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PROSPECTS OF CONSTRUCTION COST MANAGEMENT PRACTICES ON CONSTRUCTION FIRMS IN NIGERIA

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Abstract
Cost management practices have remained a vital aspect of project management function. Effective cost management improves project performance and the strategic performance of construction firms. This study aim to assess the prospects of construction cost management practices on construction firms in Nigeria The objectives of the study are to identify the prospects of construction cost management practices on construction firms; and to assess the magnitude of the impact of the prospects of construction cost management practices on construction firms; a structured questionnaire was used to elicit data from construction-related professionals. With recourse to 115 valid questionnaires retrieved representing 77% responses rate. Data were analyzed using simple percentile and mean score of 5-point Likert scaled responses. The results revealed that effective cost management play critical benefits in the construction performance of firms; its help to predict future expenses, ensures procurement effectiveness, improve profit maximization, enables the correction of changes that will impact projects outcome, help reduce wastages and expenses, improves operational efficiency need. Project managers should continuously upgrade their skills for effective cost management to boost the construction competitive position of their firms.

Keywords: cost management, construction firms, construction performance, construction projects, Nigeria.

Introduction
Client needs are generally in terms of time, cost and quality and indeed the project success radiates on these terms (Fagbenle & Owolabi, 2012). it is a complex task undertaken by construction firms/project managers in practice which constantly measuring progress, evaluating plans and taking corrective actions when needed (Kerzner, 2003). Construction firms are the major actors whose management experiences impact the project and customer satisfaction. according to Teja (2020), construction companies executes construction projects of public or private nature that requires proper management and coordination, continuous work progress, revenue generation and profitability, growth and survival of their businesses. A problem that is common in the construction sector is that of effective cost management of construction projects, it is one of the areas the contractor should focus on as it attempts to manage its project portfolio (Teja, 2020). A cost management practice involves all efforts in ensuring that construction projects are delivered within budget (Kim, 2002). Cost is a basic and critical project resource, and when there is the failure of construction firms to adequately manage these project resources from start to finish via monitoring and controlling. Barroso and Armando (2020) posit that cost management contributes to the development of strategies for attaining a competitive advantage. Despite that the construction stakeholders know how important project cost is, and the impact it has when properly managed. It is against this backdrop that this study assessed the prospects of construction cost management practices on construction firms in Nigeria.

This study is aimed at assessing the prospects of construction cost management practices on construction firms in Nigeria. In pursuit of this aim, the objectives of the study include:

1. to identify the prospects of construction cost management practices on construction firms;
2. to assess the magnitude of the impact of the prospects of construction cost management practices on construction firms;

It is understood that the outcome of this study will showcase how critical project managers and management of construction firms should take cost management function especially in meeting project baseline revenue drive and profit maximization and organizational goal of remaining competitive and surviving in the industry. Effective cost management helps to save cost and reduce unnecessary wastages and expenses that could impact value addition, future investments and job creation.

EFFECTIVE COST MANAGEMENT IN CONSTRUCTION PROJECTS

A key practice for staying competitive is effective cost management. Cost management involves all the processes for ensuring projects are delivered within the planned budget. The processes involved are planning, estimating, coordination, control and reporting of all cost –matters (Ashworth, 2010; Kern and Formoso, 2006). the benefit of effective projects cost management that have captured the attention of clients (public and private) are its ability to guarantee improved value for money and satisfaction of the clients (Gopalan and Venkataraman, 2015; Obi et al. 2017; Smith, 2014). Effective cost management can be achieved through a functional system that allows for accurate estimation of cost, planning, monitoring and controlling to keep the cost within budget (Kern and Formoso, 2004) Tejas (2020) advocated for holistic management of materials, plant and equipment; to ensure the cost of projects are kept within budget. Cost management according to Andre (2021), ensures that project cost performance is monitored, changes are corrected and changes that will impact cost are announced to project stakeholders, Effective cost management ensures that the health status of businesses is known via cost monitoring. This helps companies to make an informed decision that will bring sustainable growth and progress. helps to optimize the financial planning of the company. This makes the estimation and planning of expenditure more effective and efficient. Effective cost management helps to improve profit maximization and cost reduction on a project. Avoidable activities are eliminated to prevent unnecessary expenses that do not add value. Where the revenues are improved, profit maximized, more monies will be available for other investment opportunities. Cost management is not an easy task, as project managers would have to be confronted with a lot of issues that required proactive balancing to ensure that their impact on project success is minimized.

PROSPECTS OF CONSTRUCTION COST MANAGEMENT AND PROJECT PERFORMANCE ON CONSTRUCTION FIRMS

Effective project cost implementation can help project managers make clear the business expectation with stakeholders, scope creep is controlled, ensure that progresses are tracked and corrective action taken where the deviation is noticed, and ensure that return on investment is increasing, money losses are avoided, expected margins maintained. It also generates cost data for benchmarking potential future projects and the tracking of future long-term cost trends (Hexagon, 2020). According to the submission of EduPristine (2015), Cost management is vital for the following reasons; helps in decision making that impact the project objectives and organizational goals, help to reposition businesses for effectiveness, helps to establish overspending on an element or component, the long-term trends of a businesses can be analyzed, helps to predict future expenses, and project –specific costs and that of the businesses can be controlled. Bidkon (2021), Doeren (2020), and Zoe (2017) identified major benefits of cost management to include;

1 Reduction of expenses: project managers' utilities' the cost of resources into proper checks. the overall expenses of a company can be reduced through implementation of appropriate cost management techniques;

2 Improve operational efficiency: Cost management ensures that projects activities are managed based on a predetermined budget, to ensure the smooth running of organizational and project activities;

3 Procurement effectiveness: proper project cost management ensure that various vendors are identified and the most profitable one is selected for procuring materials and services that are economical and standard;

4 Streamline technological need: cost management helps to avoid the implementation of unnecessary technology that does not add value to the organization, but add to the overall expenditure of the company. These will enable the project manager to save the cost of other beneficial activities.

When there are cost savings in every activity, the cost saved is aggregated and invested in other businesses portfolios of the firms. The implementation of effective cost management systems by construction firms has an impact on their competitive advantages and survival in the construction firms. Cost management plays a critical role in determining the construction firms' strategic performance in the construction industry. Cost management is a strategic approach by businesses to ensure they are successful and competitive. It increases the competitive position of companies beyond the local areas, encourages the adoption of new technologies, changes businesses processes and makes management dynamic and vital in the industry (Rounaghi et al, 2021). Project managers and managers of construction firms should have a competitive attitude. All efforts of management should be targeted towards remaining relevant and competitive in the industry. Parameters that are considered in determining the success of a construction project is how well the project has fared in terms of cost, time and quality. Cost management is a strategic competitive tool for meeting and exceeding the needs of the clients and objectives of the projects.

Cost management is used to support the corporate strategy via the provision of information that the firm can use to better compete in the industry. As can be seen in Figure 1, the implementations of effective cost management practices have an impact on both the project and the implementing firms. On the construction projects, it ensures that projects are delivered within cost, time and quality with specifications and to achieve clients' satisfaction. Construction firms would experience improved revenue and profitability, business growth. The ultimate end of effective project cost management is the improvement of the strategic performance of the firms. Organizational, survival and sustenance is what drives cost management for the attainment of a higher competitive position in the industry.

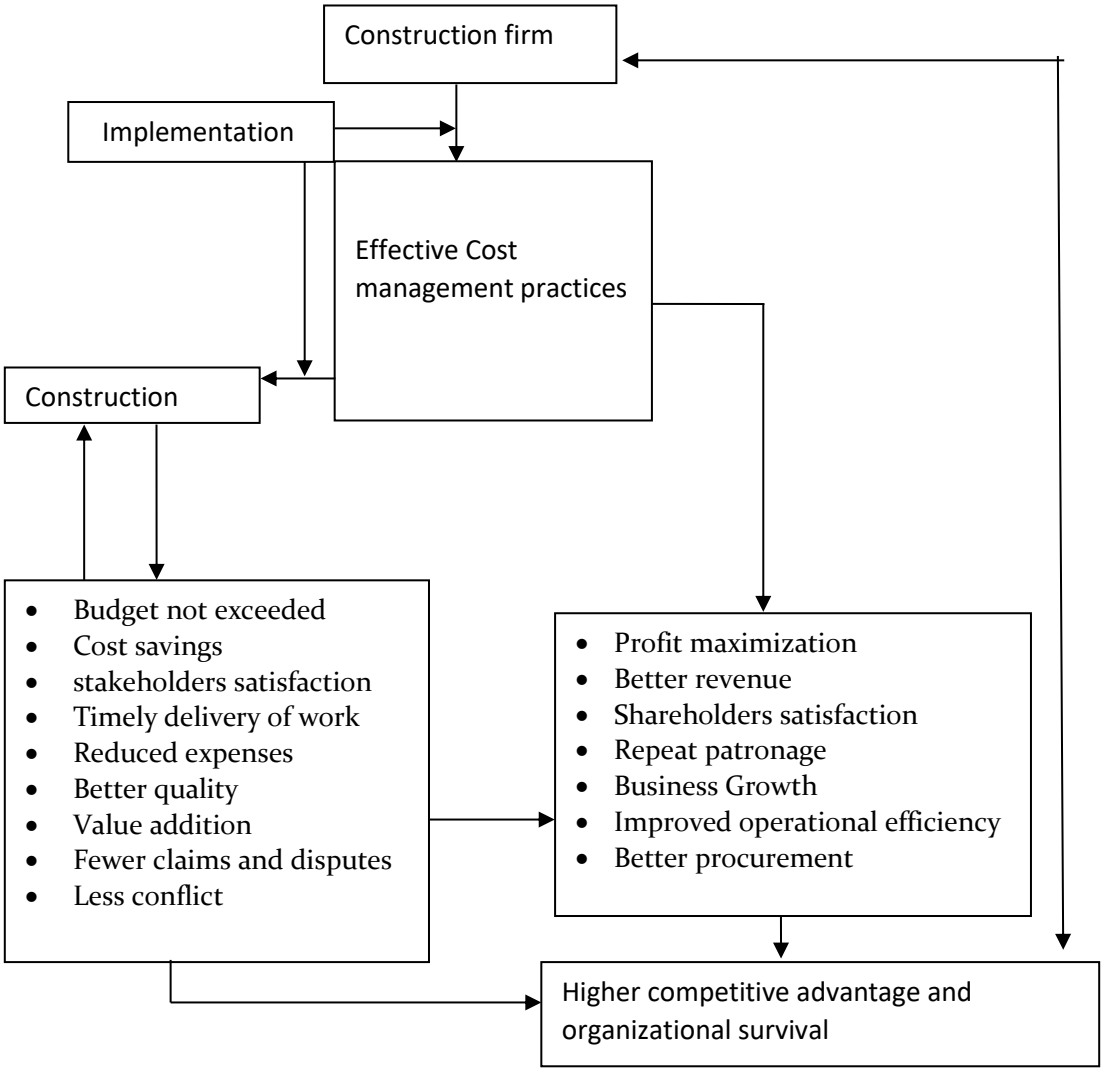


Figure1: Cost management and Construction Firms Project Performance Source

RESEARCH METHOD

This study deployed the survey methodology involving the use of structured questionnaire for data collection. A total of 150 questionnaires were administered to five groups of construction professionals namely Architects, Builders, Quantity Surveyors, Engineers, and Project Managers across the six states of North-central geopolitical zone of Nigeria comprising Kogi, Benue, Nasarawa, Plateau, Niger and Kwara states. The questionnaire comprises two sections namely A and B. Section A elicited background data about the respondents, while section B elicited data pertaining to the aim and objectives of the study.

For the analysis of data, combinations of quantitative tools were deployed. First was the frequency distribution tool for data classification (See Salvatore and Regeale, 2002), comprising frequency distribution tables, percentiles, arithmetic mean. The study adopted a variant of arithmetic mean known as the mean item score to obtain a quantitative equivalent of the average response provided by respondents in accordance with a 5-Point Likert scale. This Mean item score were targeted at analyzing and ranking the specific Benefits of construction cost management practices on construction firms identified in section 2.2 above. The formula for computing this variable is given as:

$$\text{Mean} = \frac{\sum fw}{\sum f} == \frac{(5\times f_5)+(4\times f_4)+(3\times f_3)+(2\times f_2)+(1\times f_1)}{f_5+f_4+f_3+f_2+f_1}$$

Where Σfw is the sum of the product of all weights and Σf is the total number of actual respondents.

Table 1: Criteria for the ranking of Benefits based on the mean item score

Range of Mean score	Interpretation
4.90 ≤ MIS ≤ 5.00	Very high impact
3.70 ≤ MIS ≤ 4.89	high impact
2.50 ≤ MIS ≤ 3.69	moderate impact
1.30 ≤ MIS ≤ 2.49	Low impact
0.00 ≤ MIS ≤ 1.29	Very low impact

Accompanying the mean item score as a tool of data analysis is the deployment of ranking of mean score. Hence, for the 5-point Likert scale where 5 is the highest score, and 1 being the lowest score, the ranking on the basis of the mean score was guided by the criteria indicated in Table 1.

DATA ANALYSIS, PRESENTATION AND DISCUSSION OF RESULTS

Questionnaire response rate

A total number of 150 questionnaires were distributed, 20 out of the total survey showed no response so that a total number of potential responses was 130 and total valid responses retrieved 115 questionnaires (representing 77% responses rate) were validated and adjudged to have been adequately completed in support of the data analysis.

Table 2: Background information about respondents

Category	Classification	Freq.	Percent (%)
Academic qualification of respondents	MSC/MTech/MEng	10	8.69
	PGD	25	21.74
	BSC/BTech/BEng	55	47.83
	HND	25	21.74
	Total	115	100.00
Professional affiliation of respondents	Architect	25	21.74
	Quantity Surveyors	50	43.48
	Engineers	10	8.69
	Builders	21	18.26
	Project managers	9	7.83
	Total	115	100.00
Years of experience in construction	1 – 5	5	4.35
	6 – 10	10	8.69
	11 – 15	25	21.74

	16 – 20	35	30.43
	21 – 25	40	34.79
	Total	115	100.00
	Average years of experience:		17.13 years
Type of organization / firms	Contracting	50	43.48
	Consulting	35	30.43
	Client	30	26.09
	Total	115	100.00

Source: Field Work, 2024

Background information about respondents

Table 2 indicates that holders of first degrees (BSc/BTech/BEng) constituted the highest category of respondents in the sample. It can be deduced from the highest academic qualification of respondents that they have attained a reasonable level of higher education necessary for the performance of their professional tasks. It is further deduced from Table 2 that Quantity Surveyors constituted the highest number of respondents owing to their active involvement in the pricing of building materials and contract execution process. The sample of respondents appear to have amassed an average of 17.13years' experience in the construction sector, whereas the modal class of between 21 and 25 years' experience implied that a substantial proportion of the respondents have amassed experience within the range of 21 to 25 years in the construction industry to avow a measure of authority in the responses they have availed in the course of the survey. The fourth item in Table 2 indicates that 50 (43.48%) are contractors, 35 (30.43%) are consultants, and 30 (26.09%) are clients. This result indicates that there is a high response rate from contractors compared to the other classes of respondents. It is evident therefore, that the data collected for analysis are reliable to form good basis for this study, judging from the distribution of respondents-and their experience in the construction firms.

PRESENTATION OF RESEARCH FINDINGS

It is observed from the result of data analysis presented in Table 3 that the top Fifteen (15) prospects that exert high impact on cost management practice include Help to predict future expenses ($\overline{X}$ = 4.65, SD = 0.563), Ensure procurement effectiveness ($\overline{X}$ = 4.61, SD = 0.573), Help to reduce wastage and expenses ($\overline{X}$ = 4.57, SD = 0.579), Improve profit maximization ($\overline{X}$ = 4.52, SD = 0.582), Enables the correction of changes that will impact project outcome ($\overline{X}$ = 4.48, SD = 0.583), Improve operational efficiency need($\overline{X}$ = 4.43, SD = 0.579), Generate cost data for benchmarking of potential future projects ($\overline{X}$ = 4.39, SD = 0.573), Lead to client satisfaction ($\overline{X}$ = 4.35, SD = 0.563), Improve value for money for the parties and this can lead to repeat patronage ($\overline{X}$ = 4.30, SD = 0.549), Help to reposition businesses for effectiveness ($\overline{X}$ = 4.26, SD = 0.531), Ensures that project cost performance is monitored ($\overline{X}$ = 4.17, SD = 0.482), Helps companies to make an informed decision that will bring sustainable growth and progress ($\overline{X}$ = 4.09, SD = 0.410), Project-specific cost and that of the businesses can be controlled ($\overline{X}$ = 4.00, SD = 0.296), The long-term trends of a businesses can be analyzed ($\overline{X}$ = 3.91, SD = 0.409), The financial health status of businesses is known via cost monitoring ($\overline{X}$ = 3.75, SD = 0.527), These benefits were observed to have indicated mean score in range: $3.70 \leq MIS \leq 4.89$.

In the second category are seven (7) prospects found to have exerted moderate impact on cost management practice pursuant to mean score in the range of $2.50 \leq MIS \leq 3.69$. These prospects include Ensures that return on investment is increases ($\overline{X}$ = 3.63, SD = 0.382), help project managers make clear business expectations with stakeholders ($\overline{X}$ = 3.52, SD = 0.583), Streamline technological need ($\overline{X}$ = 3.39, SD = 0.645), Help to establish overspending on an element or component ($\overline{X}$ = 3.22, SD = 0.723), Help to optimize financial planning of the company ($\overline{X}$ = 3.04, SD = 0.754), Help in decision making that impact the project objectives and organizational goals ($\overline{X}$ = 2.87, SD = 0.744), Scope creep is controlled ($\overline{X}$ = 2.70, SD = 0.690) respectively.

Table 3: Prospects of Construction Cost Management Practices on Construction firms

S/N	Prospects of Construction Cost Management	Total	Mean	StDev	Rank
1	Helps to predict future expenses	115	4.65	0.563	1st
2	Ensures Procurement effectiveness	115	4.61	0.573	2nd
3	Help reduce wastage and expenses	115	4.57	0.579	3rd
4	Improve profit maximization	115	4.52	0.582	4th
5	Enables the correction of changes that will impact project outcome	115	4.48	0.583	5th
6	Improve operational efficiency need	115	4.43	0.579	6th
7	Generates cost data for benchmarking of potential future projects	115	4.39	0.572	7th
8	Lead to client satisfaction	115	4.35	0.562	8th
9	Improve value for money for the parties and this can lead to repeat patronage	115	4.30	0.549	9th
10	Help to reposition businesses for effectiveness	115	4.26	0.531	10th
11	Ensures that project cost performance is monitored	115	4.17	0.482	11th
12	Helps companies to make an informed decision that will bring sustainable growth and progress	115	4.09	0.410	12th
13	Project – specific cost and that of the businesses can be controlled	115	4.00	0.296	13th
14	The long-term trends of a businesses can be analyzed	115	3.91	0.409	14th
15	The financial health status of businesses is known via cost monitoring	115	3.75	0.527	15th
16	Ensure that return on investment is increases	115	3.63	0.382	16th
17	Help project managers make clear businesses expectations with stakeholders	115	3.52	0.583	17th
18	Streamline technological need	115	3.39	0.645	18th
19	Helps to establish overspending on an element or component	115	3.22	0..723	19th
20	Help to optimize financial planning of the company	115	3.04	0.754	20th
21	Helps in decision making that impact the project objectives and organizational goals	115	2.87	0.744	21st
22	Scope creep is controlled	115	2.70	0.690	22nd

Source: Field Work, 2024.

Based on the results of mean item score ranking, the assessed variables of cost management practice have a very high prospect to construction projects and firms. The mean item score ranged from ($\overline{X}$ = 4.61, SD = 0.573), to ($\overline{X}$ = 3.75, SD = 0.527), with an average mean item score of ($\overline{X}$ = 2.87, SD = 0.744), to ($\overline{X}$ = 2.70, SD = 0.690) respectively. Therefore, cost management is highly beneficial in the construction industry.

Cost management plays a critical role in determining the construction firms' project performance in the construction industry. Cost management is a strategic approach by businesses to ensure they are successful and competitive. It increases the competitive position of companies beyond the local areas, encourages the adoption of new technologies, changes businesses processes and makes management dynamic and vital in the industry. The prospects of cost management practice on construction organizational growth and survival is well acknowledged in the reports of (Rounaghi et al., 2021; EduPristine, 2015; Bidkon, 2021; Doeren, 2020).

CONCLUSION AND RECOMMENDATIONS

The study found that the top fifteen prospects of construction cost management practices on construction firms are; helps to predict future expenses, ensures procurement effectiveness, help reduce wastage and expenses, improve profit maximization, enables the correction of changes that will impact project outcome, improves operational efficiency need, generate cost data for benchmarking of potential future projects, lead to client satisfaction, improve value for money for the parties and this can lead to repeat patronage, help to reposition businesses for effectiveness, ensures that project cost performance is monitored, helps companies to make an informed decision that will bring sustainable growth and progress, project-specific cost and that of the businesses can be controlled, the long-term trends of a businesses can be analyzed and the financial health status of businesses is known via cost monitoring. It was concluded that the effective implementation of cost management practices has a very high impact on the survival and sustenance of construction firms.

Beside the aforementioned, the outcome of this study is critical to the success of the project managers who are vested with the responsibility of ensuring that projects are delivered within baselines, and that profit is maximized and organizational goals and survival is maintained.

REFERENCES

Andre, K. (2021). The Importance of Cost Control in Project Management Available at: https://planyard .com/en-gb/blog/the-importance-of-cost-control-in-project-management

Ashworth, A. (2010), Cost Studies of Buildings, 5th ed., Pearson Prentice Hall, Harlow.

Barroso, Y., & Armando, S.J. (2020) Analysis of Strategic Cost Management Assisting in Decision Making: A Case Study of a company That Provides Cleaning, Conservation and Sanitation Services, International Journal for Innovation Education and Research, 8(06), 481-501. DOI: https://doi.org/10.31686/ijier.vol8.iss6.24 – 45

Bidkon(2021). 5 Benefits of Project Cost Management. Available at: https://bidkon.com/5-benefits-of-project-cost-management.

Doeren, M.(2020). 4 Benefits of Cost-Control Management Available at: https://doeren.com/4-benefits-cost-control-management.

EduPristine(2015). Cost Management: Meaning, Techniques & Advantages. Available at: https://www.edupristine.com/blog/cost-management-in-detail

Fagbenle, O.I., and Owolabi, J. D.(2012).''Developing a realistic budget for construction projects: Lessons from Nigeria '' *International Review of Business & Soc. Sc*., 1(3), 17-23.

Gopalan, K. & Venkataraman, M.(2015). Affordable housing an academic perspective on policy and practice in India IIMB Management Review, 29(7), 129-140

Hexagon,(2020). Project Cost Management: Steps, Basics and Benefits. Available https://www.ecosys.net/knowledge/project-cost-management/

Kerzner, H., (2003).''Project Management: A systems Approach to Planning, Scheduling, and Controlling'' John Willey and Sons Inc. New Jersey

Kerm, A.P., & Formoso, C.T., (2006). A model for integrating cost management and production planning and control in construction. Journal of Financial Management of Property and Construction, 11(2), 75-90

Kern, A.P., & Formoso, C.T., (2004). Guidelines for improving cost management in fast, complex and uncertain construction projects, A paper presented at the 12th Conference of the International Group for Lean Construction Helsingborg

Kim, Y. (2002). The implication of a new protection paradigm for project cost control. Unpublished Ph. D. Thesis, University of California, California, USA

Obi, L., Arif, M., & Kulonda, D. J.(2017). Prioritizing cost management system considerations for Nigerian housing projects. Journal of Financial Management of Property and Construction 22(2), 135-153.doi: 10.1108/jfmpc-06-2016-0025

Rounaghi, M.M., Jarrar, H., & Dana, L., (2021). Implementation of Strategic cost management in manufacturing companies: overcoming costs stickiness and increasing corporate sustainability. Future Business Journal, 7(31), 1-8

Salvatore, D. and Reagle, D.(2002) *Schaum's outline series of theory and problems of statistic and Econometrics* (2nd. Ed.). New York: McGraw.

Smith, P. (2014). Project Cost Management - Global Issues and Challenges. Procedia – Social and Behavioral Sciences, 119, 485-494. Doi: 10.1016/j.sbspro.2014.054

Tejas, S.B. (2020). Importance of Proper Cost Management in Construction Industry International Research Journal of Engineering and Technology, 07(01), 764-766

Zoe, T.S. (2017), 4 benefits of Cost-Control Management. Available at: https://zoetalentsolutions.com/4awesome-benefits-cost-control-management/