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FACILITY MAINTENANCE PRACTICES AND EMPLOYEE PERFORMANCE: AN EMPIRICAL ANALYSIS OF MEDIUM-SCALE MANUFACTURING FIRMS IN LAGOS, NIGERIA

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Abstract

This study investigates the effect of facility maintenance practices on employee performance in medium-scale manufacturing firms in Lagos State, Nigeria. Adopting a descriptive survey design, data were collected from 337 employees, selected using Taro Yamane's formula from a population of 2,132 workers. A structured questionnaire was used as the primary data collection instrument, with a reliability coefficient of 0.82 established through a pilot test. Data were analyzed using descriptive statistics, linear regression, and analysis of variance. The results revealed that regular facility maintenance, proper machinery upkeep, and the provision of safe and functional work environments significantly enhance employee productivity, satisfaction, morale, and overall performance. Regression analysis revealed that facility maintenance practices significantly predicted employee performance ($R = 0.173$; $R^2 = 0.030$; $F = 8.061$, $p < 0.05$). These findings underscore the strategic role of facility maintenance as a driver of organizational effectiveness, particularly within resource-constrained environments such as Nigeria. This study recommends that medium-scale manufacturing enterprises institutionalize structured maintenance schedules, integrate facility management into organizational and human resource strategies, and allocate sufficient resources to maintain workplace infrastructure. [1]

1.0. Introduction and Statement of the Problem

Employee performance is a central determinant of organizational survival and competitiveness. In recent years, the influence of the physical work environment, particularly the role of facility maintenance practices, on

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employee productivity and morale has received increasing attention (Amaratunga et al., 2019). Manufacturing operations are backed by facilities such as machinery, equipment, buildings, and utilities and their effective maintenance is crucial to sustaining efficiency and ensuring employee well-being.

In Nigeria, the problem of inadequate and poorly maintained workplace facilities has become pervasive across many industries. The manufacturing sector suffers from frequent equipment breakdowns, irregular power supply, and inadequate infrastructural upkeep, all of which compromise employee performance (Olatunji & Akinlabi, 2020). Poor facility maintenance leads to operational inefficiencies increased accident risks, reduced worker morale, and higher employee turnover (Ofori & Laryea, 2015).

Research in advanced economies has consistently established a positive link between facility management and organizational performance (Tucker & Masuri, 2016; Chotipanich & Issarasak, 2019). However, evidence from developing contexts remains fragmented and inconclusive. For example, Ntshebe et al. (2022) reported a negative association between maintenance and employee performance in South Africa, while Akinlolu et al. (2021) found that maintenance culture significantly improves organizational productivity in Nigeria. These inconsistencies highlight the need for more context-specific studies.

Given that Lagos State is Nigeria's commercial hub and home to thousands of medium-scale manufacturing firms (Nigeria Galleria, 2021), it provides an ideal context for exploring how FM practices affect employee performance. Therefore, this study seeks to fill a critical gap in the literature by empirically analyzing the relationship between facility maintenance and employee performance in Lagos State's medium-scale manufacturing enterprises. This study investigates this relationship by subjecting the following null hypothesis to empirical testing:

H_0: facility maintenance practices do not exert a statistically significant influence on employee performance among medium-scale manufacturing enterprises in Lagos State.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Facility Maintenance Practices

The concept of facility maintenance practices refers to the systematic process of ensuring that workplace facilities, including equipment, machinery, utilities, and infrastructure, are maintained in optimal working conditions to support organizational operations (Chotipanich, 2004). Maintenance may be preventive (planned and scheduled upkeep to avoid breakdowns) or corrective (repairs after failures occur). Effective maintenance minimizes disruptions, improves safety, and enhances the ability of employees to perform tasks efficiently (Waheed & Igwe, 2018). More recent studies have highlighted that facility maintenance has become a strategic enabler for operational efficiency, especially in manufacturing and service-driven organizations. For instance, Olanrewaju and Abdul-Aziz (2020) argued that adopting proactive maintenance models improves asset longevity, reduces operational costs, and creates a conducive work environment that boosts employee productivity. Similarly, Akinwale, Adegbite, and Idowu (2021) found that inadequate facility upkeep in Nigerian manufacturing firms was directly linked to workplace hazards and downtime, which ultimately impaired employee performance and organizational competitiveness.

2.1.2 Employee Performance

Employee performance is defined as the extent to which employees achieve organizational goals in terms of productivity, work quality, timeliness, and efficiency (Armstrong, 2014). It is influenced not only by skills and motivation but also by the quality of the work environment, which includes facility conditions, safety standards, and infrastructural reliability (Dessler, 2020). Recent scholarship has reinforced this connection, emphasizing that facility-related factors significantly affect employees' ability to perform optimally. For example, Chen, Li, and

Wang (2022) demonstrated that reliable infrastructural maintenance in industrial settings enhances employee morale and task accuracy by reducing frequent equipment breakdown-related job stress. Likewise, Oke and Aigbavboa (2023) highlighted that well-maintained facilities serve as an essential driver of organizational sustainability, as they foster higher employee commitment, safety compliance, and efficiency. These contemporary perspectives underscore that facility maintenance is not merely a technical requirement but a critical determinant of human capital productivity and overall organizational success.

2.2 Theoretical Review

This study draws on two theoretical perspectives:

1.**Herzberg's (1959) Two Factor Theory (1959)**. This theory emphasizes that workplace conditions (hygiene factors), such as safety, equipment reliability, and physical environment, influence employee satisfaction and indirectly affect performance.

2.**Job Characteristics Model (Hackman & Oldham, 1976)**. This theory posits that the work environment shapes psychological states, such as motivation and engagement, thereby influencing performance outcomes. Properly maintained facilities ensure that employees can work with confidence and focus, leading to higher productivity.

2.3 Empirical Review

Empirical studies provide mixed findings regarding the relationship between facility maintenance and employee performance. In Malaysia, Tucker and Masuri (2016) found that facility management significantly improves workplace productivity. Similarly, in Thailand, Chotipanich and Issarasak (2019) reported that facility upkeep enhances both employee engagement and organizational outcomes. Conversely, Ntshebe et al. (2022) found that excessive maintenance disruptions negatively affected employee output in South Africa. Akinlolu et al. (2021) established that a strong maintenance culture in Nigerian manufacturing firms enhances organizational performance. Olatunji and Akinlabi (2020) found that poor upkeep of infrastructure leads to lower worker morale and reduced productivity. Likewise, Adewunmi and Ogunba (2019) reported that Lagos-based firms' consistent facility maintenance significantly reduces downtime and enhances job satisfaction.

While existing studies highlight the significance of facility maintenance, most research in Nigeria has focused on construction, real estate, and public institutions, with limited emphasis on manufacturing enterprises. Moreover, findings across contexts are inconsistent, with some studies reporting positive associations, whereas others reveal negative associations. This study addresses these gaps by providing empirical evidence from medium-scale manufacturing firms in Lagos State, offering insights into the strategic role of facility maintenance in enhancing employee performance within resource-constrained environments.

3.0 Methodology

The study adopted a descriptive survey research design, which is widely recognized for its suitability in gathering and analyzing information from a representative sample of a defined population (Creswell & Creswell, 2018). This design was deemed appropriate for investigating the link between facility maintenance practices, serving as the independent variable, and employee performance, serving as the dependent variable. It also provided an opportunity to generalize the findings to similar contexts within the Nigerian manufacturing sector, thereby enhancing the study's external validity.

The research population consisted of employees of medium-scale manufacturing enterprises in Lagos, Nigeria. As the nation's foremost commercial hub, Lagos accounts for over 65% of business transactions and hosts approximately 11,643 registered SMEs (Nigeria Galleria, 2021). This concentration of industrial activity makes it an ideal context for examining the extent to which facility maintenance influences employee performance. The sample size was determined using the formula of Taro Yamane (1967) with a precision level of ±5%. The

computation yielded a sample size of 337 respondents based on a total population of 2,132 workers. The formula is given as

n = \frac{N}{1 + N (e^2)}, where *n* is the required sample size, *N* is the population size, and *e* is the acceptable error margin (0.05). This ensured adequate target population representation.

Primary data were obtained through a structured, self-administered questionnaire designed to capture employees' perspectives on facility maintenance practices and their impact on performance. A pilot test was conducted with a subset of respondents drawn from the study population to ascertain the reliability of the research instrument. The pilot yielded a Cronbach's alpha coefficient of 0.82, which exceeded the recommended threshold of 0.70 (Nunnally & Bernstein, 1994). Following this validation, the instrument was administered to the final sample to facilitate data collection.

The collected data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics, including means and standard deviations, were employed to summarize employees' perceptions of facility maintenance and performance outcomes. Linear regression analysis was performed to test the research hypotheses and establish the predictive power of facility maintenance practices on performance. Analysis of variance (ANOVA) was conducted to assess the statistical significance of the observed relationships. This combination of descriptive and inferential methods provided robust insights into the magnitude and significance of the associations under investigation.

4.0 Results and Discussion

Research Question: *How do facility maintenance practices influence employee performance in medium-scale manufacturing enterprises in Lagos, Nigeria?*

Table 1.1: Analysis of how FM practices affect employee performance among selected medium-scale manufacturing enterprises in Lagos State

What are the effects of good facility maintenance practices on employee performance among selected medium-scale manufacturing enterprises in Lagos State?

S/N	Effects of good facility maintenance practices	N	$\bar{X}$	SD	Remark
1.	Regular facility maintenance enhances my overall job performance	262	2.82	.905	Agree
2.	Well-maintained equipment allows me to work more efficiently	262	2.90	1.026	Agree
3.	Proper workplace facility upkeep reduces downtime, increasing my productivity	262	3.02	.802	Agree
4.	Good maintenance practices reduce the risk of accidents and improve my focus on tasks.	262	2.56	1.006	Agree
5.	Knowing that the facilities are well-maintained boosts my confidence in performing my duties.	262	2.56	1.006	Agree
6.	A well-maintained work environment contributes to my job satisfaction and performance.	262	2.72	.949	Agree

7.	Regular facility maintenance minimizes disruptions, allowing me to maintain a consistent work pace	262	3.02	.855	Agree
8.	The maintenance of tools and machinery directly impacts the quality of my work.	262	3.08	1.125	Agree
9.	Good maintenance practices improve my job engagement and commitment	262	2.59	1.085	Agree
10.	A well-maintained workplace positively affects overall employee morale and performance.	262	2.60	1.116	Agree

Table 1.1 presents the analysis of how FM practices affect employee performance among selected medium-scale manufacturing enterprises in Lagos State. It was shown that regular maintenance of facilities enhances workers' overall job performance with the mean response rate ($\bar{X}$ = 2.82, SD = .905). Well-maintained equipment allows workers to work more efficiently with the mean response rate ($\bar{X}$ = 2.90, SD = 1.026). Proper upkeep of workplace facilities reduces downtime, increasing workers productivity had the mean response rate ($\bar{X}$ = 3.02, SD = .802), good maintenance practices reduce the risk of accidents, improving workers focus on tasks, and have a mean response rate ($\bar{X}$ = 2.56, SD = 1.006).

It was further revealed that knowing that the facilities are well-maintained boosts workers' confidence in performing their duties (mean response rate ($\bar{X}$ = 2.56, SD = 1.006), and a well-maintained work environment contributes to job satisfaction and performance (mean response rate ($\bar{X}$ = 2.72, SD = .949). In addition, the assertion that regular facility maintenance minimizes disruptions, allowing workers to maintain a consistent work pace (mean response rate ($\bar{X}$ = 3.02, SD = .855). The maintenance of tools and machinery directly impacts the quality of work had a mean response rate ($\bar{X}$ = 3.08, SD = 1.125), good maintenance practices improve engagement and commitment to workers' jobs had a mean response rate ($\bar{X}$ = 2.59, SD = 1.085), and a well-maintained workplace positively affects overall employee morale and performance had a mean response rate ($\bar{X}$ = 2.60, SD = 1.116).

The results in Table 1.1 reveal that regular facility maintenance enhances workers' overall job performance, as well-maintained equipment allows workers to work more efficiently. The proper upkeep of workplace facilities was found to reduce downtime, increase worker productivity, and reduce the risk of accidents, improving workers' focus on tasks. Knowing that the facilities are well-maintained was found to boost workers' confidence in performing their duties, as a well-maintained work environment contributes to their job satisfaction and performance. Regular facility maintenance was also found to minimize disruptions, allowing workers to maintain a consistent work pace, as tools and machinery maintenance directly impacts the quality of their work. Good maintenance practices improve workers' engagement and commitment to their jobs, as a well-maintained workplace positively affects overall employee morale and performance.

Overall, the descriptive analysis revealed that facility maintenance practices significantly influence employees' productivity, safety, satisfaction, and morale**.** Employees agreed that proper workplace facility upkeep reduces downtime, enhances efficiency, minimizes accidents, and contributes to job satisfaction. Similarly, respondents affirmed that consistent facility maintenance positively impacts work pace, commitment, and overall morale.

Impact of effective facility maintenance practices on employee performance among selected medium-scale manufacturing enterprises in Lagos State.

Table 1.2a Model Summary

Model	R	R Square	Adjusted R-square	Std. Error of the Estimate
1	.173[a]	.030	.026	1.012

a. Predictors: (Constant) and Facility Maintenance Practices

Table 1.2b ANOVA[a]

Model		Sum of the Squares	of	Mean Square	F	Sig.
1	Regression	8.258	1	8.258	8.061	.005[b]
	Residual	266.357	260	1.024		
	Total	274.615	261			

a. Dependent variable: Employee performance

b. Predictors: (Constant) and Facility Maintenance Practices

Table 1.2c. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.414	.190		17.970	.000
	Facility management practices	.187	.066	.173	2.839	.005

a. Dependent variable: Employee performance

Regression results (Table 1.2a-c) indicated that facility maintenance practices significantly predicted employee performance ($R = 0.173$; $R^2 = 0.030$). Although the variance explained (3.0%) appeared modest, the ANOVA results ($F = 8.061$, $p < 0.05$) confirmed statistical significance. The coefficients further revealed that effective facility maintenance practices significantly enhance employee performance ($\beta = .173$, $t = 2.839$, $p = .005$). These findings highlight that regular and efficient facility maintenance is a strategic driver of employee productivity and workplace engagement**.**

Hypothesis Testing

The null hypothesis that *facility maintenance practices have no significant effect on employee performance was rejecte*d. The results confirmed a positive and statistically significant relationship, suggesting that maintenance practice improvements directly enhance performance outcomes in medium-scale manufacturing enterprises.

Discussion of the Findings

The findings of this study provide compelling evidence that facility maintenance practices significantly enhance employee performance in medium-scale manufacturing enterprises in Lagos State. Descriptive analysis revealed that regular facility upkeep improves efficiency, reduces operational downtime, and creates safer work environments, all of which collectively contribute to improved productivity and job satisfaction. Employees affirmed that well-maintained equipment and workplace infrastructure positively influence their confidence, engagement, and overall morale. These outcomes align with the argument that human capital and the quality of the physical and infrastructural resources provided to support work processes determine organizational performance (Armstrong, 2014).

The inferential analysis further confirmed that facility maintenance is a statistically significant predictor of employee performance. Although the coefficient of determination ($R^2 = 0.030$) indicated that facility management

accounts for a modest proportion of the variance in performance, the significant F-value demonstrated that its influence cannot be underestimated. This finding highlights the need to conceptualize facility maintenance not as a peripheral operational function but as a core component of organizational strategy that directly influences human resource outcomes.

When compared with the existing literature, the results of this study both support and extend previous scholarship. For instance, the findings contradict Ntshebe et al. (2022), who reported a negative association between facility maintenance and performance, that these disparities may be explained by contextual or sectoral differences. Conversely, the results align with those of Arampatzi (2019), who observed a positive, though weak, correlation between facility management and employee outcomes. This study strengthens Arampatzi's argument by empirically demonstrating that facility maintenance correlates with and significantly predicts performance outcomes in the Nigerian manufacturing context. Furthermore, the findings support theories of the workplace environment, which posit that the quality of physical work settings influences motivation, satisfaction, and performance (Herzberg, 1966; Hackman & Oldham, 1976).

5.0 Conclusions and Recommendations

The findings of this study demonstrate that facility maintenance practices play a pivotal role in shaping employee performance within medium-scale manufacturing enterprises in Lagos State. Specifically, regular upkeep of facilities, effective maintenance of machinery, and the creation of safe and functional work environments were found to significantly enhance productivity, reduce downtime, minimize workplace risks, and foster higher levels of job satisfaction and morale. The inferential analysis confirmed a statistically significant relationship between good maintenance practices and employee performance, thereby underscoring the strategic importance of facility management as a driver of organizational effectiveness and competitiveness rather than a routine operational necessity.

Considering these findings, manufacturing firms should institutionalize structured maintenance schedules that emphasize both preventive and corrective strategies to avoid costly breakdowns and disruptions. Furthermore, organizations should invest in modern facility management systems and allocate adequate resources to ensure consistent workplace infrastructure upkeep. Integrating facility management into human resource and organizational development strategies will further enhance employee well-being, engagement, and performance. Additionally, employees should be adequately trained on the proper use of workplace facilities and equipment, thereby complementing organizational efforts to maintain safe and efficient work environments. By adopting these measures, medium-scale enterprises in Lagos State; and by extension, similar contexts in developing economies will be better positioned to improve workforce productivity, sustain employee commitment, and strengthen overall organizational performance.

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