



ABSTRACT

This paper looked at the extent of awareness and CPM tools in the issues that affect the adoption of Construction Project Management (CPM) practices in housing projects in Ado Ekiti, Ekiti State, Nigeria. Data were collected using a descriptive survey design under construction professionals and analysed using descriptive statistics such as mean item scores (MIS), standard deviations, and ranking. The results indicated a fairly high level of awareness of CPM practices with a mean of between

C ONSTRUCTION PROJECT MANAGEMENT TOOLS AND AWARENESS IN THE DELIVERY OF HOUSING PROJECT IN ADO-EKITI, NIGERIA

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Introduction

PM practices can be very important when it comes to the successful execution of housing projects, this ensures also that the construction projects are delivered on time, to budget, and according to quality standards. Oke and Aigbavboa (2021) state that project management concerns the determination of scope, facilities, risk assessment, time, and contributor-participant communication. In a resource-limited nation like Nigeria where projects tend to overrun and overspend, these practices are necessary to make sure that chances are minimised adequately, resources are optimised and implementation of the venture simplified.

According to Ogunbiyi and Abdulkareem (2023), the successful housing construction project management (CPM) saves cost and time and does not compromise the quality. The housing deficit in Nigeria exceeds 17 million units (Ayodeji & Ajayi, 2023), which means that affordable housing is needed in the state. PM is about the special knowledge, tools, techniques, and skills necessary to attain



3.34 and 4.12. Respondents were in strong agreement that project planning, cost estimation, scheduling, risk management, and resource allocation were important to successful housing project delivery. Project planning became the most notable practice and this is because it is the basis of good construction management. The paper also found out the major drivers of the use of CPM tools and techniques. Awareness and knowledge of CPM tools was the highest followed by financial capacity, knowledge of benefits, and subsidy interventions. Although awareness was ranked as a great enabler, financial constraint was identified to be a limiting factor to the practical implementation of CPM tools, particularly, among the small and medium sized construction firms. The findings imply that, despite the recognition of the applicability of CPM practices by the construction professionals, the lack of resources and access to modern tools does not allow implementing the practice on the full scale. The paper concludes that proper integration of CPM practices is critical in ensuring timely delivery of housing projects, cost-effectiveness and quality delivery in Ekiti State. It suggests improved training and capacity building, financial support, knowledge-sharing platforms, collaborative ventures, and improved policy interventions to facilitate the adoption of CPM tools and techniques widely in the construction industry.

Keywords: Construction Project Management, Housing Project, Awareness, CPM Tools and Tools and Techniques.

the scope, time, cost, and quality objectives (Oke & Aigbavboa, 2021). Planning, design, construction and delivery of housing are lot in the hands of PPM. In CPM other activities are quality assurance, enrollment of stakeholders, procurement process, and management of resources and risks.

Moreover, to construct housing projects on schedule, within budget, and to the specified quality, it is necessary to have efficient construction project management (CPM). Poor planning, risk management, and stakeholder coordination are common in Nigerian project management which results to project delays, cost overruns, and poor housing delivery often result from these issues (Ibrahim et. al., 2020; Akinola & Ogunlowo, 2021). Also, poor planning leads to scope creep, delays, and unrealistic deadlines (Oke & Aigbavboa, 2021). Because of inflation, inaccurate cost estimates, and poor financial management often leads to project overrun, so also imported materials, economic instability, and material price fluctuations worsen this issue (Aiyetan & Olotuah, 2022).

Statement of the Problem

Delivery of housing has been a global issue especially in the developing nations like Nigeria, which is characterized by a massive housing deficit. Housing delivery is



inefficient due to delays, cost overruns, poor quality and inability to provide affordable housing as demand continues to rise despite the government and the private sector efforts. The factors that contribute to inefficiencies in the provision of housing include poor Construction Project Management (CPM) practices (Ibrahim et. al., 2020).

Moreover, poor planning, time extension and budget expansion bring about poor housing projects (Ibrahim et. al., 2020). Almost all bad and failed projects tend to be started without feasibility studies, without any clear objectives and without any documents of design (Olanrewaju & Abdul-Aziz, 2022). There is corruption and the existence of regulatory barriers, as well as expropriation of land; this makes it hard to deliver housing. The result of resources wastage and the lack of transparency in the housing policies lead the project to be more costly to run and ineffective within the housing system (Adeleke et. al., 2022). The lack of infrastructure such as water, electricity, and roads in these cities along with poor planning will make sustainable housing lackluster (Olaleye, Bello & Ugochukwu, 2022).

Due to poor CPM tools and techniques, many Nigerian housing projects are poorly planned and scheduled. Modern CPM tools and techniques are unfamiliar to many housing project managers and stakeholders. This causes wrong or underuse of tools (Akinradewo & Olatunji 2021). The lack of skilled project managers who can use advanced CPM tools hinders project execution and delivery (Akinradewo & Olatunji 2021). Construction professionals' preference for traditional project management methods often hinders CPM tool adoption. Ibrahim et. al., (2020) noted that cultural resistance and scepticism towards new technologies prevent many Nigerian housing projects from fully integrating CPM tools.

Research Questions

The following research questions were addressed in the study

- i. assess the level of awareness of construction project management practices in the delivery of housing projects in Ado Ekiti Metropolis;
- ii. assess the factors responsible for the adoption of construction project management tools and techniques in the delivery of housing projects in the study area;

Objectives of the Study

The specific objectives are to:

- iii. assess the level of awareness of construction project management practices in the delivery of housing projects in Ado Ekiti Metropolis;
- iv. assess the factors responsible for the adoption of construction project management tools and techniques in the delivery of housing projects in the study area;



Scope of the Study

The study focused on construction project management practices and housing projects delivery in Ado Ekiti Metropolis, Ekiti State, Nigeria. The study focused on the following construction project management practices variables such as: level of awareness of CPM, factors responsible for the adoption of CPM tools and techniques while project delivery was measured in terms of project timelines and cost and quality standards. The respondents were selected from relevant Ministries Department and Agencies responsible for housing projects within the State and selected private construction firms within Ado Metropolis.

Conceptual Review of Literatures

Concept of Construction Project Management

Over 17 million Nigerians lack housing due to rapid urbanisation and inadequate public and private sector efforts, according to Adebayo et. al., (2020). Mutisya and Yarime (2014) found that 60% of Nairobi's population lives in slums, highlighting formal housing's shortcomings. These findings highlight the need for innovative urban housing policies. Housing helps reduce poverty, improve health, and boost productivity. Adequate housing reduces disease, improves education, and boosts productivity. However, the lack of affordable housing drives the low-income population to informal settlements, which puts them at the risk of eviction, marginalization, and environmental issues (UNDP, 2021).

CPM would help to address the challenges of the housing delivery process since it enables managing resources, processes, and achieving sustainability and quality. Good CPM practices enable the collaboration of stakeholders, reduce the risks and witness the accomplishment of the project on schedule and budget. The CPM sustainability implies the fact that housing projects contribute to environmental and social development. Sixty percent of urban dwellers live in informal settlements that do not have water, sanitation, and electricity. Such issues need proper policies, collaboration between the state and the private sector and the involvement of the community. Housing delivery and its sustainability can be enhanced through application of technology. Prefabrication, 3D printing, and BIM can save on the cost of construction, wastage, and efficiency, thus reducing the cost of construction by 40 percent and the construction time by half to build affordable houses and eco-friendly houses in Ethiopia (Adegbite et. Al., 2021).

Housing projects require construction project management in order to be cost effective and efficient. According to Kerzner (2017), project management entails the use of knowledge, skills, tools, and techniques to the project tasks to attain outcomes. The delivery of housing involves the coordination of stakeholders, resources and constraints. Research indicates that housing outcomes are enhanced by project management. According to Ogunsemi et. al., (2018) project management was able to



cut delays by 30 percent and cost overruns by 25 percent of 50 Nigerian housing projects. According to Chinyo and Olaniyan (2019), affordable housing projects showed good results when there was effective project scheduling and resource allocation.

The research on the global housing crisis reveals gaps and urbanisation trends. According to UN-Habitat (2021), 1.6 billion individuals are living in poor housing, and sub-Saharan Africa experiences the highest deficits. Adebayo et. al., (2020) attributed the 17 million housing shortage in Nigeria to high-velocity urbanisation and the inadequate contributions of both the public and private sector. According to Mutisya and Yarime (2014), two-thirds of the population of Nairobi reside in slums, which points to the problems of the formal housing system. This evidence shows why imaginative urban housing policies are necessary. Housing influences poverty, health and economic productivity. When people are properly housed, their education, health and productivity will be better. Low-income groups are exposed to the risk of eviction, marginalization, and environmental risks due to the unavailability of affordable housing to live in informal settlements (UNDP, 2021).

Construction Project Management and Housing Delivery

Housing delivery is multifaceted and offers safe, affordable and habitable houses to satisfy the population needs. They include land acquisition, planning, financing, construction, and handing over to the residents (Olaleye et al., 2022). Housing delivery is a key social and economic problem as governments and private developers struggle to overcome a huge housing shortage in Nigeria. The cooperation between the state and business is essential, and the construction project management (CPM) is vital to the accomplishment of housing projects in the most efficient and timely manner.

Housing delivery is related to CPM. CPM tools and methods streamline housing delivery, ensuring projects are completed on time, within budget, and to quality standards. However, CPM inefficiencies can cause delays, cost overruns, and substandard housing, especially in developing countries with financial and regulatory challenges (Ogunlana & Aluko, 2021).

Effective CPM is needed because Nigeria has a housing deficit of over 17 million units (Akeju, 2007; Federal Mortgage Bank of Nigeria, 2019). However, inadequate funding, infrastructure, and bureaucratic hurdles often impede sector progress. Due to outdated tools and technical inexperience, many Nigerian housing projects fail due to poor planning and scheduling (Oluwakiyesi, 2011). Poor scheduling causes delays and cost overruns, which are compounded by inflation, currency devaluation, and corruption (Aibinu & Jagboro, 2002).

CPM Tools and Techniques and Housing Delivery

Most construction companies, particularly the SMEs, are not able to afford the cost of CPM software such as Primavera or Microsoft Project. Oke and Aigbavboa (2021)



indicated that most firms in developing countries do not have the ability to purchase sophisticated project management tools. Housing projects tend to ignore risk management even though it is essential. According to Ogunlana and Aluko (2021), most companies do not have formal risk identification and mitigation systems, which makes projects delayed, overbudget, and fail.

An effective project management using CPM tools needs valid and combined data. Ineffective data collection, storage, and sharing are barriers to the effectiveness of the tools in most housing projects. Olaleye et. al., (2022) notes that fragmented data systems and the absence of real-time data access are not efficient in project management. A lot of CPM tools do not suit the housing projects in developing countries. They might not consider local construction techniques, policies and social economic statuses. Ibrahim et. al., (2020) noted that generic tools often fail to address specific contexts' unique challenges, resulting in suboptimal use.

Complexity makes some CPM tools hard to understand and use. Complexity deters adoption, especially by non-technical professionals. The steep learning curve of some tools hinders their widespread use, according to Akinola and Ogunlowo (2021). Inefficiencies result from inconsistent CPM tool implementation across projects. Olanrewaju and Abdul-Aziz (2022) state that inconsistent project management techniques lead to different project outcomes and prevent best practices. CPM tools require stable internet connectivity and powerful computers. Many developing regions lack these infrastructures. Poor IT infrastructure hinders CPM tool adoption and efficiency in housing projects, according to Olaleye et. al., (2022).

Modern tools like BIM and project scheduling software can improve CPM planning and execution in Nigeria. Lack of training and capacity-building hinders their adoption (Adeleke & Nawi, 2022). Lack of quality assurance frameworks and risk management strategies also hinders the housing sector's ability to meet rising demand (Ogunbiyi & Abdulkareem, 2023). Reforming regulatory frameworks, improving stakeholder collaboration, and emphasising modern CPM practices will help address these issues. Without these changes, Nigeria's housing sector will struggle with delays, cost overruns, and quality issues, perpetuating the housing crisis and its socio-economic effects.

Theoretical Review

Theory of Constraints (TOC)

According to the 1980s Theory of Constraints (TOC) by Eliyahu Goldratt, the constraints or bottlenecks of a system ought to be identified and overcome. In CPM and also in housing delivery, OCT could be used to see the main constraints to project delivery which could be scarcity of material, inefficiency of labour, delays caused by regulations or financial constraints. According to OC, it is recommendable that a project manager optimises these constraints and improves processes surrounding



them in order to achieve efficiency in the project. To finish the projects within time, Critical Chain Project Management (CCPM) based on TOC banking on dependency of resources and the buffers. CPM is applicable in housing projects to establish key resources like labour and materials and assign them to avert inhibitions (Ogunbiyi and Abdulkareem, 2023).

Empirical Findings

CPM Tools and Techniques and Housing Delivery

The effect of technology on management of construction projects has been analysed by Agyekum-Mensah and Knight (2016). They learnt that there are some innovations like the Building Information Modelling (BIM) That improve collaboration, processes and project performance.

Chen and Zou (2020) went further to note that technology is also powerful in the management of construction projects. Digital technology building information modeling (BIM) and project management software were highlighted on building communication, collaboration and performance in housing development. Al-Hussein et. al., (2019) analyzed the lean construction within house delivery projects. Just-in-time delivery and continuous improvement can minimize wastes, increase productivity and project efficiency, they continued.

In addition, the study by Elinwa et. al., (2021) reviewed the effects of procurement strategies on housing delivery. They learned that the choice of the proper procurement mechanisms, e.g. design-bid-build or design-build, may affect the project outcomes, i.e., costs, quality, and schedule. Empirical literature shows that, even though the modern CPM tools and techniques are already underutilised in the housing sector, in Nigeria, specifically. Adeleke et. al., (2022) have found that most of the Nigerian construction companies embrace the traditional project planning and implementation method in which the BIM and project management software are not widely employed. It is possible to attribute this gap to software cost, the lack of staff and reluctance to change.

METHODOLOGY

Survey instrument was adopted for this study. The use of questionnaire was adopted to get relevant information from respondents regarding construction project management practices and housing projects delivery in Ado Ekiti Metropolis of Ekiti State. Copies of questionnaire were given to members of the sample selected from the study area. The research was conducted in Ekiti State, Nigeria. Ekiti State is situated in the southwestern part of Nigeria. Population is the total number of subjects of interest to the researcher. In line with the study, the population consists of various key stakeholders who have experience in construction activities in relation to housing projects delivery in Ado Ekiti. The following registered professionals were



selected; Building Planners, Builders, Project Managers, Architects, Quantity Surveyors, Civil Engineers, Electrical Engineers, Structural Engineers and Town Planners. This study targets 185 CITEC International Company, 128 Osevic Properties and Investment while the MDAs are Ministry of Works with population of (234) and Ekiti State Housing Corporation with population of (123). The study total population is 620. The type of data collected determines the presentation and analysis tool in statistics. Data from this study were presented in frequency tables, percentages, mean and standard deviation. All questionnaire items designed to achieve the research objectives (stated in chapter one) were analysed. Identifying significant differences between variables using ANOVA or t-tests. Also, regression analysis was used to test the significance level and relationships between the variables.

Response Rate

A total of 250 copies of questionnaire were distributed among the respondents comprising registered professionals; Building Planners, Builders, Project Managers, Architects, Quantity Surveyors, Civil Engineers, Electrical Engineers, Structural Engineers and Town Planners in the study area. Out of a total of 250 distributed questionnaire; 229 copies were retrieved from the respondents after which data collected was scrutinized by screening out questionnaire for missing values and respondents' engagement in filling the questionnaire through frequency count.

Level of Awareness of Construction Project Management Practices

Table 1 presents the descriptive analysis of the level of awareness of construction project management (CPM) practices in the study area, highlighting the minimum and maximum values, as well as the mean values for the various indicators. Respondents' perceptions were categorized based on mean ranks: 1.0-1.79 = Strongly Disagree (SD); 1.80-2.59 = Disagree (D); 2.60-3.39 = Moderately Agree (MA); 3.40-4.19 = Agree (A); and 4.20-5.00 = Strongly Agree (SA). The items exhibited a minimum of 1 and a maximum of 5 which indicates a variety of opinions of the respondents. This deviation is also supported by the standard deviations that vary between 0.638 and 0.884 which implies opposite views among the respondents about the level of awareness about CPM practices.

The mean values are 3.34-4.12, which indicates that there was an agreement among the respondents concerning the significance of CPM practices in the study area. The Mean Item Scores (MIS) arranged in descending order shows that the highest level of awareness is given to the statement; Stakeholders in Ado Ekiti are aware of the need to plan out their projects fully in order to deliver successfully on their housing projects (MIS = 4.12). This reiterates the importance of project planning to a successful housing project delivery. As stressed by the respondents, project planning is regarded as the foundation of the effective housing construction, and it includes all other elements of



CPM. Proper planning is considered synonymous with failure planning, and the literature is full of similar sentiments (Kerzner, 2017; Rojas et al., 2018), as the project success is impossible without thorough planning.

Right behind is the importance of the statement of whether or not stakeholders of housing construction projects are conversant with project cost estimation and budget management methods (MIS = 3.98). This finding can be compared with other studies that highlight the importance of proper cost estimation and budgeting in project management (Chitkara, 2014). The most important aspect of successful delivery of housing projects is adequate cost planning, which encompasses estimation of the correct quantity and quality of resources at affordable prices. Rojas et al. (2018) also support this observation by noting that to avert cost overruns and delays in the housing projects, cost management is essential.

The fact that Ado Ekiti construction professionals understand the importance of allocating resources and time to project activities is also reflected by high awareness of project scheduling practices (MIS = 3.96). This goes hand in hand with a study carried out by O Connor (2018) stating that efficient project scheduling is a significant portion of on-time and on-budget project delivery. Such project management tools and techniques as the Gantt charts and MS Project can also be utilized in scheduling the tasks and allocating resources in a most efficient way.

The project managers also have knowledge on risk management strategies, which are essential to the successful housing projects such as risk assessment, mitigation and contingency planning (MIS = 3.73) in Ado Ekiti. This finding is in line with what is available in the literature, such as that of Ward and Chapman (2003) that emphasize the importance of identifying and reducing risks in order to safeguard project results. On the same note, the respondents who concurred with the statement, Awareness about the importance of resource planning and allocation in housing project management (MIS = 3.48) and, the statement, Use of scheduling software/tools (e.g., Gantt charts, MS Project) is not a secret to housing project managers in Ado Ekiti (MIS = 3.45) further indicates the importance of proper resource planning and the popularity of project management software among practitioners in the field. The role of technology in increasing the efficiency of project management is one of the extensively studied areas in the contemporary literature (Kwak & Anbari, 2009; Muller & Turner, 2017).

In general, the findings indicate that there was a common agreement between the respondents as regards the level of awareness of the CPM practices. These results show that construction professionals in Ado Ekiti are conversant with the major processes involved in CPM such as project planning, cost estimation, scheduling, risk management, and resource allocation. The practices are considered as being critical in the successful implementation of housing projects in the region. This is similar to Rojas et al. (2018), who assert that project management planning, budgeting, scheduling,



and risk management are necessary for the successful completion of housing constructions.

The results also present a general trend in the construction sector where good management practices become important in order to deliver projects successfully. The incorporation of such practices guarantees the completion of the various projects on schedule, within the budget and quality standards bearing in mind its sustainability and overall success of the housing sector.

Table 1: Level of Awareness of Construction Management Practices

Items	Min	Max	Std.Dev.	Mean	Remarks
The housing projects stakeholders in Ado Ekiti are mostly familiar with the Construction Project Management (CPM) tools and techniques	1.00	5.00	.731	3.34	Moderately agree
Ado Ekiti housing project managers are familiar with the use of scheduling software/tools (e.g., Gantt charts, MS Project)	2.00	5.00	.638	3.45	Agree
The awareness regarding the significance of resource planning and allocation in the management of a housing project is very high	1.00	5.00	.842	3.48	Agree
The project managers are familiar with risk management strategies like risk assessment, risk mitigation and contingency planning in Ado Ekiti	2.00	5.00	.884	3.73	Agree
Participants in housing construction works understand the cost estimation of project and budgetary control methods	2.00	5.00	.688	3.98	Agree
Ado Ekiti stakeholders know that holistic planning of a project is required in order to have a successful delivery of housing projects	2.00	5.00	.759	4.12	Agree
The project scheduling practices are well known by professionals in the construction industry in Ado Ekiti	3.00	5.00	.798	3.96	Agree

Source: Researcher's Survey, 2025

Factors Responsible for the Adoption of CPM Tools and Techniques

This section presents the factors that led to adoption of Construction Project Management (CPM) tools and techniques in the provision of housing projects in Ekiti



State, Nigeria. A five-point Likert scale was used to capture the opinions of the respondents with strongly disagree (1) and strongly agree (5) as the lowest and highest scores respectively. The descriptive analysis can be seen in Table 2 where the minimum and maximum value, the counts of the frequencies, the standard deviation and the mean values of each of the factors are shown. The mean values of the factors were ranked in decreasing order to find out the most important factors that have the greatest influence on the adoption of CPM tools and techniques.

The findings in Table 2 indicate that "awareness about CPM tools is significant to the adoption in housing projects" (mean = 4.21; ranked 1st) is the most common factor that influences adoption of CPM tools and techniques in the area of study. The respondents also strongly agreed that the successful delivery of housing project would be feasible in case construction professionals and firms are knowledgeable of the latest tools and techniques needed in the accomplishment of house projects both in terms of efficiency and efficacy in carrying out the tasks. This observation resonates with the results of Oke and Aigbavboa (2021), who pointed out the significance of knowledge sharing related to improving the uptake of sustainable building practices. Yet, due to the lack of awareness of the tools, it is hard to achieve the maximum potential of the project management practices, which may result with the delays in the project, cost overruns, or poor quality.

Next to awareness is the element of the "financial constraints" (mean = 4.11; ranked 2nd). This result reflects a key obstacle to CPM tool and technique adoption. The financial capacity to undertake such practices can even be a limiting factor even in the cases when the construction professionals are aware of the tools. It agrees with the research by Chien and Shih (2020) that low finances usually interfere with the effective inclusion of advanced tools into construction work. The best tools cannot be successfully implemented without sufficient funding, and this can lead to the poor results of a project. The participants of the current research admitted that when there is no adequate funding, the aims of the housing projects, such as cost, quality, and time, may not be achieved unattainable.

The need to possess the knowledge of the benefits of using CPM tools (mean = 4.05; placed 3rd) is the other important factor that the respondents found to be important to the adoption of the CPM tools. The respondents emphasized that the readiness to learn new tool or technique is significantly higher in case the usefulness of the new tool or technique is understood correctly and considered as achievable. It aligns with the conclusions of Eastman et al. (2018) who have found that construction professionals are more likely to adopt the new technologies when they understand how these technologies can be utilized to increase efficiency, reduce costs, and optimize the outcomes of the project. The knowledge of practical benefits of CPM tools can accelerate the adoption and integration process into the project workflow and increase the project delivery performance. Greater efficiency and reduced cost in



project delivery (mean = 3.76; ranked 6th) was also considered to be a critical factor. The respondents noted that when the construction professionals get to realize the potential of the CPM tools in enhancing efficiency and reducing costs, the better they will be willing to adopt it. This view is in line with the research conducted by Wamelink et al. (2016) who identified the potential of project management tools to streamline the construction processes and, consequently, the possibility to use the resources more effectively and lead to cost-saving. However, there are also some advantages that should be discussed along with the start-up expense and investment that must be incurred in order to guarantee the implementation of CPM tools, as the research suggests.

The aspect of cost reduction/subsidy intervention (mean = 4.03; ranked 4th) also became a major driving force of CPM adoption, particularly with regard to joint ventures in smaller construction firms. The respondents indicated that the financial burden of using the advanced CPM tools can be alleviated by subsidizing the cost of implementation by the government or collaborating with other construction companies to help the smaller construction companies bear the burden of the financial burden. The idea of joint ventures and pooling capitals of smaller companies is also of interest to the research of Zhang and Wang (2020) who mentioned that the collaborations may allow the firms to share costs and resources, therefore, providing a higher potential to adopt advanced tools and techniques. Lastly, the study determined that the key drivers that resulted in adoption of CPM tools and methods in housing projects across Ekiti State are; "awareness and knowledge of CPM tools" (grand mean = 4.01) and "financial implications of CPM" (grand mean = 3.86). The results reinforce the adage, when one is told that s/he is in form and when one is not told that s/he is deformed. The respondents were categorical that awareness alone is not sufficient as it cannot be carried out without the finances to make it successful. This confirms the ideas expressed by Oke and Aigbavboa (2021) who suggested the implementation of financial incentive in order to motivate the use of more advanced tools of project management in the construction sector.

Table 2: Factors responsible for CPM adoption

Factors responsible for CPM adoption	Mini	Max	Mean	Std. Dev.	Rank
AWARENESS AND KNOWLEDGE OF CPM TOOLS			4.01		
There is adequate knowledge of the benefits of using CPM tools in the housing project management industry	2.00	5.00	4.05	.719	3 rd
The level of awareness regarding modern CPM tools among construction professionals in Ado Ekiti is sufficient	1.00	5.00	3.77	1.185	5 th
Awareness about CPM tools is significant to the adoption in housing projects	2.00	5.00	4.21	.812	1 st



Factors responsible for CPM adoption	Mini	Max	Mean	Std. Dev.	Rank
FINANCIAL IMPLICATIONS OF CPM			3.86		
The high cost of CPM tools is a major barrier to their adoption in housing projects	2.00	5.00	3.65	.805	
Budget constraints prevent many construction firms in Ado Ekiti from adopting advanced CPM tools	1.00	5.00	3.74	1.097	7 th
The cost of implementing CPM tools is justified by the improved efficiency and reduced costs in project delivery	2.00	5.00	3.76	.920	6 th
Financial constraints significantly limit the ability of smaller construction firms in Ado Ekiti to implement CPM tools	3.00	5.00	4.11	.797	2 nd
The adoption of CPM tools would be more widespread if the costs were reduced or subsidized	2.00	5.00	4.03	1.001	4 th

Source: Researcher's survey, 2025

Conclusion

The research proved that the level of awareness of Construction Project Management (CPM) practices is relatively high among construction professionals in Ado Ekiti, with mean values between 3.34 and 4.12. The stakeholders were well aware of the significance of project planning, cost estimation and budget management, scheduling, risk management, and resource allocation. This concurs with the literature that is consistent in emphasizing that planning, cost control, risk mitigation, and scheduling are key to the success of housing construction projects. The results also indicate that CPM practices are widely embraced as essential in ensuring timely, cost-effective and quality driven project delivery in the study area. Nonetheless, awareness is not the only factor that drives the adoption of the CPM tools and techniques. The analysis showed that awareness and knowledge of CPM tools were the most important driver of its adoption, followed by financial capacity, knowledge of benefits, and cost reduction/subsidy interventions. It means that the knowledge about CPM principles and tools is not sufficient to implement them fully, as the financial issues and the lack of exposure to the latest software and technologies are the factors that restrain professionals. Therefore, awareness lacking proper resources and financial support might not be converted into effective utilization. In general, the findings reveal two things: construction professionals in Ekiti State understand the value of CPM practices, yet their broad implementation is still hindered by systemic issues, including funding and limited access to modern tools.

Recommendations

- Professional associations, universities, and governments should join their efforts to arrange ongoing professional development seminars and training on



- the use of CPM practices and tools (e.g., Gantt charts, MS Project, Primavera). This will enhance theoretical and practical knowledge among the practitioners.
- ii. The financial limitation was noted as a significant obstacle to adoption; therefore, the government and professional associations should offer subsidies, grants, or soft loans to small and medium construction firms to help them gain access to CPM software and technologies.
 - iii. The stakeholders need to initiate forums and online platforms where the construction professionals can exchange experiences, case studies, and lessons learned about the implementation of CPM. This peer-to-peer knowledge sharing will enhance awareness of practical advantages and speed up adoption.
 - iv. Smaller construction companies are also advised to join ventures or partnerships so that they can share financial and technical resources to purchase and use CPM tools. This will lessen the personal expenses and encourage innovation.
 - v. In addition to awareness, more advocacy and incentive should be provided to the use of emerging technologies like Building Information Modelling (BIM) and digital project management tools. This will improve efficiency, eliminate errors and optimize resource allocation.

REFERENCES

- Adebayo, A., Ogunsemi, D., & Olaniyan, R. (2020). Housing deficit and the challenges of urbanisation in Nigeria. *Journal of Housing Studies*, 34(2), 45–59.
- Adegbite, A., Aluko, O., & Ajibola, O. (2021). Innovative housing delivery through prefabrication, 3D printing, and BIM in Ethiopia. *International Journal of Sustainable Construction*, 12(3), 77–89.
- Adeleke, A., & Nawi, M. (2022). Barriers to the adoption of modern CPM tools in developing countries. *Journal of Construction Innovation*, 22(4), 513–529.
- Adeleke, A., Afolabi, A., & Olanrewaju, A. (2022). Regulatory barriers and inefficiencies in Nigerian housing project management. *Journal of Construction Economics*, 18(1), 23–37.
- Agyekum-Mensah, G., & Knight, A. (2016). The contribution of BIM to construction project management. *International Journal of Project Organisation and Management*, 8(2), 173–187.
- Aibinu, A. A., & Jagboro, G. O. (2002). The effects of construction delays on project delivery in Nigerian construction industry. *International Journal of Project Management*, 20(8), 593–599.
- Aiyetan, O. A., & Olotuah, A. O. (2022). Inflation, financial management, and cost overruns in Nigerian construction projects. *Nigerian Journal of Construction Management*, 6(1), 1–13.
- Akeju, A. (2007). Challenges to providing affordable housing in Nigeria. *Proceedings of the 2nd Emerging Housing Issues Conference, Abuja*.
- Akinola, A., & Ogunlowo, O. (2021). Complexity and inefficiency of CPM tools in Nigerian construction projects. *International Journal of Construction Project Management*, 13(4), 45–58.
- Akinradewo, O., & Olatunji, O. (2021). Cultural resistance to CPM tool adoption in Nigerian housing projects. *Journal of Built Environment*, 9(3), 88–101.
- Al-Hussein, M., Ahmad, R., & Yu, H. (2019). Lean construction practices in housing delivery projects. *Engineering, Construction and Architectural Management*, 26(4), 662–678.
- Ayodeji, T., & Ajayi, K. (2023). Nigeria's housing deficit and the need for affordable housing policies. *African Journal of Housing Policy*, 15(1), 33–49.



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BUILT ENVIRONMENT & EARTH SCIENCE VOL. 9**

- Chen, C., & Zou, P. (2020). Digital technology in construction: BIM and project management software. *Automation in Construction*, 118, 103–112.
- Chien, K., & Shih, Y. (2020). Financial constraints in the adoption of CPM tools in construction projects. *Journal of Construction Engineering and Management*, 146(12), 04020145.
- Chitkara, K. K. (2014). *Construction project management: Planning, scheduling, and controlling* (2nd ed.). McGraw Hill.
- Chinyo, I., & Olaniyan, D. (2019). Resource allocation and affordable housing project outcomes in Nigeria. *Journal of African Housing Research*, 7(2), 58–71.
- Eastman, C., Teicholz, P., Sacks, R., & Liston, K. (2018). *BIM handbook: A guide to building information modeling for owners, designers, engineers, contractors, and facility managers* (3rd ed.). Wiley.
- Elinwa, A., Akpan, I., & Adewale, J. (2021). Procurement strategies and housing delivery in Nigeria. *Journal of Procurement and Construction Policy*, 5(2), 90–107.
- Federal Mortgage Bank of Nigeria. (2019). *Annual report on housing finance and mortgage development in Nigeria*. Abuja: FMBN.
- Ibrahim, Y., Musa, T., & Hassan, A. (2020). Poor CPM practices and their effects on Nigerian housing delivery. *International Journal of Construction Management*, 20(5), 371–383.
- Kerzner, H. (2017). *Project management: A systems approach to planning, scheduling, and controlling* (12th ed.). Wiley.
- Kwak, Y. H., & Anbari, F. T. (2009). Analyzing project management research: Perspectives from top management journals. *International Journal of Project Management*, 27(5), 435–446.
- Muller, R., & Turner, R. (2017). *Project-oriented leadership*. Routledge.
- Mutisya, E., & Yarime, M. (2014). The complexity of urban housing in Nairobi: A critical review. *Urban Studies*, 51(6), 1206–1226.
- Oke, A., & Aigbavboa, C. (2021). *Sustainable construction project management: Practices and cases*. Springer.
- Ogunbiyi, O., & Abdulkareem, M. (2023). Efficient construction project management for affordable housing in Nigeria. *Journal of Housing and the Built Environment*, 38(2), 251–269.
- Ogunlana, S., & Aluko, O. (2021). Risk management practices in Nigerian construction projects. *Journal of Risk in Construction*, 4(1), 15–28.
- Ogunsemi, D., Akinwale, O., & Ajayi, T. (2018). Reducing project delays and cost overruns through CPM in Nigerian housing projects. *Nigerian Journal of Construction Studies*, 11(2), 55–70.
- Olaleye, A., Bello, M., & Ugochukwu, I. (2022). Infrastructure, housing delivery, and project management in Nigerian cities. *Journal of Urban Development*, 16(4), 102–119.
- Olanrewaju, A., & Abdul-Aziz, A. (2022). Inefficiencies in project management practices and failed housing projects. *International Journal of Housing and Building*, 15(3), 144–162.
- Oluwakiyisi, T. (2011). *Housing deficit and construction challenges in Nigeria*. Lagos: Proshare.
- Rojas, E. M., Taylor, J. E., & Thomas, H. R. (2018). The role of planning in project success. *Journal of Construction Engineering and Management*, 144(2), 04017098.
- UNDP. (2021). *Human development report: Housing, poverty, and sustainability*. New York: United Nations Development Programme.
- UN-Habitat. (2021). *World cities report 2021: The value of sustainable urbanization*. Nairobi: UN-Habitat.
- Wamelink, H., Volker, L., & Lauche, K. (2016). The impact of project management tools on efficiency in construction. *Construction Management and Economics*, 34(3), 197–209.
- Zhang, J., & Wang, Q. (2020). Collaborative adoption of CPM tools in construction SMEs. *Journal of Construction Collaboration*, 8(2), 89–104.
- Ward, S., & Chapman, C. (2003). Transforming project risk management into project uncertainty management. *International Journal of Project Management*, 21(2), 97–105.