

# An Appraisal of the Performance of Caring Heart Mega Primary School Projects in Ondo State, Nigeria

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## ABSTRACT

This study appraised the performance of Caring Heart Mega Primary School projects, in terms of budget, time and quality, executed by the Ondo state government, if they were achieved. It also analyzed factors responsible for the budget overrun/under-run recorded on the project; and the causes of delay (if any) on the project delivery. Frequency, Percentage, Mean, Standard Deviation, Relative Importance Index (RII) and Severity Index (SI) were used for the descriptive data, while Chi-Square test was used for the inferential analyses to achieve the stated research objectives and test the hypotheses. The findings show that the majority of the respondents held the view that Ondo State Caring Heart Mega Primary School Project achieved the stakeholder's goals and objectives in terms of quality but did not finish on time and were completed at a cost higher than the originally envisaged contract cost. Respondents indicated that wrong method of estimation/inaccurate estimation of original cost (Mean = 4.58); additional work (Mean = 4.05); unforeseen site condition (Mean = 4.02); cost of materials (Mean = 3.91); poor contract management (Mean = 3.89); improper planning (Mean = 3.73); poor site management and supervision (Mean = 3.69); shortage of technical, managerial and supervisory personnel (Mean = 3.60); and unrealistic contract durations imposed by client (Mean = 3.61) contributed largely to the project delay and budget overrun. Furthermore, this study found that effect of weather ( $p = 0.000$ ;  $< 0.05$ ), fraudulent practices ( $p = 0.000$ ;  $< 0.05$ ), frequent design changes ( $p = 0.000$ ;  $< 0.05$ ), high cost of labour ( $p = 0.000$ ;  $< 0.05$ ), inadequate production of raw materials locally ( $p = 0.000$ ;  $< 0.05$ ), lack of communication ( $p = 0.000$ ;  $< 0.05$ ) among others contributed in one way or the other to budget overrun of the Caring Heart Mega Primary School Project except government policies ( $p = 0.226$ ;  $> 0.05$ ).

**Keywords:** Caring Heart Mega Primary School, Project, Pre Industrial Society, Risk Management, Human Problems.

## I. INTRODUCTION

Almost every industry is dynamic in nature and the construction industry is no exception. Its environment has become more dynamic due to the increase in technology, budgets, and development processes. A building project is completed as a result of a combination of many events and interactions, planned or unplanned, over the life of a facility, with changing participants and processes in a constantly changing environment [1]. Temporary, fragmented and short-term are also significant characteristics inherent in the construction industry. Such characteristics greatly affect the effectiveness of project team, especially the project managers. The concept of project success is a means to improve the present situation. However, th

is concept has remained ambiguously defined in the minds of the construction professionals. Many project managers still attend to this topic in an intuitive and ad hoc fashion as they attempt to manage and allocate resources across various project areas [2].

The performance of any developmental project (be it public or private) depends on the strategy for success adopted by the organization responsible for its implementation and execution. The strategies for success in any building project are implemented in the management of the project Time, Cost, Quality and Material management using project life cycle concept. In most cases, both public and private building

construction projects are hardly completed on time, with in cost, quality and material specifications. New buildings and newly rehabilitated or maintained infrastructure become decrepit and wrecked within a few months of commissioning despite the capital commitments on them. Collapse of building facilities, even during construction in Nigeria can best be described as a holistic financial loss like a prudent investor dramatically digging a hole and burying his life savings and staving alternative investment opportunities. Building construction failure, abandonment and collapse does not encourage development and investment and that calls for project management solution.

## II. METHODS AND MATERIAL

### 1. CONCEPT OF PROJECT DELIVERY TIME

Time is the duration for completing the project. It is scheduled to enable the building to be used by a date determined by the client's future plans [3]. Alarcon and Ashley (1996) [4] raised 'effectiveness' as a success criterion. They defined effectiveness as a measure of how well the project was implemented or the degree to which targets of time and cost from the start-up phase to full production. Therefore, effectiveness will be measured under this category. From Naoum (1994) [5] and Chan (1997) [6], time can be measured in terms of construction time, speed of construction and time overrun.

### 2. CONCEPT OF PROJECT DELIVERY COST

Cost is another important measure. Cost is defined as the degree to which the general conditions promote the completion of a project within the estimated budget [7]. Cost is not only confined to the tender sum only, it is the overall cost that a project incurs from inception to completion, so it includes any costs arising from variations, modification during construction period and the cost created by the legal claims, such as litigation and arbitration. The measure of cost can be in form of unit cost, percentage of net variation over final cost.

### 3. THEORETICAL FRAMEWORK

#### "Two-Factor" Theory

One of the causes of the difficulty in reaching consensus on the definition of project success or failure lies in the fact that these two have been treated as a dichotomy. This research takes the view that the two are not mutually

exclusive and that they could, in fact, exist together across the stages of the project life cycle. Also called the 'Herzberg's Hygiene-motivation' factor, the 'Two-factor' theory can be used to explain the relationship between project success and failure from the point of view of their underlying factors. Proposed by Herzberg et al. in 1959 [8], this theory indicates that the factors leading to 'satisfaction' are separate and distinct from the factors that lead to 'dissatisfaction'. Hence satisfaction and dissatisfaction can exist independently and simultaneously so long as the factors producing them exist. It postulates that the opposite of "Satisfaction" is not "Dissatisfaction" but "No Satisfaction", and the opposite of "Dissatisfaction" is not "Satisfaction" but "No Dissatisfaction". Applying this theory to the project situation then puts the success and failure question into a dual continuum, rather than a dichotomous, situation. We can speak of "success", "no success", "failure" and no "failure" of aspect of a typical project within the phases of its life cycle based on the influencing factors. With regard to the influencing factors, De Wit (1988) [9] posits thus: "factors affecting project success or failure are usually good indicators of preconditions of success or failure". He considered them to be analogous to Herzberg's hygiene/ motivation factors in that the presence of success factors does not guarantee success but not identifying them (their absence) is likely to lead to failure.

Therefore, in the project situation, the factors that lead to success could, sometimes, be separate and distinct from the factors that lead to failure i.e. the absence of those success factors should not always be seen as the only causes of failure. Hence there could be a condition for a project in which assessment will result in "no success" without necessarily implying "failure". In practice, this is realized by using multi-measures to assess projects. In such a situation a project could fail in some criteria but perform very well in others. In assessing a construction project thus, a fundamental theory to embrace is that the absence of success does not necessarily indicate a failure and vice versa. This position is explained by considering the various interest groups (stakeholders) within a typical construction project with diverse focus, expectations and what is of essence to them across the project life cycle.

#### The Modernization Theory

Modernization theory is a theory of social change and it has several variants. The general overview and specific

propositions of a few of modernization theory are hereby discussed. Modernization theory is concerned with economic change and industrialization. Black (1972) [10] explains it as a process by which pre-industrial societies becomes industrialized. Others scholars such as Smelser (1963) [11] were contended with painting a “before and after” picture, contrasting a set of characteristic associated with pre-industrial societies with the corresponding set that evolve in those that are highly industrialized. The definition of modernization is many but is often in term of economic development. For instance, Moore (1963) [12] regards the concept as a total transformation of traditional or pre-modern society into the types of technology and associated social organization that characterize the advanced, economically stable nations of the world. It is clear from Moore’s definition that the general characteristics of the traditional or pre-modern societies can be identified and that a transition to modernity can be effected in the hitherto pre-modern society.

#### 4. RESEARCH OBJECTIVES

- i. assess the factors responsible for budget overrun of Caring Heart Mega Primary School Project in Ondo State;
- ii. examine the causes of late delivery of Caring Heart Mega Primary School Project in Ondo State; and
- iii. assess the factors that affect the quality of Caring Heart Mega Primary School Project in Ondo State.

#### 5. RESEARCH HYPOTHESES

- H<sub>0</sub>: Budget overrun has no significant effect on delivery of Caring Heart Mega Primary School Project in Ondo State.
- H<sub>0</sub>: Project time delivery for client, consultant or contractors has no significant effect on delivery of Caring Heart Mega Primary School Project in Ondo State.
- H<sub>0</sub>: Project quality has no significant effect on delivery of Caring Heart Mega Primary School Project in Ondo State.

#### 6. RESEARCH METHODOLOGY

The research approach that was adopted in this paper was quantitative research design, which has been defined as an inquiry into a social or human problem, based on answering certain questions. This research involves a cross-sectional survey approach from which statistical data was collected to answer questions in respect of the main subject of study.

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#### Study Area

Ondo State - Nigeria, lies between latitude 5° 45' and 8° 15' North and longitude 4° 45' and 6° East, this means that the State lies entirely in the tropics. The State is bounded in the North-West by Ekiti State, West-Central by Osun State, South-East by Ogun State, South-East by Delta State and in the South by Atlantic Ocean. The people of the State are predominantly yorubas.

#### Sample and Sampling Techniques

A random sampling technique was adopted for this study. A sample size of 140 was used for the purpose of this research which includes: Staffs of Ondo State Government State Universal Basic Education Board – SUBEB (Client), Contractors that handle the project, and Consultants.

#### Method of Data Collection and Analysis

Two sets of data were identified as being relevant to the effective conduct of this research namely primary and secondary data. The primary data which refers to field data was obtained through the use of well-structured questionnaire containing both structured and unstructured questions developed from the initial identification of likely variables.

Both Descriptive and Inferential statistics were used to analyze data collected from the field. Frequency, percentage, mean, standard deviation, relative importance index (RII), and severity index (SI) were used for the descriptive data, while Chi Square test was used for inferential analyses to test the hypotheses.

### III. RESULTS AND DISCUSSION

#### 1. DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

The data presented and interpreted were based on the set of questionnaire administered. One hundred and forty (140) questionnaires were distributed and returned valid.

The output was presented in frequency distribution tables, percentages, mean, standard deviation, and severity index (SI) and relative importance index (RII), which gave a record of the number of times a score or a response occurred.

## 2. RESPONDENTS' DEMOGRAPHIC INFORMATION

### Age of the Respondents

Table 1 shows the present age categories of the respondents. In terms of age profile, the least population of the age categories of the study respondents, 2.9%, is within the age category of 20 – 29 years of age, while 60% are within the ages of 30 years to 39 years. 9.3% and 7.9% of the respondents are within the age brackets of 40 – 49 years and 50 years and above respectively. This table is justifiable in the sense that the Nigerian construction industry is flooded with participants between the age ranges of 27 – 45 years.

### Professional Background of Respondents

Table 2 shows the professional background of the respondent, 35 (25%) are Quantity surveyor, 34 (24.3%) are Architect, 10 (7.1%) Electrical Engineer, 37 (26.4%) are Builder, 10 (7.1%) Mechanical Engineer 15 (10.7%) Civil Engineer and 2 (1.4%) Project Manager, 2 (1.4%) of the respondents have two or more disciplines combined together and other varying professional background. The result expressed the generation of adequate opinion of the construction industry in the study area as the entire construction professionals are represented. This forms a robust and valid base for this study.

### Professional Qualification of Respondent

Table 3 shows the professional qualifications of the respondents. Thirty-six (25.7%) belong to members of Nigerian institute of builders (MNIQB), 40 (28.6%) MNIQS, 18 (12.9%) MNIA, 29 (20.7%), while 5 (3.6%) have other varying professional qualifications. 10 respondents representing 8.5% of the entire study sample are not affiliated to any professional body. The respondents are either associate or corporate members of their various professional bodies or possess some other professional qualifications, thus expressing their position as able to supply reliable data for the study.

### Hypothesis One

The chi-square test was used to test the hypothesis. The chi-square test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories. Decision rule: Reject the alternate hypothesis if p-value is greater than 0.05, otherwise accept. As shown on Table 4, since the p-values are all less than 0.05, therefore we accept the alternate hypothesis and conclude that all the factors highlighted on Table 4.4 like effects of weather, fraudulent practices, frequent design changes, high cost of labour, inadequate production of raw materials locally, lack of communication among others contributed in one way or the other to budget overrun of the caring heart mega primary school project except government policies.

### Hypothesis Two

As shown on Table 5, since p-values are all less than 0.05, therefore we accept the alternate hypothesis and conclude that client related issues like client initiated variations, unrealistic contract durations imposed by client, unrealistic client initial requirement and low speed of decision making by the client among other variables cause delay in the project delivery of caring heart mega primary school project.

In addition, contractor related issues like delay in subcontractors' work, poor site management and supervision, shortage of technical, managerial and supervisory personnel, improper planning, mistakes during construction and inadequate contractor experience cause among other variables delay in the project delivery of caring heart mega primary school project. Furthermore, consultant related issues like delay in work approval, preparation and approval of drawings, quality assurance/control, long waiting time for approval of test samples of material and poor contract management cause

## 3. HYPOTHESES TESTING

Delay in the project delivery of caring heart mega primary school project.

### Hypothesis Three

As shown on Table 6, Since p-values are all less than 0.05, therefore we accept the alternate hypothesis and conclude

e that factors like; appropriate quality control & assurance, appropriate procurement framework, among others have significant effect except bulk of purchase material that does not have significant effect on quality of Caring Heart Mega Primary School project in Ondo State.

#### **IV. CONCLUSION**

In this study, the researcher has argued that the occurrence of project delivery delay and budget overruns that occurred in Ondo State Caring Heart Mega Primary School Project can be deemed as symptomatic of inadequate planning and budgeting of projects. The planning inadequacy in turn is a consequence of the accuracy of costing data employed for estimating project budgets. By the same token, the elimination of cost overruns on projects or zero-cost growth on projects requires an improved understanding of the nature and behaviour of current budget overrun profiles on projects. Understanding the nature and factors that account for the overruns should assist in establishing more accurate project budgets, especially in future project as that of the Ondo State Caring Heart Mega Primary School Project. The researcher presented a study that is aimed at exploring the nature and scale of project cost overrun in construction to provide information for planning the budgets of future public construction projects.

The study results indicated that the majority of delay factors are relevant to contractor and client factors. It is concluded from the study that in ameliorating construction public project delay client must have strong economical ability and financial arrangement for project, correctly time decision. The client (Ondo state government) must give proper time and priority on her construction project and tacking appropriately time verdict. Most factors related to consultant it is due to not understanding the client necessities, not having proper project information, absence of some detail in drawing etc.

#### **V. RECOMMENDATIONS**

Public organizations should be commended for the efforts and mechanisms put in place to achieve effective implementation of projects in order to meet their strategic objectives and fulfill their legal mandates, it is clearly imperative to put in place the following

measures to re-enforce the existing mechanisms and practices:

Public entities should establish clear channels of communication during project implementation in order to enhance stakeholder acceptability. Public projects should be demystified so that they are not made to look as if they are preserving only for the top and middle level managers at the total exclusion of the lower staff. Paradoxically, these same lower level staffs are the ones expected to use the project once completed.

Therefore, the paper recommends the following based on the conclusions reached.

- i. Risk management practices should be excellently used.
- ii. There should be proper planning and proper payment from client.
- iii. There should always be a client's representative for a project and selecting experts that understand their assignments.
- iv. Clear contract and Bills of Quantities (BOQ) and computation of amount of financial damages should also be encouraged.
- v. To ensure competence of the professionals, the society of project manager, the Nigeria society of Engineers (NSE), the council for Relation of Engineering in Nigeria (COREN), the Nigeria institute of building (NIOB), the Nigerian institute of Architects, the civil Engineering Society (CES) and the government should jointly work together.
- vi. To preserve the construction projects after its completion, the quality of materials used in construction projects must not be compromised.

#### **VI. CONTRIBUTION TO KNOWLEDGE**

Despite the large number of studies on the causes of cost escalation and schedule delays in construction projects, little or no research has been undertaken in Nigeria in general and in particular Ondo State which addresses the challenges identified in appraising a finished project like the State Caring Heart primary school project. The fact that there is no literature on similar studies conducted suggests that little attention has been paid to this area of investigation. The results generated provide information on future implementation of similar projects done as specified in the literature in avoidance of identified pitfalls and challenges

encountered during the execution and completion of the Caring Heart Mega Primary Schools project, such as wrong method of estimation/inaccurate of poor estimation of original cost; additional work; unforeseen site condition; cost of materials; shortage of Technical, managerial and supervisory personnel; and unrealistic contract durations imposed by client among others contributed largely to the project delay and budget overrun.

[12]. Moore, W. E. (1963). *Man, Time and Society*. New York: Wiley.

## VII. REFERENCES

- [1]. Sanvido, V., Grobler, F., Pariff, K., Guvents, M., and Coyle, M. (1991). Critical Success Factors for Construction Projects. *Journal of Construction Engineering and Management*. pp. 118; 1; 94-111.
- [2]. Freeman, M., & Beale, P. (1992). Measuring project Success. *Project Management Journal*, 23 (1), 8-17
- [3]. Hatush Z and Skitmore M. (1997). Evaluating Contractor Prequalification Data: selection criteria and project success factors. *Construction Management and Economics*.15; 2; 129-147.
- [4]. Alarcón, L. F., and Ashley, D. B. (1996). "Modeling Project Performance for Decision Making", *Journal of Construction Engineering and Management*, 122 (3), pp. 265-273.
- [5]. Naoum S. G. (1994). Critical Analysis of Time and Cost of Management and Traditional Contracts. *Journal of Construction Engineering and Management*. 120; 3; 687-705.
- [6]. Chan A. P. C. (1997). Measuring success for a construction project. *The Australian Institute of Quantity Surveyors – Referred Journal*, 1997; 1; 2; 55-59
- [7]. (Bubashait, A. A., and Almohawis, S. A. (1994). Evaluating the general conditions of a construction contract. *International Journal of Project Management*; 12(3), pp. 133 - 135
- [8]. Herzberg, F., Mausner, B. and Snyderman, B., (1959). *The Motivation to Work*. New York, John Wiley and Sons, Inc.
- [9]. De Wit, A. (1988). Measurement of project success. *International Journal of Project Management* Vol. 6.
- [10]. Black, F. (1972). Capital Market Equilibrium with Restricted Borrowing. *Journal of Business*. 45:3, pp. 444-454.
- [11]. Smelser, N. (1963). *The Sociology of Economic Life*. Englewood Cliffs, N.J.: Prentice-Hall.