



CURRENT ORGANIZATIONAL DESIGN METHODS AMONG PRODUCERS OF ARTISANAL BUILDING MATERIALS IN NIGERIA

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Abstract

Artisanal building material sector in the construction industry is vital for ensuring that the construction space is active and positioned for growth. Though there have been efforts towards developing entrepreneurs largely, more needs to be done in the artisanal sector. Hence this study explored the current organizational design methods among producers of artisanal building materials in Nigeria. The study employed the use of qualitative approach, and Data was collected with the aid of focused group discussions. The study was conducted in three states which include, Jigawa, Kano and Kaduna states. The study discovered that the firms have good plans for procurement and quality. The study concluded that the current organizational structure design can be improved by adopting best practices most especially in terms of quality management. The study recommended that entrepreneurs should ensure proper chain of command where each worker should know his/her proper position in the organisation.

Keywords: Artisanal, Building, Design, Producers

Introduction

Producers of artisanal building materials play a crucial role in the global construction industry, particularly in regions where traditional craftsmanship and sustainable practices are highly valued (Shehu & Wang, 2020). These producers create materials such as adobe bricks, rammed earth, natural plasters, and timber frames using techniques that have been passed down through generations. The global perspective on artisanal building materials highlights their importance in

preserving cultural heritage, supporting local economies and promoting environmental sustainability. In many parts of the world, there is a growing appreciation for the unique qualities and benefits of artisanal building materials, leading to increased demand and recognition of their value in modern construction practices.

In Nigeria, the production of artisanal building materials is deeply rooted in the country's rich cultural heritage and diverse architectural traditions (Osuizugbo & Ojelabi, 2020). Nigerian artisans produce a wide range of materials, including mud bricks, thatch, bamboo and locally sourced stones, using techniques that have been refined over centuries. These materials are not only environmentally friendly but also well-suited to the local climate and conditions. The use of artisanal building materials in Nigeria supports local economies by providing employment opportunities and preserving traditional skills (Lemus-Aguilar et al., 2019). However, the sector faces challenges such as limited access to modern tools and technologies, lack of formal training, and competition from industrially produced materials which can be due to lack of proper organizational design (R. M. Burton & Obel, 2018).

Organizational design methods among producers of artisanal building materials are critical to the success and sustainability of their operations (Rovelli & Buttice, 2020). Organizational design refers to the process of structuring an organization to achieve its goals and objectives effectively (Oubrich et al., 2021). This includes defining roles and responsibilities, establishing communication channels, and creating systems for decision-making and resource allocation. In the context of artisanal building materials, effective organizational design can enhance productivity, improve quality and ensure the long-term viability of the business. Globally, producers of artisanal building materials have adopted various organizational design methods to address challenges and capitalize on opportunities. These methods range from cooperative models that emphasize collaboration and shared resources to more hierarchical structures that focus on efficiency and control.

In Nigeria, the organizational design methods used by producers of artisanal building materials vary widely, reflecting the diversity of the sector (Ejumudo & Ejumudo, 2021). Some producers operate as small family-run businesses, while others have formed cooperatives or associations to pool resources and share knowledge. The choice of organizational design can significantly impact the success of these producers, influencing their ability to access markets, secure financing, and adopt new technologies. However, there is limited research on the organizational design methods used by Nigerian producers of artisanal building materials, making it difficult to identify best practices and areas for improvement.

The problem of organizational design among producers of artisanal building materials in Nigeria can be seen in the inefficient or lack of organizational design. Many producers struggle with issues such as inadequate infrastructure, limited access to capital, and lack of formal training (Nkuda & Okocha, 2023). These challenges can hinder their ability to compete with industrially produced materials and limit their growth potential. In the literature, researchers have highlighted the need for more effective organizational design methods to address these challenges and support the development of the sector. Studies have shown that well-designed organizations are better equipped to adapt to changing market conditions, innovate, and achieve sustainable growth.

The significance of this study lies in its potential to inform policy and practice in the artisanal building materials sector in Nigeria. Policymakers and regulators will benefit from insights into the organizational design methods that can support the growth and sustainability of the sector (Lemus-Aguilar et al., 2019). This understanding can guide the development of policies and initiatives that promote best practices and address the challenges faced by producers. Producers of artisanal building materials will benefit from practical recommendations on how to structure their organizations to improve productivity, quality, and market access. By adopting effective organizational design methods, they can enhance their competitiveness and ensure the long-term viability of their businesses (Ferracuti, 2022). Additionally, the study will contribute to the academic discourse on organizational design and artisanal building materials, providing a valuable reference for future research in this area. The study aims to enhance the overall effectiveness and sustainability of the artisanal building materials sector in Nigeria.

Literature Review

Producers of Artisanal Building Materials

Producers of artisanal building materials have long been integral to the construction industry, particularly in regions where traditional craftsmanship and sustainable practices are highly valued (Unegbu et al., 2022). These producers create materials such as adobe blocks, stones and keystones. The global perspective on artisanal building materials highlights their importance in preserving cultural heritage, supporting local economies, and promoting environmental sustainability. In many parts of the world, there is a growing appreciation for the unique qualities and benefits of artisanal building materials, leading to increased demand and recognition of their value in modern construction practices.

The origin of artisanal building materials can be traced back to ancient civilizations, where local resources and traditional knowledge were utilized to construct durable and functional structures. For example, the use of adobe bricks dates back to ancient Mesopotamia, while timber framing has been a common practice in Europe and Asia for centuries. These materials and techniques

have stood the test of time, providing durable and resilient structures that are well-suited to their local environments.

Scholars have defined and approached the concept of artisanal building materials in various ways. One definition by Iheme et al., (2011) emphasizes the cultural significance of these materials, highlighting their role in preserving traditional craftsmanship and architectural heritage. Another approach by Gambo, (2023) focuses on the environmental benefits of artisanal building materials, noting their low carbon footprint and sustainable production methods. A third perspective by Unegbu et al., (2022) considers the social and economic aspects, emphasizing the importance of supporting local economies and providing employment opportunities through the production of artisanal building materials.

Currently, the concept of artisanal building materials has gained renewed interest as architects, builders, and homeowners seek to incorporate sustainable and culturally significant elements into their projects (Turner & Miterev, 2019). The growing awareness of environmental issues and the need for sustainable construction practices have led to increased demand for artisanal building materials. Additionally, the unique aesthetic qualities and cultural significance of these materials have made them popular choices for modern construction projects that aim to blend tradition with innovation (Yin et al., 2019).

The study views the production and use of artisanal building materials as a component of construction industry that offer significant benefits in terms of sustainability, cultural preservation, and economic development. (Aghimien et al., 2022) This perspective is important because it recognizes the multifaceted value of artisanal building materials and their potential to contribute to more sustainable and inclusive construction practices.

Organizational design methods

Organizational design methods among producers of artisanal building materials are critical to the success and sustainability of their operations. Organizational design refers to the process of structuring an organization to achieve its goals and objectives effectively (R. M. Burton & Obel, 2018). This includes defining roles and responsibilities, establishing communication channels, and creating systems for decision-making and resource allocation (Burton et al., 2019). In the context of artisanal building materials, effective organizational design can enhance productivity, improve quality, and ensure the long-term viability of the business. Globally, producers of artisanal building materials have adopted various organizational design methods to address challenges and capitalize on opportunities. These methods range from cooperative models that emphasize collaboration and shared resources to more hierarchical structures that focus on efficiency and control.

In the present day, the concept of organizational design has evolved to incorporate more flexible and adaptive approaches, recognizing the need for organizations to respond to changing environments and complex challenges. The growing complexity of the business environment and the increasing importance of innovation and agility have led to the development of new organizational design methods that emphasize collaboration, decentralization, and adaptability (Turner & Miterev, 2019).

This study views organizational design methods as key success and sustainability factors in the construction industry.

Methodology

According to Kumar (2014), qualitative research intertwines values and facts, whereas quantitative research maintains a separation between them. Qualitative research seeks understanding, while quantitative research aims to establish laws (Merriam, 2020). After reviewing various research methods, this study adopted a qualitative approach to generate knowledge about experiences and actions (Saunders et al., 2018). Although there are different strategies for conducting qualitative research, this study focuses on narrative and phenomenological strategies. The research was conducted in three contiguous states of North-Western Nigeria (Northwest Geo-Political Zone), chosen for their representative characteristics: Jigawa, Kaduna, and Kano.

Focus group discussions (FGD) were conducted during this study, lasting 1-2 hours each. During these interactions, every group member was given an equal opportunity to share their ideas, opinions, and perspectives. Focus groups are a qualitative research strategy used to explore attitudes, opinions, or perceptions towards an issue, product, service, or program through open discussions between group members and the researcher (Kumar, 2014; Dehalwar et al., 2023). A coding system was implemented for the 22 firms studied in Jigawa (4), Kaduna (6), and Kano (12).

Findings

Organising, along with planning, leading and controlling, is a key management function. Organising can be defined as “the process of structuring tasks and working relations into manageable components and coordinating human effort to achieve organizational goals” (Kenneth & Gillingham, 2003). Organisational design, on the other hand, is the decision-making process by which managers choose an organizational structure appropriate to the strategy for the organization and the environment in which members of that organization carry out that strategy. Organisational design thus has members looking in two different directions at the same time: inside the enterprise and outside the enterprise (Stoner et al., 2009).

It was observed that:

All the firms have elaborate and relatively good plans for procurement. KN4 states:

“It is a truism that we need inputs of sand, chippings and cement for our products from external suppliers”.

Some of the respondents JG2, JG3, JG4, KD4, KD5 and KN1, expressed their views on relationships with suppliers.

KN5 proffered that:

Our objective in procurement is to supply our companies with a flow materials to meet our needs. We also need to ensure continuity of supply by maintaining good relationships with our present suppliers. We also try to develop other sources as backups, alternatives or to meet our future plans. Again, we need to get value for money.

Other respondents - KD1, KD2, KD2, KD3, KN3, KN2, KN 4, KN6, talked on ethics, trust and company procedures. JG1 said: “One has to obtain his products by ethical means.

KN7 – added:

Suppliers will not trust you if you do not treat them fairly. We cooperate with one another with all departments, advising one another, giving one another relevant information to ensure organizational effectiveness. In the process, this ensures that the company develops the staff, policies and procedures.

KN8 chipped in: “We need to negotiate effectively and be responsible users of the environment”.

This is in terms of sourcing of ingredients for precasting the artisanal materials and continuous improvement so as to remain competitive, establish relationships and maintain customer requirements. Instructively, the KD1, the MNC mentioned that:

We need to project our identities, one of the respondents said. We need to ensure that our customers – architects, builders, quantity surveyors, engineers and the general public are aware of the products (blocks, etc.) we sell. This ability to manage our unique identity is central to our success as artisanal entrepreneurs.

He added: “one of the ways we preserve our competitive advantage is in tight control of our moulds for precasting products”. Control in this context is about setting standards (Weihrich et al, 2008) and environmental sustainability properties after serving its original purpose (Kibert, 2013; Pearce et al.,2018). Control by KD1 in this regard is about protecting their standard measure (to prevent competitors from getting hold of one to use it in precasting their products).

Every procedure can become a standard against which actual or expected performance can be measured.

Making artisanal materials is a procedure and the moulds are standards. Thus, they have to be controlled and avoid getting unauthorized persons getting hold of them. Additionally, the moulds for precasting interlocking stones, etc. are made of plastics. As you know, plastics are non-biodegradable materials. As responsible citizens and users of plastics we have to optimize processes to minimize damage to the ecosystem. There must be best practices for materials handling and utilisation. Plastic is a recyclable material that still has useful physical and chemical properties. As good corporate citizens, we have to practice principles of sustainability.

Table 1. Summarises the various themes that can be gleaned from the discussion on procurement.

Table 1. Themes on procurement

S/N	Firms	Themes
1.	KN5	Good relationships with suppliers; Continuity of supply of products
2.	JG1	Ethical procedures in business
3.	KN7	Trust in business relationships;
4.	KD1	Projecting the unique identity of the company
5.	KD1	Biodegradability of materials(e.g. plastic moulds); Environmental sustainability

Source: Authors construct

The entrepreneurs carry out regular inspection of materials and they do regular revision of plans especially as regards orders, storage, use of materials for precasting their products amongst other issues. This has manifold objectives including the desire to reduce waste. Globally, construction waste accounts for 35% of total solid waste which is a menace to the environment (Liu et al. 2020). The interaction with the firms revealed a number of issues regarding ordering materials and storage. All the respondents agree that it costs money to hold inventory and this reduces profitability. It is essential to have some level of inventory in order to continue production and avoid costly downtime (Grant, et al., 2006) according to some of the respondents, KD1, KD2 and KN1. In particular, KN1 revealed that:

We buy our fine and coarse aggregate, cement and other requirements either as stock or to use them directly to produce our blocks, kerbstones, etcetera. We usually estimate the requirements for production planning and control. What we understand about stock control is about policies which regulate the items kept in stock and their quantities. For each item, we meet and decide our requirements and time to order further supplies for production. As regards your question on Materials Requirement Planning(MRP), we do not engage in such academic activities.

Other respondents, JG2, JG4. KD3, KD5, KN6, KN7 and KN10 spoke on keeping inventory and material handling. KN6 specifically added that:

We store materials since this is convenient to have them available without making special arrangements. We try to reduce cost by purchasing what is optimally required for production. However, it is obvious to us that stock of sand, chippings, cement and so on tie up capital and constrain cash flow as well as flexibility. There is cost to storing materials – bulk materials like cement, sand and granite, especially. Material handling and management are always at a cost. We need to provide security for them and misfortunes for fire as regards flammable materials like petrol. We are lucky that most of our basic inputs like fine and coarse aggregate do not depreciate in value; but, you know, cement has a shelf life. In a nutshell these are some of the downsides of keeping inventory.

The themes that come out of the discourse on inspection of materials revolve are depicted in Table 2.

Table 2. Themes on inspection of materials

S/N	Firms	Themes
1.	KN1	Stock control/Keeping inventory
2.	KN6	Stock control/Keeping inventory; Material handling

Conclusions and Recommendations

The study concluded based on the findings that There were indigenous and multi-national firms engaged in the production of artisanal building materials in Nigeria. The multi-national company has a more elaborate organisational structure with its Nigerian headquarters in Lagos.

Based on the conclusion, the study recommended the following

- i. Entrepreneurs should ensure proper chain of command where each worker should know his/her proper position in the organisation.
- ii. Entrepreneurs should ensure proper unity of command where each worker should be accountable to only one person.
- iii. There should be clarity of delegation without ambiguity in instructions given to workers producing the artisanal materials.
- iv. They should always adhere to logistic principles of movement and transportation of ingredients for producing the artisanal materials and the precast products.
- v. Artisanal materials producers should improve their understanding of concepts of material management and relate same with logistics management.

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