



Effect of Project Management on the Performance of Selected Construction Firms in Nigeria

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ABSTRACT: The main objective of this study is to investigate the Effect of Project Management on the Performance of Selected Construction Firms in Nigeria. The fast economic development has improved the demand for construction of infrastructure and services globally. Sustainable growth and globalization are the new 'Zeitgeist' of the 21st century. In order to execute these projects efficiently and to meet the useful aim of the projects within their lifespan, an efficient project management practice is desirable. The specific objective of this study is to analyze the effect of project management practices on organisational performance and examine the significant relationship between quality project management and technical success. A survey research design was adopted and copies of questionnaire were administered on 272 employees in project and engineering department of the selected construction companies, using disproportionate stratified sampling technique. The data collected were analyzed using descriptive statistics, linear regression model, and Pearson product moment correlation. The questionnaire was validated using content validity. The reliability of the questionnaire was confirmed by determining the correlation coefficient of the data collected at two different periods. The study discovered that there is project management practices carried out by the construction firms to enhance performance. It is recommended that more attention be placed on organising project management practices according to their effect and influence and more emphasis should be put on communication and risk management by developing plans for effective communication and risk handling when carrying out projects.

KEYWORDS: Project, Management, Performance and Construction firms

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I. INTRODUCTION

Management is the process of implementing organizational objectives and planning for utilization of resources so as to achieve predetermined organizational goals. To achieve this management provided a structure in which activities are identified resources allocated, master routines are set, placements and procedures established to guide performance of duties. However, in this era of globalization sustainability overrides stability as organizations can no longer ignore the turbulence in external environment. Success of organizations today is determined by their ability to tap into the latest technology and adapting it to drive organizational processes to meet the ever changing demands of their stakeholders.

Project management integrates the project management process of initiation, planning, executing, monitoring, controlling and closing, progressively through the project life cycle with the aim of satisfying the stakeholders and constituents according to the project's established requirements. Stakeholders are those who have a direct stake in the project while the project's constituents are those who may be affected by the penalties of the project. Project success is typically created when the stakeholders and constituents show their collective fulfillment according to the extent of their involvement.

The management is expected to be on top of things to drive and even alter their customers taste by continuous improvement thereby surprising them with new services or products. With the advancement of technology, sophistication of customers and increasing emphasis on globalization managers seem to be searching for new approaches to management enterprises. The project management approach does well in creating, acquiring and transferring knowledge and modifying behavior to reflect new knowledge. While practitioners still assert that project management is a financial measure that cannot address complex issues associated with managing organizations, it underlines systematic problem solving, experimenting with new ideas, acquiring from experience of experts. This paper is to explore how project management approach can be adopted to make organizations gain a competitive advantage.

II. STATEMENT OF THE PROBLEM

Within the sphere of a given project there are several project management activities. Several ways of carrying out these activities emerge and become accepted as day to day practices. The need to meet certain environmental and social challenges, as may be faced by a particular organization, may cause the adoption of certain project management practices. Personnel involved in project management may also adopt certain project management practices and stick to them for purposes which may however not relate to the project success. Several practices are therefore carried out in the management of projects but not recognized as project management practices.

The need to obtain successful projects calls for the need to also undertake optimum practices. Performance of group of projects managed by an organization may differ from performance of another group of projects with similar characteristics but managed by another organization. The kind of project management practices carried out by the different organizations for achieving project success may also influence variation in the performance of the projects. The significance of such differences in performance of the groups of projects is therefore necessary for determination of the characteristics of influential project management practices. There would therefore be the need to promote optimum practices and a second look taken at others that confront the success of building projects.

III. OBJECTIVES OF THE STUDY

The main objective of the study is to examine the effect of project management on the performance of selected construction firms in Nigeria. The following specific objectives were formulated for the research work;

- i. To analyze the effect of project management practices on organisational performance.
- ii. To examine the significant relationship between quality project management and technical success

IV. RESEARCH HYPOTHESES

The study will be conducted with the help of the following alternate hypotheses:

- H₁: There is project management practices carried out by the selected construction firms
H₂: There is a significant relationship between quality project management and technical success

V. RESEARCH METHOD

This research therefore covers three selected construction firms in Abuja, namely Arab Contractors, Energo Nigeria Limited, and Dantata and Sawoe Construction Company, Abuja. Secondary data were obtained through books, journals, and internet. Empirical works of other scholars were consulted. A sample size of 272 was obtained from the population of 850 at 5% error tolerance and 95% degree of freedom using Yamane's statistical formula $272(100\%)$ of the questionnaires distributed 260 (96%) were returned and 12(4%) were not returned. The questionnaire was designed in Likert scale format. The researchers conducted a pre-test on the questionnaire to ensure the validity of the instrument. Pearson moment product co-efficient and regression analysis were used to test the hypotheses

VI. LITERATURE REVIEW

6.1 Concept of Project Management

Project management has gradually been a strategy used by organizations to build their plans to attain their goals. Since the beginning of the 2000s, project management (PM) and its matters have been developing in relevance in a more precise way, even being accepted as organizational model [1]. This new inclination has become strong to create a new group of organizations, composed by those that handle all or almost every organizational doings by projects: project-based organizations [2]. Considering this new state faced by most of the recent firms, their managers also need to be much involved to achieve success in project management.

The kind of construction is such that the manager often must act quickly on his own initiative, and it is required that he be empowered to do so. To be effective, he must have full power of the job and be the one voice that talks for the project. Project management is a task of executive leadership and offers the cohesive force that binds together the different elements into a team effort for project completion. Huge projects normally will have a full-time project manager who is a delegate of the firm's top management or who accounts to a senior executive of the company.

Projects are organisational activities and arise in organisations for several reasons, such as market demands, strategic opportunities or needs, technological advances, and legal requirements. They have a direct effect on the organisation's results. For this reason, projects, project performance, and their antecedents are still the frequent subject of research.

Much of project performance can be attributed to the personal characteristics of the project manager (PM). Some theorists emphasise that behavioural aspects associated with the PM, such as attitudes, are related to

project performance. However, there is no consensus or uniformity in regard to the methods of measuring the PM's personal characteristics.

6.2 Project success

There are numerous ways and criteria to assess the development and success of projects; the most outdated is based on the so-called "iron triangle", comprising the principles of cost, time and quality [3]. Thus, a project that would not overly move away from the primary budget, meet the timeline and fulfill the requirements established by stakeholders would be considered successful.

When contemplations about project management success are made, it is likely to find and use many different approaches. One of the best traditional ones is the iron triangle method. It confirms that three main aspects that must be achieved together characterize projects: scope, cost and time. [2] States that the scope as "the work done to deliver a product, service, or result with the particular features and functions". In addition PMI method cost management as: "the cost of resources needed to accomplish project activities the outcome of project decisions on the subsequent cost of using, maintaining, and supporting the product, service, or result of the project" [2], and lastly time management as "the processes needed to manage the timely completion of the project" [2].

However, throughout the years, these criteria often is believed to be fundamental - have been slammed for being limited and several efforts have been made to create a more inclusive overview. These attempts can be categorized in two different approaches: addition of more sizes to the basic criteria, or reduction to a single evaluation criterion.

6.3 Sustainability in Project Management

The main concepts about sustainability in project management, as well as the gaps related to the intersection between both topics. In addition, is discussed the literature view remaining to the integration of support in project management. The sustainability is increasingly perceived as necessary for considering the social, economic, and environmental consequences related with the way projects and their maintenance systems are designed, constructed, operated, maintained, and eventually eliminated [4].

The execution and dimension of sustainability ideologies remain in the early stages and many procedural and conceptual issues have not yet been tackled [5], [4]. Tools and practices to support choice making are necessary for methodically including sustainability principles in project evaluation, production, and processes and in project selection. In addition, the expansion of greening tools, which have objectives such as contamination reduction or continuous improvement, must be converted into sustainability tools that focus on final objectives or results, such as ensuring health and ecosystem integrity [6].

In addition, in the modern era, it is difficult to think about economic development without the similar construct of protecting the environment and the mutual assistances to society. According to [7], a crucial premise of sustainability is that economic well-being is inseparably linked to preservation of the environment and the well-being of the human populace. Thus, there is a request for a business management standard that makes the linkage between value formation with ecological and social compatibility and bonds these two ideas in a steady equilibrium [8].

6.4 Project Performance Criteria for Construction Projects

[9] Stated that project success is an abstract concept, and there is not a generally accepted definition. He cited [10] on the development of a composite project success measure of ten criteria to figure out the correlation between project success and Project Managers' leadership style. These ten criteria were mainly used to determine the performance of engineering projects, information projects and organizational projects.

Also cited [11], project success criteria varied in fields, and then the indicators of time, cost, health and safety, profitability and quality, technical performance, functionality, productivity, satisfaction, environmental sustainability were categorized into "objective measures" and "subject measures," and were stressed especially for design/build projects of construction industry. As presented in [12] below, the Project Performance criteria for construction projects were according to the attributes of construction projects

VII. TEST OF HYPOTHESES

Hypothesis one

H₁: There is a significant relationship between project management practices on organisational performance

Table 1: Table of correlation between project management practices and organisational performance:
Correlations

		project management practices	organisational performance
project management practices	Pearson Correlation Sig. (2-tailed) N	1 260	.473** .000 260
organizational performance	Pearson Correlation Sig. (2-tailed) N	.473 ** .000 260	1 260

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

According to above calculations is observed that amount of correlation coefficient between project management practices and organisational performance is equal to 47.3 per cent and considering that a significant level is less than 5%. That is there is a positive relationship between project management practices and organisational performance. This implies that one percent increase in project management practices will lead to 47.3% increase in organisational performance

Table 2: Regression analysis test of project management practices and construction firm performance
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773 ^a	.624	.722	3.96426

a. Predictors: (Constant), project management practices

Regression coefficient of $R = .773$ or 77.3% indicate that relationship exist between independent variables and dependent variable. The coefficient of determination $R^2 = 0.624$ which show that 62.4% of variation in organizational performance is explained by project management practices. The adjusted R-square in the table shows that the dependent variable, (organizational performance) is affected by 72.2% by independent variable (project management practices). It shows that there are positive effects of project management practices on organizational performance.

Table 3: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15.036	.806		18.644	(Constant)
project management practices	1.319	.125	.473	10.520	project management practices

a. Dependent Variable: organizational performance

The coefficient of determination for project management practices is positive (1.319) and is highly significant (0.000) in organizational performance. The p-value of 0.000 is less than the t-statistic value of 10.520 and the standard error value of 0.125. This implies that a unit increase in project management practices will lead to 1.319 increases in organizational performance. Therefore, the Null hypothesis is rejected and alternate hypothesis is accepted, meaning that there is a significant relationship between project management practices on organisational performance.

Hypothesis two

H₂: There is a significant relationship between quality project management and technical success

Table 4: Table of correlation between Quality Project Management and Technical Success Correlations

		Quality project management	Technical success
Quality Project Management	Pearson Correlation Sig. (2-tailed) N	1 200	.499** .002 319
Technical Success	Pearson Correlation Sig. (2-tailed) N	.499 ** .002 319	1 200

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

According to above calculations is observed that amount of correlation coefficient Quality Project Management is equal to 49.9% and considering that a significant level is less than 5%. Then can say that there is a positive relationship between Technical Success and Quality Project Management. This implies that one percent decrease in Quality Project Management will lead to 49.9% increase in Technical Success

Table 5: Regression analysis test of Quality Project Management and Technical Success Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.899 ^a	.849	.747	3.90132

a. Predictors: (Constant), Quality Project Management

Regression coefficient of R = .899 or 89.9% indicate that relationship exist between independent variables and dependent variable. The coefficient of determination $R^2 = 0.849$ which show that 84.9% of variation in Technical Success is explained by Quality Project Management. The adjusted R-square in the table shows that the dependent variable, (Technical Success) is affected by 74.7% by independent variable (Quality Project Management). It shows that Quality Project Management is responsible for technical success in Construction Company.

Table 6: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	16.960	.593		28.596	(Constant)
Quality Project Management	1.733	.154	.499	11.257	Quality Project Management

a. Dependent Variable: technical success

The coefficient of determination for Quality Project Management is positive (1.733) and is highly significant (0.002) in ensuring technical success is well carried out. The p-value of 0.000 is less than the t-statistic value of 11.257 and the standard error value of 0.154. This implies that a unit increase in Quality Project Management will lead to 1.733 increases in Technical success. Therefore, the Null hypothesis is rejected and alternate hypothesis is accepted, meaning that there is a significant relationship between quality project management and technical success

VIII. CONCLUSION

This paper finds out that if project management practices are well implemented, there is a high possibility of having a practical project that will assure a sound business success. This is related with the corresponding rise with the cost of production. The decrease in the number of local construction companies striving actively within the last few years could be credited to the increasing cost of production and other environmental influence.

Leading Organizations in this modern time are those with leaders who have been able to disaggregate their organizations into series of project whose performance is monitored and evaluated before they are integrated into the system. Project portfolio management is the mainstay of successful leaders who cannot afford to drive whole organizations that are likely to go under.

The approach help them to determine performance using planned budget or schedules which is quite easy if individual milestones have been reached as compared to measuring revenues or qualitative subjective factors. Out of all these practices this study found out that if these projects are well managed, there is a high possibility of having a viable and sound business success.

IX. RECOMMENDATIONS

Based on the findings from the study on the effect of project management on the performance of selected construction firm and in light of data collected by personal observation and though the questionnaire conducted in the organization; it is necessary to offer the following recommendations.

- i. It is recommended that more attention be placed on organizing project management practices according to their effect and influence.
- ii. Project cost management and project scope management practices should receive immediate priority due to their great on project and subsequent organisational performance.
- iii. To conserve the construction projects after its completion, the quality of materials used in construction projects must not be compromised.
- iv. More emphasis should be put on communication and risk management by developing plans for effective communication and risk handling when carrying out projects.
- v. More organisation performance metrics recently developed in other research works like benefit to end users, benefit to national infrastructure should be included for performance Measurement.
- vi. With this, the projects should not necessarily be organization based and will be more useful to all stakeholders. Embracing a tactical approach to engaging in project management practices is recommended through implementing customer satisfaction surveys, meetings and communication effectiveness evaluation forms and analysing the turnaround time for outstanding issues and informally through listening observing and conversing with relevant parties.

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