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Preventive Maintenance Practices and Organizational Performance of Selected Tissue Firms in Anambra States

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Abstract: *The study examined the preventive maintenance practices and organizational performance of selected tissue firms in Anambra States. The objectives of the study were to Determine the effect of time based maintenance on organizational performance of selected tissue firm in Anambra States. Analyze the effect of condition based maintenance on organizational performance of selected tissue firm in Anambra States. Investigate the effect of predictive based maintenance on organizational performance of selected tissue firm in Anambra States. This study is anchored on the Resource Based View (RBV) which was propounded by Wernerfelt in 1984.. The study adopted survey research design. Data were generated from primary and secondary sources. The method for data collection was questionnaire which was administered randomly among the staff of the selected firms. The area of study is Anambra state, The population of this study is One thousand, four hundred and ninety-nine (1439). The researcher used all the population as the sample size. Secondary and primary sources of data were used in this study. Percentage table was used to analyze the demographical data. Hypotheses were analyzed using multiple regression at 0.05% level of significance. The findings of the study revealed that Time based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States (t, 2.883, p, 007), Condition based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States.(t, 2.033, p,000) Preventive based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States.(t, 5.716, p, 000). The study recommends that, Mangers should ensure timely maintenance of every equipment in the organization. Proper and adequate condition-based maintenance records should be kept, and funds should be readily made available for maintenance purposes. Management should use preventive maintenance applied by applied by technician's teams and managers before any breakdown or failure occurs.*

Keywords: *preventive maintenance practices, condition based maintenance, time based maintenance, organizational performance*

1.1 Introduction

Organizations have been obliged to adapt new competitive strategies as global competitiveness continues to rise (Galli, 2020). How to reduce output loss due to breakdown is one such tactic. Every manufacturing facility strives to maintain a production line free of breakdowns in order to keep operating costs as low as feasible. To keep the machine and system functioning properly and to ensure that all essential repairs are made promptly and completely, a dependable maintenance program must be in place. According to Liu, Wu, et al. (2017), maintenance is the sum of all technical and administrative operations that can lessen the effects of failure and extend the life of a system, ensuring continued operation and expansion of industrial processes.

Additionally, keeping a system maintained typically entails maintenance procedures like repairing, replacing, overhauling, inspecting, servicing, adjusting, testing, measuring, and identifying faults in order to prevent any failure that might cause a halt in production (Lam & Banjevic, 2015). Breakdown (emergency) maintenance and preventive maintenance are the two categories under which maintenance programs are applied. After a machine or system has malfunctioned and failed to fulfill its intended purpose, breakdown maintenance is needed. Contrarily, preventive maintenance (PM) is time-based maintenance that entails doing scheduled maintenance tasks on a regular basis with the goal of reducing or avoiding breakdowns.

Preventive maintenance has a huge potential to boost system dependability, increase machine uptime, reduce equipment breakdowns, and boost production plant efficiency at a low cost of operation. The goal of all preventative maintenance (PM) procedures, including cleaning, inspection, lubrication, tightening, and replacement of worn parts, must be to improve the availability and dependability of all the production plant's machinery. The goal of preventative maintenance is to find and fix problems before they disrupt the machine or the production system (Lagnebäck, 2007).

As equipment ages, the likelihood of failure rises significantly as particular sections and components start to deteriorate. At this point, if the equipment is neglected for an extended period of time, a catastrophic breakdown will occur. A greater level of PM planning and execution can greatly minimize the overall breakdown and time losses of the plant, improving the dependability and availability of the production system.

1.2 Statement of the Problem

Whether in the home, office, school, or factory, Nigeria tragically lacks a maintenance culture. Poor maintenance culture has developed into a widely acknowledged issue in Nigeria, according to Mbamali (2003). Nigeria has the lowest maintenance culture in the world, particularly in our major cities and towns (Uforo, Malachi, and Don, 2022). Over time, resource managers in manufacturing organizations have not become more aware of maintenance culture, such as preventative and corrective techniques that include provision for sufficient care of the hard-won infrastructure.

This situation has led to a number of properties that have minor or trivial issues, including derelict automobiles with problems, decaying structures, abandoned factory facilities, moribund enterprises, and a variety of other properties. Economic stagnation, subpar quality, high operational costs for these businesses, and ensuing collapse are the unattractive results, which affect the entire national economy. Additionally, bad leadership, corruption, attitude issues, and a lack of maintenance policies plague Nigeria's maintenance culture. In light of this, the study

analyzes the organizational performance of a chosen tissue company in Onitsha, Anambra State, and maintenance management techniques.

1.3 Objectives of the Study

The study investigates the effect of preventive maintenance practices and organizational performance of selected tissue firms in Anambra States. The specific objectives derived from this main objective are to:

i. Determine the effect of time based maintenance on organizational performance of selected tissue firm in Anambra States.
ii. Analyze the effect of condition based maintenance on organizational performance of selected tissue firm in Anambra States.
iii. Investigate the effect of predictive based maintenance on organizational performance of selected tissue firm in Anambra States.

1.4 Hypotheses

Ho_1: Time based maintenance has no significant positive effect on organizational performance of selected tissue firm in Anambra States.
Ho_2: Condition based maintenance has no significant positive effect on organizational performance of selected tissue firm in Anambra States.
Ho_3: Predictive based maintenance has no significant positive effect on organizational performance of selected tissue firm in Anambra States.

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Preventive Maintenance

Preventive maintenance entails routine equipment inspections when potential issues are found and fixed in order to stop equipment failure in its tracks. In order to prevent or delay breakdowns and to lessen the impact of a breakdown, preventive maintenance is planned or scheduled maintenance that is performed at the first sign of failure (Wild, 2012). This method of maintenance management is founded on the idea that prevention is preferable to treatment. It comprises of maintenance tasks carried out on equipment prior to a malfunction in order to maintain it functioning satisfactorily and lower the likelihood of failure (Dilworth, 2012). The advantages of this practice are that it reduces rate of breakdowns, increases asset availability, maintain optimum efficiency of the equipment and reduces workload on maintenance staff.

Additionally, preventive maintenance (PM) boosts worker productivity and safety (Murthy, 2009).The key benefit of preventative maintenance over simpler approaches is planning. Many overhead costs associated with unplanned, reactive maintenance can be avoided via careful planning. Unplanned maintenance has a price tag that includes missed output, increased shipping and part prices, as well as lost time dealing with emergencies and troubleshooting broken equipment (Wild, 2012). Typically, unplanned maintenance costs three to nine times as much as scheduled maintenance. When maintenance is planned, each of these costs can be reduced. Equipment can be shut down to coincide with production downtime. Prior to the shutdown, any required parts, supplies and personnel can be gathered to minimize the time taken for a repair.

These measures decrease the total cost of the maintenance. Safety is also improved because equipment breaks down less often than in less complex strategies.

2.1.2 Performance

Cole and Kelly (2011) define performance as a continuous process for enhancing an individual's performance by bringing desired performance (and organizational strategic goals) into line with actual performance. This can be done in a number of ways, including standard-setting, informal, daily appraisal and evaluation, formal/systematic appraisal interviews, and goal-setting. According to Colquitt, Lepine, and Wesson (2014), task performance refers to employee behaviors that are directly involved in transforming organizational resources into the goods or services that the organization produces, whereas job performance refers to the value of the set of employee behaviors that contribute, either positively or negatively, to the accomplishment of organizational goals.

Performance is one metric an organization can use to gauge how effective it is. The most crucial organizational goals and objectives are without a doubt the requirement to be able to define goals and objectives in order to accomplish performance and how to enhance overall organizational performance. Researchers find it difficult to define and quantify success since companies usually have several, often-conflicting goals (Chow et al., 2014). According to Sarah and Tricia (2015), performance is frequently used to gauge the general health of an organization and the policies that are related to it. Both financial and non-financial performance can be used to gauge an organization's performance (Yang et al., 2019). In their 2016 study, Venkatraman and Ramanujam looked at three aspects of business performance measurement: financial performance (return on investment, earnings per share, and and organizational effectiveness (i.e. employee's morale, work atmosphere, etc.). The dimension of employees is reflected in one form or another in all organizational diagnostic models, an aspect that reveals its importance to the success of an organization. Often management decisions may generate feelings of anger, frustration, grievance, and distrust, among employees, that may contribute to a potentially detrimental effect on the general organizational performance (Vasconcelos, 2011).

2.2 Theoretical Framework

This study is anchored on the Resource Based View (RBV) which was propounded by Wernerfelt in 1984. Wernerfelt (1984) outlined a firm's strategic alternatives for selecting resources in his examination of RBV. The thesis indicates that intangible resources are the primary issue that secures a firm's performance and explains the origins of a firm's competitive advantage. Through RBV, studies have shown the connections between organizational competencies, resources, and performance (Barney, 2007; Ibrahim & Shariff, 2016). The RBV has drawn criticism since it lacks managerial implications and is considered as having a limited range of applications because a continuous competitive advantage is unachievable. According to Barney (2001), RBV looks to be more beneficial in terms of creating understanding and offering a framework for strategizing. According to Barney (2001), resource-based logic can aid managers in fully comprehending the types of resources that contribute to the generation of sustained strategic advantages, utilizing this understanding to assess the full spectrum of resources that their firm may be in possession of, and subsequently utilizing those resources that have the potential to produce sustained strategic advantage.

2.3 Empirical Review

Sipumelele, Miston, Thobekani and Yusuf (2022) investigated the role facility maintenance management plays on employee performance at a institution of higher learning in the Eastern Cape of South Africa. This study employed a quantitative research approach, and the data were gathered from 150 employees who were chosen through a random sampling method. The data were analyzed using the Statistical Package for the Social Scientist (SPSS) Version 24.0. The analysis was of frequencies and standard deviations. The study findings revealed that the current facilities at the institution need an upgrade to a level that is conducive, suitable, and adequate for employees to perform their duties satisfactorily to reach the objectives of the institution. An efficient method for preparing, scheduling, and coordinating facility maintenance tasks needs to be applied to ensure effective maintenance service is performed effectively. This empirical study provided fruitful implications for academicians by making a significant contribution to the facility maintenance literature by systematically exploring the effect of facility maintenance management on the employee performance at a higher learning institution within the Eastern Cape province of South Africa. This study, consequently, stands to greatly add new knowledge to the existing literature related to maintenance performance measurement in Africa, a research setting that has been neglected by academic researchers of late.

Uforo, Malachi, and Don (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. For the objective of the study to be achieved, five hypotheses were formulated. The major instrument for data collection was a structured questionnaire administered to the respondent using random sampling techniques. Data collected were analyzed using simple percentage and Ordinal Logistic Regression. Results show that there is a significant correlation between variables of maintenance management such as corrective, preventive, condition-based maintenance and pre- determined maintenance and organizational performance variables of effectiveness, efficiency and profitability among selected manufacturing firms in Akwa Ibom State. Based on the finding of the analysis, management has to provide the maintenance teams with a maintenance management software in order to ensure proper interventions monitoring as well as smooth communication between technicians and other professionals to enhances business success. Consequently, it is recommended that Management should ensure that Corrective maintenance is implemented right after a defect has been detected on a piece of equipment or a production line: its objective is to make the piece of equipment work normally again, so that it can perform its assigned function. Corrective maintenance can either be planned or unplanned depending on whether or not a maintenance plan has been created.

Wagner, Marcelo and Raimundo (2022) focused on a case study applying a maintenance management system model based on the degree of maturity in a thermoplastic industry that operates in the Industrial Pole of Manaus, in the state of Amazonas (Brazil). The system must support the decisions of the organization and promote progress in the company's continuous improvement system. The study was based on the answers to a questionnaire submitted to the maintenance, production and process engineering sectors. Internal perception was compared with external perception, in order to perform an analysis of the field of view of the three sectors on the current position of the maintenance sector in relation to the maturity model used for this analysis. From the application of the model, it was possible to develop a strategic action plan, based on lean

practices, so that the maintenance areas advance towards the higher levels of the maturity scale, aiming to reach and maintain performance levels recognized as excellence.

Sanket and Pushparaj (2022) studied the impact of effective maintenance management on improvement of productivity, profitability of production system and effective workplace management in an explosive sector industry (Solar Industries India Limited, Nagpur – A leading explosives industry in India and Asia). As much risk involve in operations of explosive industries it's a challenge for maintenance department to look forward for process improvement, plant-process optimization, effective utilization of available resources, etc. concerning all with the safety. So that it should withstand competitive explosive manufacturing environment with all required accomplishment of industrial goals. This research study also seeks to critically examine the implications of KAIZEN, 5S, TPM, Lean 6σ, TQM, etc. Implementation of this continuous improvement philosophy in an explosive manufacturing industry not only aims to increasing productivity of production system but also effective workplace management and overall personality development of working individual. The study is carried out in an explosive manufacturing industry which is now facing problem for maintaining machines due to highly acidic atmosphere, lack of effective space utilization, difficulty in establishing processing machines in plant, also to reduce downtime due to hazardous working environment and maintenance issue related with the same. The research approach is directed in the direction for finding the root cause of the problem due to which maintenance problem rise in a manufacturing of explosives industries. The study includes solving the maintenance issue and plants effective-productive modification by doing root cause analysis (RCA), why-why analysis, of the problem for reducing downtime with zero maintenance requirement, improving productivity ratio of production system, also to implement continuous process improvement tools. The study highlights the contributions of strategic maintenance management initiatives for overall improvement and zero maintenance requirements.

Javani, Jafta and Dewa (2022) positioned maintenance functions and their impact on organizational performance from a power utility perspective. Research data was collected based on semi-structured interviews on thirteen maintenance engineering management personnel. The findings indicate that the challenges facing maintenance teams in executing maintenance activities include, ageing plant, staff shortage, lack of skills and knowledge and low employee morale. The paper recommended adoption of world class maintenance framework, for maintenance to achieve greater operational performance.

METHODOLOGY

This study adopted the survey research design. It involved using a self-designed questionnaire in collecting data from the respondents. The area of study is Anambra state, The population of this study is One thousand, four hundred and ninety-nine (1439). The study used all the population as the sample size. Secondary and primary sources of data were used in this study. Percentage table was used to analyze the demographical data. Hypotheses were analyzed using multiple regression at 0.05% level of significance.

PRESENTATION ANALYSIS AND INTERPRETATION OF DATA

This chapter presents the data obtained from the respondents through the administered questionnaire. One thousand, four hundred and ninety-nine (1439) were administered among the selected staff of tissues firms in Anambra state. However; one thousand, four hundred and fifteen (1415) copies of questionnaire were retrieved. Therefore, the analysis and interpretation of data were only based on the returned questionnaire. The validity and reliability of this study is highly ensured, despite the number of questionnaires not returned. The method used was percentage table technique and t-test for the hypothesis. The method was adopted because it possesses a unique estimating property which includes unbiased, efficiency and consistency when compared with other linear unbiased estimates.

4.1 Questionnaire Response Rate

S/N			Percentage Returned
1	Copies of questionnaire Distributed	1439	100
2	Copies of questionnaire Returned	1427	99.2
3	Copies of questionnaire Rejected	12	0.84
	Copies of questionnaire used	1415	98.3

Source: Field Survey 2023

From the table above one thousand four hundred thirty-nine (1439) questionnaires was distributed. One thousand four hundred twenty-seven (1427), was returned which represent 99.2, why twelve was rejected because it was not properly filled, why one thousand four hundred and fifteen (1415) which represents 98.3%

4.2 Demographic Characteristics of the Respondents

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	582	33.8	41.1	41.1
	FEMLE	833	48.3	58.9	100.0
	Total	1415	82.1	100.0	

Sources: Computed by the researcher

The above table reveals that the five hundred and eighty-two (582) of the respondents which represents 41.1% were male respondents, while eight hundred and thirty-three (833) respondents which represent 58.9% were female respondents. By implication, female respondents were more than male respondents by 17.8% in our selected population sample for this study. The implication of this is to enable us to know the number of female and male that successfully returned their questionnaire

STATUS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MARRIED	638	37.0	45.1	45.1
	SINGLE	777	45.1	54.9	100.0
	Total	1415	82.1	100.0	

Sources: Computed by the researcher

In the table above, out of the one thousand, four hundred and fifteen (1415) respondents, six hundred and thirty-eight (638) of the respondents were married, while seven hundred and seventy-seven (777) respondents which represent 54.9 percent are single. It is therefore glaring that the majority of the respondents are single as at the time of this study. Thus marital status table help us to know the number of single, and married, and respondents that answered the distributed questionnaire.

Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	WAEC	576	33.4	40.7	40.7
	BSC/HND	441	25.6	31.2	71.9
	MSC	319	18.5	22.5	94.4
	PHD	45	2.6	3.2	97.6
	OTHER	34	2.0	2.4	100.0
	Total	1415	82.1	100.0	

Source: **Computed by the researcher**

The table above indicates that five hundred and seventy-six (576) respondents which representing 40.7% percent maintain to acquired WAEC while 31.2 percent of the respondents which represents sixty-four hundred and forty-one (441) have BSC/HND. However three hundred and nineteen respondents which represent 22.5 percent either have MSC. Meanwhile, forty-five respondents which represent 3.2 percent were PhD holders. Lastly, thirty-four respondents which represent 2.4 percent indicated others. This as the one of demographic item helps us to identify the education qualification of the respondents.

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	339	19.7	24.0	24.0
	26-33	375	21.8	26.5	50.5
	34-40	365	21.2	25.8	76.3
	41-50	210	12.2	14.8	91.1
	51-ABOVE	126	7.3	8.9	100.0
	Total	1415	82.1	100.0	

Source: Computed by the researcher

Table 4.3 above depicted the age bracket of the respondents. The distribution shows that 24% of the respondents are between the age brackets of 18 to 25 years while 26.5% respondents are within the age bracket of 26-33 years. On the same note, 25.8% of the respondents are within the age bracket of 34 - 40 years. Moreso, 14.8% of the respondents are within the age bracket of 41 - 50 years. Lastly, 8.9% of the respondent is within the age bracket 51-above.

YEARS IN SERVICES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-10	316	18.3	22.3	22.3
	11-15	364	21.1	25.7	48.1
	16-20	375	21.8	26.5	74.6
	21-30	225	13.1	15.9	90.5
	30-ABOVE	135	7.8	9.5	100.0
	Total	1415	82.1	100.0	

Source: Computed by the researcher

The table above shows that respondents whose are in service and fall between 6-10 yrs were three hundred and sixteen (316) which represents 22.3%. This is followed by those in service between 11-15 years with three hundred and sixty-four (364) which represents 25.7%. Again, those that fall in service gap between 16-20 years with three hundred and seventy-five (375) which represents 26.5%. This is followed by those in service between 21-30 years with two hundred and twenty-five364) which represents 15.9%. Lastly, those that fall in service between 30-above years with one hundred and thirty-five (364) which represents 9.5%. The implication of years in-service is to enables us have a clear view of those who have been in service for a particular period of time

4.2 Multiple regression analysis

Multiple regression result was employed to test the effect of independent or explanatory variables on the dependent variables. the result of the multiple regression analysis is presented in the tables below.

Table 4.2.1 summary of the regression result

The result of the multiple regressions formulated in chapter three is presented in the tables below.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.550[a]	.532	.520	1.18238	.122	65.569	3	1411	.000	1.969

a. Predictors: (Constant), TBM, CBM, PBM
b. Dependent Variable: ORGP

Table 3 shows that R^2 which measures the strength of the effect of independent variable on the dependent variable have the value of 53%. This implies that 53% of the variation in preventive maintenance practices such as (time based, condition based and predictive based maintenance) is explained by variations in organizational. This was supported by adjusted R^2 of 52%. In order to check for autocorrelation in the model, Durbin-Watson statistics was employed. Durbin-Watson statistics of 1.9 in table 4.3.1 showed that the variables in the model are not auto correlated and that the model is reliable for predications.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	275.001	3	91.667	65.569	.000[b]
	Residual	1972.601	1411	1.398		
	Total	2247.601	1414			

a. Dependent Variable: ORGP
b. Predictors: (Constant), TBM, CBM, PBM

The f-statistics value of 65.569 in table 4.5 with f-statistics probability of 0.000 shows that the independent variables such as (time based, condition based and predictive based maintenance) has significant effect on dependent variables can collectively explain the variations in profitability.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.485	.137		10.826	.000	1.216	1.754
	TBM	.034	.038	.027	2.883	.007	.041	.109
	CBM	.324	.027	.316	2.033	.000	.271	.377
	PBM	.140	.024	.168	5.716	.000	.092	.188

a. Dependent Variable: ORGP

A'priori Criteria: This is determined by the existing business theories; it also indicates the signs and magnitude of the business parameter under review. In table above, we found out that time based maintenance has a positive sign given its value as 0.034, this implies that a unit increase in time based maintenance increases the organizational performance by 34%, this conform to the a' priori expectation. Condition based maintenance has a positive sign given its value as 0.324; this implies that a unit increase in Condition based maintenance increases the organizational performance by 32%, this conform to a' priori expectation. Preventive based maintenance has a positive sign given its value as. 0.140; this implies that a unit increase in Preventive based maintenance increases the organizational performance by 14%, this conform to theoretical expectation.

However, time based management variable have regression t-value of 2.883 with a probability value of .0.007. This implies that time based management has a positive and significant effect on organizational performance of tissue firm in Nigeria. Condition based maintenance has a regression t-test of 2.033 with a probability value of 0.000 implying that Condition based maintenance variable have positive and significant effect on organizational performance. Preventive based maintenance has a regression value of 5.716 with a probability value of 0.000. This implies that Preventive based maintenance has a positive and significant effect on organizational performance.

4.3 Hypotheses Testing

Hypothesis One

Ho_1: Time based maintenance has no significant positive effect on organizational performance of selected tissue firm in Anambra States.

Interpretation:

Drawing inference from our regression result in table 4.4.5 above, the analysis showed that the t-value of Time based maintenance (TBM) is 3.754, which is more than 2 while its probability is 0.000 less than $p < 0.05$ level of significance and at the 95% level of confidence intervals: (lower bound=0.583, upper bound=0.182) Thus, we reject the null hypothesis (H_0) and accept the alternate hypotheses (H_1) which said that Time based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States.

Hypothesis Two:

Ho_2: Condition based maintenance has no significant positive effect on organizational performance of selected tissue firm in Anambra States.

Interpretation:

From table 4.4.5, Condition based maintenance (CBM) on organizational performance has shown a statistically positive significant relationship on organizational performance of selected tissue firm in Anambra States, with t- value = 2.063 which is more than 2; with p=0.040 less than P< 0.05 level of significance. The 95% level of confidence intervals: (Lower bound=0.009, upper bound= (0.359) Thus, we accept the alternate hypothesis (H_1) and reject the null hypothesis (H_{0S}) which implies that Knowledge conversion has a significant positive effect on Condition based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States..

Hypothesis Three

Ho_3: Preventive based maintenance has no significant positive effect on organizational performance of selected tissue firm in Anambra States.

Interpretation:

Drawing inference from the regression result table 4.4.3 above, the findings showed that t-value of representative Preventive based maintenance (PBM) is 22.755 which is more than 2; with p= 0.002, which is less than P<0.05 level of significance and at the 95% level of confidence intervals: (lower bound=0.286, upper bound=0.400). Based on the above findings, we accept (H_1) and reject H_O) which statistically suggested that Preventive based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States.

CONCLUSION AND RECOMMENDATION

Base on the findings, the following conclusions are drawn;

From the study conducted, it is obvious that time based maintenance practices, condition based maintenance practices, and predictive based maintenance practices are relational dimensions that can influence organizational performance among tissues firms in Anambra State, Nigeria. The empirical results of the study clearly underscore the following:

i. Time based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States (t, 2.883, p, 007)
ii. Condition based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States.(t, 2.033, p,000)

iii. Preventive based maintenance has significant positive effect on organizational performance of selected tissue firm in Anambra States.(t, 5.716, p, 000)

Recommendation

i. Mangers should ensure timely maintenance of every equipment in the organization
ii. Proper and adequate condition-based maintenance records should be kept, and funds should be readily made available for maintenance purposes.
iii. Management should use preventive maintenance applied by applied by technician's teams and managers before any breakdown or failure occurs.

References

Cole S., & Kelly, A. (2011).Effect of Selected Occupational Health and Safety Management Practices on Job Satisfaction of Employees. *Journal of Human Resource Management,* 5(5), 70- 77.

Dilworth, J.B. (1992). Operations management: design, planning and control for manufacturing and services: McGraw-Hill, INC

Galli, B. J. (2020). Measurement System Analysis and System Thinking in Six Sigma: How They Relate and How to Use Them. International Journal of System Dynamics Applications, 9(1), 44–62.

J. B. Barney, (2001) "Firm resources and sustained competitive advantage," J. Manag., vol. 17,

Javani, B., Jafta, N. and Dewa, M. (2022) Maintenance management and impact on organizational performance, a power utility perspective. SAIIE32 Proceedings, 3 rd – 5th October 2022, KwaZulu-Natal, South Africa © 2022 SAIIE [128]-1 no. 1, pp. 99–120

Lam, J. Y. J., & Banjevic, D. (2015). A myopic policy for optimal inspection scheduling for condition based maintenance. Reliability engineering & system safety, 144, 1-11

Liu, B., Wu, S., Xie, M., & Kuo, W. (2017). A condition-based maintenance policy for degrading systems with age-and state-dependent operating cost. *European journal of operational research,* 263(3), 879-887.

Mbamali, I. (2003) The Impact of accumulation deferred maintenance on selected buildings of Two Federal Universities in the Northwest zone of Nigeria. *Journal of Environmental Science* 5 (1) 77 – 83.

Murthy, D.N.P. (2009). Strategic maintenance management", *Journal of Quality in Maintenance Engineering,* 8 (4), 287-305.

Sanket M. N. and Pushparaj K. (2022) Impact of maintenance management on productivity improvement and workplace management of production system in an explosive industry (Solar Industries India Limited, Nagpur). *International Research Journal of Modernization in Engineering Technology and Science* 4(1), 33-42.

Sipumelele, N., Miston M., Thobekani L. and Yusuf L. (2022) Facility Maintenance Management and Its Effects on Employee Performance: A Positivist Approach. *International Journal of Higher Education 11(7); 47-58*

Uforo A. E., Malachi U. U., and Don B. (2022) Maintenance Management and Organizational Performance in Selected Manufacturing Firms, Akwa Ibom State, International *Journal of Business and Management Review, 10(4), 037-59*

Vanseconcelos, N. (2011). Legacy of Implementing Industrial Health and Safety in Developing Countries. *Journal of Physiological Anthropology and Applied Human Science,* 20(6), 311-319.

Venkateswaran N (2016). Total Productive Maintenance (TPM). Practices adopted at manufacturing unit: *An Analysis. Arab J Bus Manage Rev* 7(4): 313

Wernerfelt, B. (1984). Maximizing the potential of strategic typologies for marketing strategy research, *Journal of Strategic Marketing*, 1,171-88

Wild, R. (2012). Operations Management. Sixth Edition. 11 York Road, London: Continuum.

Yang, D., Wang, H., Ren, Y., Feng, Q., Sun, B., Wang, Z., Su, X. (2019). Condition- Based Preventive Maintenance Optimization Approach for Multiple Industrial Robotics with Stochastic Mission. Paper presented at the 2019 Annual Reliability and Maintainability Symposium (RAMS).