

AN EVALUATION OF THE IMPLEMENTATION OF NIGERIAN PUBLIC PROJECTS BASED ON BASIC SUCCESS FACTORS

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Abstract

This research is concerned with the broad objective of evaluating the implementation of Nigerian public projects based on "basic success" factors. This is against the backdrop of evident cases of 'completed' and uncompleted, abandoned and failed projects within the public sector. In order to achieve this, primary data were collected through two sets of questionnaire while secondary data were sourced from the institutions studied; National Universities Commission (NUC) and other relevant sources. 13 higher institutions were subjectively selected for ease of data sourcing and a total of 58 projects in these institutions were covered as shown in Appendix 1. The data collected were analysed using simple percentages and multiple regression. Two hypotheses formulated were tested using econometric tools of F-ratio and t-statistic. It was found that there is no significant relationship between cost, time, client satisfaction, follow-up mechanism and other factors and project implementation (performance) in Nigerian tertiary institutions. Again, only goal setting and adequacy of funds impact positively and significantly on project performance in Nigerian tertiary institutions. The other five success factors do not impact positively and significantly on project performance in Nigerian tertiary institutions. Based on these and other findings it is recommended that policy formulators in Nigerian tertiary institutions should embark on setting objective (attainable) goals and providing adequate funds through the conventional source and other sources like the capital market for articulated projects. This is in addition to conscientious attitudinal change of projects' stakeholders, among other recommendations. It is strongly believed that if the recommendations are objectively implemented they will act as a catalyst to the development of our tertiary institutions and growth of the economy at large.

1. Introduction

Projects are major indicators and facilitators of economic and social developments. Regrettably, public projects (represented by projects in Nigerian tertiary institutions) in a developing country like Nigeria have been stalled as a result of improper evaluation, mismanagement, among others, leading to

colossal losses to both individuals as well as governments. Most times, already completed projects will not either meet their target cost, time or expected benefit. This is a worrisome development especially in a growing economy like ours. Thus, incomplete projects, abandoned or failed projects have been attributed to the conscious or unconscious non-recognition and integration of the success factors in projects implementation. Good enough, there are some basic success factors that are supposed to put projects into its proper course of success. 'Success' here is defined in forms of time criterion, effectiveness criterion (achievement of set goals) monetary criterion (cost) adequately of funds, follow-up mechanism, end-user criterion (satisfaction) and other factors.

This study related these basic success factors to the implementation of projects in 13 selected Nigerian tertiary institutions with a view to identifying the missing link. Cases of uncompleted, abandoned and failed projects within the public sector are very evident in Nigeria, especially in the tertiary institutions. They have continued to retard the progress and development of the country in general and our educational sector in particular, and will continue to mar the effective management of the economy, if unchecked. It became necessary to look inward with a view to checking this ugly trend.

Interestingly, there are basic success factors that help to bring into proper focus the actual implementation of projects, whether public or private, to its successful end to the benefit of the end-user (client) and the promoter. Despite these factors, public projects' abandonment / failures and uncompleted projects are on the increase. Fortunately, there have been allegations of 'sufficient funds' in the University system and other higher institutions that would have ordinarily created room for more successful projects than unsuccessful ones. To this end, one would want to know if Nigerian Project Engineers/Managers are ignorant of these basic success factors in the implementation of public projects or they merely overlook them or are constrained by the 'invisible hand' factor. Also which of these factors is most critical?

In all, the purpose of this study is to identify and assess the overall performance of selected projects in Nigerian tertiary institutions in terms of combined factors of time, cost and end-user criteria, among others. It is also the purpose of this research to determine the impact of the basic success factors at the various stages of the projects' implementation under study, which culminate in project performance. Project performance is used interchangeably with project implementation especially in the research hypotheses.

2. Literature Review

Project implementation or execution is only a second last stage in a project's life cycle. It has been differently described as the "operation stage" (Kayode, 1989)

“action stage” (Okereke, 2008) and “production and acquisition stage” (Cleland and Ring, 1988). These descriptions are a matter of terminology and depend on the type and nature of the project as well as the perception of the concerned entity. Whatever is the terminology adopted, this stage involves the actual and physical activities associated with the project being carried out- that is concretization of plans, negotiations and agreement reached on a project. This stage also assumes the highest proportion in the entire project’s life cycle in terms of time and resources of the organization. Therefore, the success of this stage determines the success of the project and by extension the success of the organizational goals and objectives.

Successful implementation of a project can be defined using a number of criteria. Pinto and Slevin (1987) pointed out that a project is generally considered to be successfully implemented if it –

- (a) Comes in on-schedule (time criterion)
- (b) Is executed within budget (monetary criterion)
- (c) Achieves basically all the goals originally set for it (effectiveness criterion).
- (d) Is accepted and used by the client for whom the project is intended (client satisfaction criterion).

They, however, developed a Ten-factor model, which identified critical success factors as Project Mission, Top Management Support, Project Schedule Plans, Client Consultation, Personnel, Technical Task, Client Acceptance, Monitoring and Feedback, Communication and Troubleshooting. But, among these factors, Iwuagwu (1994) discovered troubleshooting as the only factor which has the most significant effect on the level of project performance. However, various degrees of relationships existed between project performance and the ten success factors used.

Baker, Murphy and Fisher (1988) in their study considered a project an overall success if it meets the technical performance specification or mission and there is a high level of satisfaction concerning the project’s outcome among key people in the parent organization, key people in the client organization, key people in the project team, and key users or clients of the project effort. On their own part, Nylén, 1996; Nwachukwu, 2003, Ezirim 2000 and Mishra, 2003 have noted time and cost overruns to be common issues in the successful implementation of projects in the construction industry. Epille (2003) identified lack of adequate skills, training and experience in project management as factors leading to delay in the take off of new commercial projects. Lucas (1979 in Iwuagwu, (1994) emphasized client’s satisfaction or acceptability of the project as an important factor in projects’ success. For him, Follow-up mechanism or monitoring and Feedback mechanism are very essential factors for projects’ success. This, according to Spinner (1981), gives the Project Manager the ability

to anticipate problems, to oversee corrective measures and to ensure that deficiencies are not overlooked.

Given the successful outcome of the above studies reviewed, none treated project implementation success factors in Nigerian tertiary institutions. Having marked this, the topic calls for urgent and serious attention. And, indeed, it constitutes the concern of this study.

3. Methodology

The Research deals essentially with implementation of projects in Nigerian tertiary institution using Basic Projects' Success Factors (BPSF). 13 tertiary institutions were covered and 58 projects were studied (See Appendix 1). The study was quasi-experimentally designed in which respondents' opinion were sought on projects' problem areas and evaluated for relevant inferences. Thus, two sets of questionnaires were designed and distributed to two key staff of Works and Physical Planning Units of the institutions covered respectively. One copy is also given to Assistant Works Director in each of the Seven Universities covered. This is because of the broad base of the University System. This brings the total number of respondents to 33.

The first set of questionnaire is a preliminary one aimed at identifying peculiar and/or expanded factors affecting project implementation in Nigerian tertiary institutions. The second set of questionnaire is used to isolate the identified problems; form and select seven basic success factors. This set of questionnaire is constructed following the Linkert Scale of ranking observations on a five-point maximum scale. Each of the options strongly agree, agree, undecided, strongly disagree and disagree are assigned values of 5 to 1 respectively.

The study used simple percentages and multiple regression analysis. Multiple regression analysis involves two variables: Dependent and Independent variables. The dependent variable is the Project Performance while the independent variables are the Basic Success Factors. Thus a model is formulated as $Y = f(X_1, X_2, X_3 \dots X_n)$

Where $Y =$ Project Performance (Implementation)

$X_1 - X_n =$ Project's Basic Success Factors which respectively include, cost, time, satisfaction of client, goal set, adequate funds, follow-Up mechanism and Other factors.

Baker B. et al (1988) identified ten of such success factors as local commitment on project team, accurate initial profit cost estimate, adequate team capability, etc. Pinto and Slevin (1987) also identified similar or related factors. This study made use of some of these factors and others relevant to our

immediate environment thereby bringing the total number of basic success factors used to seven, as stated above.

Project performance is used for our analyses and is derived accordingly. In measuring project performance, secondary data sourced from the institutions studied and other relevant sources were used and projects were categorized into three and weights assigned to each category as follows:

Category	Weights
1. Wholly realized projects in terms of cost, time and satisfaction of end-user	100
2. Partly realized projects, which are those completed untimely, at increased cost and possibly with the satisfaction of end-user	70
3. Not realized projects which are those either Abandoned or 10 Uncompleted with genuine reason or Uncompleted with unacceptable reason or Failed	40 10 0

The weights assigned to each project are summed up and the average value calculated to determine the performance of the projects studied. This is done institution by institution and on the aggregate as shown in Appendix I, and applied in our analysis. Survey data generated from the second set of questionnaire, as described earlier, was also used to determine Project Performance. This is same with independent variables and they constituted values applied in our estimation model, which used multiple regression analysis. This analysis helped us to investigate the interactions of the dependent and independent variables and possible effect of each of the basic success factors at a chosen a confidence level of 95% (i.e 5% probability level).

Hypotheses were formulated in their null form as:

H₀₁: There is no significant relationship between basic success factors and the project implementation in Nigeria.

H₀₂: Projects' basic success factors do not impact positively and significantly on the performance of public projects in Nigerian tertiary institutions.

These hypotheses were tested using estimated results which test for model's significant (t-test) and overall performance and joint significant (F-ratio) all at 5% level of significance. Given the methodological approach, the result can be used for generalization.

4 Presentation of Data and Analysis

Data presented in Appendix 2 are sourced through structured type of questionnaires designed and distributed to thirty-three staff of thirteen tertiary institutions studied as itemized in Appendix I. Out of the 33 questionnaires distributed, 26 or 79% were returned and this formed the basis for our analysis. The data obtained from primary sources, as specified in section 3.0, are shown in Tables 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6 and presented in Appendix 2. They are used in estimating our regression model, as developed and enumerated in section 3.0. Table 4.1 is a summarized version of Appendix I, showing institution by institution (for 13 institutions) project's performance and the total average projects' performance. Tables 4.2 and 4.3 are representation of how scores in Table 4.4 are generated. They are scores for the first respondent. Other respondents' scores are calculated the same way using Likert 5 point scale and are presented in Table 4.4. The maximum score for each of the seven Basic Success Factors (X) is 24 while that of Project Performance (Y) is 29. Data in Table 4.4 including project performance is used for our estimation. Problems hindering the good performance of projects are articulated and identified by the individual's institutions and this is summarized in Table 4.5.

4.1 Data Analysis

The data presented in Appendix 2 is analysed as follows:

The analysis here is done from the survey section of the study. The most relevant question among the items in the questionnaire is analysed as a matter of expediency. From the responses obtained there is obvious cost overruns which affects project performance. 18 respondent or 70% are in agreement with this while 8 respondents or 30% are in disagreement. The secondary data in Appendix I show that there is on average cost overruns of ₦3.65m. This goes to support the obvious cost overrun, which affected project performance. Projects' time targets are not met. 20 respondents or 77% are in agreement with this while 6 respondents or 23% either strongly disagreed or merely disagreed. This has negatively affected projects performance, which is supported by the secondary survey data showing a time overrun of 14 weeks. This is in line with an average of 25 weeks found in executed projects in Bayero University, Kano. In United States of America projects are 222% longer than planned. (Akpan, 2009).

End-users of project studied are satisfied with the quality of work done. 10 respondents or 38% either strongly agreed or merely agreed while 15 respondents or 60% are either strongly or merely in disagreement. One respondent or 4% is undecided on the matter. There are 18 respondents or 70% who are in agreement that the goal(s) of the project are in line with that of the institution while only 8 respondents or 30% are in disagreement. There is almost a consensus among the respondents that fund adequacy is a critical factor to the

success of any project. 25 respondent or 96% either strongly or merely agreed to this while only 1 respondent or 4% merely disagree.

Follow-up mechanism is one of the basic factors in a project success and every project team has a follow-up mechanism set for itself. 15 respondents or 58% strongly agreed, 7 respondents or 27% agreed while 2 respondents or 8% disagreed and 2 respondents or 8% strong disagreed. This means that follow-up is in place among project teams. Corruption is identified as one of the problems hindering project execution in Nigeria tertiary institutions. 17 respondents or 65% strongly agreed, 6 or 19% agreed while 2 respondents or 8% disagreed and 1 respondent or 4% strongly disagreed. One can conclude that corruption is a critical factor in most failed, abandoned or uncompleted projects in our institutions of higher learning.

Project performance showed that project came out according to budget estimate. This got the support of 16 respondents or 61% who either strongly or merely agreed. 9 respondents or 35% are not in agreement to this. Only 1 respondent or 4% is undecided of this performance view. From our performance rating, as shown in Table 1 of Appendix 2, the overall average performance of the 58 projects rated is 60.24%. This is a good performance. However, at the individual institutions level, some of the projects performed very poorly or below average but none failed. However, the projects would have performed better than recorded if not for the problems identified, as shown in Table 4.5 of Appendix 2.

Table 4.6 of Appendix 2 is the estimation results, which shows association, relationship and significance from where the Implementation Model in Equation 4.1 emerged as shown below.

Emerging Project Implementation Model

$$\text{Project Performance} = -6.687 + .679X_4 + .349X_5 + 2.98 \dots\dots\dots 4.1$$

Goal set Adequate funds

7.036 3.618

(.000) (.001)

The estimation results in Table 4.6 showed that out of the seven basic success factors (used as independent variables) affecting project performance (as dependent variable) only two factors were retained thereby dropping five basic success factors as shown in equation 1 above. This means that these five factors, namely, cost, time, customer satisfaction, follow-up mechanism and other factors are not good predictors of project performance in Nigerian tertiary institutions. The two basic success factors retained by the regression analysis using stepwise approach constitute good predictors in project performance in Nigerian tertiary

institutions. Thus, the emerging implementation model can be used to predict (estimate) project performance given the values of these two factors.

From the emerging model, the coefficient of determination (R^2) shows the explanatory power of the model to be .859. It means that the variation in the model can be explained by the retained variables to the tune of 85.9% while the remaining 17.1% could be explained by other factors excluded from the model. The model's correlation coefficient (R) of .927 or 92.7% shows a highly strong relationship. Of course, a strong relationship exists between goal setting, adequacy of funds and project performance in Nigerian tertiary institutions.

In terms of significance of the model, the F-ratio is of a significant magnitude. The entire model with the above attribute is highly statistically significant at 2 degrees of freedom and at 5% probability level. The statistical significance of the model means that the results obtained can explain the entire model. The emerging model as shown in equation 4.1 explains the marginal effect of the independent variables on the dependent variable. Thus, a unit input in setting goal for a project, increases project performance by 68% given all other factors constant. Also a unit increase in funds increases project performance by 35% while holding other factors constant. This also shows that goal setting and adequacy of fund have a direct positive relationship with project performance.

4.2 Hypotheses Testing

Two hypotheses formulated in section 3.0 are tested here. The estimation results for multiple regression model presented and interpreted above formed the basis for our test of significance, which at 5% probability level is carried out. The F-statistics and t-statistic are used for this purpose. The decision rule is as stated in section 3.0.

Hypothesis I:

H_{01} : There is no significant relationship between basic success factors and project implementation in Nigeria.

H_{A1} : There is significant relationship between basic success factors and project implementation in Nigeria.

The estimation results as presented in Table 4.6 of Appendix 2 for hypothesis 1 show that the correlation coefficient is 88.2 percent. This means that there is a strong positive relationship between the basic success factors and project implementation in Nigerian tertiary institutions. To test for significance, we conducted an F-test. The results of this analysis show that the F-value for Model 1 is 84.302. The F-value at 5 percent level is 4.26. We thus accept the alternate hypothesis which states that there is significant relationship between basic success factors and project implementation in Nigeria. We also found that at 95

% confidence level, there is a significant relationship between goal setting and adequate funding and project implementation.

Hypothesis II: This hypothesis states as follows:

Ho₂: Projects basic success factors do not impact positively and significantly on the performance of public projects in Nigeria tertiary institutions.

HA₂: Projects basic success factors impact positively and significantly on the performance of public projects in Nigeria tertiary institutions.

The estimation results from Table 4.6 of Appendix 2 indicate that the coefficient of correlation (R) has a value of 92.7 percent which signify a positive and strong relationship between project basic success factors and the performance of public projects. The F-value from Table 4.6 has a value of 69.928 while at 5 percent level it is 4.28. This is very significant. Hence, we accept the hypothesis that the two project success factors- goal setting (Var.4) and adequacy of fund (Var.5) impact positively and significantly on the performance of public projects in Nigerian tertiary institutions. Thus, cost, time, client satisfaction, follow-up and other factors do not impact positively and significantly on the performance of public projects in Nigerian tertiary institutions.

4.3 Implications of the Results

The implication of the results of the study is based on the analysis carried out and some responses from the respondents. The result showed obvious cost and time overruns. This may be accounted to either delay in the release of approved funds, as agreed by 87% of the respondents or the issue of corruption which 84% of the respondents agreed is the major problem hindering project performance. The implication of all these is that the institutions' resources in particular and the national economy in general will continue to be depleted by this level of overruns, which in the long run will not provide for growth and development.

In the analysis, seven basic success factors were used in our estimation model. Out of these numbers only two were retained in the model. This has far reaching implications. It goes to suggest that emphasis of institutions should be placed on setting appropriate goals for projects and providing adequate funds for such projects when policies are formulated. But it does not necessarily mean that the five basic success factors dropped by the multiple regression analysis are not important factors in project performance. They are important factors, as revealed by the survey data. For instance, under 'Other Factors' 69% of the respondents agreed that change of Chief Executive (Vice-Chancellors, Provosts and Rectors) negatively affects project implementation (and by extension performance) while only 31% are of the opposing view. Thus, the degree of effect

of the five factors is less when compared with the two retained factors. We can, therefore, classify the seven success factors studied into two, namely, 'Basic Success Factors' and 'Success Factors'. The retained factors are of the former while the five excluded factors are of the latter.

5. Recommendations

The Governing Council, who is the policy formulator in Nigerian tertiary institutions, should articulate properly the project(s) to embark on; set appropriate and objective (attainable) goals; and make funds available. A complex bureaucracy in the release of the funds should be avoided (without compromising leakages) in order not to vitiate the set goal(s). This will help not only to eliminate cost and time overruns, but also achieve desired satisfaction from such project(s).

Given the place of fund adequacy in our implementation model and lean resources of tertiary institutions in Nigeria, it is recommended that they (institutions) should intensify efforts to diversify their sources of fund. Capital market is a good and unexploited source and the use of Public Relations Unit in generating funds for the institution, as recommended in Okereke (1998) is also good. The goals so set at the policy formulation stage should be made clear to project implementation team. This will make for active participation which culminates in project's success.

There should be deliberate and conscious attitudinal change among major stakeholders of institutions' projects, namely, Chief Executives, Project Implementation Team, and Other Support Staff. The Chief Executive of tertiary institutions should see projects from the point of view of the business going concept. It is an aberration for a Chief Executive to stop a good project because he did not initiate it. Personal interest should be subsumed in the broad interest of the project's success. Over and above this, training and retraining of institutions' staff especially those in the works and physical planning units should be a routine. This will help to update their skills in project execution and other preliminary stages of the project.

6. Conclusion

The research has successfully adopted seven basic factors in the implementation of public project in the Nigerian tertiary institutions. It is found that the seven factors are important in the success of public projects but out of the seven factors the most basic are two. Given this result, these factors are classified into two: namely "basic success factors" which include goal setting and adequacy of funds and 'success factors' which consists of cost, time, client satisfaction, follow-up mechanism and other factors. Therefore the basic success

factors are the most significant factors, which impact positively on projects performance. This gives an Emerging Project Implementation Model as shown in equation 4.1

The researchers have preferred recommendations, which are intended to provide improvement to those other ones, which mar project implementation among tertiary institutions in Nigeria and other public projects. Excellent project performance will depend on the knowledge of all these. It is hoped that the recommendations if objectively implemented will act as a catalyst in the development of our tertiary institutions and growth of the economy at large.

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APPENDIX I
SELECTED TERTIARY INSTITUTIONS' PROJECTS AND THEIR PERFORMANCE RATING, ESTIMATED AND ACTUAL COST AND TIME

S/N	Institution	Project	Performance Rating	Cost (₦'m)		Time	
				Estimated	Actual	Estimate	Actual
1.	University of port Harcourt	i) Construction of fence boundary Aluu Road phase 11 (UDSS Rd)	75	3.9	4.5	1yr	2yrs
		ii) Construction of Lecture Hall for college of continuing education	70	62.7	82.4	1yr	4yrs
		iii) Construction of 4-Bed room semi detached bungalows (ETF sponsored)	75	23.7	27.7	1yr	2yrs
		iv) Construction of Boundary-wall fence of Choba park	75	11.7	14.02	7months	1yr1month
		v) Blocks of public toilets Choba park	98	1.99	1.99	1yr	1yr1wks
		Average		78.6			
					61.4		
2.	Federal Polytechnic Oke	vi) Construction of School of Business Studies block	75	23	27	2yrs	5yrs
		vii) Accreditation of School of Business Studies Block					
		viii) Construction of classroom Block at Attain campus	100	35	35	1yr	1yr
		ix) Renovation of building at Ofrima campus					
		x) Construction of Access Road	100	2.5	2.5	1yr	1yr
		xi) Construction of ETF Building	100	3	3	1yr	1yr
		xii) Accreditation project	10	15		2yrs	7yrs
Average		40	10				
			45				
3.	Abia State University	xiii) Surface water supply project	40	24.5		1yr	
		xiv) Construction of Examination Hall	37.5	19.6		6months	
		xv) Construction of Hostel for Foreign students	20			6months	
		xvi) Construction of Staff Restaurant & Recreational Centre	20			6months	
		Average		29.92			

4.	Imo State University	xxvii) Construction of Outreach Block xxviii) Construction of Library Extension xix) Construction of College of Health Science Block Average	40 80 60 60.0	14.5 14.0 12.5	37.98	2yrs 2yrs 1yr	
5.	University of Nigeria, Enugu Campus	xx) Permanent Library Building Average	25 25	28		2yrs	
6.	Rivers State Polytechnic Bori	xxi) Access road/ drainage in the School of Engineering xxii) Senior Staff Quarters xxiii) Six class room blocks Average	70 80 80 76.67	1.9 1.5 6		3months 1yr 1yr	3yrs 3yrs 1yr
7.	College of Ed. (Tech) Omoku.	xxiv) Construction of office block complex Average	75 75	42		3yrs	5yrs
8.	College of Ed St. John	xxv) Construction of model Hostel Average	20 20	5.5		2yrs	
9.	Bayelsa School of Arts & Science Agudama Ene	xxvi) Construction of block fence Average	5 5	15			
10.	University Campus Agudama Epe, Yenagoa	xxvii) Construction of mini-water scheme Average	100 100	11.6	11.6	6months	6months

11	Bayero University Kano (BUK)	xxviii) Construction and furnishing of office Block at AKTH xxix) Construction and furnishing of 2 nd Hostel Blocks @ AKTH xxx) Construction of 500 KVA Generator Set House. xxxi) Construction of Faculty of Science A Library Building 1 xxxii) Construction of Classroom Block xxxiii) Construction of Computer Centre xxxiv) Construction of 20 Rooms Staff Quarters xxxv) Construction of 20 Rooms Staff Quarters	80 70 100 80 100 100 100	9.1 7.7 2.1 4.7 10.6 7.8 7.7	10.4 8.1 2.1 3.9 10.6 3.8 10.3	6months 2months 2wks 1month 1yr 1month 1month 1 month 1wk 9months	7months, 2wks 1yr 1month 1month 1yr 1month 1month 1wk 1yr 4months
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		xxxvi hostels block Construction of 500 capacity Lecture Theatre	75	20.9	21.9	4months	7months1wk
		xxxvii Construction of Professorial Office Block	75	92.3	92.3	1yr 2months	2yrs 10months
		xxxviii Construction of Convocation Square	80	12.9	13.2	3 months	7 months
		xxxix Construction of Office Block of Aminu Kano Teaching Hospital	90	24.9	24.9	7months2wks	10months
		XL Construction of Sports Complex Phase I	90	19.4	19.4	7months 2wks	8months 2wks
		XXLi Construction of New University Clinic	90	7.5	7.5	1yr5months2wks	1yr 9months
		XLii Construction of Dr. Aminu Dantata Business School Hall	90	23.9	23.9	6months 2wks	1yr
		Average	90	35.9	35.9	1month	8months
		Average	80	7.2	10.8	6 months	8 months
12	University of Jos(UNIJOS)	XLiii Construction of Computer Center Phase II	80	4.7	4.7	3 months	5 months 2wks
		XLiv Fencing of Permanent site	90	2.8	2.9	6 months	11 months 2wks
		XLv Construction of Bakasi Market	80	4.4	4.4	2 months	7 months
		XLvi Construction of Car Park @ Permanent Site	100	12.4	12.95	6 months	8 months 1wk
		XLvii Construction of New Biochemistry Lab.	80	51.6	58.6	1yr1month	1yr3months2wks
		XLviii Construction NUNET Building Phase I	75	84.2			
		Average	75				

13 Federal University of Tech. Owerri(FUTO)	Xlix	Construction of Health Centre	85	4.2	8.0	9 months	9 months
	I	Construction of Staff School Phase I	85	10.5	19.0	2 months 2wks	2 months 2wks
	Li	Clan Room Block II	80	2.4	2.8	2 months	3 months
	Lii	Animal Laboratory Phase I	90	1.4	1.5	1 month	1 month
	Liii	Student Hostel Type II B	80	29.6	75.2	2 months 2wks	6 months 2wks
	Liv	Temporary Registry	80	2.4	3.2	2 months	3 months 1 wk
	Lv	Library Phase I	85	6.4	11.95	5 months	5 months
	Lvi	Fencing of FUTO Community Bank	85	0.39	0.72	1 months 2wks	1 months 2wks
	Lvii	Construction of School of Science Building Phase I	75	7.9	11.4	1 yr 1 month	5 yrs 4months
	Lviii	Construction of School Engineering & Engineering Tech Workshop II	75	1.9	2.8	1yr 1 month	6yrs 6months
	Average		82.0				

Total Average Performance Rating = 283.09

Project performance = $\frac{\text{Average of Total Average Performance Rating} = 783.09}{13} = 60.24\%$

Total Estimated Cost = 948.58

AV. Estimated Cost = $\frac{948.58}{58} = \text{N}16.35\text{m}$

Total Actual Cost = ~~N~~860.21

Average Total Actual Cost $\frac{860.21}{43} = \text{N}20.0$

Cost Overrun = Actual - Estimated = 20.00 - 16.35 = ~~N~~3.65

Estimated Time for 58 projects = 45 Yrs

Average $\frac{45}{58} = .78$ yrs = 8 months 3 wks

Actual time for 44 projects = 66 yrs 8 months

Average Actual Time = $\frac{66\text{yrs}8\text{mths}}{44} = 1\text{ yr } 1\text{ wk}$

Time Overrun = 14 weeks.

APPENDIX 2: Data/Result Presentation

Table 4.1 Project Performance Rating

S/No	Institution	Number of Projects	Average Performance Rating
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1	University of Port Harcourt	5	(%)
2	Federal Polytechnic, Oko	7	78.6
3	Abia State University	4	61.4
4	Imo State University	3	29.9
5	University of Nigeria, Enugu Campus	1	60.0
6	Rivers State Polytechnic Bori	3	25.0
7	College of Education (Technical), Omoku	1	76.7
8	College of Education, St. John	1	75.0
9	Bayelsa School of Arts & Science Agudama, Ene	1	20.0
10	University Campus, Agudama, Epe Yenagoo	1	05.0
11	Bayero University Kano (Buk)	15	100.0
12	University of Jos	6	85.3
13	Federal University of Technology, Owerri (FUTO)	10	84.2
			82.0
			783.09
	Total Average Performance of Project		60.24%

Source: Summary from Appendix I

Basic Success Factors	Scores					Total
	1	2	3	4	5	
X ₁	5	1	5	1	5	17
X ₂	5	4	5	1	5	20
X ₃	1	5	1	5	1	13
X ₄	5	1	5	1	5	17
X ₅	5	2	5	1	5	18
X ₆	5	1	5	1	5	17
X ₇	1	5	3	5	1	15

Source: Survey Data

Project Performance	Scores					Total
	1	2	3	4	5	
Y	5	1	5	1	5	23

Source: Survey Data

Respondent	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
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1	17	20	13	17	18	17	15	23
2	16	19	13	17	18	17	16	23
3	17	20	13	17	16	17	15	23
4	17	21	13	17	17	17	16	24
5	17	21	13	18	18	17	17	24
6	18	21	13	18	19	18	18	24
7	15	22	14	18	19	19	18	26
8	15	22	14	18	19	19	19	26
9	15	24	14	18	19	18	20	24
10	15	23	15	18	19	18	19	26
11	14	21	15	18	19	12	19	27
12	14	21	14	19	20	12	19	28
13	16	22	16	18	20	14	20	29
14	15	18	16	19	19	17	18	29
15	14	18	17	21	19	16	19	28
16	15	17	16	21	18	14	18	28
17	15	17	18	22	18	16	18	29
18	15	15	17	21	18	16	18	28
19	13	16	17	19	18	17	18	28
20	13	16	17	19	18	17	18	28
21	13	14	17	19	17	17	18	27
22	13	14	17	18	17	17	18	26
23	12	14	17	17	16	14	17	21
24	12	14	17	16	15	14	17	20
25	12	14	17	14	16	13	17	19
26	13	13	17	14	14	13	17	19

Source: Survey Data

Table 4.5: Summarised Problems Identified in the Institutions Studied

S/No	Problem Areas
1	Delay in release of funds
2	Personal interest
3	Faulty budgeting
4	Faulty planning
5	Corruption
6	Change of executors
7	Reconstitution of governing council
8	Change of Chief Executive
9	Lack of follow-up
10	Inadequate funding
11	Cost underestimation
12	Re-awarding of contract
13	Land contract
14	Cost control

Source: Survey Data

Table 4.6: Estimation Results

Model	Model Summary				Change Statistics				
	R	R-square	Adjusted R-square	Sid Estimate	R-Square change	F-change	Df ₁	Df ₂	Sig change
1	.882 ^a	.778	.769	1.4921	.778	84.302	1	24	.000
2	.927 ^b	.859	.846	1.2168	.080	13.089	1	23	.001

a. Predictors: (constant), var 004.

b. Predictors: (constant), var 004, var 005

ANOVA

Model		Sum of square	Df	Mean square	F	Sig
1	Regt	187.684	1	187.684	84.302	.000 ^a
	Residual	53.432	24	2.226		
	Total	241.115	25			
2	Regression	207.063	2	103.531	69.928	.000 ^b
	Residual	34.053	23	1.481		
	Total	241.115	25			

a. Predictor: constant var .0004

b. Predictors: constant var .004, var 005

Dep. Var var .08

COEFFICIENTS

Model	Unstandardized Coeffs.		Standardized coeffs		Sig
	B	Std Error	beta	T	
1(constant)	.622	2.70		.330	.820
Var 004	1.349	1.47	.882	9.182	.000
2(constant)	-6.687	2.988		-2.238	.035
Var 004	1.038	1.48	.679	7.036	.000
Var 005	.728	.201	.349	3.618	.001