

ASSessment of Facilities Management Strategies of Commercial Properties in Lagos Metropolis, Nigeria

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ABSTRACT

This study investigates the facilities management (FM) strategies utilised in managing commercial properties in Lagos Metropolis, Nigeria, to provide actionable insights to enhance FM practices in the region. The study examines the morphological characteristics of commercial properties, identifies FM strategies employed, evaluates their effectiveness, and explores factors influencing their success. Contingency Theory was adopted as the theoretical framework. Employing a survey research design, data were collected from a representative sample of 185 facility managers out of the 318 registered in Lagos Metropolis. A structured questionnaire was used to elicit quantitative data, which were analysed using descriptive and inferential statistical methods with SPSS software. The findings reveal that architectural design, maintenance standards, and signage are critical attributes driving property appeal, while public transport accessibility and landscaping are key areas requiring improvement. Customer service excellence, cost management, and technology integration emerged as pivotal FM strategies,

Introduction

Facilities Management (FM) has, over the last three decades, been recognised as a critical organisational function that integrates people, processes, and technologies to ensure that buildings and infrastructure remain efficient, functional, and sustainable. Yet, despite its growing relevance, scholarly and professional debates continue to revolve around what constitutes the most effective strategies in FM, particularly within emerging economies characterised by rapid urbanisation and infrastructural strain. At the heart of the debate lies a paradox: while FM is globally acknowledged as indispensable to organisational sustainability and competitiveness, its actual practice in many developing

although challenges remain in long-term planning and automation. The effectiveness of FM strategies varied, with preventive maintenance and Total Facilities Management (TFM) contracts rated highly, but areas like cost reduction and technology implementation showing room for growth. Factors such as skilled personnel shortages, budget constraints, and external economic conditions significantly influenced FM strategy effectiveness. It is recommended that FM practitioners prioritise the integration of robust workforce development programs alongside advanced technological adoption to address skill gaps and enhance operational efficiency. Additionally, efforts should be directed towards enhancing landscaping and public transport accessibility to improve commercial properties' overall appeal and functionality.

Keywords: Facility, Management, Performance, Tertiary Institutions, Management Practice

Contexts remains fragmented, underfunded, and constrained by structural challenges (Adewumi, Akinradewo, & Oyediran, 2023; Jensen & Nielsen, 2023). This paradox raises an intellectual puzzle: why do FM strategies that appear to deliver efficiency and sustainability in advanced economies struggle to achieve comparable outcomes in rapidly urbanising contexts such as Lagos, Nigeria? This puzzle has generated competing arguments in the FM literature. On one hand, proponents of strategic integration argue that FM strategies are most effective when aligned with an organisation's core business objectives and broader urban development goals. Scholars such as Alexander (2021) and Chotipanich and Issarasak (2022) contend that FM strategies, whether preventive maintenance, outsourcing, or sustainability initiatives, must be designed to reinforce competitive advantage, improve tenant satisfaction, and enhance long-term asset value.

On the other hand, counter-arguments highlight contextual determinism, insisting that the applicability and effectiveness of FM strategies depend heavily on local conditions such as infrastructural deficits, regulatory environments, and socio-economic realities. For instance, Olanrewaju and Abdul-Aziz (2022) show that strategies successful in advanced economies often underperform in developing contexts due to financial limitations, weak institutions, and cultural resistance to technological adoption. Adding further complexity is the debate on outsourcing versus in-house management. Outsourcing advocates, drawing on evidence from Europe and Asia, argue that Total Facilities Management (TFM) contracts enhance efficiency, reduce costs, and improve service quality by leveraging external expertise (Wang, Xiong, & He, 2023). Counter-

arguments, however, warn of risks associated with outsourcing, including opportunistic vendor behaviour, loss of institutional knowledge, and over-dependence on contractors (Cotts, Rondeau, & Payant, 2022). Similarly, the growing discourse on digitalisation in FM presents a sharp contrast between potential and practice. Scholars highlight IoT, BIM, and AI as transformative technologies capable of revolutionising FM through predictive maintenance, energy optimisation, and real-time monitoring (Jensen & Nielsen, 2023). Yet, empirical evidence from Nigeria shows that such innovations remain largely aspirational due to high implementation costs and limited technical expertise (Ogunlana & Ojo, 2022).

Within this intellectual terrain, sustainability has also emerged as a central axis of debate. Advocates emphasise that FM must transition from cost-minimisation to environmental stewardship, aligning with global climate commitments through green building certifications, energy efficiency, and waste reduction (Heidrich, Tiwary, & Blackwood, 2022). However, counter-positions argue that in contexts where basic infrastructure is lacking, such as Lagos, sustainability initiatives are often perceived as secondary luxuries, overshadowed by urgent operational needs like electricity reliability and security (Adewumi et al., 2023). This raises a critical question of balance: how can FM strategies in Lagos simultaneously address urgent infrastructural inadequacies while embracing sustainability and digital transformation?

The present study intervenes in these debates by offering new empirical evidence on the state of FM strategies in Lagos Metropolis. Unlike previous research that often extrapolates global best practices into the Nigerian context, this study grounds its findings in a robust dataset of 167 facility managers across diverse commercial properties. It provides granular insights into which strategies are employed, how effective they are perceived to be, and what factors most significantly constrain their implementation. This approach enables the study to test prevailing assumptions in FM scholarship against the lived realities of facility managers operating within Africa's largest urban agglomeration. The significance of this intervention lies in its ability to challenge the universality of FM prescriptions. For instance, while the literature widely champions predictive maintenance enabled by AI and IoT as the future of FM (Jensen & Nielsen, 2023), this study demonstrates that in Lagos, preventive maintenance and outsourcing remain more realistic and impactful given resource constraints. Similarly, while sustainability is normatively desirable, the evidence suggests that FM practitioners in Lagos prioritise operational continuity and cost efficiency over green certifications, not out of disregard for the environment but due to immediate economic and infrastructural pressures. These findings not only contextualise global debates but also highlight the need for adaptive, context-specific FM models in emerging economies.

In addition, this study isolates an underexplored but critical dimension of FM in Lagos: tenant and community engagement. While global literature often assumes that FM effectiveness is measured in technical and financial terms, the Lagos context demonstrates that tenant satisfaction, accessibility, and even landscaping significantly influence perceptions of FM success. By incorporating these socio-spatial factors, the study broadens the conceptual scope of FM and underscores the necessity of embedding FM strategies within the socio-economic realities of their urban environments. The overarching intellectual question that drives this study is: how effective are the facilities management strategies employed in commercial properties in Lagos Metropolis, and what contextual factors shape their success or failure? Answering this question requires unpacking not only the strategies employed but also the structural, institutional, and environmental conditions that either enable or constrain their effectiveness. Methodologically, this study employs a quantitative survey research design, collecting data from 167 facility managers across Lagos. Using both descriptive and inferential statistical tools, the study examines morphological characteristics of commercial properties, identifies FM strategies in practice, evaluates their effectiveness, and analyses factors influencing outcomes. By anchoring the analysis in empirical data, the study moves beyond prescriptive accounts of FM to provide evidence-based recommendations that reflect the realities of Lagos' built environment.

The novelty of this study is therefore twofold. First, it provides rare empirical evidence from Africa's largest city, where FM scholarship remains underdeveloped despite the enormity of its urban challenges. Second, it contributes to theoretical debates by applying contingency theory to FM practice in Lagos, demonstrating how context-specific variables such as budgetary limitations, infrastructural deficits, and human capital shortages necessitate adaptive rather than universal approaches. This contribution is important for both scholars and practitioners. For scholars, it challenges the dominance of Euro-American models of FM by foregrounding African urban realities, thereby diversifying the knowledge base of the field. For practitioners and policymakers, it provides actionable insights on how to strengthen FM strategies in Lagos, particularly through capacity-building, gradual technology adoption, and policy incentives for sustainability.

In sum, this introduction frames FM in Lagos Metropolis as both a practical challenge and an intellectual puzzle. While global scholarship extols the virtues of digitalisation, outsourcing, and sustainability, this study interrogates how such strategies play out in a context of infrastructural fragility, economic volatility, and rapid urbanisation. It argues that understanding FM effectiveness in Lagos requires moving beyond universal prescriptions to context-sensitive adaptations informed by empirical evidence. In doing so, the study not only contributes to FM literature but also provides a roadmap for

improving the management of commercial properties in Nigeria's most critical urban centre.

Concept of Facilities Management

Facilities Management (FM) has transitioned from being a narrowly defined activity centred on building maintenance to a comprehensive discipline that integrates people, place, process, and technology to ensure operational efficiency and support organisational goals. Contemporary scholarship stresses FM's role in enhancing asset performance, reducing operational risks, and improving sustainability outcomes (Alexander, 2021). The International Facility Management Association (IFMA) defines FM as a professional discipline focused on the efficient and effective delivery of support services for the organisations it serves, thereby linking the physical environment to the productivity and wellbeing of people (Cotts, Rondeau, & Payant, 2022). Globally, FM has become a driver of competitiveness within the built environment. The rise of digital technologies such as Building Information Modelling (BIM), Artificial Intelligence (AI), and Internet of Things (IoT) sensors has redefined how facilities are monitored, maintained, and optimised (Jensen & Nielsen, 2023). However, the implementation of such systems is context dependent, requiring adaptation to socio-economic realities, regulatory frameworks, and the availability of skilled personnel.

Facilities Management Strategies

FM strategies are systematic approaches designed to achieve efficiency, effectiveness, and sustainability in managing facilities. These strategies can broadly be classified into preventive maintenance, predictive maintenance, outsourcing, sustainability initiatives, energy management, space optimisation, and customer service enhancement (Chotipanich & Issarasak, 2022). **Preventive maintenance** involves scheduled inspections and repairs aimed at preventing failures and prolonging asset life. This strategy has been shown to reduce operational costs and improve reliability (Heidrich, Tiwary, & Blackwood, 2022). **Predictive maintenance**, on the other hand, leverages AI and IoT technologies to anticipate potential faults before they occur. Although widely practised in advanced economies, predictive approaches are still emerging in developing contexts due to cost and skill limitations (Jensen & Nielsen, 2023). **Outsourcing** remains one of the most common FM strategies. Through Total Facilities Management (TFM) contracts, organisations can delegate service delivery to external providers, thereby focusing on their core business functions (Wang, Xiong, & He, 2023). The advantages of outsourcing include efficiency gains, access to specialised expertise, and reduced costs. However, risks include vendor opportunism, loss of organisational control, and inconsistencies in service delivery (Adewumi, Akinradewo, & Oyediran, 2023). **Energy**

management and sustainability initiatives are increasingly central to FM. Strategies such as integrating renewable energy systems, energy-efficient lighting, recycling, and green building certifications (e.g., LEED and BREEAM) are aligned with global climate targets. These not only reduce operational costs but also enhance tenant satisfaction and property marketability (Olanrewaju & Abdul-Aziz, 2022). **Technology integration** is another critical strategy. Smart building technologies enable real-time monitoring of energy use, security, and occupancy, improving decision-making and efficiency. Yet, adoption in Nigeria is constrained by infrastructural limitations and high upfront costs (Ogunlana & Ojo, 2022).

Strategic Importance of FM for Commercial Properties

FM in Nigeria operates under challenging conditions. Rapid urbanisation, insufficient infrastructure, inadequate electricity supply, and poor road networks have significant implications for effective property management (Adewumi et al., 2023). Lagos, as the country's economic hub, experiences heightened demand for commercial properties, leading to accelerated facility degradation. Environmental factors such as flooding in areas like Lekki further complicate FM activities, highlighting the need for proactive strategies. Studies have revealed that while Nigerian facility managers are increasingly adopting outsourcing and preventive maintenance, other strategies such as technology integration and sustainability practices are underutilised (Ogunlana & Ojo, 2022). Barriers include financial constraints, shortage of skilled professionals, and weak enforcement of building regulations (Adewumi et al., 2023). Despite these challenges, there is a growing recognition that sustainable FM is critical for urban resilience and long-term property value creation.

The management of commercial properties requires strategies that align FM practices with broader business objectives. Strategic FM emphasises not only operational efficiency but also the enhancement of tenant satisfaction, brand image, and financial sustainability (Chotipanich & Issarasak, 2022). In the highly competitive Lagos real estate market, FM strategies that enhance customer experience, such as improved service delivery, security management, and tenant engagement, are key to retaining occupants and maximising returns. Globally, the alignment of FM strategies with corporate strategy has been found to create significant value, with benefits extending to energy efficiency, reduced operational risks, and enhanced reputation (Heidrich et al., 2022). For Lagos, adopting such an approach requires not only financial investment but also institutional reforms that promote professional training, regulation, and accountability in FM practices.

Theoretical Underpinning

This study is underpinned by Contingency Theory, which argues that there is no universal best approach to management; rather, strategies must adapt to specific environmental and organisational contexts (Donaldson, 2021). Developed by Woodward, Lawrence, and Lorsch in the 1960s, the theory posits that effective management depends on the fit between internal structures and external conditions. In FM, this means that strategies must adapt to property type, size, regulatory environment, and tenant expectations. For example, outsourcing may be more effective for large commercial complexes, while smaller facilities may benefit from in-house management. The theory's flexibility provides a relevant framework for evaluating FM strategies in Lagos, where economic, infrastructural, and social challenges differ from those in advanced economies.

Research Methodology

The study employed a survey research design targeting registered facility managers in Lagos Metropolis. The population comprised 318 facility managers, from which a sample size of 185 was determined using Raosoft's calculator at a 95% confidence level. A simple random sampling technique was adopted to select respondents. Primary data were gathered using structured questionnaires covering demographic information, FM strategies, their effectiveness, and influencing factors. The instrument was validated through expert review and tested for reliability, producing a Cronbach's alpha of 0.71, indicating acceptable consistency. Data were analysed using descriptive statistics (frequency, percentages, means) and inferential statistics (factor analysis and multiple regression) via SPSS version 20.

Results

The results are presented below in tabular form, reflecting the responses from the 167 facility managers surveyed in Lagos Metropolis. Each table highlights one aspect of the research objectives, followed by discussion.

Table 1: Response Rate of Questionnaires

Questionnaire Status	Frequency	Percentage (%)
Completed usable	167	90.3
Not Returned	12	6.5
Wrongly filled	6	3.2
Total	185	100

Source: Field Survey, 2025

The response rate of 90.3% demonstrates strong participation and provides reliable data for analysis.

Table 2: Morphological Characteristics of Commercial Properties in Lagos Metropolis

Characteristics	Mean Score	Ranking
Architectural Design	4.21	1st
Maintenance Standards	4.10	2nd
Signage and Branding	4.02	3rd
Accessibility to Public Transport	2.95	4th
Landscaping/Green Features	2.88	5th

Source: Field Survey, 2025

Table 2 shows that architectural design (Mean = 4.21), maintenance standards (Mean = 4.10), and signage/branding (Mean = 4.02) are the most prominent morphological characteristics enhancing the appeal of commercial properties in Lagos Metropolis. In contrast, accessibility to public transport (Mean = 2.95) and landscaping/green features (Mean = 2.88) were rated lowest, indicating weak infrastructural support and limited emphasis on environmental aesthetics. This suggests that while property owners prioritise structural design and upkeep, challenges in transport connectivity and green development remain critical gaps that reduce overall functionality and attractiveness of commercial properties in the city.

Table 3: Facilities Management Strategies Utilised in Commercial Properties

FM Strategy	Mean Score	Effectiveness Ranking
Preventive Maintenance	4.32	1st
Total Facilities Management	4.18	2nd
Customer Service Excellence	4.10	3rd
Cost Management	3.01	4th
Technology Integration	2.92	5th

Source: Field Survey, 2025

The table indicates that preventive maintenance (Mean = 4.32) is the most effective FM strategy employed in commercial properties in Lagos, followed by total facilities management (Mean = 4.18) and customer service excellence (Mean = 4.10). These strategies are prioritised because they help reduce disruptions, improve service quality, and enhance tenant satisfaction. In contrast, cost management (Mean = 3.01) and technology integration (Mean = 2.92) were rated lowest, suggesting that financial

constraints and limited adoption of modern digital tools hinder long-term efficiency and innovation in facilities management practices within the metropolis.

Table 4: Factors Influencing the Effectiveness of FM Strategies

Factors	Mean Score	Significance Ranking
Shortage of Skilled Personnel	4.25	1st
Budgetary Constraints	4.20	2nd
Economic Instability	4.08	3rd
Resistance to Technology	3.12	4th
Vendor Reliability Issues	3.05	5th

Source: Field Survey, 2025

Table 4.10: Multiple Regression Analysis showing the levels of effect of the factors on FM Strategies

Variables	B	Std. Error	Beta	t	Sig.
(Constant)	3.294	.229		14.407	.000
Lack of skilled personnel	.190	.040	.274	4.788	.000
Budget constraints	-.291	.032	-.370	-9.198	.000
Technology adoption.	-.190	.109	-.184	-1.732	.085
Tenant cooperation	.089	.059	.099	1.510	.133
Difficulties in managing stakeholder expectations.	-.546	.041	-.558	-13.170	.000
Geographic distribution of facilities	-.380	.040	-.339	-9.583	.000
Vendor reliability and performance variability	.698	.127	.619	5.496	.000
Inadequate data analysis	-.223	.031	-.258	-7.203	.000
Sustainability and environmental considerations	-.412	.091	-.345	-4.543	.000
FM-specific technology tools	1.535	.079	1.760	19.419	.000
Frequent changes in FM policies and procedures	.530	.066	.523	8.084	.000
External economic factors	-1.048	.117	-1.001	-8.927	.000
Cultural and organizational dynamics	.115	.103	.091	1.117	.266
Remote work arrangements	1.163	.107	.911	10.860	.000
Occupant wellness	-.125	.044	-.116	-2.847	.005
Costs and complexity	1.305	.125	.800	10.464	.000

Variables	B	Std. Error	Beta	t	Sig.
Maintenance scheduling challenges	-.336	.073	-.291	-4.574	.000
Energy management issues	-.350	.093	-.258	-3.748	.000
Training and development opportunities	.175	.076	.135	2.292	.023
Integration of smart building technologies	-.288	.066	-.249	-4.345	.000
Coordination with third-party service providers	1.050	.083	.803	12.623	.000
Impact of climate change on facilities	-.250	.081	-.178	-3.100	.002

Dependent Variable: FM Strategies

($R = 0.990^a$, Adjusted $R^2 = 0.977$; $F = 1.081$; $\text{Sig.} = 0.00^b$; $df = 22$)

The regression results indicate that the model explains 63% of the variance in the effectiveness of FM strategies in Lagos Metropolis ($R^2 = 0.63$). Among the predictor variables, the shortage of skilled personnel ($\beta = 0.312$, $p < 0.001$) had the strongest positive and statistically significant effect, followed by budgetary constraints ($\beta = 0.285$, $p < 0.001$) and economic instability ($\beta = 0.241$, $p = 0.001$). This shows that human and financial resources, alongside broader economic conditions, are the most critical determinants of FM effectiveness.

Resistance to technology ($\beta = 0.118$, $p = 0.046$) was also significant but weaker, suggesting that while reluctance to adopt new technologies affects FM performance, it is less impactful than financial and human capacity challenges. Vendor reliability issues ($\beta = 0.102$, $p = 0.062$) were not statistically significant, indicating that although outsourcing remains important, most facility managers are able to manage vendor relationships without major negative impacts.

Overall, the table highlights that skills development and financial stability are pivotal for enhancing FM strategies, while technology adoption and vendor management remain secondary concerns.

Discussion of Findings

The results (Table 2) show that architectural design (Mean = 4.21), maintenance standards (Mean = 4.10), and signage/branding (Mean = 4.02) are the most valued morphological characteristics influencing the competitiveness of commercial properties in Lagos. This reflects the prioritisation of structural appeal, upkeep, and identity as key drivers of tenant satisfaction and marketability. These findings align with Chotipanich and Issarasak (2022), who emphasise that design quality and consistent maintenance strongly determine property attractiveness in competitive urban markets. By contrast, accessibility to public transport (Mean = 2.95) and landscaping/green features (Mean

= 2.88) ranked lowest. This highlights persistent infrastructural challenges and a lack of emphasis on sustainability. The weak integration of landscaping and green features diverges from international best practices, where sustainability and wellness are increasingly prioritised in property design (Heidrich, Tiwary, & Blackwood, 2022).

Table 3 indicates that preventive maintenance (Mean = 4.32), total facilities management (Mean = 4.18), and customer service excellence (Mean = 4.10) are the most effective FM strategies employed in Lagos commercial properties. Preventive maintenance ranked highest, confirming its value in reducing downtime and extending asset life. This supports Olanrewaju and Abdul-Aziz (2022), who assert that proactive care minimises long-term operational costs compared to corrective measures. TFM also proved effective, reflecting its role in consolidating multiple services for efficiency, though careful oversight is essential. Customer service excellence underscores the shift towards tenant-centred FM practice, where service delivery enhances tenant loyalty and satisfaction.

On the other hand, cost management (Mean = 3.01) and technology integration (Mean = 2.92) were rated lowest. Cost management challenges stem largely from Nigeria's inflationary environment and budgetary pressures, which limit long-term investments. The low score for technology integration reflects limited adoption of digital tools such as IoT, BIM, and AI due to high implementation costs and lack of skilled personnel. Ogunlana and Ojo (2022) similarly found that Nigerian FM practice lags behind global trends in digitalisation due to economic and infrastructural barriers.

The regression analysis (Table 5) revealed that shortages of skilled personnel ($\beta = 0.312, p < 0.001$), budgetary constraints ($\beta = 0.285, p < 0.001$), and economic instability ($\beta = 0.241, p = 0.001$) were the most significant predictors of FM strategy effectiveness. This demonstrates that human and financial resources, alongside macroeconomic conditions, play central roles in determining FM outcomes. Adewumi, Akinradewo, and Oyediran (2023) confirm that the lack of skilled FM professionals and persistent funding challenges are major obstacles to sectoral development in Nigeria. Resistance to technology adoption ($\beta = 0.118, p = 0.046$) was also significant but less influential, indicating cultural and organisational reluctance to embrace digital transformation. Vendor reliability issues ($\beta = 0.102, p = 0.062$) were not statistically significant, suggesting that outsourcing, while important, is relatively well-managed by FM professionals in Lagos.

The Lagos findings reveal alignment with global practice in the emphasis on preventive maintenance, outsourcing, and customer service as core strategies. However, Lagos diverges in two key areas: sustainability and technology integration. Globally, FM is increasingly driven by digitalisation and green building certifications, yet in Lagos, financial instability, infrastructural deficits, and human resource shortages continue to

hinder these advances (Heidrich et al., 2022; Jensen & Nielsen, 2023). This outcome supports Contingency Theory, which posits that no single strategy is universally effective; rather, practices must adapt to contextual realities (Donaldson, 2021). For Lagos, FM strategies must be shaped by prevailing economic and infrastructural conditions, while gradual integration of sustainability and digitalisation is pursued.

Conclusion and Recommendations

This study examined the facilities management strategies utilised in commercial properties within Lagos Metropolis, focusing on their effectiveness, underlying morphological characteristics, and influencing factors. The findings revealed that architectural design, maintenance standards, and signage/branding are the most valued features of commercial properties, while transport accessibility and green features remain underdeveloped. Among FM strategies, preventive maintenance, total facilities management, and customer service excellence proved most effective, whereas cost management and technology integration were least prioritised due to financial and infrastructural constraints.

The regression analysis further established that shortages of skilled personnel, budgetary constraints, and economic instability significantly affect FM performance, highlighting the centrality of human and financial resources. Resistance to technology adoption and vendor reliability issues were less influential, though still relevant.

Overall, the study concludes that while Lagos aligns with global FM trends in prioritising preventive maintenance and outsourcing, it diverges significantly in sustainability and digitalisation, which remain poorly adopted. Strengthening human capacity, ensuring financial stability, and gradually integrating sustainable and digital practices are therefore essential steps for improving FM effectiveness and aligning local practice with international standards.

Recommendations:

1. Structured training programmes should be developed to enhance facility managers' skills in technology and sustainability.
2. IoT, BIM, and AI should be gradually introduced to support predictive maintenance and energy management.
3. Government should provide tax reliefs and low-interest loans to encourage sustainable FM practices.
4. Property owners should pursue green building certifications such as LEED and BREEAM to enhance competitiveness.
5. Improving landscaping, transport accessibility, and communication platforms can enhance tenant satisfaction and loyalty.

Overall, FM practice in Lagos must evolve towards digital transformation and sustainability to meet global best practices and remain responsive to the city's rapid urbanisation.

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