



Research Article

Evaluation of Factors Affecting Performance of Dam Construction Projects in Ondo-State, Nigeria

Francis Bamidele

Department of Civil and Environmental Engineering, City University, Cambodia

Abstract

Project construction tasks are usually confronted with some human capital problems in planning, evaluations and control in the construction industry. Consequently, this study want to examine those human capital influencing factors on Dams project construction in Ondo State, South West-Nigeria. Questionnaire was administered on some professionals classified as consultants, contractors and clients in the study area. A survey approach was used and a purposive sampling method was adopted for the study. The socio-economic characteristics of the respondents and some factors having influence on project construction were analysed using statistical tools, therefore, data were obtained from a focus group comprising clients, the client's representatives, Civil Engineering contractors and Consultants. Project Managers and other parties in road construction team through a structural likert scale questionnaire while the relative importance index (RII), linear regression and Analysis of Variance (ANOVA) were used to text the hypotheses: The results indicated percentage significant relationship between the variables and alternative hypotheses tested on factors responsible for untimely delivery of Dam construction projects were, improper planning, inadequate funding, discontinuity in governance, risk in construction and lack of experience of contractors had been considered as factors causing untimely delivery of Dam construction in Ondo State, Nigeria. The result shows that inadequate funding is the most critical factor causing untimely delivery of Dam construction projects. It was followed that discontinuity in governance and risks in construction as second factors causing untimely delivery of Dam construction while improper planning and inadequate experience of contractors scored fourth and fifth position respectively. Based on these findings, it is recommended that adequate and timely provision of financial resources which is the hub around everything else evolves and comprehensive economic analysis with financial plans should be in place before contracts are awarded. The study revealed that there is a significant relationship between project construction policies and successful engineering projects performance if government can consider her stand on various projects awarded in the state. The study equally found out that improved

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administrative and economic skills of project managers would translate into a better project performance in the construction industry in the State.

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Introduction

Background to the Study

A project is a temporary endeavor embarked on to create a unique product, service or result (PMI, 2018). The temporary nature of a project indicates that it has a definite beginning and end. In other words, a project has time criterion. However, research has shown that most public projects do not meet their time bands, some are delivered months or years after the set time, while some are abandoned, thereby rendering as waste the funds utilized for their execution. The duration of construction is of great importance in construction industry especially among other factors. It is in many instances most cost effective to complete a project within the shortest possible time. Time impacts are inevitable on road construction projects primarily because of the uniqueness of each Dam project and the limited resources of time and money that can be spent on planning, execution and delivering of the project (Wysocki, 2019). Time factors taking are inherent in all the project construction undertaking. It is among the star stigmas (time, cost and quality) determining project success Meeting goals and objectives as prescribed in such project plan. A successful project is that which accomplished its technical performance, maintained its schedule, and remained within budgetary cost (Frimpong, 2003).

Untimely delivery is one of the biggest problems often experienced on construction project sites. Construction delay is a critical function in construction projects. It has been researched that delay is a major setback in construction industry. According to Sweis et al, (2008) project delays are often responsible for turning profitable projects into loss making ventures. The consequences of such untimely delivery include cost overruns, loss of profits, increase in overhead, overruns, loss of profits, increase in overhead, stress, acrimony between parties, litigation and loss of opportunities because resources are tied up. The most important step in correcting this anomaly is to identify the root causes of the delays so that corrective measures can be devised. According to Nwachukwu et al, (2010) the rate at which public projects fails, or are abandoned, and the collapse, some even under construction is retrogressive in a developing economy like Nigeria. When

there is a problem of building development failure, a public abandonment or collapse, everybody looks up to the engineer who is their professional pride and personality ego accept the blame but could not un-ravage the menace. The answer to project success, failure, abandonment and collapse of building construction lies in in-efficient project management. In all, project delivery plan is necessary to ensure that strategies are developed and refined, they most aligned to support achievement of project goals and objectives.

Aibinu and Adeyinka (2006) observed that untimely delivery in construction projects are caused generally by actions and in action of project participants, which cause ripple effects on the roles played by others on the project team. At this end, it has been pointed out that when projects are delayed, the client stand to lose in terms of disruption of programmes and sometimes having to spend more on the project that budgeted for, (Lock, 2003). Such delays affect the reputation of both the consultant in charge and the contractor as well. At project planning phase, the plans are documented, the deliverables including requirements defined and schedule created. This involves creating a set of plans to help and guide the team through the execution and closure phase of the project. The delivery plans created during this phase will assist to manage time, cost, quality, change, risks and related issues. It will also help in managing staff and external supplies, to ensure that the project is delivered timely and within schedule. However, Dam project begins with enthusiasm, passion to deliver as plan and expectation of failure, but often without learned lessons from previous projects that ought to have contributed to the project success this time around, failed in delivery as schedule. A significant annoyance to the public occurs when projects are not completed in a timely manner and when the actual progress of the construction work is longer than necessary, thereby prolonging the inconvenience and business access.

Construction industry is a key sector in the development and economic growth of most countries across the world. Hence, the industry faces a number of challenges, such as untimely deliver of projects. Construction works that are not delivered on time to the client are referred to as delayed projects. According to Hancher and Rowings, (1981) construction delay/untimely delivery is a foremost problem facing the construction industry in almost all countries in the world. Delays occur in almost every construction project and their magnitudes vary considerably from project to project, ranging from few days to years. However, it is very important to identify the exact cause and their significance in order to minimize and avoid the aftermath of the untimely delivery of the project. Mansfield et al. (1994) stated that construction projects completed on time were a signal of project efficiency. Based on the above, construction process depend on a

number of unpredictable factors that occur from various sources among which are: the performance of construction stakeholders, availability of resources, site conditions, contract types, weather conditions and the contractual relations between stakeholders.

Modernizing construction, a report published by the UK's National Audit Office and edited by John Bourn, exposed that 70% of the construction projects carried out by public department and agencies were completed late. Moreover, research by building cost information service (BCIS, UK) found that nearly 40% of all studied construction projects had overrun contract period (Bourn, 2003).

According to Okeke (2012), there is ample evidence to suggest that untimely completion of project was not confined to any state but could rather be termed as national malaise. It is difficult to find project in the public sector that have been completed on time and within budget. Therefore, let us take for instance the abysmal performance of the Niger Delta Development Commission (NDDC), part of the finding of the President Mon Committee on NDDC available on daily times revealed that out of pe 285 projects representing above 46.8percent were abandoned at various level of 222 projects representing about 36.5 percent wees completed while another 100 project(10 percent were ongoing (Vanguard, 2023). All of the foregoing generating valid esecente about the state of projects and other infrastructure executed in Ondo State in pericoter and Nigeria at large in terms of their untimely delivery.

There are various assertions on the causes of untimely delivery of road co projects. Many and various studies were carried out by researchers to soste delays in construction projects and there is a wide range of views for the cause of time delays for engineering and construction projects. Researchers listed the causes as force majeurs exceptionally adverse weather condition, civil commotion, strikes or lockouts, compliance with designer's instructions, delays by nominated supplier and subcontractors, Government action and restrictions on the availability of labour or materials. Azmat and Siddiqui (2023) put the causes of possessive decision making mechanism, insufficient data collection and survey before design, lack of coordination at design phase, improper inspection approach, highly bureaucratic organization, site topography is changed after design, different attitude among project team, inadequate reviewing, financial, difficulties, inexperience personnel and insufficient number of staffs, lack of high technology equipenent and the Inadequacies of old equipment. Abd El-Razek et al, (2008) in a similar study is Egypt listed the most important causes of project delays as financing by contractor during creatracti partial payment during construction and non- utilization of professional construction/contractual management. Odeh and Battaineth, (2001)

reported the most important causes of delays in construction projects with traditional type contracts, from the view point of the contractor and client, as owner interference, inadequate contractors experience, funding and payment, labour productivity, slow decision making, improper planning and subcontractor's. Ogunlana and Kri (1996) reported that there are distinctive problems that causes delays in construction. They categorized them into three (3) groups which are problems of shortage or inadequacies in industry infrastructure (mainly supply of resources), problem caused by owners/clients and consultants and problem caused by contractor's incompetence/inadequacies.

Also, according to Assaf and Al-Hazmi, (1995), the causes are mistake in soil investigation, water condition and geological problems on site, obtaining permits from municipality and for labourers, excessive bureaucracy in project owner operation (i.e building codes, approval of drawings, material approval, scheduling networks and revision etc), lack of trained personnel and management support, weather and its effect on construction activities, insufficient available utilities on site, uncooperative owners/clients (in joint ownership projects) and poor organization. Equally put as the causes are: insufficient communicating between client and the designer at design phase, unavailability of professional construction management, shortage of construction materials, shortage of labour (skilled and unskilled), equipment shortage and failure, delays in contractor's progress payment by client and design changes by owner and his agent during construction. The study also acknowledge inadequate management skills during planning phase, insufficient experience on the part of the contractor, low speed of decision making, and long project identification as factors that influence time performance in project. While Asusshari et al, (2009) general knowledge and past research studies, listed change orders by the owner during construction, delay in processing payments, ineffective planning and scheduling by the contractor, shortage of manpower, difficulties of financing by the client/contractor, lack of materials, poor weather conditions, design variations and poor funding as delay factors in construction industry. However, improper planning, inadequate funding, discontinuity of governance, force majeure and contractors inadequacies are common factors causing untimely delivery delay of projects in majority of countries (Bourn 2003).

The research work therefore intends to assess these common factors to verify the degree of their effects on Dam completion delivery time.

Statement of the Research Problem

Let us know that the problem of untimely road Dam delivery is the problem being faced by Ondo State Government and how to solve it. It is through projects that resources are converted into productive assets (project management book of knowledge) Dam projects are capital intensive hence, in most cases are being funded by government. This then implies that the funding of Dam projects come through the tax payers' money. It is disheartening therefore, seeing such Dam projects with high economic values not completed to time and oftentimes abandoned, thereby rendering as waste, the scarce resources utilized which are meant to develop the nation. The researcher, with cognate experiences on execution of Dam project in the ministry of works and infrastructure observed that despite the vision and mission of the Governor to have all Dam construction projects completed to time, some key projects still drag beyond completion time.

From the survey carried out on the performance of Dam construction projects across the three senatorial district of Ondo State, records drawn from the ministry of works, in the statistics unit of planning and research department revealed that 26, 43 and 23 projects were awarded to contractors in Northern, central and southern senatorial district respectively between 2006 and 2016. These projects were found not to have been completed as scheduled. Research revealed the various facts with empirical evidence that improper planning, inadequate funding, lack of continuity in governance, force majeure, contractors inadequacies, bad project management and bureaucracy among others are the root causes of the untimely delivery for these projects. Upon all these assertions on the causes of untimely delivery/ delays to projects construction, researchers had not rated the extent at which each acknowledge causes affect road construction project delivery time in Ondo state. This research work therefore aim at rating the extent at which each acknowledge causes affect road construction according to degree of their effects on Dam construction project delivery in Ondo State.

Research Questions

In order to achieve the objective of this study, the following key research questions were adopted

- (i) To what extent does planning cause untimely delivery of Dam construction projects?
- (ii) Assess the level of funding in untimely delivery of Dam construction project?
- (iii) What are the risk involves in Dam construction project that leads to untimely delivery of Dam projects?

- (iv) How does discontinuity in governance affect untimely delivery of Dam construction project?

Aim and objectives of the study

The study aimed at assessing factors responsible for untimely delivery of Dam construction project in Ondo State, with specific objectives are to:

- (i) Assess the extent to which planning leads to the untimely delivery of Dam projects in Ondo State.
- (ii) Assess the level of inadequate funding in untimely delivery of Dam construction projects in Ondo State.
- (iii) Evaluate the effect of construction risks towards untimely delivery of Dam construction project in Ondo State.
- (iv) Identify the effect of discontinuity in governance on untimely delivery of Dam construction projects in Ondo State.
Evaluate the extent of setback cause by incompetence of contractors to untimely delivery of Dam construction project in Ondo State?

Research Hypotheses

Based on the research objective identified in this study, the following hypotheses are set up:

- H₀₁: Improper planning has no significant effect on untimely delivery of Dam construction project.
- H₀₁₋₁: Improper planning has significant effect on untimely delivery of Dam construction project.
- H₀₂: Inadequate funding has no significant effect on untimely delivery of Dam construction project.
- H₀₂₋₁: Inadequate funding has significant effect on untimely delivery on Dam construction project
- H₀₃: Risks involved in construction has no significant effect on untimely delivery of Dam construction project.
- H₀₃₋₁: Risk involved in construction has significant effect on untimely delivery of Dam construction project.
- H₀₄: Discontinuity in Governance has no significant effect on untimely delivery of Dam construction project.
- H₀₄₋₁: Discontinuity in Governance has significant effect on untimely delivery of Dam construction project
- H₀₅: Inadequate experience contractors has no significant effect on untimely delivery of Dam construction project.

H_{05.1}: Inadequate experience of contractors has significant effect on untimely delivery of Dam construction project.

Significance of the study

The significant of this study lies in unveiling those factors that brings about set back or delays in project delivery and in the possibility of adding to the existing information in public project delivery in Ondo State. The findings hoped to identify the part played by the delay factors in public project delivery. The study shall be useful to local and state government, national communities and international. Also, will be of immense use to Ondo State Government and the entire sector of Nigeria economy in charge of public project administration, in improving the level at which projects are delivered successfully in some foreseeable future.

The study provided information on the extent of the effect of improper planning, inadequate funding, risks involved, discontinuity in governance and inadequate experience contractors on project delivery time. In addition, the information will aid effective and efficient management of road construction projects for timely delivery.

The study will also serve as databank for other students and researchers who will carry out related studies in the future.

Lastly, the findings are expected to contribute to the world knowledge that would enhance informed decision to the users of the research work.

Scope of the study

The purpose of this study was to explore and understand the delay factors that caused untimely delivery of Dam construction projects including its associated process and operations in Ondo State.

The study was narrowed within the following scopes

- i. Identify the causes and effects of delay factors that influence road construction projects
- ii. Respondents were selected only from owners (clients) representative ministry of Works which is the ministry in-charge of Dam construction projects in Ondo State and also the consultants and contractors that at one time or the other had handled Dam projects works for Ondo State government
- iii. Survey findings were used to design and develop a framework of a delay analysis system

- iv. Information obtained through industry survey was also used to analyse and quantify the possible delays on Dam construction projects in Ondo State.

Limitation of the study

The study was limited to Ondo State, Nigeria with consideration only to Dam construction projects awarded for construction by Ondo State government through ministry of works between year 2006 and 2016.

Methodology

Research Design

The research approach adopted in this study comprises of a qualitative research design as an enquiry into factors affecting the timely delivery of Dam construction projects, based on answering certain questions. This study made use of a well-structured questionnaire as an instrument to gather statistical data that was used to proffer solutions in respect of the main subject of study. Questionnaire was delivered to participants in person. The respondent completed the questionnaires in their own time without any interface from the researcher. This approach removes any undue pressure from the participants and gives them the freedom to fill in the questionnaire as truthfully as possible. Unlike one to one interview, where interviewee may be influenced by the interviewer's attitude.

Study Area.

The study was carried out in Ondo State, Nigeria. However, the study was restricted to Dam construction projects awarded to contractors by the Ministry of Works in the three Senatorial Districts (North, Central and South) of Ondo State between year 2006 and 2016.

Population of the study

Statistician's defined population as group from which a sample is draw. According to Harper, (1977) population refers to a group of people from which information can be obtained. It can be anything depending on what the researcher is studying. However, the population of this study are stakeholders (clients, consultants and contractors), that partook in Dam construction projects emanated through Ministry of Works within 2006 and 2016. A total population of one hundred and twenty (120) respondents were considered for the study.

Table 1 identify the statistical data of the population.

Table 1: Population of Respondents.

S/N	RESPONDENTS	POPULATION	PROPORTION ON THE OVERALL
1	Client representatives:		
	(a) Directors	4	
	(b)Project Engineer	40	
2	Consultancy Firms	25	
3	Contracting Firms	35	
4	Other Civil Engineers	16	
	Total	120	

Source Statistical Unity Ministry of Works, Akure.

Sampling Technique and Sample Size

Sampling or samples, according to animated software company is a group of items taken from the population for examination. It is simply a smaller part of the population without having to study the whole population. The total of ninety (90) respondents were secollcted back. These respondents were client representatives (Engineers in Ministry of Works), Engineers and staff of consultancy firms and contractors engaged at one time or the order on road construction project by the Ministry between 2006 and 2016. The respondents Sist with administered questionnaire is contained in the Table 2.

Table 2: List of Respondents and Questionnaires Administered

S/N	RESPONDENTS	POPULATION	PROPORTION ON THE OVERALL
1	Client representatives:		
	(a) Directors	4	4/4
	(b)Project Engineer	33	33/40
2	Consultancy Firms	20	22/25
3	Contracting Firms	23	23/25
4	Other Civil Engineers	10	10/16
	Total	90	

Source: Field Survey, 2019.

Method of Data Collection

The questionnaire consisted of a set of questions designed to gather data, which was used to answer the research questions and test the hypotheses. The questionnaire comprises of demographic data and assessment of factors that affect timely delivery of road construction project. This was prepared with both closed and opened ended questions.

Model Specification/Measurement of variables

Untimely delivery of Dam construction project is taking as a function of improper planning, inadequate funding, risk in road construction, discontinuity in governance and inadequate experience of contractors. These were represented in the following equations. Where UDRCP is untimely delivery of Dam Construction Project, as is constant, α_1 is coefficient of slope, $1p$ which improper planning and e_1 is error term

$$\text{UDRCP} = \alpha_0 + \alpha_1 1p + \varepsilon_i \dots \dots \dots (i)$$

Where UDRCP is untimely Delivery of Dam Construction Project, as is constant, α_1 is coefficient of slope, $1p$ which improper planning and e_1 is error term.

$$\text{UDRCP} = \alpha_0 + \alpha_1 1F + \varepsilon_i \dots \dots \dots (ii)$$

Where UDRCP is Untimely Delivery of Dam Construction Project as is constant, α_0 is coefficient of slope, $1F$ which is inadequate funding and e_1 is error term.

$$\text{UDRCP} = \alpha_0 + \alpha_1 RC + \varepsilon_i \dots \dots \dots (iii)$$

Where UDRCP is untimely Delivery of Dam Construction Project, α_0 is constant, α_1 is coefficient of slope, RC which is Risk in Dam construction.

$$\text{UDRCP} = \alpha_0 + \alpha_1 DG + \varepsilon_i \dots \dots \dots (iv)$$

Where UDRCP is untimely Delivery of Dam Construction Project, α_0 is constant, α_1 is coefficient of slope, DG which is Discontinuity in Governance and e_1 is error term

$$\alpha_0 + \alpha_1 IE + \varepsilon_i \dots \dots \dots (v)$$

Where UDRCP is Untimely Delivery of Dam Construction Project, as is constant, $\alpha_0 + \alpha_1$ is coefficient of slope, IE which is inadequate experience of the contractors and e_i is error term

Method of Data Analysis

Both descriptive and inferential statistics were used to analyse data collected through questionnaire for this study. Descriptive statistical tools that we employed are frequency distribution, table, simple percentage and Relative importance Index (RII). Also, inferential statistical tool employed to test the hypotheses of the study are linear Regression and Analysis of Variance (ANOVA)

$$\text{Relative Importance Index (RII), } \frac{\sum W}{AN} = \frac{4n_4 + 3n_3 + 2n_2 + n_1}{4N}$$

Where W is the weight given to each factor by the respondent, ranging from 1 to 4, (number of respondents for strongly agree, n_4 number of respondent for agree, n_2 = number of respondents for strongly disagree, and n_1 = number of respondents for disagree). "A" is the highest weight (i.e 4 in this study) and "N" is the total number of samples (respondents)

Linear Regression, $y = a + bx$

Where y is estimated dependents a is constant, b is regression coefficient while is independent variable or predictor variable (Statistic Solution, 2013)

Results and Discussion

Having administered one hundred and twenty (120) that had demographic information of respondents as section A and respondents views on untimely delivery of Dam constructies projects, only ninety (90) representing 75% of analysis was based on these returned figure The presentation of data is in tabular form using frequency and simple percentage

Response rate

The study targeted ninety (90) sample drawn from client's representatives (Engineers in Ministry of works), Engineers and staff of consultancy firms and contractors engaged at one time or the other on Dam construction project by the ministry of works. The returned questionnaires were certified for the purpose of analysis and statistically tested to be reliable and valid. This commendable response rate was attributed to data collection procedure, rate demonstrates a willingness of the respondents to participate in the study.

Table 1: Questionnaire Distribution/Response Rate

	Client rep	Consultant Firms	Contractor Firms	Others
Number Distributed	44	25	35	16
Number Received	37	20	23	10
Percentage (%)	84	80	66	63

Table 2 shows the distribution that describes the nature of the respondent's organization. It shows the larger percentage of the respondents whose opinions were sampled fall within category of client which justifies the validity of the study. They are major stakeholders in the Dam construction works due to the fact that decision-making and procurement activities were carried out with their consent. It follows that sample population came from civil contractors and engineering consultant. The categories that represents project managers. The percentage of others, were other engineers within the corridor of the ministry of works. This implies that majority of stakeholders in the Dam construction were engaged in the evaluation on the factor causing untimely delivery of Dam construction projects in Ondo State.

Table 2: Nature of Organisation of Respondents

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Client	37	41.1		41.1
Civil contractor	23	25.6		66.7
Engineering consultant	16	17.8		84.5
Project manager	4	4.4		88.9
Other	10	11.1		100.0
Total	90	100.0		

Distribution of the respondents by age

Table 3 shows the distribution of respondents by age. The table indicates that 5.6% of the respondents have their ages between 20-30 years. While 16.7% have their ages between 31-40 years. The table equally indicate the age distribution of the respondents between 41-50 years which contains 53.3% of the total sampled opinion with a frequency of 48, those respondents between ages 51-60 years form 24.4% of the total sampled opinion with

a frequency of 22. This implies that the group that falls with 41-50 years has the highest ranking figures while the least percentage falls within the ages of 20-30 years.

Table 3 Distribution of the Respondent by Age

Description	Frequency	Percentage	Valid percent	Cum. Percentage
20-30years	5	5.6	5.6	5.6
31-40years	15	16.7	16.7	22.3
41-50 years	48	53.3	53.3	75.6
51-60 years	22	24.4	24.4	100.0
Total	90	100.0	100.0	

The respondents' gender was important so as to establish whether the gender of the respondents influenced their sense of evaluation of factors causing untimely delivery of Dam construction project in Ondo State. Table 4 indicates the percentage distribution of the respondents on the basis of sex. It was shown that 78 respondents (86.7%) were male while 12 respondents (12%) were female. The outcome result shows that the male gender was more represented than their female counterparts. This is the significant that male engaged in construction and Engineering related career than female counterpart.

Table 4: Distribution of the respondents by sex

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Male	78	86.7	86.7	86.7
Female	12	13.3	13.3	100.0
Total	90	100.0	100.0	

Distribution of the respondents by marital status

Table 4 shows the percentage distribution of the respondents on the basis of marital status. It was observed that about 11.1% were single while 88.9% were married. The married population are more than the single population. This shows more matured respondents involved in construction industries.

Table 5 Distribution of the respondents by marital status

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Single	10	11.1	11.1	11.1
Married	80	88.9	88.9	100.0
Total	90	100.0	100.0	

Distribution of the Respondents on The Basis of Education Qualification

Table 6 shows a statistical representation of the academic acquired by the various respondents. The table shows that all the respondents had a minimum of Higher National Diploma level of education with 11 (12.2%) of the entire sampled population, those with B.Sc/PGD certificate are 56 (62.2%), MBA, MSc/MPA holder represent 22 (24.5%) of the total sampled population and only 1 (1.1%) of the respondents is a holder of Ph.D certificate.

This implies that majority of the respondents that administered the questionnaires are holder of first degree and information gathered were considered valid.

Table 6 Distribution of the Respondents on The Basis Of Education Qualification

Description	Frequency	Percentage	Valid percent	Cum. Percentage
HND	11	12.2	12.2	12.2
B.Sc/PGD	56	62.2	62.2	74.4
MBA/MSC	22	24.5	24.5	98.9
Ph.D	1	1.1	1.1	100.0
Total	90	100.0	100.0	

Distribution of the respondents on the basis of construction experience

Table 7 shows the percentage distribution of respondents on the basis of their years of experience in road construction projects. The number of years of experience gathered by the respondents cannot be overemphasized in this study. Experience of the respondents are highly paramount in determining the quality of information supplied by the respondents and further justification of the study. Table shows that 27 (30.0%) has between 2-10 years of experience, while 38 (42.2%) of the total sample has between 11-20 years of working experience. It was clearly shows that 20 (22.2%) has between 21-30 years working experience the value of 5 (5.6%) goes to those of working experience that that is between 30 years and above. The information gathered depict that those with 11-20 years and above of construction experience dominate the distribution. Meaning that the respondents have wealth of knowledge and could supply adequate and valid information on the question set out in the questionnaires

Table 7: Distribution of the respondents on the basis of construction experience

Description	Frequency	Percentage	Valid percent	Cum. Percentage
2-10 years	27	30.0	30.0	30.0
11-20yrs	38	42.2	42.2	92.2
21-30yrs	20	22.2	22.2	94.4
30yrs and above	5	5.6	5.5	100.0
Total	90	100.0	100.0	

Respondents' views on the percentage of road projects finished to the expected completion date in Ondo State

From Table 8, it is clearly shown that greater part of the sampled population that is 38 (42.2%) submitted that only 25% of the Dam projects in Ondo State were finished to the expected completion date, while 20 (22.2%) argued that none of the Dam projects in Ondo State was finished to the expected target completion date, and 14 (15.6%) was viewed that 75% of the Dam projects in Ondo State were finished to the expected completion date. The finding equally revealed that 18 (20.0%) of the sample opined that only 50% of the Dam projects in Ondo State have finished to the expected completion date, and 14 (15.6%) was viewed that 75% of the Dam projects in Ondo State were finished to the expected completion date.

Table 8 distribution views on the percentage of Dam projects finished to the expected target completion date in Ondo State

Description	Frequency	Percentage	Valid percent	Cum. Percentage
None	20	22.2	22.2	22.2
25%	38	42.2	42.2	64.4
50%	18	20.0	20.0	84.4
75%	14	15.6	15.6	100.0
Total	90	100.0	100.0	

Distribution of the respondents by professional qualification

Table 9 shows the distribution of respondents by professional qualifications. The table indicated that 55.6% of the respondents were registered civil engineers either by COREN or NSE. This shows that information received from those group of registered engineers were valid for research work. 20% were HND holders from various polytechnics across the country. While 13.3% were holders of Bachelor of science but find in the corridor of practice and 11.1% holders of second degree. Among the respondents, it was indicated that only 20% of the respondent were not possess qualification for professional qualification, but 80% acquired professional qualification for registration in which among the percentage 55.6% were already registered with professional body.

Table 9: Distribution of respondents by professional qualification

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Registered Civil Engineer	50	55.6	55.6	55.6
HND in Civil Engineering	18	20.0	20.0	75.6
B.Sc. Civil Engineering	12	13.3	13.3	88.9
M.Sc Civil Engineering	10	11.1	11.1	100.0
Total	90	100.0	100.0	

Distribution of respondent's views on improper planning of Dam construction projects

Table 10 shows the views of the respondents on effect of improper planning to untimely completion of Dam construction projects in Ondo State. From the distribution table, it was noted that 24 (26.7%) of the respondents rated improper planning high, while 21 (23.3%) for between 50-75% and 6(6.7%) for above 75%. This implies that improper planning has impact on untimely delivery of Dam construction projects in Ondo State, but not the major causes.

Table 10: Distribution of respondent's views on improper planning of Dam construction projects

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Less than 10%	17	18.9	18.9	18.9
10-25%	22	24.4	24.4	43.3
25-50%	24	26.7	26.7	70.0
50-75%	21	23.3	23.3	93.3
Above 75%	6	6.7	6.7	100.0
Total	90	100.0	100.0	

Distribution of respondents' views on discontinuity in governance on Dam construction projects

Table 11 is the distribution of the rating of discontinuity in governance to untimely delivery of Dam construction of projects in Ondo State. It was observed that the effect of discontinuity in governance has 38.9% (that is 35/90) above average (50%) while, 61.1% rated the effect below average. This implies that discontinuity in governance has impact on timely delivery of Dam projects, but not in major cause.

Table 11: Distribution of respondents' vies on discontinuity in governance on Dam construction projects

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Less than 10%	7	7.8	7.8	7.8
10-25%	23	25.6	25.6	33.4
25-50%	25	27.8	27.8	61.2
50-75%	24	26.6	26.6	87.8
Above 75%	11	12.2	12.2	100.0
Total	90	100.0	100.0	

Table 12 indicates the evaluation views of respondents on the impact of inadequate funding of Dam construction projects that leads to untimely delivery in Ondo State. It was evaluated that 32/90 (35.5%) of the respondents rate the impact below average, while 58/90 (64.4%) rated the effects high above the average. This implies that funding of Dam construction projects is proportionate to its delivery to expected completion time.

Table 12: Distribution of the views of respondents on inadequate funding of Dam projects

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Less than 10%	5	5.6	5.6	5.6
10-25%	10	11.1	11.1	16.7
25-50%	17	18.9	18.9	35.6
50-75%	36	40.0	40.0	75.6
Above 75%	22	24.4	24.4	100.0
Total	90	100.0	100.0	

Distribution of the views of respondents in risks in Dam construction projects

Table 13 shows the respondents views on effect of risks in construction industry mainly Dam construction projects to untimely delivery. From the table, it was discovered that (74.4%) of the respondents rated risks in mad constructions projects below the average, 25.00 (25.6%) for above the average. This implies risks impact of madnestructures is not fuer major cause of untimely delivery of mad construction projects in Ondo State. The risks can be minimized since the internal risks can be properly managed by die management, But al risks outside the construction premises may not be totally sootmiled.

Table 13 Distribution of the views of respondents on risks in Dam construction projects

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Less than 10%	7	7.8	7.8	7.8
10-25%	23	25.6	25.6	33.4
25-50%	25	27.8	27.8	61.2
50-75%	24	26.6	26.6	87.8
Above 75%	11	12.2	12.2	100.0
Total	90	100.0	100.0	

Distribution of the views of respondents on inadequate experience contractors

Table 14 indicates the respondents views on effect of inadequate experience contractors of Dam construction as a cause of untimely delivery of Dam construction projects in Ondo

State. Table shows that 65/90 (72.2%) of respondents rated the inadequate experience contractors below the average. While, 25/90 (27.8%) of the respondents rated it above average. This depicts that the impact cause by inadequate experience contractors is not the major cause of untimely delivery of Dam construction in Ondo State. Dam Construction industry make use of materials, equipment's and labours. Hence, the availabilities of those resources made essential in Dam construction

Table 14: Distribution of views of respondents on inadequate experience of contractors

Description	Frequency	Percentage	Valid percent	Cum. Percentage
Less than 10%	16	17.8	17.8	17.8
10-25%	29	32.2	32.2	50.0
25-50%	20	22.2	22.2	72.2
50-75%	18	20.0	20.0	92.2
Above 75%	7	7.8	7.8	100.0
Total	90	100.0	100.0	

Summary of the Distribution of the Respondents' Views On:

The delay factors (Improper planning, discontinuity in governance, inadequate funding, risks in construction and inadequate experience contractors.

Discussion of Findings

Dam project has been seen as an infrastructure that creates productive assets though converting resources into productive assets. Dam construction are capital intensive and in most cases are funded by government. This implies that Dam construction is being flanded through the tax payers money. Therefore, sering such projects not completed is schedule time or at times abandoned apart from been disbeartened rendered as waste of resources, the scarce resources utilized which are meant to develop the entire nation. Dam construction projects which is the real conceptual ideas is one of the ways to bring development that can increase the nation infrastructures involves the number of parties and workers. To achieving Dam projects construction to time requires proper planning, adequate funding, continuity in governm policy, preventing construction risks and experience contractors as identified in this research work

The broad aim of this thesis was to evaluate the effect of improper planning. inadequate funding, discontinuity in governance, risks in construction and inadequate experience of contractors, which among the factors causing untimely delivery of Dam construction projects. The study revealed that improper planning, discontinuity in governance,

inadequate funding, risks involved in construction, and inadequate experience of contractors significantly affected timely delivery of Dam construction projects in Ondo state. The result identifies inadequate funding as the most imperative factor causing untimely delivery of Dam construction projects. This was followed by discontinuity in governance and risks in construction as second factors causing untimely delivery of Dam construction equally, improper planning and inadequate experience of contractors were observed from the findings that there are significant factors of untimely delivery of Dam construction project in Ondo State,

Based on ranked results shows in ascending order as inadequate experience of contractors, improper planning, discontinuity in governance and risks in construction and inadequate funding. The inadequate funding that was ranked high collaborated the earlier studies of sambasivan and soon that identified Malaysian inadequate client's finance and payment to completed work as the most severe factor causing untimely delivery of projects.

This implies that improper planning, inadequate funding, discontinuity in governance, risks in construction, and inadequate experience of contractors have significant impacts and could lead to great set back to Dam construction projects. However, inadequate funding of projects by the stakeholders is the most critical project out of those factors considered for the purpose of this researched work. The effects of such delay are extension of time, cost overturn and at times abandonment of such projects.

These results are adequately important in stimulating researches on the subject matter in various part of Ondo State, Nigeria. Though limited by sample size, this study is an attempt to establish the status quo on the subject in Ondo State that can form basis for other research works and comparison with other states in the federation and the world at large.

Conclusion

Ondo State is presently faced with several challenges including infrastructure deficits and untimely delivery of projects among others. Available evidence abounds from literature on the relationship between infrastructure capital such as Dam projects and economic growth. Therefore, the need for detailed understanding on why projects are not completed on time becomes pertinent as this facilitates synergistic continuous learning among individual and organized project stakeholders and untimely supports the growing of their economics. The most important step in reducing the untimely delivery

of Dam construction project is to find the root causes of the delay. This study, therefore, deals with improper planning, inadequate experience of contractors, risk in construction, discontinuity in governance and inadequate funding which among the listed major causes of delays identified by previous researchers; and rates their effects on untimely delivery of Dam construction project.

This thesis evaluates the factors causing the untimely delivery of Dam construction project in Ondo State, Nigeria. The relevance of the topic is grasped in the context in which Dam project timely delivery has been confronted in the State. The finding affirmed that like in other climes and other research work, improper planning, risk in construction, discontinuity in governance, inadequate experience of contractors and inadequate funding have significant impact on timely delivery of Dam construction projects. It recognized that practitioners perceived project failure based on variety of factors hindering execution and delivery of Dam construction projects within defined cost, time and scope. The broad implication of this is that an in-depth understanding of project failure can only emerge from the activities undertaken during lifecycle of projects based on stakeholders definitions and criteria.

However, it is noteworthy that based on findings, inadequate funding was rated highest and was closely followed by discontinuity in governance and risk in construction, improper planning and inadequate experience of contractors as the least rate in the factors causing untimely delivery of Dam construction projects in Ondo State. The findings also highlighted the need for the introduction of mechanism which will integrate processes and guidelines that support projects to achieve their organizational objectives timely.

This article had certain limitations which need to be addressed in the future. One important limitation was the inability to rank all the identified common factors causing untimely delivery of Dam projects in the State. The thesis dealt only with five factors out of many factors causing untimely delivery of Dam construction project. Researchers may consider force majeure, award of contract to wrong hands that were not rated in the course of this research work. The findings of this paper still present important implications and thoughts for future projects that would be undertaken in Ondo State and other States in Nigeria with similar challenges.

Recommendations

In view of the above, the following recommendations or suggestions are hereby made: There should be adequate budgetary allocation and timely provision of financial resources to Dam project. Clients must ensure that funds are available or adequate arrangements for funds are made before Dam construction projects are commenced. Contractors should ensure that the mobilization fee paid and other payments through interim certificates are used solely to finance project activities.

A clause in the contract agreement mandating the clients to pay the contractor the amount certified in an interim certificate within twenty eighty (28) days of the date of issue of the payment certificate should be enforced in Dam construction projects. Government in power should ensure the successful completion on time all inherited acts from the past administration alongside with those initiated by the incumbent tration, more so that government is continuous.

Inexperienced contractors should not be given chance to handle any government road yet, while the experienced/registered engineers should be given chance to execule government Dam projects. Government should come to aid of contractors whenever, there is much risk prevailing over the Dam construction project.

Finally, effective and efficient planning of source that would facilitate the realization ef projects to time should be embraced among the stakeholders. A good government mechanism which incorporates processes and guideline that supports project to achieve their organizational objectives and also cater for the interest of both internal and external vakeholder should be introduced and considered as action points. In conclusion, government at all level should embrace the establishment of project management offices (PMOS) as key department in their agencies and ensure their functionality for timely delivery of State projects.

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CITY UNIVERSITY CAMBODIA
DEPARTMENT OF PROJECT MANAGEMENT.

Questionnaire for Evaluation of factors causing untimely delivery of Dam construction projects in Ondo State, Nigeria.

Section A - Demographic Information.

1. Personal Data:

Age: 20-30 years ☐ 31-40 years ☐ 41-50 years ☐ 51-60 years ☐

2. Sex: Male ☐ Female ☐

3. Marital Status: Single ☐ Married ☐

4. Educational Qualification: HND ☐ B.Sc/PGD ☐ MBA/M.SC/MPA ☐ Ph.D ☐

5. How long have you been in Construction Industry? 2-10 year ☐ 11-20 years ☐

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21-30 years ☐ 30 years and above ☐

6. Which of the following best describes the nature of your organizations activities?

Client ☐ Civil contractor ☐ Engineering consultant ☐ Project Manager ☐

Others (Please specify).....

7. Professional qualification

Registered Civil Engineer ☐ HND Civil Engineer ☐ B.Sc Civil Engineer ☐

M.Sc Civil Engineer ☐

Others (Please specify).....

Section B: Respondents view on untimely completion of road construction projects.

1. In your experience, how many Dam projects in Ondo State finish to the expected/targeted completion date? None ☐ 25% ☐ 50% ☐ 75% ☐ 200% ☐

2. In your experience, do you agree that improper planning is the common factors causing untimely delivery of Dam project? Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree ☐

3. In your experience, do you agree that discontinuity in governance is the common factors causing untimely delivery of Dam projects? Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree ☐

4. In your experience, do you agree that inadequate funding is the common factors causing untimely delivery of Dam projects? Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree ☐

5. In your experience, do you agree that risk in construction is the common factors causing untimely delivery of Dam projects? Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree ☐

6. In your experience, do you agree that inadequate experience of contractors is the common factors causing untimely delivery of Dam projects? Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree ☐

7. Based on your experience, kindly rate the impact of these factors causing untimely delivery of Dam construction projects in Ondo State.

1. Improper planning

≤10% ☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ ≥75% ☐

2. Discontinuity of governance

10-25% ☐ 25-50% ☐ 50-75% ☐ ≥75% ☐

3. Inadequate funding

10-25% ☐ 25-50% ☐ 50-75% ☐ ≥75% ☐

4. Risk in construction

10-25% ☐ 25-50% ☐ 50-75% ☐ ≥75% ☐

5. Inadequate experience contractors:

10-25% ☐ 25-50% ☐ 50-75% ☐ ≥75% ☐