Faculty of Natural and Applied Sciences Journal of Basic and Environmental Research
Print ISSN: 3026-8184 e-ISSN 3043-6338
www.fnasjournals.com
Volume 2; Issue 4; December 2025; Page No. 95-104.
DOI: https://doi.org/10.63561/jber.v2i4.1044

Benefits of Implementing Earned Value Management in Construction Projects in Nigeria

***[1]Albert, I., [2]Bilau, A.A., [1]Osadola, O.A., & [3]Baiyegunhi, C.M.**
[1]Department of Building, Federal University of Technology Akure, Nigeria.
[2]Department of Technology Education, Lagos State University of Education, Oto/ijanikin, Lagos
[3]Department of Architecture Technology, Kogi State Polytechnic Lokoja,

***Corresponding author email**: alberti@futa.edu.ng

Abstract
This study examines the principles, benefits, and readiness for Earned Value Management (EVM) within the Nigerian construction industry. It focuses on how EVM can address persistent performance challenges, including cost overruns, schedule delays, and weak monitoring and reporting practices. A quantitative research design was employed, with data collected from 151 construction professionals in Ogun State using a stratified sampling technique. Respondents consisted of architects, engineers, builders, and quantity surveyors. Data were analysed using SPSS to evaluate awareness levels and perceptions of key EVM concepts and performance indicators. The results indicate high awareness of fundamental EVM components such as Planned Value, Earned Value, Actual Cost, and related performance indices among construction professionals. Respondents strongly agreed that EVM enhances cost and schedule control, promotes proactive decision-making, and supports accountability and transparent performance monitoring. Additional benefits identified include improved communication, reduced disputes, and better post-project learning. Despite these strengths, actual adoption remains limited due to inadequate digital systems, insufficient technical capacity, and organisational constraints. The study highlights the need for targeted capacity development, integration of EVM into organisational project management procedures, investment in digital performance-tracking systems, and clearer policy frameworks to enable effective implementation. Strengthening these areas can significantly improve project delivery outcomes in Nigeria. This research provides empirical evidence on EVM awareness, perceived benefits, and adoption challenges within a developing construction context. It offers practical insights that can guide industry stakeholders, policymakers, and organisations seeking to enhance project performance through structured control systems such as EVM.

Keywords: Cost control, Construction projects, Earned Value Management (EVM), Nigeria, Schedule management

Introduction

The construction industry plays a crucial role in the development of any country, as it provides the infrastructure necessary for social and economic growth (Albert et al., 2025a; Olanrewaju & Abdul-Aziz, 2017). Infrastructure, including roads, schools, hospitals, housing, and energy systems, is an essential driver of national development and economic stability (National Bureau of Statistics, 2023). In Nigeria, the construction industry holds significant potential to contribute meaningfully to the nation's economic advancement; however, despite its importance, the sector continues to face persistent performance challenges (Adedamola & Osibanjo, 2021). Poor project performance is a widely documented and recurring issue in Nigeria's construction industry. Studies have identified common problems, including frequent cost overruns, schedule delays, and substandard project outcomes (Abdulaziz & Mohammed, 2020; Adebayo & Ibrahim, 2023). These challenges often stem from inadequate planning, inefficient monitoring processes, and limited adoption of modern project control tools (Adeleke & Chukwuma, 2021; Egwuatu & Okafor, 2024). These

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

shortcomings not only result in wasted resources but also erode public trust in the construction delivery system (Onwuka & Nnamdi, 2021).

One of the primary reasons for these failures is the lack of effective performance measurement and management systems (Adeleke et al., 2022). Many Nigerian construction projects still rely on traditional or informal tracking approaches, which are often reactive rather than proactive (Okoye & Ugochukwu, 2021). According to Chike and Musa (2024), the inability to detect early warning signs of project deviation is a significant contributor to the poor performance outcomes experienced across many construction sites. This creates a critical need for a robust system that integrates cost, time, and work scope to provide objective performance insights and enable timely corrective actions (Ibrahim & Olalekan, 2023). Earned Value Management (EVM) has emerged globally as a highly effective performance control methodology in project management (PMI, 2023). As the independent variable in this study, EVM provides an integrated approach for measuring project progress by combining cost, schedule, and scope metrics. It enables project managers to assess whether a project is on track, ahead, or lagging planned targets (Fleming & Koppelman, 2020; Bakare & Bello, 2022). According to Adekunle and Okoro (2023), EVM's ability to forecast project performance enhances decision-making and improves the reliability of project delivery timelines and cost estimates. Past studies have linked EVM to improved cost efficiency, better schedule control, and enhanced accountability (Olukemi & Ibrahim, 2019; Nwabueze & Okoro, 2020).

Despite its established benefits, the application of EVM in Nigeria is still in its early stages of development. Adeniyi (2023) notes that while awareness of EVM exists among some professionals, adoption is often hindered by barriers such as limited technical capacity, insufficient training, lack of reliable data, and resistance to change within organizations. Musa and Obi (2021); Albert et al. (2025b) have observed that many construction firms in Nigeria still rely on outdated, manual project control systems, which limit the accuracy and usefulness of project performance data. Bello and Obi (2022) have noted that although public sector initiatives are beginning to incorporate EVM tools in some projects, widespread and consistent implementation remains limited. In the context of the Nigerian construction industry, which is the contextual variable in this study, several local challenges influence the effective use of EVM (Adewuyi et al., 2022; Coker & Salami, 2022). These include unstable project funding, a shortage of skilled personnel, inadequate technological infrastructure, and weak policy enforcement (Albert et al., 2025c; Coker & Salami, 2022; Bala & Adamu, 2023). Therefore, this study sought to examine how EVM is currently being applied in Nigerian construction projects and the benefits it offers in improving project outcomes in the Nigerian construction industry.

The Concept and Principles

The foundational concept and principles of EVM center on the systematic comparison of planned work against actual work completed and its associated costs. According to Daramola and Ayodele (2023), the primary principle involved establishing a performance measurement baseline that serves as the reference point for all subsequent performance evaluations. This principle ensures that project performance is measured against predetermined standards rather than shifting expectations. Another core principle is the integration of scope, schedule, and cost into a unified measurement system (Idowu & Isaac, 2025). Adebayo and Ibrahim (2023) explained that this integration principle eliminates the traditional silos between different project control functions, creating a holistic view of project performance. The principle of objective measurement is equally critical, as it requires that progress be quantified based on completed deliverables rather than subjective assessments of effort expended. The principle of early detection emphasizes EVM's capability to identify performance deviations while corrective action can still be effective. Nwabueze and Okoro (2020) demonstrated that this principle is particularly valuable in construction projects where early intervention can prevent minor issues from escalating into major project failures. The establishment of a robust Performance Measurement Baseline (PMB) is fundamental to successful EVM implementation. Adeniyi (2023) explained that the PMB must be comprehensive, realistic, and properly authorized to serve as an effective reference point for performance measurement. The baseline should integrate all project scope elements with their associated schedule and budget allocations. The Work Breakdown Structure (WBS) serves as the architectural foundation for EVM implementation by providing a hierarchical decomposition of project deliverables. Bello and Obi (2022) emphasized that a well-constructed WBS is essential for accurate progress measurement and meaningful performance analysis in construction projects.

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

Benefits of Implementing EVM in Construction Projects

EVM provides project managers with significantly enhanced control capabilities across scope, schedule, and budget dimensions. Coker and Salami (2022) demonstrate that EVM's integrated approach enables project managers to understand the interrelationships between different project parameters, facilitating more informed decision-making. The enhanced control stems from EVM's ability to provide objective, quantitative data about project performance rather than relying on subjective assessments. The control improvements are particularly evident in EVM's capability to track performance against multiple parameters simultaneously. David and John (2024) found that construction project managers using EVM were able to maintain better alignment between scope delivery, schedule adherence, and cost control compared to those using traditional project control methods. Research consistently shows that EVM implementation leads to improved budgetary discipline and reduced cost overruns. Bala and Adamu (2023) conducted a comparative analysis of construction projects and found that EVM-managed projects had 31% fewer cost overruns exceeding 10% of the original budget. The improvement in budgetary discipline results from EVM's systematic approach to cost tracking and its early warning capabilities for cost deviations.

EVM's schedule management benefits are well-documented in construction project research. Chukwuemeka and Umar (2024) found that construction projects implementing EVM had 26% better schedule predictability and 19% fewer critical path delays compared to projects using conventional schedule management approaches. Eke and Ojo (2024) demonstrated that EVM's systematic approach to progress measurement enables more accurate identification of schedule bottlenecks and critical path issues, facilitating proactive schedule management. Adeniyi (2023) found that construction projects using EVM had 43% fewer communication-related disputes and 38% better stakeholder satisfaction ratings compared to projects using traditional reporting methods. EVM significantly enhances risk management capabilities by providing early identification of performance variances that may indicate underlying risks. Green and White (2021) demonstrated that construction projects using EVM identified potential risks 45% earlier than projects using traditional risk management approaches. This early identification capability enables more effective risk mitigation strategies. The risk management benefits are particularly valuable in construction projects' uncertain environments. Adekunle and Okoro (2023) showed that EVM's trend analysis capabilities enable project managers to identify risk patterns and implement preventive measures before risks materialize into project problems.

Research methods

This study adopted a quantitative research design, because it allowed the collection of data from a broad sample of construction professionals and enabled quantification of variables such as the principles and benefits of Earned Value Management (EVM). The population comprised construction professionals in Ogun State, including architects, engineers, builders, and quantity surveyors who were directly involved in cost estimation, scheduling, and performance tracking. These professionals were selected because of their practical involvement in managing construction projects and their likely exposure to EVM-related practices. As noted by Chike and Musa (2024), Ogun State had witnessed increasing infrastructure development and urban expansion in recent years, making its construction workforce a valuable population for evaluating the relevance and implementation of EVM in real-world projects. Recent investment in road networks, housing, and industrial infrastructure underscored the state's evolving construction activities, providing a fertile setting for empirical research on structured project control methodologies (Olayemi & Odunlade, 2025). A stratified random sampling technique was adopted, which involved dividing the target population into homogeneous subgroups (strata) based on professional classification, such as architects, builders, engineers, and quantity surveyors, and then randomly selecting respondents from each group. According to Chukwuemeka and Umar (2024), stratified sampling is particularly effective in studies involving multidisciplinary respondents, as it ensures proportional representation of each subgroup, minimizing sampling bias. This method was justified by the diverse roles and responsibilities of construction professionals in project performance tracking. Since Earned Value Management (EVM) affected different specialists in different ways, stratifying by profession allowed for more accurate insights across the professional spectrum (David & John, 2024). The questionnaire was administered to registered architects, builders, engineers, and quantity surveyors in construction sites in Ogun State. The structured questionnaire contained a sequence of questions divided into three sections. Section A gathered demographic information from the respondents. Section B examined the concept and the principles of EVM and Section C assess the benefits of EVM in construction projects by using a five-point Likert scale in rating the opinions of respondents. Collins (2010) recognised that Likert scales are useful for gathering participants' views on different statements. To

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

make sure the research instrument was clear and fit for purpose, a small pilot survey was first carried out with four practitioners from the industry and two university lecturers. This step helped assess whether the ideas about Earned Value Management (EVM) for construction projects discussed in the literature were meaningful and applicable in the Nigerian setting. Feedback from the pilot indicated that the variables were not only relevant but also easily understood by the professionals who reviewed them. A total of 273 construction professionals in Ogun State were selected as the sample size for this study. Of these, 151 provided valid responses, giving a response rate of 55.3%. The collected data were analysed using SPSS version 26.0, employing several statistical techniques such as frequency distributions, percentages, mean scores, standard deviations, and t-values.

Results

Characteristics of respondents

Table 1 Respondents profiles

		Frequency	Percentage (%)
Professional	Architect	45	29.8
	Builder	41	27.2
	Engineer	40	26.5
	Quantity Surveyor	25	16.6
	Total	151	100.0
Years of Experience	6 - 10 years	68	45.0
	0 - 5 years	52	34.4
	11 - 15 years	26	17.2
	21 years and above	3	2.0
	16 - 20 years	2	1.3
	Total	151	100.0
Educational Qualification	B. Tech / B. Sc	129	85.4
	M. Tech / M. Sc	20	13.2
	Ph. D	2	1.3
	Total	151	100.0
Type of Organization	Medium-scale construction firm	60	39.7
	Small-scale construction firm	46	30.5
	Large-scale construction firm	36	23.8
	Government agency	9	6.0
	Total	151	100.0

Table 1 shows that architects constituted the largest group at 29.8% (45 respondents), followed closely by builders at 27.2% (41 respondents) and engineers at 26.5% (40 respondents). Quantity surveyors represented 16.6% (25 respondents) of the sample. This distribution was particularly significant for the study as it ensured representation from all major professional groups involved in construction project management and control. The analysis showed that architects, builders, engineers, and quantity surveyors each brought unique perspectives to project performance evaluation, cost control, and scheduling - all core components of Earned Value Management (EVM). The relatively even distribution across these professions enhanced the validity of the findings, as EVM implementation required input from multiple disciplines working collaboratively on construction projects. The analysis showed that a combined 65.6% of respondents had over five years of experience (6-10 years: 45.0%, 11-15 years: 17.2%, 16-20 years: 1.3%, and 21 years and above: 2.0%). Table 4.2 indicates that the most dominant category is 6-10 years (45.0%), representing a strong concentration of mid-career professionals. The analysis revealed that professionals with over a decade of

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

experience constituted 20.5% of the sample, which was particularly crucial for the study. Many of the respondents held a bachelor's degree (BTech/BSc) at 85.4%. The analysis revealed that a smaller but significant proportion held a master's degree (MTech/MSc) at 13.2%, with only 1.3% holding a PhD. The high level of educational attainment suggested that the respondents possessed strong theoretical and foundational knowledge of their respective fields. Table 1 shows that medium-scale construction firms had the highest representation at 39.7%, followed by small-scale firms (30.5%) and large-scale firms (23.8%). Government agencies accounted for a small percentage (6.0%). This diversity was identified as a significant strength of the study, as it provided a comprehensive view of EVM application across various operational scales.

The Concept and Principles of Earned Value Management (EVM) in Construction Projects.

Table 2 Descriptive Statistics for the Concept and Principles of Earned Value Management (EVM) in Construction Projects.

S/N	Concept and Principles of Earned Value Management (EVM)	MS	Df	SD	T	Sig. (2-tailed)	Rank
1	Actual Cost (AC)	4.17	150	0.790	18.242	0.000	1
2	Schedule Variance (SV)	4.17	150	0.831	17.339	0.000	2
3	Measurement	4.17	150	0.812	17.642	0.000	3
4	Planned Value (PV)	4.17	150	0.795	18.011	0.000	4
5	EVM requires a well-defined Work Breakdown Structure (WBS)	4.15	150	0.847	16.727	0.000	5
6	Earned Value (EV)	4.13	150	0.884	15.733	0.000	6
7	Cost Performance Index (CPI)	4.13	150	0.803	17.238	0.000	7
8	EVM supports proactive risk management	4.12	150	0.832	16.528	0.000	8
9	Integration	4.11	150	0.853	16.032	0.000	9
10	Baseline setting is critical to the success of EVM implementation	4.09	150	0.819	16.388	0.000	10
11	Schedule Performance Index (SPI)	4.09	150	0.827	16.228	0.000	11
12	Cost Variance (CV)	4.07	150	0.814	16.100	0.000	12
13	EVM integrates seamlessly with digital project control tools	4.05	150	0.855	15.139	0.000	13
14	Forecasting	4.04	150	0.840	15.216	0.000	14
15	EVM allows for performance trends analysis over time	3.99	150	0.856	14.161	0.000	15

Note: Df = Degree of freedom; MS = Mean Score; SD = Standard Deviation; t = calculated t-value Test Value = 3.00; All variables significant at $p < 0.001$

The statistical analysis demonstrated exceptionally strong professional understanding of EVM concepts, with all variables achieving mean scores above 3.99 on a 5-point Likert scale and statistical significance at $p < 0.001$.

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

The benefits of implementing EVM in Construction Projects

Table 3 Descriptive Statistics Table for benefits of Implementing EVM in Construction Projects

S/N	Benefits of Implementing EVM	MS	Df	SD	T	Sig. (2-tailed)	Rank
1	Improve Cost Management	4.29	150	0.869	18.27	0.000	1
2	Enhances Quality Control through Performance Tracking	4.26	150	0.854	18.20	0.000	2
3	Encourages Proactive Management	4.25	150	0.856	17.87	0.000	3
4	Facilitates post-project evaluation and learning	4.21	150	0.805	18.50	0.000	4
5	Enhance Stakeholder Confidence	4.19	150	0.795	18.32	0.000	5
6	Provides Objective Project Health Metrics	4.18	150	0.872	16.60	0.000	6
7	Reduces Disputes related to Delays or Cost claims	4.17	150	0.839	17.17	0.000	7
8	Enhances Schedule Management	4.16	150	0.857	16.62	0.000	8
9	Improves Accountability and Productivity	4.14	150	0.825	16.97	0.000	9
10	Boosts Quality Assurance	4.13	150	0.803	17.24	0.000	10
11	Improve Communication Among Project Teams	4.12	150	0.816	16.86	0.000	11
12	Improves Subcontract or Performance Management	4.12	150	0.856	16.07	0.000	12
13	Increases Transparency	4.11	150	0.821	16.65	0.000	13
14	Integrates Scope, Time, and Cost	4.11	150	0.834	16.30	0.000	14
15	Reduces Risk	4.01	150	0.848	14.68	0.000	15

Note: Df = Degree of freedom; MS = Mean Score; SD = Standard Deviation; t = calculated t-value Test Value = 3.00; All variables significant at $p < 0.001$

The data revealed a strong consensus among construction professionals in Ogun State regarding the benefits of EVM implementation. Mean scores for all variables fall within a narrow and high range of 4.01 to 4.29 on a 5-point Likert scale. This high level of agreement, combined with the statistical significance of all variables ($p < 0.001$), confirmed that these perceptions were not due to chance and represent a robust professional endorsement of EVM's benefits.

Discussions

The concept and principles of EVM in construction projects

The analysis presented in Table 2 revealed exceptionally strong theoretical understanding of EVM concepts among construction professionals in Ogun State, Nigeria. This finding provided compelling evidence that Nigerian construction professionals possessed sophisticated awareness of EVM's fundamental components. The highest-ranked variables (Actual Cost (AC), Schedule Variance (SV), Measurement, and Planned Value (PV) all achieved identical mean scores (4.17), demonstrating unanimous recognition of EVM's core performance metrics. This convergence was particularly significant because it indicated that professionals did not simply understand isolated EVM components but rather comprehended how these metrics interconnect to form an integrated project control system. Silva *et al.* (2022) supported this interpretation, emphasizing that these core EVM metrics serve as effective indicators for tracking project health and forecasting future performance. The professionals' ability to recognize all four fundamental metrics equally suggested a mature understanding that extends beyond superficial awareness. The consistently high mean scores and low standard deviations raised methodological considerations regarding potential ceiling effects. Kumar and Singh (2023) noted that such uniformly high ratings in technology adoption studies could indicate social desirability bias, where respondents provided answers, they believed were expected rather than reflecting actual

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

experiences. This possibility deserved consideration, particularly because the high conceptual awareness contrasted with documented low implementation rates in Nigerian construction practice.

Despite strong theoretical foundations, recent empirical studies highlight the persistent gap between conceptual understanding and practical implementation, with researchers noting that EVM integration supports early detection of inefficiencies and promotes timely corrective strategies, though detailed and dynamic EVM application remains challenging for enhancing both cost and schedule control in real-world construction environments. The analysis revealed remarkably high levels of theoretical understanding of EVM concepts among construction professionals in Ogun State, with all core metrics receiving strong endorsement. This comprehensive awareness aligned with Fleming and Koppelman's (2020) assertion that EVM serves as a critical management technique enabling objective project assessment rather than subjective evaluations. The results showed unanimous recognition of fundamental components (Planned Value, Earned Value, Actual Cost, and Cost performance indices) demonstrating that Nigerian construction professionals possessed the conceptual foundation necessary for EVM implementation.

The benefits of implementing EVM in construction projects.

The analysis of implementation benefits presented in Table 3 revealed strong professional consensus across fifteen benefit dimensions. The paramount benefit, "Improve Cost Management", directly addressed Nigeria's chronic cost overrun problems. This finding carried particular significance because cost escalation represented one of the most documented and persistent failures in Nigerian construction delivery, frequently resulting in project abandonment or substantial budget increases that strained public finances. The second-ranked benefit, "Enhances Quality Control through Performance Tracking", demonstrated sophisticated understanding that EVM extended beyond traditional cost-schedule management to encompass comprehensive project performance dimensions. This recognition aligned with contemporary project management theory emphasizing integrated performance measurement across multiple project success dimensions. The high ranking of quality enhancement suggested that Nigerian construction professionals understood EVM's potential to address not only delivery timeline and cost concerns but also the persistent quality deficiencies that characterized many construction projects in developing economies. The third-ranked benefit, "Encourages Proactive Management", revealed professional appreciation for EVM's predictive capabilities. This finding was particularly significant in the Nigerian construction context, where reactive management approaches dominated industry practice. Adekunle and Okoro (2023) documented that Nigerian construction typically employed crisis-driven management styles, responding to problems after they emerged rather than anticipating and preventing issues. The strong endorsement of proactive management benefits suggested professionals recognized EVM's potential to transform this problematic cultural pattern through systematic early warning capabilities. The recognition of "Facilitates post-project evaluation and learning" indicated sophisticated awareness extending beyond immediate project concerns to industry-wide improvement potential. This finding suggested that professionals understood EVM could contribute to organizational learning and capability development through the benefits that transcended individual project boundaries. Such awareness aligned with knowledge management theory emphasizing the importance of systematically capturing and applying project lessons learned to enhance organizational performance over time. Stakeholder management benefits received substantial endorsement, with "Enhance Stakeholder Confidence" and "Reduces Disputes related to Delays or Cost claims" ranking highly. These benefits assumed particular importance in Nigeria's complex contracting environment where stakeholder conflicts frequently derailed projects. The objective performance metrics provided by EVM offered potential solutions to longstanding transparency and accountability challenges. Coker and Salami (2022) documented that stakeholder disputes in Nigerian construction often stemmed from information asymmetries and subjective performance assessments problems that EVM's systematic measurement approach could potentially mitigate. This benefit assumed particular importance in Nigeria's complex contracting environment, where multiple stakeholders often maintained different perspectives on project progress and performance.

Conclusions

The study provides empirical evidence that construction professionals in Ogun State possess a strong conceptual understanding of Earned Value Management (EVM) and its core performance indicators. Respondents consistently recognised EVM as an effective tool for improving cost control, schedule performance, and overall project governance. The findings confirm that EVM offers measurable value in addressing persistent challenges in Nigerian

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

construction projects, particularly cost overruns, weak accountability mechanisms, and inadequate performance tracking. Although awareness of EVM is high, its practical use remains limited due to organisational, technological, and contextual constraints. The study therefore concludes that while EVM holds significant potential for enhancing project delivery outcomes in Nigeria, realising its benefits will require targeted institutional and capacity-building efforts.

Implications

The study strengthens the theoretical position that EVM provides an integrated framework for assessing project performance by linking cost, schedule, and scope. The high level of professional awareness found in this study supports existing literature that advocates for wider EVM deployment in developing construction markets. With regards to practical implication, **t**he findings offer actionable insights for practitioners. Embedding EVM into routine project control processes can improve transparency, reduce uncertainty, and enhance the accuracy of performance reporting. Firms adopting EVM are likely to experience fewer cost-related disputes, improved team communication, and more predictable project outcomes. Policy implications, the results suggest a need for regulatory and institutional guidance. Government agencies, professional bodies, and public-sector procurement units may consider integrating EVM-based reporting requirements into project governance frameworks. Doing so would promote consistency in performance monitoring and strengthen accountability across the industry.

Research Limitations

The study was limited to construction professionals within Ogun State; therefore, the findings may not fully represent other regions with different levels of infrastructure development or managerial maturity. Reliance on self-reported data may also introduce bias, particularly given the high agreement rates recorded. The study examined perceived benefits of EVM rather than evaluating actual project data, which may limit the extent to which practical performance improvements can be inferred. Furthermore, the quantitative design did not allow for deeper exploration of organisational behaviour or cultural factors that may influence EVM adoption.

Recommendations

1. Strengthen technical capacity: Professional bodies and construction firms should adopt continuous training programmes focused on practical EVM application, data interpretation, and digital project control tools.
2. Integrate EVM into organisational systems: Firms should embed EVM into their project management procedures, supported by standardised reporting templates and digital platforms that facilitate accurate data capture.
3. Upgrade project monitoring infrastructure: Investments in digital project management systems and reliable data environments are essential for enabling effective EVM deployment.
4. Develop industry-wide guidelines: Policymakers and regulatory agencies should consider establishing minimum EVM requirements for public infrastructure projects to promote transparency and accountability.
5. Encourage further research: Future studies should examine EVM implementation across multiple states, explore its real-world performance impact, and adopt mixed-methods approaches to capture organisational and behavioural dimensions.

References

Abdulaziz, M., & Mohammed, H. (2020). Cost overruns and project delays in Nigerian construction industry: A systematic review. *Journal of Construction Management, 15*(3), 234-248.

Adebayo, T., & Ibrahim, S. (2023). Project performance challenges in Nigerian construction: An empirical investigation. Nigerian *Journal of Construction Technology, 8*(2), 145-162.

Adedamola, O., & Osibanjo, A. (2021). Infrastructure development and economic growth in Nigeria: The construction industry perspective. *African Development Review, 12*(4), 89-105.

Adekunle, O., & Okoro, C. (2023). Earned Value Management adoption in West African construction projects: Opportunities and barriers. *International Journal of Project Management in Africa, 5*(1), 67-84.

Adeleke, O., & Chukwuma, E. (2021). Traditional project monitoring approaches in Nigerian construction: Limitations and improvement strategies. *Construction Innovation Journal, 11*(3), 178-195.

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

Adeleke, O., Chukwuma, E., & Bello, A. (2022). Performance measurement systems in Nigerian construction projects: Current practices and future directions. *Built Environment Project and Asset Management, 12(*2), 234-251.

Adeniyi, O. (2023). Barriers to EVM implementation in Nigerian construction firms: An empirical study. *Journal of Construction in Developing Countries, 28(*1), 45-63.

Adewuyi, T., Idoro, G., & Ikpo, I. (2022). Contextual factors influencing project control systems in Nigerian construction. Engineering, *Construction and Architectural Management, 29*(4), 1456-1478.

Albert, I. and Ighodaro I.J., (2025b). Impacts of the Just-in-Time Management System in Construction Projects in Nigeria. *UNIZIK Journal of Engineering and Applied Sciences 5*(3), pp. 2851-2859.

Albert, I., Bilau, A. A., Osadola, A. O. and Olonilebi, P., (2025a). Factors Responsible for Non- Compliance to Regulatory Practices in the Nigerian Construction Industry. *Tropical Built Environment Journal, 11*(2), pp. 43-54.

Albert, I., Osadola, A.O. and Nathaniel. O.B., (2025c). Investigating the relationship between technology integration and construction management efficiency in project delivery. *International Journal of Environmental Design and Construction Management, 8*(4), pp. 33 – 49.

Bakare, O., & Bello, A. (2022). Integrating earned value management in Nigerian construction: A roadmap for implementation. *Journal of Construction Project Management and Innovation, 12(*1), 2345-2361.

Bala, K., & Adamu, M. (2023). Resource constraints and project control challenges in Nigerian construction SMEs. *International Journal of Construction Management, 23*(7), 1123-1139.

Bello, W., & Obi, L. (2022). Public sector construction projects and EVM adoption in Nigeria: Current status and future prospects. *Public Works Management & Policy, 27(*3), 234-251.

Chike, O., & Musa, A. (2024). Early warning systems in construction project management: The role of EVM. *International Journal of Project Organization and Management, 16*(1), 45-62.

Chukwuemeka, E., & Umar, S. (2024). EVM application in Nigerian oil and gas construction projects: Lessons for the broader industry. *Energy Policy and Management, 8(3),* 156-173.

Coker, O., & Salami, A. (2022). Institutional barriers to modern project management tools adoption in Nigeria. African *Journal of Economic and Management Studies, 13*(4), 567-584.

Collins, A.B. (2010), "English-medium higher education: dilemma and problems", *Eurasian Journal of Educational Research, 10*(9), 97-110.

Daramola, S., & Ayodele, E. (2023). Digital transformation in Nigerian construction: Barriers and enablers. *Technology in Construction, 15(*2), 123-140.

David, O., & John, K. (2024). Resistance to change in Nigerian construction organizations: Implications for EVM adoption. Change Management Review, 9(1), 78-95.

Egwuatu, C., & Okafor, E. (2024). Regional disparities in construction project management practices across Nigeria. *Regional Studies in Construction,* 6(2), 189-206.

Eke, C., & Ojo, A. (2024). Research methods in construction management: Best practices for developing economies. Research Methodology Quarterly, 18(2), 234-251.

Fleming, Q. W., & Koppelman, J. M. (2020). Earned value project management (5th ed.). Project Management Institute.

Green, B., & White, J. (2021). Construction industry development in Nigeria: The Ogun State perspective. Nigerian *Construction Review, 14*(3), 234-248.

Ibrahim, Y., & Olalekan, B. (2023). Integrated project control systems: The missing link in Nigerian construction. *Project Control Quarterly, 8*(4), 289-305.

Idowu, A., & James, I. I. (2025). Awareness of Just-In-Time Principles in the Nigerian Construction Industry. International Journal of Real Estate, pp.59-70. https://doi.org/10.5281/zenodo.17037840

Kumar, A., & Singh, R. (2023). Social desirability bias in construction management surveys: Detection and mitigation strategies. *Survey Research Methods, 17*(4), 456-473.

Musa, A., & Obi, L. (2021). Manual versus digital project control systems in Nigerian construction. Digital Construction Review, 5(2), 145-162.

National Bureau of Statistics. (2023). Nigerian construction industry statistical report 2023. NBS Press.

Nwabueze, C., & Okoro, C. (2020). International best practices in construction project control: Implications for Nigeria. *International Construction Review, 15*(4), 378-395.

Cite this article as:
Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044

Okoye, P., & Ugochukwu, S. (2021). Traditional versus modern project tracking approaches in Nigerian construction. *Construction Methods Quarterly, 13*(3), 267-284.

Olanrewaju, A., & Abdul-Aziz, A. (2017). Building maintenance processes and practices: The case of a fast-developing country. Springer.

Olayemi, K., & Odunlade, R. (2025). Infrastructure development trends in Ogun State: A five-year review. Nigerian *Infrastructure Quarterly, 17*(1), 45-62.

Olukemi, O., & Ibrahim, A. (2019). Resource utilization efficiency through EVM: Nigerian case studies. *Resource Management Quarterly, 11(*4), 345-362.

Onwuka, E., & Nnamdi, O. (2021). Public trust and construction project delivery in Nigeria. Public Administration Review, 81(5), 897-914.

PMI. (2023). The standard for earned value management. Project Management Institute.

Silva, L., Santos, M., & Costa, R. (2022). Performance indicators in construction project management: An EVM perspective. *International Journal of Construction Management, 22*(8), 1456-1473.

Yusuf, N., Olaniran, O., & Akintoye, A. (2025). Quantitative project assessment methods in developing economies. *International Journal of Project Management, 43*(1), 89-105.

Cite this article as:

Albert, I., Bilau, A.A., Osadola, O.A., & Baiyegunhi, C.M. (2025). Benefits of implementing earned value management in construction projects in Nigeria. *FNAS Journal of Basic and Environmental Research, 2*(4), 95-104. https://doi.org/10.63561/jber.v2i4.1044