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CRITITICAL FAILURE FACTORS AND PROSPECTIVE SOLUTIONS OF CONSTRUCTION PROJECT IN NIGERIA: CASE OF BIDA–MINNA ROAD PROJECT

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ABSTRACT

The study used sequential data collection approach through an in-depth semi-structured interview (16 participants) and questionnaire survey (230 participants) to gather the perceptions of some project management practitioners: contractors, consultants and client on the factors that lead to failure of project in Nigeria with reference to Bida–Minna trunk–B road maintenance project. The Relative Importance Index (RII) was used to determine the relative importance of the factors identified. This was followed by Spearman rank correlation coefficient and Kruskal Wallis test to measure the degree of agreement among the variable perceptions. Thirty five (35) factors were identified as the main factors, the top eleven (11) factors were depicted as primary, 'money, corruption and politics', these factors have indexed averagely between 0.702 and 0.793. Secondary, were other management practices within the client's organizations that impede the success of the project. These unpleasant phenomena were termed as 'management deficiencies and unorganized bureaucracy protocols'. The average scores of these factors ranges between 0.609 and 0.686. The least factors were regarded as minor and were referred to as lack of resources and external forces. These factors were averagely rated very-low (0.577and 0.593) by all participants and lack of resources according to the respondents was regarded as insignificant factor causing delay but was linked to the chief delay factors, which can be traced back to insufficient funds to mobilise resources, as such, work progress were hampered on site. Four (4) recommendations were offered among which was that, parliament should make laws that would give independence to technocrats that are charged with the execution of government projects from the political interference.

KEYWORDS: ***Project delay, Project failure, Construction projects, Bida–Minna Trunk–B Road, Critical failure factors.***

INTRODUCTION

Delay in Construction Projects has been a global phenomenon, hence one of the most important problems in the Construction industry. The 82-km Bida–Minna Trunk–B road project was awarded in February, 2020 to a local contractor at a total sum of Eighty six million, six hundred and forty thousand dollar ($86.64m) and 18 months completion period. Delays occur in most construction projects and the magnitude of the delays varies considerably from project to project. In the construction context, the word "delay'' refers to something happening at a later time than planned, beyond the date that the parties agreed upon for the delivery of the project. In construction project, delay could be defined as the slowing down of works without necessarily stopping the construction progress entirely. Delay can lead to time overrun, thereby resulting to failure in project delivery. Delays occur in most construction projects in different magnitudes and the significant of these delays varies considerably from project to project**.** Construction projects are facing many uncertainty and unpredicted factors that may result in a delay, and ultimately failure in completion of the project. Generally, according to Ahsan and Gunawan, (2010), and Remon and Asmaa (2016); the origin of the delay in construction projects could be traced to incapacitations of the teams involved in the project, unavailability of resources, unfriendly environmental conditions, interference of third parties and breaching of contractual relationships. The literature and previous studies from Amid *et al.* (2012) and Rauzana (2022) classified the causative factors of construction delay as clients induced delay; contractors induced delay and external factors.

RESEARCH METHODOLOGY

Using an in-depth semi-structured interview (exploratory) and questionnaire survey from project management practitioners, contractors and client (government officials), thirty five (35) factors were identified as the causes of construction projects failure in the 82-km Bida–Minna Trunk–B road project, that has lingered for good 26 months with only about 5% certified and paid job as against the

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planned 18 months completion period. The failure factors were grouped into three main themes namely: '[1]money, [2]corruption and [3]politics', secondly: 'management deficiencies and unorganized bureaucracy protocols', and thirdly; 'lack of resources and external forces.'

Kruskal–Wallis's test was used to analyse data. It is a one-way ANOVA and a non-parametric method for testing whether samples originate from the same distribution. It was used for comparing two or more independent samples of equal or different sample sizes. It was used to test agreements of scoring amongst groups of respondents. Spearman's rank correlation was used in conjunction with Kruskal Wallis test to test the parametric equivalent of the Kruskal–Wallis's test.

A significant Kruskal–Wallis's test indicates that at least one sample stochastically dominates one other sample. The test does not identify where this stochastic dominance occurs or for how many pairs of groups stochastic dominance obtains. Since it is a nonparametric method, the Kruskal–Wallis's test does not assume a normal distribution of the residuals, unlike the analogous one-way analysis of variance. If the researcher can make the assumptions of an identically shaped and scaled distribution for all groups, except for any difference in medians, then the null hypothesis is that the medians of all groups are equal, and the alternative hypothesis is that at least one population median of one group is different from the population median of at least one other group. Kruskal – Wallis Formular is presented below.

$$H = \left(\frac{12}{n(n+1)}\sum_{j=1}^{k}\frac{R_j^2}{n_j}\right) - 3(n+1)$$

where k = *number of comparison groups,*
n = *total sample size,*
n_j = *sample size in the jth group,*
R_j = *sum of the ranks in the jth group.*

RESULTS

Table 1: Tabulation of results

Factors	Contractor's Representatives		Consultant's Representatives		Client's representatives		Overall Average		
	RII	Rank	RII	Rank	RII	Rank	RII	Rank	Importance level
Delays in payments	0.817	1	0.773	1	0.789	4	0.793	1	Most important
Political interference	0.841	4	0.788	2	0.744	1	0.791	2	Most important
Partisan politics	0.823	2	0.752	4	0.751	2	0.775	3	Most important
Project funding	0.817	4	0.756	3	0.747	3	0.773	4	Most important
Corruption by client's officials	0.814	6	0.746	6	0.737	7	0.766	5	Most important
Release of funds	0.791	7	0.737	7	0.74	5	0.756	6	Most important
Political bully by project leaders	0.757	10	0.748	5	0.74	5	0.748	7	Most important
Poor planning	0.823	2	0.704	10	0.709	10	0.745	8	Most important
Many projects with government	0.774	9	0.713	9	0.73	8	0.739	9	Most important
Change in government	0.786	8	0.717	8	0.705	11	0.736	10	Most important
Scope changes	0.733	11	0.65	16	0.723	9	0.702	11	Most important
Poor Management practices	0.719	13	0.681	12	0.659	20	0.686	12	More important
Lack of project monitoring	0.681	17	0.692	11	0.668	17	0.680	13	More important
Lack of human capacity	0.704	14	0.65	16	0.691	14	0.681	14	More important
Bureaucracy	0.649	25	0.66	14	0.68	15	0.663	15	More important
Communication gap	0.643	26	0.644	19	0.694	13	0.660	16	More important
Lack of resources	0.681	17	0.633	23	0.667	18	0.660	17	More important
Change in project leadership	0.704	14	0.642	20	0.625	29	0.657	18	More important
Wrong specification	0.669	20	0.64	22	0.656	21	0.655	19	More important
Wrong project scope	0.669	20	0.642	20	0.653	22	0.655	20	More important
Feasibility studies	0.658	23	0.623	25	0.702	12	0.661	21	More important
Sanction by regulations	0.722	12	0.612	28	0.642	24	0.658	22	More important
Pressure groups (media& NGOs)	0.693	16	0.623	25	0.649	23	0.655	23	More important
Procurement process	0.667	22	0.648	18	0.631	26	0.649	24	More important

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Project management deficiencies	0.670	19	0.617	27	0.674	16	0.654	25	More important
Unmatched Project team	0.652	24	0.669	13	0.604	31	0.642	26	More important
Poor project supervision	0.635	27	0.656	15	0.628	27	0.640	27	More important
Consultants delay to certify work	0.62	28	0.627	24	0.614	30	0.620	28	More important
Project not needed anymore	0.577	31	0.603	30	0.663	19	0.614	29	More important
Users' involvement	0.586	30	0.606	29	0.635	25	0.609	30	More important
Natural disaster	0.562	32	0.59	31	0.628	27	0.593	31	Least Important
Traditional Belief system	0.602	29	0.577	34	0.593	33	0.590	32	Least Important
Resistance from local community	0.554	33	0.587	32	0.596	32	0.579	33	Least Important
Inclement weather	0.553	34	0.586	32	0.595	34	0.578	34	Least Important
Discovery of artefacts on site	0.552	35	0.586	35	0.595	35	0.577	35	Least Important

RESULTS AND DISCUSSIONS

From table 1, it is important to establish that the rankings provided by the Contractors, Consultants and the Client (government officials) were not due to chance or some form of bias but represent the true causes of the project failure. Kruskal–Wallis's test is used for comparing two or more independent samples of equal or different sample sizes. The test is a non-parametric test which means the distribution does not necessarily need to be normal before they can be applied. In other words, the computation uses median and not mean, hence, they are not affected by outliers. Spearman rank correlation was also used. The results of the computations showed a Spearman rank correlation coefficient of 0.791, 0.766 and 0.750 for Contractors and Consultants, Contractors and Client's organization and Consultants and Client's organization respectively. All the three coefficients were strong and positive which shows a high agreement between the rankings of the three categories. The pair with the highest agreement was Contractors and Consultants. The thirty five factors were grouped into three and the rankings showed that the most important factors in descending order.

Primarily, 'money, corruption and politics', these factors have averagely indexed between 0.702 and 0.793. The money factor was summarized as inability of the client to pay as at when due, this hampers the progress of the work greatly, as there is no money to finance the projects by the contractors and commercial banks not willing to borrow out funds due to accrued debts by the construction firms. Corruption by government officials cannot be overemphasized; this has led to bullying the contractors handling the job. The Client resulting to demining the scope of work and specification; according to contractors, scope of works and specification has changed more than ten times within the five years. Concerning politics, in Nigeria, apart from the fact that each government do not like to build upon the work of its predecessor which is a form of political inconsistency, within a government set up, the political leadership many a time to take the full control of the execution of such projects regarded as 'constituency project', they turn all government project to partisan politics.

Secondarily, there were other management practices within the performing organizations that impede the success of the project. These unpleasant phenomena are termed 'management deficiencies and unorganized bureaucracy protocols. The average scoring of these factors ranges between 0.609 and 0.686. This shows that within the management leadership, there were other management and administrative practices such as lack of planning, administrative inconsistency and unorganized bureaucracy that led to failure in government construction projects. And lastly, 'lack of resources and external forces. These factors were averagely rated very-low by all participants between 0.577 and 0.593. This means they are insignificant factors that caused delay in executing the project. The lack of resources according to the respondents is not an original factor causing delay but is linked to the chief delay factors, which can be traced back to insufficient funds to mobilise resources, as such work progress were hampered on site. The external forces are factors beyond the control of the Client, Contractors and Consultants such as inclement weather and natural disaster. Even though these factors were not considered by the respondents as very important factors, attention to them is very essential as they may cause failure through the total abandonment of construction works.

CONCLUSION

From the results obtained and the subsequent analysis of the result, it is safe to conclude that factors that caused failure in the reconstruction of Bida–Minna 82 km Trunk–B Road are:

1. The project lacks funding
2. Corruption of government officials
3. Political interference
4. Unorganized Bureaucracy
5. Vagaries of weather condition

RECOMMENDATIONS

The following recommendations were offered-

1.0 It is recommended that parliament should make laws that would give independence to technocrats that are charged with the execution of government projects from the political interference.

2.0 The government should reduce the bureaucratic processes involved in the procurement of Nigerian government construction projects.

3.0 The use of hard copies of projects documents should be replaced with electronic copies; this will simplify easy access of projects documents by the media and the general public and enhance monitoring and transparency of the project.

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4.0 Enough allowances **(7.5%** to **10.0%)** should be provided for contingencies.

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