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FACILITY MANAGEMENT AND ORGANIZATIONAL EFFICIENCY: A PEARSON PRODUCT MOMENT CORRELATION (PPMC) ANALYSIS APPROACH

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ABSTRACT

The purpose of the study was to examine the impact of facility management on organizational efficiency. The specific objectives were to: examine the relationship between building facility and organizational efficiency, determine the relationship between equipment facility and efficiency, and to investigate the relationship between land facility and organizational efficiency. A survey design was employed in the study. Data for this study were gathered from primary sources through the use of a structured questionnaire from respondents of Flour Mills in Calabar. The study employed Pearson Product Moment Correlation analysis to measure the relationship between variables tested in the study. Based on the analysis of the results, it was revealed that there was a significant relationship between building facility and efficiency, there was a significant relationship between equipment facility and efficiency and there was a significant relationship between land facility and efficiency in Flour Mills, Calabar. The study recommended that facility management activities are relevant to the various aspects and dimensions of an organization, therefore, managers need to have an intimate understanding of how the organization works to create and implement facility management strategy. The authors also recommended that managements need to understand all dimensions of the organization, such as the purpose of the organization, its vision, mission, objectives, core competency and goals and the processes of work, operations, and projects.

Keywords: Building facility, equipment facility, land facility, and organizational performance.

1.0 INTRODUCT

The responsibilities of every good management of an organization should include maintaining a good level of facility to ensure efficiency and productivity. However, result from studies revealed that most companies have failed in the area of facility management. Statistically, maintenance culture is poor among organizations. This, to some extent has contributed to business failures and low business profit (Akpan & Uford, 2023). Facility management has established itself as a key service sector, with a diverse and highly competitive market of Facility management contractors, in-house FM teams, FM vendors, FM consultants and professional FM institutions. The elements of FM range from corporate level in which it contributes to the delivery of strategic and operational objectives on day-to-day basis. Many still view FM in collective terms that lump together all building facilities and services within the organization. When viewed in strategic terms, it becomes a non-core department, supporting services and more importantly the innovation that can be brought about by improving the management of service (Price, 2012).

Over the last 10-15 years, facility management in both the private and public sectors has been evolving from a discipline historically focused on individual buildings to one focused on the total performance of a portfolio of buildings in support of an organization's overall mission. It is also seen as a management of cost-efficiency rather than a method to achieve multi-dimensional enhancement of business competitiveness (Charles & Uford, 2023). However, FM is not just about delivering services in the most effective ways, it is also about providing them within an ever-evolving world and industry. High profile events, such as the British Institute of Facilities Management (BIFM) Annual Awards for Innovation reflects a growing recognition of innovation in the Facility management sector. Facility management has been established in all five continents, though it has traditionally been seen as a poor relation of the property and construction professions (Omirun, 2015).

The discipline deals in property management, financial management, change management, human resources management, contract management as well as health and safety in buildings, engineering services, maintenance, domestic services and utilities supplies (Myeda, 2011; Uford, 2018; Uford & Joseph, 2019). Facilities management is the process by which an organization delivers and sustains support services in a quality environment to meet strategic needs. It may also be defined as "the process by which an organization ensures that its buildings, systems and services support core operations and processes as well as contribute to achieving its strategic objectives in changing conditions (Kumar & Sushi, 2013).

Kincaid (1994) emphasizes the need to focus resources on meeting user needs to support the key role of people in the organizations arid strives to continuously improve quality, reduce risks and ensure value for money. Facilities management lay out an organization's response to vital issues such as space allocation and charging, environmental control and protection, direct and contract employment. Facilities management is relevant to all sectors in developed and under- developed as well as developing countries. Facility management is important to the growth and survival of an organization, particularly in the dynamic society (Keith, 2007). The effectiveness and survival of organizations are largely enhanced by the ability of management to ensure that there is functional equipment, lands and building, infrastructure, fixtures etc. Kearus (2000) observed that companies have lost their effectiveness and productivity, because of poor facilities management. He further explained that poor attitude towards facilities management hampers business' operation.

Facility management is concerned with the delivery of the enabling workplace environment, the optimum functional space that supports the business processes and human resources and not mainly covers the physical equipment of the building (Abdulhamid, Umbugala & Hishamuddin, 2015; Idaka, Ogar-Abang & Kankpang, 2020). Facilities have an influence on organizational effectiveness and it is clear that the introduction of FM, as a response to the need for more effective control and the promotion of effectiveness in the whole workplace, set new management challenges within the organizations. Jones (2000) commented on the perception in Nigeria and states that the culture of management and maintenance has gone down the drain and this has affected virtually our social and economic lives. When facilities are not well managed and maintained it might lead to various defect which can likely constitute nuisance and disturbances to the users of such facilities. Several studies carried out by researchers revealed that there is a link between facilities management and organization efficiency. Despite the effect, organizations still find it hard to manage their facility effectively and this has resulted into losses. This study intends to fill this gap in the literature. The study will provide an overview of the various steps, tools, aspects and issues relating to facility management in Nigeria.

2.0 LITERATURE REVIEW

Facility management is an interdisciplinary field primarily devoted to the maintenance and care of commercial or institutional buildings, such as hotels, resorts, schools, office complexes, sports arenas or convention centers. Jensen (2010), reviewed that an important concept in the facility management field is outsourcing, where the owner enters into an arrangement with external organizations to provide one or more services in preference to their being provided through internal arrangements. The reasons for this action can vary, including lack of in-house resources, lack of expertise and pressure to reduce costs. Unfortunately, confusion can exist because of the close association that facility management has with outsourcing. The two concepts are not synonymous; rather, outsourcing is one means for providing facility related services to the owner organization. Facilities management embraces the concepts of cost-effectiveness, productivity improvement, efficiency, and employee quality of life, it is widely applied to the array of buildings, structures, roads and associated equipment such as universities, industries (Fleming, 2014), hospitals, schools, offices, shopping centres and the like: which represents a single management unit for financial, operational, maintenance or other purposes.

Facility Management activities are relevant to the various aspects and dimensions of organizations. This means that managers need to have an intimate understanding of how the organization works. To create and implement facility management strategy, managers need to understand all dimensions of the organization. Dubem, Stephen and Anthony (2014) defines facility management as the structural activities that are responsible for coordinating all efforts related to planning, design and management of buildings and their systems, their equipment and their fittings, in order to improve the organization's ability to compete successfully in a rapidly changing environment. With this in mind, plant management has to encompass the three cost centers that include local support services and information technology.

Buam (2005) specifies that the purpose of FM is to cover all aspects related to space, environmental control, health and safety and support services. Amarantunga and Baldry (2013)

says that FM is the integrated management of the multitude of services and processes (concerning the buildings, spaces and people), which are not included in the core business, but which are necessary for the functioning of the organization. Alexander and Brown (2006) describes facility management as the process of designing, implementation and control in order to provide and maintain a predetermined level of service that can meet business demands in terms of cost and quality. Yiannis, Paul,and Robert (2012) depicts FM as a profession that includes multiple disciplines to ensure the functionality of the physical environment through the integration of people, places, processes and technology.

2.1 Efficiency

One of the most important and critical matter of facility management is a field maintenance connected with continuous improving of manufacturing systems and its performance evaluation. As Xianhai and Micheal (2011) mention, to measure effectiveness of production equipment companies often use overall equipment effectiveness (OEE). OEE is one of the performance evaluation methods that are commonly used in the production industries. OEE can be considered to combine the operation, maintenance and management of manufacturing equipment and resources. (Dal, 2000) The OEE metric that originally described by Nakajima (1988), can measure level of equipment effectiveness, and also identify loss elements which are classified into six major groups. These six big losses are breakdown, setup and adjustment losses (downtimes), minor stoppage, reduced speed losses, defect/rework (downtime) and yield losses.

Overall equipment effectiveness (OEE) and total effective equipment performance (TEEP) are two metrics, closely related and both reporting the overall utilization of facilities, time and material for manufacturing operations. In fact, OEE and TEEP indicate the gap between the ideal and the actual performance. The OEE metric describes the efficiency of the facility. The index consists of three separate independent coefficients: availability, performance and quality. Each part of this metric can point to an aspect of the process that can be monitored and improved. The OEE metric can be used in all types of industries, the challenging target of this metrics is often around 85 % (Umbugala, 2016). The percentage of scheduled time that the facility is available to operate can be characterized by the coefficient of availability. According to the calculation, the availability is the ratio between the available time and the scheduled time of production. The performance coefficient of the OEE metric can be measured as the amount of parts produced in an ideal cycle time compared to the available time. The quality portion of the OEE metric represents the percentage of the products without defects produced out of the total number of produced parts.

2.2 Research methodology

Survey design was employed in the study. This research focuses on facility management and organizational efficiency in Flour Mills in Calabar. Data for this study are gathered from primary sources through the use of structured questionnaire from respondents of the organization. The study employed Pearson Product Moment Correlation analysis to measure the relationship between variables tested in the study.

2.3 Test of hypotheses

Hypothesis one:

H0: There is no significant relationship between building facility and productivity.

Independent variable: Building

Dependent variable: Efficiency

Test statistic: Pearson's product moment correlation coefficient

The analysis showed a correlation coefficient of 0.814 indicating the existence of strong positive relationship between facility and efficiency. The test was significant at 0.01 significant level and led to the rejection of the null hypothesis which states that there is no significant relationship between building and efficiency. Consequently, the alternative hypothesis was accepted and conclusion reached that there is a significant relationship between building and efficiency.

Table 1: Correlation result of relationship between building and productivity

		Buildi	Efficiency
Building	Pearson correlation	1	.814**
	Sig. (2-tailed)		.000
	Sum of squares and cross-products	138.58	171.21
	Covariance	.250	.236
	N	196	196
Efficiency	Pearson correlation	.814**	1
	Sig. (2-tailed)	.000	
	Sum of squares and cross-products	143.80	238.90
	Covariance	.325	2.56
	N	196	196

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS analysis.

Hypothesis two:

H0: There is no significant relationship between equipment facility and efficiency

Independent variable: Equipment

Dependent variable: Efficiency

Test statistic: Pearson product moment correlation coefficient

The analysis showed a correlation coefficient of 0.725 indicating the existence of strong positive relationship between equipment and efficiency. The test was significant at 0.01 significant level, and led to the rejection of the null hypothesis which states that there is no significant relationship between equipment and efficiency. The alternative hypothesis was consequently accepted and conclusion reached that there is a significant relationship between equipment and efficiency.

Table 2: Correlation result of relationship between equipment and efficiency

		E	Efficiency
EQ	Pearson correlation	1	.725**
	Sig. (2-tailed)		.000
	Sum of squares and cross-products	325.9(	180.32
	Covariance	.401	.372
	N	196	196
Efficiency	Pearson correlation	.72!	1
	Sig. (2-tailed)	.000	
	Sum of squares and cross-products	183.4(	125.31
	Covariance	.307	.2!
	N	196	196

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS analysis by Researcher, 2023

Hypothesis three

H0: There is no significant relationship between land and efficiency

Independent variable: Land

Dependent variable: Efficiency

Test statistic: Pearson product moment correlation coefficient

The analysis showed a correlation coefficient of 0.738 indicating the existence of strong positive relationship between land and efficiency and significant at 0.01 significant level. This led to the rejection of the null hypothesis in favor of the alternative hypothesis which states that there is a significant relationship between land and efficiency. The conclusion was that land significantly related with efficiency.

Table 3: Correlation result of relationship between land and efficiency

		La	Efficien
Land	Pearson correlation	1	.738**
	Sig. (2-tailed)		.000
	Sum of squares and cross-products	38.82	134.55
	Covariance	.417	.544
	N	196	196
Efficiency	Pearson correlation	.738**	1
	Sig. (2-tailed)	.000	
	Sum of squares and cross-products	120.80	280.40
	Covariance	.207	.3270
	N	196	196

**. Correlation is significant at the 0.01 level (2-tailed).

Source: (SPSS Analysis Researcher, 2023).

3.0 SUMMARY OF FINDINGS

Based on the analysis of the results, the findings were summarized thus;

i. There was a significant relationship between building facility and efficiency in Flour Mills in Calabar.
ii. There was a significant relationship between equipment facility and efficiency in Flour Mills in Calabar
iii. There was a significant relationship between land facility and efficiency in First Bank, Calabar

4.0 CONCLUSION

The study empirically examined facilities management and organizational efficiency. The study revealed that building facility, equipment and land facility positively affected efficiency. Facility Management activities are relevant to the various aspects and dimensions of organizations. Facility management as the structural activities that are responsible for coordinating all efforts related to planning, design and management of buildings and their systems, their equipment and their fittings, in order to improve the organization's ability to compete successfully in a rapidly changing environment.

Facilities management embraces the concepts of cost- effectiveness, productivity improvement, efficiency, and employee quality of life. However, the challenge of facilities management is to minimize the operating cost of physical assets whilst simultaneously delivering a service to maximize value for money. Facility management is an area of managerial actions that include wide-range disciplines to ensure the functionality of the business environment in supporting activities connecting together employees, enterprise departments, equipment processes, and technologies.

5.0 RECOMMENDATIONS

In line with the findings, the following recommendations are made;

i. Facility Management activities are relevant to the various aspects and dimensions of organizations. Therefore, managers need to have an intimate understanding of how the organization works to create and implement facility management strategy.
ii. Managements need to understand all dimensions of the organization, such as the purpose of the organization, its vision, mission, objectives, core competency and goals and the processes of work, operations and projects.
iii. Management should adopt structural activities that are responsible for coordinating all efforts related to planning, design and management of buildings and their systems, their equipment and their fittings, in order to improve the organization's ability to compete successfully in a rapidly changing environment.

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