Influence of Planning Phase Principles on Project Performance within the Building Industry in Abuja, Nigeria

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ABSTRACT

The building industry continues to occupy an important position in the nation's economy even though it contributes less than the manufacturing industries. It has continued to be 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. This is as a result of poor planning phase principles in the building industry. However, poor planning in the Nigerian Building Industry (NBI) was linked to its inability to deliver service effectively and efficiently; and these are impediment on the Nigerian economy. This study therefore sought to examine how planning phase principles influence project performance within the building industry in Abuja, Nigeria. 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 reveal that planning phase principles was not adopted due to poor management of projects, unnecessary rush in project implementation, inadequate planning and budgetary provisions, costly project execution. In spite of the efforts of the industry to improve project performance, yet it is still faced with challenges of project management, but if planning phase principle is employed, it could improve project performance and will reduce cost and time overruns.

Keywords: *Building industry, planning phase principles, Project performance*

INTRODUCTION

The incidences of building failure and collapse, as well as the alarming loss of life that results, have become major issues of concern in Nigeria. The Nigerian building industry has been described as a sleeping giant on the African continent in terms of service delivery and its capacity to satisfy the needs of its clients because of its inability to deliver services

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efficiently and effectively. For instance, there have been several reports of poor management of projects, the unnecessary rush in project implementation, inadequate planning and budgetary provisions, costly project execution (Ibrahim and Musa-Haddary, 2010; Idoro, 2014; Ofori, 2014, Usman, Kamau and Mireri, 2014). However, through improved efficiency in the industry, cost-effectiveness and adhering to time lines, there will be cost savings for the country and greater contribution to the national economy (Ofori, 2014). It has continued to be a major player in the socio-economic development of many countries globally. Apart from creating employment, it provides shelter to millions as well as operational infrastructure such as offices, schools and hospitals (Idoro, 2014; Usman, Kamau and Mireri, 2014).

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 planning phase principles in the building industry (Usman, Kamau and Mireri, 2014). The planning phase is a step in the process of building production. It is a strategy in coordinating project activities to improve project delivery. This is a stage of enhancing the development of building plan. The development of a building plan is analogous to the development of a good facility design (Hendrickson, 1998 in Usman, 2006). Hendrickson states that the planner must weigh the costs and reliability of different options while ensuring technical feasibility. On one hand, building planning is more difficult in some ways since the building process is as dynamic as the site, and the physical facility changes as the building proceeds (Idoro, 2012). On the other hand, building operations tend to be fairly standard from one project to another even as structural foundation details might differ considerably.

From the stand point of building contractors, Usman (2006) opines that the planning process consists of three stages that take place from the moment of planning the building of the facility to the moment the valuation of the final building process. These stages include: estimation, monitoring and control as well as evaluation. Though forming a good building plan is challenging, there are numerous plans available for any given project. While past experience is a good guide to building planning, each project has special threats or opportunities that require ingenuity or creativity to solve. Unfortunately, it is difficult to provide guidance concerning procedure or strategy regarding the formation of good plans (Ofori, 2014 and Idoro, 2014). One can provide good recommendations for a good plan but it is up to the actual planner to come up with his own good plan (Hendrickson, 1991 in Usman, 2006).

In Nigeria, the building industry is critical to the Nigerian economy and provides shelter and gainful employment to the citizens (Idoro, 2012; Usman, Kamau and Mireri, 2014). The movement of the administrative capital of Nigeria from Lagos to Abuja brought about an expansion of infrastructural development in the Federal Capital Territory, Abuja that is driven by public and private sectors (Kamau, Kamau and Mireri, 2013). This resulted from the need to cater for the increasing population. Despite the rapid expansion of the building and construction sector, issues of quality and high costs of repair and maintenance have emerged with collapse of buildings reported (Idoro, 2014; Matawal, 2011; Jambol, 2012).

This study therefore sought to examine how planning phase principles would influence project performance within the building industry in Abuja, Nigeria. This study anchored on the hypothesis that there is no significant difference between project performance and the planning phase principles in the building industry in Abuja, Nigeria.

The Impact of Planning Phase Principles on Project Delivery

Planning phase principles are central to the overall project performance; any failure in its adoption adversely affects project performance. For instance, if health and safety factors are not adequately addressed, the project might face litigation charges from Environmentalists or it might turn out to be a health hazard. The planning phase principles include, project goal, project activities, design/specification, choosing a strategy, break projects to sub-units, determine performance standard, determine proper sequence, design cost estimate, determine personnel, design time/schedule, mobilize funds and obtaining approvals.

Recent studies show that the application of modern techniques, project management techniques, planning, scheduling and controlling are a bedrock to successful project delivery (Aniekwu and Audu, 2010; Kedzner, 2000; Gollenbeck, 2008). Krishnamurthy and Ravindra (2010) add that adequate planning must precede the execution of all other managerial functions. These are factors that influence project performance which is absent in the Nigerian building industry (Inuwa, Wanyona and Diang'a, 2013). Planning facilitates project performance; and when complexity of project is high, project planning is inevitable (Bailey, Farmer, Crooker, Jessop and Jones, 2008; Bamisile, 2008; Inuwa, Wanyona and Diang'a, 2013). In Nigeria, poor project delivery was traced to the inability to plan projects adequately (Achuenu, Izam and Bustani, 2000; Usman, Inuwa and Iro, 2012). Saleh (2004) reveal that this prevents the building industry from satisfying the clients need. Thus, to improve the efficiency of the Building Industry (BI), Oladimeji and Ojo (2012) assert that the BI contributes to the national economy and therefore its planning should not be ignored. The BI is an important sector of the economy, and plays a key role in national economy and economic development (Hillebrant, 2000; Ofori, 2007). The building industry is an engine for growth (Ofori and Han, 2003).

Whereas, Turin (1973) in Ofori (2014) establishes a relationship between construction and the economy. The relationship includes: contribution of value added in construction to GDP; rate of change of this contribution as the economy develops; proportion of capital formation in the industry to the total; contribution of employment in the building industry to the total employment. Thus, improving the performance of the industry in developing countries can be achieved through effective and systematic planning (Ofori, 2014). Planning involves a series of interrelated activities and sequential processes; and its efficiency and effectiveness have a direct impact on the project success or failure (Dada, 2012; Idoro, 2012; Ikediashire, Mendie, Achuenu and Oladokun 2012; Mathonsi and Thwala, 2012; Love, 2002; Ibrahim, 2008; Inuwa, Wanyona and Diang'a, 2013). Hendrickson (1998) argues that planning is analogous to the development of good facility design in the building industry. Planning is more difficult in ways since building process is dynamic. However, cash flow is a necessary tool in planning processes (Kerzner, 2000; Bustani, 2002). According to Gupta (2010), planning is deciding where the organization/

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or a project should be going and how it should get there. He added that this requires the appraisal of external and internal changes and constraints, forecasting, setting objectives, developing strategies and policies, and preparing action plans. Planning is an organized method to develop on a continuing basis, specific course of actions to improve project delivery (Inuwa, Wanyona and Diang'a, 2013, Eigege, 2005). Basically, planning has four goals in the delivery of any building project (Krishnamurthy and Ravindra, 2010). To offset uncertainty and change; to focus attention on the objectives; to make economic operations possible and to assist project managers in controlling projects.

Whereas, Inuwa, Wanyona and Diang'a, (2013) and Harris and McCaffer (2005) opine that in developed countries, contractors embraced planning because the results impact directly on project delivery. However, the Nigerian building industry is considered unproductive due to management incapacity and inadequate planning (Aniekwu and Audu, 2010; Saleh, 2004; Achuenu, Izam and Bustani, 2000). This creates problems that affects project delivery in the building industry, and prevents the building industry from meeting clients need. In spite of this, Oladimeji and Ojo (2012) opine that planning is essential due to its contribution to the national economy towards improving project delivery. Consequently, project planning is an endeavour in which human, material and financial resources are organised in a better way to undertake work of a given specification within constraints of time, cost and quality so as to achieve a predetermined goal in a given environment. Daft (2010) recognises planning as management principles, which show the importance of planning phase principles for the effectiveness of project delivery.

Economic and Financial Planning

The appraisal of economic viability of any project should be taken at the inception of the project. The project value and cost are of paramount importance, and a project's value is defined by the utility or benefit of the completed project (Idoro, 2014; Ofori, 2007). According to Kamau, Mireri and Usman (2013); Inuwa, Wanyona and Diang'a (2013), project costs are the expenditures incurred in completing a project and are included in its valuation. A cost benefit analysis helps a client to determine his level of commitment to a project which depend on perceived benefits and cash flow of the project. Planning is critical to project management. The project manager defines a series of action required to complete the project and this must stem from a planning process (Usman, Kamau and Mireri, 2014). Planning enhances the preparation of a meaningful budget and time estimates. Bustani (2002) states that payments must be made by the client to contractors in timely fashion to ensure work progress without interruption.

Economic factors influencing building activities

Building is characterised by two important factors (Kerzner, 1986 in Usman, 2006) fluctuations in demand, which can impact the utilisation of resources and the use of various techniques and factor combinations (particularly of capital and labour) which need to be tailored to each finished product. These two factors are also influenced by economic measures. The former, through planning and demand management, while the latter through pricing policies that influences economic measures (Idoro, 2012; Ofori, 2014, Usman, Kamau and Mireri, 2014).

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Characteristics of demand

The output of building fluctuates considerably more than that of manufacturing and the economy as a whole (Kerzner, 1986 in Usman, 2006). This tendency is based on the demand structure of the capital goods industries where relative small changes in demand by consumers will cause the production capacity to expand or contract considerably (Ofori, 2014). Not only do the private sector resources and demand fluctuate with export earnings, but important public sector investments also tend to concentrate during periods of rapid economic growth, thereby accentuating the cyclical variations. The fluctuations in building activity, relative to those of other sectors, tend to be greater in stabilizing the economy. The public sector plays a dominant role in generating demand for building. This is particularly so in developing countries, where it account for 80% of building jobs (Ofori, 2014; Idoro, 2012b). For instance, Usman (2006) and Ofori (2014) assert that a building industry survey in Liberia estimated the total building volume in the formal sector to be slightly about 20 million US dollars in 1978, while the private sector accounted for about 4 million US dollars. Similar ratios apply in Burma, NEPAL, New Guinea and several other countries in Africa. Surveys made in Egypt and Indonesia in 1979 placed the public sector share of the total demand for building jobs at 65% (2.3 million US dollars) and 75% (4million US dollars) respectively (Usman, 2006). The government's share of total demand is also high in such capital-abundant countries as Kuwait, Libya, Saudi Arabia, which continue to develop their basic infrastructure.

The importance of the public sector as major source of demand for building is not limited to developing countries alone, although the share tends to decrease at higher levels of development. In the United States for instance, building demand from the public sector in 1982 was roughly 50% of total demand; this estimate, however, excludes the building of single family homes (Henroid, 1986 in Usman, 2006). The two-fold role of government as a policy maker at macro-economic level, and as an originator of demand and executor of works at the micro-economic level underscores the importance to the sector. The timing of government investments can therefore cause fluctuations in building demand. Similarly, the government's overall economic policies and specific interest in industry - related regulations can be a profound influence on private sector building investment decisions (Kabir, Bello, Kolo and Bustani, 2009; Inuwa and Usman, 2008).

METHOD

This study is carried out using both quantitative and qualitative techniques. The qualitative design provides a descriptive analysis of the influence of planning Phase Principles (PPP) within the building industry in Abuja, Nigeria. The quantitative analysis provides statistical information and figures with regard to how PPP has affected costs, time, wastage and issues related to durability of projects. Stratified and Purposive random sampling was used for case 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.

RESULTS AND DISCUSSION

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, Wanyona and Diang'a, 2013); 55.5% (Usman, Inuwa and Iro, 2012); 47% (Ibrahim, 2008); 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 Niger, Kaduna, Nasarawa, and Kogi States, 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. This study indicates that planning phase principles are not adopted within the building industry in Abuja. This could be due to poor design, discrepancies in contract documents, project variation, and shortage of materials, inadequate work plan, and poor service delivery. It was established that the National Building Code specifies that drawings and specifications which are prepared by architects in the Urban Development Planning Unit, be approved within three months once the required standards are met (FRN, 2006).

However, project B took 9 months to be approved, project C 5 months, project E 6 months and project F 7 months as against 3 months respectively (see Table 2). It was discovered that these projects were delayed before the approval processes. However, project B, C, E and F were delayed due to survey and soil analysis. In addition, consultancy fees were not paid on time; which leads to delay of the survey on site and material survey. The findings indicate that planning phase principles form a significant aspect of project performance. It must therefore be taken into account to improve project performance and service delivery. The findings are in agreement with Idoro (2010); Nwanchukwu (2008); Nwanchukwu and Fedelis (2011); Usman, Inuwa and Iro (2012) studies holds the same view. Project is said to have performed when time, cost and quality standard requirement are met. However, the six projects (table 2) that were examined were completed behind schedule and at a higher cost than planned. This could be accounted for by delays as result of non-release of funds to project activities as and when due, high level of corruption, bureaucracy, inflation and unethical professional practices (Usman , Inuwa and Iro, 2012; Inuwa, Wanyona and Diang'a, 2013; Usman, Inuwa and Iro, 2012, Idoro, 2014).

From the analysis on table 1, p-value was found to be less than the chosen alpha value 0.05 at 95% level of confidence suggesting the rejection of the null hypothesis that there is no significant difference between project performance and the planning phase principles in the building industry in Abuja. This means that there is a significant difference between project performance and the planning phase principles. So, planning phase principles can influence project performance within the building industry. Results of ANOVA

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test as summarized on table 1 suggest that there is a significant difference between project performance and the planning phase principles. The study therefore establishes that project performance depends on proper planning. None adherence to planning phase principles leads to failure or abandonment of projects. Perhaps that is why projects are rarely completed within expected quality standards, cost and time schedules. Chi-square tests to determine whether there is a significant difference between planning phase principles and project performance within the building industry in Abuja were conducted. From table 1, the value of Chi-square for Architects, Builders, Contractors, Engineers, Quantity Surveyors and Urban and Regional Planners obtained suggest that the variability of project performance is accounted for by improper planning. It means that project performance can be improved by good planning. This is confirmed by the fact that the difference between planning phase principle and project performance was statistically significant.

Table 2 shows the influence of planning on project performance of time, cost and quality standard. The analysis indicates that little delay has serious implications on time and cost overruns. The results reveal that most projects were completed at a sum and period higher than planned. For instance, public projects B, E and F (Table 2) were completed at $1,165.5 million, $0.64308 million and $0.41136 million as against $1,133.75 million, $0.60668 million and $0.35477 million respectively. These projects were completed at a period of 40, 46 and 36 months higher than scheduled. For instance, projects A, B and D carried out Environmental Impact Assessment, while projects C, E and F were not conducted. According to National Building Code (NBC), EIA is mandatory for a project in the building industry (FRN, 2006). Equally, projects approval should not be more than 3 months if the regulatory requirements are met (FRN, 2006). In spite of this, projects A, B, C, D, and F were approved 10, 12, 14, 8, 15 and 18 months respectively. This delay has affected time and cost overruns. The prices of materials have gone high due to inflation especially during the petroleum crisis.

The cost of skilled labour is also high. In the same vein, the delays increase the rate of corruption due to bureaucracy especially with public projects. It is a policy that once project is approved, contractors should mobilize to site within 3 months (FRN, 2006). However, only project A met this standard; whereas, projects B took 7 months, C 6 months, D 4 months, E 8 months and F 9 months respectively. In the same way, projects B, C and E were commissioned, while, projects A, D and F were not commissioned. The statutory requirement demands that all projects must be commissioned at the takeoff (FRN, 2006). This scenario creates unethical professional practice which affects time, cost and quality standards. Besides, projects are supposed to be decommissioned after completion; but from the findings, no single project was decommissioned. Thus, the non- compliance results to delay, high cost and time overruns. It is therefore, a clear indication that projects cannot be delivered under such conditions. The Building Industry is engulfed with bureaucracy, and unethical professional practice, non- adherence to regulations, politics, and poor planning; ineffective monitoring and supervision. This finding is in agreement with other research that, in Nigeria, building regulations are not adhered to; planning and policies are poorly implemented especially in the building industry (Jambol, 2012; Ike, 2012, Idoro,

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2014; Ofori, 2014; Usman, Chen and Lodson, 2010). From the above discussion, it implies that the more the delay, the higher the duration and the higher the cost which is an impediment to project performance. This could be accounted for non-compliance to the policies and ethical standards as well as inadequate planning. Ofori (2014) opines that the building industry could not perform due to poor project planning, inappropriate policies and non-adherence to planning phase principles. Besides, he suggests that a long term strategy for the building industry to be developed synchronized continuously, coordinated and monitored. This will ensure project delivery.

Table 1: Summary of Chi-square tests for hypothesis on Planning Phase Principles

Professionals	χ^2	**Df**	**Sig.**	**Decision**
Architects	124.641	16	0.000	Reject
Builders	77.597	16	0.000	Reject
Contractors	109.667	16	0.000	Reject
Engineers	94.491	16	0.000	Reject
Quantity Surveyors	71.891	16	0.000	Reject
Urban and Regional Planners	65.3585	16	0.000	Reject

Source: Field survey, 2013

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

CONCLUSION AND RECOMMENDATIONS

Despite planning phase principle's successful use in the building industry worldwide, its use in Nigeria is yet to be adequately exploited. Several questions emerge: is planning phase principle being applied only by a section of the industry in Nigeria or by the entire building industry? Is planning phase principle 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 planning phase principles 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 proper adoption of the planning phase principle within the building industry in developing countries especially Nigeria. In conclusion, the current traditional systems is not working and in spite of the efforts of the industry to improve project performance, yet it is still faced with challenges of project management, but if Planning Phase Principle (PPP) is employed, it could improve project performance. If PPP is properly applied, it will reduce the cost and time overruns. This study, therefore, recommends the adoption of planning phase principles in the building industry in Nigeria; that stakeholders should ensure compliance to standards and specifications in the planning of a project in the

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study area are in particular and Nigeria as a whole; adequate plan for environmental, health and safety provisions should be made. Also, stakeholders should ensure realistic estimate and time frame for any project. Finally, discrepancies and design errors in contract documents should be resovled.

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