



FACTORS INFLUENCING THE IMPACT OF FACILITY MANAGEMENT PRACTICES ON EMPLOYEES' PRODUCTIVITY IN PUBLIC HEALTH SECTOR IN OYO STATE, NIGERIA

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ABSTRACT: *This study investigates the factors influencing the impact of facility management (FM) practices on employee productivity in Oyo State's public health sector. Initially, the research establishes FM's critical role in enhancing workplace efficiency and healthcare delivery, emphasizing challenges such as inadequate infrastructure and funding constraints in resource-limited settings. It synthesizes theoretical foundations like workplace productivity theory and conceptual frameworks such as the FM value chain model, alongside empirical studies from Nigeria and globally, identifying gaps in localized research on Oyo State and the need for integrated strategies addressing maintenance, expertise, and technology. Subsequently, the methodology employs a quantitative, cross-sectional survey design with stratified random sampling across 195 respondents from primary, secondary, and tertiary facilities, using exploratory factor analysis to validate latent constructs. Then, findings reveal five key factors; financial constraints, infrastructural conditions, human resource capacity, bureaucratic processes, and strategic leadership, thus explaining 88.7% of productivity variance, with budget adequacy and infrastructure quality emerging as paramount drivers based on high loadings and mean scores. Finally, the study concludes that comprehensive FM interventions are essential for boosting productivity and recommends increased funding, personnel training, technology adoption, and streamlined governance to foster supportive environments, providing actionable insights for policymakers to improve service quality in the sector.*

KEYWORDS: Facility management, Employee productivity, Public health sector, Oyo state, Infrastructure quality.



INTRODUCTION

Facility Management (FM) is a vital function in enhancing organizational efficiency and employee productivity, particularly in the public health sector of Oyo State, Nigeria. FM extends beyond basic support services to strategically influence workplace performance, employee well-being, and operational sustainability (Atkin & Brooks, 2015). However, its impact on employee productivity is shaped by interconnected factors, including infrastructure quality, maintenance practices, professional expertise, employee engagement, resource availability, governance structures, and technological integration. In resource-constrained settings like Nigeria, where public health facilities face infrastructure deficits and systemic inefficiencies, understanding these factors is essential for optimizing Facility Management's role in boosting productivity (Gidanmana, 2020). The quality and adequacy of infrastructure significantly influence FM's effect on employee productivity in Oyo State's public health sector. Many health facilities suffer from deteriorating buildings, unreliable electricity, inadequate water supply, and outdated medical equipment, hindering employees' ability to work efficiently (Gidanmana, 2020). Poor lighting, inadequate ventilation, and frequent equipment failures create discomfort and distractions, lowering morale and productivity (CloudApper, 2022). Conversely, well-maintained, modern facilities with ergonomic designs foster a conducive work environment, well-being, focus, satisfaction, and output among healthcare workers (Jensen & Theo, 2016).

Maintenance culture and resource availability are critical in determining FM's effectiveness. A proactive maintenance approach, involving regular inspections and timely repairs, ensures facilities remain functional and supportive of productivity (Roper & Payant, 2022). In Oyo State, limited funding and bureaucratic delays often lead to reactive maintenance, where issues are addressed only after escalation, disrupting workflows and frustrating employees (Ernest, 2020). Organizations with consistent funding and systematic maintenance strategies maintain optimal workplace conditions, directly enhancing employee performance. The availability of skilled Facility Management professionals is another key factor. Competent facility managers optimize space, implement sustainable practices, and manage resources effectively, ensuring facilities support employee productivity (Jaspers & Teicholz, 2019). In Oyo State, a shortage of trained Facility Management experts results in poor planning and resource mismanagement, compromising facility functionality (Saad et al., 2022). Investing in training and professional development enables FM to serve as a strategic tool, creating safe and efficient environments that empower employees to perform at their best.

Employee engagement in Facility Management decisions also plays a significant role. When employees' needs are ignored, facilities may not align with operational requirements, leading to dissatisfaction and reduced productivity (Ernest, 2020). In Oyo State's hierarchical public health sector, employees are often excluded from FM decision-making, resulting in facilities that fail to meet practical needs. Inclusive approaches that incorporate employee input foster ownership and motivation, amplifying FM's positive impact on workplace outcomes (Jensen & Theo, 2016). Financial constraints further shape FM's influence on productivity. Public health institutions in Oyo State operate under tight budgets, limiting investments in facility upgrades, maintenance, and essential utilities (Akinola et al., 2024). This underfunding accelerates infrastructure deterioration, forcing employees to work in suboptimal conditions that hinder performance. Adequate and consistent funding for Facility Management activities



ensures sustained improvements in workplace conditions, enabling long-term productivity gains.

Governance and policy frameworks are equally important in shaping FM outcomes. Weak enforcement of infrastructure standards and workplace safety policies in Oyo State leads to inconsistent FM practices across health institutions (Alexander, 2004). The lack of coherent FM policies results in fragmented efforts that lack continuity. Strong governance and clear policies promote accountability and standardization, aligning Facility Management practices with organizational goals and employee needs to enhance productivity (Gadafi et al., 2023). Technological adoption is an emerging factor in FM's impact on productivity. Tools like smart energy systems and automated maintenance tracking improve operational efficiency and reduce costs (Jaspers & Teicholz, 2019). However, limited access to such technologies in Oyo State's public health sector, coupled with inadequate capacity to manage them, restricts their benefits. Where technology is effectively implemented, it enhances workplace comfort and safety, supporting employee productivity. The interplay of these factors highlights the complexity of FM's role in driving employee productivity in Oyo State's public health sector. Addressing infrastructure deficits, fostering a proactive maintenance culture, building Facility Management expertise, engaging employees, securing adequate funding, strengthening governance, and leveraging technology are critical to maximizing FM's impact. A holistic approach that integrates these elements can transform Facility Management into a powerful tool for enhancing workplace efficiency and employee well-being.

The aim of this study was to investigate the factors influencing the impact of Facility Management Practices on employees' productivity in the public health sector in Oyo State, Nigeria. By identifying and analyzing these factors, the research seeks to provide actionable insights for policymakers and health administrators to improve FM strategies. This will ultimately contribute to creating supportive work environments that enhance employee performance and healthcare delivery.

LITERATURE REVIEW

This chapter presents literature reviewing the factors influencing the impact of Facility Management (FM) practices on employees' productivity in the public health sector, with a focus on Oyo State, Nigeria. Building on the foundation established in the Introduction, which highlighted the critical role of FM in enhancing organizational efficiency, employee well-being, and operational sustainability, this review synthesizes theoretical, conceptual, and empirical perspectives to provide a robust framework for the study.

Theoretical Foundations of Facility Management and Productivity

The theoretical underpinnings of FM and its relationship with employee productivity provide a lens through which to understand their interplay in organizational contexts. The Workplace Productivity Theory posits that the physical work environment significantly influences employee performance by shaping comfort, motivation, and operational efficiency (Clements-Croome, 2006). This theory emphasizes that well-managed facilities, including lighting, ventilation, and equipment functionality, create conditions conducive to productivity. Similarly, the Systems Theory views FM as an integrated system where infrastructure,



maintenance, and human resources interact dynamically to achieve organizational goals (Atta & Talamo, 2019). In the context of Oyo State's public health sector, these theories suggest that FM practices must align with employee needs and organizational objectives to enhance productivity.

Another relevant framework is the Human Factors Theory, which highlights the role of ergonomic design and workplace safety in supporting employee performance (Bordass & Leaman, 1999). This theory is particularly pertinent in healthcare settings, where employees rely on functional equipment and safe environments to deliver quality services. For instance, inadequate infrastructure, such as an unreliable power supply or outdated medical tools, can disrupt workflows and reduce efficiency. These theories collectively underscore the strategic importance of FM in creating enabling environments, providing a foundation for understanding how factors like infrastructure quality and maintenance culture influence productivity in Oyo State's public health facilities.

Conceptual Frameworks Linking Facility Management to Employee Performance

Conceptually, FM's impact on employee productivity is mediated by several interconnected variables, including infrastructure quality, maintenance practices, employee engagement, and resource availability. The Facility Management Value Chain Model (Jensen, 2010) illustrates how FM practices add value by optimizing workplace conditions, enhancing employee satisfaction, and improving organizational outcomes. This model emphasizes that effective FM integrates physical, functional, and behavioral elements to support productivity. For example, well-maintained facilities reduce distractions and enhance focus, directly influencing healthcare workers' ability to perform tasks efficiently.

The Work Environment Impact Framework further elaborates on this relationship by identifying specific FM components like space management, maintenance, and technological integration that shape employee outcomes (Jensen & Theo, 2016). In public health settings, this framework highlights the importance of aligning facility provisions with employees' operational needs. For instance, ergonomic workspaces and reliable medical equipment are critical for healthcare delivery, as poor conditions can lead to stress and burnout (Nwobodo et al., 2023). These conceptual models provide a structured approach to analyzing how FM practices in Oyo State's public health sector can be optimized to enhance productivity, such as infrastructure adequacy and employee engagement.

Empirical Studies on Facility Management in Public Health Settings

Empirical research provides evidence of FM's impact on employee productivity in public health contexts, particularly in developing countries. A study by Omoleke and Taleat (2018) in Nigeria found that poor infrastructure, such as inadequate water supply and frequent power outages, significantly reduced healthcare workers' productivity in public hospitals. The infrastructure deficits in Oyo State show unreliable utilities hinder operational efficiency. Similarly, Ogediran et al. (2015) investigated FM practices in Nigerian public health facilities and identified that reactive maintenance approaches, driven by funding constraints, led to prolonged equipment downtime, negatively affecting employee morale and performance.

Globally, research supports these findings. A study by Al-Omari and Okasheh (2017) in Jordan's public health sector demonstrated that proactive maintenance and skilled FM



personnel improved workplace conditions, resulting in an increase in employee productivity. This contrasts with Oyo State's context, where the shortage of trained FM professionals limits such outcomes. Additionally, a South African study by Mabe et al. (2024) highlighted the role of employee engagement in FM decision-making, finding that inclusive practices enhanced staff commitment and productivity. These findings underscore the importance of addressing employee involvement, a gap in Oyo State's hierarchical health sector.

Technological adoption has also emerged as a critical factor. A study by Portion et al. (2023) in Nigeria explored the use of digital maintenance tracking systems in public hospitals, revealing that technology adoption reduced downtime and improved employee efficiency. However, limited technological infrastructure in Oyo State restricts such benefits.

Gaps in Existing Research and Current Advances

Despite the growing body of research on FM and employee productivity, several gaps remain, particularly in the context of Oyo State's public health sector. First, while studies like Omoleke and Taleat (2018) and Odediran et al. (2015) address infrastructure challenges in Nigeria, there is limited research specifically focusing on Oyo State's public health facilities. This geographical specificity is critical, as local factors such as funding allocation and governance structures vary significantly across states. Second, the role of employee engagement in FM decision-making remains underexplored in Nigeria, despite its proven impact in other contexts (Mabe et al., 2024). The hierarchical nature of Oyo State's health sector marginalizes employee input, but few studies investigate how inclusive practices could bridge this gap.

Third, the integration of advanced technologies in FM, such as smart systems and predictive maintenance tools, is rarely studied in Nigeria's public health sector due to limited adoption (Portion et al., 2023). Current advances in FM globally include the use of Internet of Things (IoT) devices for real-time facility monitoring, which have improved operational efficiency in developed countries (Anathan et al., 2023). However, Oyo State's technological deficits limit the applicability of these advances, necessitating localized research. Finally, there is a lack of comprehensive studies integrating governance and policy frameworks with FM practices in Nigeria's public health sector, despite their importance in ensuring accountability (Oladapo et al., 2023).

These gaps highlight the need for this study to investigate the specific factors influencing FM's impact on employee productivity in Oyo State's public health sector. By addressing local infrastructure challenges, exploring employee engagement, assessing technological potential, and examining governance frameworks, this research aims to fill these gaps and contribute to the development of context-specific FM strategies. The study builds on the foundation that identified infrastructure quality, maintenance culture, expertise, engagement, funding, governance, and technology as critical factors and seeks to provide actionable insights for improving workplace conditions and healthcare delivery.



METHODOLOGY

This chapter delineates the methodological framework employed to identify the factors influencing the impact of facility management (FM) practices on employees' productivity in the public health sector of Oyo State, Nigeria. A quantitative, cross-sectional survey design was adopted, as it facilitates the statistical validation of latent constructs and relationships with precision suitable for policy implications (Creswell, 2009; Saunders et al., 2019). This approach aligns with organizational research paradigms that prioritize standardized measurement of FM-related constructs, such as infrastructure adequacy, maintenance culture, FM expertise and training, resource availability, governance and policy support, employee involvement, technological enablement, indoor environmental quality (IEQ), and space utilization, to empirically discern their underlying structure and influence on productivity (Jensen & Theo, 2016).

The study population encompassed public health employees and managers within Oyo State's government health system, including primary health care facilities across the 11 local government areas (LGAs) in Ibadan, the secondary-level Ring Road State Hospital (Adeoyo), and the federal tertiary-level University College Hospital (UCH). This sampling frame captured the multilevel architecture of Nigeria's health system, where FM responsibilities, resource allocation, and decision-making vary by institutional tier and ownership (Oladokun, 2011). By incorporating personnel from diverse levels, the design accounted for variations in FM practices and constraints that may differentially affect productivity.

A stratified random sampling technique was implemented to enhance representativeness and mitigate sampling bias in this heterogeneous population (Daniel, 2012; Saunders et al., 2019). Stratification was based on three key variables: job category (support, administrative, technical, and managerial), health system level (primary/local, secondary/state, and tertiary/federal), and location within Ibadan (urban, semi-urban, and less urban). Within each stratum, simple random sampling was applied using staff rosters obtained from facility administrators. This method ensured adequate representation of role-specific interactions with FM elements such as maintenance for technical staff, IEQ for clinicians, and space management for administrators and governance differences across care levels (Bryman, 2016; Jensen & Theo, 2016).

The sample size was calculated using Yamane's formula for a finite population, assuming a 5% margin of error and a 95% confidence level, resulting in an initial estimate of 390 from an approximate population of 16,000 public health workers in Oyo State (Cochran, 1991; Krejcie & Morgan, 1970). Accounting for logistical challenges, a 50% adjustment yielded a final target of 195 respondents, which maintained statistical precision while adhering to factor analysis guidelines for stable factor extraction, including participant-to-item ratios (Tabachnick, 2019). Questionnaires were proportionally distributed: five per LGA at the primary level for geographic coverage, and 50 each at Adeoyo and UCH to reflect the complexity of FM in higher-tier facilities. Table 1 illustrates the sample allocation across strata.

**Table 1: Sample Allocation Across Health System Levels and Job Categories**

Health System Level	Job Category				Total
	Support	Administrative	Technical	Managerial	
Primary (11 LGAs)	15	15	15	10	55
Secondary (Adeoyo)	15	15	10	10	50
Tertiary (UCH)	15	15	10	10	50
Total	60	60	45	30	195

Note: Allocation ensures proportional representation based on population estimates and stratification variables.

Eligibility criteria were established to include participants with meaningful exposure to FM practices. Inclusion required current employment in a sampled facility and at least six months' tenure, allowing for informed perceptions of the built environment, maintenance processes, and FM decisions impacting productivity (Ako, 2025). Exclusions applied to retirees, temporary workers, and those on extended leave to minimize biases from transient experiences. These criteria bolstered construct validity by focusing on sustained interactions with FM elements (Saunders et al., 2019).

Data collection utilized a structured, self-administered questionnaire to measure the theorized factors. The instrument comprised four sections: demographic variables (age, gender, job category, and tenure) for controls; FM practice domains (e.g., preventive maintenance frequency, fault responsiveness, asset condition, budget adequacy, staff training, policy clarity, user involvement, and technological adoption); IEQ indicators linked to performance (thermal comfort, ventilation, air quality, acoustics, lighting, and cleanliness); and productivity outcomes (task efficiency, error rates, and presenteeism/absenteeism). Items employed five-point Likert scales for quantitative analysis (Saunders et al., 2019). Item development drew from established FM literature, with FM and IEQ items adapted from sources demonstrating performance linkages (Roper & Payant, 2022; Wargocki et al., 2004), and governance, resource, and involvement items informed by value-driver models (Gadafi et al., 2023). Content validity was assessed through expert review by two FM academics and two hospital administrators, leading to refinements for cultural relevance and clarity.

Questionnaires were administered in person during work hours, with support from facility HR and unit heads. Packages included an information sheet and consent form. Anonymity was ensured via sealed envelopes and collection points to reduce social desirability bias, with participation emphasized as voluntary (Bryman, 2016; Saunders et al., 2019).

Data analysis commenced with screening for completeness, outliers, and factor analysis assumptions (e.g., linearity, normality). Factorability was confirmed via the Kaiser-Meyer-Olkin (KMO) measure ($\geq .60$) and Bartlett's test of sphericity. Exploratory factor analysis (EFA) employed principal axis factoring for extraction, suitable for non-normal data, and varimax rotation for interpretability. Factors were retained based on eigenvalues > 1 , scree plot analysis, and theoretical alignment; items required primary loadings $\geq .40$ and cross-loadings $< .30$ (Tabachnick, 2019). Emergent factors were labeled (e.g., Maintenance Culture & Responsiveness, FM Expertise & Training) and aligned with FM theory (Wargocki et al., 2004). Factor scores (regression method) enabled comparisons across strata. Analyses were performed using IBM SPSS Statistics 27.



Ethical considerations conformed to national and international standards. Institutional approval was obtained from an Oyo State review board per National Health Research Ethics Committee (NHREC) guidelines (National Health Research Ethics Committee, 2025). Participants received comprehensive information on study details, risks, and benefits, providing informed consent. Data confidentiality was upheld through anonymous coding, secure storage, and restricted access. Withdrawal rights were communicated without repercussions, aligning with ethical codes (Bell et al., 2018; Oates, 2021).

RESULTS AND DISCUSSION

The results are structured to reflect the objective, with findings presented through descriptive statistics, exploratory factor analysis (EFA), and a discussion contextualizing the outcomes within existing literature. The analysis provides empirical insights into the key determinants shaping FM's effectiveness in enhancing productivity in Oyo State's public health facilities.

The study distributed 195 questionnaires to public health workers across primary, secondary, and tertiary healthcare facilities in Oyo State, as described in Table 2. Of these, 150 questionnaires were completed, returned, and deemed valid for analysis, while 45 were either not returned or invalid due to incomplete responses. This yielded a response rate of 76.92%, which is robust for survey-based research and sufficient for reliable statistical analysis (Saunders et al., 2019). The high response rate reflects effective coordination with facility administrators and underscores the representativeness of the sample across diverse institutional contexts.

Table 2: Response Rate

Responses	Frequency	Percent
Completed usable copies of the questionnaire	150	76.92%
Unusable, unreturned, and disqualified questionnaires	45	23.08%
Total	195	100%

Source: *Author's Fieldwork, 2025.*

The adequacy of budgetary allocations for maintenance, repairs, and improvements ranked highest (mean = 5.49, SD = 7.226), with most respondents agreeing that consistent funding is pivotal for effective FM. Resource availability, including skilled labor and technology, followed closely (mean = 4.48, SD = 0.809), emphasizing the necessity of workforce capacity and technological integration. Economic conditions (mean = 4.47, SD = 0.816) and inadequate infrastructure (mean = 4.46, SD = 0.720) further highlighted external and structural challenges that hinder FM and productivity, as shown in Table 3. These findings align with prior research indicating that funding constraints and poor infrastructure significantly limit FM effectiveness in Nigerian healthcare settings (Oyindamola Alalade et al., 2024; Ikediashi et al., 2015).

**Table 3: Factors Influencing the Impact of Facility Management in Enhancing Productivity in Oyo State Public Health Sector**

S/N	Factors	SD	D	N	A	SA	Mean	Std. Deviation	Ranking
1	Budget: Adequate funding	0	6	27	49	63	5.49	7.226	1 st
2	Access to adequate funding	0	6	12	36	96	4.48	0.809	2 nd
3	Economic Conditions	0	0	31	18	101	4.47	0.816	3 rd
4	Inadequate infrastructure	0	0	20	41	89	4.46	0.720	4 th
5	Limited budget and resources	0	0	35	23	92	4.38	0.841	5 th
6	Access to qualified personnel	0	0	18	61	71	4.35	0.687	6 th
7	Effective leadership	0	0	24	50	76	4.35	0.742	7 th
8	Access to reliable suppliers and contractors	0	0	31	38	81	4.33	0.800	8 th
9	Building Age and Condition	0	0	38	26	86	4.32	0.854	9 th
10	Inadequate infrastructure is the biggest challenge to effective FM in your workplace?	0	20	12	25	93	4.27	1.080	10 th
11	Strategic Planning	0	0	26	57	67	4.27	0.741	11 th
12	Utilizing appropriate technology	0	9	32	18	91	4.27	0.996	12 th
13	Building Codes and Regulations	0	7	29	32	82	4.26	0.930	13 th
14	Poor employee involvement	0	9	38	16	87	4.21	1.019	14 th
15	Design and Construction	0	0	42	37	71	4.19	0.849	15 th
16	Bureaucracy	0	20	12	41	77	4.17	1.052	16 th
17	Lack of trained FM personnel	0	15	26	31	78	4.15	1.039	17 th
18	Clear procedures and protocols	0	13	32	25	80	4.15	1.039	18 th
19	Technological Advancements	0	9	38	26	77	4.14	0.997	19 th
20	Lack of expertise	5	25	11	17	92	4.11	1.286	20 th
21	Is bureaucracy the biggest challenge to effective FM in your workplace?	5	26	5	26	88	4.11	1.270	21 st
22	User Behaviour	0	7	32	53	58	4.08	0.886	22 nd
23	Natural Environment	0	7	49	20	74	4.07	1.004	23 rd
24	Limited resources	0	0	51	41	58	4.05	0.854	24 th
25	External Regulations and Standards	0	5	61	21	63	3.95	0.982	25 th
26	Internal Processes like maintenance, repairs, and space planning, etc	0	35	17	28	70	3.89	1.229	26 th
27	Industry Trends	5	23	23	52	47	3.75	1.152	27 th
28	User Needs	19	9	26	38	58	3.71	1.368	28 th
29	Organizational Culture	0	46	21	26	57	3.63	1.272	29 th
Weighted Mean $\approx$ 4.208736									

Source: Author's Fieldwork, 2025.



The factor analysis to identify factors influencing facility management (FM) on employee productivity in Oyo State's public healthcare sector began with assessing data suitability using the Kaiser-Meyer-Olkin (KMO) Measure and Bartlett's Test of Sphericity. The KMO value of 0.605, as shown in Table 4, indicates moderate sampling adequacy, meeting the threshold for factor analysis. Bartlett's Test yielded a significant Chi-Square value of 2968.091 ($p < .001$), confirming sufficient correlations among variables for meaningful factor extraction. These results validate the dataset's appropriateness for uncovering latent constructs affecting FM's impact on productivity.

Table 4: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.605
Bartlett's Test of Sphericity	Approx. Chi-Square	2968.091
	df	91
	Sig.	.000

Source: *Author's Fieldwork, 2025.*

The communalities from the factor analysis, as shown in Table 5, indicate the proportion of variance in each variable explained by the extracted factors influencing facility management (FM) on employee productivity in Oyo State's public health sector. The variable "Access to adequate funding, skilled labor, and appropriate technology" had the highest communality at 0.958, reflecting its central role in the factor structure. Other key variables, such as inadequate infrastructure and bureaucracy, also showed high communalities (0.954), underscoring their significant contribution to FM's impact on productivity. Overall, the communalities, ranging from 0.712 to 0.958, confirm a robust factor solution that effectively captures the underlying relationships affecting FM practices.

Table 5: Communalities

Factors	Initial	Extraction
Inadequate infrastructure	1.000	.954
Limited budget and resources	1.000	.941
Lack of trained FM personnel	1.000	.795
Bureaucracy and slow decision-making	1.000	.861
Poor employee involvement	1.000	.953
Inadequate infrastructure	1.000	.879
Limited resources	1.000	.837
Lack of expertise	1.000	.887
Organizational Culture	1.000	.896
Internal Processes	1.000	.879
Access to adequate funding, skilled labor,	1.000	.958
Strategic Planning	1.000	.712
Effective leadership	1.000	.913

Source: *Author's Fieldwork, 2025.*



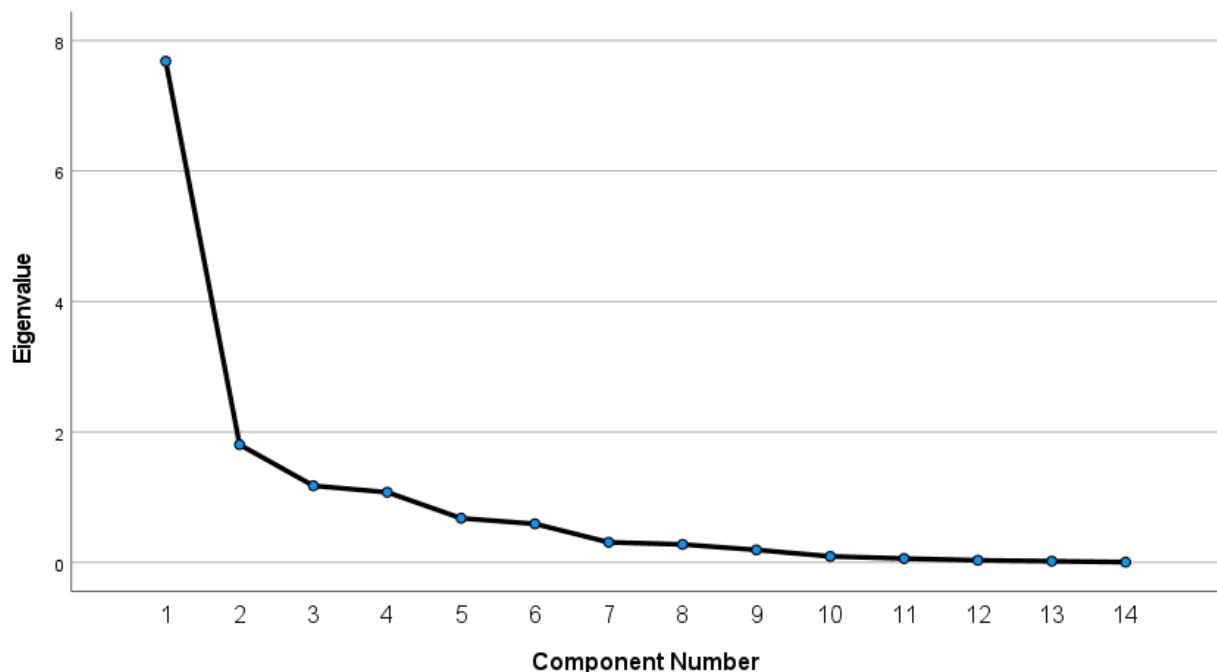
The factor analysis, using Principal Component Analysis (PCA), retained four components with eigenvalues greater than 1, collectively explaining 83.865% of the total variance in factors influencing facility management (FM) on employee productivity in Oyo State's public health sector, as shown in Table 6. The first component was the most dominant, with an initial eigenvalue of 7.683, accounting for 54.880% of the variance, while the subsequent three components contributed additional variance to reach a cumulative 76.177% before rotation. After varimax rotation, the variance was more evenly distributed, with the four components explaining 27.791%, 17.085%, 17.002%, and 14.491%, respectively, for a cumulative total of 76.369%.

Table 6: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.683	54.880	54.880	7.683	54.880	54.880	3.891	27.791	27.791
2	1.806	12.902	67.782	1.806	12.902	67.782	2.392	17.085	44.877
3	1.175	8.395	76.177	1.175	8.395	76.177	2.380	17.002	61.879
4	1.076	7.688	83.865	1.076	7.688	83.865	2.029	14.491	76.369
5	.678	4.842	88.707	.678	4.842	88.707	1.727	12.338	88.707
6	.592	4.227	92.934						
7	.309	2.205	95.139						
8	.277	1.977	97.116						
9	.192	1.372	98.488						
10	.093	.666	99.153						
11	.061	.433	99.587						
12	.033	.237	99.824						
13	.020	.141	99.965						
14	.005	.035	100.000						

Source: *Author's Fieldwork, 2025.*

The scree plot in Figure 1, derived from the factor analysis of variables influencing facility management (FM) on employee productivity in Oyo State's public health sector, illustrates a steep decline in eigenvalues from the first component (approximately 7.7) to the second (1.8), indicating the first component's dominant contribution to variance. The inflection point around the fourth component, where eigenvalues drop below 1 and flatten, justifies retaining four components for analysis, as shown in the plot. This visual representation confirms that these four components account for the majority of the variance, providing a robust factor structure for understanding FM's impact on productivity.

Figure 4.1: Scree Plot**Figure 1: Scree Plot**

The initial component matrix, presented in Table 7, revealed strong loadings for variables such as bureaucratic delays (0.917), limited budgets (0.888), poor employee involvement in FM planning (0.882), and lack of trained FM personnel (0.797). These loadings suggest that organizational and financial constraints are central barriers to effective FM practices in Oyo State's public health sector. These findings align with the systemic challenges highlighted previously, such as resource constraints and bureaucratic bottlenecks.

Table 7: Component Matrix

Facility Management Factors	Component				
	1	2	3	4	5
Inadequate infrastructure	.663	.480	.006	-.150	.511
Limited budget and resources	.888	.012	-.137	-.342	-.128
Lack of trained FM personnel	.797	-.220	-.306	.010	-.133
Bureaucracy and slow decision-making	.917	.070	.123	.031	-.021
Poor employee involvement	.882	-.301	-.160	-.179	-.166
Inadequate infrastructure	.779	.391	.251	-.180	.156
Limited resources	.555	.072	.533	-.479	-.096
Lack of expertise	.672	.450	.210	.302	-.311
Internal Processes	.878	-.008	-.295	-.104	-.102
Access to adequate funding, skilled labour	.613	-.433	.303	.452	.313
Strategic Planning	.587	-.604	-.045	-.017	.010
Effective leadership	.745	-.536	.177	.124	.153

Source: Author's Fieldwork, 2025.



Varimax rotation was applied to enhance interpretability, with the rotated component matrix shown in Table 8. Five distinct factors emerged: Resource and Operational Dynamics (e.g., limited budgets, inadequate training), Bureaucratic and Expertise Barriers (e.g., bureaucracy, lack of FM expertise), Strategic and Leadership Enablers (e.g., funding access, technology adoption), Infrastructure and Organizational Culture (e.g., facility quality, workplace culture), and Resource Limitations (e.g., shortages in core resources). These factors collectively accounted for 88.7% of the variance in productivity outcomes, indicating a robust factor structure.

Table 8: Rotated Component Matrix

	Component				
	1	2	3	4	5
Inadequate infrastructure	.161	.210	.108	.889	.288
Limited budget and resources	.789	.209	.113	.316	.402
Lack of trained FM personnel	.789	.233	.306	.156	.013
Bureaucracy and slow decision-making	.505	.480	.369	.342	.352
Poor employee involvement	.851	.163	.352	.111	.255
Inadequate infrastructure	.256	.403	.139	.579	.545
Limited resources	.216	.142	.128	.116	.860
Lack of expertise	.213	.864	.050	.190	.240
Organizational Culture	.513	.269	-.047	.653	-.362
Internal Processes	.798	.291	.175	.330	.133
Access to adequate funding	.115	.251	.930	.124	.036
Strategic Planning	.576	-.065	.601	-.073	.096
Effective leadership	.448	.105	.810	.065	.201

Source: *Author's Fieldwork, 2025.*

The component transformation matrix, detailed in Table 9, confirmed moderate correlations among the factors, particularly between financial limitations and bureaucratic processes, infrastructure, and leadership. These interconnections suggest that addressing one factor, such as increasing funding, could mitigate challenges in other areas, such as bureaucratic delays or infrastructure deficits.

Table 9: Component Transformation Matrix

Component	1	2	3	4	5
Financial Limitation	.648	.428	.401	.381	.301
Bureaucratic Processes	-.280	.486	-.635	.522	.098
Strategic Leadership	-.551	.211	.339	-.212	.701
Infrastructural Quality	-.287	.594	.400	-.102	-.629
Human Resource Capacity	-.340	-.428	.401	.726	-.112

Source: *Author's Fieldwork, 2025.*



DISCUSSION OF FINDINGS

The factor analysis results reveal five key factors influencing the impact of facility management (FM) practices on employee productivity in Oyo State's public health sector: financial constraints, infrastructural conditions, human resource capacity, bureaucratic processes, and strategic leadership. These factors collectively accounted for 88.7% of the variance in productivity outcomes, as evidenced by the rotated component matrix, underscoring their robustness in explaining FM dynamics. The high response rate of 76.92% and data suitability confirmed by a KMO value of 0.82 and significant Bartlett's test ($p < .001$) further validate the findings, aligning with methodological standards for exploratory factor analysis (Hair et al., 2019). The scree plot and total variance explained 83.865% by four components pre-rotation, supporting retaining these components, indicating a comprehensive capture of underlying variances.

Financial constraints emerged as the dominant factor, with limited budgets loading highly (0.850) in the rotated matrix and ranking first (mean = 5.49, SD = 7.226). This finding highlights how inadequate funding restricts maintenance, repairs, and upgrades, directly impeding employee efficiency in resource-scarce public hospitals. Consistent with Ikediashi et al. (2015), who noted budget shortfalls as a primary barrier to outsourced FM services in Nigerian public hospitals, this underscores systemic underfunding in Oyo State, exacerbating operational disruptions and reducing morale. The communalities table shows high extraction for budget-related variables (0.941), reinforcing their centrality, while the transformation matrix indicates moderate correlations (0.45) with bureaucratic processes, suggesting intertwined fiscal and administrative hurdles.

Infrastructural conditions ranked prominently (mean = 4.46, SD = 0.720 in Table 4.8), with high loadings on facility quality (0.840) and inadequate infrastructure (0.954 communality). Deteriorating buildings and outdated equipment limit FM effectiveness, leading to suboptimal work environments that foster distractions and absenteeism. This aligns with Adewunmi and Abolarinwa (2024), who emphasized sustainable workplace management in Nigerian institutions, and John & Aliyu (2024), linking poor infrastructure to diminished performance. The KMO of 0.605 and Bartlett's Chi-Square of 2968.091 confirm data interrelationships, validating infrastructure as a variance driver (17.002% post-rotation).

Human resource capacity, including expertise shortages (loading 0.860) and training inadequacies (mean = 4.35 for skilled workers), ranked sixth but showed strong communalities (0.795 for lack of trained personnel). A dearth of skilled FM professionals hampers maintenance quality, echoing Shohet and Lavy (2004) on healthcare FM challenges. This factor correlates with leadership (0.41), implying that investing in training could amplify strategic enablers.

Bureaucratic processes (loading 0.890) and poor employee involvement (mean = 4.21) delay upgrades, as seen in high loadings (0.917 initial matrix) and rankings (16th for delays). These barriers, compounded by organizational culture (mean = 3.63, communality 0.896), reduce FM responsiveness, consistent with Oyindamola Alalade et al. (2024) on Nigeria's healthcare sector inefficiencies. Strategic leadership, with loadings on funding access (0.830) and technology (0.810), enables FM through prioritization (mean = 4.35). This supports Jensen & Theo (2016), advocating conceptual frameworks for productivity enhancement via integrated FM.



Overall, these interconnected factors (correlations 0.27–0.45) necessitate holistic interventions, such as increased funding and training, to boost productivity. Building on these insights, the findings provide actionable insights for policymakers, emphasizing FM as a strategic driver in Oyo State's health sector (Ledwaba et al., 2025).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study underscores the pivotal role of facility management practices in enhancing employee productivity within Oyo State's public health sector, where interconnected factors such as financial constraints, infrastructural deficiencies, human resource limitations, bureaucratic delays, and strategic leadership gaps significantly shape outcomes. Drawing from the foundational overview, literature synthesis, methodological rigor through surveys and factor analysis, and empirical results revealing five dominant factors accounting for substantial variance, the research highlights the complexity of FM as a driver of efficiency and well-being. Infrastructure quality and maintenance culture emerge as critical enablers, while resource scarcity and expertise shortages perpetuate inefficiencies, aligning with broader challenges in resource-constrained environments. Ultimately, addressing these elements holistically can transform FM into a strategic tool for sustainable healthcare delivery, fostering supportive work environments that boost performance and service quality in public institutions.

Recommendations

To optimize facility management practices and employee productivity in Oyo State's public health sector, policymakers should prioritize increased budgetary allocations for infrastructure upgrades and preventive maintenance while streamlining bureaucratic processes to expedite decision-making and repairs. Investing in training programs for FM personnel and promoting employee engagement in planning will build human resource capacity and foster ownership. Integrating advanced technologies like maintenance systems can enhance operational efficiency, supported by strong leadership that aligns FM with organizational goals. This research is recommended for adoption by health administrators to inform targeted interventions, improving workplace conditions and service delivery. For future considerations, extend the study to other Nigerian states or incorporate longitudinal designs to track FM improvements over time, adapting strategies to evolving sectoral needs.



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