

Strategic Leadership and Sustainable Project Management in Enugu, Nigeria

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Abstract—The study investigates the connection between strategic leadership and project management sustainability, with an emphasis on building projects Nigeria. The study set out to accomplish two specific goals: first, it sought to establish a link between creative project management and resource efficiency in construction projects in Nigeria; and second, it sought to establish a link between innovative thinking and waste minimization in those same projects. A structured questionnaire was used to collect primary data from 45 registered construction enterprises in the study area as part of the study's descriptive research approach. Due to the nonparametric nature of the data, Spearman Rank Order Correlation was used to evaluate the acquired data. The findings demonstrate that creative project management had a significant positive impact on resource efficiency in construction projects carried out by project management firms ($r = .849$; $p.001$), and that innovative thinking had a significant impact on waste reduction in those same projects ($r = .849$; $p.001$). It was determined that strategic leadership had a significant impact on the sustainability of project management, and it was thus advised that project managers should foresee, prepare for, and effectively communicate present and future developments to project staff in order to ensure that the objective of sustainable initiatives, such as recycling and reuse, is implemented in construction projects.

Keywords—Construction, project management, strategic leadership, sustainability, waste reduction.

I. INTRODUCTION

THROUGH the creation of jobs, infrastructure, and facilities that support other economic sectors, the construction industry has grown significantly in importance as a key factor in the socio-economic growth of many countries [1]. Construction projects become more complicated and larger as a result of this increased relevance, necessitating the use of good project management to guarantee on-time delivery, cost-effectiveness, and adherence to sustainability objectives. A significant portion of the population in Nigeria is employed by the sector, which contributes between 3% and 4% of the country's GDP [2]. The construction industry is also facing heavy criticism for its poor sustainability practices, which have led to waste creation, environmental deterioration, and inefficiency [3]. This criticism is in addition to the challenges mentioned above. Sustainable building methods are employed to lessen the negative environmental effects of construction projects and to create constructed environments that are environmentally friendly, resource-efficient, and socially responsible [4]. Decision-making procedures must consider environmental, social, and economic issues at every step of a

project's lifetime in order to apply sustainability in construction project management [5].

In general, a number of significant elements can influence how successful a project management effort is. Because project managers depend on senior leaders to guide them in achieving project goals and overcoming challenges, top management's commitment to exhibiting effective leadership is crucial [6]. Despite this justification, there has not been much research on the relationship between strategic leadership and long-term project management in Nigeria's construction sector, particularly in Enugu [7]. Southeast Nigerian metropolis of Enugu has recently experienced a significant urbanization and industrialization process [8], [9]. As a result, there are more building and infrastructure projects being undertaken. At every stage of a project's lifecycle, economic factors play a role [5].

Despite these developments, there have been concerns about project management practices that are not sustainable and have been connected to issues with quality, cost overruns, abandonment, and completion delays [10]. Addressing the research gap could offer insights for improving sustainable practices through strategic leadership, given the significance of construction to Nigeria's economy and the need to solve its sustainability concerns. In light of the aforementioned, the purpose of this study is to determine how strategic leadership influences the sustainability of project management in Nigeria. There is a knowledge gap about the impact of strategic leadership practices on the long-term execution and success of building projects as a result. This discrepancy is crucial because, in the absence of sufficient local empirical evidence, building project management businesses in the State can adopt strategic leadership concepts based only on speculation. It becomes necessary to create empirical data to support the relationship between strategic leadership and project management sustainability in Nigeria.

This study intends to fill this gap by exploring how strategic leaders might promote sustainable results through their decisions and actions in a Nigerian context. Closing this gap has the potential to contribute to theoretical knowledge and practical insights that can guide decision-making and policy formulation in the Nigerian construction industry with the specific goals of determining the relationship between innovative project coordination and resource efficiency of construction projects in Nigeria, and establishing the relationship between creative thinking and waste reduction in construction projects.

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II. REVIEW OF RELATED LITERATURE

The development of infrastructure, urbanization, and economic expansion are all significantly influenced by the worldwide construction industry. Strategic leadership and project management techniques are crucial in this situation for assuring the viability and success of building projects. This position is especially necessary in developing nations like Nigeria, where the construction industry faces many difficulties due to resource shortages, environmental degradation, and ineffective project management, despite playing a significant role in the country's economic development [11]. Developing a shared vision, coordinating resources, and encouraging teamwork are all aspects of strategic leadership [12]. The strong strategic leaders accomplish this through inspiring and motivating their people, fostering an innovative culture, and fostering continuous learning and improvement lends support to this. Strategic leadership can guarantee that construction projects are completed on schedule, under budget, and with the least amount of environmental damage possible [13]. The prospects and potentials for sustainable project management are likely once these are accomplished. Resource efficiency in building projects is acknowledged to be a key goal that can only be attained through efficient project coordination, particularly under the direction of visionary leaders. Setting specific objectives, creating a common vision, and matching project activities to organizational strategy are all components of visionary project coordination [14]. Setting up a project with a clear, motivating vision and successfully managing resources to accomplish the intended results are both required. Strong teamwork, excellent communication, and strong leadership are necessary for this to happen [14]. Therefore, visionary leaders are those who establish clear objectives, encourage and inspire teams, and guarantee adherence to the project's long-term aims.

Visionary leaders can forge a shared vision that minimizes resource waste and optimizes resource allocation supports this point of view. According to this theory, these leaders encourage team members to innovate and use resources efficiently [15]. The transformational leadership model highlights the significance of visionary leaders in establishing a culture of innovation, flexibility, and efficiency, which further accords with the assumption [16]. Strategic planning, efficient resource allocation, and ongoing monitoring and assessment are frequently stressed in the literature in this field [17]. They look at how different project management techniques, such Agile and Lean, can be used to improve project outcomes and resource usage. In addition, several research [18] emphasize the value of leadership traits like vision, adaptability, and the capacity to foresee and reduce potential hazards.

According to the evaluation, visionary project coordination includes the capacity to envision long-term goals and foresee future trends, manage risk, and strategically plan to connect project objectives with a larger vision. With the potential to minimize waste and improve project outcomes, innovation has emerged as a driving force for sustainable construction. According to the research, firms that support an innovative culture are more likely to find and successfully apply waste reduction techniques. This statement is supported by studies by

[19] and [20], which place special focus on the idea that creative problem-solving can result in the adoption of cutting-edge building techniques, materials, and procedures that reduce waste production. So, innovative thinking entails questioning established procedures, investigating cutting-edge technologies, and utilizing environmentally friendly strategies. The adoption of Building Information Modeling (BIM) technology is one of the examples used to support the value of innovative thinking.

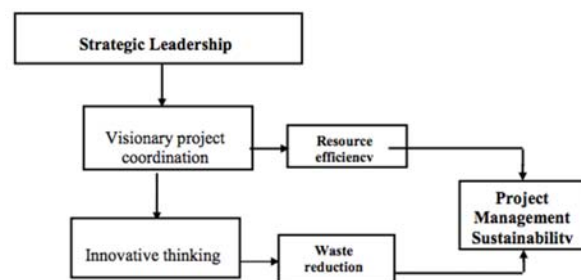


Fig. 1 Conceptual Framework

According to [21], the use of cutting-edge techniques like BIM has improved waste reduction through better planning, cooperation, and decision-making. In academic studies, the term "circular economy" is also covered. This idea intends to reduce waste production and increase resource efficiency through practices including recycling, reusing, and remanufacturing [19]. Reducing trash at its source, recycling, and managing waste management expertise are all part of waste reduction. The conceptual framework is presented graphically in Fig. 1.

A. Theoretical Framework

The theories of [22] and [23] on transformational leadership place a strong emphasis on the leader's capacity to move followers beyond self-interest and toward the greater benefit of the group or society. Strategic leaders convey a vision that inspires and drives people toward sustainable performance goals, making this theory applicable to the study. When sustainability goals are established, they inspire followers to adopt the organizational vision as their own, boost motivation, and match followers' needs with goals and objectives.

Nigeria's construction sector urgently needs to make the transition to sustainable development; as a result, it may call for transformational leaders who can train, empower, and engage staff in sustainability projects to ensure their full support and dedication to such reforms. The notion is predicated on the idea that a strategic leader who wants to accomplish a certain goal must have a vision, communicate that vision, and have the ability to make that vision a reality. In light of the discussion, the study employed this theory's claims in an analysis of the connection between strategic leadership and project management sustainability as a way to confirm or deny its hypotheses in the research domain.

B. Empirical Review

Moderating role of corporate citizenship behavior in the

relationship between visionary leadership and employee performance inside a business is essential [24]. Employees in the service industry in the Pakistani cities of Rawalpindi and Islamabad provided information for the study. Using practical sampling, 275 of the 350 distributed questionnaires were filled out and returned. Regression analysis was used to evaluate the hypotheses using SPSS and AMOS, and the results showed that there were significant correlations between the variables. Reference [25] looked into the relationship between visionary leadership and corporate social performance in a few Nigerian microfinance institutions.

The 75 senior microfinance bank workers were included in the study because they could offer the most insightful information relevant to the goals of the research. Data was gathered using a Likert scale with five options, from "strongly disagree" to "strongly agree," and was then analyzed using multiple regression and Pearson correlation methods with SPSS 17 statistical software. The results show a tenuous and negligible positive correlation between corporate social performance, employee satisfaction, environment, and visionary leadership. By examining how the degree of strictness in environmental rules effects innovation within a European cross-country setting, [26] evaluated the less forceful interpretation of the Porter hypothesis in the context of waste management.

C. Summary of the Review of Related Literature

There is a void in the literature discussing the specific benefits that strategic leadership has on project management sustainability, despite the extensive research on its impact on companies. There has not been much research done specifically on how strategic leadership affects resource efficiency and waste reduction, especially in the Nigerian construction industry, but these characteristics include innovative project coordination and visionary project management. This demonstrates the paucity of research on the moderating factors included in the study and how they might affect Nigeria's project management sustainability.

Additionally, the majority of research on strategic leadership and sustainable performance concentrated on private sector commercial organizations, with the construction sector receiving little consideration. Due to the construction industry's considerable involvement in environmental degradation issues, it operates in a special project environment that necessitates them balancing property development interests with social duties. By filling in these gaps, the study is able to add to the body of knowledge on strategic leadership and offer helpful advice to academics and professionals in the field of construction project management who want to improve the sustainability of their project deliverables.

III.METHODOLOGY

The research design used in the study was descriptive. In order to gather information from primary sources about the relationship between strategic leadership and project management sustainability, the census method was used. Data from primary sources, which were collected through the use of

a questionnaire, were used in the study; 45 professionals who work for licensed project management companies in the research area make up the population. Holistic sample of the population was used because of the manageable nature of the number. As a result, the research tool was made available to every participant in the study. Four supervised research assistants distributed a 5-point Likert Scale structured questionnaire as the research instrument to architecture companies in the study area. Utilizing the opinions of three management experts, the study used content validity to confirm the instrument's inclusion and relevance to the discussion of strategic leadership and project management sustainability. The Cronbach alpha coefficient was used as the test statistic in an internal consistency test to evaluate the instrument's reliability. The test-retest methodology was used in the study. To determine the relationship between strategic leadership and project management sustainability within the context of projects management, data were presented with tables and analyzed using Spearman Rank Order correlation. Due to the nonparametric character of the data, Spearman was utilized.

IV.DATA PRESENTATION AND ANALYSIS

A. Questionnaire Administration

A total of 145 copies of the questionnaire were distributed to the respondents in accordance with the population sample; as shown in Table I, a total of 140 copies were subsequently collected from the respondents.

TABLE I
 PERCENTAGE ANALYSIS OF RESPONDENTS RESPONSE RATE

Total number of copies of the questionnaire administered	145
Total number of copies of the questionnaire returned	140
Response Rate $\frac{140}{145} \times \frac{100}{1}$	96.55%
Non response rate 100% - 96.55% (140 copies)	3.45%
Total (%)	100%

The questionnaire was distributed in a total of 145 copies, of which 140 were fully completed and returned, while five copies were ineligible for analysis (Table I).

B. Presentation of Research Questions

The investigation of the relationship between strategic leadership and project management sustainability among projects managed by design companies in Nigeria, was the main focus of the research topic. According to the study's objectives, the results from the distribution of the Likert-scale questionnaire are displayed in weighted mean Tables II and III.

Table II shows that construction project management firms were highly regarded for their visionary project coordination, with a weighted mean of 3.45, although respondents also admitted that the companies had, to some extent, attained optimal resource efficiency, as shown by a weighted mean of 3.39.

While conceding a greater outcome of waste reduction (3.42), Table III reveals that innovative thinking is above average in the construction project management organizations under consideration (3.2). This information is used in the

following part to examine the relationships between the variables.

TABLE II
VISIONARY PROJECT COORDINATION AND RESOURCE EFFICIENCY OF CONSTRUCTION PROJECTS IN NIGERIA

S/n	Options	Strongly Agree 5	Agree 4	Undecided 3	Disagree 2	Strongly Disagree 1	Weighted Mean 5.0
	Independent Variable – Visionary Project Coordination						3.45
1	Firm anticipates future market trends, technological advancements, and societal changes that could impact the project's outcomes during project planning	28	54	14	22	22	3.31
2	Managers incorporate flexibility to adapt to changing circumstances while staying true to the project's visionary goals	41	59	0	22	18	3.59
	Dependent Variables – Resource Efficiency						3.39
3	Futuristic vision of the firm has streamlined processes to eliminate inefficiencies, reduce resource consumption, and enhance productivity	28	52	11	35	14	3.32
4	Flexibility of management considers the incorporation of renewable energy sources and energy-saving technologies wherever possible.	26	62	16	22	14	3.46

TABLE III
INNOVATIVE THINKING AND WASTE REDUCTION IN CONSTRUCTION PROJECTS IN NIGERIA

S/N	Options	Strongly Agree 5	Agree 4	Undecided 3	Disagree 2	Strongly Disagree 1	Weighted Mean 5.0
	Independent Variable – Innovative Thinking						3.2
1	Firm provides resources and opportunities for continuous learning and exposure to diverse ideas.	32	58	12	22	16	3.49
2	Managers promote experimentation and provide a safe environment for taking calculated risks on project sites	14	31	28	62	5	2.91
	Dependent Variables – Waste Reduction						3.42
3	Firm has a policy and program for waste recycling and reuse in construction projects	18	54	14	38	16	3.14
4	Firm innovativeness has led to the design of processes and implementation of products that generate minimal waste	48	44	18	18	12	3.7

TABLE IV
CORRELATIONS MEASURES

Correlations		Visionary project coordination	Resource efficiency
Visionary project coordination	Correlation Coefficient	1.000	.849**
	Sig. (2-tailed)	.	.000
	N	140	140
Resource efficiency	Correlation Coefficient	.849**	1.000
	Sig. (2-tailed)	.000	.
	N	140	140

** . Correlation is significant at the 0.01 level (2-tailed).
Source: SPSS 19.0

TABLE V
CORRELATION MEASURES ON RELATIONSHIP BETWEEN INNOVATIVE THINKING AND WASTE REDUCTION

Correlations		Innovative thinking	Waste reduction
Innovative thinking	Correlation Coefficient	1.000	.817**
	Sig. (2-tailed)	.	.000
	N	40	40
Waste reduction	Correlation Coefficient	.817**	1.000
	Sig. (2-tailed)	.000	.
	N	40	40

** . Correlation is significant at the 0.01 level (2-tailed).
Source: SPSS 19.0

C. Test of Hypothesis One

According to Hypothesis 1, there is a significant correlation between resource efficiency and visionary project coordination in Nigeria. In Table IV, Spearman correlation analysis was used to investigate this.

The correlation matrix for the relationship is shown in Table IV, along with the correlation coefficients, significant values, and number of cases. As seen by the correlation coefficient, which is 0.849, the correlation is significant at the 0.00 level (2-tailed). Therefore, resource efficiency in building projects

carried out by architecture firms in Nigeria, is significantly improved by visionary project coordination ($r = .849$; $p.001$).

D. Test of Hypothesis Two

The second hypothesis claims that there is a significant connection between creative problem-solving and waste minimization in construction projects in Nigeria. As shown in Table V, Spearman correlation was utilized to test the hypothesis at a 5% level of significance.

Table V contains the correlation matrix, which displays the correlation coefficients, significant values, and number of cases for the correlation between the two variables. According to the correlation coefficient, which is 0.817, there is significant correlation at the 0.00 level (2-tailed). Therefore, creative thinking significantly reduces waste in project firms' construction projects in Nigeria ($r = .849$; $p.001$).

V. DISCUSSION OF RESULTS

The study's initial goal was to ascertain how resource efficiency in construction projects carried out by companies in Nigeria was affected by visionary project coordination. The outcomes show a sizable beneficial impact. The outcome backs with the findings of [27] who discovered substantial positive connections between the factors and a weak and insignificant positive association between the variables in Nigeria pointed out by [28], which was contrary to the findings of the study. The study's second goal was to ascertain how innovative thinking affected waste reduction in building projects carried out by companies in Nigeria. The findings show a strong positive correlation between the factors. This result is consistent with empirical theory in [25] and previous work by [29]

VI. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Regarding the study's objectives, this was said.

- a. Construction projects, visionary project coordination significantly improved resource efficiency ($r = .849$; $p.001$).
- b. Waste reduction in construction projects by construction businesses in Nigeria, was significantly impacted by innovative thinking ($r = .849$; $p.001$).

The results indicate that, in order to achieve continuing sustainability of the projects, new thinking must be linked with vision in order to promote resource efficiency and waste reduction in building projects. Based on the study's findings, it was determined that strategic leadership significantly improved project management sustainability in Nigeria. The study recommends that the objective of sustainable initiatives is achieved in construction projects and ensure that staff members are committed to fresh ideas that would improve the project's contribution to the wellness of the environment as a whole, strategic project leaders should foster an environment of psychological safety.

VII. CONTRIBUTION TO KNOWLEDGE

The work significantly advances both theoretical and empirical understanding. By incorporating innovative project

management techniques and visionary project coordination in a developing economy, it advances knowledge by expanding the definition of strategic leadership. Additionally, it showed a strong link between a psychologically safe atmosphere and the success of sustainability measures in surroundings related to construction projects. This is expected to have influenced policy and practical implementations and added to the body of knowledge in the debate.

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