JRBE JOURNAL OF RESEARCH IN THE BUILT ENVIRONMENT
ISSN 2636-6363
JRBE 2025
VOLUME 2 ISSUE 4
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BARRIER TO TIME CONTROL ON CONSTRUCTION PROJECT DELIVERY

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ABSTRACT*: cost control in construction project involves managing and regulating the expenses of a project to ensure it stays within the approved budget. It's crucial for the financial health and success of a construction project, however it's associated with some barriers. This study aims to identify and analyze the barriers to effective time control in construction project delivery [a case study of Building and infrastructural project in Ondo and Ekiti State] in Nigeria and to propose strategies for improving time management within the construction industry. Related literature was reviewed and methodology is hinged on collecting useful information from published and unpublished secondary sources, while relevant data were also gathered from construction professional in research area as primary sources. Results indicated a high level of agreement among respondents, irrespective of demographic differences, in ranking the main barriers to time control in construction projects in Nigeria, evaluating the impact of these barriers on project timelines, and suggesting strategies to address them. Key recommendations to enhance time control in construction projects include strengthening quality control, implementing time management measures for accurate project forecasting, maintaining schedules to avoid extended site occupancy, enhancing client trust through timely project delivery, fostering improved communication and collaboration, adopting effective time management practices for streamlined processes, and reducing cost overruns.*

Keywords: Barriers, Time Control, Construction Project Delivery

1.0 INTRODUCTION

Time control involves managing and overseeing factors that influence the schedule of an activity (Owens & Krynovich, 2017). Construction projects are unique and encompass activities such as building new structures, making additions, alterations, expansions, renovations, and major replacements, including mechanical and electrical installations. Controlling costs and time in the construction industry is crucial to ensure projects are completed within budget and on schedule (Rahman, Memon, Nagapan, Latif, & Azis, 2012).

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Globally, the success of a construction project is measured by its ability to meet cost, time, safety, resource allocation, and quality criteria as defined by the client. According to Kagioglou, Cooper, and Aouad (2021), a successful project achieves its technical goals, stays on schedule, and remains within budget. Rahman et al. (2012) emphasize that time and cost performance are key success criteria in any construction project.

Despite these established performance metrics, the construction industry frequently struggles to complete projects within the scheduled time and budgeted costs. Olawale and Sun (2010) argue that the industry is often seen as performing poorly, failing to achieve effective time and cost management, leading to significant overruns. Failure to control time in construction projects can result in severe consequences. Azis, Memon, Rahman, and Karim (2013) note that uncontrolled construction costs increase investment pressure, raise construction expenses, and impact investment decision-making. Shanmugapriya and Subramanian (2013) add that from a national economic perspective, time and cost overruns reduce the productivity of economic resources, hinder development potential, and diminish economic effectiveness. Research conducted by the Chartered Institute of Building (CIOB) in 2008 has indicated that the quality of time-management on construction projects is generally poor (Chin & Abdulhamid, 2015). However, in the construction sector such as in Nigeria, poor delivery of project especially completion within schedule has remained an issue causing disharmony among construction stakeholders despite the existence of established processes of time management. Therefore, this study aim to identify and analyze the barriers to time control in construction project delivery in Nigeria and to propose strategies for improving time management in the construction industry, with the specific objectives to identify the key barriers to time control in construction projects in Nigeria, assess the impact of these barriers on project delivery timelines and proffer recommendations to mitigate the identified barriers and enhance time control in construction projects.

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2.0 LITERATURE REVIEW

Achieving completion of construction projects on time is a basic requirement. However, projects are seldom completed on time. Construction delay is generally acknowledged as the most common, costly, complex and risky problem encountered in construction projects. The overriding importance of time for both the owner and the contractor has made it a source of frequent disputes and claims leading to lawsuits (Ahmed et al., 2013). Delays do not always result from a single catastrophic event. They frequently develop slowly during the course of work. Delays can cause substantial damages to an owner. The successful execution of construction projects and keeping them within the estimated cost and prescribed schedules depend on a methodology that requires sound engineering judgment. A study showed that the Vietnamese government has acknowledged this issue as a serious concern, especially with government-related funded projects (Le-Hoai et al., 2018).

Improper planning, financial problems, contractual relationships, lack of effective communication, management issues, design errors and shortage of supply rank high as causes of delays in construction industry (Maura, Teixeira & Pires, 2017; Assaf, AlKhalil & Al-Hazmi, 2016; Mezher & Tawil, 2018; Maghareh, Imani, Karimi & Ostovan, 2011; Abdul-Rahman & Berawi, 2016; Mohammed & Isah, 2012). The findings on financial issues further agree with similar studies in other developing countries. For example, Frimpong et al. (2013) found that financial problems are the main factors that cause delay in the construction of groundwater projects in Ghana. Alaghbari et al. (2017) study in Malaysia indicated that from a list of thirty-one (31) factors, clients, contractors and consultants agreed that financial problems were the main factors causing delay. The inability of clients to honour payments on time was determined as the first major factor that causes delays in building construction projects in Ghana (Fugar & Agyakwah-Baah, 2010). Sweis et al. (2018) studied the causes of delay in residential projects in Jordan and concluded that financial difficulties faced by the contractor and too many change orders by the owner are the leading causes of construction delay. Abd El-Razek et al. (2018) in a similar study in Egypt found that the most important cause of delay is tied to project financing during the construction phase.

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According to Othman et al (2017), timely completion remains the key criteria to achieve success in any project despite the industry. The management of time is a necessity of life. In the construction industry stakeholders are unanimous that time along with cost and quality are the major deliverables upon which project are said to be a success or failure

2.3 PROJECT TIME MANAGEMENT CONCEPT

According to PMI (2017) time is an integral part of life. However, many people and organizations do not actively manage it. Chan and Kumaraswamy (2012) stated that construction time is increasingly important because it often serves as a crucial benchmarking for assessing the performance of a project and the efficiency of the project organization. Westland (2016) posited that time management is the process of recording and controlling time spent by staff on the project. Adeyinka (2012) in his study defines time management as a set of principles, practices, skills, tools and system that helps you use your time to accomplish what you want. Time management is a process of managing time according to the requirements of different assignments and activities with the goal of ensuring organizational success and maximizing benefits by utilizing, saving and not wasting time or energy (Sahito&Vaisanen, 2017).

Time management is basically a set of principles, practices, skills, tools and system that helps one to use one's time to accomplish what one wants. Project time management includes the processes required to manage the timely completion of the project (PMI, 2013).

Fig. 1 shows the conceptual framework implemented for the study. It consists of the independent variables and dependent variable. The framework hypotheses that time management factors: processes, principles and practices, which are the independent variables will influence construction project delivery most especially timely completion. However, this postulation is not immune to the interference of other external factors which might affect its operation.

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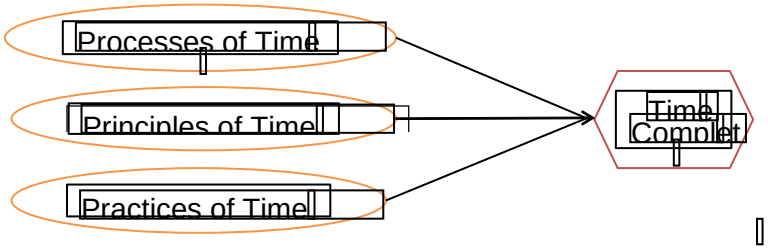

Time Management Factors
(Independent Variables)

Project Delivery
(Dependent Variable)

Fig 1: Conceptual framework for time management

Source: Suleiman Shehu (2021)

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2.7 KEY BARRIERS TO TIME CONTROL IN CONSTRUCTION PROJECTS IN NIGERIA

2.7.1 Inadequate Project Funding

Inadequate project funding is a significant barrier to time control in Nigerian construction projects, as insufficient financial resources can lead to delays in project mobilization, procurement, and execution. When project funding is inadequate, contractors often struggle to procure necessary materials and hire skilled labor, causing work stoppages and extended project timelines. The financial instability also impacts the ability of contractors to maintain consistent project momentum, ultimately leading to prolonged project delivery times (Ameh & Odusami, 2014). Furthermore, inadequate funding hinders proper planning and resource allocation, increasing the likelihood of overruns that disrupt the completion timeline (Ogwueleka, 2021).

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2.7.2 Political Unrest or Changes in Government

Political instability or changes in government in Nigeria pose considerable challenges to time control in construction projects. Political unrest, such as civil protests or localized conflicts, disrupts construction activities and often necessitates a temporary halt to operations to ensure the safety of personnel and resources (Akinwale, 2020). Changes in government can also lead to shifts in project priorities or budgets, as new administrations may suspend or cancel ongoing projects. This shift disrupts timelines and may render previously allocated resources obsolete or insufficient for project completion (Omoregie & Radford, 2016).

2.7.3 Poor Infrastructure and Poor Site Accessibility

Inadequate infrastructure and poor accessibility to project sites are notable impediments to effective time control in Nigerian construction projects. Many construction sites, especially in rural or underdeveloped areas, lack the necessary roads and utilities, which delays the delivery of materials and restricts workers' access. Poor infrastructure not only delays the commencement of projects but also contributes to significant inefficiencies during project execution, leading to extended construction timelines (Adebayo, 2018). Furthermore, remote sites with poor transportation infrastructure face issues such as increased transportation costs and material handling delays, exacerbating project delays (Ibrahim et al., 2014).

2.7.4 Irregular or Delayed Funding

Irregular or delayed funding significantly disrupts the time management of construction projects in Nigeria. The intermittent release of funds creates a stop-start effect on project activities, which increases the time needed for completion as resources are either delayed or unavailable. Contractors facing delayed payments may reduce their workforce or pause material procurement, further prolonging the project schedule (Ogunsemi & Jagboro, 2016). Inconsistent funding leads to a ripple effect of delays, creating bottlenecks in labor, materials, and equipment, thereby preventing projects from maintaining consistent progress (Olatunji, 2020).

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2.7.5 Unavailability or Scarcity of Construction Materials

Scarcity of construction materials is another critical factor impacting project timelines in Nigeria, as the availability of quality materials is often inconsistent. Material shortages, exacerbated by supply chain issues or market fluctuations, can cause significant delays when contractors cannot procure necessary resources on time. Shortages of locally sourced materials, such as cement or steel, affect the scheduling of project phases that rely heavily on specific materials, causing unplanned interruptions in project activities (Ogunbiyi et al., 2014). In many cases, the time lost in seeking alternative suppliers or adjusting material specifications results in protracted project timelines (Olusegun & Aje, 2015).

2.7.6 Lack of Skilled Contractors

The shortage of skilled contractors poses a significant barrier to time control in Nigeria's construction projects. Many contractors lack the necessary technical expertise, which impacts their ability to efficiently manage time, cost, and quality across different project stages. A deficiency in skilled personnel often results in slower project delivery, as tasks that could have been completed in a shorter time frame are prolonged due to inexperience or lack of proficiency (Aibinu & Jagboro, 2022). This skills gap impacts not only technical tasks but also administrative functions, leading to mismanagement of timelines (Ojo et al., 2020).

2.7.7 Ineffective Communication and Coordination Among Stakeholders

Ineffective communication and coordination among stakeholders is a critical barrier to time control in construction projects. Poor communication channels can lead to misunderstandings and conflicts, as well as a lack of clarity regarding project goals and timelines, ultimately impacting the efficiency and pace of project execution (Mbachu & Nkado, 2017). Miscommunication between contractors, clients, and suppliers causes delays in decision-making, which disrupts the sequence of activities and can create prolonged bottlenecks in the project schedule (Agyekum et al., 2015).

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2.7.8 Excessive Bureaucratic Procedures

Excessive bureaucratic procedures in Nigeria's construction sector contribute significantly to time overruns. Lengthy approval processes for permits, licenses, and other regulatory requirements create unnecessary delays before and during project execution. These procedures often involve multiple layers of administration, leading to slowdowns in mobilization and the commencement of construction activities (Akomah & Abdul-Rashid, 2018). Bureaucratic inefficiencies hinder timely access to essential resources and approvals, causing projects to exceed their scheduled timelines (Ameh et al., 2020).

2.7.9 Unpredictable and Severe Weather Conditions

Unpredictable and severe weather conditions are a major impediment to time control in Nigeria's construction projects. Due to Nigeria's tropical climate, seasonal rainfall, and unpredictable weather patterns, construction activities are often disrupted by conditions unsuitable for work. Heavy rains, for instance, can make construction sites inaccessible or lead to waterlogging, which halts work and damages equipment, resulting in delays (Awodele & Ogunlana, 2016). The inability to control weather-induced delays complicates project scheduling and planning, often leading to prolonged project timelines.

2.7.10 Client-Initiated Changes or Revisions in Project Design

Client-initiated changes or design revisions are frequent sources of delays in construction projects, as modifications to the project scope often require re-evaluation of the original timeline. These changes may involve alterations in project specifications, materials, or designs, necessitating rework that extends the construction schedule (Hanna et al., 2022). Each change initiated by the client disrupts the project's flow, as adjustments in resource planning, procurement, and workforce allocation are required to accommodate the revised design (Arain & Low, 2016).

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2.8 IMPACT OF THESE BARRIERS ON PROJECT DELIVERY TIMELINES

2.8.1 Delayed Project Start

Administrative delays, funding issues, and approval bottlenecks can push back the project start date. This initial delay can cascade through the project timeline, setting back all subsequent milestones. Waiting for government approvals or securing budget allocations can take months, delaying the commencement of necessary construction or maintenance work. Bureaucratic processes can be slow, especially when multiple levels of approval are needed (Abdulkadur et al, 2017).

2.8.2 Extended Project Duration

Insufficient planning and poor project management practices can result in tasks taking longer than anticipated. This is often due to unforeseen challenges, scope creep, or inefficient resource allocation. Mismanagement of contractor schedules or unexpected technical difficulties can significantly extend the project duration. (Amade et al, 2015).

2.8.3 Increased Downtime

Inefficiencies in scheduling and coordination among different teams can lead to periods where no work is being done, thereby wasting valuable time. If electrical work is not synchronized with structural repairs, workers might have to wait for one team to finish before they can proceed, causing avoidable downtime. Poor scheduling and coordination can result in teams waiting on each other. (Ayodeji et al, 2017).

2.8.4 Procurement Delays

Difficulties in sourcing materials and equipment, especially specialized items that are not readily available locally, can hold up project progress. Delays in the delivery of imported construction materials due to customs issues can halt ongoing work until the materials arrive. Dependence on vendors and suppliers to deliver on time can be a risk. Delays from suppliers can stall the entire project (Chan & Kumaraswamy, 2022).

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2.8.5 Funding Interruptions

Interruptions or delays in funding can cause project work to pause. Inconsistent financial flow affects the ability to pay contractors, purchase materials, and maintain a steady project pace. Budget cuts or delays in fund disbursement from the federal government can force a temporary suspension of project activities. Contractors and suppliers may halt work if they are not paid on time, leading to project delays. (Chin & Abdulhamid, 2015).

2.8.6 Regulatory and Compliance Hurdles

Navigating through bureaucratic regulations and compliance requirements can be time-consuming, often leading to significant delays. Extensive paperwork and prolonged approval processes for environmental assessments or safety regulations can slow down project progress. Projects may require environmental impact assessments and approvals, which can be a lengthy process. (Hao et al, 2018).

2.8.7 Labor Shortages and Strikes

Unavailability of skilled labor or labor strikes can severely disrupt the project schedule. Skilled workers might be limited, and labor unrest can lead to work stoppages. Strikes by construction workers or skilled technicians due to disputes over wages or working conditions can halt project activities for days or weeks. (Hussain, 2014).

2.8.8 Weather-Related Delays

Adverse weather conditions can cause work stoppages, especially for outdoor activities, thereby extending the project timeline. Heavy rains during the rainy season can delay construction work, particularly when it comes to laying foundations or external structures. In regions with distinct wet and dry seasons, planning construction activities around these patterns is crucial to avoid delays. (Ibironke & Elamah, 2021).

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2.8.9 Communication Breakdowns

Poor communication among stakeholders, including project managers, contractors, and the educational institution, can lead to misunderstandings and misalignment, causing delays. If project changes are not effectively communicated to all parties, it can result in rework or waiting periods while clarifications are made. (Ibrahim, 2020).

2.8.10 Supply Chain Disruptions

Disruptions in the supply chain, such as delays in the delivery of construction materials or equipment, can slow down the project progress. Global supply chain issues or local logistical challenges can delay the arrival of critical building components, stalling work until the necessary materials are available. Transporting materials and equipment to the project site can face logistical challenges such as traffic, road conditions, or shipping delays. (John et al, 2015).

2.9 RECOMMENDATIONS TO MITIGATE THE IDENTIFIED BARRIERS AND ENHANCE TIME CONTROL IN CONSTRUCTION PROJECTS

2.9.1 Implement Advanced Project Planning and Scheduling Tools

Utilize project management software and advanced scheduling tools like Primavera P6 or Microsoft Project. These tools offer detailed scheduling, resource allocation, and time management features, enabling more precise project timelines and better tracking of progress. (Inuwa, 2014). These tools enable project managers to create detailed schedules that break down tasks, allocate resources, and set timelines. They also offer features for tracking progress, identifying bottlenecks, and making adjustments in real-time. (Amade et al, 2015).

2.9.2 Enhance Communication and Collaboration

Establish robust communication channels using tools like Slack, Microsoft Teams, or other collaboration platforms. Improves information flow, ensures all stakeholders are aligned, and reduces delays caused by miscommunication or lack of information. Effective communication

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and collaboration are critical to the success of construction projects. Utilizing platforms like Slack or Microsoft Teams can significantly improve the flow of information among project stakeholders (Mgeleka, 2015).

2.9.3 Adopt Lean Construction Practices

Integrate lean construction methodologies to minimize waste, optimize processes, and improve efficiency. Reduces time spent on non-value-adding activities, streamlines workflows, and enhances overall project efficiency. Lean construction practices focus on maximizing value while minimizing waste in construction processes. By adopting these methodologies, projects can improve efficiency and reduce time spent on non-value-adding activities. Lean principles such as Just-In-Time (JIT) delivery, continuous improvement, and waste reduction streamline workflows and enhance productivity (Murithi et al, 2017).

2.9.4 Provide Comprehensive Training and Skill Development

Conduct regular training sessions and workshops for staff on new technologies, project management techniques, and best practices. Ensures that the team is skilled and knowledgeable, reducing the likelihood of errors and rework that can cause delays. Investing in regular training and skill development for construction staff is crucial for maintaining high standards of work and minimizing delays. (Olawale & Sun, 2020).

2.9.5 Utilize Building Information Modeling (BIM)

Implement BIM to create detailed 3D models of the project. Enhances visualization, allows for better planning, and identifies potential issues early in the project, reducing delays and improving coordination. Building Information Modeling (BIM) is a transformative technology that allows for the creation of detailed 3D models of construction projects. BIM enhances visualization, planning, and coordination among project stakeholders. It helps identify potential issues early in the project lifecycle, enabling proactive problem-solving and reducing the risk of delays (Sunke, 2019).

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2.9.6 Establish Clear Contractual Agreements

Draft comprehensive contracts that clearly define roles, responsibilities, timelines, and penalties for delays. Ensures accountability and clarity among all parties, reducing disputes and misunderstandings that can cause delays. Clear and comprehensive contractual agreements are vital for ensuring accountability and clarity in construction projects. Contracts should define the roles, responsibilities, timelines, and penalties for delays for all parties involved. Well-drafted contracts reduce the risk of disputes and misunderstandings, which can lead to project delays. (Ugwu & Attah, 2016).

2.9.7 Conduct Regular Progress Monitoring and Reporting

Implement a robust system for regular monitoring and reporting on project progress using key performance indicators (KPIs). Enables early identification of potential delays, allowing for timely corrective actions and adjustments to keep the project on track (Abdulkadir et al, 2017). Implementing a system that tracks key performance indicators (KPIs) allows project managers to keep a close eye on the project's progress. Regular reporting ensures that any deviations from the plan are quickly identified and addressed (Ibrahim, 2020).

2.9.8 Improve Supply Chain Management

Optimize procurement processes and establish reliable relationships with suppliers to ensure timely delivery of materials and equipment. Reduces delays caused by late or incorrect deliveries, ensuring that the project has the necessary resources available when needed. Effective supply chain management is crucial for ensuring the timely delivery of materials and equipment needed for construction projects (Amade et al, 2015).

2.9.9 Implement Risk Management Strategies

Develop a comprehensive risk management plan that identifies potential risks and outlines mitigation strategies. Proactively addresses issues that could cause delays, ensuring that the project team is prepared to handle unexpected challenges. Proactive risk management is essential for identifying and mitigating potential risks that could cause delays in construction

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projects. Developing a comprehensive risk management plan involves identifying potential risks, assessing their impact, and outlining mitigation strategies (Ibironke &Elamah, 2021).

2.9.10 Enhance Stakeholder Engagement

Involve stakeholders throughout the project lifecycle and maintain regular updates and consultations. Ensures stakeholder expectations are managed, reduces resistance to changes, and fosters a collaborative environment that supports timely project completion (Hao et al, 2018). Active stakeholder engagement throughout the project lifecycle is critical for ensuring alignment and support. By maintaining strong stakeholder relationships, project managers can ensure smoother project execution and adherence to timelines (Inuwa, 2014).

3.0 RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data [Kothari, 2004]. Survey research design will be adopted. This is considered suitable because survey research method helps in collecting data from a predefined group of respondents to gain information and insights into the research topic. Surveys also serve as a great method of opinion sampling and finding out what people think about different contexts and situations. Applying this to research means you can gather first – hand information from persons affected by specific contexts.

3.2Area of Study

In the research work, the study was carried out on barriers to time control on construction project delivery

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3.3 TARGETED POPULATION

The target population for this study were professionals in construction industry, private firms and ministry of works within Ekiti and Ondo -State

3.4 Sample size

The research was conducted through a systematic random sampling procedure.

3.5 Sampling Techniques

The study will adopt census sampling technique. Census method is the method of statistical enumeration where all members of the population are studied.

3.6 Data Collection Instrument

Questionnaire was selected for efficient data collection mechanism to ensure relevancy and consistency of information.

3.6 Data Analysis

The method of data analysis that was used for this research is descriptive statistics which includes frequency table, mean and rank. The data were collected and analyzed through the use of statistical package for the social science (SSPS) to achieve the objective.

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4.0 DATA ANALYSIS AND INTERPRETATION OF RESULT

4.4 ANALYSIS OF OBJECTIVES

Table 4.1 Key barriers to time control in construction projects in Nigeria

S/N	KEY BARRIERS TO TIME CONTROL IN CONSTRUCTION PROJECTS IN NIGERIA	5	4	3	2	1	RII	RANK
1	Lack of skilled contractors	26	18	1	0	0	0.91	1st
2	Ineffective communication and coordination among stakeholders	26	17	1	1	0	0.90	2nd
3	Excessive bureaucratic procedures	27	14	3	1	0	0.90	2nd
4	Unpredictable and severe weather conditions	24	16	5	0	0	0.88	4th
5	Client-initiated changes or revisions in project design	25	17	1	1	1	0.88	4th
6	Delays in obtaining necessary permits, approvals, or inspections from regulatory bodies	21	20	4	0	0	0.88	4th
7	Security issues	24	14	7	0	0	0.88	4th
8	Lack of effective project monitoring and control mechanisms	20	20	4	1	0	0.86	8th
9	Poor Quality of Materials	23	17	1	4	0	0.86	8th
10	Inadequate experience or expertise among project managers	23	16	3	2	1	0.86	8th
11	Inadequate project funding	21	19	3	1	1	0.86	8th
12	Political unrest or changes in government	17	22	6	0	0	0.85	12th
13	Poor infrastructure and poor site accessibility	22	17	3	1	2	0.85	12th
14	Irregular or delayed funding	20	17	6	2	0	0.84	14th
15	Unavailability or scarcity of construction materials	18	19	8	0	0	0.84	14th

Source: Researcher's field survey 2025

Comment: Table 4.1 shows that the respondents' view on the Key barriers to time control in construction projects in Nigeria, using relative importance Index (RII), the greater the index scores the higher the rank as follow; "Lack of skilled contractors" ranked 1st with RII of 0.91, followed by "Ineffective communication and coordination among stakeholders" ranked 2nd with RII of 0.90 on the table, followed by "Excessive bureaucratic procedures" also ranked 2nd with RII 0.90 on the table, followed by "Unpredictable and severe weather conditions" ranked 4th with a RII of 0.88, while "Client-initiated changes or revisions in project design" also ranked 4th with RII of 0.88 on the table respectively.

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Table 4.2 Impacts of the barriers on project delivery timelines

S/N	IMPACT OF THESE BARRIERS ON PROJECT DELIVERY TIMELINES	5	4	3	2	1	RII	RANK
1	Supply Chain Disruptions and Material Issues	18	26	1	0	0	0.91	1st
2	Compromised Work Quality	17	26	1	1	0	0.90	2nd
3	Increased Stress Among Project Teams	14	27	3	1	0	0.90	2nd
4	Regulatory Changes	16	24	5	0	0	0.88	4th
5	Missed Opportunities	17	25	1	1	1	0.88	4th
6	Extended Project Duration	20	21	4	0	0	0.88	4th
7	Increased Downtime	14	24	7	0	0	0.88	4th
8	Procurement Delays	20	20	4	1	0	0.86	8th
9	Funding Interruptions	17	23	1	4	0	0.86	8th
10	Regulatory and Compliance Hurdles	16	23	3	2	1	0.86	8th
11	Labor Shortages and Strikes	19	21	3	1	1	0.86	8th
12	Weather-Related Delays	22	17	6	0	0	0.85	12th
13	Communication Breakdowns	17	22	3	1	2	0.85	12th
14	Supply Chain Disruptions	17	20	6	2	0	0.84	14th
15	Delayed Project Start	19	18	8	0	0	0.84	14th

Source: Researcher's field survey 2025

Comment: Table 4.2 shows that the respondents' view on the Impacts of the barriers on project delivery timelines, using relative importance Index (RII), the greater the index scores the higher the rank as follow; "Supply Chain Disruptions and Material Issues" ranked 1st with RII of 0.91, followed by "Compromised Work Quality" ranked 2nd with RII of 0.90 on the table, followed by "Increased Stress Among Project Teams" also ranked 2nd with RII 0.90 on the table, followed by "Missed Opportunities" ranked 4th with a RII of 0.88, while "Extended Project Duration" also ranked 4th with RII of 0.88 on the table respectively.

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Table 4.3 Recommendations to mitigate the identified barriers and enhance time control in construction projects

S/N	RECOMMENDATIONS TO MITIGATE THE IDENTIFIED BARRIERS AND ENHANCE TIME CONTROL IN CONSTRUCTION PROJECTS	5	4	3	2	1	RII	RANK
1	Enhanced Quality Control	26	18	1	0	0	0.91	1st
2	Implement Advanced Project Planning and Scheduling Tools	26	17	1	1	0	0.90	2nd
3	Enhance Communication and Collaboration	27	14	3	1	0	0.90	2nd
4	Adopt Lean Construction Practices	24	16	5	0	0	0.88	4th
5	Provide Comprehensive Training and Skill Development	25	17	1	1	1	0.88	4th
6	Utilize Building Information Modeling (BIM)	21	20	4	0	0	0.88	4th
7	Establish Clear Contractual Agreements	24	14	7	0	0	0.88	4th
8	Conduct Regular Progress Monitoring and Reporting	20	20	4	1	0	0.86	8th
9	Improve Supply Chain Management	23	17	1	4	0	0.86	8th
10	Implement Risk Management Strategies	23	16	3	2	1	0.86	8th
11	Enhance Stakeholder Engagement	21	19	3	1	1	0.86	8th
12	Improved Project Forecasting	17	22	6	0	0	0.85	12th
13	Reduced Site Occupancy	22	17	3	1	2	0.85	12th
14	Enhanced Client Confidence	20	17	6	2	0	0.84	14th
15	Improved Team Morale	18	19	8	0	0	0.84	14th

Source: Researcher's field survey 2025

Comment: Table 4.3 shows that thehighest Relative Importance Index (RII) is 0.91, the second highest Relative Important Index (RII) is 0.90, while the third highest Relative Importance Index (RII) is 0.88 which connotes that enhanced quality control, enhanced quality control, implement advanced project planning and scheduling tools, enhance communication and collaboration, adopt lean construction practices, provide comprehensive training and skill development, utilize building information modeling (BIM), establish clear contractual agreements, conduct regular progress monitoring and reporting, improve supply chain management, implement risk management strategies, enhance stakeholder engagement, improved project forecasting, reduced site occupancy, enhanced client confidence, improved team morale are the most common recommendations to mitigate the identified barriers and enhance time control in construction projects.

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SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1 SUMMARY OF THE STUDY

The focus of the study was on examining the Barriers to time control in construction project delivery. Table 4.8 shows that the respondents' view on the Key barriers to time control in construction projects in Nigeria, using relative importance Index (RII), the greater the index scores the higher the rank as follow; "Lack of skilled contractors" ranked 1st with RII of 0.91, followed by "Ineffective communication and coordination among stakeholders" ranked 2nd with RII of 0.90 on the table, followed by "Excessive bureaucratic procedures" also ranked 2nd with RII 0.90 on the table, followed by "Unpredictable and severe weather conditions" ranked 4th with a RII of 0.88, while "Client-initiated changes or revisions in project design" also ranked 4th with RII of 0.88 on the table respectively.

Table 4.9 shows that the respondents' view on the Impacts of the barriers on project delivery timelines, using relative importance Index (RII), the greater the index scores the higher the rank as follow; "Supply Chain Disruptions and Material Issues" ranked 1st with RII of 0.91, followed by "Compromised Work Quality" ranked 2nd with RII of 0.90 on the table, followed by "Increased Stress Among Project Teams" also ranked 2nd with RII 0.90 on the table, followed by "Missed Opportunities" ranked 4th with a RII of 0.88, while "Extended Project Duration" also ranked 4th with RII of 0.88 on the table respectively.

Table 4.10 shows that the highest Relative Importance Index (RII) is 0.91, the second highest Relative Important Index (RII) is 0.90, while the third highest Relative Importance Index (RII) is 0.88 which connotes that enhanced quality control, enhanced quality control, implement advanced project planning and scheduling tools, enhance communication and collaboration, adopt lean construction practices, provide comprehensive training and skill development, utilize building information modeling (BIM), establish clear contractual agreements, conduct regular progress monitoring and reporting, improve supply chain management, implement risk management strategies, enhance stakeholder engagement, improved project forecasting, reduced site occupancy, enhanced client confidence, improved team morale are the most

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common recommendations to mitigate the identified barriers and enhance time control in construction projects.

5.2 CONCLUSION

Effective time control is essential to the successful delivery of construction projects, yet numerous barriers persist, particularly in the context of the construction industry. This study has identified and analyzed key barriers to time control in construction project delivery, including inadequate planning, poor communication, resource shortages, design changes, and environmental factors. These obstacles collectively lead to delays, cost overruns, and project inefficiencies, hindering the achievement of project goals within stipulated timeframes.

Addressing these challenges requires a holistic approach that includes better project management practices, effective stakeholder coordination, timely decision-making, and the adoption of modern construction technologies. By focusing on proactive risk management, regular project progress monitoring, and clear communication channels, construction projects can be better positioned to adhere to planned schedules.

In conclusion, overcoming these barriers is crucial for improving the time control of construction projects. It is recommended that contractors, project managers, and other stakeholders invest in capacity building, utilize technology-based tools for real-time monitoring, and foster collaborative work environments to ensure that project timelines are met without compromising quality or budget. Through these strategies, the construction industry can significantly improve its time management practices and enhance overall project performance.

5.3 RECOMMENDATION

Based on the conclusion of this study, it is recommended that; enhanced quality control, enhanced quality control, implement advanced project planning and scheduling tools, enhance communication and collaboration, adopt lean construction practices, provide comprehensive training and skill development, utilize building information modeling (BIM), establish clear

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contractual agreements, conduct regular progress monitoring and reporting, improve supply chain management, implement risk management strategies, enhance stakeholder engagement, improved project forecasting, reduced site occupancy, enhanced client confidence, improved team morale are the most common recommendations to mitigate the identified barriers and enhance time control in construction projects.

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