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REMEDIES TO TIMELY DELIVERY OF CONSTRUCTION PROJECTS IN LUSAKA, ZAMBIA – AN EXPLORATORY STUDY

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ABSTRACT

The construction industry is a key sector in the development and economic growth of Zambia, however, the industry has not escaped the challenges facing other countries worldwide in terms of delivering construction projects on time as stipulated in the contracts. This paper assesses the construction professionals' perception on the measures of minimising constuction project delays in Lusaka – Zambia. The data used in this paper were derived from both primary and secondary sources. The secondary data was collected via a detailed review of related literature. The primary data was collected through a well-structured questionnaire which was distributed to construction professionals, which include: Architects, quantity surveyors, builders, civil engineers, land surveyors and project managers. Out of the 50 questionnaires sent out, 32 were received back representing 64% response rate. Data received from the questionnaires was analysed using descriptive statistics procedures. Findings from the study revealed that site management and supervision, effective strategic planning, clear information and communication channels, use proper and modern construction equipment and proper project planning and scheduling were the major measures of minimising construction project delays. The study contributes to the body of knowledge on the subject of minimising construction project delays in Lusaka, Zambia.

Keywords: Construction Industry, Delays, Lusaka, Zambia

1. INTRODUCTION

The construction industry is a key sector in the development and economic growth of Zambia according to the National Council for Construction report (2004). However, the construction industry in Zambia has not escaped the challenges facing other countries worldwide in terms of delivering projects on time as stipulated in contracts. Projects or construction works that are not delivered on time to the client are referred to as delayed projects. Mohamad (2010) defines delay as an act or event that extends the time to complete or perform an act under the contract. Also, Assaf and Al-Hejji (2006), defined delay as the time overrun either beyond completion date specified in a contract, or beyond the date that the parties agreed upon for delivery of a project.

It is basically a project slipping over its planned schedule and is considered as a common problem in construction projects worldwide. Assaf and Al-Hejji (2006) further illustrate that, to the owner, delay means loss of revenue through lack of production facilities and rent-able space or a dependence on present facilities. In some cases, to the contractor, delay means higher overhead costs because of longer work period, higher material costs through inflation, and due to labour cost increases.

Theodore (2009) classifies delays into two, those caused by the client and those caused by the contractor. Delays caused by the client such as late submission of drawings and specifications, frequent change orders, and incorrect site information generates claims from both the main contractors and sub-contractors which many times entail lengthy court battles with huge financial repercussions (Theodore, 2009). Delays caused by contractors can generally be attributed to poor managerial skills. Lack of planning and a poor understanding of accounting and financial principles have led to many a contractor's downfall (Theodore, 2009). Hence, this paper is aimed at identifying the causes and effects of construction project delays in Lusaka, Zambia. This is because the aim of any construction project is to successfully complete the project on time, within budget and with high quality. This study focuses on the completion of projects on time thus overcoming delays. Alkhathami (2004) states that delay can be defined as extra time required to finish a given construction project beyond its original planned duration, whether compensated for or not.

2. CONSTRUCTION PROJECT DELAY – MEASURES OF MINIMISING DELAYS

Aiyetan et al. (2011) show that the principle of Right-First-Time holds great value. Right-first-Time requires accuracy and precision. Accuracy means reflecting the realities (specifications), whereas precision implies meeting the specific dates. The processes of construction demand accuracy and very high precision. Wei (2010) illustrates that when a construction delay occurs, there is no question that the Owner suffers financially. But the extent to which the owner can recover loss of income from the Contractor, and more importantly minimize the risk that such delays will occur, depends largely on how the construction contract was drawn up.

Tabish and Jha (2011) identify five successful criterions that can be used to deliver construction projects on time. The study further revealed that there are independent measures that can be taken in each criteria to reduce delays. These criterions are as follows; Schedule performance criterion, cost performance criterion, quality performance criterion, safety performance criterion and No-dispute performance criterion.

Aiyetan et al. (2011) identified twelve factors that would influence project delivery time, these includes: Construction planning and control techniques; management style; economic policy; the quality of management during construction; site access conditions; site ground conditions; motivation of workers, constructability of designs; socio and political conditions; client understanding of the design; procurement and construction processes; the quality of management during design; and physical environmental conditions. Wei (2010) fifteen ways of minimising delays were identified and ranked them as follows; and hence, this study adopted them, as they were more comprehensive factors that can minimize construction project delays; site management and supervision, effective strategic planning, clear information and communication channels, collaborative working in construction, proper project

planning and scheduling, frequent coordination between the parties involved, complete and proper design at the right time, use appropriate construction methods, accurate initial cost estimates, proper material procurement, proper emphasis on past experience, frequent progress meeting, compressing construction durations, use proper and modern construction equipment and use up-to-date technology.

The above measures of minimising construction delays are in agreement with the study by Majid (2002), where these measures were identified as the most effective ways of reducing construction project delays.

3. RESEARCH METHOD

The data used in this paper were derived from both primary and secondary sources. The primary data was obtained through the survey method, while the secondary data was derived from the review of literature and archival records. The primary data was obtained through the use of a structured questionnaire survey. This was distributed to a total of 50 construction professionals that included; quantity surveyors, civil engineers, architects, builders, land surveyors, and contractors who are currently involved in construction works in Lusaka, Zambia. This yardstick was considered vital for the survey in order to have a true reflection of the measures of minimising construction project delays. All professional and contractors in Lusaka had an equal chance to be drawn and participate in the survey. Out of the 50 questionnaires sent out, 32 were received back representing a 64% response rate. This was considered adequate for the analysis based on the assertion by Moser and Kalton (1971) that the result of a survey could be considered as biased and of little value if the return rate was lower than 30–40%. The data presentation and analysis made use of frequency distributions and percentages of all the respondents. The research was conducted between the months of June to August, 2013.

3.1 Mean Item Score (MIS)

A five point Likert scale was used to determine the measures of minimising construction project delays in Lusaka with regards to the identified factors from the reviewed literature. The adopted scale was as follows:

1 = Extremely unlikely
2 = Unlikely
3 = Neutral
4 = likely
5 = Extremely likely

The five-point scale was transformed to mean item score (MIS) for each of the factors of measures of minimising delays as assessed by the respondents. The indices were then used to determine the rank of each item. The ranking made it possible to cross compare the relative importance of the items as perceived by the respondents. This method was used to analyse the data collected from the questionnaires survey.

The mean item score (MIS) was calculated for each item as follows as in Equation 1.0;

$$MIS = \frac{1n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5}{\sum N} \quad \text{.....Equation 1.0}$$

Where;
n1 = Number of respondents for extremely unlikely;
n2 = Number of respondents for unlikely;
n3 = Number of respondents for neutral;
n4 = Number of respondents for likely;
n5 = Number of respondents for extremely likely;
N = Total number of respondents

After mathematical computations, the criteria are then ranked in descending order of their mean item score (from the highest to the lowest).

4. FINDINGS AND DISCUSSION

Findings from the 32 usable questionnaires revealed that 25% of the respondents had diploma degree as their highest qualification while 75% had bachelor's degrees. Further findings revealed that 53% of the respondents, who were all construction professionals, were government employees, 25% were employed by consultants and 22% were employed by contractors. The statistical mode for years of experience of the respondents was in the range of 1-5 years while 31% of the respondents were handling an average of 3-4 construction projects in Lusaka. The following were the results of the methods of minimising construction project delays.

4.1 Measures to minimise construction project delay

When the respondents were asked to rate measures that can be taken to deliver construction projects on time in Lusaka, the following result were obtained; Results as presented in in Table 1 Revealed that site management and supervision was the most effect way of minimising delays in Lusaka. Effective strategic planning, clear information and communication channels and use proper and modern construction equipment were ranked second most effective measures of minimising delays on construction site in Lusaka. These results are in general agreement with the study by wei (2010) where site management and supervision, effective strategic planning and Clear information and communication channels were identified as the most effective measure of minimising construction project delays.

Table 1: Measures to minimise construction project delay.

Methods to minimizing construction delays	MIS	Rank (R)
Site management and supervision.	4.22	1
Effective strategic planning.	4.13	2
Clear information and communication channels.	4.13	2
Use proper and modern construction equipment.	4.13	2
Proper project planning and scheduling.	4.10	3
Adherence to construction specifications.	4.06	4
Frequent coordination between the construction team.	4.03	5
Building according to the construction drawings.	4.03	5
Complete and proper design at the right time.	4.00	6
Up-to-date technology utilization.	3.97	7
Appropriate construction methods.	3.94	8
Collaborative working in construction.	3.91	9
Frequent progress meeting.	3.88	10
Accurate initial cost estimates.	3.84	11
Proper material procurement.	3.84	11
Fast-tracking construction.	3.68	12

5. CONCLUSION AND RECOMMENDATION

Literature review showed that there are many measures that can be employed to minimise construction project delays. The study further identified site management and supervision, effective strategic planning, clear information and communication channels, use proper and modern construction equipment and proper project planning and schedulingas as the major measures of reducing delays. Findings from the study supported work done by previous researchers and scholars that not a singular factor can be employed to minimise delays in Lusaka, Zambia. In recommendation, construction team need to be aware of the factors stated above in order to minimise the construction project delays. Furthermore, the construction team should practice the identified measures of reducing construction project delays such as; Site management and supervision, effective strategic planning, clear information and communication channels, use proper and modern construction equipment, and proper project planning and scheduling among other identified measures.

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