

# Facility Management and Organizational Effectiveness of Manufacturing Firms in Rivers State Nigeria

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## ABSTRACT

This study empirically examines the relationship between facilities management and manufacturing firms' effectiveness in Rivers State, Nigeria. A survey research design was adopted for the study for collecting a wide range of primary data on the subject of study. Results show that facilities management, and assets management has a strong influence on firm performance with a correlation of 0.9939 and t-value of 46.76. We therefore, recommend that organizations should provide adequate and regular inspection of the facilities from time to time so as to prevent any unforeseen circumstances and avoid any major breakdowns and corrective repairs should be carried out regularly on any identified breakdown facilities during inspection and proper records of same should be kept.

## 1.0 INTRODUCTION

Fierce competition, variable trading conditions, high energy costs and other economic elements have forced companies to look at all means of reducing costs and maintaining a market edge (Jones & Jowett, 1998). In these circumstances, facilities management has become established in all five continents, though it has traditionally been seen as a poor relation of the property and construction professions (Grimshaw, 2002). 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 (Atkin & Brooks, 2000).

According to the Centre for Facilities Management (2010), 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 (Keith, 2009).

Center for Facilities Management, (CFM, 2010) emphasize the need to focus resources on meeting user needs to support the key role of people in the organizations and 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 and developing countries.

Facility management is important to the growth and survival of organization, particularly in the dynamic society as ours (Dell, 2008). The effectiveness and the survival of organization are largely enhanced by the ability of management to ensure that there is functional equipment, lands and building, infrastructure, fixtures etc. Ejiofor (2004) observed that companies have lost their effectiveness and productivity, because of poor facilities management. He further explained that poor attitude towards facilities management hamper business' operation. To him, management operates below capacity as a result of facilities management.

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 company has failed in the area of facilities management. Statistically, maintenance culture is poor among companies. This, to some extent has contributed to business failures and low business profit.

Egboluche (2009) 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 effectiveness; for example, James (2000), revealed that there is link between facilities management and effective operations of business firm. Similarly a study conducted by Johnson (2004) revealed that good facilities management enhanced productivity. Despite these findings and suggestions, organizations still find it hard to manage their facility effectively and this has resulted into losses.

This paper therefore intends to investigate empirically the extent of organization effectiveness as occasioned by proper facilities management. 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 facilities management in Nigeria. The study will be beneficial to a lot of individuals, companies and research students. Specifically, the study will help management develop strategy that will enhance productivity, effectiveness and efficiency. Besides, it will evoke greater consciousness on the need for facilities management. Facilities management is still an emergent practice in this part of the world.

The rest of this paper will be organized as follows: section two reviews literature associated with facilities management and organization effectiveness in general and in particular for Nigeria. The third section focuses on the research methodology, section four presents the results and discussion and section five provides the conclusion and recommendations.

## **2.0 LITERATURE REVIEW**

### **2.1 Concept of Facility Management**

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 (Wondell, 1990). Atkin & Brooks (2000), 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 (Cotts, 1999), it is widely applied to the array of buildings, structures, roads and associated equipment — such as universities, industries (Stipanuk, 2002), hospitals, schools, offices, shopping centres and the like — which represents a single management unit for financial, operational, maintenance or other purposes.

### **2.2 Integrating Facility Management in an Organization**

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 (Kincaid, 1994). To create and implement facility management strategy, managers NEED to understand all dimensions of the organization. Four basic dimensions according to Nutt, (2002) are:

- 1) The purpose of the organization, its vision, mission, objectives, core competency and goals.
- 2) The processes of work, operations and projects.
- 3) The environmental context, organizational behaviour, culture and market.
- 4) The product(s), infrastructure, property and facilities.

A clear understanding helps shape appropriate facility management strategy and plans, and supports the use of the processes and operations most suited to each organization in its existing property and facilities. Johnson & Scholes, (2002) emphasize that each aspect in itself is important, but none is adequate alone. The manager who aspires to manage or influence strategy must be able to see a larger picture. A perception of the whole rather than just the parts is critical.

### **2.3 Facilities Management and Organizational Effectiveness**

Facilities management embraces the concepts of cost-effectiveness, productivity improvement, efficiency, and employee quality of life (Cotts, 1999). 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 (Campbell, 2003). Thus, there is a need to describe (specify), measure (assess performance), and qualify (price) the output (end products and services). Normally, facilities managers rely upon ratios which provide very little understanding of how facilities operate and how they contribute to core business goals or objectives. The development of generic methodologies to understand the relationship between facilities and core business goals and objectives of organizations in buildings is essential (Loosemore & Hsin, 2001).

Facility performance is usually measured via performance indicators and by a process known as benchmarking in relation to performance outcomes. Indicators represent a set of measures focusing on the aspects of performance that are most critical for the current and future success of the organization. The focus, therefore, is either on the aspects of performance that require improvement, or on those which must be kept within a specified level to ensure the continued success of the organization (Baker, 2002).

As the success of facilities managers depends on asset performance, they need to determine a set of Key Performance Indicators (KPIs) to help organizations set and reach individual goals, and then use these KPIs to measure the progress made towards achieving these goals — especially when the goals are about to change or need to be improved (Timo, 1997). Although most indicators concern financial outcomes there is no single performance indicator for every organization (Baker, 2002). Facilities managers and management teams need to tailor their own for individual measurements.

## **2.4 THEORETICAL APPROACHES TO FACILITY MAINTENANCE**

### **2.4.1 Maintenance Strategies**

According to Chika (2008), no single support technique and system can adequately give required solutions for both natural and artificial defects on structures. Chika recommends the utilization of an arranged support technique which is termed as Planned Preventive Maintenance. Olanrewaju et al., (2011, p.263) assert that "there is a need for shift from maintenance management principles to value-based initiatives". This contention is requiring a change in upkeep administration forms.

### **2.4.2. Procurement Strategies**

Barret & Baldry (2003) describe procurement as the procedure by which a client utilizes a different organization under an agreement to perform a capacity or to be performed by in-house staff. They conclude that HEIs as Corporate organizations can't stick to embracing a specific procurement procedure keeping in mind the end goal to accomplish quality of work done and guarantee successful project delivery.

Brian & Brook (2009, p.44) state that, "the choice between in-house and outsource services is not always clear cut". They argued that, the management of organization should take the issue of cost as first priority. Consistent with the above, RICS (2009) posits that, a high level of mastery is one of the benefits of outsourcing. The report further clarifies that, in-house specialized staff (direct labour) carries out specialist work, particularly where breakdowns must be attended to promptly or where security is in high need. An examination must be made into the estimation of the task before a choice is taken as to which of the two strategies or mix is to be implemented and use (RICS, 2009).

### **2.4.3. Maintenance Methods**

David (1999) categorizes facility maintenance into the, viz: preventive, predictive and corrective techniques. The author clarifies further that, repairs or placement of works can be minor or major. The planned preventive maintenance strategy was recommended by Chika (2008), while Justine & Keith (2008, p.361) posit

that, “in the United Kingdom a stock condition survey (combination of predictive and curative) is the common tool used to assess the need for maintenance”. Furthermore, Oyewande, 1992; Taiwo, 2010 and Akinpelu, 2002) recommend the utilization of preventive support technique as a measure to turn away inevitable breakdown of facility. RICS (2009) affirms that the blends of preventive and corrective maintenance systems are required for facilities to be tough and perform well. Iwarere & Lawal (2011) state that, every open facilities can be used effectively and viably if a mix of preventive and corrective techniques are utilized.

The reviewed literature has stressed the need for proper facility maintenance to achieve organizational effectiveness as such more empirical analysis is required to shed more light on the role of facility maintenance on the effectiveness on manufacturing organization in Rivers state. Based on the foregoing, the following hypothesis was tested:

H<sub>0</sub>: There is no significant relationship between facilities management and organizational effectiveness.

### 3.0 METHODOLOGY

This study adopts a cross-sectional survey using judgmental sampling technique to select 27 manufacturing firms from the population of manufacturing firms registered with Manufacturing Association of Nigeria (MAN) in Rivers State. Primary data were elicited from respondents who are top level personnel in the organization using well-structured questionnaire in order to ascertain the influence of facility management on organizational effectiveness. Data generated from the sets of questionnaire were analyzed using descriptive statistical tool and the hypotheses were tested using the Spearman’s Rank Correlation represented by rs and calculated thus:  $rs = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$

Where: d<sup>2</sup> = square of the difference of the two variables  
 n = sample size

### 4.0 RESULT AND DISCUSSION

#### 4.1 Demographic Analysis

Table 1 shows the profile of respondents from selected manufacturing firms and table 2 shows the years of work experience.

**Table 1: Position of Respondents**

Position	Num	Percentage (%)
Marketing manager	5	18.52
Operation manager	4	14.81
Production manager	7	25.93
Supervisor	11	40.74
Total	27	100

Source: Field work 2015

**Table 2: Respondent’s Year of Working**

Years of Working	Num	Percentage (%)
Below 5 years	5	7.41
5 – 15 years	7	25.93
16 – 25 years	12	44.44
Above 25 years	27	22.22
Total	27	100

Source: Field work 2015

From the respondent’s demographic data, it was discovered that the respondents have the capacity to give information on the findings of the research.

Table 3 and table 4 shows the firms' demographic data which comprise the age of the selected firms and their sizes.

**Table 3: Age Firm**

Age of Firm	Num	Percentage (%)
Below 5 years	-	-
5 – 15 years	5	18.52
16 – 25 years	18	66.67
26 years and above	4	14.81
Total	27	100

Source: Field work 2015

**Table 4: Approximate Size of Firm**

Size of Firm	Num	Percentage (%)
Below 50	5	18.52
50 to 100	18	66.67
101 to 200	12	44.44
201 to 300	-	-
Above 300	-	-
Total	27	100

Source: Field work 2015

From the firm demographic data, it was discovered that the large amount of the firm have the capacity to give information on the findings of the research.

Table 5 shows the responses obtained from respondents on the relationship between facilities management and organization effectiveness.

**Table 5: Summary of Findings on Research Question**

Item	Variables	Very Greatly/Greatly		Very Low/Low	
		Num	%	Num	%
Q	Does facilities management embraces the concepts of cost	23	85.19%	4	14.81%
Q	Does facilities management helps your firm to increase her effectiveness	24	88.89%	3	11.11%

Source: Field work 2015

From the table 5, 85.19% of manufacturing firm's managers agreed that facilities management embraces the concepts of cost which affects the performance of their firm. Also, 88.89% accept that facilities management helps their firm to increase effectiveness which affects the performance of their firm.

Furthermore, the correlation values of the relationships between facilities management and organizational effectiveness is shown table 6. The ranking of facilities management (x) and organizational effectiveness (y) were obtained from the responses to the research questions.

Table 6

X-rank	Y-rank	D	d <sup>2</sup>
2	3	-1	1
4	1	3	9
1	4	-3	9
3	2	1	1
			Σd <sup>2</sup> = 20

$$r_s = 1 - \frac{6\sum d^2}{n(n^2 - 1)} = 1 - \frac{6(20)}{27(27^2 - 1)} = 1 - \frac{120}{27(729 - 1)} = 1 - \frac{120}{27(728)}$$

$$= 1 - 0.0061 = 0.9939$$

The relationship between facilities management and organizational effectiveness indicates that  $r_s = 0.9939$ . This indicates that a strong positive relationship exist between facilities management and organizational effectiveness.

#### 4.2 TESTING OF HYPOTHESIS

For a small sample size, the test for hypothesis where  $n$  is less than or equal to 30. The t-statistic is used, where the co-efficient of correction  $r$  is given as:

$$t = r \sqrt{\frac{n - 2}{1 - r^2}}$$

Where:

$r_s$  = Rank Correlation Co-efficient

$n$  = Sample size

The level of significance for the hypotheses is given at 95% confidence interval (0.05 significance level) at  $n - 2$  degree of freedom (df).

Decision Rule: where the t-calculated value is less than tabulated value, the null hypotheses ( $H_0$ ) will be accepted otherwise rejected.

$H_0$ : There is no significant relationship between facility management and organizational effectiveness.

$$t = 0.9939 \sqrt{\frac{27 - 2}{1 - 0.9939^2}}$$

$$t = 0.9939 \sqrt{\frac{25}{1 - 0.9878}}$$

$$t = 0.9939 \sqrt{\frac{25}{0.0122}}$$

$$t = 0.9939 \sqrt{2213.11}$$

$$t = 0.9939(47.94)$$

$$t = 46.76$$

**Decision:** Since the calculated t statistic (46.76) is greater than the tabulated value (critical t value) of 1.7530, the null hypothesis is rejected and the alternative accepted. Having accepted the alternative hypothesis, it implies that there is a significant relationship between facility management and organizational effectiveness in manufacturing firms in Rivers State. Critical value of 5% level of significance with degree of freedom = 2.

### 4.3 DISCUSSIONS

#### **Facility Management and Organizational Effectiveness**

Asset management is generally defined as the process of managing and guiding the acquisition, use and disposal of assets in order to maximize service delivery while also managing risks and costs over the lifespan of the asset. Facilities management and maintenance are integral to effective asset management. Proper facilities maintenance helps nations to preserve its assets and enhance the nation's ability to provide functional infrastructural facilities for the future use of her citizenry. However, there is poor maintenance attitude of people towards public facilities provided by the government (Adeleye, 2011). To this extent facilities that were meant to benefit the masses are just rotting away, being wasted without being put to any good use as people are not interested in making such facilities sustainable. The result therefore, is that public facilities do not last long due to lack of maintenance. This shows that without a strong maintenance culture, infrastructural development will amount to nothing.

From the study it was discovered that facilities management has great effect on organizational effectiveness with a correlation of 0.9939 and effective management of assets also has a great impact on organizational growth which is in conformity with what Cotts (1999) opined: facilities management embraces the concepts of cost-effectiveness, productivity improvement, efficiency, and employee quality of life. Also, several studies carried out by researchers revealed that there is link between facilities management and organization effectiveness; for example, James (2000), revealed that there is link between facilities management and effective operations of business firm. Similarly a study conducted by Johnson (2004) revealed that good facilities management enhanced productivity.

### 5.0 CONCLUSION AND RECOMMENDATIONS

Facility management or maintenance is an investment because resources are spent today to do maintenance in order to reduce cost or get higher benefits in the future as compared to if the resources are not spent (Kelly, 2006). However despite this opinion, maintenance is generally separated from true investment because it is a matter of restoring an old function or keeping up an old function. Facilities maintenance management is an important tool needed for effective use of any facility Furthermore, Abdul-Moshen (2008) is of the opinion that maintenance means to hold, keep, sustain or preserve facilities to an acceptable standard.

Also, facility maintenance is the effort in connection with different technical and administrative action to keep a physical asset, or restore it to a condition where it can perform a require function. Therefore, facility management is a combination of activities to retain a facility in its functional state. Adeleye (2009) commented on the perception in Nigeria that the culture of facilities maintenance has gone down to 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; thereby affecting the well-being of the society now and in the future. It is where infrastructural facilities meet the needs of the human populace while conserving the environment at the same time.

Infrastructural development is the basis and bedrock of any development effort in the world today. It is important that it is not enough for facilities of development to be put in place; rather it is more important for these facilities to be adequately and properly maintained so that the purpose for which they are meant would be accomplished. Facility management is a vital element in supporting any organization in carrying out its core business, whatever that may be, by providing a safe and effective environment in which to operate. Conclusively, it is very important for managers to be aware of the importance of facilities management because it holds the key to organizational effectiveness and growth.



## 5.1 RECOMMENDATIONS

From the result of this study the following recommendations are suggested:

- 1) Adequate and regular inspection of the facilities should be done from time to time so as to arrest any unforeseen circumstances and avoid any major breakdowns.
- 2) Corrective repairs should be carried out regularly on any identified breakdown facilities during inspection and proper records of same should be kept.
- 3) Adequate workshops and seminars regarding new technological innovation on maintenance programmes should be organized from time to time to upgrade the knowledge of the personnel involved in maintenance.

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