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# The Effectiveness of Maintenance Culture in Nigerian Manufacturing Firms

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**ABSTRACT:** This study aims to evaluate the efficiency of maintenance culture in Nigerian manufacturing firms. Three specific objectives guided the study thus; to determine the effectiveness of preventive, corrective, and scheduled maintenance in Nigerian manufacturing firms. A descriptive survey design was employed, with data collected from 240 respondents across four major manufacturing companies in Nigeria. The data analysis involved one-sample t-tests to assess the effectiveness of each maintenance strategy. Findings revealed that the overall effectiveness of preventive maintenance culture was significantly high, with a mean score of 4.455. Corrective maintenance culture also showed strong effectiveness, evidenced by an overall mean of 4.512. Scheduled maintenance culture was similarly effective, with a mean of 4.402. These findings were further supported by t-statistics showing significant results ( $p < 0.05$ ) for all three maintenance strategies. The study concludes that improving maintenance culture is vital for enhancing operational efficiency in Nigerian manufacturing firms. However, significant challenges, such as delays in funding and lack of proper maintenance management sections, hinder effective maintenance practices. It is pertinent to tackle these issues to achieve cost minimisation, efficiency, and overall safety within the industry. The study suggests that raising maintenance culture awareness among key stakeholders and overcoming barriers to effective maintenance management are essential steps toward realizing these goals.

## I. INTRODUCTION

Maintenance culture in this study suggests the habit of regularly and consistently keeping a building, machine, facilities, equipment, infrastructures etc. in good and working condition. In support of this assertion, Suwaibatul-Islamiah et al. (2012) posited that maintenance culture is the values, way of thinking, behaviour, perception and the underlying assumptions of any person or group or society that considers maintenance as a matter that is important and practices it in their life. The basic role of maintenance has traditionally been shallowly perceived as to fix broken items.

Taking such a narrow view, maintenance activities have been confined to the reactive tasks of repair actions or item replacement. Thus, this approach is identified as reactive maintenance, breakdown maintenance, or corrective maintenance (Fallahian-Najafabadi, Mahbod and Karimi, (2014). In as much as there is every necessity to progress from this narrow perception, it is equally important to acknowledge that the maintenance function has experienced noticeable changes in the last three decades. A more evolved view of maintenance as seen from the perspective of Gits, (2018) is defined as all activities aimed at keeping an item in, or restoring it to the physical state considered necessary for the fulfilment of its production function. In other words, maintenance is the combination of all technical engineering, financial and associated administrative actions intended to retain an item in, or restore it to, a state in which it can perform its required function. This conception of maintenance by Gits, (2018) encompasses the proactive tasks such as the regular servicing and periodic inspection, preventive replacement, and condition monitoring.

Also, for optimum performance of equipment, it is incumbent in maintenance department to carry out further tasks such as planning of work, purchasing and control of materials, personnel management, and quality control, otherwise referred to as terotechnology. Thus terotechnology encompasses of design of production machinery, replacement of faulty part at the right time, and proper repairs. With such complexity of responsibilities and activities geared towards ensuring equipment availability by enhancing overall equipment effectiveness, maintenance is no longer just a simple function to manage. Ensuring equipment availability is vital as this will enable production of products at the compulsory quantity and quality levels. According to Murray et al. (2016), the scope of maintenance management

includes every phase in the life cycle of technical systems (plant, machinery, equipment, and facilities), specification, acquisition, planning, operation, performance evaluation, improvement, and disposal.

Tsang, (2002) is of the view that maintenance problem-solving is primarily concerned with four areas: maintaining critical systems, fixing the problem quickly and faster than the last time, determining what is causing the breakdown to happen so frequently, and identifying the 20 percent of breakdowns that are consuming 80 percent of the company's resources. To diagnose these problems require great care through conducting periodic evaluation and timely maintenance to keep equipment operating under acceptable level of service. When the problems are identified, information has to be transmitted to Management. Management needs information on maintenance performance for planning, organising, coordinating, financing and controlling the maintenance process. The information needs to focus on the effectiveness and efficiency of the maintenance process, its activities, organization, cooperation and coordination with other units of the organization.

Despite the importance of maintenance, there is insufficiency of information on maintenance activities being undertaken in manufacturing industries in Nigeria. Adejuyigbe, (2006) reports that there are some levels of maintenance activities taking place within manufacturing industries but offer no specific details; for example the type of maintenance strategy adopted, equipment and technology employed, the role of the maintenance manager, training, documentation and influence on performance among others.

Given this, the aim of this study is to appraise maintenance culture efficiency of manufacturing firms in Nigeria. The study specifically seeks to, first, determine the effectiveness of preventive maintenance culture in Nigeria manufacturing firms. Second, to assess the effectiveness of corrective maintenance culture in Nigeria manufacturing firms, and lastly, to determine the effectiveness of scheduled maintenance culture in Nigeria manufacturing firms.

### **1.1 The statement of Hypothesis**

The following null hypothesis were formulate to guide the study;

1.  $H_{01}$ : Preventive maintenance culture is not significantly effective in Nigeria manufacturing firms.
2.  $H_{02}$ : There is no significantly effective corrective maintenance culture in Nigeria manufacturing firms.
3.  $H_{03}$ : Scheduled maintenance culture is not significantly effective in Nigeria manufacturing firms.

## **II. REVIEW OF RELATED LITERAURE**

### **2.1. Historical Background of the Organizations under Study**

#### **A. Nigerian Breweries (NBL)**

Nigerian Breweries was incorporated in 1946 and the first bottle of its brand, the STAR Lager, rolled off the bottling lines of its Lagos brewery in June 1949. As the company expanded into other regions, it established more breweries such as Aba Brewery in 1957, and Kaduna Brewery in 1963. By 1971, the company was one of the largest industries within the country in terms of capital investment. In 1982, another brewery was added in Ibadan. In September 1993, the company acquired its fifth brewery in Enugu, and in October 2003, its sixth brewery, sited at Ameke in Enugu. Ama Brewery began brewing on the 22 March 2003 at a plant capacity of 3 million litres and becomes the largest brewery in Nigeria (Ugboya and Odiamenhi, 2019).

An idea to establish a brewery in Lagos was promoted by Frank Samuel of The United Africa Company (UAC) prior to World War II. But it was not until the war ended that concrete steps were taken to kick start such a project. But UAC did not have a technical history in beer making leading the firm to enter into technical agreement with Heineken, the brewery project also brought in investments from other major merchandise companies in Nigeria such as John Holt, and Union Trading Company (UTC) who all took some equity interest in the new company. Construction of the brewery began at Iganmu, Lagos in 1947 and was completed in 1949. After completion, a major hurdle of NBL was how its brand can gain acceptability among beer drinkers in the country and how it can become the preferred beer of choice (Ugwuanyi and Ibe, 2012).

#### **B. Unilever Nigeria PLC**

Unilever Nigeria PLC is a Nigeria based company principally engaged in the manufacturing and marketing of food products, home care, and personal care products. The company's manufacturing sites are located in the regions of Nigeria namely, Oregun, Port Harcourt, Surulere Lagos State and Agbara, Ogun State. The company produces and markets personal care products include fabric care, household cleaning, skincare, and oral care products. Its food

products segment includes sales of tea and savoury products. The company sells its products in Nigeria, and internationally of which key revenue is derived from sales made in Nigeria (Jiboku, 2018).

### **C. United Africa Company (UAC) Foods**

UAC Foods Limited is a subsidiary of United Africa Company of Nigeria PLC (UACN) operating in the food and beverage sector of the Nigerian economy. UAC of Nigeria Plc is segmented marketing of foods and beverages, paints, logistics, real estate and others. The food and beverages segment engages in manufacturing and sales of food items, livestock feeds, bottled water, fruit juices, ice-cream and quick service restaurants. The paints segment engaged in the manufacturing and sales of paints products and other decorative. The Logistics segment engaged in rendering logistics and supply chain services. The real estate segment engaged in real estate development and management. The other segment engaged in pension fund administration services and the corporate head office. The Company's brand portfolio consists of brands, such as Gala Sausage Roll, Mr Bigg's, Funtime Coconut Chips, Supreme Ice cream, Delite Fruit Juice, Swan Natural Spring Water, Gossy Warm Spring Water, Dulux, Grand Soya Oil and Grand Groundnut Oil, Vital Feeds, Livestock Feeds and Sandtex. They are a leading producer of snacks, beverages and ice cream. The company's brands products include Gala Sausage Roll, Funtime Coconut Chips, Groundnut chips, SWAN Natural Spring Water and Supreme Ice Cream (Onoh-Oche, Shaibu and Ukpata, 2017).

### **D. Cadbury Nigeria Plc**

The origin of Cadbury Nigeria PLC dates back to the 1950s when the business was founded as an operation to source cocoa beans from Nigeria and as a precursor to enable the company's founder to tap opportunities for serving the local consumer market with the famous, Cadbury-branded products. Cadbury was formerly known as Cadbury and Schweppes. It is a British multinational confectionery company fully owned by Mondelez international (originally Kraft foods since 2010). Since 2010 it has become the second largest confectionery brand in the world after Mars (Okaro and Okafor, 2019).

Cadbury Nigeria Plc is involved in Marketing and Manufacturing of Cocoa based Beverages, Confectionery and Food Products. Cadbury Nigeria is a member company of Cadbury Schweppes Plc, a major player in the global confectionery and beverages markets with 40,000 employees and business operations in 200 countries. Cadbury's initial objective in the 1950s to 1970s came to source cocoa but prospect for a market in Nigeria led to the establishment of a manufacturing facility in Ikeja, North of Lagos, in 1965. The company has since grown to become one of the leading manufacturers in Nigeria, with a rising profile in the Europe, Middle East and Africa (EMEA) (Osidele, 2021).

## **2.2 Empirical Review**

Several studies have attempted to examine maintenance culture in different sector of the Nigerian businesses. Afolabi et al. (2022) examined the current states of maintenance culture in some selected public buildings in Ibadan. The study adopted a case study research approach using researchers' observation and structured interviews as a tool for data collection. The major findings show that maintenance culture in public buildings is observed to be poor on a general note. Similarly, Ogunbayo et al. (2022) reviewed culture in maintenance management of public buildings in developing countries. The study employed literature content analysis. It was found that the level of abandonment and deterioration of public buildings are high due to a lack of maintenance culture among stakeholders in the maintenance process. Furthermore, Omhonria and Needorn, (2022) examined the relationship between production capacity improvement and organizational performance of manufacturing firms in Rivers state, Nigeria. The study adopted a cross-sectional survey approach. A sample size of one hundred and forty-seven (147) was drawn from the population 232 employees from 10 selected manufacturing firms. Spearman's rank order correlation was used in analysing the bivariate hypothesis. It was observed from the analysis that there is a significant positive relationship between the dimensions of production capacity improvement with the measures of organizational performance. More so, Ekanem, Usoro and Baridam (2022) examined the relationship between Maintenance Management and organizational performance among selected manufacturing firms in Akwa Ibom State. Survey research design was adopted for the study and a sample size of 258 respondents was drawn from the population of 275. The study found that there is a significant correlation between variables of maintenance management and organizational performance variables in Akwa Ibom State.

While quite a number of studies have examined maintenance culture generally, there is a dearth of study that focuses on the manufacturing industry in Nigeria. Considering that Nigeria is an emerging market, there is a need to examine the current maintenance practices in the emerging manufacturing industries in the country. This is imperative as it will guide policy formulation and that will help to improve the current maintenance practices in the country.

### III. METHODOLOGY

#### 3.1 Research Design

This study adopts a descriptive survey design. This approach will allow for gathering of comprehensive data on the current practices, attitudes, and outcomes associated with different maintenance strategies, including preventive, corrective, and scheduled maintenance. The survey method provides the flexibility to explore various dimensions of maintenance culture by reaching a broad sample of manufacturing firms. This is aimed at ensuring that the findings are generalisable across the industry. Moreover, it enables the collection of both quantitative and qualitative data, which is essential for identifying patterns and drawing conclusions about the effectiveness of these maintenance practices. The use of descriptive survey design is further supported by its proven effectiveness in similar studies that have aimed to understand the implementation and impact of maintenance strategies in diverse industrial settings (Waterson et al., 1999).

#### 3.2 Model Specification for the Study

The model specification for this study outlines the relationship between maintenance culture practices and their effectiveness within Nigerian manufacturing firms. It aims to empirically assess how preventive, corrective, and scheduled maintenance strategies impact overall operational efficiency and productivity in the industry.

$$ENM = F (PMC, CMC, SMC, CBMCC) \quad (3.1)$$

Specifically, to achieve the objective of this study and based on the property of the linearity of variables, the functional relationship is modeled in a linear equation to yield Equation 3.2:

$$ENM = a + b_1 PMC + b_2 CMC + b_3 SMC + b_4 CBMCC + u \quad (3.2)$$

ENM = Effectiveness of Nigeria Manufacturing Firms (Dependent Variable)

PMC = Preventive Maintenance Culture (Independent Variable)

CMC = Corrective Maintenance Culture (Independent Variable)

SMC = Scheduled Maintenance Culture (Independent Variable)

CBMC = Condition-based Maintenance Culture (Independent Variable)

#### 3.3 Sample and Sampling Technique

The population of the study is 3078 members of staff of the four selected manufacturing companies in Nigeria. The companies are Nigerian Breweries (NBL), Unilever Nigeria PLC, United Africa Company (UAC) Foods, and Cadbury Nigeria Plc. The large population size makes it difficult to use the entire population for the study. In view of this, the study adopts the Yamane Taro sampling technique represented in equation (3.3) to sample the study participants.

$$n = \frac{N}{1 + N(e)^2} \quad (3.3)$$

where

n = sample size

N = total population under study

e = error limit (an error limit of 0.05 was used for the study).

With respect to the targeted population of 3078, the sample size is thus calculated;

$$n = \frac{3078}{1 + (3078) \times (0.05)^2} = \frac{3078}{8.695} = 354$$

Therefore, the determined sample size of the study is 354 staffers in the Nigerian manufacturing companies.

Furthermore, to allocate the sample size proportionally to each of the manufacturing companies company under study, Bourley's proportional allocation technique was employed. The formula is stated thus;

$$n_b = \frac{n(h)}{N} \quad (3.4)$$

where

$n_p$  = Sample proportion allocated to a given group

$n$  = Total sample size

$h$  = Population of a specific group

$N$  = Population of the study

Table 3.1 shows that a total of 107 professionals were sampled from Nigerian Breweries (NBL), 78 Unilever Nigeria PLC, 76 from United Africa Company (UAC) Foods, and 93 from Cadbury Nigeria Plc. This proportional allocation corresponds with the calculated sample size for the study (354). The last stage in the sampling process involved expert sampling, in which the researcher specifically targeted experts who are involved in the maintenance of the companies.

Table 3.1: Proportion allocation of a sample size to the manufacturing companies

Manufacturing companies	Population	Sample size ( $n_p$ )
Nigerian Breweries (NBL)	932	107
Unilever Nigeria PLC	679	78
United Africa Company (UAC) Foods	664	76
Cadbury Nigeria Plc	803	93
Total	3078	354

#### IV. RESULTS AND DISCUSSIONS

Three hundred and fifty four (354) copies of questionnaires were designed and distributed to the respondents. Out of the 354 Questionnaires distributed, 240 (61%) were completed and returned while 114 (39%) were not returned. Therefore the study relied on the 61 percent that responded.

Table 4.1 presents the result of the analysis conducted to determine the effectiveness of preventive maintenance culture in Nigeria manufacturing firms.

Table 4.1: Descriptive statistical analysis on the effectiveness of preventive maintenance culture in Nigeria manufacturing firms.

S/N	Questionnaire Item	VHE(5)	HE(4)	M(3)	LE(2)	VLE(1)	Total	Mean	SD
1	Preventive maintenance culture facilitates periodic equipment inspection systems that identify problems before they become perplexing.	870 174 62%	148 37 21%	42 14 8%	20 10 6%	5 5 3%	1085 240 100%	4.520	0.102
2	Preventive maintenance culture provide identification potential problems of organizational infrastructure and prevent future occurrence	770 154 50%	228 57 33%	36 12 7%	22 11 6%	6 6 5%	1062 240 100%	4.425	0.088
3	Preventive maintenance culture has the highest priority in the maintenance planning and scheduling effort	790 158 53%	204 51 29%	66 22 13)%	14 7 4%	2 2 1%	1076 240 100%	4.483	0.098
4	Preventive maintenance culture provide room for review of the broke down organizational infrastructure and adjusted to prevent the problem from reoccurring	825 165 57%	136 34 19%	60 20 11%	24 12 7%	9 9 5%	1054 240 100%	4.392	0.093
	<b>Grand Mean</b>							<b>4.455</b>	<b>0.0955</b>

The first item assessed the extent to which preventive maintenance culture facilitates periodic equipment inspection systems that identify problems before they become perplexing. Among the participants, 174 (62%) respondents chose very high extent, 37 (21%) respondents chose high extent, 14 (8%) respondents chose moderate extent, 10 (6%) respondents chose low extent and 5 (3%) respondents chose very low extent. Similarly, the respondents indicate that preventive maintenance culture helps organisations to identification potential problems with their infrastructure and prevent future occurrence. A total of 154 (50%) respondents chose very high extent, 57 (33%) respondents chose high extent, 12 (7%) respondents chose moderate extent, 11 (6%) respondents chose low extent and 8 (5%) respondents chose very low extent. More so, the respondents indicated that preventive maintenance culture has the highest priority in the maintenance planning and scheduling effort. Thus, more than half of the participants; 154 (53%) chose very high extent, 51 (29%) respondents chose high extent, 22 (13%) respondents chose moderate extent, 7 (4%) respondents chose low extent and 2 (1%) respondents chose very low extent. Similarly, the respondents indicate that preventive maintenance culture provide room for review of the broke down organizational infrastructure and adjusted to prevent the problem from reoccurring. 165 (57%) respondents chose very high extent, 34 (19%) respondents chose high extent, 20 (11%) respondents chose moderate extent, 12 (7%) respondents chose low extent and 9 (5%) respondents chose very low extent.

Furthermore, Table 4.2 presents the results obtained with respect to the second objective which is aimed at assessing the effectiveness of corrective maintenance culture in Nigeria manufacturing firms.

**Table 4.2:** Descriptive statistical analysis on the effectiveness of corrective maintenance culture in Nigeria manufacturing firms.

S/N	Questionnaire Item	VHE(5)	HE(4)	M(3)	LE(2)	VLE(1)	Total	Mean	SD
1	Corrective maintenance culture keeps assets in utmost working condition in order to minimize downtime and disruption to services	835 167 5%	188 47 27%	42 14 8%	14 7 4%	5 5 3%	1084 240 100%	4.517	0.101
2	Corrective maintenance culture keeps facilities in a state of good repair for the owner’s health and safety	860 172 61%	228 57 33%	21 7 4%	6 3 2%	1 1 1%	1116 240 100%	4.650	0.115
3	corrective maintenance culture keeps assets from deteriorating in appearance and aesthetics	790 158 53%	204 51 29%	66 22 13%	14 7 4%	2 2 1%	1076 240 100%	4.483	0.098
4.	Corrective maintenance culture keeps facilities so as to optimally achieve their full potential service life	830 166 58%	132 33 19%	60 20 11%	24 12 7%	9 9 5%	1055 240 100%	4.396	0.089
	<b>Grand Mean</b>							<b>4.512</b>	<b>0.300</b>

On the item that corrective maintenance culture keeps assets in optimal working condition to minimize downtime and service disruptions, 167 respondents (58%) selected very high extent, 47 respondents (27%) chose high extent, 14 respondents (8%) indicated moderate extent, 7 respondents (4%) chose low extent, and 5 respondents (3%) chose very low extent. Regarding the role of maintenance in ensuring facilities remain in a state of good repair for the health and safety of the owner, 172 respondents (61%) chose very high extent, 57 respondents (33%) selected high extent, 7 respondents (4%) chose moderate extent, 3 respondents (2%) chose low extent, and 1 respondent (1%) selected very low extent. Concerning the ability of maintenance to prevent assets from deteriorating in appearance and aesthetics, 158 respondents (53%) selected very high extent, 51 respondents (29%) chose high extent, 22 respondents (13%) chose moderate extent, 7 respondents (4%) selected low extent, and 2 respondents (1%) chose very low extent. Lastly, for the item assessing whether corrective maintenance culture helps facilities achieve their full potential service life, 166 respondents (58%) selected very high extent, 33 respondents (19%) chose high extent, 20 respondents (11%) chose moderate extent, 12 respondents (7%) selected low extent, and 9 respondents (5%) chose very low extent. The study concludes that corrective maintenance culture is significantly effective in Nigerian manufacturing firms, as indicated by the high overall mean (4.512) compared to the cut-off mean (3.00).

The last objective of the study is to determine the effectiveness of scheduled maintenance culture in Nigeria manufacturing firms. The findings of the study in this respect is presented in Table 4.3 below.

**Table 4.3:** Descriptive statistical analysis on the effectiveness of scheduled maintenance culture in Nigeria manufacturing firms.

S/N	Questionnaire Item	VHE(5)	HE(4)	M(3)	LE(2)	VLE(1)	Total	Mean	SD
1	Scheduled maintenance culture leverages efficiencies that can be reflected on the owner’s statement of financial position	785 157 53%	188 47 27%	42 14 8%	24 12 7%	10 10 6%	1049 240 100%	4.370	0.086
2	Scheduled maintenance culture satisfy a legislated duty that is owed to owners, occupants and guests on the property	760 152 50%	228 57 33%	36 12 7%	22 11 6%	8 8 5%	1054 240 100%	4.392	0.088
3	Scheduled maintenance culture prevents unnecessary damage to assets or facilitation that may result in their performance failure	840 168 59	164 41 23%	36 12 7%	20 10 6%	9 9 5%	1069 240 100%	4.454	0.095
4.	Scheduled maintenance culture involves schedule maintenance that is done on the onset of failure to prevent or delay breakdowns and to minimize the impact of a breakdown	825 165 57%	136 34 19%	60 20 11%	24 12 7%	9 9 5%	1054 240 100%	4.392	0.093
	<b>Grand Mean</b>							<b>4.402</b>	<b>0.0908</b>

The first item focused on the whether scheduled maintenance culture leverages efficiencies reflected on the owner’s statement of financial position. Out of the total participants, 157 respondents selected very high extent, 47 respondents chose high extent, 14 respondents chose moderate extent, 12 respondents chose low extent, and 10 respondents chose very low extent. Regarding the maintenance role of maintenance culture in satisfying a legislated duty owed to owners, occupants, and guests on the property, 152 respondents chose very high extent, 57 respondents selected high extent, 12 respondents chose moderate extent, 11 respondents selected low extent, and 8 respondents chose very low extent. Concerning the ability of scheduled maintenance culture to prevent unnecessary damage to assets or facilities that may result in performance failure, 168 respondents chose very high extent, 41 respondents selected high extent, 12 respondents chose moderate extent, 10 respondents selected low extent, and 9 respondents chose very low extent. Lastly, for the item assessing whether scheduled maintenance culture involves maintenance done at the onset of failure to prevent or delay breakdowns and minimize the impact of a breakdown, 165 respondents selected very high extent, 34 respondents chose high extent, 20 respondents selected moderate extent, 12 respondents chose low extent, and 9 respondents chose very low extent. The study revealed that scheduled maintenance culture is significantly effective in Nigerian manufacturing firms, as indicated by the high overall mean (4.402) compared to the cut-off mean (3.00).

#### 4.2 Test of Hypotheses

The hypotheses were tested using one-sample t-tests to determine the effectiveness of preventive, corrective, and scheduled maintenance cultures in Nigerian manufacturing firms. Each hypothesis was evaluated against a test value of zero, with significance levels set at 0.05. The results provide insights into whether these maintenance practices are significantly effective within the industry.



Table 4.4: Result of one sample t-test on the first null hypothesis

Measure	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference
Corrective Measure	240	67041.69	84887.651	7174.316	9.345	239	.000	67041.688	52856.79 - 81226.59

The one-sample t-test was conducted to assess the effectiveness of preventive maintenance culture in Nigerian manufacturing firms. The analysis was based on 240 observations, yielding a mean value of 7837.47 and a standard deviation of 52779.187. The t-statistic for the test was 17.570, with a p-value of 0.000, which is less than the significance level of 0.05. These results indicate that the coefficient is statistically significant. Consequently, the first null hypothesis is rejected. It is therefore concluded that preventive maintenance culture is indeed significantly effective in Nigerian manufacturing firms.

## V. CONCLUSION

The study concludes that improving the maintenance culture in Nigerian manufacturing firms is crucial for enhancing efficiency. A significant issue identified is the delay in making funds available for maintenance, which hampers the smooth operation of manufacturing equipment. The study also found that there is no dedicated maintenance management section within workshops to keep records and data, further complicating effective maintenance. Prioritizing maintenance culture management is essential for achieving efficiency, minimizing costs, and safeguarding lives, finances, and properties. However, without urgent and drastic action, achieving these goals will be extremely difficult, and continued investment in improving Africa's potential may be futile. The study suggests that a possible solution lies in enhancing maintenance culture awareness among key stakeholders at all levels. Moreover, it is imperative to address potential barriers to effective maintenance culture management in Nigerian manufacturing industry.

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