

Impact of Specification on Construction Administration for Project Management Within Lagos Megacity

W. K. Alugbue, G.A. Otuonuyo*, B.J. Adewumi, A.O. Onamade & O.A. Asaju

Department of Architecture, Caleb University, Imota, Lagos State, Nigeria.

*Corresponding Author

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ABSTRACT

Lagos megacity, a dynamic metropolis with a vibrant economy and diverse population, is a rapidly growing commercial and financial hub in Nigeria, attracting significant investment in infrastructure development and technology adoption. This study explored the impact of specifications on the efficiency and effectiveness of construction project management. The study analyses data collected from 15 selected building professionals through a detailed survey using a well-structured questionnaire, the research examined how specifications were utilized throughout various stages of construction, including design, procurement, construction, and post-construction. The findings revealed that specifications were integral part of any successful construction management. 100 percent of respondents indicates they integrated specification with architectural drawing process while 93.3 percent agrees that specification is used in clarifying design intents and ensuring quality control. However, significant challenges were identified, including difficulties in coordinating stakeholders, ambiguities or inconsistencies in specifications, non-compliance by contractors, and inadequate enforcement on-site. In order to address these issues, the study recommended several improvements: enhancing the integration of specifications with project drawings, strengthening communication and collaboration among stakeholders, developing standardized specification templates, and providing enhanced training for the preparation and interpretation of specifications. Additionally, the paper emphasis on compliance and enforcement as well as integrating sustainable practices into specifications to promote environmental responsibility. Implementing these recommendations, stakeholders of Lagos Mega City could improve the effectiveness of specifications, thereby enhancing construction administration while contributing to more successful and sustainable project outcomes. This study underscored the importance of addressing both practical challenges and sustainability considerations to advance the quality and efficiency of construction management practices.

Keywords: Cost optimization, green construction, Lagos megacity, project management, specifications, sustainability.

INTRODUCTION

Lagos megacity is located in Nigeria and it is one of the fastest-growing megacities globally (Adewumi et al., 2023; Badmos et al., 2018). As Nigeria's commercial and financial hub, Lagos megacity is a dynamic metropolis with a vibrant economy, a diverse population, and significant cultural influence (Busari & Princewill, 2023; Asaju et al., 2024). Rapid urbanization in Lagos megacity has spurred extensive infrastructure development, with the government investing heavily in projects. High-rise buildings and skyscrapers are booming in affluent areas, driven by demand for commercial office spaces and luxury apartments. The construction industry is also embracing technology and innovation (Dorcas et al., 2023; Oru et al., 2024). These technologies improve efficiency, reduce costs, and ensure higher quality in construction projects. Construction administration and project management in Lagos megacity are crucial for ensuring timely, budget-friendly, and quality-adequate project completion (Oladigbolu et al., 2022). Lagos' megacity rapid growth necessitates effective administration and management practices, with specifying building

materials crucial for quality, construction methods, and overall workmanship (Martine Mselle et al., 2023). The specification of building materials is a crucial contract document in construction agreements, outlining physical and functional characteristics, quality, workmanship, and construction methods beyond what can be conveyed through drawings alone (Isah et al., 2018).

Lagos faces construction challenges due to rapid urbanization, causing flooding, waste management, environmental degradation, and building collapse, putting pressure on existing infrastructure (Hassan et al., 2024; Onamade et al., 2022). The Nigerian construction industry's success is largely attributed to effective project management systems, despite challenges like building collapses, delays, project abandonment, and cost overruns (Ogunde et al., 2017). Specification documents are crucial for construction contracts and project success, yet their usage in Nigeria is surprisingly low, according to anecdotal evidence (Adewale et al., 2018). Informal construction practices significantly impact the construction sector, but material specifications, crucial in contract documents, often receive less attention during smaller projects. (Adewale et al., 2018).

In Nigeria, specifications, which are intended to compile all relevant standards for inclusion in contracts and serve as a key document for quality management, are often missing (Anigbogu et al., 2014). Additionally, Anigbogu et al., (2014) Nigerian architects often lack detailed working drawings, relying on quantity surveyors for specifications, and lack sufficient knowledge about the function and performance of their specified materials and components (Adafin et al., 2011; Folorunso & Ahmad, 2013). Approximately 40% of architects issue these details as instructions on-site or during site meetings once work has commenced, reflecting a lack of thorough project planning (Anigbogu et al., 2014). Construction administration and project management in Lagos megacity are critical components of the construction industry, playing vital roles in ensuring that projects are completed on time, within budget, and to the required quality standards (Oladigbolu et al., 2022; Onamade et al., 2022). As Lagos continues to grow rapidly, with a booming construction sector, effective administration and management practices have become increasingly important. The aim of this study is to evaluate impact of specification on construction administration in project management in Lagos megacity, in order to enhance effectiveness and efficiency of construction project management. The objectives of the study are to evaluate the impact of specification on construction administration in project management in Lagos megacity; to obtain stakeholder's perception on specification writing and its effectiveness in enhancing construction administration in project management; and to suggest effective strategies to improve specification writing in the construction industry in Lagos megacity. The research problem investigated how specification clarity influences construction administration efficiency and project outcomes in Lagos Megacity, focusing on time, cost, and quality management challenges in urban development projects.

LITERATURE REVIEW

Specification is a comprehensive description of the dimensions, construction methods, workmanship, materials, and other details of work performed or to be performed on a project, typically prepared by an architect, engineer, or designer, who are often referred to as specifiers (Bharil, 2016; NBS Enterprises Ltd, 2020; Wininger, 2011). Architects are responsible for specifying suitable construction materials that meet environmental performance standards, evaluating factors like function, durability, and mechanical performance (Adamu Umar et al., 2021; Folorunso & Ahmad, 2013). Specifications are crucial in construction project management, outlining requirements for materials, workmanship, and techniques to ensure a project meets quality standards and client expectations (Akintoye et al., 2024). This literature review explores the critical role of specifications in construction administration, their impact on project management, and the challenges and best practices associated with their implementation.

Conceptual review

Specifications are crucial for translating the design intent into actionable guidelines that contractors and suppliers must follow (Adeboyejo et al., 2022). Specifications are indispensable for defining project

requirements beyond what can be conveyed through drawings alone. They serve as a reference point for evaluating compliance and ensuring that the project meets both technical and aesthetic standards.

Specifications are crucial in quality control by setting clear standards for materials and workmanship, enabling thorough inspections, enforcing quality standards, and promptly addressing discrepancies (Osuzugbo, 2018). This proactive approach to quality control helps in preventing defects and ensuring that the final construction product meets the desired standards.

Effective communication among stakeholders is crucial for project success, with specifications serving as a common reference for architects, engineers, contractors, and clients, ensuring comprehensive understanding of the project's qualitative aspects (Lozier, 2015). Technical specifications are essential in contract documents, defining design intent, material quality, and installation standards, addressing aspects better represented in written form than through drawings (Lozier, 2015). By providing a clear and detailed description of project requirements, specifications help prevent misunderstandings and reduce the potential for disputes (Akintoye et al., 2024). Precise specifications foster a unified understanding of the project scope, facilitating better coordination and smoother project execution among all parties involved.

Specifications are integral to the procurement process as they define the quality and performance criteria for materials and products (Munyimi, 2019). This clarity helps in selecting suitable suppliers and subcontractors who can meet the specified requirements. Moreover, specifications form a key part of the contractual obligations, providing benchmarks for evaluating contractor performance and handling claims. Haron et al. (2017) highlight that clear and detailed specifications are essential for effective contract administration and for managing procurement processes efficiently.

Challenges in Specification Implementation

One major challenge in specification implementation is the presence of incomplete or ambiguous specifications (Adewale et al., 2018). Such deficiencies can lead to confusion and misinterpretation, resulting in construction delays, cost overruns, and compromised quality. Adafin et al. (2011) point out that in Nigeria, specifications are often missing or inadequately detailed, which undermines their effectiveness in guiding the construction process. This issue highlights the need for thorough and precise documentation to ensure that all project requirements are clearly defined.

The effectiveness of specifications is also affected by the knowledge and expertise of designers and architects. Folorunsho and Ahmad (2013) argue that many designers lack sufficient understanding of the materials they specify, which can lead to inappropriate material choices and insufficient specifications. This lack of expertise can negatively impact the quality and performance of the construction, emphasizing the need for designers to have a comprehensive knowledge of material properties and their suitability for specific applications.

Integrating specifications with modern project management systems presents another challenge. Advanced tools like Building Information Modelling (BIM) and project management software require accurate and detailed specifications to function effectively. Haron et al. (2017) discuss how the lack of integration between specifications and these tools can limit their utility and hinder the overall efficiency of project management. Ensuring that specifications are compatible with these systems is crucial for maximizing their benefits.

Best Practices for Effective Specification

To enhance the effectiveness of specifications, they must be detailed and clear. This involves providing comprehensive descriptions of materials, workmanship, and construction methods (Bharil, 2016). Regularly reviewing and updating specifications is crucial for ensuring they are precise, comprehensive, and align with project requirements, reducing ambiguities and providing a clear understanding for all stakeholders.

Effective specification requires collaboration among architects, engineers, and contractors. Engaging experts in material selection and performance can improve the accuracy and relevance of specifications. Adafin et al. (2011) suggest that involving specialists in the specification process can help address knowledge gaps and ensure that specifications are practical and achievable. Collaborative efforts also contribute to better communication and alignment among project stakeholders.

Integrating specifications with project management tools, such as BIM and project management software, can enhance their utility and effectiveness. This integration allows for better tracking of specifications, facilitates real-time updates, and improves overall project management efficiency. Haron et al. (2017) explains that leveraging technology in construction project management can streamline processes, improve project outcomes, and address challenges like incompleteness and expertise through best practices, expert collaboration, and modern tools.

Theoretical Framework

The theoretical framework for examining the role of specifications in enhancing construction administration in Lagos Megacity involves integrating various theories related to project management, construction practices, administrative processes, and urban development. This framework offers a structured understanding of how specifications influence successful project outcomes in a rapidly growing urban environment, incorporating existing theories from the literature such as Project Management Theory (PMT), Systems Theory (ST), Design-Bid-Build (DBB), Performance-Based Specification Theory (PBST), Administrative Theory (AT), Total Quality Management (TQM), Urban Growth Theory (UGT), Sustainable Development Theory (SDT) and so on. But this particular research will be based on Design-Bid-Build (DBB) and Total Quality Management (TQM).

Design-Bid-Build (DBB):

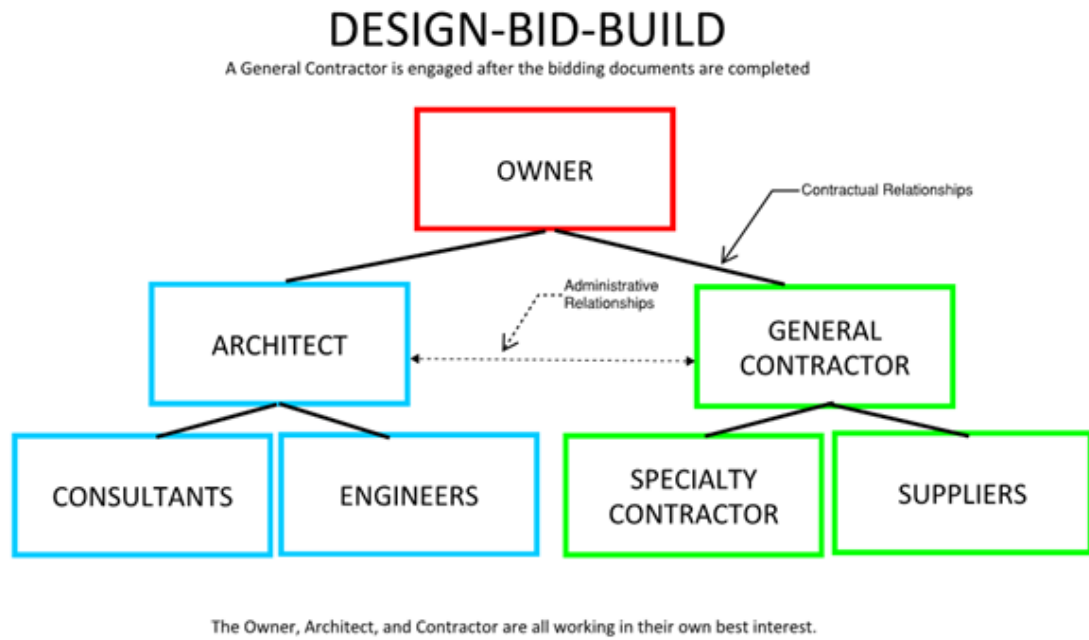
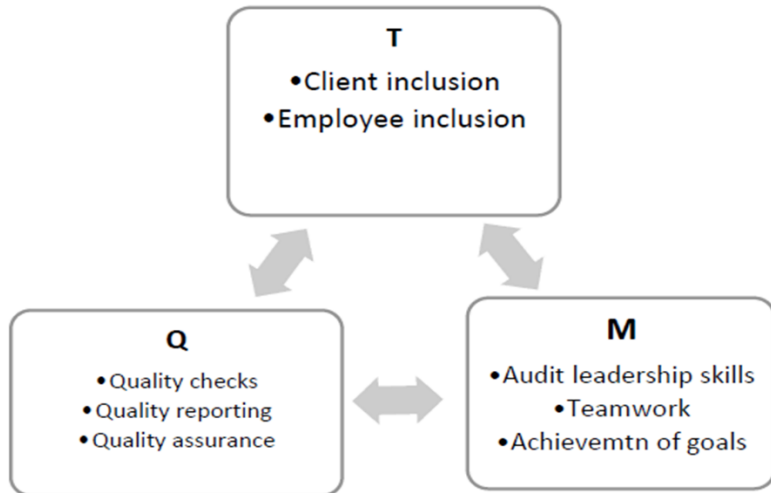


Fig.2:1 showing diagram representing Design-Bid-Build (DBB)

The Design-Bid-Build (DBB) methodology, a traditional project delivery system in the construction industry, involves design, bidding, and construction phases. Supporters include professional organizations like AIA and AGC, while critics argue it can be inefficient, leading to longer timelines and higher costs. DBB's sequential process allows owners to select the lowest bidder, potentially leading to cost savings (Gransberg et al., 2022). DBB is commonly used in public sector projects, particularly in regions like Kuwait

where it is mandated by law (Al-enezi & Sabah, 2024). While DBB is perceived as offering financial efficiency due to its competitive bidding process (Gransberg et al., 2022), it also faces challenges, such as hindering collaboration among stakeholders due to its competitive nature, which can lead to inefficiencies (Sari et al., 2024). Additionally, despite potentially faster construction intensity, DBB projects often lag behind Design-Build (DB) projects in overall cost performance (Al-enezi & Sabah, 2024), and there are ongoing calls for improvements in contractor selection and project optimization within the DBB approach (Almuhannadi & Ghareeb, 2024).

Total Quality Management (TQM)



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Fig.2: 2 showing Total Quality Management (TQM)

Edwards Deming, Joseph Juran, and Philip Crosby are key figures in the field of Total Quality Management (TQM). Deming's principles of statistical process control and the Plan-Do-Check-Act cycle have been widely adopted. Joseph Juran's Juran Trilogy on quality planning and control further supports TQM. Kaoru Ishikawa, known for his Ishikawa Diagram, also contributed to TQM principles. Critics argue that TQM's focus on quality and efficiency may overlook innovation and strategic direction. However, TQM remains a crucial management philosophy (Na'im, 2024), and customer satisfaction, the ultimate goal of meeting or exceeding expectations for long-term success (T & E, 2024). Effective TQM also relies on employee involvement, fostering a shared commitment to quality (Nwokeocha, 2024), while the success factors such as top management commitment is crucial for driving TQM initiatives and aligning them with organizational goals (Al-Qayoudhi et al., 2024) including cultural change, which requires viewing quality management as an ongoing process rather than a one-time effort (Abdulkadir, 2023). Despite its effectiveness across various sectors, TQM's successful implementation can be hindered by challenges like lack of management commitment and communication gaps, which must be addressed to fully realize its benefits.

Empirical Review (Application to Lagos Megacity)

An empirical review serves as a crucial component in understanding the practical and data-driven aspects of a research topic. Several examples are high-rise residential buildings, major infrastructure development, mixed-use developments, commercial office buildings and public utilities projects which focus will be on two (2) randomly selected projects.

High-Rise Residential Buildings: The Eko Tower Complex

(Gilbert & Ronald, 2020) The Eko – Towers owned by Eko Hotels is a design and build project by ITB Nigeria Limited. Situated along the prestigious Ademola Adetokunbo Street and sitting next to the Eko Hotel

Luxury Suites. The Eko Towers is another peerless addition to the ever changing and beautiful Victoria Island landscape. The 19-Storey Tower with over 7000m² of Technical Profile curtain walling will be used as offices on completion. The structure consists of reinforced concrete columns, beams and post tensioned slabs all sitting on a piles and raft concrete foundation. There is one level basement on the entire site layout which is isolated from the neighboring-built environment with metal sheet piles. The basement and the first three floors will serve as parking.



Fig.2:3 showing overview of Eko Tower Complex

Major Infrastructure Development: Lagos Light Rail Project

(UITP, 2022) says a significant part of the Lagos Light Rail System, spans approximately 27 kilometres and runs from Okokomaiko in the west to Marina in the east, with a total of 13 stops along the way. The line runs on the Badagry Road Right-of-Way, which is a crucial four-lane corridor serving western Lagos and its surrounding communities. It continues south-eastwards from Eric Moore, passing the National Theatre before turning south along the Eko Bridge Road. The route proceeds eastward towards Iddo, where it connects with the Red Line and crosses the Osa Channel on a new bridge towards Lagos Island. This project focuses on developing a light rail system to improve urban mobility. Specifications for track design, signaling systems, and safety protocols are critical. Effective project management ensures that these specifications are adhered to, minimizing disruptions and delays in the city's transport infrastructure.



Fig.2: 4 showing the Lagos Light Rail Station

Gaps In Literature

Research should address these gaps as several critical areas related to construction specifications and project management in Lagos megacity: the impact of adaptive specifications on project outcomes in a rapidly evolving urban environment, exploring how flexible requirements can balance standardization with the need for real-time adjustments (Bandali et al., 2022); the integration of smart technologies, such as BIM, IoT, and AI, into specification and construction administration processes to enhance efficiency and tailor solutions to megacity needs (Silitonga & Jin, 2024); the effectiveness of current compliance monitoring mechanisms and tools, evaluating their role in ensuring adherence to specifications and identifying best practices (Mellqvist & Conde, 2021); the influence of Lagos’s cultural and socioeconomic factors on specification development and project management, including strategies to align global best practices with local realities (Settembre-Blundo et al., 2021); and the incorporation of sustainability and resilience goals into project specifications, focusing on energy efficiency, climate adaptation, and resource conservation to improve the success and durability of urban megaprojects (Abubakar et al., 2022).

METHODOLOGY

The study employs a quantitative research method to examine the impact of specifications on construction administration in Lagos Megacity. Data collection is conducted through a structured questionnaire, which is designed to capture information on the usage of specifications, their effectiveness, and their influence on project outcomes. The quantitative approach facilitates the measurement of key variables and the application of statistical analysis to interpret the results. Purposive sampling techniques are used to select respondents with relevant experience in construction administration, ensuring that the data collected is specific and relevant to the research objectives. A carefully crafted questionnaire was distributed to fifteen (15) selected building industry professionals in Lagos Megacity. The questionnaire took about five (5) minutes to fill. The questionnaire aimed to understand the frequency and effectiveness of specifications in construction projects, common challenges, and recommendations for improving practices. Data was analysed using statistical tools like descriptive statistics and correlation analysis. This analysis provided a clear understanding of how specifications were used and perceived within the construction industry in Lagos Megacity. The ethical Considerations include participants received a clear explanation of the study's purpose, procedures and provided written or electronic consent before participating; confidentiality and privacy of participants' personal data was anonymized and securely stored, with access restricted to authorized researchers only; participation was entirely voluntary, participants could withdraw from the study at any time without consequences; the study was conducted in a manner that avoided causing any physical, psychological, or professional harm to participants; and transparency and integrity of research findings were reported honestly and accurately, with any conflicts of interest disclosed; and sources of data and ideas were properly cited, and plagiarism was avoided.

RESULTS AND DISCUSSIONS

What is your role in the construction industry?
15 responses

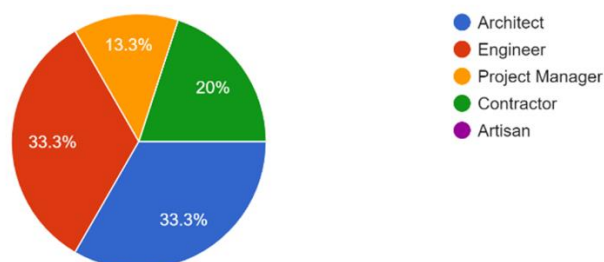


Fig 4:1. Pie Chart showing percentage distribution of respondents' role in the construction industry

15 respondents, 33.3% (5) were architects, while the same percentage applied to engineers. Contractors comprised 20% (3) of the respondents, and project managers made up 13.3%. These distributions are illustrated in Chart 1.

The survey of 15 respondents shows a balanced representation: architects and engineers each make up 33.3% (5 respondents), contractors account for 20% (3 respondents), and project managers represent 13.3%. This distribution provides a diverse range of perspectives from key industry professionals, including those involved in design, engineering, construction, and project management, offering a comprehensive view of the industry's practices and challenges.

The implication of the distribution of respondents is that the survey captures a well-rounded perspective from key professionals in the construction industry. With architects and engineers each representing a third of the respondents, and contractors and project managers making up the remainder, the data reflects a diverse range of viewpoints. This balanced representation ensures a comprehensive understanding of industry practices and challenges, providing valuable insights into various aspects of construction project management.

How often do you use specifications in your construction projects?

15 responses

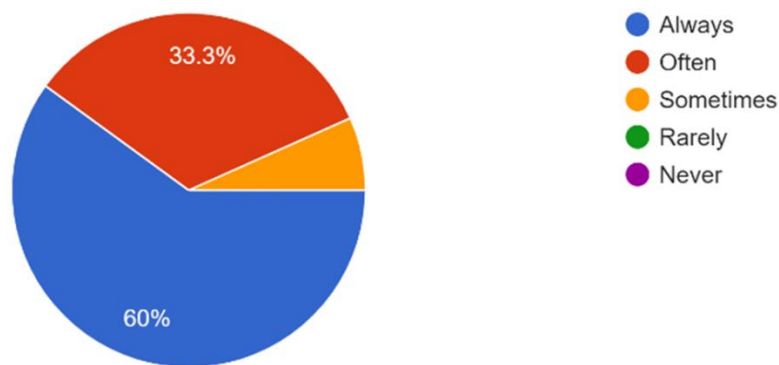


Fig4:1. Pie Chart showing percentage distribution of how often respondents use specifications in their construction projects

15 respondents, 60% (9) reported that they consistently use specifications in their construction projects. Meanwhile, 33.3% (5) indicated that they frequently incorporate specifications, and 6.7% (1) mentioned that they use them occasionally. This distribution highlights the varying levels of reliance on specifications among the professionals surveyed.

Among 15 respondents, 60% consistently use specifications in their construction projects, reflecting a strong adherence to detailed guidelines. Meanwhile, 33.3% frequently incorporate specifications, and 6.7% use them occasionally. This distribution indicates a significant reliance on specifications, with a majority emphasizing their importance, while a smaller segment uses them less regularly, revealing diverse practices in project management.

The implication of this result is that while the majority of professionals (60%) consistently use specifications, reflecting their critical role in construction projects, there is a notable variation in how frequently others incorporate them. With 33.3% frequently using specifications and only 6.7% using them occasionally, this diversity in usage levels suggests differing practices and potentially varying levels of emphasis on the importance of specifications in project management.

In which stages of the construction project are specifications typically used? (Select all that apply)
 15 responses

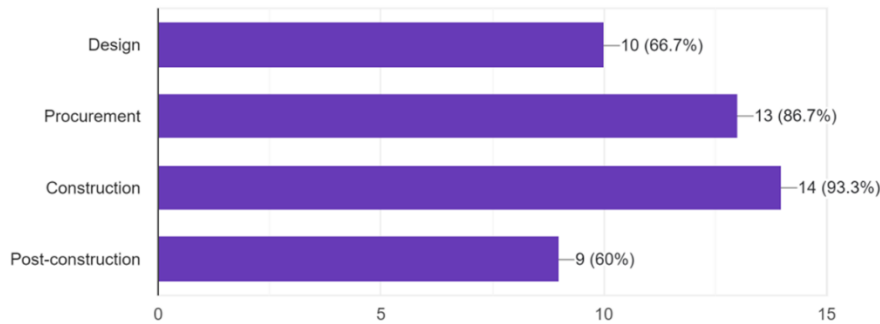


Fig 4:2. Bar Chart showing percentage distribution of the stages of construction project which specifications are typically used.

In this section, respondents were allowed to select multiple options regarding the stages at which specifications are used. The results indicate that 93.3% (14) of respondents identified the construction stage as the primary phase where specifications are typically utilized. Additionally, 86.7% (13) reported that specifications are commonly employed during the procurement stage. Specifications are also frequently used during the design stage, according to 66.7% (10) of the respondents. Finally, 60% (9) of the respondents noted that specifications are applied during the post-construction stage. This data underscores the critical role specifications play across various phases of construction projects.

The results reveal that specifications are most commonly used during the construction stage, cited by 93.3% of respondents, highlighting their critical role in ensuring project execution. Specifications are also widely utilized during procurement (86.7%) and design (66.7%) stages, with a significant portion (60%) applying them during post-construction. This distribution emphasizes the essential function of specifications throughout all phases of construction projects, from planning to completion.

The implication of this information is that specifications are integral throughout all phases of construction projects. With 93.3% of respondents using them predominantly during the construction stage, and significant usage during procurement (86.7%), design (66.7%), and post-construction (60%), it highlights their essential role in guiding project execution, maintaining quality, and ensuring consistency from planning through to completion. This comprehensive application underscores the importance of specifications in effective project management.

How do you generally receive and use specifications in your projects? (Select all that apply)
 15 responses

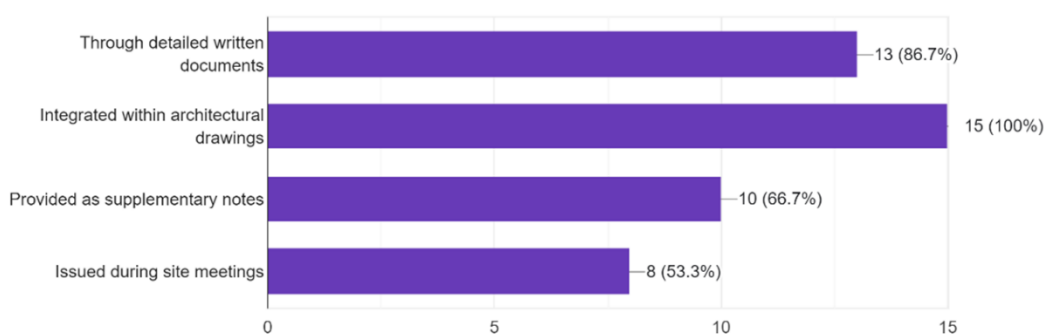


Fig.4:3: Bar Chart showing percentage distribution of how respondents generally receive and use specifications in their projects

In this section, respondents were asked to select all applicable methods for receiving specifications. The results reveal that 100% (15) of respondents indicated that specifications are typically integrated within architectural drawings. Additionally, 86.7% (13) reported receiving specifications through detailed written documents. A significant portion, 66.7% (10), noted that specifications are provided as supplementary notes, while 53.3% (8) mentioned receiving specifications during site meetings. This distribution highlights the diverse ways in which specifications are communicated and integrated into the construction process.

The results show that all respondents receive specifications integrated within architectural drawings, demonstrating its central role. Additionally, 86.7% obtain specifications through detailed written documents, while 66.7% get them as supplementary notes, and 53.3% during site meetings. This diversity in communication methods highlights the various ways specifications are conveyed, reflecting the need for multiple channels to ensure comprehensive integration into the construction process.

The implication of this result is that specifications are communicated through various methods, reflecting their critical role in the construction process. The fact that all respondents integrate specifications with architectural drawings, and many also use written documents, supplementary notes, and site meetings, highlights the necessity for multiple communication channels. This diversity ensures that specifications are effectively conveyed and understood, supporting comprehensive integration and minimizing the risk of misunderstandings throughout the construction process.

How effective do you believe specifications are in enhancing construction administration?
15 responses

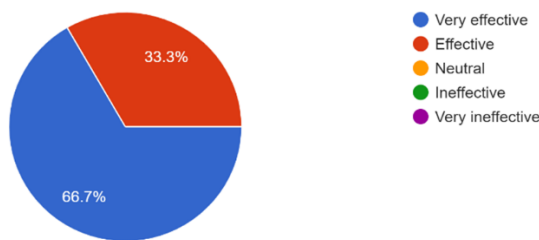


Fig.4:4: Pie Chart showing the effectiveness of specification in enhancing construction administration

According to the survey, 66.7% (10) of respondents reported that specifications are highly effective in enhancing construction administration. This suggests that a majority of professionals find specifications to be a crucial tool for improving the management and execution of construction projects. Additionally, 33.3% (5) of respondents indicated that specifications are effective, though not to the same extent. Overall, the feedback highlights a strong consensus on the positive impact of specifications on construction administration, with a significant proportion of professionals recognizing their value in ensuring project success.

The survey indicates that 66.7% of respondents view specifications as highly effective in enhancing construction administration, underscoring their critical role in improving project management and execution. Meanwhile, 33.3% find them effective, but to a lesser extent. This feedback reflects a strong overall consensus on the significant positive impact of specifications, with most professionals acknowledging their value in ensuring successful project outcomes.

The implication of this result is that specifications are widely regarded as a crucial element in enhancing construction administration, with 66.7% of respondents finding them highly effective. This indicates a strong recognition of their role in improving project management and execution. Although 33.3% find them effective but to a lesser degree, the overall consensus underscores the significant positive impact of specifications on achieving successful project outcomes and highlights their importance in the construction process.

In what ways do specifications contribute to the successful management of construction projects?

15 responses



Fig.4: 5: Bar Chart Showing ways which specifications contribute to the successful management of construction projects

Respondents were asked to select all applicable ways in which specifications contribute to the successful management of construction projects. The results indicate that 93.3% (14) of respondents believe that specifications play a crucial role in clarifying design intents, thereby enhancing project management. Similarly, 93.3% (14) of respondents affirmed that specifications are essential for ensuring quality control throughout the construction process. Additionally, 86.7% (13) noted that specifications help in reducing errors and minimizing the need for rework, which can significantly impact project efficiency and cost. Furthermore, 66.7% (10) respondents highlighted that specifications facilitate communication among stakeholders, improving coordination and collaboration across the project team. These findings underscore the multifaceted benefits of specifications in managing construction projects effectively.

The results reveal that 93.3% of respondents view specifications as vital for clarifying design intents and ensuring quality control, emphasizing their crucial role in project management. Additionally, 86.7% believe specifications help reduce errors and rework, enhancing efficiency and cost-effectiveness. Furthermore, 66.7% note that specifications improve communication and coordination among stakeholders. These findings highlight the diverse and significant benefits of specifications in successfully managing construction projects.

The implication of this result is that specifications are considered fundamental to successful construction project management. With 93.3% of respondents highlighting their role in clarifying design intents and ensuring quality control, specifications are seen as essential for effective project management. Additionally, 86.7% believe they reduce errors and rework, improving efficiency and cost-effectiveness, while 66.7% see them as enhancing communication and coordination among stakeholders. This demonstrates the broad and significant benefits of specifications in ensuring project success.

What challenges do you face in the preparation of specifications? (Select all that apply)

15 responses

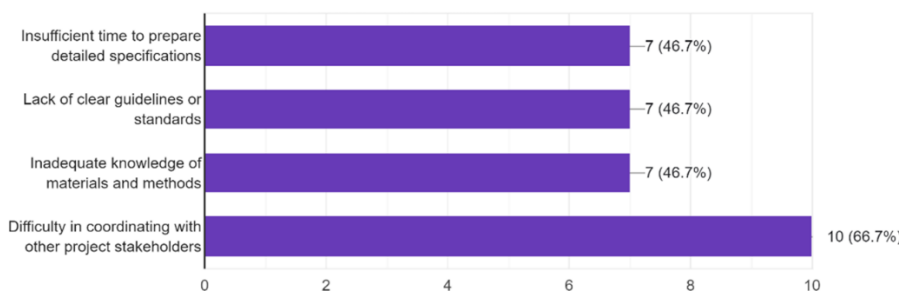


Fig.4:6. Bar Chart showing some difficulties members of the construction industry face in preparing specifications

In this section, respondents were asked to identify the challenges they encounter when preparing specification documents. The results reveal that 66.7% (10) of respondents cited difficulty in coordinating with other project stakeholders as a significant challenge. This indicates that managing input and feedback from various parties can complicate the specification process. Additionally, 46.7% (7) of respondents reported that insufficient knowledge of materials and methods poses a challenge when drafting specifications, highlighting a gap in expertise that affects the quality of the documents. Another 46.7% (7) noted that the absence of clear guidelines or standards contributes to difficulties in preparing specifications, suggesting that a lack of standardized practices can lead to inconsistencies. Furthermore, 46.7% (7) of respondents pointed out that time constraints impede their ability to develop detailed and comprehensive specifications, reflecting the pressure of tight deadlines on the quality of specification preparation. These insights underscore the various obstacles faced in the specification process, pointing to areas where improvements and support could enhance the effectiveness of specification development.

The results indicate that 66.7% of respondents find coordinating with project stakeholders a major challenge in preparing specifications, highlighting difficulties in managing diverse inputs. Additionally, 46.7% cite insufficient knowledge of materials and methods, lack of clear guidelines, and time constraints as significant issues. These challenges suggest that improving stakeholder coordination, expertise, standardization, and managing deadlines could enhance the quality and effectiveness of specification documents.

The implication of this result is that preparing specification documents is fraught with challenges. The primary issues include difficulties in coordinating stakeholder input (66.7%), insufficient knowledge of materials and methods, lack of clear guidelines, and time constraints (46.7% each). These obstacles suggest a need for better stakeholder management, enhanced expertise, standardized guidelines, and more realistic deadlines to improve the quality and effectiveness of specifications in construction projects.

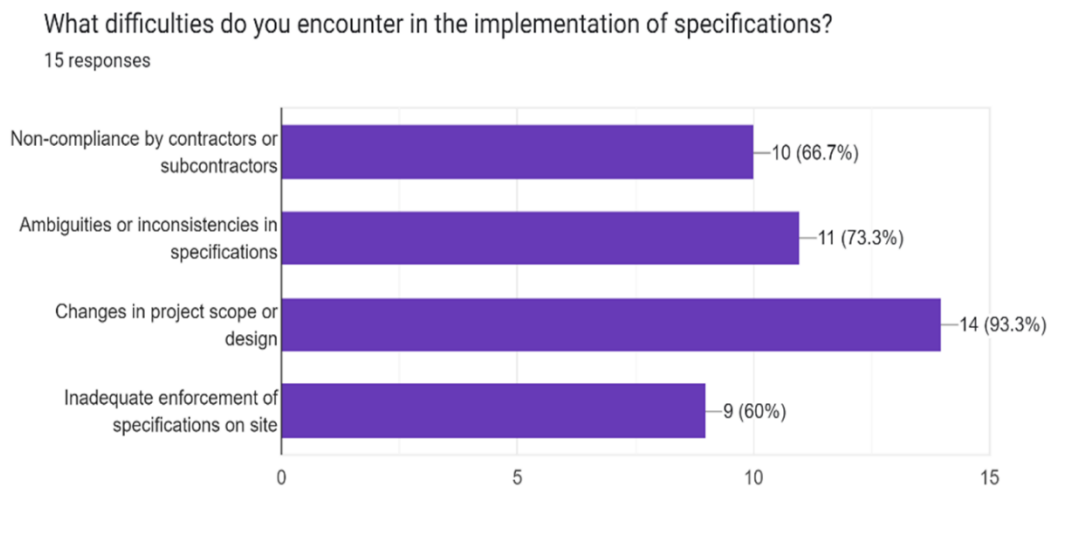


Fig.4: 7. Bar Chart showing difficulty in implementing specifications

In this section, respondents were asked to identify the difficulties they face in implementing specifications. The results show that 93.3% (14) of respondents identified changes in project scope or design as a major challenge, indicating that frequent alterations can complicate adherence to specifications. Additionally, 73.3% (11) of respondents noted that ambiguities or inconsistencies within the specifications themselves pose significant challenges, highlighting the need for clear and precise documentation to avoid misunderstandings. Another 66.7% (10) reported that non-compliance by contractors or subcontractors is a major obstacle, reflecting issues with ensuring that all parties adhere to the specified requirements. Furthermore, 60% (9) of respondents pointed to inadequate enforcement of specifications on-site as a critical difficulty, suggesting that insufficient oversight and enforcement mechanisms can undermine the

effectiveness of specifications. These findings emphasize the importance of addressing these challenges to improve the implementation and impact of specifications in construction projects.

The results highlight that 93.3% of respondents see changes in project scope or design as a major challenge in implementing specifications, indicating that frequent alterations complicate adherence. Additionally, 73.3% find ambiguities or inconsistencies in specifications problematic, underscoring the need for clarity. Non-compliance by contractors (66.7%) and inadequate on-site enforcement (60%) further complicate implementation, emphasizing the need for clearer documentation and better oversight to enhance the effectiveness of specifications.

The implication of this result is that implementing specifications in construction projects faces significant challenges. The majority of respondents (93.3%) struggle with changes in project scope or design, which complicate adherence. Additionally, 73.3% find ambiguities in specifications problematic, highlighting the need for clear documentation. Issues with contractor non-compliance (66.7%) and inadequate on-site enforcement (60%) further undermine effectiveness. These findings stress the need for clearer specifications and improved oversight to better support specification implementation.

What improvements would you suggest for better specification practices in construction projects?
 (Select all that apply)
 15 responses

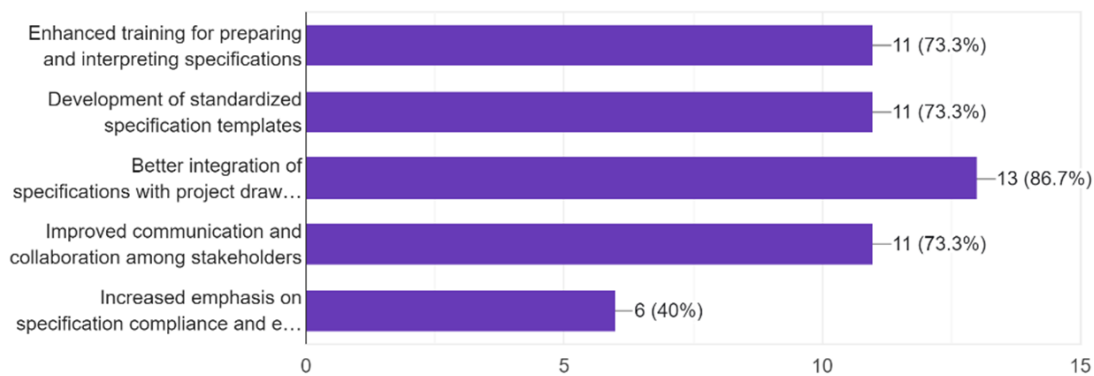


Fig.4: 8. Bar chart showing improvements suggested by respondents for better specification practices in construction projects

In this section, respondents were asked to provide suggestions for improving specification practices in construction projects. The results indicate several key areas for enhancement:

Eighty-six-point seven percent (13) of respondents emphasized the need for better integration of specifications with project drawings to reduce discrepancies and enhance clarity, while 73.3% (11) highlighted the importance of improving communication and collaboration among stakeholders to better understand and resolve issues related to specifications. Additionally, 73.3% suggested developing standardized specification templates to streamline the process and ensure consistency, and another 73.3% recommended enhancing training for the preparation and interpretation of specifications. Finally, 40% (6) proposed increasing the emphasis on compliance and enforcement to ensure adherence and improve project outcomes. These suggestions collectively aim to address challenges in specification practices and enhance construction project management.

The results indicate a strong consensus on improving specification practices: 86.7% advocate for better integration with project drawings, while 73.3% each stress enhancing communication among stakeholders, developing standardized templates, and boosting training for specification preparation. Additionally, 40%

suggest increased focus on compliance and enforcement. These recommendations highlight the need for clearer, more consistent, and effectively managed specifications to improve overall construction project management.

The implication of these results is that improving specification practices in construction requires several key enhancements. A strong majority (86.7%) supports better integration of specifications with project drawings to minimize discrepancies. Additionally, 73.3% advocate for enhanced communication among stakeholders, standardized templates, and improved training, while 40% recommend increased emphasis on compliance and enforcement. These recommendations reflect a consensus on the need for clearer, more consistent, and effectively managed specifications to boost overall project management and success. Therefore, these results above is in agreement with aim of these study that is, the impact of specification on construction administration for construction management in Lagos megacity.

CONCLUSION

This study underscored the pivotal role that specifications play in improving construction administration. Specifications are crucial across various stages of construction, including design, procurement, construction, and post-construction. They ensure clarity, quality control, and effective management of construction projects. The majority of building professionals utilize specifications extensively, particularly noting their integration within architectural drawings and their effectiveness in ensuring project quality and clarity.

However, the research also highlights several challenges in the implementation of specifications. Issues such as difficulties in coordinating with stakeholders, ambiguities or inconsistencies in specifications, non-compliance by contractors or subcontractors, and insufficient enforcement on-site pose significant barriers. These challenges can undermine the effectiveness of specifications and, consequently, the success of construction projects.

RECOMMENDATIONS

In order to enhance the effectiveness of specifications in construction administration, stakeholders in Lagos Megacity should focus on several key recommendations: ensure seamless integration of specifications with architectural drawings to mitigate discrepancies; strengthen communication and collaboration among project stakeholders for better understanding and timely issue resolution; develop and implement standardized specification templates to provide consistency and clarity; implement comprehensive training programs tailored to the needs of architects, engineers, contractors, and project managers; increase emphasis on compliance and enforcement on-site with clear monitoring protocols; incorporate sustainable design principles into specifications to promote environmental responsibility; and ensure specifications address the long-term maintenance and durability of building components. These measures will improve project outcomes, address existing challenges, and support a more sustainable and efficient construction industry.

REFERENCES

1. Abubakar, I., Dalglish, S. L., Angell, B., Sanuade, O., Abimbola, S., Adamu, A. L., Adetifa, I. M. O., Colbourn, T., Ogunlesi, A. O., Onwujekwe, O., Owoaje, E. T., Okeke, I. N., Adeyemo, A., Aliyu, G., Aliyu, M. H., Aliyu, S. H., Ameh, E. A., Archibong, B., Ezech, A., ... Zanna, F. H. (2022). The Lancet Nigeria Commission: investing in health and the future of the nation. *Lancet*, 399(10330), 1155–1200. [https://doi.org/10.1016/S0140-6736\(21\)02488-0](https://doi.org/10.1016/S0140-6736(21)02488-0).
2. Abdulkadir, K. (2023). Total Quality as an Effective Tool for Achieving Customer Satisfaction, Patronage, Productivity Gains and Sustainability in Organizations. *Studies in Economics and Business Relations*, 4(2), 37–53. <https://doi.org/10.48185/sebr.v4i2.893>.
3. Adafin, J., Ayodele, E., & Daramola, O. (2011). *An Assessment of Factors Affecting Material Stock Control Practice on Selected Construction Sites in Nigeria*.

4. Adamu Umar, I., Jacob Lembi, J., & Chioma Emechebe, L. (2021). American Journal of Construction and Building Materials Assessment of Awareness of Architects on Sustainable Building Materials in Minna, Nigeria. *Nigeria. American Journal of Construction and Building Materials*, *x*, No. *x(X)*, x–x. <https://doi.org/10.11648/j.xxx.xxxxxxxx.xx>
5. Adeboyejo, B. C., Kure, M. H., Onamade, Akintunde O., Gbolade, O. O., & Archibong, S. E. J. (2022). Inclusive and Healthy Urban Environment in the Global South : Definition , Characteristics and Benefits. *Asian Journal of Geographical Research*, *5(4)*, 44–51. <https://doi.org/10.9734/AJGR/2022/v5i4170>
6. Adewale, B., Oluwatayo, A., & Uwakonye, O. (2018). Shortfalls of Specification Writing. *International Journal of Civil Engineering and Technology (IJCIET)*, *9(7)*, 497–506.
7. Adewumi, B. J., Onamade, A. O., Asaju, O. A., & Adegbile, M. B. . (2023). Impact of Architectural Education on Energy Sustainability in Selected Schools of Architecture in Lagos Megacity. *Caleb International Journal of Development Studies*, *06(02)*, 209–218. <https://doi.org/10.26772/cijds-2023-06-02-13>
8. Akintoye, O. O., Babalola, O., & Waheed Adeyemi, K. (2024). A Review of Importance of Construction Documents on Project Delivery. *International Journal of Latest Technology in Engineering, Management & Applied Science*, *XIII(IV)*, 28–41. <https://doi.org/10.51583/IJLTEMAS.2024.130405>
9. Al-enezi, S. S. S., & Sabah, R. Al. (2024). Comparing time and cost performance of DBB and DB public construction projects in Kuwait. *Journal of Engineering Research (Kuwait)*, *June*. <https://doi.org/10.1016/j.jer.2023.11.016>
10. Al-Qayoudhi, S. A. S., Kamal, E. M., & Said, I. (2024). Success Factors of Total Quality Management (TQM) Practices: A Case Study of University of Technology and Applied Sciences (UTAS) in the Sultanate of Oman. *Paper Asia*, *40(2b)*, 59–71. <https://doi.org/10.59953/paperasia.v40i2b.85>
11. Almuhammad, M. A., & Ghareeb, A. S. (2024). Enhancing design-bid-build project delivery: A comprehensive review and framework for contractor selection and project optimisation in the construction industry. *Organization, Technology and Management in Construction*, *16(1)*, 63–80. <https://doi.org/10.2478/otmcj-2024-0005>
12. Anigbogu, N., Anigbogu, N. A., & Anunike, E. B. (2014). *STANDARD OF MATERIALS SPECIFICATIONS, THEIR IMPLEMENTATION AND ENFORCEMENT ON BUILDING CONSTRUCTION PROJECT IN NIGERIA Theoretical and conceptual framework in PhD research View project OPINION SURVEYS ON DRIVERS AND BARRIERS OF DEVELOPMENT OF NATIONAL STA. December 2014*, 33–44.
13. Badmos, O. S., Rienow, A., Callo-Concha, D., Greve, K., & Jürgens, C. (2018). Urban development in West Africa-monitoring and intensity analysis of slum growth in Lagos: Linking pattern and process. *Remote Sensing*, *10(7)*. <https://doi.org/10.3390/RS10071044>
14. Bandali, S., Style, S., Thiam, L., Omar, O. A., Sabino, A., & Hukin, E. (2022). Pathways of change for achieving sustainability results: A tool to facilitate adaptive programming. *Global Public Health*, *17(3)*, 457–468. <https://doi.org/10.1080/17441692.2020.1868016>
15. Bharil, R. K. (2016). Girders. *Innovative Bridge Design Handbook: Construction, Rehabilitation and Maintenance*, 359–381. <https://doi.org/10.1016/B978-0-12-800058-8.00014-1>
16. Busari, S., & Princewill, N. (2023, November). *Lagos positions itself as global financial center after historic appearance at London’s Lord Mayor’s Show | CNN*.
17. Dorcas, M., Taiwo, A., & Emmanuel, O. (2023). Innovations in Construction Organisations in Nigeria. *Towards a Sustainable Construction Industry: The Role of Innovation and Digitalisation*, 132–142. https://doi.org/10.1007/978-3-031-22434-8_14
18. Folorunso, C. O., & Ahmad, M. H. (2013). Parameters for Building Materials Specifications in Lagos, Nigeria. <https://doi.org/10.1177/2158244013497724>, *3(3)*, 1–5. <https://doi.org/10.1177/2158244013497724>
19. Gilbert, C., & Ronald, C. (2020). *Itb nigeria ltd*.

20. Gransberg, D., Michael, L., & Ghada, G. (2022). Design-Bid-Build Project Delivery. In *The Engineer's Project Delivery Method Primer* (pp. 29–52). American Society of Civil Engineers. <https://doi.org/10.1061/9780784416013.ch02>
21. Hassan, T. A., Adewumi, B. J., & Olukunga, O. A. (2024). An Empirical Review on Affordable Housing Estate Using Vernacular Architecture in Lagos State. *EKSU Journal of the Management Scientists*, 3(1), 218–224.
22. Isah, A. D., Muhammad, I. B., & Katun, I. (2018). Optimizing architects' building materials' specification strategy through knowledge management principles. *Construction Innovation*, 18(4), 394–411. <https://doi.org/10.1108/CI-08-2017-0071>
23. Lozier, P. (2015). Understanding specifications. *Architect*, 104(9), 130–133. <https://doi.org/10.1016/B978-1-85617-676-7.00009-9>
24. Martine Mselle, J., Alananga Sanga, S., & Eliufoo, H. (2023). Knowledge Transfer on Building Materials Specifications Among the Informal Construction Practitioners. *Article in Journal of Building and Land Development*, August.
25. Mellqvist, J., & Conde, V. (2021). *Best practice report on compliance monitoring of ships with respect to current and future IMO regulation*.
26. Munyimi, T. F. (2019). The role of procurement specifications in curbing wrong deliveries of construction materials in the construction sector in Zimbabwe. *Cogent Engineering*, 6(1). <https://doi.org/10.1080/23311916.2019.1631542>
27. Na'im, Z. (2024). Tinjauan Teoritis Manajemen Mutu Pendidikan. *Evaluasi: Jurnal Manajemen Pendidikan Islam*, 8(1), 110–123. <https://doi.org/10.32478/r30rhw16>
28. NBS Enterprises Ltd. (2020, January). *Architectural Specifications | NBS | NBS*.
29. Nwokeocha, I. (2024). Total Quality Management in Media Outfits and Organizational Performance. *International Journal of Economic, Finance and Business Statistics*, 2(1), 31–42. <https://doi.org/10.59890/ijefbs.v2i1.1383>
30. Ogunde, A. O., Olaolu, O., Afolabi, A., Owolabi, J., & Ojelabi, R. (2017). Challenges Confronting Construction Project Management System for Sustainable Construction in Developing Countries: Professionals Perspectives (a Case Study of Nigeria). *Journal of Building Performance*, 8(1), 2180–2106.
31. Oladigbolu, E., Akanbi, M. O., Joshua CHIKADIBIA, U., Akinbola, M. A., Banjo, R. K., Jamiu ADEWALE, E., & Matthew ADESOLA, A. (2022). Effectiveness of the Project Delivery Methods in Construction Management. Lagos State, Nigeria. *International Journal of Innovative Science and Research Technology*, 7(8).
32. Onamade, A., Alagbe, O., Dare-Abel, O., & Daramola, S. (2022). an Empirical Study of Solid Waste Collection and Management. *Global Scientific Journal*, 10(11), 1602–1613.
33. Onamade, A. O., Asaju, O. A., & Adetona, O. (2022). *Building Industry Professional Attitude Towards Construction And Demolition Waste Hazards In Lagos*. 16(11), 26–31. <https://doi.org/10.9790/2402-1611022631>
34. Opeyemi A. ASAJU, ADEWUMI, B. J., ONAMADE, A. O., & ALAGBE., O. A. (2024). ENVIRONMENTAL IMPACT ON ENERGY EFFICIENCY OF ARCHITECTURAL STUDIOS IN SELECTED TERTIARY INSTITUTIONS IN. *GEN-MULTIDISCIPLINARY JOURNAL OF SUSTAINABLE DEVELOPMENT*, 2(1), 29–37.
35. Oru, T. ., Bamidele, J. ., Asaju, O. ., & State, L. (2024). *A Comparative Study on Improving Energy-Efficiency in Multi-Apartment Residential Buildings*. 3(1), 255–267.
36. Osuizugbo, I. C. (2018). Traditional Building – Construction Problems: Need for Espousal of Sustainable Construction in Nigeria. *Article in International Journal of Scientific and Research Publications*, 8(12). <https://doi.org/10.29322/IJSRP.8.12.2018.p8427>
37. Sari, E. M., Irawan, A. P., Wibowo, M. A., Purwanto, S. K., Sutawidjaya, A. H., Dewi, M. P., & Santoso, J. T. (2024). Design bid build to integrated project delivery: Strategic formulation to increase partnering. *Journal of Infrastructure, Policy and Development*, 8(1), 1–18. <https://doi.org/10.24294/jipd.v8i1.2242>.

38. Settembre-Blundo, D., González-Sánchez, R., Medina-Salgado, S., & García-Muiña, F. E. (2021). Flexibility and resilience in corporate decision making: A new sustainability-based risk management system in uncertain times. *Global Journal of Flexible Systems Management*, 22(S2), 107–132. <https://doi.org/10.1007/s40171-021-00277-7>.
39. Silitonga, D. M., & Jin, O. F. (2024). Application of Artificial Intelligence (AI) in Construction Management: A Systematic Literature Review. *INVOTEK: Jurnal Inovasi Vokasional Dan Teknologi*, 23(3), 155–166. <https://doi.org/10.24036/invotek.v23i3.1153>
40. T, D. M., & E, D. A. (2024). Influence of Total Quality Management on Customers' Satisfaction: An Indication from Cooperative Banks. *Educational Administration Theory and Practices*, 30(6), 901–907. <https://doi.org/10.53555/kuey.v30i6.5388>
41. UITP. (2022). *Lagos Rail Mass Transit (LRMT) - Blue Line Elevator pitch Project description*.
42. Wininger, G. A. (2011). Specification writing, data sheet production, requisition development, and bid analysis. *Pipeline Planning and Construction Field Manual*, 421–463. <https://doi.org/10.1016/B978-0-12-383867-4.00020-7>