EFFECTS OF PAYMENT DELAY ON CONSTRUCTION PROJECTS IN EDO STATE

BY

Onoise Faith EGBARAN
ENV1805844

DEPARTMENT OF QUANTITY SURVEYING
FACULTY OF ENVIRONMENTAL SCIENCES
UNIVERSITY OF BENIN

October, 2023

EFFECTS OF PAYMENT DELAY ON CONSTRUCTION PROJECTS IN EDO STATE

BY

Onoise Faith EGBARAN
ENV1805844

Being a Project Submitted to the Department of Quantity Surveying
Faculty of Environmental Sciences, University of Benin, Benin City, Nigeria
In Partial Fulfillment of the Requirements for the Award of the Degree of
Bachelor of Science (B.Sc.) in Quantity Surveying

October, 2023

DECLARATION

I declare that this project is an original work carried out by me, **Onoise Faith Egbaran** with Matriculation Number **ENV1805844** in the Department of Quantity Surveying, Faculty of Environmental Sciences, University of Benin, Benin City.

Onoise Faith Egbaran
ENV1805844

Signature:…..…..….. Date: ……

CERTIFICATION

We certify that this project with the title: **Effects of Payment Delay on Construction Projects in Edo State** submitted by **Onoise Faith Egbaran**, with Matriculation Number ENV1805844 has satisfied the regulations governing the award of Bachelor's Degree in Quantity Surveying from the University of Benin, Benin City, Edo State.

Supervisor: Dr. C. P. Ogbu Signature:…..…..…… Date: ……

Ag. Head of Department: Dr. T. S. Fawale Signature:……..…… Date: ……

External Examiner: Prof. H. A. Odeyinka Signature:…..…..…… Date: ……....

DEDICATION

This project is dedicated to God Almighty for his constant provision and for seeing me through my study in school. To my mom and siblings for their constant support and encouragement.

ACKNOWLEDGEMENTS

I would like to send my thanks to; the Almighty God for keeping me safe throughout my stay in the University, to my family and friends for supporting me. I would also like to acknowledge my supervisor, Dr. C. P. Ogbu, who through his assistance led to the successful completion of this study.

To my mom, Mrs. Juliet O. Egbaran, who through her selfless efforts gave me the opportunity to go through school and for her support throughout my stay in school. To the Head of the Department of Quantity Surveying, Dr. T. S. Fawale who always gave me words of encouragement to strive on regardless the circumstance surrounding my admission into the department, and to my lecturers, Mr. G.A Sanni, Mr. E.M Osazuwa, and Mr. Fidelis. To Gold Isibor, who always encouraged and assisted me with my Law courses. I would also like to appreciate Mrs. Omo-Enabulele Ikpomwonsa and Omo-Enabulele Ikpomwonsa for their assistance through my stay in school.

Contents

ABSTRACT

The construction industry has been plagued by the issue of payment delay. This study examined the effects of payment delay on construction projects in Benin City, Edo State with a view to enhancing contractors' projects cash flow. The data for this study was gotten through the response to the administered structured questionnaire. The data obtained was analyzed using the mean item score, this answered the question of this study through the research objectives; to; identify the causes of payment delay on construction projects in Edo State, assess the effects of payment delay on construction projects in Edo State, ascertain the measures for mitigating the effects of payment delay on construction projects in Edo State. The research findings showed that administrative bottlenecks/bureaucracy ranked as the highest cause of payment delay. It also found that delayed payment had a detrimental effect to construction projects where delay in project completion was seen to be the highest effect. Contractors should adhere strictly to the conditions of contract so as to reduce the effect of payment delay on construction projects.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Payment is the foundation of any construction process because the profitability of any industry involving construction completely depends on continuous cash flow. Payment is the monetary value given in exchange for the labor performed by a contractor, in line with the terms of the contract, as well as the materials delivered onsite (Ansah, 2011). The issue of payment is not a recent occurrence within the construction sector, this often leads to disputes and delay in project completion.

Among the top Nigerian industries and the entire world is the construction industry. Over the years, the construction sector has helped in boosting the gross domestic product of a nation. Ansah (2011) is of the opinion that to engage in prompt and effective compensation is a significant element that might influence the success of a project. Fatoye (2012) opined that a number of construction projects are completed in accordance to client's specification, but hardly within the time-frame set aside for such construction due to delayed payments.

According to research, payment problems are one of the primary causes of controversy in the construction sector (Chan and Suen, 2005). These difficulties have been largely recognized for more than four decades by prior research (Wu, Kumaraswamy, and Soo, 2011). In the construction sector, payment delay is a significant issue that, if not addressed, may ultimately result in cost overruns and restricted cash flow.

The term ‘delay’ refers to a time overrun that occurs beyond the contract’s expiration date or after the parties’ mutually-agreed-upon deadline for project delivery. A construction project payment delay is the client’s failure to make payment when the contractor expects it and on a proper schedule (Olatunji, 2020). The contractor has received payment for the entire amount of work that has been finished up to this point.

Kadir et al. (2005) observed in his research that material deliveries are delayed as a result of payment delays, which have an effect on labor productivity in the construction sector. According to (Ramachandra and Rotimi, 2015) payment delays frequently have an impact on cash flow, which may force the contractor to seek funding through loans and other sources to guarantee the project's success.

Idowu, Simon-Eigbe, and Eshiemokhai (2022) opined that prior to the start of a construction project; stakeholders must do enough planning and more thorough feasibility assessments to reduce the probability of payment delays. Project stakeholders who are actively involved in construction projects should make proper preparations and budgetary planning to ensure the smooth running of the project.

1.2 Statement of the Research Problem

Idowu, Simon-Eigbe, and Eshiemokhai (2022) opined that public construction projects in Edo State, Nigeria are impacted by payment delays. Fugar and Agyakwah-Baah, (2010) observed that payment delays in Ghana's public project execution have been regarded as the most significant obstacle to the country's successful implementation of infrastructure development. Furthermore, Ayudhya (2012) opined that a significant factor in the closure of construction enterprises has

been recognized as payment delays. One of the major problems for contractors around the world is that, for some reason, late payments have become customary in the construction sector. According to reports, payment delays have negative influence on construction projects in Edo State. It makes no difference whether it is in the public or private sector. Construction projects may become sluggish or even abandoned as a result of payment delays that cause disputes.

Wuni et al, (2017) in his study focused on the significant reasons for the impacts of payment delays on the accomplishment of public projects in Ghana and (Ayudhya, 2012) talked about the factors causing delay in payment of residential building projects in Thailand, while Idowu, Simon-Eigbe, and Eshiemokhai (2022) in their study focused on the impacts of payment delays on public building projects in Edo State. These researchers all talked about the causes and impacts of payment delay respectively in their research, but did not evaluate the effects delayed payments has on construction projects in Benin City, Edo State, Nigeria.

This study is required to analyze the factors that contribute to these causes, their effects, and any potential countermeasures that the construction industry might employ with a view of creating awareness to project stakeholders and policy makers.

1.3 Research Questions

1. What are the causes of payment delay in construction project?
2. What effects do delayed payments have on construction projects?
3. What are the measures for mitigating payment delay on construction projects?

1.4 Aim and Objectives

The aim of this study is to examine the effects of payment delays on construction projects in Edo State with a view to enhancing contractors' project cash flows. The research was conducted so as to ascertain the following objectives; to:

1. Identify causes of payment delay in construction projects in Edo State,
2. Assess effects of payment delay on construction projects in Edo State, and;
3. Ascertain measures for mitigating payment delay on construction projects in Edo State.

1.5 Scope of the Study

This study concentrated on construction projects in Benin City, Edo state. Primary and secondary data were both examined in this study. This study covers a diverse range of construction projects, including residential, industrial, civil and institutional projects. This diversity is essential to capture a comprehensive understanding of the effects of payment delays across different project types. The study considered construction projects completed by professionals who have hands on experience on construction projects where payment delay had a detrimental effect.

1.6 Significance of the Study

The construction sector plays a vital role in the economic advancement of regions, including Edo State, Nigeria. Locally operated construction projects are integral to Edo State's construction industry but often encounter challenges that hinder their sustainability and operations. Understanding these challenges and the reasons behind payment delays is crucial for enhancing project delivery, which is essential as construction projects must adhere to cost, quality, and time constraints.

While there is limited knowledge about the impact of payment delays on construction in Edo State, previous studies have explored this issue in the broader Nigerian construction sector. This study aims to address this gap by specifically investigating the effects of payment delays on contractors in Edo State. The findings will not only contribute valuable insights but also assist project stakeholders in comprehending the repercussions of payment delays. By bridging the existing research gap, this study will aid the construction industry in achieving improved project performance. Additionally, the research will delve into the root causes of payment delays and propose strategies to mitigate their effects. The outcomes of this study will offer evidence-based recommendations, benefiting policymakers, contractors, and other industry stakeholders, and ultimately facilitating a more efficient payment process within the construction sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Preamble

This chapter explores prior research on how payment delays impact construction projects, as well as the reasons behind these delays and strategies to mitigate them. The construction industry has faced significant challenges related to payment issues and financial losses, a problem that has gained widespread attention recently (Ye and Rahman, 2010). Payment delays represent a major concern affecting construction projects on a global scale. Even in developing countries like Nigeria, this issue persists. The urgency for timely payments is exacerbated by the lengthy duration of construction projects, substantial financial commitments required, and the common practice of utilizing credit terms instead of immediate payment upon item delivery.

2.2 Overview of the Construction Industry

The construction industry involves a broad spectrum of activities related to the planning, design, construction, and maintenance of various structures including buildings, infrastructure, and physical assets. Idoro (2004) recognized construction as a pivotal sector in the development of nations, playing a vital role in economic growth. This industry forms the cornerstone of the economy, providing employment opportunities for skilled workers across nations where it is a significant investment capital (Albtoush et al, 2022). In several countries, construction contributes 6 to 9% of the GDP, with this figure steadily rising to 10%. Additionally, it constitutes 10% of the national GDP, acting as a primary catalyst for economic advancement. Moreover, it drives substantial and beneficial physical developments for the nation's economy, as noted by Kumaraswamy (2006), Memon (2013), and Niazi (2017). Furthermore, by creating

essential infrastructure such as schools, clinics, and roadways, the construction industry plays a crucial role in improving the overall quality of life.

2.3 Payment and Payment Delay in the Construction Industry

The lifeblood of any construction project is considered to be its payment. In construction, payment signifies the money provided to suppliers, consultants, and contractors upon the successful completion or acceptance of their projects (Illangakoon, 2017). Research by Shebob et al. (2011) revealed that delays in payment have substantial adverse financial and social consequences for all parties involved. Owners might delay or deny payments to bolster their financial standing, while contractors might present inflated claims (Carmichael, 2002). Bolton et al. (2022) noted that the construction industry has long grappled with late payments, especially affecting individuals further down the supply chain.

These delayed payments hinder firms, especially smaller ones, from investing in development, hindering the creation of new opportunities and impeding the country's progress (Rahim et al., 2016). Rahim further pointed out that the payment system often lacks efficiency, escalating the risk of insolvency for the involved parties. Naseem (2006) and Judi and Rashid (2010) identified various payment issues, such as non-payment, refusal to pay, deductions from certified or due sums, disputes over certifications, delayed payments, and challenges in obtaining payment even with valid certificates, leading to significant delays in asserting payment rights. In the construction sector, the payment process is notably sluggish, typically taking an average of 90 days to receive payment after invoice submission or payment requests.

2.3.1 Methods of Payment in the Construction Industry

Interim Payments

In the realm of construction agreements, an interim payment signifies a partial payment made to subcontractors by the main contractor, property owner, or developer. These payments play a vital role in the construction industry as they enable contractors and subcontractors to receive compensation for work completed while the project is still ongoing. Unlike final payments, these interim payments are made before the project reaches completion and are typically calculated based on the percentage of work completed or the number of milestones achieved.

Final Payment:

In accordance with Ye and Rahman (2010), a contractor can obtain the final payment only upon achieving the actual or significant completion milestone specified in the contract and formally transferring the completed work to the employer. Until this milestone is met and approved by the contract administrator, the contractor is not eligible for any payment. By utilizing this approach, the contractor effectively funds the project to a large extent, using expenditures that will eventually be incorporated into the contract price. Additionally, a substantial lump sum payment must be arranged and established to enable the employer to assume this responsibility and assume control of the project.

Payment in Advance:

Ansah (2011) suggested that when an employer pays a contractor in advance of the completion of the specified work, it's termed as an advance payment. The contract typically allows for this upfront payment, ensuring the contractor receives a lump sum on the agreed-upon date stated in

the contract. This practice is commonly seen in public works contracts and serves the purpose of aiding the contractor in financing the project without resorting to costly external borrowing.

In construction, the term "claim," including "extensions of time," signifies a demand for money, property, or a solution. These claims can result from a contract violation or a breach of common law duty (as in tort law). To accommodate potential changes in conditions, some claims outlined in the contract are necessary and easily resolved. However, others might lead to disputes if they are perceived as unreasonable, either in terms of amount or principle.

Retention:

The employer may opt not to compensate the contractor due to various factors. These factors include significant construction mistakes, disagreements over the work performed, failure to comply with essential contract terms, potential claims from third parties, or delays in paying for project resources. If the employer decides not to make payment, it can result in delays, as explained by Reeves (2003) and referenced by Idowu & Aligamhe (2022). Retention refers to a payment that the client withholds until the project is certified as completed and an official certificate of actual completion is issued.

2.4 Previous Studies on Payment Delay on Construction Projects;

2.4.1 Causes of Payment Delay in Construction Projects in Edo State

Several factors can contribute to delays in payments within construction projects, as highlighted by Nazir (2006). A study conducted by Abdul-Rahman et al. (2009) examined payment-related issues in the construction industry, revealing differing perspectives between consultants and contractors regarding the causes of late payments. Contractors commonly attribute payment

delays to certification delays, clients' inadequate financial management, local cultural attitudes, clients' lack of strong governance within their organizations, and clients' failure to pay certified amounts promptly. Consultants, on the other hand, point to factors such as local culture and attitudes, client underpayment, and delays in the acceptance of claims by customers as the primary reasons for payment delays. It is essential to identify the specific variables responsible for delayed payments in the construction sector. Previous studies have identified several circumstances that can lead to payment delays, necessitating further examination.

Table 1: Causes of Payment Delay

S/N	CAUSES OF PAYMENT DELAY	SOURCE
1	Poor management of finance by employers	Okoye et al., (2015), Ayudhya (2012), Ye and Rahman (2010), Wu (2010)
2	Withholding payment by employers	Okoye et al., (2015), Kikwasi (2012), Oppong (2003), Abdul-Rahman et al. (2011)
3	Lack of sufficient feasibility study	Fatoye, (2012)
4	Inadequate information on the project	Idowu and Aligamhe (2023), Kikwasi (2012)
5	Regional mindset/culture	Idowu et al., (2022)
6	Delay in approval of work by consultant and concerned authorities	Idowu et al., (2022), Ayudhya (2012)
7	Disagreement between the parties	Abdalla and Hussein, (2002)
8	Increase in interest rates for the repayment of loans	Idowu et al., (2022)
9	Use of ‘pay-when-paid’ clauses in contract	Abdul-Rahman et al., (2008)
10	Disagreement on the valuation of work done	Ansah, (2011), Kikwasi (2012), Hasmori et al. (2012)
11	Administrative bottlenecks/Bureaucracy	Idowu and Aligamhe (2023), Sunjka & Jacob (2013)
12	Contractor incomplete claim submission	Idowu et al., (2022)
13	Sluggish valuation and initial payment certification by the consultant	Idowu et al. (2022), Ye and Rahman (2010)
14	Inflation	Idowu et al., (2022)

15	Poor quality of work	Ansah (2011), Ayudhya (2012)
16	Design changes	Kikwasi (2012), Sunjka & Jacob (2013)

2.4.2 Effects of Payment Delay on Construction Projects in Edo State

The adverse consequences of delayed payments for contractors in Edo State, Nigeria, have been a longstanding issue. Late payments can significantly jeopardize a contractor's ability to sustain their business, as highlighted by Bolten et al. (2022). Here are a few possible outcomes of payment delays:

Leads to difficult financial circumstances:

Throughout the project, it is anticipated that the contractor will face financial challenges due to a delay in payment.

Has a detrimental domino impact on other parties:

Payment problems in construction have a cascading effect. If one party delays payment, it can disrupt the entire payment process throughout the project's supply chain.

Causes cash-flow issues:

It is widely recognized that late payments affect the contractor's cash flow, potentially hindering the project's progress and financial prosperity (Naseem, 2006).

Delays in project completion:

Senior management's view of the survey as the main reason for the delay, along with a shortage of workforce, confirms the financial problem. This situation often results in project abandonment and financial instability, causing significant negative impacts on society. It also triggers formal conflict resolution processes like legal actions or arbitration..

Table 2: Effects of Payment Delay on Construction Projects

S/N	EFFECTS OF PAYMENT DELAY	SOURCE
1	Cash flow issues	Naseem (2006), Ye and Rahman, (2010), Ang (2006), Danuri et al. (2003)
2	Delay in project completion	Abdul-Rahman and Berawi (2006), Idowu et al., (2022), Ansah (2011), Amoako (2011), Danuri et al. (2003)
3	Cost overruns	Aibinu and Jagboro (2002), Idowu et al., (2022), Kikwasi (2012)
4	Reduction in project expansion	Haseeb et al (2011)
5	Disputes	Aibinu and Jagboro (2002), Idowu et al., (2022), Ansah,(2011), Kennedy (2005), Kikwasi (2012)
6	Increased cost of work	Odeyinka and Kaka (2005)
7	Rework	Zhang et al., (2018), Love and Smith (2003), Kim and Skibniewski (2020)
8	Complete abandonment of the project	Aibinu and Jagboro (2002), Okoye et al., (2015), Olanusi and Otunola (2012), Amoako (2011), Danuri et al. (2003)
9	Increases the financial hardship of contractors	Wuni et al, (2017), Ang (2006), Danuri et al. (2003)
10	Leads to strained stakeholders relations	Akinsiku, and Ajayi (2016)
11	Contractors/Employee discontentment	Idowu et al. (2022), Okereke (2020)
12	Increases reliance on debt and creates stress for contractors	Idowu et al. (2022), Danuri et al. (2003)
13	Time overruns	Aibinu and Jagboro (2002), Idowu et al., (2022), Amoako (2011), Kikwasi (2012)
14	Loss of credibility	Hasmori et. al., (2012), Wuni et al, (2017)
15	Arbitration and litigation	Aibinu and Jagboro (2002), Danuri et al. (2003)
16	Compromise of project quality	Akinsiku, and Ajayi (2016)
17	Increases time related charges	Okoye et al., (2015)
18	Leads to bankruptcy or liquidation	Ansah (2011), Danuri et al. (2003)
19	Creates a negative chain effects on other parties	Bob (2005), Shebob et al. (2011), Danuri et al. (2003), Amoako (2011)
20	Creates negative social impacts	Akinola and Awolesi (2019), Kikwasi (2012)

21	Contractors unwillingness to bid for projects from the clients	Ibrahim et al. (2017)
22	Increased cost of funds	Abdul-Rahman et al. (2011), Ameh et al, (2010), Fatoye (2012)

2.4.3 Measures for Mitigating the Effects of Payment Delay on Construction in Edo State

According to Lim (2009), the payment bond serves as a straightforward measure where, if the party responsible for payment defaults, a third party like a bank or insurance company steps in to guarantee payment. Essentially, this requires the party awarding a building contract above a certain amount to provide a payment bond to the contractor. This concept is similar to the performance bond commonly used in public projects, except in this case, the employer is responsible for obtaining the payment bond. Importantly, work cannot commence until the payment bond is in place. Additionally, Ramachandra and Rotimi (2011) noted in their research that payment bonds, direct payments, and trust accounts were solutions identified by contractors and subcontractors to address delayed payments.

Table 3: Measures for Mitigating Payment Delay

S/N	MEASURES FOR MITIGATING PAYMENT DELAY	SOURCE
1	The use of payment bonds	Lim (2009), Fatoye (2012)
2	Adopting the use of direct payments	Ramachandra and Rotimi (2011)
3	The use of trust accounts	Ramachandra and Rotimi (2011), Cheng et al., (2009)
4	Clear contract terms	Akinola and Awolesi (2019)
5	Use of retention bond to secure retention money	Ramachandra, and Rotimi (2012)
6	Conduct proper credit checks on clients before entering into contracts to assess their payment history and financial stability	Akinola and Awolesi (2019), Fatoye (2012)
7	Provide the contractor rights to either suspend work or reduce the rate of work	Illangakoon (2017), Fatoye (2012)
8	Obtain payment due before handover of project to client	Abdul-Rahman and Ye (2010), Fatoye

		(2012)
9	Prompt invoicing: Submit invoices promptly upon completion of project milestones	Akinola and Awolesi (2019), Illangakoon (2017)
10	Payment tracking system: Implement a system to track payment schedules, monitor payment status and generate reminders for pending payments	Akinola and Awolesi (2019), Illangakoon (2017), Fatoye (2012)
11	Carrying out proper feasibility on a project before commencement	Idowu et al. (2022), Idowu and Aligamhe (2023)
12	Proper site management	Idowu and Aligamhe (2023)
13	Non-interference of management on payment issues	Idowu and Aligamhe (2023)
14	Strict adherence to conditions of contract by parties involved in the projects	Idowu and Aligamhe (2023)
15	Laws: Penalties for late payments	Idowu et al, (2022), Fatoye (2012), Kwame (2011)
16	Early valuation	Idowu & Aligamhe (2023)
17	Adequate budgetary preparation	Idowu et al. (2022)
18	Early cash flow analysis advice to client	Akinola & Awolesi (2019)
19	Reduction in bureaucracy	Idowu & Aligamhe (2023)

CHAPTER THREE

RESEARCH METHODS

3.1 Preamble

In this chapter, we explore the typical procedures employed by researchers to analyze their subject matter, grounded in logical reasoning. By utilizing research methods, researchers can create a systematic and well-thought-out approach to their studies. These methods aid in determining the appropriate sample size, designing data collection tools, selecting the most suitable methodologies, and collecting pertinent information aligned with their research objectives. They provide techniques and tools for obtaining information through experiments, surveys, interviews, and observations.

3.2 Research Design

This research is a cross-sectional survey conducted using questionnaires to gather data. It concentrated on construction projects in Benin City, Edo State, aiming to improve cash flow positivity during these projects. The goal was to assess the perspectives of construction industry experts regarding payment delays in the sector. The professionals sampled were sourced from Edo State Chapters of professional organizations such as the Nigerian Institute of Quantity Surveyors, Nigeria Institute of Architects, and Nigeria Society of Engineers. The survey questionnaires were distributed to respondents through their professional bodies' WhatsApp platforms, and some participants completed the surveys on their own.

3.3 Area of the Study

This study concentrates on Benin City, Edo State. The choice of this area is significant due to the numerous construction projects underway in Edo State. Delays in payment for these projects can severely impact their viability. Investigating the repercussions of payment delays on construction projects can offer valuable insights into various facets of the construction industry in Edo State. This research aims to enhance understanding of the causes, effects, and potential solutions for payment delays in construction projects within the region.

3.4 Target Population

The focus of this study encompasses all individuals engaged in construction projects within Benin City, Edo State, Nigeria.

Table 4: Target Population

S/N	Target Population	Number of Professionals	Sample	Percentage (%)
1	Engineers	600	194	71.68
2	Architects	83	27	9.92
3	Quantity Surveyors	108	35	12.90
4	Builders	46	15	5.50
	Total	**837**	**271**	**100**

SOURCE: Nigerian Society of Engineers, Nigerian Institute of Architects, Nigerian Institute of Quantity Surveyors, Edo State Chapter, Nigerian Institute of Building.

3.5 Sampling Techniques and Sampling Size

To refine the scope and focus of this study, a purposive sampling approach was employed. The sample size was calculated using the Yamane (1967) formula (equation 2) to ensure appropriateness and representativeness.

$$n = \frac{N}{1 + N\,(\mathrm{e})\,2}$$

Where;

N=the population size,

n= the sample size,

e=margin of error (5%).

Sample Size;

$$n = \frac{837}{1 + 837\ (0.05)\ 2}$$

n = 271

A total of two hundred and seventy-one (271) questionnaires were distributed for this study by self-administration, and through Google forms and 68 (25.09%) questionnaires were collected which were used for the analysis.

Table 5: Response Rate

Professionals	**Frequency**	**Percentage (%)**
Architects	9	13.23
Engineers	31	45.59
Quantity Surveyors	18	26.47
Builders	10	14.71
Total	**68**	**100**

3.6 Methods of Data Collection

To achieve the goals and objectives of the study, quantitative data was collected and analyzed. This data was obtained by administering questionnaires.

3.6.1 Questionnaire

This study gathered data using a well-organized questionnaire distributed to professionals in the construction industry. The questionnaire was split into four parts: the initial section aimed at collecting demographic information from the participants, while the subsequent sections focused on gathering data related to the research goals. These sections were designed to comprehend and assess the impacts of payment delays on construction projects, based on the participants' feedback. Respondents were requested to express their opinions on the identified causes, consequences, and strategies to mitigate payment delays, using a 5-point Likert scale as illustrated in Table 6.

Table 6: 5-Point Likert Scale

5 POINT LIKERT-SCALE	MEANING
1	Strongly Disagree (SD)
2	Disagree (D)
3	Neither agree/disagree (NA/D)
4	Agree (A)
5	Strongly Agree (SA)

3.7 Method of Data Analysis

The approach employed to analyze the gathered data in this study is the mean item score, also known as the 'mean score.' This statistical method calculates the average value of responses to a

specific question within a dataset, serving as a fundamental tool to summarize and interpret the data collected for research purposes.

Mean Item Score (MIS) $\frac{\sum wn}{N} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{N}$

Where;

w is weighting given to each factor by the respondents ranging from 1-5.

n is the number of weighting.

N is the total number of respondents.

CHAPTER FOUR

RESULTS AND DISCUSSION OF FINDINGS

4.1 Introduction

In this section, a detailed explanation is provided about the consensus among construction experts who were actively involved in projects where payment delays significantly affected project completion. The chapter also delves into the responses obtained from a structured questionnaire distributed to address each of the research objectives.

4.2 Demographics of Respondents

The data collected from this part of the survey was utilized to obtain individual details of the respondents, including their years of experience, professional and academic qualifications, occupation, and the specific projects they have been involved in.

Table 7: Demographic Data of Respondents

Category	Description	Frequency	Percentage (%)
Years of experience	0 – 5	14	20.58
	5 – 10	23	33.82
	11 – 15	17	25
	16– 20	5	7.35
	Above 20	9	13.24
	Total	**68**	**100**
Academic qualification	HND	19	27.94
	PGD	1	1.47
	B.Sc.	26	38.24
	M.Sc.	22	32.35
	Total	**68**	**100**
Profession of respondents	Architects	9	13.23
	Engineers	31	45.59
	Quantity Surveyors	18	26.47
	Builders	10	14.71
	Total	**68**	**100**
Professional qualification	MNIQS	16	23.53
	MNSE	29	42.65
	MNIA	9	13.23
	MNIOB	10	14.71
	PROBATIONER	4	5.88
	Total	**68**	**100**
Type of projects handled	Residential	8	11.76
	Industrial	7	10.29

	Civil	16	23.53
	Institutional	3	4.41
	Two or more of the listed	34	50
	Total	**68**	**100**

Table 7 illustrates the work experience of the participants. Out of the total, 14 individuals (20.58%) have 0-5 years of experience, 23 (33.82%) have 5-10 years, 17 (25%) have 11-15 years, 5 (7.35%) have 16-20 years, and 9 (13.24%) possess more than 20 years of experience. Regarding their education, the majority holds B.Sc. degrees, comprising 38.24% of the respondents, while 32.35% have M.Sc qualification. Additionally, 27.94% have HND qualifications, and 1.47% holds PGD degrees. In terms of professions, 26.47% are quantity surveyors, 13.23% are architects, 45.59% are engineers, and 14.71% are builders. Their professional qualifications vary, with 23.53% being MNIQS, 42.65% MNSE, 13.23% MNIA, 14.71% MNIOB, and 5.88% being probationer members, split evenly between Quantity surveyors and Engineers. The study also delves into the types of projects handled by the respondents. Specifically, 11.76% have experience in residential buildings, 10.29% in industrial buildings, 23.53% in civil constructions, 4.41% in institutional projects, and 50% have worked on two or more of these categories.

4.3.1 Causes of Payment Delay on Construction Projects

The table 8 displays the average scores given by respondents indicating their agreement levels regarding the factors contributing to payment delays in construction projects in Benin City, Edo State. The findings reveal that issues such as administrative hurdles and disagreements among involved parties are the most significant causes of payment delays in these projects. On the other

hand, employer payment withholding, regional attitudes, and the inclusion of pay-when-paid clauses in contracts are identified as the least common reasons for delays in payments.

Table 8: Causes of Payment Delay on Construction Projects

Variables	Mean	Rank
Administrative bottlenecks/bureaucracy	3.77	1
Disagreement between the parties	3.66	2
Poor quality of work	3.63	3
Inflation	3.58	4
Disagreement on the valuation of work done	3.54	5
Contractor incomplete claim submission	3.51	6
Delay in approval of work by consultant and concerned authorities	3.48	7
Design changes	3.47	8
Sluggish valuation and initial payment certification by the consultant	3.47	9
Lack of sufficient feasibility study	3.39	10
Inadequate information on project	3.27	11
Increase in interest rates for the payment of loans	3.26	12
Poor payment of finance by employers	3.25	13
Withholding payment by employer	3.19	14
Regional mind-set/culture	3.11	15
Use of pay-when-paid clauses in contract	3.07	16

4.3.2 Effects of Payment Delay on Construction Projects

Late payments in the construction industry have significant negative consequences, potentially leading to the abandonment of projects if not effectively addressed. The results presented in Table 9 highlight findings from a survey, demonstrating that delays in paying contractors can disrupt the construction process, resulting in higher project costs. Among the respondents, five out of twenty-two key factors were identified as major consequences of payment delays: delay in project completion (MIS=3.83), increased cost of work (MIS=3.79), time overruns (MIS=3.79), compromised work quality (MIS=3.76), and cost overruns (MIS=3.72). Additionally, factors such as strained stakeholder relationships and the need for arbitration were viewed ambiguously by respondents (MIS=3.66, 3.61 respectively).

Table 9: Effects of Payment Delay on Construction Projects

Variables	Mean	Rank
Delay in project completion	3.83	1
Increased cost of work	3.79	2
Time overruns	3.79	3
Compromise of quality of work	3.76	4
Cost overruns	3.72	5
Loss of credibility	3.69	6
Increases time related charges	3.67	7
Increased cost of funds	3.66	8
Increases financial hardship on contractors	3.66	9
Leads to strained stakeholders relations	3.66	10
Arbitration	3.61	11
Disputes	3.61	12
Cash flow issues	3.60	13
Employee discontentment	3.60	14
Complete abandonment of project	3.55	15
Leads to bankruptcy	3.54	16
Creates a negative chain effect on other parties	3.48	17
Increases reliance on debt	3.48	18
Creates negative social impacts	3.47	19
Contractors unwillingness to bid for projects	3.35	20
Rework	3.33	21
Reduction in project expansion	3.25	22

4.3.3 Measures for Mitigating Payment Delay on Construction Projects

Regarding the approval of strategies to reduce payment delays, data from the table demonstrates that most respondents supported seven (7) out of nineteen (19) proposed measures. The top-ranking method for minimizing delays was adherence to conditions of contract ranked 1st in minimizing delay, ensuring clients verify completed project milestone ranked 2nd. Other effective measures included implementing a payment tracking system, conducting proper credit checks, establishing clear contract terms, engaging in adequate budgetary planning, and ensuring prompt invoicing, with corresponding scores of (MIS=3.86, 3.83, 3.75, 3.75, 3.73, 3.72, 3.72 respectively).

Table 11: Mitigating Measures of Payment Delay

Variables	Mean	Rank
Adherence to conditions of contract	3.86	1
Ensure clients verify completed project milestone	3.83	2
Payment tracking system	3.75	3
Proper credit checks	3.75	4
Clear contract terms	3.73	5
Adequate budgetary planning	3.72	6
Prompt invoicing	3.72	7
Proper feasibility	3.72	8
Proper site management	3.69	9
The use of payment bonds	3.66	10
Early valuation	3.63	11
Reduction in bureaucracy	3.63	12
Laws: Penalties for late payments	3.61	13
The use of direct payments	3.55	14
Early cash flow analysis	3.50	15
The use of retention bonds	3.45	16
The use of trust accounts	3.42	17
Obtain payment before handover	3.41	18
Non-interference of management	3.33	19

4.4 Discussion of Findings

In the study area, administrative bottlenecks and bureaucracy were identified as the primary cause of payment delays, followed by disputes between parties, poor quality of work, inflation, and disagreements on the valuation of work done. This finding contrasts with a study by Idowu and Aligamhe (2023) where bureaucracy was the fourth significant cause of payment delay, possibly due to differences in the target population, specifically professionals. Another study by Idowu et al. (2022) revealed that slow coordination and seeking approval from authorities, late preparation of interim valuations, inflation, increased interest rates in loan repayments, and cash flow problems due to client management deficiencies were significant causes of payment delay.

Regarding the effects of payment delay on construction projects, this study found that project completion delays, increased work costs, time overruns, compromised work quality, and cost overruns were the major consequences. This aligns with findings from Idowu et al. (2022), where time overruns, disputes, and cost overruns were the primary effects. Ansah (2011) and Fatoye (2012) also identified project progress delays and cost and time overruns as significant effects of payment delays in construction projects.

In terms of mitigating payment delays, strict adherence to contract conditions, verification of completed project milestones by clients, implementation of payment tracking systems, conducting proper credit checks, clear contract terms, and adequate budgetary planning were identified as effective measures. This corresponds with previous research by Idowu and Aligamhe (2023) and Fatoye (2012), highlighting the importance of adhering to contract conditions and comprehensive budget planning to mitigate payment delays.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on the primary research outcomes and conclusions. It also presents recommendations derived from these findings. To accomplish the research goal, the study investigated the reasons, consequences, and ways to reduce payment delays in construction projects in Benin City, Edo State.

5.2 Summary of Findings

A total of 68 questionnaires was retrieved from the respondents and analyzed. The questionnaire was broken down into three (3) sections so as to retrieve accurate data based on the different objectives. The response to the first objective in the questionnaire shows that the respondents agree to three (6) of the seventeen (17) variables, which are administrative bottlenecks/bureaucracy (MIS=3.77), disagreement between the parties (MIS=3.66), poor quality of work (MIS=3.63), inflation (MIS=3.58), disagreement on the valuation of work done (MIS=3.54), contractor incomplete claim submission (MIS=3.51). The response to the questionnaire for the second objective shows that delay in project completion, increased cost of work, time overruns, compromise of quality of work, cost overruns, loss of credibility, increases time related charges, increased cost of funds, increases financial hardship on contractors, leads to strained stakeholders relations, arbitration are major effects of payment delay on construction projects. The study found that the respondents agreed to thirteen (13) of nineteen (19) of the variables in the questionnaire as the measures of mitigating payment delay on construction projects; adherence to conditions of contract, ensure clients verify completed project milestone,

payment tracking system, proper credit checks, clear contract terms, adequate budgetary planning, prompt invoicing, proper feasibility, proper site management, the use of payment bonds, early valuation, reduction in bureaucracy, laws: penalties for late payments.

5.3 Conclusion

The research investigated how delays in payments impact construction projects. The study's results reveal the various negative outcomes associated with delayed payments in the construction industry. These include administrative hurdles, disagreements between parties, which the study identified as the primary causes of payment delays in construction projects.

Payment delays in construction projects can harm them in several ways, with the most significant being delays in project completion. Additionally, they can result in cash flow problems, increased costs, project delays, strained relationships, and legal disputes. These consequences can lead to significant disruptions and complications during project execution.

To minimize the adverse effects of payment delays, this research emphasizes the importance of several key factors, including adhering to contract conditions, having clear contract terms, and implementing efficient payment monitoring. By comprehending and addressing the underlying causes of payment delays, along with their effects and mitigation strategies, construction projects can reduce disruptions, foster better collaboration among stakeholders, and enhance overall project success.

5.3 Recommendations

The research findings suggest several strategies to minimize the negative impact of payment delays in construction projects:

Increase awareness among administration about how their decisions can affect construction progress.

Contractors should confirm clients' financial capacity before accepting contracts to prevent cash flow issues during projects.

Contractors need to strictly follow contract conditions throughout the entire project duration.

5.4 Areas for further research

Although this study has offered valuable knowledge about how payment delays affect construction projects, there are still several unexplored areas for future research. Researchers and industry experts could investigate the following areas:

Analyzing how government policies and laws influence payment delays and evaluating the effectiveness of measures taken to resolve this problem.

Creating reliable risk assessment models that can anticipate and prevent payment delays by considering project-specific factors and historical data.

Investigating new contractual models and incentive systems that can encourage prompt payments and decrease disputes in construction agreements.

REFERENCES

Bibliography

Abdul-Rahman , H., Berawi, M. A., Berawi, A. R., Mohamed, O., Othman, M. and Yahya, I. A., (2006) Delay mitigation in the Malaysian construction industry. *Journal of Construction Engineering and Management 132 (2): 125 – 133.*

Abdul-Rahman, H., Yahya, I.A., Berawi, M.A., Low, W.W., (2008). Conceptual Delay Mitigation Model Using a Project Learning Approach in Practice.

Abdul-Rahman, H., Takim, R. and Min, W. J (2009). Financial-related causes contributing to project delays*, Retail Leisure Property, 8: 225.*

Abdul-Rahman, H., and Ye, K.M., (2010). Risk of Late Payment in the Malaysian Construction Industry. *World Academy of Science, Engineering and Technology International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering Vol: 4, No:5.*

Abdul-Rahman, H., Wang, C., Takim, R., and Wong, S., (2011). Project schedule influenced by financial issues: Evidence in construction industry.

Aibinu, A. and Jagboro*, G.,* (2002). The effects of construction delays on project delivery in Nigerian construction industry. *International Journal of Project Management, 20, 593-597.*

Akinola, G. A., and Awolesi, J. A. B. (2019). Effects of Delay in Interim Payment on Contractors' Working Capital in Lagos State, Nigeria.

Akinsiku, O.E., and Ajayi, O.M., (2016). Effects of Delayed Payment of Contractors on Construction Project Delivery in Nigeria.

Amoako, K. B., (2011). The effect of delayed payment on cash flow forecasting of Ghanaian road contractors. Unpublished master thesis, University of Science and Technology.

Ameh, O. J., Soyingbe, A. A., and Odusami, K. T., (2010). Significant Factors Causing Cost Overruns in Telecommunication Projects in Nigeria

Ang, T. S. S. (2006). Payment Issues-the Present Dilemmas of Malaysian Construction Industry (Doctoral dissertation, Univeristi Teknologi Malaysia, Faculty of Built Environment).

Ansah, S. K., (2011). Causes and Effects of Delayed Payments by Clients on Construction Projects in Ghana. *Journal of Construction Project Management and Innovation, 1(1), 27–45.*

Ayudhya, A. P. B. I. N. (2012). Factors causing delay in payment of residential building projects in Thailand. TS01C–Construction Economics and Management I, 5480.

Bob, C. (2005), The marketing of rebellion: Insurgents, media, and international activism. Cambridge University Press.

Cheng, T., Soo, G., Kumaraswamy, M., and Jin, W., (2009). Security of Payment for Hong Kong Construction Industry – Workable alternatives and suggestions. *Building Journal Hong Kong China, 60-77.*

David G Carmichael, (2002). Disputes and international projects. CRC Press.

Danuri, M.S.M.,Munaaim, M.E.C., Raham, H.A., and Hanid, M., (2003). Late and non-payment issues on the Malayasian Construction Industry contractors perspective, Center for Project and Facilities Management, Faculty of the Built Environment, University of Malaya, 50603 Kuala Lumpur, Malaysia.

D.H.S., Illangakoon (2017). Study on Payment Delays in Small Scale Construction Projects in Sri Lanka.

Edwin HW Chan, Henry CH Seun, (2005), Dispute Resolution Management for International Construction Projects in China, *Management decision 43(4), 589-602.*

Faten Albtoush, Doh Shu Ing, Rahimi A. Rahman, Ayman Al-Momani, (2022). Critical success factors of construction projects in Jordan: an empirical investigation.

Fatoye, E.O. (2012). Contributing factors of delay in the Nigerian construction industry: A comparative analysis with other selected countries In: Laryea, S., Agyepong, S.A., Leiringer, R. and Hughes, W. (Eds). *A paper Presented at the 4th West Africa Built Environment Research (WABER) Conference Held on 24-26 July, Abuja, Nigeria, 575-587.*

Fugar, F. D., and Agyakwah-Baah, A. B. (2010). Delays in building construction projects in Ghana. *Australasian Journal of Construction Economics and Building, 10(1/2), 128.*

Haseeb, M., Bibi, A., Rabbani, W., (2011). Problems of Projects and Effects of Delays in the Construction Industry of Pakistan*. Australian Journal of Business and Management Research 1 (5), 41-50.*

Hasmori, M.F., Ismail, I. and Said, I. (2012). Issues of late and non – payment among contractors in Malaysia. 3rd International conference on Business and Economic research (3rd ICBER 2012) proceeding 12 - 13 March 2012. Golden Flower Hotel, Bandung, Indonesia, 82 - 93.

Idoro, G.I., (2004). The Effect of Globalization on Safety in the Construction Industry in Nigeria. *International Symposium on Globalisation and Construction AIT Conference Centre, Bangkok, Thailand 17-19 November, 2004. 817-826.*

Idowu, A.O., Simon-Eigbe, B.O. & Eshiemokhai T.I., (2022). Impact of Payment Delay on Construction Projects in Edo State, Nigeria. *Nigerian Research Journal of Environmental Sciences and Engineering. 7(1) 250-256.*

Idowu, A.O., Aligamhe, V.I., (2023). Effect of Payment delay on Time Performance of Construction Projects in Edo State, Nigeria. *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) e-ISSN: 2278-1684,p-ISSN: 2320-334X, Volume 20, Issue 2(1).*

John W. Creswell (2009). Mapping the Field of Mixed Methods. Research. *Journal of mixed methods research 3 (2), 95-108.*

Judi, S. S. and Abdul Rashid, R., (2010). Contractor's Right of Action for Late or Non-Payment by the Employer. *Journal of Surveying, Construction & Property, 1(1):65-95.*

Kazdin, A. E. (2021). Research design in clinical psychology. Cambridge University Press.

Kennedy, P., (2005). Statistics and trends in statutory adjudication in the UK since 1998 - International Forum on Construction Industry Payment Act and Adjudication, Kuala Lumpur Convention Centre, Kuala Lumpur, Malaysia.

Kikwasi G.J., (2012). Causes and effects of delays and disruptions in construction projects inTanzania , Australasian Journal of Construction Economics and Building, Conference Series, 1(2), 52-59.

Kim, Y. J., and Skibniewski, M. J. (2020). Cash and claim: Data-based inverse relationships between liquidity and claims in the construction industry. *J. Leg. Aff. Dispute Resolut. Eng. Constr. 12(3).*

Kumaraswamy, M.M. (2006). Accelerating construction industry development. *Journal of Construction in Developing Countries, 11(1) 73-96.*

Kwame, B.A. (2011). The effect of delayed payment on cash flow forecasting of Ghanaian road contractors. Unpublished MSc Thesis. Institute of Distance Learning, Kwame Nkrumah University of Science and Technology

Lim, C.F. (2009). Malaysian construction industry payment strategies for reform.

Love, P. E. D., and Smith, J. (2003). Benchmarking, bench-action, and bench-learning rework mitigation in projects. J. *Manag. Eng. 19(4), 147-159.*

Mark Saunders, Philip Lewis, Adrian Thornhill, (2007). Research Methods*. Business Students 4th edition Pearson Education Limited, England 6 (3), 1-268.*

Memon, A.H, I.A, Rahman (2013). Analysis of cost overrun factors for small scale construction projects in Malaysia using PLS-SEM method. *Modern applied science 7(8), 78.*

MR Abdul Kadir, WP Lee, MS Jaafar, SM Sapuan, AAA Ali, (2005), Factors Affecting Construction Labour Productivity for Malaysian Residential Projects, *Structural survey 23(1), 42-54.*

Mohd Khairul Anas Mohd Badroldin, Abdul Rahim Abdul Hamid, Syazwani Abdul Raman, Rozana Zakaria & Saeed Reza Mohandes, (2016). Late Payment Practices in the Malaysian Construction Industry.

Naseem, N.A. (2006). A Construction Industry Payment And Adjudication Act – Reducing Payment-Default And Increasing Dispute Resolution Efficiency. International Forum Construction Industry Payment Act and Adjudication. Kuala Lumpur: CIDB and ISM.

Nazir, N.Z. (2006). Late payment problems among contractors in Malaysia. Unpublished Masters Dissertation (Construction Management), Faculty of Civil Engineering, Universiti Teknologi Malaysia, Skudai, Malaysia.

Niazi, G.A., and Painting, N. (2017). Significant factors causing cost overruns in the construction industry in Afghanistan*. Procedia Engineering, 182 510-517.*

Odeh, A.M., and Battaineh, H.T., (2002). Causes of construction delay: Traditional contracts. *International Journal of Project Management, 20: 67-73.*

Odeyinka, H. A., and Kaka, A., (2005). An evaluation of contractors' satisfaction with payment terms influencing construction cash flow. *Journal of Financial Management of Property and Construction Volume 10, Number 3, pp171 – 180.*

Okereke, R., (2020). The Effect of Delayed Payments and Retention on Contractors Cash Flow. *PM World Journal (ISSN: 2330-4480), Vol. IX, Issue VIII.*

Okoye, M. P., Rambo, C. M., Odundo, P.A., (2015). Effects of Delayed Payment of Contractors on the Completion of Infrastructural Projects: A Case of Sondu-Miriu Hydropower Project, Kisumu County, Kenya. *Chinese Business Review, Vol. 14, No.7, 325-336.*

Olalusi, O. and Otunola, A. (2012). Abandonment of building projects in Nigeria – A Review of causes and solution. *International conference on chemical, civil and Environment Engineering (ICCEE 2012), Dubai, 253 – 255.*

Oppong B., (2003). Causes of Construction Delays in Ghana, Department of Building Technology, Kwame Nkrumah University of Science and Technology (Unpublished Thesis).

Ramachandra, T. and Rotimi, J.O., (2011) The nature of payment problems in the New Zealand construction industry. *Australasian Journal of Construction Economics and Building 11(2) 22-33.*

Ramachandra, T., and Rotimi, J.O.B., (2012). Construction payment delays and losses: Perceptions of New Zealand. *Paper presented at the PMI New Zealand Chapter 18th Annual Conference: Faces and Facets of Project Management, Wellington, New Zealand.*

Ramachandra, T., and Rotimi, J.O.B., (2015). Causes of Payment Problems in the New Zealand Construction Industry. *Construction Economics and Building, 15(1), 43-55.*

Reeves, k. (2003). Pay up. JUBM Construction News and Views, 1:4-6.

Sam Bolton, Gayan Wedawatta, Nadeeshani Wanigarathna, Chamindi Malalgoda, (2022). Late payment to subcontractors in the construction industry. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction 14 (4).*

Shebob, A, Dawood, N and Xu, Q., (2011) Analysing construction delay factors: A case study of building construction project in Libya In: Egbu, C. and Lou, E.C.W. (Eds*.) 27th Annual ARCOM Conference, 5-7 September 2011, Bristol, UK, Association of Researchers in Construction Management, pp. 1005-1012.*

Sunjka, B. P. and Jacob, U., (2013). Significant Causes and Effects of Project Delays in the Niger Delta Region, Nigeria.

Wu, J., Kumaraswamy, M.M. and Soo, G., (2011). Regulative Measures Addressing Payment Problems in the Construction Industry: A calculative understanding of their potential

outcomes based on gametric models. *Journal of Construction Engineering and Management 137(8), pp.566-573.*

Wa'el Alaghbari, Mohd Razali A Kadir, Azizah Salim, (2007). The Significant Factors Causing Delay of Building Construction Projects in Malaysia. *Engineering, construction and architectural management 14(2), 192-206.*

Wuni, I. Y., Boafo, H. K., Agyei-Kumi S., (2017). Critical Causes and Effects of Payment Delays in the Execution of Public Constructin Projects in Ghana: Fresh Evidence from the Brong-Ahofo Region. Developing Country Studies, Vol.7, N0.5.

Wu Jin (2010). Securing Payment in the Mainland China Construction Industry: the Problems of Payment Arrears and Their Remedial Measures.

Yamane, Y., (1967). Mathematical Formulae for Sample Size Determination.

Ye, K. M. and Rahman, H.A., (2010). Risk of late payment in the Malaysian construction industry. *Internatonal Scholarly and Scientific Research and Innovation, 4(5), p.81-90.*

Zhang, S., Duan, H., Zhao, X., Xia, B., Feng, Y., and Galvin, S, (2018). Learning on rework management of construction projects a case study. *Int. J. Constr. Manag. 21(3), 246-260.*

APPENDIX

RESEARCH QUESTIONNAIRE SURVEY

UNIVERSITY OF BENIN

FACULTY OF ENVIRONMENTAL SCIENCES

DEPARTMENT OF QUANTITY SURVEYING

Faculty of Environmental Sciences,
Department of Quantity Surveying,
University of Benin,
Benin City,
Edo State.
October, 2023.

Dear Respondent,

REQUEST TO FILL OUT QUESTIONNAIRE

I am a final year student of the Department of Quantity Surveying, Faculty of Environmental Sciences, University of Benin undertaking research on the topic, "Effects of Payment Delay on Construction Projects in Edo State". The research is in partial fulfillment of the requirements for the award of the degree of B.Sc. in Quantity Surveying.

Kindly respond to the questions in the attached questionnaire to enable me complete the study. Your responses will be treated with utmost confidentiality.

Thank you.

Yours Faithfully,

EGBARAN, Onoise Faith
08159805088

QUESTIONNAIRE

SECTION 1: DEMOGRAPHIC DATA OF RESPONDENT

Please tick ( ) in the box with the appropriate response. Mark one box only

1. Profession of respondents:
   Quantity Surveyor ( ), Architect ( ), Engineer ( ), Builders ( ),
2. Educational background:
   OND ( ), HND ( ), BSC ( ), MSc ( ) MBA ( ), PHD ( )
3. Professional qualification:
   MNIQS ( ), FNIQS ( ), MNSE ( ), FNSE ( ), MNIA ( ), FNIA ( ), MNIOB ( ), FNIOB ( ), other ( )
4. Years of experiences:
   Less than 5 years ( ), 5 -10 years ( ), 11 – 15years ( ),
   16 – 20 years ( ) 20years and above ( )
5. Types of projects involved/handled:
   Residential ( ), Industrial ( ) Civil ( ), Institutional ( ), two or more of the listed ( )

SECTION 2: CAUSES OF PAYMENT DELAY ON CONSTRUCTION PROJECTS IN EDO STATE

Using a scale of (1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree). Kindly indicate your level of agreement based on your job experience. (Please tick the box which best defines your level of agreement).

S/N	CAUSES OF DELAYED PAYMENTS	SCALE				
		1	2	3	4	5
1	Poor management of finance by employers.					
2	Withholding payment by employers.					
3	Lack of sufficient feasibility study					
4	Inadequate information on the project					
5	Regional mindset/culture					
6	Delay in approval of work by consultant and concerned authorities					
7	Disagreement between the parties					
8	Increase in interest rates for the repayment of loans					
9	Use of 'pay-when-paid' clauses in contract					
10	Disagreement on the valuation of work done					
11	Administrative bottlenecks/Bureaucracy					
12	Contractor incomplete claim submission.					
13	Sluggish valuation and initial payment certification by the consultant					
14	Inflation					
15	Poor quality of work					
16	Design changes					

SECTION 3: EFFECTS OF PAYMENT DELAYS ON CONSTRUCTION PROJECTS

Using a scale of (1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree). Kindly indicate your acceptance to the effects of payment delays on construction projects listed below. (Please tick the box which best defines your level of agreement).

S/N	EFFECTS OF PAYMENT DELAYS	SCALE				
		1	2	3	4	5
1	Cash flow issues					
2	Delay in project completion					
3	Cost overruns					
4	Reduction in project expansion					
5	Disagreements/ Disputes					
6	Increased cost of work					
7	Rework					
8	Complete abandonment of the project					
9	Increases the financial hardship of contractors					
10	Leads to strained stakeholders relations					
11	Employee discontentment					
12	Increases reliance on debt					
13	Time overruns					
14	Loss of credibility					
15	Arbitration and litigation					
16	Compromise of project quality					
17	Increases time related charges					
18	Leads to bankruptcy or liquidation					
19	Creates a negative chain effect on other parties					
20	Creates negative social impacts					
21	Contractors unwillingness to bid for projects from the clients					
22	Increased cost of funds					

SECTION 4: MEASURES FOR MITIGATING PAYMENT DELAY ON CONSTRUCTION PROJECTS

Using a scale of (1= strongly disagree, 2=disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree). Kindly indicate your level of agreement to the mitigating measures for mitigating payment delays on construction projects listed below. (Please tick the box which best defines your level of agreement).

S/N	MEASURES FOR MITIGATING PAYMENT DELAY	SCALE				
		1	2	3	4	5
1	The use of payment bonds.					
2	Adopting the use of direct payments.					
3	The use of trust accounts.					
4	Early cash flow analysis advice to client.					
5	Laws: Penalties for late payments.					
6	Adequate budgetary preparation.					
7	Reduction in bureaucracy					
8	Early valuation					
9	Clear contract terms					
10	Use of retention bond to secure retention money					
11	Conduct proper credit checks on clients before entering into contracts to assess their payment history and financial stability.					
12	Ensure clients verify completed project milestones promptly, enabling timely payment processing.					
13	Obtain payment due before handover of project to client.					
14	Prompt invoicing: Submit invoices promptly upon completion of project milestones.					
15	Payment tracking system: Implement a system to track payment schedules.					
16	Carrying out proper feasibility study on a project before commencement.					
17	Proper site management.					
18	Non-interference of management on payment issues					
19	Strict adherence to conditions of contract by parties involved in the projects					