



ASSESSMENT OF PRACTICE OF SUSTAINABLE PROJECT MANAGEMENT AMONG QUANTITY SURVEYORS IN IBADAN

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ABSTRACT

The traditional method of construction is not friendly to human nature neither is it to the other resources in the society. The process of construction needs to transition from traditional process to sustainable process in order to keep the inhabitants and resources of this generation safe and to not damage the resources the future generation are meant to benefit from. Therefore, it is pertinent to ensure the management of the construction project is sustainable as well. This study aimed to assess the practice of sustainable project management in Ibadan. The research method adopted is quantitative using snowball technique in seeking for quantity surveyors that are carrying out project management tasks in the study area. The data was analysed using percentage, mean item score and standard deviation. It was found out that the level of practice of sustainable project management by quantity surveyors in Ibadan is average and it can be enhanced by effective stakeholder collaboration and partnership.

Keywords: quantity surveyors, sustainable project management, stakeholder collaboration, construction project.

INTRODUCTION

The construction industry, renowned for its significant contributions to global economic growth and infrastructure development plays a vital role in environmental sustainability. Over the years, the perspective on the concept of sustainability has spanned into the concept of sustainable project management as the relationship between project management and sustainable development is rapidly gaining interest from practitioners and academics (Ozumba *et al.*, 2020; Silvius *et al.*, 2019). This transition toward a more sustainable project management practice requires changing of products, procedures, processes, and management strategies (Silvius, 2021; Kivilä *et al.*, 2017; Silvius, Armenia *et al.*, 2019). Sustainability in project operations such as financial, social, and environmental sustainability is one of the most prominent issues of the present times to address. Sustainable Project Management (SPM) has emerged as a paradigm within the construction sector, advocating for environmentally

responsible, socially equitable, and economically viable practices throughout the project lifecycle (Apenko and Klimenko, 2019).

The construction industry, by its nature, exerts a significant influence on the environment, society, and economy. The sector consumes vast resources, generates substantial waste, and emits greenhouse gases, contributing to environmental degradation and climate change (Ahiaga-Dagbui and Smith, 2018; Chawla *et al.*, 2018). In response, SPM offers a framework to address these challenges by promoting sustainable practices such as green building design, energy efficiency, waste reduction, and renewable resource utilization. By embracing SPM principles, construction projects can mitigate environmental impacts, conserve resources, and contribute to the transition toward a more sustainable built environment (Chow *et al.*, 2021; Zakrzewska, 2022). Again, SPM is essential for enhancing the resilience and long-term viability of construction projects in the face of evolving sustainability risks and regulatory requirements (Baniheshemi *et al.*, 2017). As governments and international organizations increasingly prioritize sustainability goals, adherence to SPM principles becomes imperative for project success, market competitiveness, and regulatory compliance (Zakrzewska, 2022). Moreover, SPM aligns with emerging trends such as corporate sustainability initiatives, green building certifications, and stakeholder demands for ethical and environmentally responsible business practices.

However, in achieving this, the roles of quantity surveyors are important. As cost managers or construction economists, their roles include cost estimation, procurement, contract administration, and project management (Chow *et al.*, 2021). In the context of sustainable construction, Quantity Surveyors wield significant influence in integrating sustainability considerations into project decision-making processes. Their expertise in cost management, value engineering, and procurement strategies would enable them to optimize project outcomes while adhering to sustainability objectives (Zhang *et al.*, 2020). Quantity Surveyors contribute to sustainable construction through various means. These include a cost-benefit analysis of sustainable design features and materials to optimize life cycle costs and environmental performance, procurement strategies that prioritize environmentally / sustainable materials, suppliers, and construction methods, monitoring and controlling project costs to ensure adherence to sustainability targets and budget constraints, and collaborating with stakeholders to incorporate sustainability requirements into project specifications, contracts, and performance metrics.

To this end, this paper examines the level of awareness and practice of Sustainable Project Management (SPM) among Quantity Surveyors in the construction industry using Ibadan as a case study. It also identified gaps, challenges, and opportunities for enhancing sustainability practices in construction project management. To achieve the above objective, this paper is guided by the following research questions:

- i. What is the level of awareness of Sustainable Project Management (SPM) principles among Quantity Surveyors in Ibadan?
- ii. To what extent does Quantity Surveyors incorporate sustainable practices into their project management processes in the study area?
- iii. What are the factors influencing Quantity Surveyors' engagement in sustainable construction practices in the study area?

LITERATURE REVIEW

The Concept of Sustainable Development

Sustainable development is a concept that originated in the 1980s and gained prominence with the publication of the Brundtland Report in 1987, which defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This definition accentuates the interconnectedness of environmental, social, and economic dimensions in achieving long-term human well-being. The basic principles of sustainable development encompass environmental stewardship, social equity, and economic prosperity. Environmental sustainability involves minimizing resource depletion, pollution, and habitat destruction while promoting biodiversity conservation and ecosystem resilience (Zakrzewska, 2022; Wiek *et al.*, 2011). Social equity entails ensuring fair distribution of resources, opportunities, and benefits across diverse societal groups, including marginalized communities and future generations (Martens and Carvalho, 2016). Economic prosperity involves fostering inclusive growth, innovation, and resource efficiency to enhance productivity and prosperity while minimizing negative impacts on the environment and society (Zakrzewska, 2022).

The Concept of Sustainable Project Management

Researchers have presented their works on the integration of sustainability in project management based on the triple bottom-line approach and economic, environmental and social as aspects of sustainabilities. SPM extends the principles of sustainable development to project delivery processes, emphasizing the integration of environmental, social, and economic considerations into project planning, implementation, and evaluation (Grevelman and Kluiwstra, 2016). This seeks to optimize project outcomes while minimizing adverse impacts on the environment, society, and economy, thereby contributing to the broader goals of sustainable development. The principles of SPM centres on minimizing resource consumption, waste generation, and environmental degradation throughout the project lifecycle by adopting eco-friendly practices, technologies, and materials (Broto and Westman, 2019). More so, it focuses on promoting inclusivity, diversity, and community engagement in project decision-making processes to address social inequalities and enhance stakeholder well-being (Wang *et al.*, 2023), while maximizing project value and return on investment (Walker *et al.*, 2021).

The Traditional Responsibilities of Quantity Surveyors in Projects Construction

Quantity Surveyors in their role as cost managers or construction economists, traditionally play a major role in project construction, primarily focusing on cost estimation, procurement, contract administration, and financial management (Ashworth and Hogg, 2013). Their responsibilities include estimating the costs of constructing projects, including materials, labour, equipment, and overhead expenses (Klaus-Rosińska and Iwko, 2021). They utilize their knowledge of construction methods, materials pricing, and market trends to provide accurate cost estimates at various stages of project development. Moreso, QS are involved in the procurement process. This process includes tendering, bid evaluation, and contract negotiation with suppliers and subcontractors. QS ensures that materials and services are procured cost-effectively while meeting quality and schedule requirements. Again, they administer construction contracts on behalf of clients, ensuring compliance with contractual terms and conditions, managing variations and claims, and facilitating payments to contractors and subcontractors, playing key roles in resolving disputes and ensuring that projects are completed within budget and on schedule (Orieno *et al.*, 2024; Martens and Carvalho, 2016). These roles

revolve around the entire process of monitoring and controlling project costs throughout the construction process, tracking expenditures, forecasting budgetary requirements, and providing financial reports to stakeholders.

The Emerging Responsibilities of Quantity Surveyors in Sustainable Project Construction

With the growing emphasis on sustainability in the construction industry, Quantity Surveyors are increasingly called upon to integrate sustainability considerations into their traditional roles and responsibilities. These emerging role in sustainable construction encompasses sustainable cost management. With this, Quantity Surveyors are tasked with evaluating the life cycle costs of sustainable design features, materials, and technologies, considering both initial investment costs and long-term operational savings (Ofori, 2023). In achieving this, cost-benefit analyses would be conducted to identify economically viable sustainability strategies and optimize project outcomes while adhering to budget constraints. In their new role, procuring environmentally preferable materials, suppliers, and construction methods, minimizes resource depletion, pollution, and waste generation are prominent (Klaus-Rosińska and Iwko, 2021). However, Quantity Surveyors would be responsible for monitoring and reporting project sustainability performance, through energy consumption, waste generation, and greenhouse gas emissions (Zhang *et al.*, 2020), by developing key performance indicators (KPIs) and sustainability metrics to track progress toward sustainability goals, and identify areas for improvement, and communicate performance outcomes to stakeholders.

RESEARCH METHODS

A survey method was adopted to assess the level of practice of sustainable project management among quantity surveyors in Ibadan. Questionnaires were designed and distributed virtually to the quantity surveyors in Ibadan. Snowball technique was adopted in selecting respondents as it is not all quantity surveyors that are involved in project management, and there is no specific data for those interested in project management, as a result of these difficulties, snowball is the technique that was selected to get qualified respondents for this study.

The analysis of data gotten from the well-structured questionnaire was done by using percentage for the respondents' demographic information, while mean and standard deviation was used for the data gotten regarding the factors influencing quantity surveying engagement in sustainable construction practices.

FINDINGS AND DISCUSSION

Table 1. Respondents' Level Of Education

		Frequency	Percent t	Valid Percent	Cumulative Percent
Valid	HND	6	19.4	19.4	19.4
	B.Sc	14	45.2	45.2	64.5
	M.Sc	7	22.6	22.6	87.1
	Ph.D	4	12.9	12.9	100.0
	Total	31	100.0	100.0	

Source: Author's field survey, 2024

The academic qualifications of the respondents show a diverse educational background. The majority, 45.2%, hold a Bachelor's degree (B.Sc), indicating that a solid undergraduate education is common among the participants. Those with a Master's degree (M.Sc) represent 22.6% of the respondents, suggesting that a significant number have pursued advanced studies. Additionally, 19.4% have a Higher National Diploma (HND), reflecting a practical and technical educational background. Finally, 12.9% of the respondents hold a Doctorate degree (Ph.D), indicating a presence of highly specialized and research-focused professionals.

Table 2 Professional qualification of Respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
			t		
Valid	MNIQS	24	77.4	77.4	77.4
	FNIQS	6	19.4	19.4	96.8
	Others	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Source: Author's field survey, 2024

Professional qualifications among the respondents are predominantly within the MNIQS designation, with 77.4% holding this qualification. This majority suggests a strong professional standard within the industry. The FNIQS qualification is held by 19.4% of respondents, indicating a notable presence of highly experienced and recognized professionals. A small percentage, 3.2%, have other professional qualifications, reflecting some diversity in professional accreditation.

Table 3 Years of work experience of the respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
			t		
Valid	0-5years	6	19.4	19.4	19.4
	6-10years	6	19.4	19.4	38.7
	11-15years	7	22.6	22.6	61.3
	16-20years	4	12.9	12.9	74.2
	Above 20 years	8	25.8	25.8	100.0
	Total	31	100.0	100.0	

Source: Author's field survey, 2024

The respondents exhibit a wide range of work experience, reflecting a diverse pool of expertise. Among the 31 participants, 25.8% have over 20 years of experience, suggesting a strong presence of seasoned professionals. Those with 11-15 years of experience account for 22.6%, while both the 0-5 years and 6-10 years categories each represent 19.4% of the respondents. Finally, 12.9% have 16-20 years of experience. This distribution indicates that the survey captures insights from both relatively new entrants and highly experienced individuals in the field, providing a comprehensive perspective on the topic.

Table 4 Factors influencing Quantity Surveyors' engagement in Sustainable Construction Practices

Factors	N	Mean	Std. Deviation
Stakeholder collaboration and partnerships	31	3.7742	1.05545
Financial consideration and cost-saving opportunities	31	3.7419	1.23741
Project budget	31	3.6774	1.04521
Availability of skilled workmen and expertise	31	3.6129	1.05443
Project size and complexity	31	3.5484	0.99461

Availability of sustainable materials and technologies	31	3.4839	1.02862
Public awareness and community support	31	3.3226	1.01282
Industry standards and certifications (e.g., LEED, BREEAM)	31	3.129	0.84624
Client demands and preferences	31	2.9677	1.07963
Training and educational opportunities	31	2.0968	0.74632
Professional network	31	2.0323	0.75206

Source: Author's field survey, 2024

The survey of 31 respondents identifies several key factors influencing Quantity Surveyors' engagement in sustainable construction practices, with stakeholder collaboration and partnerships emerging as the most significant. This factor has the highest mean score of 3.7742, underscoring the critical role of cooperation among various stakeholders in promoting sustainable practices. Financial considerations and cost-saving opportunities also rank highly, with a mean score of 3.7419, highlighting the importance of economic incentives in motivating sustainable construction. Additionally, the project budget, with a mean score of 3.6774, is a crucial factor, reflecting the impact of financial constraints and allocations on the ability to implement sustainable practices effectively. The availability of skilled workmen and expertise, scoring 3.6129, and project size and complexity, at 3.5484, further illustrate the challenges and necessities of integrating sustainable practices into construction projects.

Other notable factors include the availability of sustainable materials and technologies (3.4839) and public awareness and community support (3.3226), which are significant but slightly less influential. Industry standards and certifications, such as LEED and BREEAM, with a mean score of 3.129, indicate a moderate influence, suggesting adherence to recognized standards is somewhat important. Client demands and preferences, scoring 2.9677, also play a role but to a lesser extent. Training and educational opportunities (2.0968) and professional networks (2.0323) are the least influential factors, suggesting that current training and professional networking may be insufficient or underutilized in promoting sustainable practices. Overall, these results highlight the multifaceted influences on sustainable construction practices, with stakeholder collaboration, financial considerations, and project budget emerging as the most significant motivators for Quantity Surveyors.

DISCUSSION OF FINDINGS

Quantity Surveyors being professional that are in charge of judicious utilization of the construction resources make QS important parties to the construction project. The findings of this study shows importance of collaboration and partnership in influencing quantity surveyor's participation on sustainable construction practice. This was corroborated by (Koigi, 2017) stating that quantity surveyors' involvement on sustainable construction will be hard to achieve as an individual consultant without effective collaboration. Qs can ensure the economic aspect of economic in sustainability is achieved, but in order to achieve the total sustainability goals in economic, environment and social, the client and the designers have to come to play their roles collaboratively to ensure all areas of sustainability are well covered. The collective goal that comes through effective collaboration and partnership is what influences Qs to participate in sustainable construction project.

CONCLUSION AND RECOMMENDATIONS

Sustainable project management being procedures to ensure sustainable construction practice is well carried out. It is of great essence to ensure project are being constructed in the manner that considers the three key aspects of sustainability; economic, environment and social. In achieving this, the role of quantity surveyors cannot be overlooked as QSs monitors the utilisation of the resources to ensure it follows a sustainable way. This study has shown that stakeholders' collaboration and partnership is a factor that influences the quantity surveyor best to engage in sustainable construction project management. The overall goal is to ensure that green and less waste environment is achieved through construction activities, and to achieve this the stakeholder need to collaborate effectively and explore the available alternatives to the traditional procedure of project management.

From the findings of this study, the knowledge of sustainable project management in the midst of quantity surveyors in the study area is established and to ensure the increase in the practice of sustainable project management, the study recommends the following:

1. Effective collaboration should be encouraged amidst the stakeholders, most especially the primary stakeholders involved in the project directly.
2. Professional bodies should take it as a role to educate the professionals on the benefits of employing sustainable project management practice, to them and to the clients.
3. The use of technology in the practice of sustainable project management is important, to that effect, the study hereby recommends the area for further research work.

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