

THE INFLUENCE OF IMPLEMENTATION PHASE PRINCIPLES ON PROJECT PERFORMANCE WITHIN THE BUILDING INDUSTRY IN ABUJA, NIGERIA

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ABSTRACT

The building industry contributes immensely to the development of any nation even though its contribution is less than the manufacturing industries; it is a major player in the socio-economic development of many countries globally. However, recently, issues of quality, costs, reliability and human and environmental safety have emerged posing a challenge to the growth of the industry. This is as a result of poor implementation phase principles in the industry. Yet, poor implementation in the Nigerian Building Industry (NBI) was linked to its inability to deliver service effectively and efficiently; and these are obstacles on the Nigerian economy. This study therefore sought to determine how implementation phase principles may influence project performance within the building industry in Abuja, Nigeria. Explanatory and descriptive approaches were used to obtain data from completed project files (three from both public and private sectors respectively) and professionals from the building industry. Stratified and purposive random samplings were used to select completed projects and qualitative data for the purpose of analysis. The results revealed that implementation phase principles were not adopted due to poor management of projects, unnecessary rush in project implementation, inadequate planning and budgetary provisions, costly project execution. Still, the current traditional system is not working, but if implementation phase principle is employed, it could improve project performance and will reduce cost and time overruns.

Keywords: Building Industry, Implementation Phase Principles, Influence, Project Performance.

INTRODUCTION

The building industry continues immensely to the development of any nation even though it contributes less than the manufacturing industries. It is a major player in the socio-economic development of many countries globally. However, recently, issues of quality, costs, reliability and human and environmental safety have emerged posing a challenge to the growth of industry.

The inability to implement policies, plans or projects is widely recognized as a major weakness of contemporary planning in developing countries (Achuenu *et al*, 2000). If a project does not result in change necessary to achieve desired goals and objectives, it is meaningless. Goals and objectives have to be translated into action and it is their implementation that provides progression from plan to action and to changes in economic, social and physical environments (Inuwa *et al* 2013; Usman *et al* 2010; Usman *et al* 2014).

Implementation phase principle is the third segment of the Life Cycle Management (LCM). This is a process for improving project delivery. The implementation phase principles include: mobilization, commissioning of the project, procurement, determination of cash flow, consultants and Government agencies as well as the construction processes which affects cost, time and quality standards. Implementation is the execution of the planned procedures in the building construction process used in enhancing project performance within the building industry. These are stages that when carefully followed results to project delivery within the building industry in Abuja, Nigeria.

The study sought to identify how implementation phase principles may influence project performance within the building industry in Abuja. Professionals (Architects, Builders, Engineers, Quantity Surveyors, Urban and Regional Planners and Contractors) were asked to respond to several questions on the implementation phase principles and to determine how implementation phase principles influence many project performances within the building industry.

Project implementation and management is a means of avoiding the ills inherent in the construction sector and which lead to project failure, incompleteness, and abandonment (Idoro, 2014; Ofori, 2014). However, the success of any building project in public or private sectors depends on the project manager's staff appointment and control, and strict monitoring of time, cost, material, quality and environmental constraints (Nwachukwu & Fedelis, 2010). Project implementation can be used to mean the whole process of translating broad policy goals and objectives into visible and specific programmes of action. This forms the interaction between the setting of goals and the actions required to achieve them.

However, well formulated management programme or policy, unless action is taken to implement it, it remains only as paper work. Programme implementation is the full range of managerial activities associated with putting the chosen strategy into place, supervision of its pursuit, and achieving the targeted result (Obi, 1999). Nevertheless, if there is no commitment from the organization's leaders to implement a strategic plan and to achieve quality, any effort to actualize it can lead to cynicism and lessen the likelihood of its adoption and success in future. Plan implementation results from administrative decisions on how to do things and create fits between management policies and operations.

Jambol (2012) opined that administrative and managerial elements are necessary to put a management policy into place and that full implementation can take several months to years depending on the amount of coordination involved. His findings include building an organization capable of carrying out the policy successfully, developing budgets, and sharing resources internally on activities critical to strategic success, motivating people and modifying their duties and jobs to better fit the requirements of successful policy implementation, and providing the internal leadership needed to implement the plan and to keep improving on policy execution. Ofori (2014) further proposed three steps for effective strategy implementation: Developing an organizational structure to delineate lines of

authority and relationships; managing organizational activities, ensuring effective performance, and monitoring the effectiveness of policies. These implementation tasks help in the building of a capable organizational structure and are further explored in detail hereafter.

Mintzberg (1979) in Obi (1999) defined the structure of an organization as the sum total of the way in which it divides its labour into distinct tasks and then achieves their coordination. Structure is designed to support the accomplishment of goals and implementation of policies. Jones *et al* (2003) stated that when a capable organizational structure is built, each functional unit within the organization is clear regarding what is expected of it in the planning process, and made aware of how their respective contribution underwrite the success of planning in the organization. Idoro (2012) pointed out that structure of a firm is the framework within which both strategy and strategic management occur and further advised that both strategy and structure are interrelated. This link between strategy and structure, well known by state business men, has been verified by an extensive research programme conducted under the auspices of Harvard University and Manchester Business School by a good number of scholars (Gransberg & Elliot, 1997). Their findings summarized the fact that structure follows strategy and that a company's strategy determines its structure. Ofori (2014) in a similar study further extended this exploration of the link between resources, strategy and structure to small and medium size building firms.

Human, capital and material resources are key elements in the development of any project within the building industry. Stoner & Freeman (1989) in Usman (2006) recognized the role and importance of people as key to good management. He asserted that management is getting things done through people (Daft, 2010). Nonetheless, stated that the job of managers is to give direction to their organizations, provide leadership; and decide how to use organizational resources to accomplish goals (Druker, 1974 in Daft, 2010).

BUILDING PROJECT MANAGEMENT

Building project management expands tremendously in principle and practice because each project has a unique style of management adopted for it. Gupta (2010) advocated that a manager of a construction project must assess each situation, noting its difference from others, and then selects the appropriate management approach. Robert and Wallace (2004) argued that certain fundamental strategic orientations emerge from projects depending on the different actions and institutions used to build management standards in public and private organizations in developing countries. Wideman (2004) argued that alternative approaches such as design and build, management contracting, and building management have been on the increase. He further noted that complex building projects undertaken by multinational corporations need efficient project managers.

The Chattered Institute of Building (1982) in Usman (2006) defined project management as being "the overall planning and control of a project from inception to completion aimed at meeting a client's requirements and ensuring completion on time, within cost and according to agreed quality". This definition corresponds to the practice of professional building management in the United States. Rapidly advancing technology, increasing complexity of operation, and growing competition

in the market have made project management essential for organizations (Ofori, 2014). Ngowi *et al* (2005) advised that for companies with little or no experience in technology, the need for successful project management becomes more critical. Gupta (2010) defined project management as the "planning, organizing, directing and controlling of company resources for a relatively short-term, that has been established to complete specific goals and objective." Most of the time, project management techniques also play a major role in the efficient and effective development of new technology and systems within good customer relationship.

METHODOLOGY

The study was carried out using both quantitative and qualitative techniques. The qualitative design provides a descriptive analysis of the influence of implementation Phase Principles within the building industry in Abuja, Nigeria. The quantitative analysis provides statistical information and figures with regard to how implementation phase principles have affected costs, time, wastage and issues related to durability of projects. Stratified and Purposive random sampling was used for case exploratory study and qualitative data respectively. The sample size was 210 comprising 35 Architects, 35 Builders, 35 Engineers, 35 Quantity Surveyors, 35 Urban and Regional Planners, and 35 Contractors respectively. Statistical Package for Social Sciences (SPSS) version 17 was used to analyze the data; reliability test conducted using Cronbach's alpha, significance test, ANOVA and descriptive statistics. The results show that the Cronbach's alpha is 0.993. The Cronbach's alpha value was > 0.70, which means its adequate proof for consistency.

The response rate 70% found to be better than other studies 59% (Inuwa *et al*, 2014); 55.5% (Usman *et al* 2012); 47% (Ibrahim & Musa-Haddary, 2010); 35% (Adams, 1997). The study was carried out in Abuja the Federal Capital Territory of Nigeria. The territory is located north of the Niger and Benue Rivers. It is bordered by the States of Niger, Kaduna, Nasarawa, and Kogi, lying between latitude 8.25 and 9.20 north of the equator and longitude 6.45 and 7.39 east of the Greenwich Meridian (Jibrin, 2006). Abuja is located in Central Nigeria. The Federal Capital Territory covers an area of approximately 7,315 km², and Abuja occupies 275.3 km² of it with a population of 1,568,583. It is situated within the Savannah region with moderate climatic conditions. The territory is made up of six Local Councils: Abuja, Abaji, Gwagwalada, Kuje, Bwari and Kwali. The Local Government Authorities are controlled by the Federal Capital Development Authority, Abuja.

DATA ANALYSIS

Test for Hypothesis on Implementation Phase Principles

Table 1: Summary of Chi-square Tests for Hypothesis on Implementation Phase Principles

Professionals	χ^2	Df	Sig.	Decision
Architects	124.444	16	0.000	Reject
Builders	140.000	16	0.000	Reject
Contractors	83.133	16	0.000	Reject
Engineers	100.686	16	0.000	Reject
Quantity Surveyors	78.573	16	0.000	Reject
Urban and Regional Planners	114.186	16	0.000	Reject

Source: Author, 2014

H_0 : Implementation phase principles have no influence on project performance within the building industry in Abuja.

The results of the analysis on Chi-square test show that $p\text{-value } 0.000 < 0.05$ at 95% level of confidence.

Decision

Since the $p\text{-value}$ is less than the chosen alpha ($0.000 < 0.05$), it shows a significant difference between project performance and the implementation phase principles. Therefore, reject Null hypothesis; meaning that implementation phase principles have influence on project performance within the building industry in Abuja.

Table 2: Case Study Analysis of Some Completed Projects

Project	Initial Period (Months)	Final Period (Months)	Period Variation (Months)	Initial Cost (Million USD)	Final Cost (Million USD)	Cost Variation (Million USD)	Sector
A	28	60	32	0.91448	0.91618	0.0017	Private
B	24	64	40	1,133.75	1,165.5	31.75	Public
C	26	47	21	0.49265	0.49412	0.00147	Private
D	24	56	32	0.44718	0.45371	0.00653	Private
E	30	76	46	0.60668	0.64308	0.0364	Public
F	28	64	36	0.35477	0.41136	0.05659	Public

Source: Field Survey, 2013

Data was analyzed using descriptive analysis under the hypothesis that implementation phase principles have no influence on project performance within the building industry. Implementation phase is crucial in project delivery. The National Building Code (NBC) stipulates that within 3 months of approval, contractors should mobilize to site. However, for the case study, only project A was mobilized to site within 3 months after approval. Whereas, projects B, C, D, E, and F were mobilized after 7, 6, 4, 8 and 9 months respectively (Table 2). This delay impacted on time by extending the duration of the project schedule. The costs of these projects were found to be higher than planned.

The factors that were associated with the poor implementation process include lack of release of mobilization fee on time, lack of cash flow, inadequate manpower, inadequate materials, and non-adherence to construction plan, non-compliance to budgetary provisions, inadequate allocation of resources to project activities, poor monitoring and supervision among others. Another controversy is project commissioning. For instance, projects A, C and E were commissioned while; projects B, D and F were not commissioned. Yet the NBC states clearly that all projects must be commissioned before takeoff (FRN, 2006). It was also discovered that projects B, D and F were not commissioned because of lack of approval due to major contract variations.

The results indicate that $F = 779.707$; $P = 0.05$; $df = 4, 206$. They suggest that there is a statistical significant difference between project performance and implementation phase principles. The data was analyzed using ANOVA to determine implementation phase principles may influence project performance within quality, cost and time overruns. Further analysis show that there is significant difference between

implementation phase principles and project performance within the building industry. It is therefore established that; project performance depends on effective adoption of implementation phase principles. Projects are completed with high cost and time overrun due to lack of adoption of implementation phase principles and as a result, projects are rarely completed within cost and time schedules.

A chi- square test was conducted to determine whether there is a significant difference between implementation phase principles and project performance within the building industry. The results show that $\chi^2 = 124.444$, $P = 0.05$; $df = 16$ for Architects, $\chi^2 = 140.000$ $P = 0.05$; $df = 16$ for Builders, $\chi^2 = 83.133$ $P = 0.05$; $df = 16$ for Contractors, $\chi^2 = 100.686$ $P = 0.05$; $df = 16$ for Engineers, $\chi^2 = 78.373$ $P = 0.05$; $df = 16$ for Quantity Surveyors and $\chi^2 = 114.186$ $P = 0.05$; $df = 16$ for Urban and Regional Planners was obtained respectively (Table 1). This suggests that the variability of project performance is accounted for by the variability of the implementation phase principles. It means that project performance can be improved if implementation phase principles are adopted.

This shows that the difference between implementation phase principles and project performance was statistically significant, $F(4, 206) = 779.707$, $P = 0.000$, whereas, with $\alpha = 0.05$, project performance can be influenced by proper implementation phase principles adoption since the probability value is less than the chosen alpha.

THE IMPACT OF IMPLEMENTATION PHASE PRINCIPLES ON PROJECT DELIVERY

Implementation phase principles can influence project performance within the building industry in Abuja. Data analysis revealed the following major findings. It revealed that the project implementation phase principles are essential to the overall project performance; any failure in their adoption unfavorably affects project performance. Implementation phase principles include mobilization to site, project commissioning, obtaining mobilization fee, procurement, determining cash flow, determination of consultants/government agencies, construction, monitoring and supervision. It was observed that these principles are not carried out correctly. Other project processes are negatively affected; and the possibilities of the building facing other performance and structural challenges become high.

The NBC stipulates that within 3 months of approval, contractors should mobilize to site. For the case study, only project A was mobilized to site within 3 months after approval. Whereas, projects B, C, D, E, and F were mobilized at 7, 6, 4, 8 and 9 months respectively (Table 2). This delay impacted on time by extending the duration of the project schedule. The costs of these projects were found to be higher than planned. Another challenge is project commissioning. For instance, projects A, C and E were commissioned while; projects B, D and F were not commissioned. Yet the NBC states clearly that all projects must be commissioned before takeoff (FRN, 2006). It was also discovered that projects B, D and F were not commissioned because of lack of approval due to major contract variations. These findings indicate that implementation phase principle is not adopted within the building industry. This could be due to improper implementation and poor services.

In a study, Shen *et al* (2010) developed a strategy to diagnose implementation process for project improvement in Chile. The strategy was applied to selected projects; they discovered that implementation problems were due delays and lack of resources (money, personnel, materials and skilled labor) to monitor and control the process. In Finland, Oyegoke (2006) identified four project management areas of scope, time and cost as basis for studying client's anticipations in project delivery. From his findings, he discovered the short coming of the routes in managing these key variables and recommended that proper monitoring and control would enhanced implementation phase process. Similarly, in Australia, Love and Li (2000) indicated that a single set of criteria is adequate for the series of activities in the implementation of project. Owing to the fact that every project has different implementation criteria, therefore each project is unique in enhancing project performance. Lin *et al* (2007) added that direct and indirect consequences of rework does not change comparative to type in Australia; he discovered rework to be 52% of the cost of project is accounted by 26% variance in project delivery. To enhance project performance, he recommends understanding the processes of rework, effectiveness and efficiency in project delivery within time, cost and quality standard.

In Malaysia, Rashid *et al* (2006) and Inuwa *et al* (2014) shows that implementation process differs from each other in terms of allocation of resources, assigning responsibilities, release of cash flow, adherence to construction plan, proper monitoring and supervision; and invariably affected project performance of time, cost and quality standards. However, it is desired that all resources are controlled and monitored to enhance project delivery in the building industry. Project performance, as described by Gupta (2010) is the success of a project that must be completed within the budget, specified time and perform to satisfaction. According to Dolo (2009) in Alzahrani & Emsley (2012) project performance is a fundamental issue to governments, users and communities. They added that project delivery involves a multitude of stakeholders.

THE POTENTIAL ROLE OF IMPLEMENTATION PHASE PRINCIPLES ON PROJECT PERFORMANCE

The implementation phase principles are essential to the overall project performance. Lack of adoption may unfavorably affect project performance. For instance, if mobilization to site, project commissioning, obtaining mobilization fee, procurement, determining cash flow, determine consultants/government agencies, construction, monitoring and supervision are not carried out correctly, other project processes become delayed. Although the implementation phase is vital in project processes, it was observed that this important step is not properly adopted due to bureaucracies, poor allocation of resources, lack of competent personnel, poor supervision, monitoring and control and unethical professional practices. The study concludes that there is no adoption of implementation phase principles in the BI in Nigeria which contribute to higher project cost and time overruns.

CONCLUSION

Despite LCM's successful use in the building industry worldwide, its use in Nigeria is yet to be adequately exploited. The study concludes that right from the initiation to completion phases, project processes have been faulty and so project cannot be delivered on time, within the budget and quality standards. Several questions

emerge: are LCM principles being applied only by a section of the industry in Nigeria or by the entire building industry? Is LCM seen by industry players as an effective tool that will ensure quality and durability in the building industry? Is there resistance to the application of LCM by the industry? These posed a serious challenge in the delivery of projects on quality, cost and time overruns; however, these challenges can be mitigated by applying LCM within the building industry.

The parameters for measuring project performance are cost, time and quality standards. Clients usually demand for a better value from their investments. As such, they want projects to be completed on time, within cost and with the right quality (Rashid *et al*, 2006). All of the projects studied, were completed at a higher cost and time overrun. This could be attributed to delays in release of funds; funds are not issued as at when due which results into inflation and unethical professional practices.

In conclusion, the current project delivery system is not working. There is need to adopt LCM to help improve project performance, especially in the reduction of cost and time overruns.

The study has established that the building industry in Abuja, Nigeria is unable to deliver projects efficiently and effectively; and there are several reports of poor management of projects, the unnecessary rush in project implementation, inadequate planning and budgetary provisions, time and costly project execution, inefficient service delivery and abandoned or non- functional facilities and collapsed buildings.

Similarly, this study revealed that LCM application has not been applied in the delivery of projects; however, traditional methods are mostly practiced (Inuwa *et al*, 2013). Idoro (2012) observed that traditional method of project procurement must be improved because of time and costs overrun in its delivery. It is against this background that the recommendations below are made.

RECOMMENDATION

Basing on the findings of this study, the following recommendations are envisaged to help in the improvement of project delivery in Abuja. There is need to improve adoption of the implementation phase principles within the building industry in Abuja, Nigeria, it is recommended that

- Allocate resources according to project requirement
- Projects should always be commission
- Ensure proper communication between the stake holders
- Ensure compliance to national building code
- Ensure effective site meetings
- Engage experienced personnel
- Ensure cash according to project need and as when due
- Adhere to budgetary provisions
- Implement project according to design

- To enhance service delivery, monitoring/supervision mechanisms should be intensified at all levels within the building industry
- Cash flow should be release on time and according to schedule

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