

Factors Influencing the Adoption of Sustainable Practices in Facility Management

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Abstract

Minimising environmental impacts and maximising economic and social benefits are critical in facilities management (FM). This study identified factors affecting the adoption of sustainable practices in FM. A quantitative approach was employed in the study, utilising a questionnaire survey administered to FM professionals selected through purposive and convenience sampling. Respondents were approached at three recent Africa FM conferences. The data from 89 respondents were analysed using descriptive statistics, including frequencies, percentages, and mean item scores. Findings revealed that awareness of sustainability practices, financial knowledge relevant to adopting sustainable practices, competencies and skills, and management support are critical factors in adoption. The study can contribute to advancing the adoption of sustainable practices in FM and developing support initiatives with an understanding of these identified influences. The study provides a crucial knowledge base for future FM research, training, and policymaking.

Keywords: Facility management, organisations, sustainability, sustainable development goals, sustainable practices

1. Introduction

Facility management (FM) is increasingly gaining recognition and attention due to the flexibility provided to organisations in the rapidly changing era (Lee et al., 2021). The use, operation and maintenance of buildings and the built environment have the most significant environmental impact, affecting organisations, society and future generations' access to resources (Hauashdh et al., 2024). Hence, sustainability (ensuring that future generations' needs are not compromised) has become imperative in response to environmental, societal, and economic challenges and impacts to ensure that tomorrow's generation will enjoy the benefits of efforts today. Minimising environmental impacts and maximising economic and social benefits have become crucial. The role of FM in realising organisational and sustainable development through daily activities, processes, and procedures is critical. Despite these potential contributions, there is still a low sensitivity to sustainability in FM. In present-day FM, professionals face a vital issue of 'sustainability' for the rapid development of built infrastructures, and there is a need to be more proficient in sustainable development and practices (Islam et al., 2019). Facility management should benefit an organisation in response to its needs, be impactful within and outside the organisation, and consider sustainability imperatives (Jensen et al., 2013). Sustainable FM adds value to companies, organisations, and governments that integrate it into their vision (Alfalah & Zayed, 2020). There is also 'added value' in customer and relationship values related to physical resources, such as building-related facilities and services (Islam et al., 2019).

Standards and frameworks exist to guide FM practices for specific objectives, eg, ISO 41001, ISO Green Building Standards (Codes), ISO 15932 and the Balanced Scorecard (BSC) (Graubner et al., 2016). Studies have focused on maintenance strategies for public buildings using a multicriteria decision-making model (Ighravwe & Oke, 2019) and barriers to adopting sustainable FM practices in higher education institutions (Radebe & Ozumba, 2021). Others have reviewed SFM research and observed limited attention in Africa (Nielsen et al., 2016; Okoro, 2023). Kwawu and Elmualim (2011) observed that the integration of sustainability with core business strategies evolves continually, and as such, the emphasis on different drivers may differ for organisations. Thus, this research is essential to analyse what is considered important especially in the African context, where SFM is gaining momentum as the continent grapples with rapid urbanisation, poor infrastructure performance and needs, increasingly strained infrastructure, growing need for climate change, resource scarcity, unpredictable institutional challenges, inadequate skills and capacity development in FM, financing constraints, lack of awareness of FM's enhanced role and levels (operational, tactical and strategic), reactive rather than proactive management and environmental degradation. There is a need to develop solutions in the local context (Radebe & Ozumba, 2021). The attainment of SDGs and sustainability imperatives in Africa will remain a mirage unless there is an inclination toward resilience, prevention and preparedness. Therefore, the current study focused on perspectives in Africa on the factors that influence the adoption of sustainable practices. The study's findings provide evidence for FM organisations and stakeholders to plan for current and future eventualities by identifying key factors to focus on and

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prioritise in strategic planning and implementing sustainability objectives to ensure long-lasting value.

2. Literature Review

2.1. Sustainability in Facility Management

Sustainability in FM is becoming increasingly significant, and organisations are revising current procedures and processes to incorporate sustainability into their daily activities. The FM profession faces more demands and challenges as the goals of sustainability agendas change over time, and it must be equipped with new knowledge, tools, and competencies to overcome these challenges (Elmualim, 2013). The International Facility Management Association's (2023) research on emerging trends transforming the industry also holds relevance for future or sustainability-centred initiatives. These trends include Proptech, artificial intelligence, circular economy, ESG reporting, climate change and wellbeing.

The concept of sustainability has evolved from an add-on to an integrated approach in management and business thinking and practices. The sustainability theory is a core aspect of modern facilities management theories, which are dynamic and evolving to meet the need for environmental sustainability and increased efficiency. For example, this includes the Corporate Social Responsibility (CSR) theory and the green innovation and economy theory (Fosu et al., 2024). In Islam et al.'s (2019) view, assets in the built environment must perform optimally beyond their expected lifespan, at the nexus of people's and processes' operational efficiency and reduced costs. Therefore, sustainability theory in facilities management incorporates innovative business thinking and the long-term performance of physical structures.

Globally, sustainability is an essential business consideration in building and facility management. Organisations acknowledge the financial and environmental benefits of sustainable practices and continually seek ways to optimise their operations, streamline processes, and reduce costs in areas such as energy efficiency, water conservation, and waste reduction (Pandit, 2024). Ageing buildings and the negative impacts of maintaining such include solid waste generation, water and land degradation, and depletion of natural resources and valuable materials (Hauashdh et al., 2024).

In the United States, SFM is focused on optimising the operation and maintenance of buildings, lowering costs, and minimising their environmental impact (Hauashdh et al., 2024). The approach involves strategies to enhance energy efficiency, minimise waste, conserve water, and integrate sustainable practices into the daily operations of facilities. Likewise, in the UK, concerns centre on energy efficiency and policies, such as the Netherlands'

Minimum Energy Efficiency Standards (MEES), which require buildings to meet a specific energy rating for letting or selling, thereby guiding practice (McAllister & Nase, 2023). In Ghana, companies have begun to adapt and implement strategies to comply with environmentalism concepts and CSR goals, focusing on effective energy use, pollution reduction, recycling, and waste disposal management, as well as cost reduction (Fosu et al., 2024). Organisations are encouraged to adopt sustainable practices to realise targeted objectives and the SDGs. However, there is limited attention to the factors influencing the adoption of these practices, especially in the African context.

2.2. Factors Influencing the Adoption of Sustainable Practices in Facility Management

Studies revealed that the poor implementation of policies is a significant factor that hinders the adoption of sustainable practices. According to Elmualim (2013), FM focus areas and functions (energy management, waste management, recycling, health and safety, and carbon footprint management) have been part of the profession's agenda before the emergence of sustainable development or sustainability interests. However, the real problem lies in the implementation process of sustainability policies. The study by Elmualim (2013) also identified awareness of sustainable practices, items included in organisations' sustainability policy and organisational effectiveness in implementing and managing sustainability practices as adoption factors. Other studies shared these views, revealing that strategic management and planning from financial, customer, and stakeholder, as well as process and organisational capacity, standpoints are crucial (Rohm & Montgomery, 2019). Roper (2013) opined that the future management of the built environment will be influenced by change management and new technology applications, including robotics, augmented and virtual realities and educational opportunities.

Lee et al.'s (2021) comprehensive review revealed a gap in organisational strategy for performance measurement, specifically in evaluating, planning, maintaining, and controlling quality in facilities management. Morganti and Bragadin (2025) stated that a maintenance planning strategy is of capital importance in improving the life cycle of assets and the efficiency of maintenance processes.

In relation to organisational or corporate strategy, culture, which encompasses the values and behaviours that make up a business's unique environment, can affect how people or groups interact and conduct business; it may influence the sustainable practices adopted (Hamsa, 2025). This could be the responsibility of occupants, the facility management organisation, or the demand organisation. The study by Weerasinghe et al. (2022) revealed that organisational culture, in terms of its strategy to address occupants'

preferences, contributes to the adoption of sustainable practices. Radebe and Ozumba (2021) supported the idea that competence, skills, and knowledge in specialised areas, such as green building and new technologies, might hinder adoption. In addition to the maintenance culture, situational or environmental circumstances contribute to the ageing and damage of building facilities, requiring continuous engagement with industry stakeholders and the participation of FM in the planning phase to ensure that targeted objectives are met with minimal environmental impact (Mewomo et al., 2022).

Furthermore, Rasmussen et al. (2023) observed that individual and organisational ambitions, motivators, and willingness to implement or increase sustainable practices, as well as tenants' expectations and demands (aesthetics), environmental and climate action considerations, finance, and the cost of incorporating sustainable products (for example, energy-efficient products) influence adoption. Technical factors, such as maintenance requirements, types, frequency, and teams (in-sourced and outsourced), as well as privacy and interoperability concerns, influence sustainable practices (Rasmussen et al., 2023; Muniandi et al., 2024).

Organisational structure and size, the FM organisation's data availability to monitor resource consumption, lack of incentives, limited knowledge about relevant environmental themes, inadequate time and resources, user participation, and community-based strategies and involvement all influence the adoption of sustainable practices in FM (Nielsen et al., 2009). Compliance with legislation, regulatory changes, reputation and corporate image (organisations wanting to be seen as environmentally and socially responsible entities), organisational ethos, behaviour and use from the residents and owners, purely technical qualities of the building and misalignment between regulatory and organisational objectives, business contexts and senior management leadership style are also important considerations (Kwawu & Elmualim, 2011).

The identified factors include elements related to the organisation, individuals' knowledge and skill, finance and support, and regulatory, technological and technical factors. As supported by Kwawu and Elmualim (2011), the considerations given to these factors may differ within and between organisations. Different regions may view the extent of their influence differently.

3. Methods

The study adopted a quantitative approach. A closed-ended questionnaire was used to collect data, enabling the derivation of statistical data to achieve the study's objectives (Sundram & Romli, 2023). The questionnaire was hosted online via Google Forms, and

the link was circulated among facilities managers and practitioners who attended three conferences held in 2023 and 2024 in African countries. Participants were approached at conferences attended by the author from the time the study was conceptualised (2023). This population was purposively targeted for the study, as they are practising facilities managers who are already adopting or are likely to adopt sustainable practices in their organisations or those that demand them. A similar technique was adopted in a previous study (Musonda & Okoro, 2021). Purposive sampling enables the deliberate identification and selection of individuals in specific settings or events to gather relevant information on the subject or phenomenon of interest, based on their knowledge and/or experience (Taherdoost, 2016).

Additionally, convenience sampling was employed to select participants who were willing to participate in the study. According to Golzar et al. (2022), researchers can select participants with whom they have ready access. Therefore, the total population included all attendees at the three conferences, which were attended by facility management practitioners (approximately 320) from different African countries. As Althubaiti (2022) explained, the population for descriptive studies can be defined by various elements, including the time frame and geographical locations. However, while the time frame was considered (2023–2024), the countries of origin or geographical locations were not included as part of the study's scope, as the delegates convened from various African countries. The views of practitioners in Africa, in general, were sought. The online link was also circulated on two WhatsApp groups to increase the response rate. WhatsApp is an ethically responsive online data collection method for qualitative and quantitative data collection (Mwanda, 2022). Eighty-nine responses were received during the data collection period. The amassed data were analysed using descriptive analysis in the Statistical Package for Social Sciences (SPSS). Cronbach's Alpha was used to assess the internal consistency reliability of the questionnaire constructs, with acceptable values of 0.7 and above. Mean and standard deviation scores were then computed to identify the most important factors influencing the adoption of sustainable practices.

4. Results

The respondents' demographic characteristics are summarised in Table 1. The analysis revealed that the respondents were from South Africa (40.4%), Nigeria (25.8%), and Ghana (23.6%). There was also minimal representation from Egypt, Botswana and Namibia. 39.3% held a Master's degree qualification, 29.2% a Bachelor's degree, 10.1% a PhD, and 7.9% other qualifications, such as certificates. The backgrounds of the participants included: 29.2% in Facilities Management (FM), 18% in Estate Management, 10.1% in Quantity Surveying, and 33.7% in other areas. Their

Table 1: Demographic characteristics of respondents

Attribute	Percentage	Attribute	Percentage
Educational qualification		Professional qualification	
Masters	39.3	FMP certification	20.2
Bachelor's	29.2	SFP certification	3.4
PhD	10.1	Other	27.0
Other	7.9	None	47.2
Work experience		Sector	
More than 15 years	31.5	FM industry	58.4
5-10 years	31.5	FM Education	3.4
11-15 years	21.3	Other (Building Construction, Engineering, and Research and Development)	25.8
Less than 5 years	15.7	Not specified	12.4

work experience in the FM industry spanned more than 15 years (31.5%), 5-10 years (31.5%), 11-15 years (21.3%), and less than 5 years (15.7%). Regarding professional qualifications, 20.2% of respondents were FMP certified, 3.4% held SFP certificates, and 27% held other professional qualifications. The remaining 47.2% did not have a professional qualification certification. Regarding the sector, 58.4% of respondents indicated they were FM Practitioners, 25.8% were in other sectors such as Building Construction, Engineering, and Research and Development, 3.4% were FM Educators, and 12.4% opted not to specify their sector. Many respondents (41.57%) were involved in combined FM activities (security, waste management, water management, sanitation, energy, landscaping, lifts, HVAC systems, and generators), 34.83% in security, waste management, water management, and corporate services, 4.9% in investment services, and 3.7% in energy services. The remaining 12.36% indicated that they offer other non-listed services. The diverse backgrounds and professional qualifications provided balanced insights from both theoretical and practical perspectives.

The Cronbach's alpha test for internal consistency reliability was 0.967 ($N = 20$), indicating that the individual items accurately measured what was intended. Table 2 shows the descriptive analysis results. Awareness of sustainability practices emerged as the most important factor (mean=4.37), followed by finance (mean=4.34; SD=1.14), relevant knowledge to adopt sustainable FM practices (mean=4.33), competencies and skills (mean=4.29; SD=1.00) and management support (mean=4.29; SD=1.05). The lowest-ranked factors were environmental control measures (mean = 3.67, SD = 1.17), performance objectives (mean = 3.67, SD = 1.18), and community engagement/involvement (mean = 3.79, SD = 1.03). Two of these factors exhibited relatively higher standard deviations, suggesting respondents were divided on their relevance in adopting sustainable FM practices. All the factors had a range of 4, indicating

that responses covered the whole Likert scale of 1 to 5. The low standard deviations, especially on the top factors, indicate respondents' agreement on the relative importance of these factors in adopting sustainable FM practices.

5. Discussion

Awareness, the first-ranked factor, is crucial for the adoption of sustainable FM practices. The study by Elmualim (2013) identified the awareness of sustainable practices and organisations' sustainability policy items as an adoption factor. Its criticality was also supported by Zulu et al. (2020), who ranked the factor highly due to its role in enhancing the adoption of sustainable practices in the construction industry in Zambia. Fosu et al.'s (2024) findings also supported the notion that most organisations in Ghana are unaware of some sustainability imperatives; initiatives like environmental CSR were considered unrealistic and unnecessary without awareness of environmental degradation. Without understanding the concept of sustainability, organisations cannot implement the required sustainability strategies effectively. Hence, spreading awareness is essential for successfully adopting sustainable FM practices.

The respondents also considered finance as an important factor in implementing sustainability initiatives. This suggests that FM organisations with stronger financial support are more likely to adopt sustainable practices. This aligns with the findings of Radebe and Ozumba (2021) and Rasmussen et al. (2023), which showed that financial constraints and the cost of incorporating sustainable products, such as energy-efficient ones, as well as environmental and climate action considerations, are key drivers of adoption. Organisations will be unwilling to invest substantially if it does not yield a return, a view shared by Fischer et al. (2023). This suggests a balance or trade-off necessary to implement sustainable practices.

Table 2: Factors influencing the adoption of sustainable practices in FM

Items	Mean	Standard deviation	Rank
Awareness of sustainability practices	4.37	1.04	1
Finance	4.34	1.14	2
Relevant knowledge to adopt practices	4.33	1.02	3
Competencies/skills needed	4.29	1.00	4
Management support	4.29	1.05	4
Organisational culture	4.18	1.03	6
Cost of environmental programmes	4.13	1.20	7
Technological/technical requirements	4.10	1.12	8
Sustainability tools/standards	4.10	1.21	8
Individual willingness	4.06	1.14	10
Ethics and professionalism	4.04	1.12	11
Procurement/outsourcing support	4.03	1.08	12
System/organisational capacity/size of firms]	4.00	1.07	13
Exposure to international programmes	4.00	1.12	13
Cybersecurity/Safety	3.98	1.13	15
Knowledge management concerns	3.92	1.06	16
National/ Government policies/Legislation	3.92	1.21	16
Community engagement involvement	3.79	1.03	18
Environmental control measures	3.67	1.17	19
Performance objectives	3.67	1.18	19

Knowledge of sustainability concepts ranked third, indicating that respondents largely agree that relevant knowledge is a prerequisite for effectively implementing sustainable practices. Implementing sustainable practices in the FM industry may require a certain level of specialised knowledge, such as energy-efficient technologies and green building standards. Furthermore, the fourth most important factor was competencies/skills needed to implement sustainable practices. These findings were supported by Radebe and Ozumba (2021), who demonstrated that the level of competence, skills, and knowledge in specialised areas, such as green building and new technologies, may either hinder or drive adoption.

Management support was also ranked highly in the descriptive analysis, suggesting that organisational leadership is pivotal in adopting and enabling sustainable practices in FM. This finding was also consistent with Radebe and Ozumba's (2021) observation that a lack of senior management commitment can adversely affect the adoption of sustainable practices in higher education institutions, and that the responsibility for developing policies towards sustainability lies with them. As Ighravwe and Oke (2019) suggested, multicriteria decision-making and multi-objective programming approaches can facilitate more strategic choices and sustainable practices. Management's role in educating staff and

end-users about sustainable practices, implementing policies to reduce carbon emissions, or choosing suppliers with a track record of sustainable practices, is essential in SFM practice. These will also spill over to organisational culture, values, and monitoring processes, which ranked sixth.

On the contrary, the result for one of the least-ranked factors (environmental measures) was surprising, as FM sustainability entails minimising the environmental impact of buildings and their operations while maximising resource efficiency. In addition, policies and legislation, although deemed important by many respondents, ranked the lowest. This is inconsistent with views shared by Graubner et al. (2016) on the relevance of codes, standards and policies in sustainability practice in FM. By implementing policies such as green building and complying with regulations, SFM can be ensured. These mixed findings are supported by Kwawu and Elmualim's (2011) observation that different organisations could be driven by differing factors, which may evolve with time.

6. Conclusion

The study evaluated the factors that influence the adoption of sustainable practices in FM using descriptive analysis of data collected from FM practitioners in Africa. Findings revealed the most

important factors as awareness, finance, knowledge, competencies and skills, and management support. The study provides evidence for FM stakeholders' decision-making in assessing and prioritising factors that affect the adoption of sustainable practices in their spaces. Although organisational responsibility for committing resources to sustainability goals rests on the highest level of management, FM professionals can integrate sustainable practices into their operational and management activities. Investing financial resources and strategic support in sustainability initiatives will be instrumental in ensuring that buildings and workplaces are sustainable. Facility managers can create long-lasting organisational value by developing, implementing and maintaining sustainable practices. The current study provides evidence for decision-making regarding policy and strategic support for sustainable FM practice and education.

Future research can be undertaken with a more diverse sample of built environment professionals and a larger

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- sample from more African countries. Alternative research approaches, such as interviews, can be undertaken for more in-depth accounts and a better understanding of the manifestation of these factors in different sectors and organisations. Future research could also employ inferential analysis to examine the contributory effects of the identified factors to sustainability, singly or collectively. In addition, the relationships between the identified factors can be examined to determine which factors can be grouped and prioritised for optimal performance and sustainability in FM. It might also be helpful to investigate future views on the influences considered in the current study, as they may evolve and differ across different organisations and contexts. Further, strategies to encourage the adoption of sustainable practices could be the focus of future studies.

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