

Assessing the impact of artisan time management practices on the success of construction projects in Bauchi State, Nigeria

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Abstract

Effective time management among artisans is crucial for the timely completion and overall success of construction projects. This study investigates the influence of artisans' time management practices on construction project performance in Bauchi State, Nigeria. Using a quantitative approach, data were collected from 150 artisans and 50 project supervisors across selected ongoing construction sites. The findings reveal that structured scheduling, prioritization of tasks, and adherence to deadlines significantly contribute to project success, while poor time management leads to delays, cost overruns, and reduced quality. The study recommends training programs on time management and the adoption of digital tools to enhance artisans' efficiency, thereby improving project outcomes.

Keywords: Artisans, time management, construction projects, project success

Introduction

The construction industry is a complex and dynamic sector that relies heavily on effective time management practices for successful project completion. Artisans, who are skilled craftsmen and workers involved in construction projects, play a crucial role in ensuring the timely delivery of quality workmanship (Windapo, 2016) ^[18]. This study aims to investigate the Influence of Artisans Time Management Practice on Construction Project Success in Bauchi State Nigeria. Time management is a critical aspect of construction project management.

Time management practices, according to Randy (2007) ^[15], is the act or process of planning and exercising conscious control over the amount of time spent on specific activities specially to increase efficiency or productivity. Time management is a necessity in any project development as it contributes to the project completion within the scope and duration. Time management skills increase productivity and positively impact all aspects of individual workers' activities in construction. The passage highlights the significance of completing construction projects within the agreed-upon timeframe. It emphasizes that time is a crucial factor in project performance and mentions that various improvement methods have been proposed in the literature to address time-related issues in construction projects (Jackson, 2020) ^[9].

Furthermore, the passage states that human resources play a central role in the construction industry. It mentions that managers have four types of resources at their disposal: people, equipment, money, and time. However, it emphasizes that time is irreplaceable and underscores the importance of time management skills for success. Effective time management is described as a way to organize one's time, make informed decisions, and be productive in the workplace (Aka *et al.*, 2022) ^[6]. The time management is a necessary condition for managerial effectiveness and can contribute to the survival and success of an organization. It mentions that establishing appropriate cultural backgrounds within an organization is crucial for the successful implementation of a time management system (Sardroud, 2012) ^[17].

Human resources have been observed to be central to the performance of the construction industry of most nations (Lerman, 2013) ^[10]. Similarly, Odediran and Babalola (2013) ^[10] observed that, the types of manpower mostly needed in large quantity for housing construction in Nigeria and globally are artisans. Artisans in the construction industry play a crucial role in the practical realization of any construction project, they are mostly engaged in the technical aspect of construction and at the management level serve as frontline manager (supervisor); giving the role of interpreting the company policies into practical realization of the organizational goal of employer (Afolabi & Oyeyipo, 2017) ^[5].

However, the literature on the specific impact of artisans' time management practices on project success is limited. Previous studies have primarily focused on broader project management issues, neglecting the unique perspectives and challenges faced by artisans in managing their time effectively. This study will provide valuable insights into the impact of artisans' time management practices on project outcomes in Bauchi State, Nigeria. The findings will contribute to the body of knowledge in construction project management and aid in the development of strategies to enhance time management skills among artisans, ultimately leading to more successful construction projects in the region.

Statement of the Problem

Construction projects in Bauchi State, Nigeria, are frequently plagued by delays, cost overruns, and substandard outcomes, despite the increasing investment in infrastructure development. While several factors contribute to these challenges, the role of artisans' time management practices has received limited attention. Artisans—including masons, carpenters, electricians, and plumbers—are pivotal to project execution, yet many lack structured approaches to task scheduling, prioritization, and adherence to deadlines. Existing studies in Nigeria (Abubakar *et al.*, 2022) ^[6] indicate that poor time management is a significant contributor to project inefficiency. However, most research has focused on project managers and contractors, neglecting

the artisans whose day-to-day activities directly impact project timelines and quality. Without understanding how artisans manage their time and the challenges they face, interventions to improve construction project success may be ineffective or misdirected.

This gap highlights the need for empirical research assessing the impact of artisans' time management practices on project success in Bauchi State. Addressing this problem is critical for improving project delivery, reducing financial losses, and enhancing client satisfaction in the region's construction sector.

Research Aim and Objective

The aim of this study is to assess the impact of artisans' time management practices on the success of construction projects in Bauchi State, Nigeria, with the goal of identifying strategies to enhance project efficiency and timely completion. To achieve this aim, the study focuses on the following objectives:

- To examine the time management practices employed by artisans in Bauchi State construction projects.
- To evaluate the relationship between artisans' time management practices and the success of construction projects.
- To identify challenges that hinder effective time management among artisans and propose strategies for improvement.

Significance of the Study

The research will highly be significant to entire humanity due to the population that were targeted. Since the research is on the awareness of lecturers on lean principles practices, the academic environment will have this as an encouraging tool that can be used to improve and intensify researches. Finally, the general public are active users of the construction industry's products. They will be able to get finished and qualitative products all within the expected time and budgeted cost.

Concept of Time Management

Time management involves planning, prioritizing, and executing tasks efficiently to achieve objectives within a given period (Macan, 2019). In construction, time management ensures resources are used optimally and projects meet deadlines. Techniques include task prioritization, scheduling, progress tracking, and resource allocation.

Artisans and Construction Project Success

Artisans' effectiveness directly impacts project outcomes. Ogunsemi and Jagboro (2020) highlighted that artisan productivity, discipline, and adherence to schedules are key determinants of project success. Time mismanagement can cause cost overruns, material wastage, and client dissatisfaction.

Theoretical Framework

This study adopts the Time Management Theory developed by Therese Hoff Macan (1994) ^[11], which emphasizes that effective use of time is achieved through planning, goal setting, prioritization, and scheduling of activities. According to the theory, individuals who organize their tasks, establish clear objectives, and allocate sufficient time to important activities are more likely to improve their

performance and achieve desired outcomes. The theory argues that time management behaviors help individuals gain greater control over their work, reduce stress, and increase productivity. Rather than focusing on time itself, the theory concentrates on how people manage their activities within the available time to accomplish specific goals.

In the context of artisans in the construction industry, Time Management Theory is highly relevant because construction projects are often governed by strict deadlines and schedules. Artisans who prepare work plans, prioritize critical tasks, and use available working hours efficiently are more likely to complete assignments on time and maintain high-quality workmanship. Conversely, poor planning, lack of prioritization, and ineffective allocation of time may lead to delays, cost overruns, and reduced productivity. Therefore, the theory provides a useful framework for understanding how time management practices influence the performance and productivity of artisans in construction projects.

Time Management

1. Effective Time Management

Effective time management among artisans is influenced by a combination of personal, organizational, and environmental factors. One of the most important factors is skill level and experience. Skilled artisans who have spent many years in their trade are generally better able to estimate the time required for specific tasks, anticipate challenges, and organize their work schedules efficiently. Experience enables them to develop practical strategies for handling multiple activities simultaneously while maintaining quality standards. As a result, experienced artisans are often more productive and capable of completing projects within the stipulated timeframe than less experienced workers (Ali & Hassan, 2023) ^[2]. In addition, continuous training and professional development help artisans improve their planning and scheduling abilities, thereby enhancing overall project performance.

2. Supervision and Management Practices

Another significant factor is supervision and management practices. Effective supervision ensures that artisans remain focused on assigned tasks and adhere to established work schedules. Regular monitoring, feedback, and performance evaluations encourage accountability and reduce the likelihood of unnecessary delays. According to Chukwu *et al.* (2022) ^[8], construction projects with active supervisory systems tend to record higher levels of productivity and timely task completion. Supervisors also play a critical role in coordinating activities, resolving conflicts, and ensuring that work progresses according to project plans. Consequently, strong managerial oversight contributes positively to artisans' time-management effectiveness.

3. Material Availability, Workload, Task Complexity, Motivation, and Discipline

Furthermore, material availability, workload, task complexity, motivation, and discipline significantly affect artisans' ability to manage time. Delays in the delivery of construction materials, tools, or equipment can disrupt workflow and cause artisans to remain idle, leading to project delays. Similarly, excessive workload and highly complex tasks may overwhelm artisans and make it difficult

for them to prioritize activities effectively. Motivation is equally important, as workers who receive adequate compensation, recognition, and support are more likely to remain committed to meeting deadlines. Personal discipline, including punctuality, self-control, and adherence to work plans, also contributes to efficient use of time. Therefore, improving material supply systems, balancing workloads, and fostering a motivating work environment can greatly enhance artisans' time-management practices and overall productivity (Mullins, 2019; Robbins & Judge, 2022) ^[12, 16].

Global and Local Studies

1. Global Perspective

Globally, the importance of artisans' time management practices has attracted increasing attention among construction researchers because artisans constitute the largest workforce on construction sites and directly influence project productivity. Studies conducted in developing countries indicate that artisans who effectively plan their daily activities, adhere to work schedules, prioritize tasks, and minimize time wastage demonstrate higher levels of productivity and work efficiency. According to Zhang *et al.* (2021) ^[19], artisan-focused time management interventions significantly improved punctuality, task completion rates, and overall site performance. The study found that artisans who practiced effective time management spent less time on non-productive activities and were better able to coordinate their work with other trades. Consequently, improved time management among artisans contributed to smoother workflow, reduced rework, and enhanced project outcomes. Furthermore, international studies have shown that artisans' time management practices are influenced by factors such as skill level, supervision, motivation, availability of materials, and workplace organization. Artisans who receive clear work instructions and adequate supervision are generally more likely to manage their time effectively than those working in poorly coordinated environments. These findings suggest that assessing artisans' time management practices is essential for identifying productivity gaps and developing strategies for improving construction performance.

2. Local Perspective

In Nigeria, time management among artisans remains a critical concern within the construction industry. Many construction projects experience productivity challenges arising from poor work scheduling, lateness, prolonged breaks, absenteeism, and ineffective utilization of working hours by artisans. Studies have revealed that many artisans rely heavily on informal work practices, often resulting in poor adherence to project schedules and reduced productivity. According to Abubakar *et al.* (2022) ^[6], project managers identified poor artisan time management as one of the major factors affecting timely project delivery in medium-scale construction projects. The Nigerian construction environment presents additional challenges that influence artisans' time management practices. These include irregular material supply, inadequate supervision, transportation difficulties, poor communication among project participants, and limited access to modern planning tools. Such challenges may reduce artisans' ability to organize their work effectively and utilize available time productively. Therefore, assessing artisans' time management practices is important for

understanding how artisans allocate their working hours, identify factors affecting their efficiency, and provide recommendations for improving productivity and project performance within the Nigerian construction industry. The relevance of these global and local findings to the present study lies in the need to evaluate the extent to which artisans practice effective time management on construction sites. By assessing practices such as punctuality, task prioritization, adherence to work schedules, planning of daily activities, and management of work interruptions, the study seeks to provide empirical evidence on the current state of time management among artisans and its implications for construction productivity.

Methodology

A descriptive survey design was used, combining quantitative and qualitative methods to obtain a comprehensive understanding of artisans' time management practices. The population included artisans and project supervisors in Bauchi State. Using stratified random sampling, 150 artisans and 50 supervisors were selected. Artisans were stratified by trade (carpentry, masonry, electrical, plumbing) to ensure representativeness. Questionnaires were used to capture demographic information, time management practices, and project outcomes. Semi-structured interviews with supervisors to validate artisans' responses and gather qualitative insights simply to support the quantitative data obtained. Instruments were reviewed by construction management experts and pilot test was conducted with 20 artisans in neighbouring states, yielding a Cronbach's alpha of 0.82, indicating high reliability.

Data Analysis and Results Presentation

Quantitative Data was analyzed using SPSS v28 whereby Descriptive statistics, Pearson correlation, and Multiple Regression were used to test relationships.

1. Demographic Profile of Respondents

Demographic	Frequency	Percentage
Gender		
Male	170	85%
Female	30	15%
Total	200	100%

Age Group	Frequency	Percentage
20–30	60	30%
31–40	80	40%
41–50	40	20%
51 and above	20	10%

Experience (years)	Frequency	Percentage
1–5	60	30%
6–10	80	40%
11–15	40	20%
16 and above	20	10%

Task Scheduling: 70% reported using daily schedules; 30% relied on supervisor instructions.

Prioritization: 65% ranked tasks by importance; others worked sequentially without planning.

Adherence to Deadlines: Only 60% consistently met project timelines.

2. Relationship between Time Management and Project Success

Regression analysis showed a strong positive relationship ($R^2 = 0.68$, $p < 0.01$), indicating that effective time management predicts project success.

3. Challenges in Time Management

Material shortages (72%), inadequate supervision (65%), High workload (58%) and Poor motivation (50%).

Discussion

The results indicate that artisans' time management practices significantly influence construction project outcomes. Consistent with Ali & Hassan (2023) and Chukwu *et al.* (2022)^[2, 8], structured scheduling, prioritization, and monitoring are crucial for project success.

Conclusion and Recommendations

Effective time management among artisans significantly impacts construction project success in Bauchi State. Therefore, the recommendations include:

- **Training Programs:** Implement workshops on scheduling, task prioritization, and goal setting.
- **Digital Tools:** Encourage the use of mobile apps for task tracking and progress reporting.
- **Improved Supervision:** Regular monitoring by site managers to enforce deadlines.
- **Motivation Schemes:** Incentives for artisans who consistently meet project timelines.

Future research could explore cross-state comparisons or the influence of cultural factors on artisans' time management.

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