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Time and Cost Management Challenges in Private Residential Construction Projects Delivery in Owerri, Imo State

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ABSTRACT

Effective time and cost management is essential for the successful delivery of construction projects; however, private residential projects in Nigeria frequently encounter delays and cost overruns. This research investigates the factors influencing time and cost management and identifies strategies to enhance project delivery in private residential construction projects in Owerri, Imo State, Nigeria. A descriptive survey research design was employed. The study population consisted of 300 private residential project owners and developers, selected through simple random sampling from Owerri Municipal, Owerri North, and Owerri West. Data collection utilized a structured questionnaire, validated by experts, which achieved a Cronbach's alpha reliability coefficient of 0.83. Descriptive statistics, including mean and the Relative Importance Index (RII), were applied for data analysis. The results indicate that poor project planning and scheduling (Mean = 4.07; RII = 0.81), delays in material procurement (Mean = 3.94; RII = 0.79), and delayed payments to contractors and suppliers (Mean = 3.83; RII = 0.77) are the primary factors affecting time management. Similarly, inflation in material prices (Mean = 4.10; RII = 0.82), inaccurate cost estimation and budgeting (Mean = 4.04; RII = 0.81), and exchange rate fluctuations (Mean = 3.82; RII = 0.76) are the most significant factors influencing cost management. The study further demonstrates that proper project planning and scheduling, regular project monitoring and supervision, and accurate cost estimation are the most effective strategies for improving time and cost management in residential construction projects. It is concluded that strengthening project planning, financial management, procurement practices, and project monitoring is vital for enhancing project delivery performance. The adoption of comprehensive planning and scheduling, realistic cost estimation, effective project supervision, and modern project management practices is recommended to minimize delays and cost overruns in residential construction projects.

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INTRODUCTION

The construction industry serves as a key driver of economic growth and national development by facilitating infrastructure provision, housing delivery, employment generation, and overall economic productivity. In Nigeria, this sector is instrumental in advancing urbanization and socio-economic progress. Nevertheless, its impact is frequently limited by persistent project delays and cost overruns, which diminish profitability, compromise project quality, deter investment, and erode public confidence in construction activities (Olawale & Sun, 2010). These issues often lead to project abandonment, resource wastage, contractual disputes, and inefficient allocation of limited financial resources.

Effective management of project time and cost is essential for the successful delivery of construction projects, as these are fundamental indicators of project performance. The inherent complexity of construction projects arises from the involvement of multiple stakeholders, technical uncertainties, evolving client requirements, and fluctuating economic conditions. As a result, project managers must integrate the management of scope, time, cost, and quality to achieve project objectives. Time management encompasses the planning, scheduling, monitoring, and control of project activities to ensure completion within the approved timeframe (Kerzner, 2013). Cost management involves estimating, budgeting, financing, monitoring, and controlling project expenditures throughout the project lifecycle to ensure completion within the approved budget (Memon et al., 2012). Ineffective management of these interrelated dimensions frequently results in schedule delays, budget overruns, diminished client satisfaction, and suboptimal project outcomes (Project Management Institute, 2000).

Despite advancements in project management practices and technologies, construction projects in many developing countries continue to face significant challenges related to time and cost management. These difficulties are often linked to inadequate project planning and scheduling, inaccurate cost estimation, fluctuating material prices, funding interruptions, contractor inefficiency, design modifications, ineffective communication among stakeholders, and weak project monitoring systems. Collectively, these factors undermine project delivery performance and restrict the construction industry's ability to contribute effectively to sustainable development.

These challenges are particularly pronounced in Owerri, the capital of Imo State, which has experienced rapid urbanization and increased investment in residential development over the past decade. The heightened demand for housing has encouraged substantial private-sector involvement in residential construction. Nevertheless, numerous residential projects continue to face extended completion periods, rising construction costs, and, in some cases, abandonment before completion. Evidence indicates that these outcomes result from inadequate planning and scheduling, escalating material costs, insufficient project supervision, contractor inefficiency, funding limitations, and frequent design changes during project execution (Ikechukwu et al., 2017). Additionally, weak enforcement of contractual obligations and limited adoption of modern project management tools further constrain effective project delivery in the area.

While many studies have explored time and cost management in construction projects across Nigeria and other developing countries, few have specifically addressed the challenges faced by private residential construction projects in Owerri, Imo State. Considering the growing private investment in residential housing and the ongoing prevalence of project delays and cost overruns, empirical research is needed to identify the factors contributing to these challenges and to assess their implications for project delivery performance.

This study aims to address this knowledge gap by investigating the challenges of time and cost management in the delivery of private residential construction projects in Owerri, Imo State. Specifically, the study seeks to:

i. Identify the primary factors influencing time management in private residential construction projects in Owerri.
ii. Examine the determinants of cost management in private residential construction projects.
iii. Propose strategies to enhance time and cost management in residential construction projects.

The findings are anticipated to offer valuable insights for project managers, contractors, developers, policymakers, and other stakeholders in formulating strategies that improve project efficiency, increase stakeholder satisfaction, and advance sustainable construction practices within the study area.

2.0 LITERATURE REVIEW

2.1 Overview of Residential Construction Projects

Residential construction projects are building activities aimed at providing housing, including single-family homes, duplexes, apartments, and estates. These projects are typically initiated by private individuals or developers and are shaped by factors such as market demand, affordability, and urban growth patterns (Oladapo, 2020). In contrast to public construction projects, private residential developments are more vulnerable to client-driven modifications, financial constraints, and informal procurement practices, all of which can negatively impact project performance.

In Nigeria, especially in urban centers such as Owerri, residential construction has experienced rapid

growth as a result of popularizing heightened demand for housing. Despite this expansion, significant challenges persist in the planning, execution, and monitoring of project activities, leading to delays and cost overruns.

2.2 Time Management in Construction Projects

Time management in construction encompasses the systematic planning, scheduling, and monitoring of project activities to ensure timely completion. It includes defining project tasks, sequencing activities, allocating resources, and tracking progress against a predetermined schedule (Kerzner, 2025). Ahmad et al. (2012) define time management as the ability to prioritize, schedule, and execute tasks effectively to achieve project goals within the allocated time frame. Shehu (2021) emphasizes that time management involves managing human behavior and operational activities in relation to time by adhering to planned schedules and established milestones to ensure project success. Thus, time management in construction constitutes a decision-making process that integrates optimization models to balance time and cost, ensuring project completion at minimal expense without compromising quality. Adetola (2021) highlights the strategic application of scheduling techniques, such as the Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT), to monitor progress, identify potential delays, and maintain control over project timelines.

Time is a critical performance indicator in construction management, alongside cost and quality. Olawale and Sun (2010) assert that effective time management enables contractors, clients, and project managers to coordinate resources efficiently, reduce idle time, and mitigate delays. Effective time management requires developing and implementing a detailed schedule that specifies project activities, durations, dependencies, and milestones. Poor time management in construction is often due to inadequate planning, delayed payments, design alterations, and supply chain disruptions. Consequently, effective time management is essential to enhance productivity, reduce rework, and ensure projects are delivered on time.

Empirical evidence underscores the importance of time management as a determinant of project success. For example, Oluwajana et al. (2021) conducted a study in the Niger Delta region of Nigeria to identify factors affecting time and cost performance in construction projects. The study found that time overruns were primarily caused by delayed payments, material shortages, and a lack of skilled labor. The authors concluded that effective planning and scheduling are essential for mitigating these delays.

2.3 Cost Management in Construction Projects

Cost management encompasses the process for estimating, allocating, and controlling project costs, ensuring completion within approved budgets. These processes include cost estimation, budgeting, cost control, and financial reporting throughout the project lifecycle (PMI, 2000). Lock (2017) describes cost management as the procedures required to deliver a project within its estimated financial plan while achieving the desired scope and quality standards. Memon (2012) characterizes cost management as a coordinated process involving cost estimation, budgeting, and control to maintain financial discipline throughout the project life cycle. It is a continuous process of forecasting, monitoring, and evaluating expenditures to ensure that project costs remain aligned with planned objectives.

Cost management is a critical factor in the success of construction projects, as it ensures efficient utilization of financial resources and prevents unforeseen expenses that may threaten project completion. Inadequate cost management often leads to cost overruns, reduced profitability, and project abandonment. Common causes include inaccurate cost estimation, variation orders, insufficient financial planning, and ineffective procurement systems (Aibinu & Jagboro, 2002). Effective cost management enables contractors and clients to maintain transparency, accountability, and financial predictability throughout the project life cycle.

Cost management is essential in construction, as it directly affects project performance, financial viability, and client satisfaction. By ensuring projects are completed within budget, cost management minimizes financial risks for both contractors and clients. According to Kerzner (2013), effective cost management establishes a financial baseline for measuring actual performance and facilitates early identification of potential cost overruns.

2.4 Factors Responsible for Time Overruns in Residential Construction Projects

Time overruns in residential construction projects occur when completion exceeds the planned schedule, resulting in increased costs, reduced productivity, and diminished stakeholder satisfaction (Olawale & Sun, 2010). The literature identifies several interrelated managerial, financial, technical, and external factors contributing to these delays. Notable causes include inadequate project planning and scheduling, insufficient site supervision, poor coordination among project participants, and ineffective communication between clients, contractors, consultants, and suppliers. These issues disrupt project workflows and impede timely decision-making (Aibinu & Jagboro, 2002; Kerzner, 2025). Financial challenges, such as delayed client payments, poor cash flow, inflation, and fluctuating material prices, further exacerbate schedule slippage by hindering the timely procurement of resources and execution of project activities (Oseghale et al., 2015). Technical factors, including frequent client-initiated design changes, variation orders, rework, shortages of skilled labour, and delays in material procurement, also extend project durations by interrupting planned

construction sequences (Ameh & Osegbo, 2011). Additionally, external factors such as adverse weather conditions, political instability, and regulatory delays negatively impact project schedules, despite being largely outside the control of project managers (Okereke & Igwe, 2020). These findings indicate that time overruns result from the interaction of management, financial, technical, and environmental challenges, underscoring the importance of effective planning, robust financial management, efficient stakeholder coordination, and proactive risk management to ensure timely project delivery (Odeyinka & Yusif, 2021).

2.5 Challenges of Cost Management in Residential Projects

Cost management in residential construction projects faces a range of technical, financial, managerial, and economic challenges that impede achieving project delivery within approved budgets. Inaccurate cost estimation and budgeting during the planning stage represent a primary challenge, often resulting in budget overruns and financial constraints during project execution (Obi et al., 2017). Persistent fluctuations in the prices of construction materials, such as cement, steel reinforcement, and roofing materials, further complicate cost control, as these materials constitute a significant share of total construction expenditure (Ajayi et al., 2024). Additionally, inadequate project planning and scheduling can lead to inefficient resource allocation, construction delays, material wastage, and rework, all of which contribute to escalating costs.

Additional significant challenges encompass inflation, exchange rate volatility, insufficient financial planning and cost control, frequent variation orders, unrealistic contract durations, limited managerial competence, ineffective communication among project stakeholders, suboptimal site management, and mismanagement of project funds. Collectively, these factors increase construction costs, reduce housing affordability, and impede the timely and cost-effective delivery of residential projects (Aibinu & Jagboro, 2021).

2.6 Empirical Review

Most empirical research has focused on what affects project delivery, especially time, cost, quality, and stakeholder satisfaction. Studies show that project performance depends on a mix of managerial, financial, technical, institutional, and environmental factors. Aibinu and Jagboro (2002) examined delays in Nigerian construction projects and found that poor planning, contractor inefficiency, and financial constraints were the main causes of time overruns. Their study showed that delays not only lengthen projects but also raise costs and lower client satisfaction, highlighting the close link between time and cost performance.

Frimpong et al. (2003) studied construction projects in Ghana and found that delayed payments, material shortages, poor contractor management, and weak project supervision were the main reasons for schedule overruns. They stressed the importance of sound financial management, adequate resources, and ongoing project monitoring to deliver projects on time. Chan and Chan (2004) developed a framework for assessing construction project success that goes beyond meeting time and cost goals. They said project performance should also include quality of work, safety, how well the project functions, and client satisfaction. Their study showed that the traditional "iron triangle" only partly measures project success.

Assaf and Al-Hejji (2006) studied construction delays in Saudi Arabia and found that frequent design changes, slow decision-making, delayed approvals, and poor coordination among stakeholders were major causes of schedule overruns. They emphasized that good communication and quick decisions are key to reducing delays and improving project performance. Omoregie and Radford (2006) examined the Nigerian construction industry and found that procurement delays, poor scheduling, poor communication, changing material prices, and funding problems were major causes of time and cost overruns. They also noted that weak institutions and regulations make these problems worse by limiting good project management and control.

Toor and Ogunlana (2008) studied construction project performance in developing countries and found that weak governance, corruption, poor stakeholder management, and not enough project monitoring hurt project delivery. They showed that strong institutions and effective management are crucial for successful projects. Olawale and Sun (2010) examined the causes of construction cost overruns and found that inflation, design changes, poor risk management, and weak cost controls were the main drivers of rising costs. They recommended active cost monitoring and strong risk management to improve financial performance during the project.

Ofori (2012) reviewed construction project delivery in Nigeria and found that poor planning, insufficient technical skills, weak regulation, and poor project management led to delays, cost overruns, and quality issues. The study suggested building professional skills and improving oversight to boost project performance. Memon et al. (2012) examined why construction costs exceed budget and found that change orders, inaccurate cost estimates, late payments, and poor contract management were key reasons. They stressed that good planning and strong contract management are needed to keep projects within budget.

Oladinrin et al. (2012) examined project delivery in Nigeria and found that poor communication, weak coordination, and poor contract management negatively affected project outcomes. They concluded that better

collaboration and clear communication are essential for successful projects.

Doloi (2013) studied construction project performance and found that poor cost planning, weak stakeholder management, and bad risk assessment were main reasons for cost overruns. The study argued that rising costs usually come from several management and technical problems working together, showing how complex construction project management can be.

Aziz and Hafez (2013) looked at ways to imto improvection project performance and showed that using modern tapplying Information Modelling (BIM), Earned Value Management (EVM), and advanced scheduling helps make planning, monitoring, and decision-making more accurate. Their findings highlight the growing importance of digital technologies in construction projects. Overall, research shows that the main factors affecting construction project performance are similar across different regions. Studies often point to poor planning, contractor inefficiency, weak stakeholder coordination, financial problems, procurement delays, material shortages, poor communication, weak institutions, wrong cost estimates, design changes, and poor project monitoring as the main reasons for delays, cost overruns, and poor results. On the other hand, using good planning methods, strong financial and risk management, clear procurement, strong governance, better collaboration, and modern digital tools can greatly improve project delivery. These findings show that successful projects depend on managing time, cost, quality, and stakeholder needs together throughout the project.

3.0 METHODOLOGY

A descriptive survey research design was employed to examine the challenges associated with time and cost management in private residential construction projects in Owerri, Imo State, Nigeria. The study population consisted of 300 private residential project owners and developers selected from five major streets across the three local government areas: Owerri Municipal, Owerri North, and Owerri West. A simple random sampling technique was utilized to ensure equal participation among respondents. Primary data were collected using a structured questionnaire, the *Time and Cost Management in Construction Projects Questionnaire (TCMCPQ)*. This instrument comprised 10 items measured on a five-point Likert scale, ranging from *Strongly Disagree (1)* to *Strongly Agree (5)*. Content validity was ensured through expert review by the Department of Estate Management. Internal consistency was confirmed using Cronbach's alpha coefficient of 0.83, indicating satisfactory reliability. The collected data were analyzed using descriptive statistics, specifically mean and standard deviation, to address the study objectives. A criterion mean of 3.00 served as the decision threshold; scores of 3.00 or higher indicated agreement and scores below 3.00 indicated disagreement.

4.0 RESULTS AND DISCUSSION OF FINDINGS

4.1 Factors Affecting Time Management in Private Residential Construction Projects in Owerri, Imo State

Table 1 presents respondents' perceptions of the factors affecting time management in private residential construction projects in Owerri, Imo State. The analysis is based on mean scores and the Relative Importance Index (RII), using a criterion mean of 3.00. Mean values of 3.00 or above reflect consensus that a factor significantly impacts time management**.**

Table 1: Factors Affecting Time Management in Private Residential Construction Projects in Owerri

Time Management Factors	SA	A	U	D	SD	Sum	Mean	RII	Rank	Decision
Poor project planning and scheduling	137	100	28	18	17	300	4.07	0.81	1st	Agree
Delay in material procurement	126	91	41	22	20	300	3.94	0.79	2nd	Agree
Delays in payment to contractors and suppliers	117	88	45	27	23	300	3.83	0.77	3rd	Agree
Poor supervision and site management	111	80	43	36	30	300	3.69	0.74	4th	Agree
Client-induced design changes	101	90	38	40	31	300	3.63	0.73	5th	Agree
Shortage of skilled construction personnel	102	74	36	47	40	300	3.49	0.70	6th	Agree

Source: Field Survey, 2025
Criterion Mean = 3.00

Decision Rule: Mean ≥ 3.00 = Agree; Mean < 3.00 = Disagree.

The results show that all six factors have a significant impact on time management in private residential construction projects in Owerri, as each had a mean score above 3.00. This means most respondents agreed

these factors cause project delays and affect timely completion. Poor project planning and scheduling was the most important factor, with the highest mean score of 4.07 and an RII of 0.81. This suggests that not planning well and not scheduling effectively are the main reasons projects are delayed. Poor planning can lead to unrealistic timelines, inefficient use of resources, and poor coordination, which often causes schedules to slip. The next most important factor was delays in getting materials, with a mean score of 3.94 (RII = 0.79). Respondents said that when materials arrive late, work is disrupted, which can stop progress and push back completion dates. Delays in paying contractors and suppliers came third, with a mean score of 3.83 and an RII of 0.77. This shows that when cash flow is irregular and payments are late, contractors struggle to buy materials, pay workers, and keep work going, which also leads to delays.

Poor supervision and site management was the fourth most important factor, with a mean score of 3.69 (RII = 0.74). This means that when supervision is weak and site operations are not well coordinated, productivity drops and it becomes harder to stick to the project schedule. The fifth factor was changes to the design requested by clients, with a mean score of 3.63 and an RII of 0.73. Frequent design changes during construction interrupt planned work, require redoing tasks, and add time to the project. The last factor was a shortage of skilled construction workers, with a mean score of 3.49 and an RII of 0.70. While this was the least significant, respondents still agreed that not having enough skilled workers lowers efficiency, productivity, and can delay project completion.

The study found that poor project planning and scheduling had the biggest impact on time management in private residential construction projects in Owerri. This was followed by delays in getting materials, late payments to contractors and suppliers, poor supervision and site management, design changes requested by clients, and a shortage of skilled workers. These results show that poor planning and coordination are still the main reasons for project delays. Poor planning often leads to unrealistic schedules, inefficient use of resources, and poor coordination, which can make projects take longer to finish. These findings are consistent with those of Aibinu and Jagboro (2002), who found that poor planning, contractor inefficiency, and financial problems are major causes of construction delays in Nigeria. The results also support Frimpong et al. (2003), who reported that material shortages, late payments, poor contractor management, and weak supervision contribute to schedule overruns. Similarly, the study agrees with Assaf and Al-Hejji (2006), and Omoregie and Radford (2006), who found that poor scheduling, procurement delays, funding issues, and poor site management are key reasons for time overruns in construction projects.

4.2 Factors Influencing Cost Management in Residential Construction Projects

Table 2 presents respondents' perceptions of factors influencing cost management in residential construction projects in Owerri, Imo State. The analysis employs mean scores and the Relative Importance Index (RII), using a criterion mean of 3.00. Mean scores of 3.00 or above reflect consensus among respondents that the identified factors significantly impact project cost management.

Table 2: Factors Influencing Cost Management in Residential Construction Projects

Cost Management Factors	SA	A	U	D	SD	Total	Mean	RII	Rank	Decision
Inflation in material prices	142	94	32	17	15	300	**4.10**	**0.82**	1st	Agree
Inaccurate cost estimation and budgeting	140	90	30	21	19	300	**4.04**	**0.81**	2nd	Agree
Exchange rate fluctuations	122	81	44	27	26	300	**3.82**	**0.76**	3rd	Agree
Variation orders	118	84	36	37	25	300	**3.78**	**0.76**	4th	Agree
Poor management of project funds	116	77	45	37	25	300	**3.74**	**0.75**	5th	Agree
Fluctuation in construction material prices	114	75	40	38	33	300	**3.66**	**0.73**	6th	Agree
Material wastage and rework	100	89	36	40	35	300	**3.60**	**0.72**	7th	Agree
Ineffective communication among stakeholders	107	75	38	42	38	300	**3.57**	**0.71**	8th	Agree
Design changes during project execution	102	74	36	47	41	300	**3.50**	**0.70**	9th	Agree

Source: Field Survey, 2025
Criterion Mean = 3.00

Decision Rule: Mean ≥ 3.00 = Agree; Mean < 3.00 = Disagree.

Table 2 shows that all the factors identified had mean scores above the criterion mean of 3.00. This means respondents agreed these factors have a strong impact on cost management in residential construction projects. Inflation in material prices ranked highest, with a mean score of 4.10 and an RII of 0.82, making it the most significant factor. Inaccurate cost estimation and budgeting came next (Mean = 4.04, RII = 0.81),

highlighting the impact of poor budgeting on cost overruns. Exchange rate fluctuations (Mean = 3.82, RII = 0.76) and variation orders (Mean = 3.78, RII = 0.76) were third and fourth, while poor management of project funds (Mean = 3.74, RII = 0.75) was fifth. Other important factors included changes in construction material prices (Mean = 3.66, RII = 0.73), material wastage and rework (Mean = 3.60, RII = 0.72), ineffective communication among stakeholders (Mean = 3.57, RII = 0.71), and design changes during project execution (Mean = 3.50, RII = 0.70). Although design changes ranked last, they were still seen as significant.

The study found that inflation in material prices had the biggest impact on cost management. Other important factors were inaccurate cost estimation and budgeting, exchange rate changes, variation orders, poor management of project funds, changes in material prices, material wastage and rework, poor communication among stakeholders, and design changes during the project. These results show that both economic factors and project management practices play a big role in construction cost performance. The findings are similar to those of Olawale and Sun (2010), who found that inflation, design changes, poor risk management, and weak cost control often cause cost overruns. They also agree with Flyvbjerg et al. (2003), who reported that inaccurate cost estimates often lead to budget overruns. The results are also in line with Memon et al. (2012), who pointed to variation orders, inaccurate estimates, and poor contract management as main reasons for cost increases. Finally, the findings agree with Doloi (2013) who stressed that poor financial management, procurement problems, and weak project controls can seriously harm cost performance in construction projects.

4.3 Strategies to Enhance Time and Cost Management in Residential Construction Projects

Table 3 summarizes respondents' perceptions regarding strategies for enhancing time and cost management in residential construction projects in Owerri, Imo State. The analysis utilized mean scores and the Relative Importance Index (RII), applying a criterion mean of 3.00. All identified strategies achieved mean scores above this benchmark, indicating consensus among respondents on their effectiveness in improving project time and cost performance.

Table 3: Strategies for Enhancing Time and Cost Management in Residential Construction Projects

Questionnaire Items	SA	A	U	D	SD	Total	Mean	RII	Decision
Proper project planning and scheduling improve time and cost management in residential construction projects.	143	88	33	20	16	300	**4.07**	**0.81**	Agree
Regular project monitoring and supervision enhance timely project completion and cost control.	137	82	46	19	16	300	**4.02**	**0.80**	Agree
Accurate cost estimation before project commencement minimizes budget overruns.	122	85	40	32	21	300	**3.85**	**0.77**	Agree
Effective communication among project stakeholders improves project delivery performance.	120	85	36	30	29	300	**3.79**	**0.76**	Agree
Timely procurement and availability of construction materials reduce project delays and cost escalation.	122	77	34	37	30	300	**3.75**	**0.75**	Agree
Effective financial planning and prompt release of project funds improve project delivery.	118	76	38	38	30	300	**3.71**	**0.74**	Agree
Employing qualified and experienced contractors improves time and cost management.	121	71	37	34	37	300	**3.68**	**0.74**	Agree
Effective risk management practices help minimize unforeseen delays and cost overruns.	111	76	40	39	34	300	**3.64**	**0.73**	Agree
The use of modern project management software and scheduling tools enhances project planning and control.	111	74	44	36	35	300	**3.63**	**0.73**	Agree

Source: Field Survey, 2025
Criterion Mean = 3.00

Decision Rule: Mean ≥ 3.00 = Agree; Mean < 3.00 = Disagree.

The results show that proper project planning and scheduling were rated as the most effective strategy, with a mean score of 4.07 and an RII of 0.81. This suggests that good planning and scheduling are key to finishing projects on time and keeping costs under control by using resources well and coordinating activities. Regular project monitoring and supervision came second, with a mean score of 4.02 and an RII of 0.80. Respondents agreed that ongoing monitoring helps spot problems early and allows for quick fixes, which improves project delivery and cost control. Accurate cost estimation before starting a project ranked third, with a mean score of 3.85 (RII = 0.77), showing that realistic budgets and reliable forecasts help avoid going over budget. Effective communication among project stakeholders was fourth, with a mean score of 3.79 (RII = 0.76), highlighting the need for clear information sharing and coordination. Timely procurement and availability of construction materials ranked fifth, with a mean score of 3.75 and an RII of 0.75, suggesting that having materials on hand helps prevent delays and extra costs. Effective financial planning and prompt release of project funds ranked sixth, with a mean score of 3.71 (RII = 0.74). Employing qualified and experienced contractors ranked seventh, with a mean score of 3.68 (RII = 0.74). These results show that good financial management and skilled project staff are important for successful project execution. Effective risk management practices ranked eighth, with a mean score of 3.64 (RII = 0.73), showing the value of identifying and reducing risks before they affect the project. The use of modern project management software and scheduling tools ranked ninth, with a mean score of 3.63 and an RII of 0.73. Even though this strategy ranked lowest, respondents still agreed that digital tools help with planning, monitoring, and control.

The findings show that proper project planning and scheduling are the most effective way to improve time and cost management. Other important strategies include regular project monitoring and supervision, accurate cost estimation, good communication among stakeholders, timely procurement of materials, effective financial planning, hiring qualified contractors, managing risks well, and using modern project management software and scheduling tools. This suggests that better planning, monitoring, financial management, and coordination with stakeholders can greatly improve project delivery. These results are consistent with Kerzner (2025), who stressed the importance of planning and scheduling for successful project management. They also support the Project Management Institute (2002), which highlights planning, monitoring, cost control, and stakeholder communication as key to project success. The findings further agree with Aziz and Hafez (2013), who found that modern project management tools help improve planning and monitoring, leading to better project performance. Similarly, the results match those of Chan and Chan (2004) and Toor and Ogunlana (2008), who pointed out that good coordination, stakeholder management, and solid project management practices are crucial for successful construction projects. Overall, this discussion shows that the study's findings are mostly in line with existing research. It supports the idea that good planning, financial management, stakeholder coordination, and ongoing project monitoring are essential for better time and cost management and for successful residential construction projects.

5.0 CONCLUSION

This study examined the challenges of time and cost management in private residential construction projects in Owerri, Imo State. The findings revealed that ineffective project planning and scheduling, delays in material procurement, delayed payments to contractors and suppliers, poor site supervision, client-induced design changes, and shortages of skilled personnel are the major factors affecting time management. Similarly, inflation in material prices, inaccurate cost estimation and budgeting, exchange rate fluctuations, variation orders, poor fund management, and material wastage were identified as the major factors influencing cost management. The study further established that effective project planning and scheduling, regular project monitoring and supervision, accurate cost estimation, effective stakeholder communication, timely procurement of construction materials, sound financial planning, engagement of qualified contractors, risk management, and the adoption of modern project management tools are effective strategies for enhancing project time and cost performance. Overall, the study concludes that improving planning, financial control, procurement processes, supervision, and stakeholder coordination is essential for achieving timely project completion, minimizing cost overruns, and improving the overall performance of residential construction projects in Owerri.

6.0 RECOMMENDATIONS

Based on the findings, the study recommends that:

i. Project owners and contractors should adopt comprehensive project planning and realistic scheduling to minimize delays.
ii. Accurate cost estimation, budgeting, and effective financial management should be implemented to control project costs.
iii. Regular project monitoring and effective site supervision should be strengthened to ensure timely project delivery.
iv. Stakeholders should improve communication, minimize unnecessary design changes, and ensure timely procurement of construction materials.

v. Construction firms should engage qualified personnel and adopt modern project management tools, such as Building Information Modelling (BIM) and scheduling software, to improve project performance.
vi. Government and professional bodies should promote best project management practices through policy enforcement and capacity-building programmes.

REFERENCES

Adetola, A. (2021). Strategies for effective project time management. International Journal of Innovative Business Strategies, 7(1), 487-496.

Abdul-Rahman, H., Thompson, P. A., & Whyte, I. L. (1996). Capturing the cost of non-conformance on construction sites: an application of the quality cost matrix. *International Journal of Quality & Reliability Management*, *13*(1), 48-60. NEW

Aibinu, A. A., & Jagboro, G. O. (2002). The effects of construction delays on project delivery in the Nigerian construction industry. *International Journal of Project Management, 20*(8), 593–599.

Ajayi TO, Daramola OT, Adhuze OO (2024) cost management evolution in building projects. A review of innovations and challenges. Int J of ResInnov App Sci, 9 (9): 80-95

Ameh, O. J., & Osegbo, E. E. (2011). Study of relationship between time overrun and productivity on construction sites. *International Journal of Construction Supply Chain Management, 1*(1), 56–67.

Assaf, S. A., & Al-Hejji, S. (2006). Causes of delay in large construction projects. *International Journal of Project Management, 24*(4), 349–357.

Aziz, R. F., & Hafez, S. M. (2013). Applying lean thinking in construction and performance improvement. *Alexandria Engineering Journal, 52*(4), 679–695.

Chan, A. P., & Chan, A. P. (2004). Key performance indicators for measuring construction success. *Benchmarking: an international journal*, *11*(2), 203-221.

Chan, A. P., & Chan, A. P. (2004). Key performance indicators for measuring construction success. *Benchmarking: an international journal*, *11*(2), 203-221.

Doloi, H. (2013). Cost overruns and failure in project management: Understanding the roles of key stakeholders in construction projects. *Journal of construction engineering and management*, *139*(3), 267-279.

Flyvbjerg, B., Skamris Holm, M. K., & Buhl, S. L. (2003). How common and how large are cost overruns in transport infrastructure projects?. *Transport reviews*, *23*(1), 71-88.

Frimpong, Y., Oluwoye, J., & Crawford, L. (2003). Causes of delay and cost overruns in construction of groundwater projects in a developing countries; Ghana as a case study. *International Journal of project management*, *21*(5), 321-326.

Ikechukwu, A. C., Fidelis, I. E., & Kelvin, O. A. (2017). Causes and effects of cost overruns in public building construction projects delivery, in Imo State, Nigeria. *IOSR Journal of Business and Management*, *19*(07), 13-20.

Kerzner, H. (2025). *Project management: a systems approach to planning, scheduling, and controlling*. John Wiley & Sons.

Lock, D. (2017). *The essentials of project management*. Routledge.

Memon, A. H. (2012). Time and cost perfomance in costruction projects in Southern and Cenrtal regions of Penisular Malaysia. *International Journal of Advances in Applied Sciences (IJAAS), Vol. 1 (1), ISSN: 2252-8814 [Indexing: Google Scholar]*.

Memon, A. H. (2012). Time and cost performance in construction projects in Southern and Central regions of Peninsular Malaysia. *International Journal of Advances in Applied Sciences (IJAAS), Vol. 1 (1), ISSN: 2252-8814 [Indexing: Google Scholar]*.

Obi LI, Arif M, Kulonda DJ (2017) Prioritizing cost management system considerations for Nigerian housing projects. J finanmanag prop const, 22 (2):135-153

Ofori, G. (2012). Developing the Construction Industry in Ghana: The Case for a Central Agency. *A concept paper prepared for improving the construction industry in Ghana. National University of Singapore*, *13*(1), 3-18.

Oladinrin, T. O., Ogunsemi, D. R., & Aje, I. O. (2012). Role of construction sector in economic growth: Empirical evidence from Nigeria. *FUTY Journal of the Environment*, *7*(1), 50-60.

Olawale, Y. A., & Sun, M. (2010). Cost and time control of construction projects: inhibiting factors and mitigating measures in practice. *Construction management and economics*, *28*(5), 509-526.

Oluwajana, S. M., Ukoje, J. E., Okosun, S. E., & Aje, I. O. (2021). Factors Affecting Time and Cost Performance of Road Construction Projects. *Journal of Environmental Management and Safety*, *12*(1), 17-17. Correct

Omoregie, A., & Radford, D. (2006, April). Infrastructure delays and cost escalations: causes and effects in Nigeria. In *Proceedings of the 6th International Postgraduate Research Conference in the Built and Human Environment* (pp. 79-93). University of Salford.

Oseghale, G. E., Abiola-Falemu, J. O., & Oseghale, B. O. (2015). Factors affecting cost and time performance of construction projects in the Niger Delta, Nigeria. *British Journal of Environmental Sciences*, 3(2), 21–29. Fake

Project Management Institute. (2000). A guide to the project management body of knowledge (PMBOK Guide). Project Management Institute.

Project Management Institute (2017). A guide to the Project Management Body of Knowledge: (PMBOK Guide, 6th Ed.).Pennsylvania, USA, Project Management Institute, Inc.

Shehu, S. (2021). A review of time management factors in const ruction project delivery. *Journal of Project Management Practice*, *1*(2), 34-45.

Toor, S. U. R., & Ogunlana, S. O. (2008). Problems causing delays in major construction projects in Thailand. *Construction management and economics*, *26*(4), 395-408.

Ahmad, N. L., Yusuf, A. N. M., Shobri, N. D. M., & Wahab, S. (2012). The relationship between time management and job performance in event management. *Procedia-Social and Behavioral Sciences*, *65*, 937-941.

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