussed in relation to the study's objectives, the existing literature and its theoretical framing. The thematic analysis specifically focused on themes relating to the objectives.

3.6 *Trustworthiness of the study*

Trustworthiness was addressed through credibility, transferability, dependability and confirmability. Credibility was enhanced through prolonged engagement, careful interpretation and member checking. Transferability was supported by detailed descriptions of the study context, participants and procedures. Dependability was strengthened through systematic documentation, while confirmability was supported by grounding interpretations in participants' responses rather than researcher assumptions (Enworo, 2023).

3.7 *Ethical considerations*

Ethical approval was obtained from the University of Johannesburg Research Ethics Committee before data collection. Participants received information about the study and gave voluntary informed consent. Confidentiality and anonymity were assured, with participants identified as P1–P25. Participants could withdraw at any stage without negative consequences, and data were used for academic purposes and stored securely.

4. Findings and discussion

This section presents the findings obtained from the semi-structured interviews conducted with the participants. The findings were analysed through manual thematic analysis, and themes were developed in line with the study's objectives. The thematic analysis generated three overarching themes relating to the role of employee engagement in workforce upskilling, barriers to effective employee engagement and strategies for strengthening engagement towards workforce development. Table 2 provides a consolidated overview of the principal findings emerging from participants' accounts, while the subsequent subsections provide detailed interpretation and discussion of each theme.

4.1 *Theme one: role of employee engagement in the upskilling of blue-collar workers*

The findings revealed that employee engagement plays a significant role in motivating blue-collar workers towards participation in workforce development and upskilling programmes within the Nigerian construction industry. Most participants explained that workers who feel valued, recognised and supported by their organisations are generally more willing to acquire new technical skills and improve their professional competencies. The participants emphasised that employee engagement fosters a sense of belonging, organisational trust and commitment, thereby encouraging continuous learning among blue-collar workers.

P3 explained that:

When workers are treated with respect and involved in organisational activities, they become more interested in improving themselves. Most blue-collar workers are willing to learn modern construction methods if management supports them.

Similarly, P11 stated that:

Workers participate more actively in training when they see that the organisation values their growth and well-being.

The findings further revealed that employee engagement significantly improves workforce productivity and project performance. Participants explained that engaged workers often

Table 2. Summary of themes and key findings from the interviews

Main theme	Key findings from interviews	Implications for workforce upskilling
Role of employee engagement in workforce upskilling	Employee engagement strengthens workers’ motivation, commitment, willingness to learn and participation in skills-development initiatives. Organisational support, recognition, communication and professional-development opportunities encourage continuous learning	Stronger engagement can facilitate workers’ participation in training, acquisition of new competencies and adaptation to changing construction practices
Barriers to effective employee engagement and upskilling	Poor working conditions; inadequate funding for workforce development; weak organisational support; poor communication; limited access to vocational training and modern technical education; unstable employment and job insecurity	These conditions can weaken workers’ organisational attachment, motivation and willingness or opportunity to participate in continuous workforce development
Strategies for strengthening employee engagement and upskilling	Continuous vocational and technical training; improved welfare conditions; participatory decision-making; recognition and reward systems; effective communication; collaboration among construction firms, vocational institutions, government agencies and professional bodies	These measures can strengthen workforce inclusion, motivation, access to skills development and participation in continuous learning

Source(s): Authors’ own work (2026)

demonstrate higher levels of dedication, concentration, teamwork and efficiency during project execution. According to the participants, employee engagement improves workers’ morale and encourages positive attitudes towards organisational goals and development initiatives.

P15 noted that:

Workers perform better when they feel appreciated. Productivity increases because workers become more committed to both their jobs and training opportunities.

The findings also showed that employee engagement enhances workers’ adaptability towards technological innovation and sustainable construction practices. Participants observed that engaged workers are generally more willing to adopt modern construction technologies, digital systems, safety procedures and environmentally responsible practices than disengaged workers.

P7 argued that:

Construction methods are changing rapidly. Workers need new knowledge in areas like green building and digital construction. Engagement helps workers accept these changes more easily.

Similarly, P20 explained that:

Sustainable construction depends heavily on workers’ knowledge. If workers are not engaged and trained properly, sustainability goals cannot be achieved effectively.

Another important finding revealed that employee engagement strengthens organisational loyalty and workers’ willingness to participate in long-term workforce development

initiatives. Participants noted that employees who experience supportive workplace environments often demonstrate stronger commitment towards organisational growth and professional improvement.

P18 stated that:

When organisations invest in workers' development, workers also become loyal and committed to improving themselves for the organisation.

Social exchange theory explains how employee engagement facilitates workers' participation in upskilling through reciprocal organisational relationships. Organisational practices such as recognition, effective communication, welfare support and professional development signal that workers are valued, thereby encouraging stronger commitment, willingness to learn and participation in workforce development activities. Human Capital Theory complements this explanation by emphasising that investment in training and continuous skills development enhances workers' competencies and productive capacity. Together, the theories suggest that effective upskilling depends on both opportunities for competency development and supportive organisational conditions that motivate workers to use them. The findings extend those of [Saks \(2019\)](#), who associated employee engagement with organisational commitment and participation in development activities, by demonstrating its role in promoting upskilling among the blue-collar workforce in the Nigerian construction industry. Likewise, while [Nikolova et al. \(2019\)](#) and [Helalat et al. \(2025\)](#) emphasised employees' willingness to embrace continuous learning, the present study highlights the organisational conditions that enable such participation. The findings also build on [Opoku \(2019\)](#) and [Agyekum et al. \(2025\)](#) by showing that sustainable construction depends not only on workforce competence but also on organisational practices that foster continuous learning and employee engagement.

4.2 Theme two: barriers militating against effective employee engagement

The findings identified several barriers affecting effective employee engagement within the Nigerian construction industry. One of the most recurring barriers identified by participants was poor welfare conditions among blue-collar workers. Participants explained that many construction workers work under difficult conditions, characterised by low wages, delayed salary payments, inadequate healthcare support, unsafe working environments and unstable employment. According to the participants, these conditions negatively affect workers' morale and willingness to participate in upskilling programmes.

P5 explained that:

Many workers are struggling with poor salaries and unsafe conditions. Under such situations, workers lose motivation towards training and development.

Similarly, P12 stated that:

Some organizations focus only on project completion without considering workers' welfare and development.

Another major barrier identified was inadequate funding for workforce development and training programmes. Participants noted that many construction organisations rarely allocate sufficient financial resources towards employee training and technical development initiatives.

P9 argued that:

Training programmes are often ignored because many companies see workforce development as unnecessary cost instead of investment.

The findings further revealed weak organisational support and poor management commitment towards employee development as major challenges affecting employee engagement. Participants explained that some organisations lack structured workforce development policies and supportive learning environments necessary for continuous workforce improvement.

P14 noted that:

Some management teams are only interested in immediate project delivery. Employee growth and development are rarely prioritized.

Poor communication systems also emerged strongly from the findings. Participants observed that blue-collar workers are frequently excluded from discussions relating to workplace policies, project operations and workforce development initiatives. This situation creates feelings of marginalisation and reduced organisational attachment among workers.

P22 stated that:

There is poor communication between management and site workers. Many workers are not even informed properly about available training opportunities.

The findings additionally revealed limited access to vocational training opportunities and modern technical education as major barriers affecting workforce upskilling. Participants argued that many blue-collar workers still depend heavily on informal apprenticeship systems with limited exposure to modern construction technologies and sustainability-oriented practices.

P1 explained that:

Most blue-collar workers still use outdated methods because they do not have access to proper technical training centres.

Job insecurity and temporary employment arrangements also emerged as significant barriers affecting employee engagement. Participants explained that workers operating under unstable employment conditions often demonstrate low commitment towards long-term organisational development programmes.

P25 stated that:

Workers who are unsure about job stability may not be interested in spending time and energy on training programmes.

Social exchange theory explains how poor welfare conditions, weak organisational support, inadequate communication and employment insecurity can undermine workers' engagement with upskilling initiatives. When workers perceive limited organisational support and recognition, reciprocal commitment may weaken, reducing their willingness to participate in workforce-development activities. Human capital theory complements this explanation by demonstrating that inadequate funding and limited access to vocational and technical training restrict opportunities to acquire competencies required for modern and sustainable construction practices. Together, the theories indicate that both supportive organisational relationships and sustained investment in workforce development are essential for effective upskilling. The findings extend those of [Tope \(2024\)](#), who identified poor welfare conditions and weak workforce-development practices as key challenges in the Nigerian construction industry. While supporting these observations, the present study further demonstrates that ineffective communication, weak organisational support and insecure employment collectively discourage workers from engaging in continuous upskilling. Similarly, although [Ofori \(2026\)](#) associated

inadequate training investment with reduced workforce competence and productivity, the present findings suggest that training alone is insufficient without supportive organisational practices. This also broadens [Anitha's \(2014\)](#) argument by showing that communication, organisational support and employee well-being influence not only employee engagement but also participation in continuous workforce upskilling.

4.3 Theme three: strategies for improving employee engagement towards workforce upskilling

The findings identified several strategies to improve employee engagement and strengthen workforce upskilling in the Nigerian construction industry. One of the major strategies emphasised by participants was the provision of continuous vocational training and technical development programmes. Participants argued that regular training opportunities improve workers' competence, confidence, adaptability and willingness to embrace modern construction practices.

P6 explained that:

Workers need regular exposure to new construction technologies and sustainability practices. Continuous training is very important for workforce improvement.

Similarly, P16 stated that:

Training opportunities should not only focus on professionals. Blue-collar workers also require structured technical education and continuous learning opportunities.

Improved welfare conditions also emerged as an important strategy for strengthening employee engagement. Participants emphasised the importance of fair salaries, healthcare support, insurance benefits and safe working environments in improving workers' morale and commitment towards organisational objectives.

P10 noted that:

Workers become more committed when organisations care about their welfare and safety.

Participatory decision-making was another major strategy identified from the interviews. Participants argued that involving workers in discussions about workplace policies and operational decisions improves their sense of belonging and organisational trust.

P19 explained that:

Workers become more committed when management listens to their opinions and includes them in important decisions.

Recognition and reward systems also emerged as effective strategies for improving employee engagement and motivating workforce participation in upskilling programmes. Participants explained that workers are encouraged when organisations acknowledge their contributions and professional development efforts.

P8 stated that:

Recognition motivates workers greatly. Even simple appreciation can encourage workers to improve themselves continuously.

The findings additionally revealed that effective communication systems improve workforce inclusion, organisational trust and participation in development initiatives. Participants emphasised the importance of transparent communication between management and site workers regarding organisational goals, welfare matters and training opportunities.

P21 explained that:

Good communication helps workers understand organisational expectations and available opportunities for development.

Another important strategy identified was collaboration between construction firms, vocational institutions, government agencies and professional bodies. Participants argued that stronger institutional collaboration can improve workforce access to modern technical education and sustainability-oriented construction knowledge.

P4 stated that:

Construction companies and training institutions need a stronger partnership to develop workers with modern construction skills.

The identified strategies are best explained through the complementary perspectives of social exchange theory and human capital theory. From a social exchange theory perspective, improved welfare, recognition and reward systems, participatory decision-making and effective communication strengthen workers' perceptions of organisational support and inclusion, thereby encouraging reciprocal responses such as greater commitment, trust and willingness to participate in workforce development initiatives. Human capital theory complements this perspective by explaining that continuous vocational and technical training, together with institutional collaboration, represents investment in workers' knowledge and productive competencies. Collaboration between construction organisations and vocational institutions further enhances access to specialised technical knowledge and training resources that individual organisations may be unable to provide on their own. Together, these theories suggest that effective workforce upskilling depends on both sustained investments in competency development and supportive organisational conditions that motivate workers to use available learning opportunities.

The findings build on those of [Helalat *et al.* \(2025\)](#), who emphasised the importance of continuous workforce learning and organisational support in improving employee performance and innovation. Similarly, while [Nikolova *et al.* \(2019\)](#) highlighted the positive influence of supportive work environments on employee motivation and engagement, the present study demonstrates that such environments also encourage workers' participation in continuous upskilling. The findings further extend [Hill *et al.* \(2023\)](#), who stressed the importance of coordinated investment in workforce training, institutional collaboration and continuous professional development, by showing that workforce upskilling also depends on organisational practices such as improved welfare, recognition, worker participation and effective communication. Collectively, these measures strengthen access to technical education and sustainability-oriented competencies within the Nigerian construction industry. However, implementation should recognise differences in organisational capacity. While larger firms may institutionalise structured training and welfare programmes, smaller and resource-constrained organisations may adopt cost-effective approaches such as project-based training, mentoring, shared training initiatives and collaborative partnerships. Accordingly, employee engagement and upskilling strategies should be adapted to organisational capacity to strengthen workforce development across the Nigerian construction industry.

5. Recommendations

Based on the findings of the study, the following recommendations are proposed:

- (1) Construction organisations should establish structured employee engagement policies capable of promoting workforce participation, recognition, communication

and professional development within the workplace. Employee engagement should be integrated into organisational workforce development strategies to improve workers' motivation towards continuous learning and upskilling.

- (2) Organisations within the construction industry should improve workers' welfare conditions through fair remuneration, healthcare support, insurance schemes, safe working environments and employee-centred welfare policies capable of improving workforce morale and organisational commitment.
- (3) Management teams should encourage participatory decision-making by involving blue-collar workers in discussions relating to workplace policies, project operations, safety management and workforce development initiatives. This may improve workers' sense of belonging, organisational trust and commitment towards continuous professional development.
- (4) Construction organisations should strengthen communication systems between management and workers to improve transparency, collaboration and workforce inclusion. Effective communication channels should be established to ensure workers are adequately informed about organisational goals, welfare matters and available training opportunities.
- (5) Government agencies and policymakers should strengthen vocational education and technical training systems within Nigeria's construction sector. Increased investment should be directed towards technical education infrastructure, skills acquisition centres, certification systems and sustainable construction training programmes to improve workforce quality and employability.
- (6) Professional bodies, vocational institutions and construction firms should collaborate more closely in developing industry-relevant training programmes tailored towards modern construction technologies, sustainability practices and workforce competency improvement. Such collaboration may improve access to technical education and strengthen workforce preparedness within the construction industry.

6. Implications of the study

6.1 Theoretical implications

Theoretically, the findings extend the application of social exchange theory and human capital theory to the relationship between employee engagement and upskilling of the blue-collar workforce in construction. Social exchange theory provides an explanatory lens for understanding why organisational support, recognition, communication, worker participation and welfare conditions may influence workers' willingness to reciprocate by strengthening commitment and participation in development activities. Human capital theory complements this explanation by demonstrating the importance of organisational investment in training and competency development for strengthening workers' productive capacities. The study therefore suggests that workforce upskilling is not solely a technical training process; it is also shaped by the quality of the organisational relationship within which opportunities for skills development are provided. Integrating the two theoretical perspectives consequently provides a more comprehensive explanation of how organisational engagement practices and investment in human capital can jointly facilitate blue-collar workforce development.

6.2 *Practical and managerial implications*

For construction organisations, the findings indicate that providing training opportunities alone may be insufficient to achieve sustained workforce upskilling where these workers experience weak communication, inadequate recognition, poor welfare conditions or limited organisational support. Managers should therefore connect workforce development programmes with engagement practices that strengthen workers' motivation, inclusion and willingness to learn. This includes providing accessible vocational and technical training, clearly communicating available development opportunities, recognising workers' skills development efforts, involving workers in relevant workplace decisions and improving welfare and safety conditions. For blue-collar workers, such practices can create a more supportive environment for continuous skills acquisition, technological adaptability and participation in sustainability-oriented construction practices. The findings therefore position employee engagement as an organisational condition that can facilitate, rather than replace, formal and informal skills-development initiatives.

6.3 *Policy and industry implications*

At the industry and policy levels, the findings demonstrate the need for stronger coordination between construction organisations, vocational training institutions, professional bodies and relevant government agencies. Participants identified limited access to modern technical education and inadequate workforce development opportunities as important constraints, while institutional collaboration emerged as a strategy to expand access to relevant skills development. Accordingly, industry-level workforce development initiatives should encourage partnerships that facilitate vocational training, technical certification and exposure to contemporary construction technologies and sustainability practices. Such initiatives should also recognise differences in organisational capacity, as smaller and resource-constrained firms may require shared training arrangements and institutional support to provide development opportunities comparable with those available in better-resourced organisations.

6.4 *Implications for sustainable built environment development*

For sustainable development of the built environment, the findings suggest that workforce competence is an important human resource dimension of the construction sector's capacity to respond to evolving technologies and sustainability requirements. Continuous upskilling can improve blue-collar workers' exposure to modern construction methods, sustainability-oriented practices and evolving technical competencies, while employee engagement can influence their willingness to participate in these development opportunities. The practical implication is that sustainable construction should not be approached exclusively through technologies, materials and professional-level competencies; attention is also required to the engagement and continuous development of the site-based workforce responsible for translating construction requirements into the physical delivery of projects. Strengthening the engagement–upskilling relationship may therefore contribute to building a more adaptable and sustainability-oriented construction workforce.

6.5 *Research implications*

For construction management research, the study highlights the value of examining workforce upskilling not only from the perspective of training availability but also from the organisational and behavioural conditions, such as employee engagement, that influence workers' participation in skills development. The multi-stakeholder evidence further indicates the value of incorporating worker, managerial and training-provider perspectives

when examining construction workforce development. Future empirical research can build on these findings by testing the relationships among organisational support, employee engagement, participation in upskilling and workforce outcomes using quantitative or mixed-methods designs, and by examining variations across organisational sizes, regions and stakeholder groups.

7. Limitations and future studies

7.1 *Limitations of the study*

This study has several limitations. Firstly, its qualitative phenomenological design generated rich, in-depth insights into participants' lived experiences, but limits the statistical generalisability of the findings. Secondly, the study was conducted exclusively in Lagos State, where construction activities are highly concentrated; therefore, the findings may not fully reflect workforce realities in other regions of Nigeria. Thirdly, the participants comprised construction professionals, skills educators and skilled blue-collar workers, excluding other key stakeholders such as government regulators, labour unions, policymakers and project clients, whose perspectives may have enriched the findings. Although thematic saturation was achieved with 25 participants, a larger sample could have captured a broader range of experiences. In addition, the study relied on semi-structured interviews, making the findings dependent on participants' openness and accuracy. Finally, the study focused primarily on employee engagement and workforce upskilling without extensively examining contextual factors such as leadership, organisational culture, government policies, technological readiness and economic conditions.

7.2 *Suggestions for future studies*

Future studies should adopt mixed-methods or quantitative research designs to examine the relationship between employee engagement and workforce upskilling, using larger, more representative samples to enhance the generalisability of the findings. Researchers should also extend similar investigations beyond Lagos State to other regions of Nigeria or undertake comparative studies across different construction environments to identify regional variations in workforce development practices. In addition, future studies should incorporate a broader range of stakeholders, including government agencies, labour unions, human resource personnel, vocational regulators, project clients and professional bodies, to provide a more comprehensive understanding of workforce development challenges. Further research should examine the influence of leadership styles, organisational culture, technological readiness, construction organisational types, digital transformation and government policies on employee engagement and workforce upskilling. Longitudinal studies are also recommended to evaluate the long-term effects of employee engagement and upskilling on labour productivity, workforce retention, organisational performance and sustainable construction outcomes.

8. Conclusion

This study examined employee engagement as a catalyst for upskilling blue-collar workers towards sustainable development of the built environment in Nigeria. Using a qualitative phenomenological approach, data were collected through semi-structured interviews with construction professionals, skills educators and skilled blue-collar workers in Lagos State, and were analysed thematically to explore participants' experiences and perceptions. The first objective examined the role of employee engagement in upskilling blue-collar construction workers. The findings indicate that engagement can strengthen workers' motivation, commitment, willingness to learn and participation in skills development

activities. Organisational support, recognition, effective communication and opportunities for professional development emerged as important conditions that may increase workers' willingness to acquire new competencies and adapt to changing construction practices. Employee engagement, therefore, operates as an organisational and behavioural mechanism that can facilitate workers' participation in upskilling rather than as a substitute for technical training itself. Regarding the second objective, which identified barriers to effective employee engagement, the study found that poor working and welfare conditions, inadequate funding for workforce development, weak organisational support, poor communication, limited access to vocational training and modern technical education and unstable employment arrangements constrain workers' engagement and participation in continuous development. These barriers demonstrate that workforce upskilling is influenced not only by the availability of training but also by the organisational environment within which workers are expected to learn and develop. The third objective explored strategies to improve employee engagement in workforce upskilling. The findings identified continuous vocational and technical training, improved welfare conditions, participatory decision-making, recognition and reward systems, effective communication and stronger collaboration among construction organisations, vocational institutions, government agencies and professional bodies as important strategies. These measures can create more supportive conditions for blue-collar workers to participate in continuous learning and develop competencies relevant to contemporary construction requirements.

This study contributes to construction workforce-development discourse by demonstrating that employee engagement functions as a catalyst for blue-collar workforce upskilling, extending conventional perspectives that primarily emphasise technical training. By integrating Social Exchange Theory and Human Capital Theory, the study provides a complementary explanation of how supportive organisational practices and strategic investment in competency development jointly enhance workers' participation in continuous learning and skills acquisition. The findings underscore the importance of aligning employee engagement with technical skills development to foster a competent, adaptable and sustainability-oriented construction workforce capable of responding to evolving industry demands.

Acknowledgements

The authors sincerely acknowledge all the stakeholders who participated in the interviews conducted in Lagos State, Nigeria. Their valuable contributions, experiences and insights were instrumental in achieving the objectives of this study. The authors are grateful for their time, cooperation and willingness to share their perspectives throughout the research process.

Funding

This research received no grant from any funding agency in the public or private sectors.

Reference

- Aduloju, T.O., Bello, W., Ojo, G.K. and Ogunrinde, F. (2026), "Construction education in the built environment of Lagos State, Nigeria", in *Facilitating Inclusivity in Multi-, Inter-, and Transdisciplinary Sustainable Built Environment Research in Emerging Economies*, Springer Nature Switzerland, pp. 1629-1638, doi: [10.1007/978-3-032-08992-2_137](https://doi.org/10.1007/978-3-032-08992-2_137).
- Afolabi, J.A. (2023), "Employment effects of technological innovation: evidence from Nigeria's economic sectors", *Ekonomski Horizonti*, Vol. 25 No. 1, pp. 3-16, doi: [10.5937/ekonhor2301003A](https://doi.org/10.5937/ekonhor2301003A).

- Agyekum, K., Sackey, K.N.Y.S., Addoh, F.E., Pittri, H., Sosu, J. and Danso, F.O. (2025), "Key competencies of built environment professionals for achieving net-zero carbon emissions in the Ghanaian construction industry", *Buildings*, Vol. 15 No. 10, p. 1750, doi: [10.3390/buildings15101750](https://doi.org/10.3390/buildings15101750).
- Albrecht, S.L., Furlong, S. and Leiter, M.P. (2023), "The psychological conditions for employee engagement in organizational change: test of a change engagement model", *Frontiers in Psychology*, Vol. 14, p. 1071924, doi: [10.3389/fpsyg.2023.1071924](https://doi.org/10.3389/fpsyg.2023.1071924).
- Ameen, A. and Baharom, M.N. (2019), "Assessing the effect of employee engagement on employee performance in an organisation: a theoretical discussion", *International Journal of Economics, Commerce and Management*, Vol. 7 No. 3, pp. 328-338, available at: www.ijecm.co.uk (accessed 4 May 2026).
- Anitha, J. (2014), "Determinants of employee engagement and their impact on employee performance", *International Journal of Productivity and Performance Management*, Vol. 63 No. 3, pp. 308-323, doi: [10.1108/IJPPM-01-2013-0008](https://doi.org/10.1108/IJPPM-01-2013-0008).
- Aujla, S. and McLarney, C. (2020), "The effects of organizational change on employee commitment", *IUP Journal of Organizational Behavior*, Vol. 19 No. 1, pp. 7-22, available at: <https://ssrn.com/abstract=3797368> (accessed 4 May 2026).
- Bristol-Alagbariya, B., Ayanponle, O.L. and Ogedengbe, D.E. (2024), "Leadership development and talent management in constrained resource settings: a strategic HR perspective", *Comprehensive Research and Reviews Journal*, Vol. 2 No. 2, pp. 13-22, doi: [10.57219/crrj.2024.2.02.013022](https://doi.org/10.57219/crrj.2024.2.02.013022).
- Clarke, V. and Braun, V. (2017), "Thematic analysis", *The Journal of Positive Psychology*, Vol. 12 No. 3, pp. 297-298, doi: [10.1080/17439760.2016.1262613](https://doi.org/10.1080/17439760.2016.1262613).
- Creswell, J.W. and Poth, C.N. (2018), *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, 4th ed., SAGE Publications.
- Dobbs, R.L., Sun, J.Y. and Roberts, P.B. (2008), "Human capital and screening theories: implications for human resource development", *Advances in Developing Human Resources*, Vol. 10 No. 6, pp. 788-801, doi: [10.1177/1523422308326200](https://doi.org/10.1177/1523422308326200).
- Dodgson, J.E. (2023), "Phenomenology: researching the lived experience", *Journal of Human Lactation*, Vol. 39 No. 3, pp. 385-396, doi: [10.1177/08903344231185130](https://doi.org/10.1177/08903344231185130).
- Ebekozien, A., Aigbavboa, C.O., Adekunle, S.A., Aliu, J. and Thwala, W.D. (2024), "Training needs of built environment professionals: the role of fourth industrial revolution", *Engineering, Construction and Architectural Management*, Vol. 31 No. 11, pp. 4353-4371, doi: [10.1108/ECAM-07-2022-0645](https://doi.org/10.1108/ECAM-07-2022-0645).
- Ebekozien, A., Nwaole, A.N.C., Aigbavboa, C.O., Ahmed, M.A.H., Samsurijan, M.S., Thwala, W.D. and Ikuabe, M.O. (2026), "Appraising young-adult internal migrants into construction craftsmanship: issues surrounding skill acquisition and competencies in Nigeria", *Engineering, Construction and Architectural Management*, Vol. 33 No. 6, pp. 4411-4428, doi: [10.1108/ECAM-08-2024-0927](https://doi.org/10.1108/ECAM-08-2024-0927).
- Enworu, O.C. (2023), "Application of Guba and Lincoln's parallel criteria to assess trustworthiness of qualitative research on indigenous social protection systems", *Qualitative Research Journal*, Vol. 23 No. 4, pp. 372-384, doi: [10.1108/QRJ-02-2023-0023](https://doi.org/10.1108/QRJ-02-2023-0023).
- Glover, A.S., Appiah, N.A. and Haruna, A.S. (2024), "Exploring ethical challenges and labour practices in the informal sector: a study of Ghana's fashion apprenticeship programs", *Fashion and Textiles Review*, Vol. 5, pp. 95-113, available at: www.itfpgh.com (accessed 4 May 2026).
- Helalat, A., Sharari, H., Alhelalat, J. and Al-Aqrabawi, R. (2025), "Transformational leadership and employee performance: a further insight using work engagement", *ECONOMICS*, Vol. 13 No. 1, pp. 333-352, doi: [10.2478/eoik-2025-0015](https://doi.org/10.2478/eoik-2025-0015).
- Hill, W., Jalloul, H., Movahedi, M. and Choi, J. (2023), "Sustainable management of the built environment from the life cycle perspective", *Journal of Management in Engineering*, Vol. 39 No. 2, p. 03123001, doi: [10.1061/JMENE.MEENG-4759](https://doi.org/10.1061/JMENE.MEENG-4759).

- Idowu, A.O., Aigbavboa, C. and Oke, A.E. (2024), "Training techniques for blue-collar workers to improve construction project performance in Edo State, Nigeria", *International Journal of Sustainable Construction Engineering and Technology*, Vol. 15 No. 3, pp. 80-86, doi: [10.30880/ijscet.2024.15.03.008](https://doi.org/10.30880/ijscet.2024.15.03.008).
- International Labour Organisation (2021), "Shaping skills and lifelong learning for the future of work (report VI)", International Labour Office Geneva, available at: www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_813696.pdf (accessed 4 May 2026).
- Kahn, W.A. and Heaphy, E.D. (2013), "Relational contexts of personal engagement at work", *Employee Engagement in Theory and Practice*, Routledge, London, pp. 82-96, doi: [10.4324/9780203076965-9](https://doi.org/10.4324/9780203076965-9).
- Karatsareas, P. (2022), "Semi-structured interviews", *Research methods in language attitudes*, Cambridge University Press, pp. 99-113.
- Kelechi, G. (2026), "Employee health, safety and environmental disclosures: a study of the impact on construction project performance in Rivers state, Nigeria", *PM World Journal*, Vol. 15 No. 4, pp. 1-24, available at: <https://pmworldjournal.com/wp-content/uploads/2026/04/pmwj163-Apr2026-Kelechi-Employee-health-safety-environmental-disclosures-impact.pdf> (accessed 4 May 2026).
- Kenku, A.A. (2025), "Leveraging job analysis as a basis for optimal recruitment and selection efficiency in Nigerian organisations", *IKR Journal of Arts, Humanities and Social Sciences*, Vol. 1 No. 4, pp. 262-273, doi:[10.5281/zenodo.17427830](https://doi.org/10.5281/zenodo.17427830).
- Li, K., Griffin, M.A. and Xia, M. (2025), "How do workforce adaptability and reskilling initiatives drive innovations: the case of Western Australian construction industry", *Construction Management and Economics*, Vol. 43 No. 9, pp. 746-763, doi: [10.1080/01446193.2025.2511831](https://doi.org/10.1080/01446193.2025.2511831).
- Lim, W.M. (2025), "What is qualitative research? An overview and guidelines", *Australasian Marketing Journal*, Vol. 33 No. 2, pp. 199-229, doi: [10.1177/18393349241296223](https://doi.org/10.1177/18393349241296223).
- Mabindisa, T.J. and Legoabe, R. (2021), "Factors contributing to low employee morale at a South African state owned entity in financial distress", *African Journal in Education and Transformation*, Vol. 1 No. 2, pp. 87-101, available at: www.researchgate.net/publication/356251126_Factors_Contributing_To_Low_Employee_Morale_at_a_South_African_State_Owned_Entity_in_Financial_Distress (accessed 4 May 2026).
- Nikolova, I., Schaufeli, W.B. and Notelaers, G. (2019), "Engaging leader–engaged employees? A cross-lagged study on employee engagement", *European Management Journal*, Vol. 37 No. 6, pp. 772-783, doi: [10.1016/j.emj.2019.02.004](https://doi.org/10.1016/j.emj.2019.02.004).
- Ofori, G. (2026), "Construction industry in developing countries: nature, significance, evolution, current situation and need for development", in *Research Companion to the Construction Industry in Developing Countries*, Edward Elgar Publishing, Cheltenham, pp. 20-52, doi: [10.4337/9781035336319.00009](https://doi.org/10.4337/9781035336319.00009).
- Oke, A.E., Aliu, J., Mwanaumo, E.M.U.M., Abayomi, T. and Kahanji, C. (2023), "Leveraging gamification to enhance productivity and employee engagement in the Nigerian construction industry", *Built Environment Project and Asset Management*, Vol. 13 No. 6, pp. 813-829, doi: [10.1108/BEPAM-04-2023-0064](https://doi.org/10.1108/BEPAM-04-2023-0064).
- Olanrewaju, O.I., Bello, A.O., Semiu, M.A. and Mudashiru, S.A. (2025), "Critical barriers to effective communication in the construction industry: evidence from Nigeria", *International Journal of Construction Management*, Vol. 25 No. 7, pp. 783-801, doi: [10.1080/15623599.2023.2266688](https://doi.org/10.1080/15623599.2023.2266688).
- Omoriegie, I.I., Aigbe, E.F. and Obaedo, B.O. (2026), "The impact of site management practices on masonry workforce efficiency in Benin City, Edo State, Nigeria", in *Facilitating Inclusivity in Multi-, Inter-, and Transdisciplinary Sustainable Built Environment Research in Emerging Economies*, Springer Nature Switzerland, pp. 1099-1108, doi: [10.1007/978-3-032-08992-2_91](https://doi.org/10.1007/978-3-032-08992-2_91).

- Opoku, A. (2019), "Biodiversity and the built environment: implications for the sustainable development goals (SDGs)", *Resources, Conservation and Recycling*, Vol. 141, pp. 1-7, doi: [10.1016/j.resconrec.2018.10.028](https://doi.org/10.1016/j.resconrec.2018.10.028).
- Ornek, O.K., Waibel, J., Wullinger, P. and Weinmann, T. (2022), "Precarious employment and migrant workers' mental health: a systematic review of quantitative and qualitative studies", *Scandinavian Journal of Work, Environment and Health*, Vol. 48 No. 5, pp. 327-341, doi: [10.5271/sjweh.4035](https://doi.org/10.5271/sjweh.4035).
- Saari, T., Leinonen, M. and Tapanila, K. (2021), "Sources of meaningful work for blue-collar workers", *Social Sciences*, Vol. 11 No. 1, p. 2, doi: [10.3390/socsci11010002](https://doi.org/10.3390/socsci11010002).
- Saks, A.M. (2019), "Antecedents and consequences of employee engagement revisited", *Journal of Organizational Effectiveness: People and Performance*, Vol. 6 No. 1, pp. 19-38, doi: [10.1108/JOEPP-06-2018-0034](https://doi.org/10.1108/JOEPP-06-2018-0034).
- Sakthimala, B. (2026), "Fostering employee engagement through green HRM practices: a study of IT professionals in Bangalore", *Minnesota Journal of Business Law and Entrepreneurship*, Vol. 1, pp. 775-783, doi: [10.52783/mjble.107](https://doi.org/10.52783/mjble.107).
- Sakthimala, B. and Deepalakshmi, G. (2023), "Employment engagement: a review of current research and its implications: a theoretical framework", *Multidisciplinary Handbook of Social Exclusion Research*, Mayas Publication, p. 126, available at: <https://mayas.info/view-archive-issues/23/5/1/2024-01-05> (accessed 4 May 2026).
- Salvadorinho, J. and Teixeira, L. (2023), "Happy and engaged workforce in industry 4.0: a new concept of digital tool for HR based on theoretical and practical trends", *Sustainability*, Vol. 15 No. 3, p. 2781, doi: [10.3390/su15032781](https://doi.org/10.3390/su15032781).
- Surikova, S. (2024), "Towards the effective professional upskilling of low-skilled employees: key influencing factors", *Problems of Education in the 21st Century*, Vol. 82 No. 5, pp. 737-757, doi: [10.33225/pec/24.82.737](https://doi.org/10.33225/pec/24.82.737).
- Tajik, O., Golzar, J. and Noor, S. (2025), "Purposive sampling", *International Journal of Education and Language Studies*, pp. 1-9, doi: [10.47852/bonviewIJEL.S42024279](https://doi.org/10.47852/bonviewIJEL.S42024279).
- Tisdell, E.J., Merriam, S.B. and Stuckey-Peyrot, H.L. (2025), *Qualitative Research: A Guide to Design and Implementation*, 5th ed., John Wiley and Sons, Hoboken, NJ.
- Tope, A.O. (2024), "Assessment of the key factors responsible for the shortage of skilled blue-collar workers in the Nigerian construction industry", in *Facility Management Practices: Empirical Cases in Developing Countries*, Springer Nature Switzerland, pp. 181-198, doi: [10.1007/978-3-031-71065-0_11](https://doi.org/10.1007/978-3-031-71065-0_11).
- Turner, P. (2020), "What is employee engagement?", in *Employee Engagement in Contemporary Organizations: Maintaining High Productivity and Sustained Competitiveness*, Springer International Publishing, Cham, pp. 27-56, doi: [10.1007/978-3-030-36387-1_2](https://doi.org/10.1007/978-3-030-36387-1_2).
- Uusitalo, P., Peltokorpi, A., Seppänen, O. and Alhava, O. (2024), "Towards systemic transformation in the construction industry: a complex adaptive system perspective", *Construction Innovation*, Vol. 24 No. 7, pp. 341-368, doi: [10.1108/CI-01-2023-0007](https://doi.org/10.1108/CI-01-2023-0007).
- Windapo, A.O. (2026), "Business development in construction in developing countries", in *Research Companion to the Construction Industry in Developing Countries*, Edward Elgar Publishing, Cheltenham, pp. 181-211, doi: [10.4337/9781035336319.00014](https://doi.org/10.4337/9781035336319.00014).
- Yamamoto, S. (2024), "Social exchange theory", in *A Guide to Key Theories for Human Resource Management Research*, Edward Elgar Publishing, Cheltenham, pp. 274-279. DOI: [10.4337/9781035310548.00040](https://doi.org/10.4337/9781035310548.00040).

Further reading

- Irmansyah, J., Syah, H. and Kurniawan, E. (2025), "Teachers' knowledge and understanding of physical literacy in physical education learning: a phenomenological approach", *The Qualitative Report*, Vol. 30 No. 5, pp. 3597-3618, doi: [10.46743/2160-3715/2025.7995](https://doi.org/10.46743/2160-3715/2025.7995).

Appendix. Semi-Structured interview guide

Dear Participant

Request for Interview

You are respectfully invited to participate in this research study entitled: *Employee engagement as a catalyst for upskilling blue-collar construction workers towards a sustainable built environment in Nigeria*.

The Nigerian construction industry relies heavily on blue-collar workers whose skills and competencies are critical to improving project performance and achieving sustainable development of the built environment. Employee engagement has been recognised as an important organisational practice that promotes workers' commitment, motivation, participation and continuous learning. Despite its importance, there is limited empirical evidence on how employee engagement influences the upskilling of blue-collar workers within the Nigerian construction industry.

Specifically, this study seeks to:

- explore the role of employee engagement in the upskilling of blue-collar workers towards sustainable built environment development in Nigeria;
- examine the barriers militating against effective employee engagement in the upskilling of blue-collar workers within the Nigerian construction industry; and
- identify strategies to improve employee engagement for effective workforce upskilling and sustainable development of the built environment in Nigeria.

Kindly note that the interview questions are designed around these objectives. Your responses will be analysed together with those of other participants and will be used solely for academic purposes. All information provided will be treated with the highest level of confidentiality, and your identity, as well as that of your organisation, will remain anonymous.

Your participation is voluntary, and your valuable insights and professional experiences will make an important contribution to the success of this research.

Thank you for your time and willingness to participate.

Yours faithfully,

Research Coordinator

Section A: Background information

- What is your current professional role within the construction industry?
- How many years have you worked in the Nigerian construction industry?
- What types of construction projects are you primarily involved in?

Section B: Role of employee engagement

- How would you describe employee engagement within construction organisations in Nigeria?
- In your opinion, how does employee engagement influence the willingness of blue-collar workers to acquire new knowledge and skills?
- Can you share any experiences or examples where employee engagement has encouraged workforce learning, skills development, or upskilling?
- In your view, how does employee engagement contribute to sustainable construction practices and sustainable built environment development?

Section C: Barriers

- What factors discourage employee engagement among blue-collar workers in the Nigerian construction industry?
- What organisational barriers hinder the effective upskilling of blue-collar workers?
- How do workers' welfare conditions influence their willingness to participate in training and skills development programmes?
- What challenges limit continuous workforce development within construction organisations?

Section D: Strategies

- What strategies could construction organisations adopt to strengthen employee engagement among blue-collar workers?
- How can vocational institutions and training providers contribute more effectively to workforce upskilling?
- What role should government and relevant regulatory agencies play in improving workforce development and employee engagement?
- Based on your experience, what recommendations would you make for improving employee engagement and the upskilling of blue-collar workers towards sustainable built environment development in Nigeria?

Corresponding author

Isaiah Igbinoba Omoregie can be contacted at: 223195238@student.uj.ac.za