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Abstract

The construction industry plays a vital role in the global economy. The World Economic Forum argues that the sector contributes to creating new jobs, drives economic growth, and provides solutions to address infrastructural, social, climate and energy challenges in society. This paper explores the impact of employment processes on the quality of the Nigerian Construction Industry. Using a qualitative method, construction workers will be interviewed on their perception of the process and its impact on the quality of their output and the Nigerian Construction Industry. These interviews will be conducted among employees of 10 major construction firms chosen based on their spread and profile within the sector. A conceptual framework will be developed which shows the relationship between the employment process and its impact on the sector, thereby recommending ways to curb unethical practices, and enhance supervision by overseeing agents. The framework will improve the quality of the outputs of the industry.

1.0 Introduction

The quality of Construction and maintenance in Nigeria cannot be ignored (Adeleke et al., 2018). Nigeria is a fast-growing country; it is the most populous black nation on earth (OECD, 2012; Kamer, 2022). However, poor infrastructure is a significant problem throughout the country. Countries with infrastructural deficit like Nigeria, introduce policies aimed at addressing identified deficit in its infrastructure. The construction sector has played significant role in a bid to address Nigeria's infrastructural deficit. However, the employment of the required human resources to work has been marred with unregulated employment processes thus compounding the challenge (Manzuma-Ndaaba, 2022). If not addressed professionally and effectively, this can lead to substantial financial, legal, health, and security risks.

For over 2 decades, Nigeria has seen a significant increase in building collapses (Okunola, 2022; Akinwotu, 2021; Pokharel, 2022), reduction in building quality, and abandoned projects (Taylor & James, 2023). This paper seeks to explore the impact of employment processes on the quality of the Nigerian Construction Industry to recommend the procedures that meet the required quality standards that can be achieved, thus creating value for money for all stakeholders. The following objectives were developed to help advance the aim of the research:

1. To review existing literature on the employment processes within the Nigerian construction industry.
2. To identify what constitutes quality for the construction industry.

3. To explore the impact of the employment process on the quality of products within the Nigerian construction industry.

The remaining section of the paper will be structured as follows. Section two reviews existing literature regarding the employment processes and quality in the Nigerian construction industry. The research methodology adopted for the paper is presented in section three. Data analysis and discussion are presented in sections four and five, concluding with research findings and recommendations.

2.0 Literature Review

2.1 Overview of the Nigerian Construction Industry

The construction sector contributed 30% as of 2021 (International Trade Administration (ITA), 2021) and over N2.5 billion to the Nigerian GDP (Gross Domestic Product) in the year 2022 (CBN, 2023). The industry has recorded an average growth rate of 3.2% in 2021 and 4% in 2022 (Businesswire, 2023). Nigeria's construction industry and growth can be attributed to the dynamism of development and the need to accommodate social and demographic changes over time. Particularly for Nigeria, the movement of the nation's capital from Lagos to Abuja in the 90s caused a considerable infrastructural challenge (NBS, 2015). Factors such as rural-urban migration, a rising middle class with the demands that go with it (Onishijan, 2018), and the need for social infrastructure provided an opportunity for the growth of the construction sector (Ewubar & Maeba, 2018).

The Nigerian construction industry is a vibrant sector that has steadily grown in recent years (Tunji-Olayeni, Mosaku, Fagbenle, and Omuh, 2017; Dang, 2020). This can be attributed to the country's increasing population, rapid urbanisation, and economic growth (Ogunleye, Owolabi & Mubarak, 2018). As a result, the industry has experienced increased demand for new housing, office buildings, and infrastructure such as roads, bridges, and ports (International Trade Administration, 2021).

According to Aliyu, Adamu, Abdu and Singhry (2015) and ITA, (2021), the Nigerian construction industry is comprised of four major players: public sector clients, private sector clients, contractors, and consultants. The public sector, which includes federal and state governments, is the most significant contributor to the industry, accounting for around 70% of total construction output (ITA, 2021).

The construction industry comprises three main sub-sectors: planning and design, materials production, and Construction. The planning and design sub-sector encompasses professionals such as quantity surveyors, architects, and consulting engineers working together as a team of professional consultants. The materials production sub-sector consists of builders' merchants and manufacturers of materials, who may specialise in specific types of materials. Some manufacturers focus on producing materials, involving many manufacturing processes. The third sub-sector, known as the construction sub-sector, includes civil engineering, building contractors, and specialist subcontractors. These entities are responsible for transforming the inputs from the planning and design stage and the materials into finished products or deliverables that meet the customers' requirements within the established project parameters.

2.1.1 Products of the Construction Industry

The construction industry is a vast and complex sector encompassing a wide range of products used in various construction projects. In this section, we will focus on the different types of construction industry products, specifically residential, commercial, industrial, institutional, infrastructure, and environmental. Understanding the different kinds of construction industry products is essential for individuals interested in pursuing a career in the construction industry.

Residential Construction

This refers to the process of building and renovating homes, apartments, and other residential structures, and it requires a range of construction products to create safe and comfortable living spaces. The products used in residential Construction vary depending on the specific project requirements. A study by Perez et al. (2005) highlights the critical products used in residential Construction, including building materials such as concrete, bricks, timber, steel, and roofing materials. They also emphasise the importance of energy-efficient products in residential Construction, such as insulation, efficient heating and cooling systems, and energy-saving appliances. These products are selected based on durability, aesthetics, energy efficiency, and cost-effectiveness. For example, energy-efficient windows, insulation, and efficient heating and cooling systems are commonly used in residential Construction to enhance energy efficiency and reduce utility costs (Bertram et al., 2019). Additionally, sustainable and eco-friendly products like recycled building materials and energy-saving appliances are gaining popularity in residential Construction to minimise environmental impact (Bertram et al., 2019).

Commercial Construction

Commercial Construction involves the development of buildings for business and commercial purposes, such as offices, shopping centres, hotels, and restaurants. The products used in commercial Construction differ from residential Construction due to the specific requirements of these structures. Common products in commercial Construction include steel, glass, concrete, electrical systems, plumbing fixtures, HVAC systems, and interior finishes. Durability, functionality, and aesthetics are crucial considerations when selecting these products. For instance, steel and glass facades are often utilised to create visually appealing and modern commercial buildings. At the same time, advanced insulation systems and efficient lighting systems help improve energy efficiency and reduce operational costs (Kamal, 2017). Moreover, integrating technology, such as Building Information Modeling (BIM), has become increasingly important in commercial Construction to facilitate stakeholder coordination and enhance project efficiency (Olanrewaju et al., 2022).

Industrial Construction

Industrial Construction involves building facilities such as factories, refineries, power plants, and warehouses. Due to the nature of industrial operations, the products used in this type of Construction must meet specific durability, safety, and functionality requirements. Essential products in industrial Construction include heavy machinery, steel, concrete, specialised electrical and mechanical systems, and safety equipment (Kamal, 2017). For example, reinforced concrete is commonly used in industrial Construction due to its strength and resistance to harsh operating conditions (Qin et al., 2022). Fire-resistant coatings, corrosion-

resistant alloys, and ventilation systems are also critical in industrial Construction to ensure safety and compliance with industry standards (Chen et al., 2021). Modular construction techniques are also being adopted in industrial projects to accelerate construction schedules and improve cost efficiency (Chen et al., 2021).

Infrastructure Construction

Infrastructure construction involves the development of public facilities that are essential for the functioning of society, such as roads, bridges, tunnels, airports, and water supply systems. The products used in infrastructure construction are selected based on their durability, strength, and ability to withstand heavy usage and environmental conditions. Common products in infrastructure construction include asphalt, concrete, steel, geosynthetics, and construction equipment (Chen et al., 2021). For example, high-performance concrete and fibre-reinforced polymers enhance infrastructure projects' strength and durability (Chen et al., 2021). Geosynthetics, such as geotextiles and geomembranes, are utilised for soil stabilisation and erosion control in infrastructure projects (Chen et al., 2021). Advanced construction technologies and techniques, such as prefabricated elements and modular Construction, are also employed in infrastructure construction to expedite project schedules and reduce costs.

Environmental Construction

Environmental Construction, also known as green Construction or sustainable Construction, focuses on minimising the environmental impact of construction activities and promoting the use of sustainable materials and technologies. The products used in environmental Construction aim to improve energy efficiency, reduce resource consumption, and enhance indoor air quality. Examples of products used in environmental Construction include eco-friendly building materials like bamboo, recycled steel, and bio-based insulation materials (Jin et al., 2022). Energy-efficient technologies, such as solar panels, rainwater harvesting systems, and green roofs, are also incorporated into environmental construction projects to reduce energy consumption and promote sustainability (Jin et al., 2022). In addition, the selection of materials and products in environmental Construction is guided by certifications and standards such as LEED (Leadership in Energy and Environmental Design) to ensure compliance with sustainability goals.

Institution Construction

Institution construction involves building educational institutions, healthcare facilities, government buildings, and other public structures. The products used in institution construction vary depending on the specific requirements of each institution. For educational institutions, products such as classroom furniture, laboratory equipment, IT infrastructure, and specialised teaching aids are necessary (Dion & Evans, 2023). Healthcare facilities require products such as medical equipment, sterile surfaces, HVAC systems with enhanced air quality control, and specialised lighting (Dion & Evans, 2023). Government buildings may require security systems, specialised lighting, energy-efficient systems, and sustainable design elements (Ochedi & Taki, 2022). The selection of products for institution construction focuses on meeting the functional needs of the facility, ensuring safety and compliance with regulations, and creating a conducive environment for the intended purpose of the institution.

2.2 Employment Process in the Nigerian Construction Industry

The employment process in Nigeria's construction industry significantly impacts the quality of work produced. Research indicates that the quality of health and safety standards in the Nigerian construction industry is associated with recruitment (Adeleke, Bahaudin & Kamaruddeen, 2018; Taofeeq, Adeleke, and Lee, 2022). Wapmuk (2017) supports the assertion that the employment process in Nigeria's construction industry significantly impacts the quality of the industry's output. The research found that the recruitment process in the construction industry was inadequate, and, as a result, the industry could not attract and retain the necessary skills and knowledge. The lack of skilled labour led to a decrease in the quality of the output. In addition, the research highlights the industry lacked the necessary equipment and tools, which are essential in creating the desired outcome. The lack of proper training and development of the labour force was a factor in the decrease in quality as the labour force could not operate with the necessary level of expertise. This study provides important insights into the impact of the employment process on the quality of construction projects in Nigeria, and it highlights the need for improved recruitment processes to ensure the quality of construction projects in the country.

2.2.1 Employment regulation framework in Nigeria

Nigeria's employment regulations have undergone several changes in recent years, particularly with the enactment of the Labour Act of 2010. This Act provides a comprehensive framework for regulating employment relationships in the country, including issues such as minimum wage, working conditions, and termination of employment. The Act also established the National Industrial Court (NIC) as a specialised court for resolving labour-related disputes. However, despite these regulatory efforts, Nigeria's labour market remains characterised by a high level of informality. Many workers, especially those in the informal sector, are not covered by the Labour Act and are therefore not entitled to the benefits and protections the law provides. In addition, enforcing labour regulations remains a significant challenge, particularly in the informal sector, where compliance with labour laws is often poor. Abubakar (2015;) noted that the lack of effective enforcement mechanisms, coupled with weak institutional capacity, undermines the effectiveness of Nigeria's labour regulations. This highlights the need for a concerted effort by the government and other stakeholders to improve compliance with labour regulations, especially in the informal sector, and strengthen the capacity of regulatory institutions to enforce labour laws.

2.3 Quality Measures

Quality in Construction is attained when a project exceeds or meets the Scope of Work guidelines set by the owner or the client (Rahman et al 2022). This is the roadmap that is there to ensure that a project is on track to success.

Parameters for measuring quality

Completion on Time: Completion on time is a measure of construction quality that assesses whether a project is finished within the specified timeframe. Meeting the scheduled deadline is indicative of effective project management, coordination, and efficient execution. It ensures that the project's stakeholders, such as clients and investors, can rely on the agreed-upon timeline, minimizing disruptions and avoiding additional costs associated with delays.

Completion within Budget: Completion within budget refers to successfully finishing a construction project without exceeding the allocated financial resources. This measure emphasises the importance of effective cost management, accurate estimation, and prudent financial planning throughout the project's lifecycle. Staying within budget ensures financial sustainability, avoids cost overruns, and enhances client satisfaction.

No or Low Casualties: The measure of no or low casualties in construction aims to minimize the occurrence of accidents, injuries, or fatalities on the construction site. It highlights the importance of implementing robust safety protocols, adhering to regulatory guidelines, and promoting a culture of safety among all project participants. Construction quality is closely linked to the well-being and protection of workers, visitors, and the general public, fostering a safe and secure working environment.

Fit for Purpose: Fit for purpose assesses whether a constructed facility or infrastructure meets its intended function and satisfies the requirements of the end-users. It takes into account aspects such as functionality, durability, reliability, and usability. A project that achieves a high level of fitness for purpose delivers a quality outcome that meets the needs and expectations of its stakeholders, ensuring long-term satisfaction and maximizing the value of the constructed asset.

2.4 Underpinning Theory

The influence of various arrangements and pressures wielded by the institutional environment on organisations is featured prominently in prevailing perspectives of neo-institutionalism. The capability of organisations to understand what the proper and relevant behaviour is anticipated in a context is shaped by the various structures and factors manifest in an institutional environment (Zucker, 1983; Davis, Desai and Francis, 2000). Neo-institutionalism advances norms of behaviour, laws, regulations, compulsion, occupational bodies, cultural directions, values, belief practices, and social cognition to be pressures and elements within environments that affect the structure, conduct, processes, practices and strategic directions of organisations (Meyer and Rowan, 1977; Scott, 1987; DiMaggio and Powell, 1983; Meyer, 2008). These formal and informal institutional factors shape behaviour and outcomes in society (Jepperson, 2002; Lammers et al., 2014). The theory underscores the importance of institutions as key drivers of behaviour and outcomes in society, and the composition of legal frameworks, regulatory systems, cultural norms, social networks, and organisational structures determine the formal and informal elements and factors informing the environment (Scott, 2008; Anderson & Colyvas, 2021).

Neo-institutionalism focuses on the interplay between organisations and the institutional environments in shaping behaviour, and the uniformity in the structures of the former (organisations), through the exerted pressures by the latter (institutional environments). Consequently, the type of environment directly affects the forms organisations encompass (DiMaggio and Powell, 1983; Scott, 2004; Scott, 2008). The influence of the institutional environment is attributed to its capability to explain various social understandings, beliefs systems and laws in a context. The explanations of the characteristics of different contexts help explain how organisations will organise and conduct their operations within them (Zucker, 1987; Davis et al., 2000; Scott, 2008). The various explanations on the roles of the institutional environment on organisations' actions and conduct have been proffered from two standpoints: these positions are internally (organisational-field level) and externally (nation-state level) ascribed to organisations (Zucker, 1983).

The conception of a nation-state and professional sphere as an institutional and organisational environment is cardinal in comprehending the influence on organisational behaviour and structures. The institutional and organisational environments obtain explanatory ability from complementary state elaborations. The organisational environment conceptualises the standards, norms and behavioural dictate of occupations (Scott, 1987); Directives that, when adhered to, lead to general acceptance by members of an organisations field (Scott, 1987), which are associated and under the purview of the state (Zucker, 1987). The overall number of organisations that constitute an acknowledged area of institutional reality, DiMaggio and Powell (1983) define as the organisational sphere. Generally, organisations that produce and deliver homogeneous goods and services, such as telecommunications, pharmacy, Engineering, banking and Construction. Such recognised fields, where organisations relate on the basis of their collectively shared domain of activities, are an organisational field. The organisation field share similar professions that collectively interrelate and exchange knowledge, which are key elements to understanding and behaviour.

The level of interplay between organisations in an area increases knowledge and information transfer between members engaging in the same commercial activity. It also influences organisations' structures of control (DiMaggio, 1982; Meyer 2008).

Members are expected to set out clear processes necessitating the development of organisational spheres with attendant benefits to practitioners. Organisational spheres provide an opportunity for sustaining the connection between organisations and aiding in fostering a collaborative relationship. (Fligstein, 2007). The regulations are derived from the collective understandings of players in the sphere, underscoring the norms and values that the players agree to govern them. The behaviour, practices and decisions of organisations in the organisational sphere is interpreted based on the perception and understanding of the regulation that guides association (Fligstein, 2007).

The neo-institutional lens has been adopted in this paper because of its explanatory ability on organisational actions and its impact on both employees and outcomes within the environment.

2.5 Preliminary Conceptual Framework

This section will present a preliminary conceptual framework (figure 1) linking the literature, which provides the basis for analysing the results and findings. The preliminary framework is based on the reviewed literature, which comprises four sectors: the construction industry

products, employment process factors, construction quality measures, and impacts of the employment processes on the construction quality of the products. The framework will be validated through data that will be collected from the semi-structured interviews.

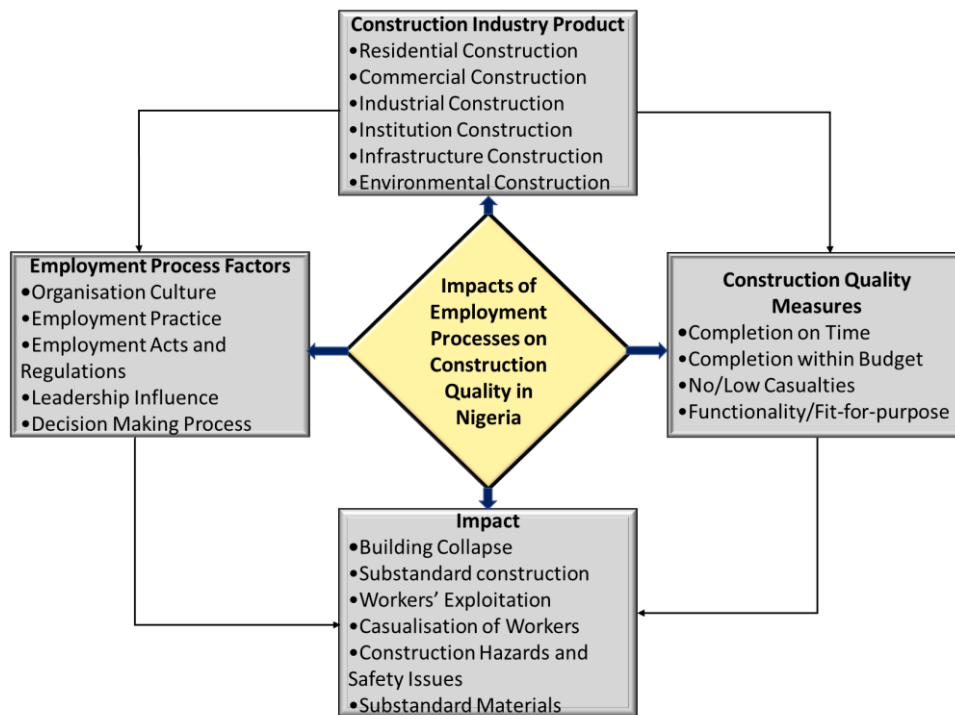


Figure 1: Preliminary Conceptual Framework

3.0 Methodology

This paper adopts a qualitative research design targeting ten major construction companies in Nigeria. The choice of companies is based on the size of their employees. The construction companies in Nigeria can be classified broadly into two viz; large, which are essentially Multinational Corporations (MNCs) and Medium/Small (SMEs). According to the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) criteria, any company with less than 200 employees are classified as medium/small firms. In contrast, a company with 200 and above employees are classified as large firms. However, the Nigerian Central Bank (CBN) categorised SMEs as companies with less than 250 employees. The study will adopt the SMEDAN classification because it is the agency in charge of SMEs in Nigeria. For stratification purposes, four of the selected companies will be from the large firm, while six of the firms will be from the SMEs. The reason is that the SMEs constitute over 85 per cent of the construction firms in Nigeria (Ali, 2021). This stratification will ensure wide and proportional coverage of all the construction firms in Nigeria. Participants will be drawn from the purposefully sampled companies based on their experience of the employment process and their roles during the employment process. Accordingly, at least three participants will be selected from each company for the semi-structured interview. These participants will include a member of the management team who usually sits on employment process, a member of the HR involved in recruitment process, and a worker who has been recently appointed.

Data will be collected using a semi-structured interview lasting 60 to 90 minutes. The use of semi-structured interview will allow researchers to follow a general outline of questions based on the identified themes in the literature but explore further on any emerging theme from the interview. The interviews will be recorded and transcribed verbatim using an online transcription tool known as Otter.AI. A thematic data analysis approach will involve identifying and organising patterns in the data related to the research objectives and questions. Thematic data analysis has been found to be flexible allowing researchers to adapt the research to the research questions, data type and theoretical framework (Javadi, & Zarea 2016).

The transcript will be coded line by line (Charmaz, 2006) using NVivo 12. This will allow researchers to familiarised with the data and then an initial priori codes will be aggregated into focused codes/ themes based on the research objectives (Charmaz, 2006). The themes will be reviewed and refined to ensure it accurately reflect the data and ensure it provides details description of the perspectives and experiences of social actors.

4.0 Results, Analysis and Discussion

This section will present the results and discussion of the findings.

5.0 Conclusions

This paper seeks to explore the impact of employment processes on the quality of the Nigerian Construction Industry, with a view to recommending the processes that meets required quality standards can be achieved, thus creating value for money for all stakeholders.

The researchers welcome any feedback that will lead to further development of the paper.

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