



**FEDERAL UNIVERSITY OF TECHNOLOGY
MINNA**

**THE NIGERIAN CONSTRUCTION
INDUSTRY IDEOLOGY AND
PRAXIS IN PURSUIT OF GRICE'S
MAXIMS AND SUSTAINABLE
PRACTICES**

BY:

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Professor of Construction Management

**INAUGURAL LECTURE
SERIES 134**

27TH AUGUST, 2026



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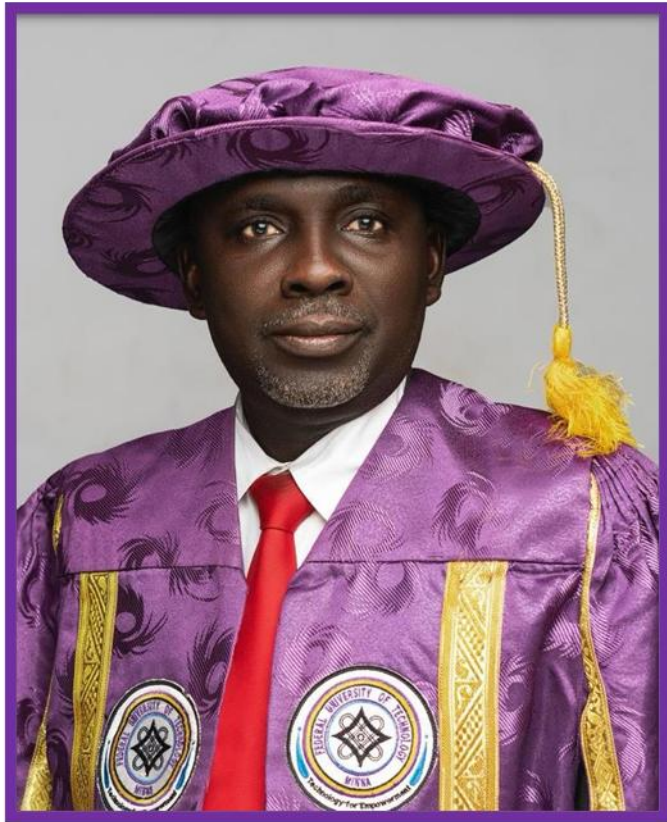
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THURSDAY 27TH AUGUST, 2026



Prof. Faruk Adamu Kuta
B.Sc. (UDUS), M.Tech. (FUTMIN), PhD (ATBU)
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PREAMBLE

The joy of standing before you all to present this inaugural lecture series to me is humbling and palpable but this cannot be achieved without the expert guidance of the Unseen, the Greatest and the Merciful – Allah. For His mercy, He chooses whom He pleases, for He is the Lord of bounties unbounded. The Vice Chancellor – Professor Faruk Adamu Kuta, the Deputy Vice Chancellor (Academic) – Professor Abdullahi Mohammed, the Deputy Vice Chancellor (Administration) – Professor Uno Esang Uno, the Registrar – Malam Danladi Mallam, the Bursar – Dr Hadiza Goje, the Librarian – Professor Katamba Saka, Dean Postgraduate School – Professor Abubakar Ndaman Saidu, Senate members and other members of the University community, my Dean – Professor Olurotimi Adebawale Kemiki and other Deans, my Head of Department – Dr Joseph Abah Apeh and other Heads of Department, Chairman of the Seminar and Colloquium Committee – Dr Victoria Chukwuemeka, distinguished invited guests, and my students - past and present, good morning. I am honoured to present my inaugural lecture titled **“The Nigerian Construction Industry Ideology and Praxis in Pursuit of Grice’s Maxims and Sustainable Practices”**.

My lecture today seeks to illuminate a path forward, a journey rooted in two key concepts: the wisdom in Grice’s Co-operative Maxims (though not a Linguistic like Herbert Paul Grice that espoused them in 1975, in logic and conversation, but I am basing them on the concept of rationality which is key) and the imperative of sustainable practices. Together, these concepts offer the lens through which we can reshape the ideological leanings, praxis, and structure of our construction sector, ensuring a more efficient, ethical, and resilient future for the construction industry in Nigeria. It has been a journey of over two decades where the studies carried out by my colleagues, students and I have always been about shaping the construction industry with our modest contribution to knowledge. I will start by looking at the construction industry generally so that the lecture can be properly situated. This will be followed by taking a snapshot on the evolutionary

trend of the industry in Nigeria. Next will be the ideological leanings, praxis and structure of the industry. Thereafter, the key concepts of Grice's maxims and sustainability will be interrogated. This will be followed by my contribution, the conclusion that will result thereof and finally, my recommendations.

1.0 INTRODUCTION

The construction industry unlike many manufacturing situations is concerned with one-off projects. This naturally creates difficulties for effective management control because each contract often has a fresh management team; labour is transient and recruited on an ad-hoc basis; added to all these are the ever-changing weather conditions. Humans are compulsive builders who have demonstrated throughout the ages a remarkable and continually improving talent for construction. As knowledge and experience have increased, the ability of humankind to build structures of increasing size and complexity has expanded enormously. In the modern world, everyday life is maintained and enhanced by an impressive array of construction of all kinds, awesome in its diversity of form and function. Buildings, highways, tunnels, pipelines, dams, docks, canals, bridges, airports, and a myriad of other structures are designed and constructed so as to provide us with the goods and services we require. As long as there are people on earth, structures will be built to serve them (Clough *et al.*, 2015; Chilipala *et al.*, 2020).

Generally, there are three levels to define construction within the literature. At one extreme, construction is referred to as an economic activity that involves the entire construction process from producing raw and manufactured building materials and components and providing professional services such as design and project management, to executing the physical work on site. In this view, construction is an economic activity that crosses over all three economic subsectors: primary subsector that involves the extraction of natural resources; secondary subsector that involves the manufacture of building materials and components, and the transformation of these materials into finished buildings; and tertiary subsector that involves the provision of consultancy services such as project management, design and structural

engineering. From this angle of approach, the construction process actually starts long before the physical work on site that transforms materials and design into the complete buildings, structures and facilities (United Nations, 1990; Gruneberg, 1997; Dang & Pheng, 2015)

At the other extreme, construction is conceived as an economic activity that focuses only on the last stage of the construction process which is the physical work carried out on the production site. From this perspective, all services such as project management, planning and design as well as the offsite manufacture and supply of building materials are excluded. Following this classification, construction is perceived as an economic activity directed to the new work, renovation, repair or extension of buildings, structures and other heavy constructions such as roads, bridges, dams and so forth (Ofori, 1990; Ive & Gruneberg, 2000)

There is one more way of defining the construction industry, which is somewhat in between the two above mentioned extremes. In this context, construction is referred to as the production process of the built environment including various activities from conception through design to execution. The objects of the built environment include buildings and other fixed structures. In other words, the construction industry is “a sector of the economy which, through planning, design, construction, maintenance and repair, and operation, transforms various resources into constructed facilities”. As such, the construction industry encompasses all firms or organizations, who professionally engage in the construction process, from those providing consultancy services in the planning, design, supervisory and managerial services to those carrying out execution work on site such as the general contractors and builders (United Nations, 1990; Hillebrandt, 2000; Pheng & Hou, 2019)..

Construction projects are complex and time-consuming undertakings. The structure to be built must be designed in accordance with applicable codes and standards, culminating in working drawings and specifications that describe the work in sufficient detail for its accomplishment in the field. The building of a structure of even modest

proportions involves many skills, numerous materials, and literally hundreds of different operations. The assembly process must follow a certain order of events that constitutes a complicated pattern of individual time requirements and sequential relationships among the various segments of the structure. Each construction project is unique in its own way, and no two are ever quite alike. Each structure is tailored to suit its environment, designed and built to satisfy the needs of its owner, arranged to perform its own particular function, and designed to reflect personal tastes and preferences (Clough *et al.*, 2015; Chilipala *et al.*, 2020).

2.0 NIGERIAN CONSTRUCTION INDUSTRY EVOLUTIONARY TREND

The trajectory of the Nigerian construction industry over the past century is a narrative of growth, aspiration, and persistent challenges. In the early 20th century, particularly during the colonial era, construction was largely driven by the infrastructure needs of the colonial administration, with traditional building methods slowly giving way to imported techniques and materials (Onuorah *et al.*, 2022). Post-independence, the industry became a critical engine for national development, contributing significantly to the Gross Domestic Products and absorbing a substantial portion of the labour force, reflecting periods of intense activity and "construction booms" (J. *et al.*, 2020).

However, this growth was not without its complexities. Indigenous contractors, despite various governmental interventions aimed at capacity building, frequently struggled to compete with more established foreign firms, leading to a reliance on expatriate expertise for major projects (Adams, 1997; Jimoh & Johnson, 2006). Organisational and management standards often lagged, resulting in widespread issues such as project abandonment, delays, and a pervasive problem of substandard work (Aniekwu & Okpala, 1988; Jimoh & Ogunbode, 2006; Ngoka, 1979). The late 20th and early 21st centuries have further exposed deep-seated issues including corruption, ethical dilemmas among professionals, and a lack of effective mechanisms for project oversight (Ameh & Odusami, 2010; Jimoh *et al.*, 2015; Awoyera *et al.*, 2021).

More recently, issues of quality compromise, stemming from a lack of adherence to national standards and the use of substandard materials, have become prevalent (Jimoh *et al.*, 2017; Opawole *et al.*, 2022). Social dimensions have also emerged, notably the underrepresentation and limited participation of women in key professional roles within the industry, often attributed to ingrained socio-cultural barriers and gender bias (Jimoh *et al.*, 2016; Kofoworola & Buki, 2019; Shola & Abdulazeez, 2020). As Nigeria strides deeper into the 21st century, the imperative to modernise, improve quality, and enhance global competitiveness has become unequivocally clear (Okolie *et al.*, 2020). The industry faces the dual challenge of addressing its historical shortcomings while simultaneously embracing contemporary demands for efficiency, integrity, and sustainability.

3.0 IDEOLOGY, PRAXIS, AND STRUCTURE OF THE NIGERIAN CONSTRUCTION INDUSTRY

The prevailing ideology within the Nigerian construction industry has, for too long, been characterised by a short-term, often fragmented, and at times, opportunistic approach (Ezeokoli *et al.*, 2021). Rather than a holistic vision of long-term value creation and national development, the focus has frequently been on immediate project completion, often at the expense of quality, efficiency, and ethical conduct (Aniekwu & Okpala, 1988; Jimoh *et al.*, 2015). This mindset contributes to pervasive issues such as building failures and the generation of significant waste, reflecting an output-oriented rather than value-driven philosophy (Okoye *et al.*, 2020; Jimoh, 2023). The ethical fabric, particularly among some professionals, has also faced scrutiny, hinting at an underlying ideology where expediency sometimes trumps professionalism (Ameh & Odusami, 2010; Oyewobi *et al.*, 2011).

In terms of praxis, or the actual practices and methods employed, the industry operates within a complex web of stakeholders including clients, consultants, contractors, and suppliers. Contractual arrangements, whilst designed to facilitate project delivery, can sometimes be convoluted and contribute to the underperformance of indigenous contractors (Aniekwu & Okpala, 1988; Oyewobi *et al.*, 2016). Issues such as the deregulation of material specifications also

impact project delivery, leading to concerns about quality (Henry & Okereke, 2020). Despite a recognised need for technological advancement and improved labour force skills, issues of low-quality work persist (Abidemi, 2022; Opawole *et al.*, 2022). Furthermore, critical aspects like human resource management, though vital for operational efficiency, frequently suffer from ineffective communication practices (Abdullahi *et al.*, 2016; Babalola & Aigbavboa, 2022). The engagement of women in professional roles, particularly in building, remains disproportionately low, reflecting persistent gender imbalances in practice (Jimoh *et al.*, 2016; Shola & Abdulazeez, 2020). The slow adoption of modern practices, such as Building Information Modelling and blockchain technology, further exacerbates these practical challenges (Babatunde *et al.*, 2020; Okanlawon *et al.*, 2023).

The structure of the Nigerian construction industry is largely comprised of a vast number of small and medium-sized enterprises alongside a smaller contingent of larger, often foreign-affiliated, firms. The viability and professionalism of many local firms remain a significant concern (Jimoh & Johnson, 2006; Oladimeji, 2019). There is a clear struggle with fragmented information flows and a slow adoption of modern technological tools. This structural fragmentation hinders collaboration, stifles innovation, and often results in inefficiencies across the project lifecycle. The industry's operational environment has been described as inherently problematic, further challenging any attempts at structural reform (Henry & Okereke, 2020).

3.1 Espousing Grice's Co-operative Principles Maxims in Relation to the Nigerian Construction Industry

Paul Grice's Co-operative Principle, which posits that participants in a conversation should make contributions "such as is required, by the accepted purpose or direction of the talk exchange in which you are engaged," is without gainsaying relevant to the Nigerian construction industry (Aminah, 2022). This principle is underpinned by four fundamental maxims:

1. **Maxim of quantity:** Be as informative as required; do not be more informative than required.
2. **Maxim of quality:** Do not say what you believe to be false; do not say that for which you lack adequate evidence.
3. **Maxim of relation:** Be relevant.
4. **Maxim of manner:** Be clear, brief, orderly, and avoid obscurity and ambiguity.

Effective communication is key for efficient collaboration, building relationships, and fostering trust (Järvenpää *et al.*, 2021). Effective communication is *sine qua non* to project success to avoid misunderstandings and misinterpretations (Abdullahi *et al.*, 2016; Abdullahi *et al.*, 2021; Aminah, 2022; Babalola & Aigbavboa, 2022). However, the industry's pervasive issues, such as contract failures, abandoned projects, delays, and cost overruns (Jimoh & Ogunbode, 2006; Obebe *et al.*, 2020; Usman, 2020; Madu *et al.*, 2025), suggest non-observance of these maxims. When communication is ineffective, it leads to poor performance (Galli, 2019). Risks include sub-contractor failures, scope and design changes, ineffective knowledge transfer, and poor stakeholder engagement (Galli, 2019; Ganiyu *et al.*, 2023). For instance, ethical erosion and corruption within the industry (Ameh & Odusami, 2010; Oyewobi *et al.*, 2011) directly violate the maxim of quality. Obscure contractual terms or the deliberate withholding of crucial information undermine the maxims of manner and quantity. The pervasive problem of abandoned projects also reflects a failure in the maxim of relation, as communication may not be consistently focused on the core purpose of project completion (Aniekwu & Okpala, 1988). Adherence to these maxims, allows for better navigation of ambiguity and incompleteness in communication (Abdullahi *et al.*, 2016; Saad *et al.*, 2025).

Taking a cursory look at how Grice's maxims can be used to shape the construction industry:

1. **Shaping ideology:** A conscious commitment to the **maxim of quality** (truthfulness and evidence) can directly combat the ethical erosion and corruption that have plagued the industry (Ameh & Odusami, 2010; Oyewobi *et al.*, 2011; Jimoh *et al.*, 2015). An

ideology built on transparency and integrity will foster greater trust among stakeholders, moving away from adversarial relationships (Aduwo *et al.*, 2020). By adhering to the **maxim of quantity**, all parties will be obligated to provide all necessary information, preventing contract failures due to information asymmetry and promoting accountability. This would foster an ideology of collective responsibility and collaborative success (Abdullahi *et al.*, 2016; Abdullahi *et al.* 2021).

2. **Shaping praxis:** In practical terms, effective communication, will improve collaboration and project performance (Järvenpää *et al.*, 2021; Moyanga & Adeoye, 2021). Clear, unambiguous communication, following the **maxim of manner**, in contractual agreements and specifications, would reduce disputes and rework, directly addressing issues of poor quality work and contract failures (Aniekwu & Okpala, 1988; Oyewobi *et al.*, 2016a; Obebe *et al.*, 2020). Applying the **maxim of relation** will ensure that discussions and actions remain focused on project objectives, enhancing productivity and preventing deviations that lead to project delays (Jimoh & Ogunbode, 2006; Usman, 2020). This will facilitate better human resource management, communication and overall organisational effectiveness (Jimoh *et al.*, 2023; Babalola & Aigbavboa, 2022). Such communication will also enable better risk management and smoother project implementation (Garba & Mohamed, 2018).
3. **Shaping structure:** By fostering an environment of honest and clear communication, the industry structure can become more integrated and less fragmented. Trust built through consistent adherence to best practices could encourage greater participation from indigenous firms, improving their viability and professionalism (Jimoh & Johnson, 2006; Oladimeji, 2019). This cultural shift, driven by communicative competence, will lead to a more efficient and competitive Nigerian construction industry (Abdullahi *et al.* 2016; Okolie *et al.*, 2020; Abdullahi *et al.* 2021).

3.2 Espousing Sustainable Practices in Relation to the Construction Industry

Since the Brundtland Report entitled 'Our Common Future' was presented at the United Nations Conference on Environment and Development in 1987, the idea of sustainable development had only gained global political traction (Lowe & Zhou, 2013). One theme that emerged from the debate on the successor agenda to the millennium development goals (MDGs) is the importance of true integration of environment into development ambitions. Environmental sustainability is a core pillar of the post-2015 agenda and a prerequisite for lasting socioeconomic development and poverty eradication. Healthy, well-managed and diverse ecosystems and resources can play a strong role in mitigating future environmental challenges and improving livelihoods everywhere. Therefore, it is crucial to ensure that the development agenda for the future reflects the links between socioeconomic and environmental sustainability and protects and reinforces the environmental pillar (Du Plessis, 2002; Jimoh, 2023).

Sustainability in the built environment is based on the principle of sustainable growth, a concept designed for the continuation of human life that is based on prudence in today's decisions without compromising the conditions of future decisions significantly. Research has shown that a significant role in achieving sustainable development is played by the construction industry. Despite its perceived role in the construction industry, its adaptation to sustainable practices in construction projects is slow (Aigbavboa *et al.*, 2017; Jimoh *et al.*, 2021). By 2056, global economic activity is estimated to have risen fivefold, global population by more than 50 percent, nearly triple energy consumption, and manufacturing activity by at least threefold by 2056. In turn, these will significantly increase housing construction to curb the rapidly growing world population, which will also increase the use of energy and finite fossil fuel resources, leading to their exhaustion and heavy environmental impacts, depletion of the ozone layer, emissions of carbon dioxide, global warming and climate change (Peter *et al.*, 2012). It has been identified that the largest single contributors to carbon dioxide emissions that are intimately linked to global warming

are residential and commercial buildings. Therefore, sustainability in the construction industry is germane even in the traditional project delivery method, due to the growing need to save costs, optimize performance and meet the external needs of stakeholders (Oladokun & Ujene, 2017).

Given the social, environmental and economic significance of the construction industry, even minor performance gains will have a strong impact on people, the economy and the environment. For example, a 1 percent increase in productivity worldwide could save \$100 billion a year. For its future success, the sector will rely on successful co-operation with all stakeholders (WEF & The Boston Consulting Group, 2016).

Societal: A 1% drop in building costs will save society about \$100 billion annually. In reality, the targets go well beyond that the vision formulated by the UK government for 2025 is to reduce the initial construction costs by 33 percent and the entire life cycle costs of built properties (Her Majesty Government, 2013).

Economic: The global infrastructure capacity deficit is expected to hit 15-20 trillion dollars by 2030. Closing this gap could create up to 100 million additional jobs and produce economic growth of \$6 trillion a year in the long run (B20 Australia, 2014). Up to 30 percent of this boost could come from changes to building projects and asset operations.

Environmental: By harnessing the capacity of the building sector, many countries can cut emission rates cost-effectively and achieve energy savings of more than 30% (United Nations Environment Programme, 2009). The target set by the Government of Nigeria if the Building Energy Efficiency Code of 2017 when implemented in buildings has the capacity to save 40% of current energy usage. How this can be achieved in Nigeria must be a tall order especially with our propensity for policy somersault!

The Nigerian construction industry's sustainability performance has been described as "poor" (Okoye *et al.*, 2020). This is partly because traditional construction practices are often output-oriented, leading to significant waste generation (Okoye *et al.*, 2020; Ibe, 2023).

Construction activities contribute greatly to environmental degradation and increased carbon footprint (Akinshipe *et al.*, 2019).

Key sustainable practices include:

1. **Resource efficiency and green building:** Mitigating environmental impacts and carbon footprint through the adoption of sustainable practices such as green building, including the use of sustainable materials and designs (Akinshipe *et al.*, 2019; Lembi *et al.*, 2021). This also encompasses lean practices to minimise waste (Babalola *et al.*, 2019).
2. **Waste reduction:** Moving away from processes that generate waste and embracing practices that promote circularity, ensuring materials are kept in use for as long as possible (Okoye *et al.*, 2020; Oladiran, 2009).
3. **Sustainable design and planning:** Integrating sustainable principles from the early stages of a project, encompassing economic, social, biophysical, and technical indicators (Nwokoro & Onukwube, 2011). This includes promoting the use of local materials and climate-responsive designs (Enwin & Ikiriko, 2024; Lembi *et al.*, 2021).

Despite the clear need, the Nigerian construction process faces significant challenges in adopting these practices, and the industry often appears unwilling to apply many available methods (Jimoh & Banuso, 2008; Toriola-Coker *et al.*, 2021). Major barriers include cost constraints, which are often the dominant factor in decision-making (Akinshipe *et al.*, 2019; Ohiomah & Aigbavboa, 2020; Toriola-Coker *et al.*, 2021). There is also a recognised lack of awareness regarding sustainable construction, which acts as a major impediment to its adoption (Adindu *et al.*, 2020; Jimoh *et al.*, 2021). While professionals possess some knowledge of sustainable construction, there's a need to appraise how the local industry is performing in delivering sustainable development (Akinshipe *et al.*, 2019). Improved laws, education, training, and knowledge management are seen as crucial for all stakeholders to enhance the quality of working life in sustainable construction (Nwokoro & Onukwube, 2015; Chukwu *et al.*, 2019).

The imperative for sustainable practices is no doubt a catalyst for transformation that will make the Nigerian construction industry to have a re-think on its approach. Also, taking a cursory look at how sustainable practices can be used to shape the construction industry:

1. **Shaping ideology:** Embracing sustainable practices necessitates a shift from an ideology of short-term profit and output-oriented construction to one that prioritises long-term value creation and intergenerational equity (Okoye *et al.*, 2020; Toriola-Coker *et al.*, 2021). This involves a deeper recognition of construction's significant environmental and social impact (Jimoh & Banuso, 2008; Akinshipe *et al.*, 2019) and a commitment to mitigating it. The ideology is expected to move towards valuing resource efficiency, waste reduction, green building principles, and considering the entire lifecycle of projects (Nwokoro & Onukwube, 2011; Okoye *et al.*, 2020).
2. **Shaping praxis:** Sustainable practices are directly influencing how projects are conceived, designed, and executed. This includes integrating green building principles from design to completion, necessitating the use of sustainable materials and designs (Akinshipe *et al.*, 2019; Tunji-Olayeni *et al.*, 2018). There will be a greater emphasis on waste management and circular economy principles, challenging traditional output-oriented practices (Ibe, 2023; Oladiran, 2009). The identification of barriers to sustainable construction, such as cost constraints (Ohiomah & Aigbavboa, 2020; Toriola-Coker *et al.*, 2021), will drive innovation in cost-effective sustainable solutions. This transformation in praxis demands new skills, and a more integrated, life-cycle approach to project delivery (Chukwu *et al.*, 2019; Madu *et al.*, 2019; Oyewobi *et al.*, 2023).
3. **Shaping structure:** The drive for sustainability necessitates systemic changes. It pushes for improved laws and regulations that support sustainable construction practices, and for greater education and training of professionals to build capacity in this area (Du Plessis, 2002; Akinshipe *et al.*, 2019, 2019a; Nwokoro & Onukwube, 2015). It fosters collaboration among stakeholders to

overcome barriers to adoption, such as lack of awareness (Adindu *et al.*, 2020; Jimoh *et al.*, 2021). This societal pressure will inevitably lead to a more resilient and future-oriented industry structure, where sustainability is not an afterthought but a core guiding principle embedded in every stage of the construction process. This fosters greater innovation and resilience within the industry's structure (Babatunde *et al.*, 2020; Jimoh *et al.*, 2021a).

4.0 MY CONTRIBUTION

Mr Vice Chancellor Sir, distinguished guests, looking back, I did not set out to become a professional in the construction industry, let alone become a Professor in the Department of Building. I actually wanted to study Veterinary Medicine where my interactions would have been with animals! Here we are today, as fate will have it. My advise to parents and children is to make the best out of every situation. Based on the title of the lecture, my works over the years have been on the way the maxims enunciated by Grime's can be used to shape the construction industry. In a related development, my works have also been focused on how sustainable practices can be used to shape the industry so that the adversarial relationships which are prevalent can be mitigated.

To these end, here are some of my contribution to the field of construction management:

4.1 Assessment of Communication Practices adopted for Managing Construction Projects in Abuja

Human activities require sending and receiving information for continuity thereof. These activities cut across many sectors including the construction activities. Dave and Koskela (2009) asserted that many construction activities rely heavily on information passage from one party to another. Information often flows from the topmost level of management and cascades all to the bottom. Information which is disseminated in the construction industry often involves financial activities, managerial activities and technical actions. On most construction sites, various stakeholders are often involved to ensure that the project objectives are met, achieved through effective

communication among relevant stakeholders. Abadie *et al.* (2013) submitted that ineffective communication method remains a stumbling block to project delivery. This could be the reason why Aulich (2013) and Kamalirad *et al.* (2017) emphasised the need for a detailed dissemination of information to all the relevant stakeholders. Bond-Barnard *et al.* (2013) stated that effective communication among project participants helps to improve the level of understanding in order to achieve project objectives. Efficient and effective communication is key to achieving project objectives. Failure to share project information adequately amongst project participants affects coordination and control regarding project delivery (Meng, 2012; Gorse & Emmitt, 2007). Gorse and Emmitt (2007) submitted that communication network often breakdown during crises between relevant stakeholders, which inhibits projects success. Darvik and Larsson (2010) believed that various stakeholders should device means to communicate effectively and regularly in-order to ensure projects are delivered as planned. According to Wong and Lam (2011), the mode of communication and information transfer among relevant stakeholders are key to project performance. Therefore, there is the need for various stakeholders to communicate effectively so as to complete project within the cost target, time and quality. Therefore, when construction project stakeholders communicate effectively, there will be a cut on the volume of needless expenditure (Kamalirad & Kermanshachi 2018). Abdullahi *et al.* (2021) assessed the communication practices adopted for managing construction projects in Abuja. The study adopted mixed methods design using convergent parallel strategy to obtain data from key stakeholders who were actively involved in construction projects domiciled in Abuja. Key findings of the study indicated that drawings were the most used mode of communication. Language was the most frequently stated as a barrier to effective communication by all the stakeholders. Furthermore, the site operatives were the most difficult people to communicate with during project construction phase. The Mechanical engineers, Quantity surveyors and Civil engineers communicate frequently with the Architects. This study recommended that other available modes of communication should be effectively

utilised in order to improve communication between stakeholders. Again, the site operatives should be trained on communication and interaction skills in order to engender improved project delivery. The outcome of this research highlights practical implications for the construction project team regarding communication practices adopted. It further exposed the need for effective communication among stakeholders in the construction for achieving project goals.

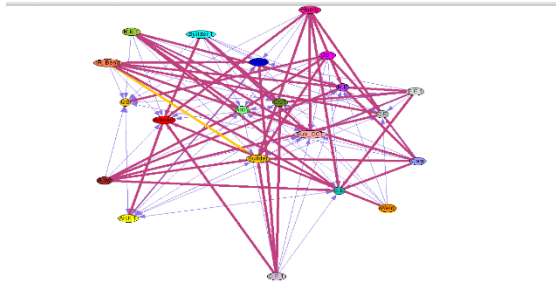


Figure 1: Communications network Sociogram among parties on site

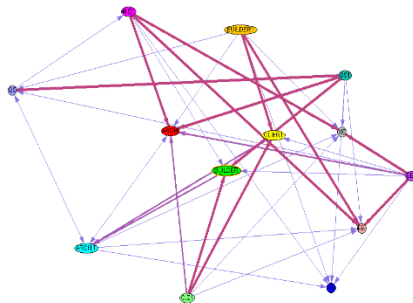


Figure 2: Communications network sociogram among professionals on site

4.2 Members Ethical Compass in Doldrums: Code of Conduct for Professional Builders to the Rescue

The construction industry plays a tremendous role in the economy, and the activities of the industry are also vital to the achievement of national socio-economic development goals of providing shelter, infrastructure and employment. In spite this positive attribute, the nature of the construction industry makes it easier for fraud and financial crime to be

perpetrated more readily than other sectors. This is due to the nature of the industry that is fragmented, usually involving multiple subcontractors thereby making consistency of standards difficult and eventually making the issue of payments complicated (www.bdo.co.uk accessed on 29/08/2013).

According to Wells (2014), despite the fact that investment in capital projects is essential for economic growth and development, there is widespread dissatisfaction with the outcomes of construction investment due in part to mismanagement and corruption by the professionals in the industry. Globally, the construction sector is regarded as one of the most corrupt sectors. Vee and Skitmore (2003) and Chartered Institute of Building (CIOB, 2006) identified the main forms of corruption as unethical practices to include patronage, nepotism, fronting companies, bid rigging and collusion, submitting multiple bids and conflict of interest. In a related development, Ameh (2011) citing several sources, stated that among the most critical ethical issues faced by the construction industry are unethical tendering practices, fraud, bribery, conflict of interest, negligence and collusion, misrepresentation of completed work or work value, poor quality control or quality of work and technical incompetence. Therefore, “doing the right thing” is a hallmark of ethics which is measured by the extent of trust and integrity by which business is conducted by companies and individuals (Mason, 2011).

Mason (2011) stated that ethical conduct is the compliance with the following ethical principles: i. Honesty – to avoid conduct that will likely deceive others; ii. Fairness – to avoid benefitting from the unfair treatment of other people; iii. Fair reward – to avoid acts that are inimical to others from getting commensurate reward for any work done; iv. Reliability – to update one’s skills and provide services only in areas of one’s competence; v. Integrity – to be above board where it concerns public interest; vi. Objectivity – to make sure that areas of possible conflicts of interest are noted and disclosed especially to those that will be affected in one way or the other by it; vii. Accountability – to render account by way of providing information for the common good of the public. The deliberate withholding of production

information, non-adherence to pre-qualification guidelines, allowing contractors to submit more than one tender using sundry company names, price collusion, use of sub-standard materials among others call to question ethical issues in the Nigerian construction industry. Jimoh *et al.* (2015) sought the perception of building professionals vis-à-vis ethical issues based on the Nigerian Institute of Building (NIOB) handbook and Izam (2001) using mixed mode approach.

The results indicated that only two (2) of the 15 ethical codes which is “using their knowledge and skills for the enhancement of the public interest” and “striving to increase the prestige and competence of the building profession” had the highest mean scores of 3.73 and 3.69 respectively. The respondents perceived these as being of high level of adherence. The remaining 13 codes were adhered to moderately as perceived by the respondents. It was however worrisome that “obtaining a written letter of commission from the employer before the commencement of consultancy services” with a mean score of 2.55 was the least as perceived by the respondents. If a written letter of commission was not obtained before commencing the consultancy, verbal agreements may become contentious especially when the project went awry. In the Nigerian context where sometimes consultancy jobs are given based on political patronage, ‘god-fatherism’, cronyism etc., this scenario may be the order of the day. The industry will be worse for it and professionalism will suffer. It was therefore not surprising that abiding by the specific regulated fees for each consultancy services as contained in the NIOB conditions and scale of fees had a mean score of 2.67. The reason for this was obvious based on the point raised under obtaining letter of commission before the commencement of consultancy service. The level of patronage was another issue as some clients preferred to patronise quacks than professionals. Contracting firms maintaining insurances against risks for which insurance was contractually compulsory had a mean score of 2.61, this was ranked 13th. Apart from on Government projects and other foreign agencies operating in the country, contracting firms’ level of adherence was low. This might be due to the weak enforcement of Insurance Act number 37

of 2003 as many contractors do not comply with the quotation stated below:

"No person shall cause to be constructed any building of more than two floors without insuring with a registered insurer his liability in respect of construction risks caused by his negligence or the negligence of his servants, agents or consultants which may result in bodily injury or loss of life to or damage to property of any workman on the site or of any member of the Public" (Federal Government of Nigeria Gazette on Insurance Act 37 of 2003 part xi, section 64 subsection 1).

General comments on ethical issues by the respondents:

The comments of the respondents could be summarised under the following: Lack of awareness on who a builder was; compromise was the other of the day leading to sharp practices and corruption; regulatory bodies such as Council of Registered Builders of Nigeria (CORBON), Architects Registration Council of Nigeria (ARCON) were not doing enough in terms of enforcement; inadequate enforcement of the available laws by the Government; the number of builders engaged in consultancy services was low; interference on job specifications by professionals within the construction industry and skill acquisition for raising competency level was low.

Jimoh *et al.* (2015) concluded that the level of adherence by the building professionals' vis-à-vis NIOB code of conduct for professional builders was low. To this end, the following suggestions were advanced for the improvement of ethical issues: Efforts should be made by CORBON in ensuring that professionals that were found wanting to be blacklisted in order to send signals to would-be culprits; relevant legislation such as the Insurance Act of 2003 should be given adequate backing by the Government so that the enforcement could be strengthened; adequate public awareness was necessary to be carried out by bodies such as CORBON and NIOB in order to sensitise the public on building profession; and Continuous Professional Development (CPD) should be organised by the NIOB. This was to give better platform for building professionals to be acquainted with ethical issues especially the NIOB code of conduct.

4.3 Women Professionals' Participation in the Nigerian Construction Industry: Finding Voice for the Voiceless

Gender in Nigeria Report of 2012 affirmed that an investment in women and girls in Nigeria will increase productivity and will promote sustainable growth. Although awareness has been created in the country over the past few years that something should be done to empower women and enable them to fight poverty by generating revenues and resources to ensure the development of the country's economy, women involvement in construction is abysmally low. However, today's construction industry is conventional in employing women due to extreme gender stratification. Most of the women working in the construction industry carry out administrative, technical and specialized work while the employment of women at the professional level is very little and the data are limited to zero, but in many countries, these represent <1% of the labour force (Clarke *et al.* 2005).

Women are detail oriented and this skill is required in project control/management. Moreover, experience shows that women executives are better communicators, more effective in decision-making and seek less personal glory than their male counterparts. Women generally face challenges as they advance in their careers, and this is most common in non-traditional occupations such as construction. Considering the perceived unattractiveness of the construction industry, a low number of women are choosing careers in the construction industry due to several factors that affect career choice, resulting in the poor implementation of the provisions of the Employment Equity Act in Nigeria, lack of women empowerment and a shortage of skills in the construction industry.

In spite of the many initiatives and the awareness created over the past few years, with respect to the significance of women participation in the industry, coupled with the efforts to balance the diversity and inequality in the industry workforce, women still remain a small minority of those working in the construction sector. In Nigeria, the population of women in the industry represents only 0.2% of those in the construction profession (Okoyeuzu *et al.*, 2008). Ginige *et al.* (2007) argued that one of the problems facing today's construction industry is skill shortage

due to its inability to attract young women to pursue careers in the industry. Increasing women representation in the construction workforce is a reliable solution for bridging the skill gap. In the context of this, Jimoh *et al.* (2016) investigated using questionnaire survey the level of women participation, challenges faced by professional women and the factors that influence them in the course of developing careers in construction and the criteria that could be used to encourage women participation in the Nigerian construction industry.

The analyses confirmed that construction industry was largely dominated by men with women having a lot of challenges. There was lack of self-confidence to compete with male counterpart and they also felt insecure in the midst of men to execute their work as professionals. Adequacy of women helps to tackle a number of human resource challenges and other issues raised in this work affect the participation of women professionals in the construction industry deemed to be of high extent. Also, most of the factors influencing women participation and the constraints that prevented women entry into construction industry were of high impact. Based on these challenges, the study explored the strategies to improve their participation in the construction. Therefore, the study recommended that making young women aware of construction industry opportunities was needed to encourage them build their careers in construction related areas from school in order to increase the number of professional women participation in future. It was also recommended that there was the need to consider the career advancement activities that were needed to sustain career path progression to include training and mentoring in order to retain women professionals. . In addition to these, professional women should be given equal job opportunities as their male counterparts to ensure better representation of women so that the impact of women professionals in the construction industry can be extended.

4.4 Housing Sustainability in Nigeria: A Mirage or Reality

Housing according to UN-Habitat (2012), is one of those fundamental social conditions that determine not only the quality of life and welfare of people but also that of places. It follows that where homes are

located, how well designed and built, and how well they are woven into the environmental, social, cultural and economic fabric of communities are factors that, affect both the present and future generations. To this end, the position of Nigeria in relation to housing sustainability was examined by Jimoh *et al.* (2014) using structured questionnaires administered to the participants at the 2013 Conference/Annual General Meeting of the Nigerian Institute of Building. Housing sustainability parameters such as empowerment of poor communities, reform unsustainable policies and legislation that constrain the provision of sustainable housing, consideration of women relationship with housing, beneficial policies and legislation for the low income earners and availability of mortgage instruments for the low income earners had mean scores of 1.54, 1.74, 1.89, 1.89 and 1.90 respectively. The implication of this is that Nigeria has not shown enough commitment in this direction. All the stakeholders must therefore be alive to their responsibilities so that the position of Nigeria could be improved significantly in the nearest future.

Based on the cut-off points indicated, none of the sustainability parameters had between 3.50 and 5.00 in the country's quest towards housing sustainability. The highest mean score was 2.58; that was the formulation of urban planning standards could be deemed as to a small extent by the perception of the respondents. This was not surprising, because since in the 20s when bubonic plague affected Lagos, formulation and implementation of planning standards have been receiving attention from successive governments (the adequacy is another thing entirely).

The household income group of vast majority of Nigerians is in the bracket of those that, according to Cloete (2005), cannot access conventional mortgage finance because they are informally employed and are in the low income group. The other group that are formally employed but are still in the low income group can still not access loan because of the way the mortgage is structured. This group of people are referred to as 'unbankable' or the 'grey gap' for mortgage purposes (Smit, 2003 & Cloete, 2005). Rust (2008) stated that evidence from South Africa based on the study by Finmark Trust showed that the

mortgage instrument is not appropriate or in some cases not relevant for majority of people due to their limited affordability.

Since time immemorial, the place of women in the scheme of things has not been adequately addressed, hence the little consideration giving to the relationship of women with housing. This has mean score of 1.89 which was deemed as being to a very small extent by the respondents. It was expected that kitchens of houses should be spacious because of the importance attached by women to such places and coupled with the fact that many hours are usually spent each day in the kitchen. However, what passed as kitchens in some cases were better imagined. One of the authors once lived in a house where the kitchen was so small that if the wife was in the kitchen, the man cannot enter the kitchen. At best, the kitchen was an afterthought.

Table 1: The mean scores of the housing sustainability parameters

s/n	Sustainability parameter	1	2	3	4	5	Mean score
1	Empowerment of poor communities	21	15	3	0	0	1.54
2	Inclusion of all groups in planning	11	19	7	2	0	2.00
3	Inclusion of all groups in design	14	18	6	1	0	1.85
4	Inclusion of all groups in governance decisions	8	16	12	0	2	2.26
5	Building the skills of people	9	21	7	1	1	2.08
6	Creating training & employment opportunities through construction processes	7	18	9	3	2	2.36
7	Promotion of social integration and equity through mixed land use	3	24	6	5	1	2.41
8	Promotion of different sizes, forms, tenure & types of houses	8	18	8	4	1	2.28
9	Consideration of women relationship with housing	10	23	4	1	0	1.89
10	Linking housing policies to micro economic development	4	21	11	2	1	2.36
11	Linking housing policies to macroeconomic development	8	14	14	1	1	2.29
12	Linking housing policies to employment & income generation	9	12	10	6	2	2.49
13	Linking design to employment & income generation	7	18	11	2	1	2.28
14	Linking construction processes to employment & income generation	6	17	11	3	2	2.44

15	Government partnering with financial institutions to provide low interest loans to the low income earners	9	16	9	3	2	2.31
16	Maintaining cultural heritage for future generation	11	16	8	2	0	2.03
17	Protecting traditional housing forms	15	16	4	2	2	1.97
18	Culturally appropriate built environment in terms of design	11	14	12	2	0	2.13
19	Culturally appropriate built environment in terms of spatial layout	6	23	7	0	0	2.03
20	Culturally appropriate built environment in terms of materials	10	15	8	4	1	2.24
21	Beneficial policies & legislation for the low income earners	13	8	6	0	1	1.89
22	Availability of affordable mortgage instruments for the low income earners	16	16	4	1	2	1.90
23	Reform unsustainable policies & legislation that constrain the provision of sustainable housing	6	19	10	3	0	1.74
24	Removal of bureaucratic bottlenecks from land titling	10	17	10	0	2	2.15
25	Formulation of urban planning standards	5	12	16	4	1	2.58
26	Implementation of urban planning standards	6	15	14	2	1	2.39
27	Easing regulations on collateral	11	16	7	2	3	2.23
28	Encouraging flexible repayment schedules	12	14	7	1	3	2.16

Based on the findings, the study concluded that the extent by which all the stakeholders put into consideration the long-term environmental, social, cultural and economic balance of the housing stock and its occupants was limited. This was evidenced from the low mean scores of all the 28 parameters measured. As a result of this, the study advocated for the following: Differentiating within the various income groups in tackling housing issues and giving priority to the low income group; encouraging public private partnership; adherence to building standards; research in local building materials; regulating the housing supply market including lands; and beneficial policies and legislation to encourage low income housing programmes.

4.5 Implementation of Sustainable Practices in American University of Nigeria

It has been observed that human environment contributes to ecological crises through resources depletion, energy consumption, air pollution and creation of waste. However, sustainable development has become a buzzword as a result of scarce resources, and the needs of men is increasing and becoming complex in nature. Lelle and Jimoh (2017) assessed the sustainable practices in American University of Nigeria (AUN), Yola administrative buildings 1 and 2 with a view to determining the challenges encountered during their construction and the lessons learnt. The study used participant observation to evaluate the Admin building 1 and 2 of AUN. The first building was completed in 2015 while the second in 2017. From the observations, the building tried to achieve the triple bottom line of sustainability; environmentally; it minimized the use of cement with the recycle containers, use of bricks to form drainage, polyurethane and laterite finish on the walls. Also, the recycling of sewer water, returning of storm water to the earth, the landscape, thermal comfort, which provided a non-toxic built environment. Social element was achieved with the use of local vendors, craftsmen and some materials like the laterite, bricks, acoustic panels which were sourced locally to uplift the society and maintain the culture of the society. The financial factor was actualized with resources being recycled within the locality, with jobs created and life cycle cost expected to be minimised when compared to conventional buildings.



Plate I: Admin block 1 at the beginning and when completed



PLATE II: The two buildings with solar car park

Major challenges faced in admin 1 and corrected in admin 2 as lessons included;

1. **Building Skin:** The laterite finishing of the Admin 1 at some part washed off in some areas on the building during heavy rainfall, which signified inconsistent mixing ratio of the laterite and resin by the local craftsmen. This caused a lot of maintenance issue. This was carefully watched and controlled in the Admin 2 building with practical samples of improved mix ratio..
2. **Insulation:** The Admin 1 building, the external wall was insulated with polystyrene and offices inside container was finished with painted plywood, while admin 2 the external wall was insulated with polyurethane and inside container offices with gypsum board. Polystyrene foam was replaced due to its tedious installation process which required careful handling and led to a lot of waste, and poor finishes when laid on the body of the container. The polyurethane is inflammable, durable and energy efficient, flexible to apply as it came in liquid form that solidified immediately after application. The interior was changed to gypsum board due to expansive nature of plywood and it gave a better smooth finished surface.
3. **Thermal Comfort:** In the Admin 1, normal AC was used to cool the building with extractor fans in strategic locations to help bring in fresh air and take out contaminated air. Due to the size of the building AC maintenance became noticeable with minor problems

that distracted the users. In Admin 2, HVAC system was introduced to enhance the thermal comfort, indoor air quality and reduced the frequency of maintenance.

To achieve environmental sustainability, universities have a crucial role to improve the performance of the environment through their built assets and to teach the upcoming generation the perception of sustainability. AUN took this very seriously in the University policy by creating a Sustainability Department which taught sustainability as a core course for Natural and Environmental Science students, while the Construction Department and Environmental Unit of the University implemented these practices, but the assessments of these developments needed to be carried out to view if they matched the expectations. Blessinger (2026) stated that universities can transform themselves into institutions that engender best practices in sustainability across all their processes and operations when sustainability is seen beyond a message but as a culture to be imbibed.

4.6 Sustainable Building Users Satisfaction: Evidence from University Building in Yola-Nigeria

The focus of the study was on measuring the building's performance through its occupants' impressions using Post Occupancy Evaluation (POE) as opposed to measuring the environment's physical characteristics (temperature, noise, light). The POE provided an opportunity to investigate the impact of occupant behaviour on the building's performance and its level of comfort and satisfaction. According to Bluysen *et al.* (2011), post-occupancy assessment (POE) has been used to assess building efficiency in a systematic way to enhance indoor environmental quality and user satisfaction with thermal, climate, visual and acoustic conditions. In order to improve its efficiency, the information obtained from a POE as stated by Wagner *et al.* (2007) can be used to fine-tune the operation of the building. It is also useful for regulating the building's internal environment to improve user comfort, well-being and satisfaction. The wider performance factors assessed by a POE will address issues such as use of space, management, environmental impact, and consumption costs (Bordass &

Leaman, 1997). In a related development, Sodagar and Starkey (2016) stated that POE can also be used as a feedback loop at the design stage to better inform decision-making process. Fieldson and Sodagar (2017) emphasised that POE has been used frequently in traditional buildings and limited use in specialised buildings especially those that are constructed with sustainability in mind.

The construction industry consumes a major portion of natural resources and generates waste of the same magnitude globally (Dahiru, 2005). The quest for sustainable development has placed Universities in the central role of promoting sustainable development in teaching, research, and application of sustainable principles in the development of their assets. To this end, there was the development of sustainable designs and structures out of the numerous shipping containers within the University environment based in Yola-Nigeria. Leaman (1991) reported that many structures do not seem to create better environments, they made things worse. Buildings often overheat or are too noisy: they often stopped things from happening instead of helping them happen. Instead of making, they inhibit. They constrain, not only impacting physical tasks and roles, but also people's willingness to use and perform well in them. Has the situation changed? Apart from this, many studies of green building occupant satisfaction according to Liu *et al.* (2018), came from the United States and the United Kingdom, and emerging studies came from Asia, especially China. There was still limited studies from Nigeria on sustainable building user satisfaction. Based on this, answer was sought to the following question; Does the completed project satisfy the end users? Lelle *et al.* (2020) evaluated the satisfaction and comfort of users of the administrative office building in Yola through post-occupancy evaluation. The Building Use Studies (BUS) method was adopted to evaluate the performance of the buildings. Findings showed that some sustainable features necessary to ensure the performance of the building, provide comfort and enhance workers' productivity were entrenched in the buildings. All the requisite variables necessary to ensure satisfaction and comfort of the occupants of the buildings were within or above the established benchmark. The

lack of personal control of some of the key variables such as thermal comfort in the physical surrounding was noted to affect some users.

The POE survey conducted largely showed that the users were satisfied with the containerized building. The variables analysed included but not limited to temperature, lighting, control, noise, design, needs, and image, which were found to be within or above the benchmark. The result of the POE indicated the comfort and acceptance levels of the building were above satisfactory level. The result also found noticeable areas of improvements such as controls, furniture arrangements, needs, meeting rooms, and window types. In view of the findings made from the study, the following recommendations were made. Users should be involved in the design and planning to generate satisfactory result from users' perspective. Therefore, engaging potential users played significant role to achieve sustainable outcome for building development. Furthermore, control of variables such as lighting, ventilation, cooling/heating, temperature, and noise should be taken into account when designing office building to significantly contribute productivity factor and users wellbeing.

4.7 Framework for the Sustainability of Housing Co-Operatives in South Africa

UN-Habitat (2008) stated that only a few areas affect human beings as much as housing does and that the importance of housing cannot be overemphasized. More than one billion of the world's total urban population, according to UN-Habitat (2007), live in inadequate housing, mostly in slums and squatter settlements of the developing world. In South Africa, as stated by du Plessis *et al* (cited by Ross, Bowen & Lincoln, 2010) housing is one of the areas, like in other developing countries, wherein the task of providing it to the teeming population, is daunting. The extent of the housing problem and the lack of delivery in South Africa are shown by the demand for affordable housing and by the number of people living in slums and informal housing conditions (UN-Habitat, 2008a).

Co-operative housing according to Rooftop Canada Resource Centre (s.a) is an alternative housing approach that utilizes the principles and

processes of co-operatives while housing co-operative is the organisation which responds to the needs of its members by adopting the methods and practices of the co-operative housing system. The use of the co-operative housing approach to solve the housing needs of people has a long history, as documented by UN-Habitat (2006). Although the approach has not been used to provide houses at scale in most of the places where the approach has been used, countries such as Sweden (18% of the housing stock), Czech Republic (17%), Germany (6%), Norway (15%), Turkey (25%), Austria (8%), Ireland (about 4%) and Estonia (45%) had used the approach to produce houses at scale (Jaadla, 2002, Pedersen, 2002; Ellery, 2008 and CCMH, 2009). Co-operative housing is seen as a social housing; that is housing for households whose needs are not met by the open market and where there are rules for allocating housing to benefiting households.

The difficulties in obtaining credit for housing, following the global economic crisis, showed that private individual home-ownership was not effective enough in addressing the housing needs of the low and middle income groups. As a result of this, the need to find an option that would solve the housing needs of the people became intense. Therefore the study by van Wyk and Jimoh (2015) developed a framework for the sustainability of housing co-operatives using questionnaire survey. Based on the findings, framework for sustainable housing co-operatives in South Africa was developed from the strategies. The strategies were categorised into the following factors: policy and legislation; support services; education, training and information; and governance.

Proposed framework

Based on the Cronbach's alpha reliability coefficient tests conducted as shown in Table 2, the proposed framework was developed. The essence of the framework was to advance the roles expected from the role players and the relationship among the role players thereby making housing co-operatives sustainable based on the strategies identified. The strategies were interrelated as shown by the linking arrows; without an enabling policy and legislative framework for instance, it will be difficult for the support services to be successful. The same

interrelationship was also displayed among the outputs as shown in Figure 3.

The four (4) factors based on the Cronbach's alpha reliability coefficient tests constituted the components of the proposed framework. The roles of the various governments according to van Wyk and Jimoh (2015) have been the driving force of the housing co-operatives in those countries where housing co-operatives have been successful due to the tremendous support received by the housing co-operatives. The implication was that the housing co-operatives in any country cannot do it alone without the support of government in areas such as having legislation and policies that were beneficial to the housing co-operatives, providing support services in areas such as land allocation and favourable finance and embarking on regular education and training.

While the roles of government were incontrovertible, members were expected to display a high level of commitment in terms of regular payments of fees and ensuring that they participated adequately in the activities of their housing co-operatives. Above all, governance in the housing co-operatives should be dynamic; to this extent, it should always be what works best in a given situation and this implied being flexible so that the housing co-operative could be open to new ideas that will be beneficial. In a nutshell, all the role players must come on board and collectively do what was expected of each role player in order for the sustainability of the housing co-operatives.

Table 2: Analysis of strategies by means of the cronbach alpha reliability coefficient

Strategies				
POLICY & LEGISLATION	ITC	AID	CA	DECISION
Government should establish an institutional framework that allows rapid and efficient registration of housing co-operatives	0.49	0.87		
Government should consult with housing co-operatives in the formulation of policies and legislation that are applicable to them	0.62	0.84	0.86	Good
Government should promote community empowerment through appropriate legislation	0.80	0.79		

Creation & implementation of appropriate policies and legislation by government	0.72	0.81		
Government should provide the political environment that supports the development and growth of housing co-operatives	0.76	0.81		
SUPPORT SERVICES				
Government should facilitate housing co-operatives to access support services	0.78	0.89		
Financial institutions should develop financing instruments that are beneficial to housing co-operatives	0.78	0.89	0.90	Excellent
The housing sector should be supportive of housing co-operatives	0.87	0.81		
EDUCATION, TRAINING & INFORMATION				
Government should encourage the development of housing co-operatives	0.75	0.79		
Government should respect the autonomous nature of housing co-operatives	0.67	0.83	0.85	Good
Government should promote the development of technical skills of the members	0.75	0.79		
Government should disseminate information on co-operative housing	0.64	0.84		
GOVERNANCE				
Housing co-operatives should put in place well defined management and organisational structures	0.86	0.84		
Housing co-operatives should network with other stakeholders such as the apex body of co-operatives and NGOs for their development	0.86	0.84	0.9	Excellent
Exhibition of high level of commitment by all stakeholders involved in co-operative housing	0.63	0.93		
Regular training and education of members by housing co-operatives	0.79	0.87		

ITC-Item total correlation; AID-Alpha if deleted and CA-Cronbach's alpha

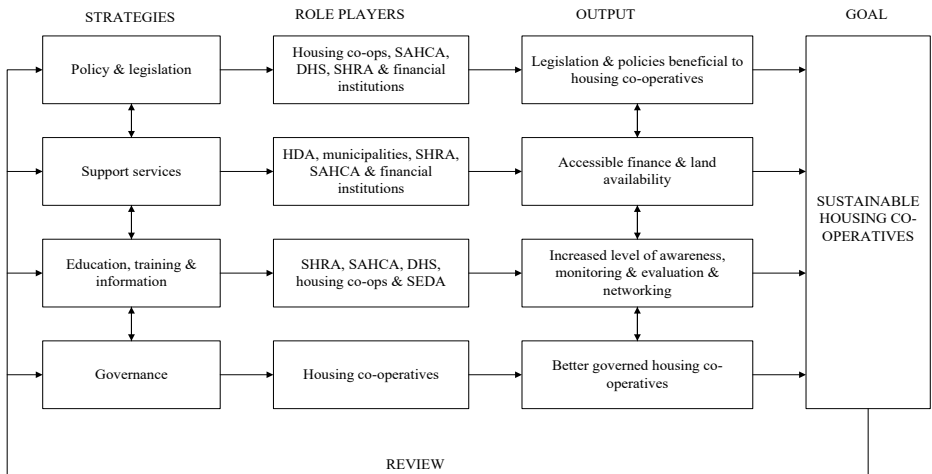


Figure 3: Components of strategy implementation process

KEY: DHS represents Department of Human Settlements; HDA represents Housing Development Agency; NHFC represents National Housing Finance Corporation; NURCHA represents National Urban Reconstruction and Housing Agency; SAHCA represents South African Housing Co-operatives Association; SEDA represents Small Enterprises Development Agency and SHRA represents Social Housing Regulatory Authority

5.0 CONCLUSION

In coasting home, the Vice Chancellor Sir, distinguished guests, the future of the Nigerian construction industry is not merely about erecting buildings; it is about constructing a more ethical, efficient, and sustainable future for our nation. By internalising Grice's maxims, we can foster a culture of transparency, trust, and effective communication, addressing long-standing inefficiencies and ethical challenges. Simultaneously, by fully embracing sustainable practices, we can have an industry that not only builds vital infrastructure but does so in harmony with its environment and for the benefit of future generations. These twin concepts that are rooted in communication and responsibility, will shape a Nigerian construction industry that is not only economically robust but also environmentally sound and socially equitable. From the foregoing, for Grice's maxims and sustainable

practices to have a foothold in Nigeria, there is the need for us to be collectively responsible and to go back to some of the issues raised by Du Plessis 24 years ago and Blessinger this year, the issues are very germane.

5.1 Recommendations

The following recommendations are hereby made:

1. Establishment of construction industry development board by the Federal Government that will be saddled with the responsibility among others to aid research and development in construction management knowledge areas. The current NRF in place is rigged towards tangible products leaving out soft skills that propel many of the processes in the construction industry.
2. There is the need for the revision of curricula and programmes of tertiary institutions taking into cognisance sustainability practices while not losing focus on the gap in the education of all stakeholders such as the clients, policy/decision makers and professionals that has to be filled. Seeing sustainability not as a message but as a culture will enhance this.
3. Creation of synergy between researchers and those to implement the outcome of the research efforts. In other words, the triple helix concept should be adopted.
4. Development of appropriate policies and legislation by reviewing the existing laws. The laws should be such that incentives are provided in order to encourage the practice of sustainability especially by clients and contractors. In doing these, best practices have to be adopted.
5. The adoption of systems perspective in the construction industry; whatever affects one person affects all. This will reduce the adversarial relationship among stakeholders.
6. Finally, professionals in the construction industry should practice in their core areas so as to improve the relationships among them. This will go a long way in stemming quackery that has become the albatross in the industry.

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FUT Anebira Forum

My home turf, FUT Anebira Forum members under the leadership of Dr Abdulkadir Onivehu (Alhaji), Prof S.O.E. Sadiku, Barr S.M. Okeji, Prof A. Asipita, Prof N. Adabara, Prof R. Lafia-Araga, Mr Zubairu Anderson (QAP), Barr Rufai Abdulmalik, Mr Abdulazeez Isah (SSANU), Arc (Dr) J. Onuwe, Arc Sezuo, Mal Sani Mohammed (VC Office), Mr Abdulrahman Ajana, Dr Femi Enesi Aminu, Mr Abdulwahab Ochesuru, Mr Tijani, Dr Bello Enesi (EBS), Mrs Hafsat Garba, Zainab (Mama Numan), Mr Asipita Jimoh, Mrs Rafatu Onimisi and a host of others. Thank you for identifying with me, I am grateful!

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My friends and brothers, Prof L.O. Oyewobi (**@hassankay, a colossus in both academic and union matters**), Engr Dr J.O. Mahmud (mni), Prof A.W. Ola-Awo, Prof B.O. Ganiyu, Prof R.B. Isa, Prof E.B. Ogunbode, Dr A.A. Bilau, Dr C.U. Ayegba, Dr A. Aka, Dr A.A. Oke, Dr V.I. Martins, Dr S.O. Medayese, Esv Gbenga Morenikeji, Mr Sunday Omolehin, Mr Adebayo Joseph Jimba (RIP), Mr Femi Ajanaku Ogunsina, Arc Sani Momoh, Dr A. Salawu, Bldr H.A. Salisu, Tpl Olaitan Peter, Sabdat Momoh (RIP), Farida Shuaibu, Bola Shiru, Prof M.T.A Ajayi, Prof N.I. Popoola, Prof A.D. Adamu, Prof M.I. Bala, Prof Y.D. Mohammed, Prof S. Ibrahim, Prof M. Anifowose, Prof A.A. Shittu, Dr P. Alumbu, Dr A. Tsado, Mrs L. Odine, Mrs A. Doko, sister Mercy, Madam Vero, Madam Lydia, Prof S.A. Abdulkarim, Prof A. Kovo, Prof J.O.Tijani, Prof C.E. Chinma, all the RPAC members, Prof G. Abolarin, Prof O.F. Adedayo, Prof A.I. Sule, Prof A.D. Isah,

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“Taskforce”

To the taskforce on “when are you presenting your inaugural lecture?” My Wife – Mrs Jimoh, Prof S.O.E. Sadiku, Prof Y.A. Sanusi, Bldr R.O. Banuso, Prof L.O. Oyewobi, Prof O.A. Kemiki, Prof J. Dukiya, Engr Dr Jafaru Mahmud (mni), Mrs H.I. Oyewobi, Dr A.H. Abdullahi, Gbenga Morenikeji, Oyibo Mohammed, Amani, Aaliyah, Faizah, I appreciate the love behind the urging, God bless you all.

Family Members

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My wife and children, Mrs Fatima Anayimi Jimoh (my wifey), Amani Ometere Jimoh, Aaliyah Ohunene Jimoh and Faizah Ozavize Jimoh – you are all my *joie de vivre*. Thank you all for the immense support. May His mercy and favour never depart from our household (amen).

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Mentors

To Bldr R.O. Banuso, I started out as his student where he showed considerable love for me. When I came to the Department as staff in 2001, he accepted me as a colleague, I shared his table and chair for more than eight (8) years and later inherited them after he exited the system in 2013. In him I saw decency, honesty, humility and someone with high degree of integrity. These are the qualities that have influenced my life over the years. He taught me how to use e-mails, after that Oga developed phobia for sending and receiving mails. This made me to become his unofficial private secretary till date. Due to this, I was a corresponding author in one of his articles that I was not part of in 2008 which made me to know about the University where I undertook my doctoral study. He has since adopted me as his son because I am an orphan. From the bottom of my heart Sir, I say thank you for all that you have done for me and my family (immediate and extended). God bless you more (amen).

My friend and brother, Prof L.O. Oyewobi, he called me his mentor, but what we have between us is reciprocal mentoring (this is borne out of his love and genuine interest for me to succeed; vice versa on my part). He met me on this journey like he described, he has since become unstoppable in terms of his research output. An iconic academic that has continued to bestride the industry like a colossus due to his cerebral nature, tenacity and patriotic zeal (if three people are left in Nigeria, the people will be Prof Oyewobi, my in-law (Dr Hamza) and myself). Nelson Mandela said and I quote “what count in life is not the mere fact that we have lived. It is what difference we have made to the lives of others which will determine the significance of the life we lived”. Ishola, I am deeply grateful!

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Very special appreciation to these wonderful people; Bldr R. O. Banuso's family, Prof L. O. Oyewobi's family, Engr. Dr J. O. Mahmud (mni) family, Prof B. O. Ganiyu's family, Arc M. A Sani's family, Prof R. B. Isa's family, Prof E. B. Ogunbode's family, Dr A. Aka's family

and Dr S. Medayese's family. To my LASUSTECH family, great people! Warafanahu makana Aliyah, jazakumlahu khairan (amin). Distinguished invited guests, my gratitude knows no bound, safe trip to your respective destinations. Peace!

PROFILE OF THE INAUGURAL LECTURER

Professor Richard Ajayi Jimoh was born to the family of late Mallam Jimoh Dagana and late Mrs Agnes Aishatu Oseimoh Jimoh at Kabba on 5th March 1971. He started his primary education at St Andrew's Primary School, Kabba in 1976. He attended St Augustine's College, Kabba from 1983-1987. He was at Kwara State Polytechnic, Ilorin from 1991-1992 where he obtained the National Diploma (ND) in Building and finished top of his class. He was admitted into 100L in FUT Minna which was changed to 200L after applying for a change to 200L on account of ND that he had. He finished top of his class in February 1998 with 1st Class.

He had his MSc from ABU in 2004 in Construction Management. For his doctoral study, he was at the Nelson Mandela Metropolitan University, Port Elizabeth, South Africa from 2010-2012. He started his lecturing career as Assistant Lecturer on 26th September 2001 in Federal University of Technology, Minna. He rose through the ranks to become a Professor in 2018. He has held several positions within the University among them were as: Level Adviser for nine years, Department Project Co-ordinator for three years, Department Examinations Officer for one year, School Examinations Officer for one year, Deputy Dean for two years, Head of Department for five and half years, Managing Editor, ETSJ (2016 – to date). He has served in various committees within the Department, the School and the University. Among these were, Exams Malpractice Committee, Committee on comprehensive staff and student audit, Committee on Reconstruction of Bosso Campus Clinic, Vice Chancellor's Elect Transition Committee on Technology deployment, Committee on Doctoral Thesis Award scheme, Committee on Policies and Manuals of the University, Committee to develop Policy for Persons with Disabilities, Book Development Committee for Academic Publishing Centre, Committee for the Construction of Female Hostel, Committee for the Renovation of the University Guesthouse. Outside the University, he has served as external examiner to many universities within and outside Nigeria for undergraduate and postgraduate programmes in universities such as ABU Zaria, ATBU Bauchi, University of Jos, University of Johannesburg, Cape Peninsula University of Technology, Cape Town, Nelson Mandela University,

Port Elizabeth, University of South Africa. He has assessed many academics to professorial ranks in many universities in Nigeria. He has also served as assessor for National Research Foundation (NRF), South Africa. He is a reviewer for many international and national journals. He is currently the Managing Editor of the *Environmental Technology and Technology and Science*. He has supervised over 80 BTech students, 26 MTech students and four (4) PhD candidates. He has over 140 publications in journals, conference proceedings and book chapters. He is happily married to Mrs Fatima Jimoh and it is blessed with three (3) children – Amani Ometere, Aaliyah Ohunene and Faizah Ozavize.

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