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CONTEXTUAL DETERMINANTS OF FACILITIES MANAGEMENT STRATEGIES IN THE LAGOS COMMERCIAL REAL ESTATE SECTOR

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ABSTRACT: *Facilities Management (FM) plays an increasingly strategic role in sustaining the performance of commercial properties, particularly in rapidly urbanising contexts such as Lagos, Nigeria. This study examines the contextual determinants shaping FM strategies in the Lagos commercial real estate sector. Drawing on a survey of 167 registered facility managers, the research employed descriptive and inferential statistics to evaluate the effectiveness of various strategies, including preventive maintenance, Total Facilities Management (TFM), customer service protocols, and technology integration. Findings indicate that preventive maintenance and TFM are perceived as the most effective approaches, yielding significant benefits in asset longevity, cost control, and tenant satisfaction. However, the study highlights persistent challenges, including limited adoption of advanced technologies due to infrastructural constraints, financing barriers, and workforce skill gaps. The analysis, framed within contingency theory, underscores that FM effectiveness depends on aligning strategies with contextual realities such as building morphology, economic pressures, and regulatory environments. The study concludes that while Lagos is transitioning towards integrated FM models, uneven implementation limits overall outcomes. It recommends investment in workforce development, staged technology adoption, vendor governance, and sustainability measures to strengthen resilience. The findings contribute to both scholarship and practical decision-making in facilities management.*

KEYWORDS: Facilities Management, Commercial Real Estate, Preventive Maintenance, Lagos Metropolis, Contingency Theory.

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INTRODUCTION

The management of the built environment has, in recent decades, become an intellectual and practical frontier where urbanisation, economics, sustainability, and governance intersect. In commercial property contexts, Facilities Management (FM) has moved beyond custodial and maintenance functions into a strategic discipline that underpins asset value, tenant satisfaction, and organisational performance (Atkin & Brooks, 2021). Yet, in rapidly urbanising African cities such as Lagos, FM confronts paradoxes that unsettle global best practices. On the one hand, proponents emphasise FM as a vehicle for efficiency, cost control, and sustainability (Boge & Lindkvist, 2022); on the other, the contextual realities of infrastructure deficits, weak regulatory enforcement, skills shortages, and economic volatility create conditions under which otherwise "proven" models often underperform (Akinlabi & Adebayo, 2021). This tension raises a key question: How effective are facilities management strategies in Lagos commercial real estate, and what contextual factors account for their performance? The academic debate around FM strategies is marked by competing emphases. One influential view, associated with contingency theorists such as Donaldson (2001), stresses fit between strategy and environment. For example, preventive maintenance is celebrated in FM literature for reducing lifecycle costs and asset downtime (Horner et al., 2019), but in Lagos, unpredictable power supply, flooding, and weak vendor accountability complicate its implementation (Olawale & Ogunlana, 2020). Advocates of Total Facilities Management (TFM) argue that bundling services under integrated contracts reduces duplication and delivers economies of scale (Jensen & Van der Voordt, 2020). Yet critics counter that in emerging economies, over-reliance on TFM contracts risks vendor capture, service rigidity, and diminished client control (Ogunba & Ojo, 2021). A parallel line of argument centres on technology: while the adoption of IoT-enabled Building Management Systems (BMS) is considered transformative in Europe and Asia (Nutt et al., 2022), in Nigeria, such systems often falter due to unstable power supply, high acquisition costs, and lack of skilled operators (Olayiwola, 2023). These counterpoints underscore the core debate: Can strategies deemed "best practice" globally translate effectively into Lagos' unique urban and economic conditions?

Existing scholarship on FM in Africa tends to cluster around descriptive studies of adoption rates, maintenance culture, or client satisfaction. For instance, Adewunmi and Olaleye (2019) found that commercial property managers in Nigeria prioritise corrective maintenance over preventive approaches due to budget constraints, a finding echoed by Olufemi and Oyetunji (2022) in their study of retail malls. However, these studies often stop short of identifying the determinants of effectiveness, that is, the contextual variables that explain why some strategies succeed where others fail. Furthermore, comparative analysis within Nigeria's most dynamic urban hub, Lagos, remains thin despite the city accounting for the largest concentration of commercial real estate in West Africa (PwC, 2023). The current research addresses this gap by combining morphological analysis of property attributes with an empirical survey of facility managers to trace how strategy effectiveness is conditioned by workforce capacity, budget discipline, regulatory context, and asset design.

The intellectual proposition advanced here is that FM strategies in Lagos cannot be properly understood without situating them within contextual determinants. This moves the debate forward in two ways. First, it challenges universalist claims in FM literature that preventive maintenance, TFM, or advanced technology are inherently superior strategies regardless of location. Second, it proposes a nuanced model in which strategy effectiveness is mediated by contingencies such as infrastructure reliability, macroeconomic volatility, and vendor-market

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maturity. Such a reframing is important because it not only strengthens theoretical understanding but also yields actionable insights for property owners, investors, and policymakers navigating Nigeria's volatile property market. To substantiate this proposition, the paper introduces new empirical evidence drawn from a survey of 167 facility managers across Lagos Metropolis. This evidence shows that preventive maintenance and TFM, when aligned with vendor maturity and client capacity, outperform other models in terms of tenant satisfaction and operational reliability. However, it also reveals that technology adoption remains uneven, with significant underperformance tied to infrastructural and skills bottlenecks. By systematically connecting these outcomes to contextual variables, the study demonstrates that the success of FM strategies in Lagos depends less on the formal strategy chosen and more on the contextual fit with the operating environment.

This contribution is significant for three reasons. First, it enriches FM literature by embedding African urban realities into a debate often dominated by European and Asian case studies. Second, it provides practitioners with a framework for tailoring FM strategies to Lagos' specific conditions rather than importing models wholesale. Third, it informs policymakers by highlighting the urban infrastructure deficits (e.g., drainage, transport access, and power reliability) that constrain asset-level FM effectiveness. In doing so, the study positions FM not only as an organisational competence but also as a lever for sustainable urban governance in Lagos.

To frame this argument, the paper poses the overarching intellectual question: How do contextual determinants shape the effectiveness of facilities management strategies in Lagos commercial real estate? This question orients the analysis toward disentangling the relative weight of morphology, workforce capability, budget availability, regulatory enforcement, and vendor ecosystems in determining outcomes. The data and methodology deployed, namely, a structured survey and statistical analysis (descriptive and regression-based) of Lagos facility managers, allow for both breadth and rigour in capturing these relationships. In what follows, the paper first reviews literature on FM strategies globally and in Nigeria, highlighting debates over preventive maintenance, TFM, and technology adoption. It then situates the analysis within contingency theory, which provides a lens for assessing fit between strategy and environment. The methodology outlines the survey design and statistical tools used. Results are then presented, showing which strategies are most effective and under what conditions. The discussion interprets these results in light of the theoretical and empirical debates, while the conclusion and recommendations propose pathways for strengthening FM practice in Lagos' dynamic but challenging real estate sector.

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LITERATURE REVIEW

Facilities Management: Scope and Evolution

Facilities Management (FM) has witnessed a significant transformation over the past few decades, evolving from a relatively narrow preoccupation with building maintenance and repair into a holistic discipline that is increasingly strategic in orientation. Initially, FM was understood largely as a technical function concerned with the upkeep of physical structures, mechanical systems, and basic services. However, as organisations began to recognise the influence of the built environment on productivity, cost efficiency, and organisational performance, FM expanded in scope. Atkin and Brooks (2021) emphasise that FM now integrates diverse processes to sustain and enhance the effectiveness of an organisation's core activities, underscoring its role as a strategic enabler rather than a purely operational service.

In contemporary commercial real estate, FM encompasses a wide array of functions, including not only physical upkeep but also health and safety management, energy efficiency, vendor governance, customer service, and space optimisation. This expansion reflects the growing acknowledgement that buildings are not merely inert physical assets but strategic resources capable of creating competitive advantage. Accordingly, FM strategies are increasingly aligned with corporate objectives, sustainability targets, and tenant satisfaction imperatives. The evolution of FM is particularly consequential in emerging economies, where infrastructural deficits, rapid urbanisation, and environmental vulnerabilities intensify the pressures on real estate performance. Nigeria offers a salient case: in Lagos Metropolis, Africa's most populous urban centre, commercial properties face the combined challenges of overpopulation, inadequate planning, traffic congestion, and recurrent flooding. As Oladokun and Gbadegesin (2020) observe, these conditions heighten the need for professional FM practices that safeguard asset value, ensure resilience, and provide reliable services in a demanding urban environment. Thus, FM in Lagos and similar contexts is not only about operational efficiency but also about mitigating systemic risks and supporting sustainable urban development.

Strategic Approaches to Facilities Management

Facilities Management (FM) strategies represent the structured choices organisations make in delivering and sustaining property-related services. They are typically shaped by factors such as organisational size, budget, asset type, regulatory environment, and workforce capabilities. The literature identifies three dominant approaches: in-house provision, outsourcing, and Total Facilities Management (TFM), each with distinct strengths and limitations. In-house FM involves retaining direct responsibility for staff and operations. This model allows close control over quality, alignment with organisational culture, and quick response to tenant needs. However, it can be costly, inflexible, and limited by the internal workforce's expertise. Outsourcing is widely adopted to reduce costs, transfer risk, and access specialist expertise. It may involve out-tasking specific services (such as cleaning or security) or contracting larger bundles of services to a facilities management company. Research by Chotipanich and Issarasak (2022) shows that outsourcing enhances efficiency and innovation where vendor markets are competitive, but it may reduce control and introduce dependency risks.

Total Facilities Management (TFM) extends outsourcing by consolidating most or all FM functions under a single contractor. Atkin and Brooks (2021) argue that TFM offers efficiency through economies of scale, integrated service delivery, and clearer accountability. Yet, in contexts with weak vendor capacity or regulatory oversight, TFM may expose clients to service

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quality fluctuations and contractual disputes. Beyond these structural models, preventive and predictive maintenance strategies have gained prominence. Preventive maintenance reduces unplanned downtime and lifecycle costs, while predictive approaches, enabled by sensors and data analytics, anticipate failures before they occur (Ghisi et al., 2021). Increasingly, hybrid models that combine in-house oversight with outsourced service provision are being employed, particularly in Lagos, where infrastructural challenges necessitate flexibility. Ultimately, strategic FM is not a one-size-fits-all solution but requires tailoring to the contextual realities of each property, aligning service delivery with cost efficiency, resilience, and tenant satisfaction.

Technology and Innovation in FM

Technological innovation has become one of the most transformative forces shaping contemporary Facilities Management (FM). Globally, FM has shifted from being a reactive, labour-intensive practice towards a proactive, data-driven and technology-enabled discipline. Digital tools such as Computerised Maintenance Management Systems (CMMS), Building Information modelling (BIM), Internet of Things (IoT) sensors, and smart building platforms now enable facility managers to anticipate failures, optimise energy use, and improve the quality of service delivery. According to Elmualim, Chileshe, and Ujene (2023), the integration of digital technologies into FM enhances transparency, enables predictive analytics, and significantly reduces operational inefficiencies. In the context of commercial real estate, technologies such as IoT-enabled meters allow continuous monitoring of utilities, while predictive maintenance systems reduce equipment downtime by identifying faults before they escalate. Similarly, Building Management Systems (BMS) and BIM provide facility managers with centralised control, real-time visualisation, and detailed data for decision-making. These innovations align FM with sustainability goals, as they improve energy efficiency and extend the lifecycle of building assets.

However, adoption in developing contexts such as Lagos remains uneven. While high-end commercial properties, particularly in Victoria Island and Ikoyi, increasingly integrate CMMS and IoT solutions, many mid-tier buildings rely on manual records due to capital constraints and unreliable power supply (Adewunmi & Omirin, 2021). Skills shortages also pose a barrier, as effective technology use requires specialised training that many facility managers lack. The implication is that innovation in FM cannot be divorced from context. In Lagos, staged technology adoption, beginning with affordable CMMS and metering, and gradually advancing to IoT and predictive analytics, offers a more sustainable pathway. Without addressing infrastructural limitations, financial constraints, and workforce capabilities, technology will remain underutilised, and the promise of smarter, more sustainable facilities management will not be fully realised.

Tenant Satisfaction and Service Delivery

Tenant satisfaction has emerged as a central metric for evaluating the effectiveness of facilities management (FM) in commercial properties. It goes beyond physical maintenance to encompass service quality, responsiveness, safety, comfort, and the perceived value delivered to occupants. Satisfied tenants are more likely to renew leases, recommend facilities, and justify premium rents, while dissatisfaction often results in high vacancy rates and reputational decline. Scholars such as Ho, Skitmore, and Wong (2022) emphasise that service delivery in FM must be user-centred, involving transparent communication, efficient complaint resolution,

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and proactive maintenance. In developed real estate markets, FM strategies are deliberately designed around customer experience frameworks, where feedback mechanisms, digital reporting platforms, and periodic surveys ensure continuous improvement. However, in emerging economies like Nigeria, service delivery is often constrained by infrastructural gaps, weak regulatory oversight, and cost-cutting tendencies by property owners.

Empirical evidence from Nigeria indicates that tenants frequently cite poor maintenance culture, inadequate security, inconsistent power supply, and ineffective communication channels as key drivers of dissatisfaction (Ajayi et al., 2021). In Lagos, where urban density and infrastructural pressures intensify operational challenges, the capacity of FM teams to deliver seamless services is often tested. For instance, unreliable electricity supply necessitates generator dependence, raising costs and sometimes reducing service consistency. To achieve tenant satisfaction in such contexts, FM strategies must integrate preventive maintenance, robust customer-service protocols, and responsive vendor management. Investment in technology, such as computerised maintenance systems and tenant service portals, can enhance communication and accountability. Furthermore, embedding service quality benchmarks in contracts and training staff to adopt customer-centric attitudes strengthens the link between FM and tenant loyalty. Ultimately, service delivery in FM is not simply a technical function but a strategic driver of competitiveness in the Lagos commercial real estate sector.

Sustainability and Environmental Considerations

Sustainability has become a central pillar of contemporary Facilities Management (FM), driven by global concerns about climate change, resource depletion, and the need for resilient urban systems. In the commercial real estate sector, sustainability in FM goes beyond energy conservation to encompass waste management, water efficiency, indoor air quality, stormwater control, and long-term resilience planning. As Darko et al. (2020) observe, sustainable FM not only reduces the environmental footprint of buildings but also enhances operational efficiency, lowers lifecycle costs, and improves occupant wellbeing. These benefits are particularly relevant in urban contexts like Lagos, where climate risks such as flooding, heat stress, and unreliable energy supply directly affect property performance and tenant satisfaction.

The integration of sustainability in FM strategies is reflected in practices such as green retrofitting, energy audits, and the adoption of smart technologies for monitoring resource use. Global trends increasingly emphasise certifications such as LEED and BREEAM, which signal compliance with international standards and boost asset competitiveness (Adebayo & Akinola, 2022). However, in Nigeria, the uptake of such certifications is still limited to high-end developments, primarily due to high costs, limited regulatory enforcement, and a lack of awareness among property owners. In Lagos, where infrastructural deficits exacerbate environmental risks, embedding sustainability into FM is not merely aspirational but essential. For instance, integrating nature-based stormwater systems and passive design measures can mitigate recurrent flooding, while energy retrofits such as LED lighting and solar solutions reduce dependence on unreliable grid power. Despite these potential benefits, implementation is constrained by financing barriers, weak policy frameworks, and skills shortages (Ogunlana & Oloyede, 2023). Therefore, the path forward requires a hybrid approach: enforcing minimum environmental standards, incentivising sustainable retrofits, and equipping facility managers with the skills to implement context-appropriate solutions. This ensures FM contributes both to property performance and to broader urban sustainability goals.

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Synthesis

The literature consistently emphasises that FM effectiveness is contingent on the alignment between strategies and contextual factors. Global best practices such as TFM, preventive maintenance, and smart technologies may yield positive results in well-capitalised environments but encounter limitations in resource-constrained settings. Lagos, with its unique socio-economic and infrastructural context, exemplifies this tension. The existing body of work suggests that FM in Lagos requires a hybrid approach, blending preventive strategies, staged technology adoption, and contextualised service delivery, while building workforce capacity and embedding sustainability principles.

Theoretical Framework

This study adopts Contingency Theory as its theoretical foundation for analysing facilities management (FM) strategies in the Lagos commercial real estate sector. Originating from organisational theory, contingency thinking rejects the notion of a single "best way" of managing and instead posits that effectiveness depends on the fit between organisational structures, processes, and the external environment (Donaldson, 2001). In the context of FM, this implies that no universal strategy, be it in-house management, outsourcing, or Total Facilities Management (TFM), can be applied uniformly across different properties and still achieve optimal results. Rather, FM strategies must be tailored to the specific characteristics of the building, the expectations of stakeholders, and the socio-economic environment in which they operate.

The Lagos property market illustrates the relevance of contingency thinking. Commercial properties in prime locations such as Victoria Island often benefit from robust financial resources, enabling them to adopt advanced technologies like Computerised Maintenance Management Systems (CMMS) and integrated service contracts. In contrast, properties in mid-tier or peripheral areas face infrastructural challenges, limited capital, and skills shortages, constraining the strategies that can be realistically adopted (Adewunmi & Omirin, 2021). The theory predicts that where there is alignment between contextual conditions and chosen FM strategies, such as preventive maintenance in aging buildings or staged technology adoption in resource-constrained firms, effectiveness is higher. Moreover, contingency theory highlights the dynamic nature of FM. As external conditions shift, such as through inflation, regulatory change, or climate-related risks like flooding in Lagos, facility managers must adopt strategies to maintain alignment. The theory, therefore, provides a flexible, context-sensitive lens through which to interpret variations in FM practices and outcomes across Lagos. By foregrounding fit, it underscores why strategies that succeed in one environment may fail in another, and why contextual determinants must remain central to FM decision-making.

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METHODOLOGY

A quantitative survey design was adopted. The population comprised 318 registered facility managers in Lagos Metropolis; a Raosoft-derived sample of 185 was targeted via simple random (lottery) sampling. Structured questionnaires captured demographics, morphology of properties, FM strategies, perceived effectiveness, and influencing factors. Likert-type scales supported descriptive statistics (frequencies, percentages, means, standard deviations) and inferential analysis (factor analysis/multiple regression). Reliability testing yielded Cronbach's alpha ≈ 0.71. Of 185 questionnaires, 167 were usable (90.3% effective response). Analyses were run in SPSS (v20). Ethical safeguards included informed consent, anonymity, and confidentiality.

RESULTS

Table 1: Morphology of Commercial Properties in Lagos

Attribute of Morphology	High (%)	Rating	Moderate (%)	Rating	Low (%)	Rating	Mean Score
Architectural design quality	72		18		10		4.21
Maintenance standards	68		20		12		4.07
Signage visibility	65		22		13		3.95
Landscaping quality	40		25		35		3.02
Accessibility to public transport	38		30		32		2.98

The results in Table 1 indicate that architectural design quality (M = 4.21), maintenance standards (M = 4.07), and signage visibility (M = 3.95) are the most highly rated morphological features of commercial properties in Lagos, reflecting tenants' preference for well-designed and properly maintained buildings. In contrast, landscaping quality (M = 3.02) and accessibility to public transport (M = 2.98) received lower ratings, suggesting significant weaknesses. These findings highlight that while building design and upkeep contribute positively to market appeal, shortcomings in landscaping and transport connectivity reduce the overall attractiveness of many commercial properties in the metropolis.

Table 2: Adopted Facilities Management Strategies

Strategy	Widely Adopted (%)	Moderately Adopted (%)	Rarely Adopted (%)	Mean Score
Preventive maintenance	78	15	7	4.32
Customer service protocols	70	18	12	4.05
Vendor coordination & outsourcing	66	20	14	3.96
Cost management measures	62	23	15	3.91
Technology integration (CMMS/IoT)	45	28	27	3.28
Total Facilities Management (TFM)	55	26	19	3.65

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The results from Table 2 show that preventive maintenance (M = 4.32) is the most widely adopted strategy, with 78% of respondents using it consistently to ensure asset reliability and reduce downtime. Customer service protocols (M = 4.05) are also common, reflecting the importance placed on tenant satisfaction. Vendor coordination and outsourcing (M = 3.96) and cost management measures (M = 3.91) are moderately emphasised, indicating reliance on external providers and financial prudence. Total Facilities Management (M = 3.65) is gaining traction but not yet dominant, while technology integration (M = 3.28) remains the least adopted, hindered by infrastructural and cost challenges.

Table 3: Perceived Effectiveness of FM Strategies

Strategy	Highly Effective (%)	Moderately Effective (%)	Ineffective (%)	Mean Score
Preventive maintenance	80	14	6	4.36
Total Facilities Management	72	18	10	4.15
Customer service protocols	68	20	12	4.08
Vendor coordination	63	22	15	3.92
Cost management measures	59	24	17	3.81
Technology integration	40	34	26	3.22

Table 3 indicates that preventive maintenance (M = 4.36) is perceived as the most effective FM strategy, with 80% of respondents rating it highly effective in sustaining property performance and reducing operational risks. Total Facilities Management (M = 4.15) and customer service protocols (M = 4.08) also score strongly, highlighting their value in integrated service delivery and tenant satisfaction. Vendor coordination (M = 3.92) and cost management (M = 3.81) are viewed as moderately effective, reflecting their supporting role. Conversely, technology integration (M = 3.22) is the least effective, with only 40% rating it highly, constrained by infrastructural and financial barriers.

Table 4: Influencing Factors on FM Effectiveness

Factor	Strong Influence (%)	Moderate Influence (%)	Weak Influence (%)	Mean Score
Workforce skill level	76	16	8	4.28
Budgetary constraints	71	18	11	4.10
Age/condition of property	67	22	11	4.02
Vendor market capability	62	23	15	3.89
Regulatory compliance requirements	58	25	17	3.76
Macroeconomic pressures	55	27	18	3.70

Table 4 highlights that workforce skill level (M = 4.28) exerts the strongest influence on FM effectiveness, with 76% of the respondents emphasising the need for competent personnel to deliver quality services. Budgetary constraints (M = 4.10) also play a critical role, reflecting the importance of adequate funding in sustaining maintenance and operations. The age and condition of properties (M = 4.02) further shape FM outcomes, as older buildings require more

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intensive management. Vendor market capability (M = 3.89) and regulatory compliance (M = 3.76) exert moderate influence, while macroeconomic pressures (M = 3.70) also affect costs and decision-making, though less directly.

Table 5: Regression Coefficients for Influencing Factors

Factor	Beta (β)	t-value	Sig. (p)
Workforce skill level	0.42	6.87	0.000 ***
Budgetary constraints	0.31	5.12	0.000 ***
Age/condition of property	0.24	4.05	0.001 **
Vendor market capability	0.18	2.76	0.007 **
Regulatory compliance	0.12	1.95	0.052 *
Macroeconomic pressures	0.10	1.62	0.107 (ns)

Model Summary: $R^2 = 0.61$, Adjusted $R^2 = 0.59$, $F(6,160) = 42.75$, $p < 0.001$

The model explains 61% of the variance in FM effectiveness, indicating a strong fit. Workforce skill level ($\beta = 0.42$, $p < 0.001$) emerged as the most significant predictor, followed by budgetary constraints ($\beta = 0.31$, $p < 0.001$). Property age/condition and vendor market capability also showed significant positive effects. Regulatory compliance had a marginal influence, while macroeconomic pressures did not significantly predict effectiveness. This suggests that FM outcomes in Lagos are primarily determined by the skills of facility managers and the financial resources available to support operations.

DISCUSSION OF FINDINGS

The results affirm the contingency view that facilities management (FM) effectiveness rests on the fit between strategy and context (Donaldson, 2001). High ratings for architectural design quality and maintenance standards underscore how asset morphology and upkeep shape market appeal in Lagos (Table 1). This aligns with work showing that building condition and planned maintenance materially influence user perceptions and value retention (Olanrewaju et al., 2021; Ho et al., 2022). Conversely, weak scores for landscaping and public transport access highlight the boundary of site-level FM when urban systems, drainage, greenery, and mobility are under-provided, echoing Lagos-focused observations that some service deficits lie outside property managers' direct control (Adewunmi & Omirin, 2021). Adoption patterns in Table 2, dominated by preventive maintenance and customer service protocols, mirror global best practice favouring lifecycle reliability and tenant experience (Ghisi et al., 2021; Ho et al., 2022). The moderate use of Total Facilities Management (TFM) suggests a gradual shift toward integrated, vendor-coherent delivery in better capitalised sub-markets, consistent with broader FM outsourcing trends (Atkin & Brooks, 2021). By contrast, comparatively low uptake of CMMS/IoT reflects the cost, power-quality and capability hurdles documented for developing contexts, including Nigeria (Adewunmi & Omirin, 2021; Elmualim et al., 2023).

Perceived effectiveness (Table 3) reinforces these dynamics. Preventive maintenance and TFM score highest, indicating strategies that travel well across heterogeneous assets because they reduce downtime, standardise service levels and share risk (Atkin & Brooks, 2021; Ghisi et al., 2021). Technology integration's weaker effectiveness ratings are not a repudiation of digital FM per se; rather, they confirm adoption constraints and the need for staged roadmaps, CMMS

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and metering first, analytics later, as advocated in the digital-transformation literature (Elmualim et al., 2023). In short, without stable power, data governance, and trained operators, smart systems underperform (Adewunmi & Omirin, 2021). The regression results (Table 5) give causal texture: workforce skill and budget are the strongest predictors of FM effectiveness, followed by property age/condition and vendor capability. This hierarchy dovetails with evidence that human capital and financing mediate whether strategies translate into outcomes (Ho et al., 2022; Olanrewaju et al., 2021). The modest roles of regulatory compliance and macroeconomic pressures in the model likely reflect their indirect influence, shaping costs and priorities but not substituting for operational competence (Ogunlana & Oloyede, 2023; Darko et al., 2020).

Overall, Lagos rewards preventive, integrated, and people-centred FM, sequenced against capability and cashflow. The literature suggests that building workforce capacity, adopting phased digitalisation, and embedding lifecycle thinking can convert today's pockets of excellence into more consistent portfolio-wide performance (Atkin & Brooks, 2021; Elmualim et al., 2023; Darko et al., 2020).

CONCLUSION

This study examined the contextual determinants of facilities management (FM) strategies in the Lagos commercial real estate sector, highlighting how morphology, strategy adoption, and external influences shape effectiveness. The findings establish that preventive maintenance and Total Facilities Management (TFM) are the most effective strategies, while technology integration remains constrained by infrastructural deficits, skills shortages, and cost barriers. Building features such as architectural design and maintenance standards add significantly to market appeal, yet systemic weaknesses in landscaping and transport connectivity reduce competitiveness. The regression analysis confirms that FM effectiveness is most strongly driven by workforce competence and budgetary provision. Property age and vendor capability also matter, reinforcing the importance of lifecycle planning and reliable service partnerships. Regulatory requirements and macroeconomic conditions exert some influence but were less decisive. These results validate contingency theory: effectiveness emerges not from a universal approach but from the alignment of FM strategy with contextual realities.

Overall, the Lagos experience demonstrates that FM is evolving towards integrated, value-driven models but remains uneven in performance due to resource constraints and infrastructural fragility. For FM strategies to be transformative, investment in human capital, phased adoption of technology, and lifecycle cost planning are indispensable. At the same time, the interdependence between property-level FM and city-level systems highlights the need for collaborative approaches involving regulators, urban planners, and service providers. Strengthening this nexus offers the most promising pathway for sustainable and competitive commercial property management in Lagos.

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RECOMMENDATIONS

i. The government should standardise and enforce preventive-maintenance codes and property compliance audits to improve building quality across Lagos.

ii. The private sector (property owners and facility managers) should invest in continuous training and certification for FM staff to close skills gaps.

iii. The private sector should adopt technology in phases, beginning with affordable CMMS and metering, before scaling to IoT and predictive analytics.

iv. The government should strengthen vendor regulation by accrediting service providers and ensuring performance standards in FM contracts.

v. Both the government and the private sector should prioritise lifecycle planning and resilience—government by enforcing building codes for safety and resilience, and property owners by budgeting for lifecycle-based capital expenditure.

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