

The Impact of Initial Phase Principles on Project Performance within the Building Industry in Abuja, Nigeria

Usman, N. D.

Kamau, P. K.

Mireri, C.

Department of Environmental Planning and Management
School of Environmental Studies
Kenyatta University
P. O. Box 43844-00100
Nairobi
Kenya

Abstract

The building industry is a key player of the Nigerian socio-economic development is saddled with the challenges of project management. The Nigerian Building Industry has adopted the traditional project management system in which projects are hardly delivered on time, within budget and quality standards. This has affected the growth of the industry as a result of its inability to deliver projects and services effectively and efficiently. This study therefore sought to determine the adoption of Life Cycle Management (LCM) and how initial phase principle influence project performance within the building industry in Abuja, Nigeria. LCM is a series of activities used in enhancing project performance. It is a valuable tool that helps the project manager to better understand the various steps of a project and the resources required. It reflects every management requirement for successful project delivery and communication between participants. LCM principles have been used successfully in managing many projects and improving services. Explanatory and descriptive approaches were used to obtain data from completed projects 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 projects were not delivered on time, within cost and quality due to poor management of projects, inadequate planning and budgetary provisions, costly project execution. The current traditional project management system is not achieving the desired results, however, if initial phase principle is adopted, it could improve project performance and reduce cost and time overruns.

Keywords: Building Industry, Cost, Impact, Initial Phase Principles, Project Performance, Quality, Time

Introduction

The Building Industry (BI) as a key employer of the Nigerian economy is saddled with the challenges of project management. This is due to its adaptation of the traditional project management system which attributed to its non-performance to deliver projects efficiently and effectively (Adawei & King, 2001; Odusami *et al*, 2003; Onwusonye, 2005; Okereke, 2008; Odusami & Ameh, 2006).

According to Daft (2010) project management is the attainment of organizational goals in an effective and efficient manner through planning, organizing, leading and controlling organizational resources. Kamau, Mireri and Usman (2013) added that the growing complexity of the building industry calls for increased effectiveness in the planning and control of projects. However, construction methods use a range of traditional to modern techniques to meet client's needs based on global economic development. As a result of population explosion and continued demand for new kinds of buildings, there is the need for professional practitioners who are versed in project management systems (Idoro, 2014; Usman, Kamau & Mireri, 2014a) to display their ability in improving performance.

The success of any project depends on how effective the project management cycle is. This cycle begins from the initiation to completion of any project. A major bottleneck facing the building industry is why projects are not being completed on time, at the budgeted cost and within specified standards? Chandra (2010) noted that building projects especially in the public sector compromise on quality and are not completed on time and have cost overruns.

The initial phase principle is the primary activity of a project. These activities include: project identification, project goals and objectives, determination of preliminary materials, equipment and personnel; others are development of budget and schedule, identification of project team and conducting Environmental Impact Assessment (EIA). The study investigated how the initial phase principle affects project performance within the building industry in Abuja. The initial phase is the beginning of the project execution. Once the initial phase is done correctly, project performance can be achieved within the building industry.

The initial phase is the beginning of building production. In this phase, the feasibility and the viability of the processes of project delivery takes place. The principles in this phase includes: project identification, project goals, objectives, determination of preliminary materials, conducting soil test, conducting survey, determination of equipment and personnel; developing a budget and schedule; identifying project team and conducting Environmental Impact Assessment amongst others. Alzahrani *et al* (2013) pointed out that project delivery can be achieved when the initial phase principles are done correctly. However, building project delivery is solely dependent on how well the consultants and contractors carry out the initial phase principles (Banki *et al*, 2009; Ng *et al*, 2009; Palaneeswaran & Kumaaraswanry, 2001; Yawel *et al*, 2005); selecting the right contractors, will ensure quality, time and cost effectiveness of projects.

Project performance is enhanced through setting goals and objectives and how these can be achieved. The phase principles are series of activities set out standards in aiding the project team to deliver within quality standards, cost and time specification (Chan & Chan, 2004). Basically, initial phase principles are activities to which project goals and expectations are met (Chan *et al*, 2002). According to Alzahrani *et al* (2013), initial phase principles are the determining factors to enhancing project delivery especially when surveys, EIA, resources and feasibilities are done according to plan. A study by Alzahrani *et al* (2013) shows that environmental issues during building production receives more attention from governments, non-governmental institutions and general public. Shen and Tam (2002) points that building projects affect the environment in many ways across the life cycle and regarded as a major contributor to environmental impacts.

Alzahrani *et al* (2013) reported that 14 million tons of waste has been put into landfill in Australia annually. Forty-four per cent of this waste came from the building industry. In developing countries, building industry consumes 62.86% of non-metallic minerals, such as glass, cement, clay and lime (Chan & Chan, 2004). Alzahrani *et al* (2013) argue that 30% of the annual waste in UK came from the building industry. This damage to the environment could be accounted for economic growth which affects time, cost and quality of project delivery.

Similarly, Belout and Gauvreau (2004) conducted a research on project delivery process and found out the significant predictors of project performance were setting out goals and objectives; resources (human, material and equipment), cash flows and as well, survey and soil tests. This is consistent to Nguyen *et al* (2004) who asserted that people are responsible for creating, managing, operating and utilizing projects to either successful delivery or failure. The results also revealed that contractors with adequate resources (human, materials and equipment) are important factors to project delivery. This is in agreement with Wong *et al* (2003) as they found that on-site productivity can be affected by availability of resources needed for building projects.

In a related development, Alzahrani *et al* (2013) found out that the size or scope of project and clients' needs are of paramount importance in project delivery. Isik *et al* (2009) also reported that clients need, project scope and financial resources show a contractors credibility and reputation in the ability to handle projects.

Although the findings revealed that the overall test of quality was not statistically valid, however, the size of past projects delivered appears to be statistically significant. This finding is in line with Holt *et al* in Alzahrani *et al* (2013) who asserted that contractors have the requisite experience from a similar project tend to have greater impact on project delivery.

Methodology

The study was carried out using both quantitative and qualitative techniques. The qualitative design provides a descriptive analysis of the effectiveness of Initial Phase Planning (IPP) within the building industry in Abuja, Nigeria. The quantitative analysis provides statistical information and figures with regard to how IPP has affected costs, time and quality of projects. 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 0.995. Chi-square was used to test the Null Hypothesis that initial phase principles do not affect project performance within the building industry in Abuja, Nigeria.

In Nigeria, the building industry is critical to the Nigerian economy and provides shelter and gainful employment to the citizens. The movement of the administrative capital of Nigeria from Lagos to Abuja brought about an expansion of infrastructural development in the Federal Capital Territory (FCT), Abuja that is driven by public and private sectors. This resulted from the need to cater for the increasing population.

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. Abuja is located in the Centre of 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 (Jibrin, 2006; Njeru, 2012)). 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 Presentation and Analysis

Table 1: Respondents Response Rate

Profession	Questionnaire distribution	Questionnaire received	Questionnaire success response rate
Architects	50	35	70%
Builders	50	35	70%
Contractors	50	35	70%
Engineers	50	35	70%
Quantity Surveyors	50	35	70%
Urban and Regional Planners	50	35	70%
Total	300	210	100%

Author, 2014

Table 1 shows the questionnaire response rate based on respondents responses. The response rate 70% better than other studies 59% (Inuwa *et al.*, 2013); 55.5% (Usman *et al.*, 2012); 47% (Ibrahim, 2008); 35% (Adams, 1997). The Cronbach's alpha was found to be 0.995 greater than 0.70, which means its adequate proof for consistency.

Test for Hypothesis on Initial Phase Principles

Table 4.6.16: Summary of Chi-square tests for Hypothesis on Initial Phase Principles

Professions	χ^2	Df	Sig.	Decision
Architects	90.859	16	0.000	Reject
Builders	89.132	16	0.000	Reject
Contractors	109.667	16	0.000	Reject
Engineers	86.515	16	0.000	Reject
Quantity Surveyors	87.612	16	0.000	Reject
Urban and Regional Planners	72.657	16	0.000	Reject

H0: Initial phase principles do not affect project performance within the building industry in Abuja
Chi – square results shows that $p\text{-value } 0.000 < 0.05$ meaning that there is statistical significance at 95% level of confidence.

Decision

Since the $p\text{-value } 0.000$ is less than the chosen alpha value. The Null hypothesis is rejected. This means that initial planning phase principles do affect project performance within the building industry.

Data Analysis

Data was analyzed using descriptive analysis under the hypothesis that initial phase principles do not affect overall project performance. The results indicate that there is significant difference between adherence to initial phase principles and project performance within the building industry ($F= 517.026$; $P<0.05$; $df = 4, 206$). The study therefore established that project performance depends on how well the initial phase principles are observed. It is clear that adherence to initial phase principles does affect project delivery.

Chi- square test was carried out to determine whether there is a significant difference between initial phase principles and project performance within the building industry. Table 1, a value of 90.859 was obtained for Architects, 89.132 for Builders, 109.667 for Contractors, 86.515 for Engineers, 87.612 for Quantity Surveyors and 72.657 for Urban and Regional Planners respectively. This suggests that the variability of project performance is accounted for by the level of adoption of the initial phase principles. It means that project performance can be improved by adhering strictly to initial phase principles.

The Impact of Initial Phase Principles on Project Delivery

The initial phase principle affects project performance diverse ways. For instance, if a survey is not carried out correctly, it may affect other initial processes; and the possibilities of the building collapsing or facing other structural challenges become high. Equally, the initial phase principle may not be observed due to ignorance and lack of compliance. The findings indicate that initial phase principles are not adopted within the building industry which may be due to sudden rush of projects without understanding the scope and client's briefs; bureaucracy, poor delivery and services to owners. Responses from the various categories of professionals revealed that initial phase principles affects project performance within the building industry.

The findings indicate that the initial phase principles success is a significant factor of project performance. It must therefore be taken into account while improving project performance and service delivery to clients. The findings are in agreement with (Usman *et al*, 2014b); Idoro (2012), Nwanchukwu (2008), Nwanchukwu & Fedelis (2010); Usman, Inuwa & Iro (2012) studies hold the same view.

Project performance, as described by Gupta (2010) is the success of a project that must be completed within budget, specified time and perform to satisfaction. According to Doloi (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. 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. Daft (2010) asserted that management is getting things done through people. However, the job of managers is to give direction to their organizations, provide leadership; and decide how to use organization resources to accomplish goals (Daft, 2010).

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. 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.

In conclusion, the current traditional project management delivery system is not working (Dada & Akpadiaha, 2012; Andawei & King, 2001; Ogunsemi *et al*, 2008). 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 (Usman *et al*, 2014b; Inuwa *et al*, 2013). Idoro (2012) observed that traditional method of project delivery must be improved because of time and costs overruns. It is against this background that the recommendations below are made.

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

1. To improve the adoption of the initial phase principles within the building industry in Abuja, Nigeria; it is recommended that
 - Principles that enhance project performance at the initial phase be adopted
 - Environmental, health and safety provisions should be met at the initial phase of the project
 - Contractors should understand client's briefs and scope of the project from the onset
 - Determine the availability of equipment and personnel
 - Mobilization fee should be released on time
 - Contractors should mobilize equipment and materials to site as stipulated by the National Building Code

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