



STRATEGIC FORESIGHT, SYSTEMS THINKING AND STRATEGIC VISION AS CORRELATES OF ORGANIZATIONAL COMPETITIVENESS AMONG SELECTED CONSTRUCTION AND INFRASTRUCTURE FIRMS IN THE FEDERAL CAPITAL TERRITORY, ABUJA

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DOI: <https://doi.org/10.67862/jmres.2026.pnd750pv>

Keywords:

Strategic intelligence;
Strategic foresight; Systems thinking; Strategic vision;
Organizational competitiveness

Article History:

Received: 15 August 2026

Revised: 18 September 2026

Accepted: 18 September 2026

Published: 27 September 2026

Article Info:

Homepage:

<https://jmres.org.ng>

Volume: 1, No. 1, 2026

Pages: 29-46

ABSTRACT

The construction and infrastructure industry is very competitive, and the demands of clients, project risks, pressure to cut costs, technological advances, and competition between firms demand smart, future-focused decision making. Motivation and partnership, which are two other strategic intelligence dimensions according to Maccoby (2011) were not considered in this study. The study used a cross-sectional survey design and quantitative approach. The study surveyed all the senior strategic decision-makers in the 9 purposively selected construction and infrastructure companies in Abuja and analyzed the data with partial least squares structural equation modelling (PLS-SEM). Strategic foresight, systems thinking and strategic vision were all statistically significant and positively related to organizational competitiveness ($\beta = 0.373, 0.270$ and 0.267 respectively; $p < 0.05$) and accounted for 75.3 per cent of the variance. The difference in size of coefficients in the discriminant validity assessment is reported descriptively, as the three predictors had high inter-correlation (HTMT up to 0.958) and elevated collinearity (VIF up to 5.59), and do not necessarily indicate that one dimension is most important. The results indicate that strategic foresight, system thinking, and strategic vision are linked to increased competitiveness in the firms. The study suggests the following measures to bring strategic intelligence into the formalization process: Periodic vision review, integrated cross-functional planning, and periodic environmental scanning to support proactive decision-making and competitive position.

Introduction

Organizational competitiveness is the ability of a company to achieve a competitive situation in comparison with the other companies, based on service quality, innovation, customer satisfaction, operational efficiency and sustainable value generation. Building and infrastructure companies face an environment of competitiveness as factors influence their business, including various client demands, project risk, cost pressure and technological changes. The more theoretically interesting problem tackled by this study is why, in a project-based industry where the literature on strategic intelligence is virtually nonexistent, are there certain capabilities of strategic intelligence that are more important than others for competitiveness.

Whereas digital transformation has impacted competitiveness globally, companies in the construction and infrastructure industry are no longer competing based purely on construction processes. Digital transformation has changed the rules of the game, so that firms in the construction and infrastructure industry are no longer competing solely on the basis of construction processes, but also on the basis of building information modelling, project management software, prefabrication and sustainable construction methods. Competitive strategies and innovation have been identified as affecting the emergence of competitive advantage, while the capability of the organizations has been found to have a stronger effect on the relationship between competitive strategies and performance (Farida & Setiawan, 2022; Chong & Ali, 2022).

As urbanisation, urban competition, increasing regulatory demands, and cost of materials increase, construction and infrastructure has been growing in Africa, as well as in Nigeria. In Africa and Nigeria, the construction and infrastructure industry has been expanding in line with increased competition from urbanisation and urban demand, cost of materials, and regulatory requirements. The Nigerian construction industry represented about four per cent of Gross Domestic Product (GDP) in 2024, with most of the contribution coming from public infrastructure projects and the nation's infrastructure deficit is estimated to be worth three trillion dollars over the next thirty years (Agusto & Co., 2025). For the Federal Capital Territory specifically, Federal Capital Development Authority (FCDA) is tasked with planning, compliance to regulations and delivery of infrastructure in Abuja, while project quality, cost control, delivery time and innovation are emerging as key competitiveness indicators for firms operating in the city.

The evidence on intelligence-related capabilities in Nigeria has been mainly from the telecommunications sector, with Chukuigwe (2018), who studied the relationship between strategic intelligence and telecom sector performance in Rivers State, Nna-Emmanuel and Nwogu (2023) who used the same constructs and firms but a different sample and time period, the one in Bayelsa State was studied by Tamunosiki-Amadi and Ebisinkemefa (2024) and the one in South-South Nigeria by Nwinye (2025). These studies provide some important contextual evidence in Nigeria, but such a contextual gap (between telecommunications and construction) does not necessarily constitute a strong theoretical contribution. For this reason, this study puts forward its contribution in three aspects. Empirically, there is limited evidence of strategic intelligence and competitiveness of Nigerian Construction and Infrastructure companies in particular. In the context of the evidence, the current studies focus on telecommunications and do not ask whether these relationships exist in a project-based, tender-driven, procurement-exposed project environment, where a tender win or loss is a discrete competitive event, rather than a continuous subscriber relationship as occurs in telecommunications. Existing research does not provide a sufficient explanation, as the contextual argument doesn't provide it, of which strategic intelligence capabilities are most important and why their impact

should be different, largely treating strategic intelligence as a monolithic construct. It is this theoretical gap that this study fills beyond a change of sector, as discussed in the Theoretical Framework below.

Strategic intelligence is closely linked to the competitiveness of the organization, as organizations must know what to do if they receive signals from the competition. The need for strategic intelligence has been found to be relevant to strategic success in an organization that operates in a competitive environment as illustrated in the case study of Asiacell Telecommunications Company (Alwan & Najmaldeen, 2024).

As theorised by Maccoby (2011), strategic intelligence is a five-part leadership competency that includes strategic foresight, systems thinking, strategic vision, motivation and partnership. This calls into question the construct itself and this study explicitly addresses it: does strategic intelligence as a whole or only three of its five dimensions get tested here and if only three dimensions, are they related to each other or distinct? Does this study test three related but distinct antecedents to competitiveness, all of which happen to be taken from Maccoby's typology? This page uses the second position. It does not measure, verify or calculate a single higher-order variable called "strategic intelligence", but rather tests three variables that are theoretically related and are separately measured and reported as predictors of organizational competitiveness: strategic foresight, systems thinking and strategic vision. There is a theoretical difference between the three retained dimensions and the two excluded ones, which is that foresight, systems thinking and vision are cognitive and informational aspects of a firm's toolbox, relating to how it reads its surroundings, structures information between the firm's parts, and uses its understanding to guide the firm's direction, while motivation and partnership are relational and people-centred aspects of a firm's toolbox, relating to how it inspires employees and builds external alliances. The three dimensions retained are the ones most closely related to the concern of this study, which lies in the processing of the information received from the surrounding environment and from the organization, to influence the competitive position of construction and infrastructure firms, while motivation and partnership are reserved for future research that will focus more on the dimensions of human and relational aspects of strategic intelligence in this area. This is a scope boundary not an actual exclusion of the importance of motivation and partnership, which is mentioned again in the Limitations section where it is conceded that if they have a correlation with the three dimensions kept in the model, and if they have an effect on competitiveness, they will bias the three path coefficients reported.

Statement of the Problem

With the changing face of business, strategic intelligence is now playing a significant part in the way that construction and infrastructure companies gather, process and interpret information. It provides the guidance on project delivery methods, market & environment analysis and directs a firm's future. These abilities will help make more informed decisions on project investments, service innovation, cost management, client retention, technology adoption, and competitive positioning. Strategic intelligence is essential for the competitiveness of an organization, but there has been limited discussion about its use across construction and infrastructure companies in Abuja, and its implementation has been limited to the telecommunication industry (Tamunosiki-Amadi & Ebisinkemefa, 2024). However, this limited attention is linked to poor responsiveness to market changes and weak client retention, limitations that also manifest in the telecommunication industry (Nwinye, 2025), thereby limiting the capacity in case of construction and infrastructural companies to maintain competitive positions. This study which investigated the relationship between strategic foresight, systems thinking and strategic vision of construction and

infrastructure company in Abuja is motivated by the three level gap as described above, namely empirical, contextual and theoretical gap.

Objectives of the Study

The main objective of this study is to examine the relationship between strategic intelligence and organizational competitiveness among construction and infrastructure firms in Abuja. The specific objectives are to:

- (i) examine the relationship between strategic foresight and organizational competitiveness among construction and infrastructure firms in Abuja;
- (ii) determine the relationship between systems thinking and organizational competitiveness among construction and infrastructure firms in Abuja; and
- (iii) assess the relationship between strategic vision and organizational competitiveness among construction and infrastructure firms in Abuja.

Literature Review

Organizational Competitiveness

Organizational competitiveness is the capability of a company to achieve and sustain a desirable position in its industry compared to other companies. It is a reflection of the ability of a business to provide value to customers, adjust to market conditions, improve products and services and maintain performance over time. Typical indicators of competitiveness include market share, customer retention, service quality, innovation, operational efficiency, profitability, brand strength and growth. Rikwentishe et al. (2026) suggested that the strategic positioning decision that a firm can make in an industry will determine the level of organizational competitiveness, while Ngendahimana et al. (2024) perceived competitive positioning as a factor that affects an organization's performance and position compared to other organizations.

Observance of organizational competitiveness is important because it enables the companies to succeed, grow and remain relevant in the ever-changing business environment. In Kenya's telecommunications industry, intangible resources were seen to affect competitive advantage (Ndirangu & Owino, 2023), closely related to this, Muniu (2021) and Nima (2022) found strategic positioning, as fundamental as it is, was linked to competitive advantage of telecommunication companies in Kenya, whereas Rua and Santos (2022) found that positioning and market orientation mediated the relationship between branding and competitive advantage, and Africa et al. (2020) found that strategic management practices correlated with the performance of telecommunication firms in Kenya. This literature base is predominantly regional, sector-specific and, in some cases, dissertation-level; direct acknowledgement of this is offered, while the theoretical underpinning for the importance of such capabilities (as developed in the resource-based view, dynamic capabilities and Porter's framework) is based on existing international theory.

Strategic Intelligence

Strategic intelligence is a conceptual term to describe the overall organization's ability to systematically collect, combine, utilize and apply knowledge and information that are forward-looking in nature to guide strategic direction and support the organization's viability. Adıgüzel (2020) described it as a cognitive and interpretive process that extends beyond the mere collection of data, an internal reading of the dynamics and external environmental readings. Al-Hamiri and Abdul-Mahdi (2019) suggested that strategic

intelligence is the foundation for the formulation of responsive strategies that are closely coveted with an organization's long-term purpose and strategic goals. It is distinct from operational information collection for its future oriented aspect, its all-organizational view, and the direct effect on strategic decision making and planning (Esmaeili, 2014; Othman, 2017).

The utility of strategic intelligence is in the role it plays in the managers' ability to make their decisions under uncertainty and to change as per environmental changes. This capacity is not just pivotal for sustainable competitive advantage (Mahjabin et al., 2017) but also acts as a mediator between the strategic management practices and organizational entrepreneurship (Abd et al., 2019). Maccoby (2011) recognized five dimensions of strategic intelligence: Strategic foresight, Systems thinking, Strategic vision, Motivation and Partnership. All five dimensions have their relevance but this study focused on strategic foresight, systems thinking and strategic vision, as these dimensions are most directly related to an anticipatory capability of the construction and infrastructure company, a systems approach, and a clear competitive orientation.

Strategic Foresight

Strategic foresight involves predicting what is going to happen, identifying trends, early warning signs and signs of potential opportunity and threat. Al-Shammari et al. (2021) showed that strategic intelligence is a factor in sustainable competitive advantage, and Rahmatian and PourKiani (2017) showed that the managers' strategic intelligence was related to organizational success. It is a tool that managers in construction and infrastructure companies can use to predict the changes in technology, customer preferences, material costs, regulation requirements and competitor actions, and invest accordingly in construction technology, services and new construction methods. The findings of Alwan and Najmaldeen (2024) showed that strategic intelligence positively affected strategic position at Asiacell Telecommunications Company, so that the company that can predict the development of the future market is more likely to make its position better.

Systems Thinking

Systems thinking is the ability to think of an organisation as a series of interrelated parts and not as individual parts, allowing managers to understand how actions in one part of the system will affect the other and make informed and coordinated decision-making (Ansoff et al., 2019). In construction and infrastructure companies, managers can leverage systems thinking to grasp the interplay between pricing, project investment, client service, technology adoption, employee capability, and regulatory compliance, and see how these factors collectively impact overall performance. In the telecommunications sector, Nwinye (2025) established that there existed a relationship between competitive intelligence and organizational effectiveness in South-South Nigeria with evidence related to the sector.

Strategic Vision

Strategic vision is a clear, future oriented statement of what an organisation wants to become and what direction it wants to take, informing strategic priorities, resource allocation, innovation and investment decisions. In the second, strategic vision and strategic foresight are conceptually close since both are about a firm's orientation to the future, but more practically important is the examination of the discriminant validity results reported later in this study; they correlate at 0.923 on the HTMT criterion, which is above the standard 0.90 criterion, and therefore, the conceptual distinction that is made here is a claim tested by this study, rather than one assumed. Strategic vision is what guides decisions on what a construction,

infrastructure company decides to do to compete, whether it's build quality, competitive pricing, client experience, technology innovation, specialised project solutions, or market expansion. According to Tamunosiki-Amadi (2024), vision is a capability that guides the direction and decision making of the organisation in a telecommunication environment, and according to Chukuigwe (2018), vision is an ability of a firm to predict and react to strategic changes in its operating environment.

Strategic Foresight and Organizational Competitiveness

Chukuigwe (2018) examined strategic intelligence (foresight) and performance of four telecommunication companies in Rivers State, Nigeria and tested nine research hypotheses with a census of managers and spearman correlation analysis. The findings of this study showed a positive correlation between strategic intelligence and the performance, however, the small sample size and correlational design may only be generalised and cannot draw causal conclusions.

In their study, Alwan and Najmaldeen (2024) explored the impact of strategic intelligence, comprising foresight and future vision, on the strategic position of Asiacell Telecommunications Company based on a survey of 79 valid responses that were analysed using regression. Vision and foresight had a strong positive influence, and vision accounted for the largest proportion of variance, but the single-firm, single-country design and limited sample size makes generalisations impossible.

Systems Thinking and Organizational Competitiveness

Tamunosiki-Amadi and Ebisinkemefa (2024) investigated strategic intelligence (SI) comprising systems thinking and performance of 176 telecommunication workers in Bayelsa state, Nigeria, using correlational research, with a significant positive relationship between strategic intelligence and performance, however, the study was conducted within the confines of a single state which makes it difficult to generalise their findings and could have introduced social desirability bias.

The business strategy and competitive advantage are mediators between the performance and innovation of 150 construction and real estate SMEs, which were analyzed using structural equation modelling by Farida and Setiawan (2022). Business strategies had positive effects on competitive advantage via both mediators; the SME and the focus on one sector meant that these business strategies were not transferable to larger construction and infrastructure firms.

Strategic Vision and Organizational Competitiveness

Nwinye (2025) investigated the relationship between competitive intelligence and organizational effectiveness of 114 telecommunication workers in South-South Nigeria and revealed a positive correlation between the two; the region studied and the lack of specification of intelligence dimensions (vision) reduces the generalisability and precision of the study.

Al-Shammari et al. (2021) investigated the concept of strategic intelligence and sustainable competitive advantages using an exploratory survey of department heads and administrators at Karbala University, the clarity of direction achieved an impact on the sustainable competitive advantage, but this exploratory design with limited objectivity and direct application.

This review is as critical as it can be of previous studies, with respect to small samples, correlational designs, and self-reported data, as this study is of its own design elsewhere in the Limitations section below.

Theoretical Framework

Strategic Intelligence Theory

The theory used in this study is Strategic Intelligence Theory, which was proposed by Maccoby (2011). Strategic intelligence is a leadership ability that enables managers to understand complex situations, predict future events, establish direction for the organization, motivate employees and build effective relationships. Maccoby (2011) defined five main components of strategic intelligence: strategic foresight, systems thinking, strategic vision, motivation, and partnership. The theory proposes that better business performance occurs when business leaders interpret environmental change, process relevant information and make decisions that are future-oriented.

Strategic Intelligence Theory provides a description of where these capabilities come from but by itself, it is insufficient to explain why an internal capability should be a source of competitive advantage, which is provided here by two complementary viewpoints. The resource-based view (Barney 1991) suggests that resources and capabilities that are valuable, rare, difficult to imitate and non-substitutable are what should give a company a sustainable competitive advantage; these three attributes are likely to apply to strategic foresight, systems thinking and strategic vision, qualities that are unevenly distributed amongst managers and are hard for rival companies to quickly replicate. The dynamic capabilities perspective (Teece, Pisano, & Shuen, 1997) further states that in contexts of uncertainty and volatility, like construction and infrastructure delivery in a regulatory and procurement environment, the dynamic of a firm's sense of opportunities and threats, its ability to take advantage of them, and its reconfigured resources is what leads to a sustained competitive position – strategic foresight is closely related to the sensing, and systems thinking to the reconfigured resources. Strategic vision is the reason it is important for competitiveness as per Porter's (1980) competitive strategy framework which states that it is the strategic vision that determines on what basis a company will compete and not leave resource allocation undirected.

These viewpoints give rise to three short propositions that link each dimension to competitiveness in different ways and with different processes, which are used to measure against the outcomes in the discussion below. Strategic foresight should be the top of the hierarchy, because it is direct and internal to the firm and is the sensing part of dynamic capability. Systems thinking should be important because it dictates the effectiveness with which a firm can reconfigure resources after sensing a change; in part it depends on foresight identifying something to reconfigure around. Strategic vision should be important because it is a resource commitment to a coherent competitive basis and it is on a longer time frame than a cross-sectional snapshot can capture (Porter, 1980). The discriminant validity results below address how this can be mechanistically separated in practice from foresight, systems thinking and vision.

The theory can be used in this study as it provides insight into the role strategic intelligence plays in the competitiveness of construction and infrastructure companies. Using strategic foresight, businesses can predict technology, regulatory, client and competitor shifts. Through the lens of systems thinking, managers can become more aware of the interconnections between aspects of project operations, pricing, client service, infrastructure, staff and regulatory requirements. Strategic vision can guide investment, innovation, market positioning and long-term direction of the organization.

Its core principles of environmental interpretation and future oriented decision making further support the theory. Esmaeili (2014) and Rahmatian and PourKiani (2017) agree with foresight as an instrument that helps identify opportunities and threats; Alwan and Najmaldeen (2024) and Mahdi et al. (2021) agree that the vision dimension is related to sustainable competitive advantage, which is related to cross-functional,

integrated decisions of systems thinking is emphasized by Ansoff et al. (2019). The theory is also supported by the findings of Tamunosiki-Amadi (2024) and Nwinye (2025), which shows that the theory has practical implications for organizational performance and effectiveness in the telecommunication industry of Nigeria.

But the theory has some drawbacks. It may underestimate the external factors like regulation, infrastructure constraints, and market structure, as it focuses on capability of leadership. The theory can also be hard to operationalize as its dimensions are often measured by the manager's self-reported perception (Othman, 2017), which may not always be possible, which the current study does not pretend to be, as the four constructs in the study were measured from the same respondents at the same time. Moreover, the theory fails to provide an account of the importance of strategic intelligence in situations where companies do not have adequate resources, as intangible resources have been shown to be important on their own for competitive outcomes (Ndirangu & Owino, 2023).

Methodology

The study used the cross sectional survey design and quantitative method. The survey was carried out in Abuja, Nigeria, in selected construction and infrastructure companies with corporate office and their main strategic offices in the Federal Capital Territory.

Table 1 below indicates that there were 102 eligible senior strategic decision makers across the nine selected firms. The participants were CEOs, Executive Directors, General Managers, heads of strategy, Business Development Managers, project managers, Operations Managers, procurement managers, Finance Managers, and Engineering Managers who were directly involved in strategic planning, environmental scanning, project development, risk assessment, or major decisions of the organization. All firms were selected because they had been operating for at least five years and actively involved in the delivery of construction and infrastructure projects in the Federal Capital Territory at the time of data collection. This is not a random selection of firms, but an intentional selection and the conclusions of this study should therefore be interpreted as representative of the sample of mid-sized construction and infrastructure operators in the Federal Capital Territory and not the entire industry; large operators like Julius Berger were not included in the sampling frame, which is discussed further in the Limitations section.

Unit of Analysis

The population is represented by 102 individual respondents that are only nested in nine firms, while competitiveness on the organizational level is conceptually a firm-level characteristic. The data collected from the individual respondents of a single firm are not statistically independent, and the fact that only nine firms were sampled is not a sufficient effective sample to measure an independently verified firm-level organizational competitiveness construct. Key informants were selected instead of respondents, people who were directly involved in strategic decision making, such as position holders, chief executives, directors, heads of strategy, and functional managers, based on their ability to provide direct strategic knowledge of their firm's operations. All results should accordingly be interpreted as relationships among key informants' perceptions of these constructs, and the path coefficients reported below should be interpreted as indicating relationships between these constructs. The within-firm clustering, along with the common-method concerns discussed below, is noted but not separately modelled at the aggregation stage, as multiple respondents were drawn from each of the nine firms ($n \sim 10-13$ per firm, per Table 1).

Although the study's structural model comfortably exceeds the widely accepted ten times rule of thumb for sufficient statistical power (three predictor constructs), a more formal a priori power analysis (with a significance level of 0.05 and a power of 0.80) demonstrates that the smallest effect size in this study ($f^2 = 0.052$ for the systems thinking construct) would require a much larger sample of 102 people to be detected with confidence. Not only are the point estimates different, but the study is also better powered to detect this effect than the other two, specifically the strategic foresight effect ($f^2 = 0.124$) is more easily detected than the systems thinking and strategic vision effects.

Table 1

Distribution of the Study Population

S/N	Selected construction and infrastructure firm	Population
1	SABC Limited	13
2	Tower Nigeria Limited	12
3	Multiworks Constructions Nigeria Limited	10
4	FrankNita Nigeria Limited	11
5	Mogjan Nigeria Limited	12
6	Arch-Sterix Nigeria Limited	10
7	Hedge & Pembroke	11
8	Bespoke Grand Synergy Limited	10
9	Kaplan Group of Companies Limited	12
	Total	102

Source: Human Resources of the Selected Firms

The data were gathered using a structured questionnaire consisting of 23 items measuring strategic foresight (5 items), systems thinking (7 items), strategic vision (5 items) and organizational competitiveness (6 items) on a 5-point Likert scale, and demographic questions. The strategic foresight, systems thinking and strategic vision items are culled from Maccoby's (2011) strategic intelligence framework while the organizational competitiveness items are developed from the reviewed literature on organizational competitiveness. The items were reworded as appropriate to the Nigerian context of construction and infrastructure.

Items were revised for face and content validity by use of an expert panel, resulting in some minor changes to item wording and sequencing. A pilot study with 50 senior managers outside the study population resulted in acceptable internal consistency for the four dimensions of the instrument, with Cronbach's alpha values for strategic foresight being 0.74, for systems thinking being 0.81, for strategic vision being 0.90 and for organizational competitiveness being 0.86.

The design is subject to the threat of common method variance because all three constructs of strategic foresight, systems thinking, strategic vision and organizational competitiveness were measured using the same instrument, the same respondents and at the same time. Procedural measures were taken: The predictor and criterion items were psychologically separated within the questionnaire, the predictor items were presented in the same section with the criterion items, and the wording of the items was neutral and did not lead the respondent. Further, but not conclusive, reassurance comes from the outer and inner variance inflation factors reported in the Results section (outer VIF range 2.04-4.13, and inner VIF range 4.53-5.59), as extreme common method variance would be expected to raise all of the indicator pairs in the test uniformly.

Partial Least Squares Structural Equation Modelling (PLS-SEM) was used to analyse the data. Measurement model was assessed by the following indicators: Factor loadings, Composite reliability,

Average variance extracted, and Heterotrait-Monotrait ratio (HTMT). Path coefficients, bootstrapped t-statistics, p-values, bias-corrected and accelerated (BCa) bootstrap confidence intervals, coefficient of determination, effect sizes (f^2), inner variance inflation factors were used to evaluate the structural model as well as the coefficient of determination, bootstrapped t-statistics, p-values, bias-corrected and accelerated (BCa) bootstrap confidence intervals, effect sizes (f^2), inner variance inflation factors, and predictive relevance (PLSpredict). To bootstrap, 5000 subsamples were used and the BCa method was used. Hypotheses were tested at the 0.05 level of significance using a two-tailed test.

The study was ethically approved by Federal University Wukari. All respondents signed informed consent forms before participating, and the management of each participating firm was contacted for permission and gave informed consent for the study.

Results

Table 2

Measurement Model Assessment

Construct	No. of items	Loading range	Cronbach's α	rho_A	CR	AVE
Organizational competitiveness	6	0.819–0.877	0.923	0.924	0.940	0.723
Strategic foresight	5	0.852–0.914	0.936	0.938	0.952	0.797
Systems thinking	7	0.780–0.854	0.920	0.922	0.936	0.675
Strategic vision	5	0.837–0.905	0.923	0.923	0.942	0.765

Source: PLS-SEM output, 2026. *Composite reliability above 0.95; see note below.

Loadings ranged from 0.780 to 0.914, Cronbach's alpha from 0.920 to 0.936, rho_A from 0.922 to 0.938, composite reliability from 0.936 to 0.952, and AVE from 0.675 to 0.797. Hair et al. (2022) note that factor loadings of 0.708 and above indicate acceptable indicator reliability, composite reliability above 0.70 indicates internal consistency reliability, and AVE above 0.50 indicates convergent validity; on these criteria, the measurement model meets the required standards. Hair et al. (2022) also caution, however, that composite reliability above 0.95 can signal item redundancy rather than superior measurement; strategic foresight, at 0.952, crosses this threshold and is noted as a measurement caveat rather than treated as an unqualified strength.

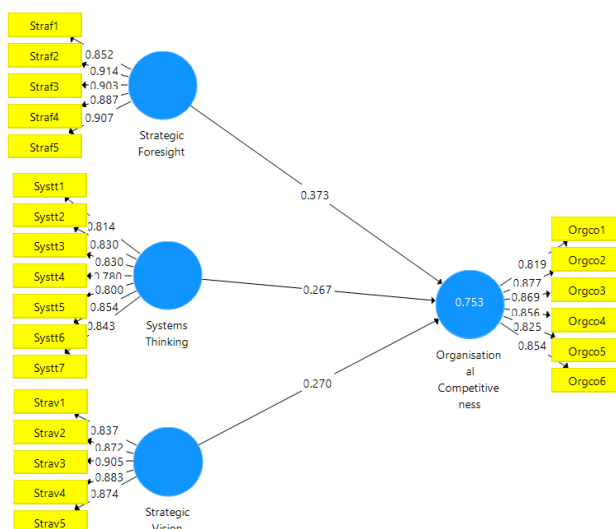


Figure 1*Factor Loadings of the Constructs***Table 3***Discriminant Validity Assessment***(a) Fornell-Larcker Criterion**

Construct	Org. competitiveness	Strategic foresight	Strategic vision	Systems thinking
Organizational competitiveness	0.850			
Strategic foresight	0.833	0.893		
Strategic vision	0.826	0.858	0.874	
Systems thinking	0.824	0.856	0.885	0.822

The Fornell-Larcker criterion requires each construct's square root of AVE (the diagonal) to exceed its correlation with every other construct. This holds for organizational competitiveness, strategic foresight and strategic vision, but fails for systems thinking: its diagonal value of 0.822 is lower than its correlation with strategic vision (0.885).

(b) Heterotrait-Monotrait Ratio (HTMT)

Construct	Org. competitiveness	Strategic foresight	Strategic vision	Systems thinking
Organizational competitiveness	—			
Strategic foresight	0.894	—		
Strategic vision	0.894	0.923	—	
Systems thinking	0.891	0.921	0.958	—

Source: PLS-SEM output, 2026

Henseler et al. (2015) set 0.90 as a liberal threshold for discriminant validity and 0.85 as the more conservative threshold for conceptually similar constructs. The HTMT values between organizational competitiveness and each of the three predictors (0.894, 0.894, 0.891) clear 0.90 only marginally and sit above the more conservative 0.85 benchmark, and are best described as borderline rather than adequate. Among the three predictor dimensions themselves, discriminant validity fails outright: strategic foresight and systems thinking (0.921), strategic foresight and strategic vision (0.923), and systems thinking and strategic vision (0.958) are all above the liberal threshold and, in the last case, far above the conservative one. Conceptual distinctiveness does not by itself establish empirical discriminant validity, and the Fornell-Larcker violation above corroborates this independently. This means the separate path coefficients for strategic foresight, systems thinking and strategic vision in Table 6 cannot be interpreted as three fully independent effects, and their ordering by magnitude should not be read as a stable ranking of which capability matters most. Of the remedies available, modelling strategic intelligence as a single second-order construct, with the three dimensions as indicators, fits the theoretical framework developed above best, and is recommended as the direction for re-specification in future work.

Table 4*Coefficient of Determination*

Endogenous construct	R ²	Adjusted R ²	Interpretation
Organizational competitiveness	0.753	0.752	Substantial explanatory power

Source: PLS-SEM output, 2026

Strategic foresight, systems thinking, and strategic vision jointly explained 75.3 per cent of the variance in organizational competitiveness ($R^2 = 0.7533$, adjusted $R^2 = 0.7517$). Hair et al. (2022) suggest that R^2 values of approximately 0.75, 0.50, and 0.25 may be described as substantial, moderate, and weak, respectively; on this basis, the model demonstrates substantial explanatory power.

Table 5
PLSpredict Assessment for Organizational Competitiveness

Indicator	PLS RMSE	LM RMSE	PLS $Q^2_{predict}$	PLS wins?
Orgco1	0.547	0.526	0.540	No
Orgco2	0.612	0.627	0.578	Yes
Orgco3	0.645	0.678	0.550	Yes
Orgco4	0.669	0.700	0.513	Yes
Orgco5	0.664	0.698	0.482	Yes
Orgco6	0.626	0.650	0.545	Yes

Source: PLS-SEM output, 2026

Table 5 presents the out-of-sample predictive assessment of organizational competitiveness. The $Q^2_{predict}$ values ranged from 0.482 to 0.578 and were all positive, which Shmueli et al. (2019) note is necessary but not sufficient for claiming predictive relevance; their procedure additionally compares PLS-SEM prediction error against a naive linear regression (LM) benchmark, indicator by indicator. On RMSE, the PLS-SEM model produced a lower prediction error than the LM benchmark for five of the six organizational competitiveness indicators, with the LM benchmark performing marginally better only for Orgco1. Following Shmueli et al.'s (2019) classification, this model demonstrates medium predictive power. The excess kurtosis of the prediction errors (5.95) indicates a non-symmetric error distribution, for which MAE is checked alongside RMSE as the appropriate metric; the classification is unchanged under either.

Table 6
Path Coefficients, Effect Sizes, Collinearity and Hypothesis Testing

Hypothesis / Path	β	t	P	95% CI (BCa)	f^2	Inner VIF	Decision
H01: Strategic foresight → Organizational competitiveness	0.373	4.495	0.000	[0.230, 0.539]	0.124	4.531	Rejected
H02: Systems thinking → Organizational competitiveness	0.267	2.908	0.004	[0.104, 0.446]	0.052	5.490	Rejected
H03: Strategic vision → Organizational competitiveness	0.270	3.305	0.001	[0.090, 0.414]	0.053	5.589	Rejected

Source: PLS-SEM and bootstrapping output, 2026. Bootstrap: 5000 subsamples, bias-corrected and accelerated (BCa), two-tailed test, $\alpha = 0.05$.

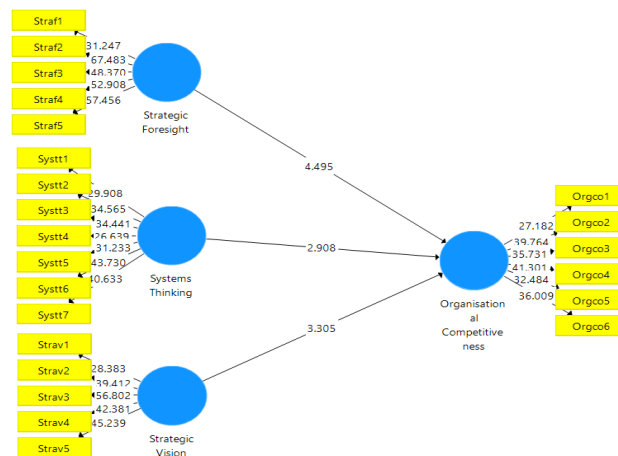


Figure 2
Bootstrapping Results

Strategic foresight was positively and significantly associated with organizational competitiveness ($\beta = 0.373$, $t = 4.495$, $p < 0.001$, 95% CI [0.230, 0.539]); applying Cohen's (1988) benchmarks (f^2 of 0.02, 0.15 and 0.35 as small, medium and large), its effect size ($f^2 = 0.124$) approaches, without quite reaching, a medium effect. Systems thinking ($\beta = 0.267$, $t = 2.908$, $p = 0.004$, 95% CI [0.104, 0.446]) and strategic vision ($\beta = 0.270$, $t = 3.305$, $p = 0.001$, 95% CI [0.090, 0.414]) were also positive and significant, each with a small effect size ($f^2 = 0.052$ and 0.053 respectively). All three null hypotheses were rejected.

Collinearity among the predictor constructs was assessed following Hair et al. (2022), who recommend inner variance inflation factors below 3, with 5 as an outer limit. The inner VIF values obtained, 4.531 for strategic foresight, 5.490 for systems thinking, and 5.589 for strategic vision, all exceed the conservative threshold, and the latter two exceed the more lenient outer limit. This confirms, through a diagnostic independent of the HTMT and Fornell-Larcker results above, that the three predictor constructs are highly collinear, and means the three path coefficients should not be compared against one another as evidence that strategic foresight matters most for competitiveness; that comparison is offered descriptively only.

Discussion of Findings

Strategic Foresight and Organizational Competitiveness

Strategic foresight was positively and significantly associated with organizational competitiveness, suggesting that construction and infrastructure firms that anticipate technological change, client demands, competitive moves, and regulatory shifts are associated with a stronger market position. This is consistent with Alwan and Najmaldeen (2024) and Rahmatian and PourKiani (2017), and with Maccoby's (2011) Strategic Intelligence Theory. This Discussion, like the sections that follow, confirms every study it cites; no contrary or null result appears, and we did not locate a Nigerian or sector-comparable study reporting a null or negative strategic intelligence effect to weigh against those cited. This asymmetry in the available literature is acknowledged rather than concealed.

Systems Thinking and Organizational Competitiveness

Systems thinking was positively and significantly associated with organizational competitiveness, consistent with Nwinye (2025) and Chong and Ali (2022), and with Maccoby's (2011) framing of systems thinking as the ability to coordinate decisions across interconnected activities. As discussed under Table 3, however, systems thinking could not be empirically distinguished from strategic vision in this sample (HTMT = 0.958, inner VIF = 5.49 and 5.59), so this association should be read as one facet of a broader, closely related set of cognitive-strategic capabilities rather than as a wholly independent contribution.

Strategic Vision and Organizational Competitiveness

Strategic vision was positively and significantly associated with organizational competitiveness, corroborating Tamunosiki-Amadi (2024) and Rikwentishe et al. (2026), and consistent with Maccoby's (2011) theory. Because the outcome constructs compared across these studies differ, spanning organizational performance, strategic position, and organizational effectiveness, and because none report a standardised coefficient or effect size directly comparable to the f^2 of 0.053 obtained here, these are offered as directional corroboration rather than a like-for-like replication.

Note on Causal Language

The associations reported above come from a single cross-sectional survey measuring predictors and outcome simultaneously from the same respondents. Reverse causality is plausible: firms already winning work and generating margin may be better able to afford dedicated strategy functions and long-horizon planning, so competitiveness may in part drive strategic intelligence rather than the reverse. The associational language used throughout this Discussion should be read with this alternative ordering in mind. Construction's project-based, tender-driven revenue and heavy procurement exposure create sharper, more discrete competitive events than telecommunications' continuous subscriber relationships; whether this strengthens or weakens the foresight-competitiveness association relative to telecommunications is a question this design cannot resolve, and is noted for future comparative research.

Conclusion

This study examined the relationship between strategic foresight, systems thinking and strategic vision, and organizational competitiveness among construction and infrastructure firms in Abuja. Strategic foresight, systems thinking, and strategic vision were each positively and significantly associated with organizational competitiveness. Strategic foresight recorded the largest standardised path coefficient (0.373) and the largest effect size ($f^2 = 0.124$), against 0.270 and 0.267 for strategic vision and systems thinking, respectively; given the high inter-construct correlation and elevated inner collinearity (VIF up to 5.59) reported in the discriminant validity assessment, this ordering is reported descriptively and should not be treated as a firmly established ranking of which capability matters most. Overall, the findings suggest that proactive, coordinated, and future-oriented strategic decision-making by managers is associated with a stronger competitive position among construction and infrastructure firms.

Limitations and Directions for Future Research

This study is subject to several limitations. The cross-sectional design cannot establish the direction of causality between strategic intelligence and competitiveness; longitudinal designs are needed to test precedence. The study draws on nine purposively selected firms in a single territory, excluding the sector's largest operators such as Julius Berger, which limits generalisation. The 102 respondents are nested within

only nine firms, and constructs reflect managers' perceptions rather than an independently verified firm-level measure; clustering was not separately modelled. All four constructs were self-reported by the same respondents at the same time, raising a common method variance risk that procedural remedies alone cannot fully rule out. Strategic foresight, systems thinking and strategic vision are not fully empirically separable in this sample, particularly systems thinking and strategic vision, and inner VIF values confirm high collinearity; the relative ranking of the three should be treated with caution, and future studies should consider a second-order strategic intelligence construct. This study examined only three of Maccoby's (2011) five dimensions; motivation and partnership were outside its scope, and if either correlates with the three retained here and also affects competitiveness, their omission may bias the reported coefficients. A formal a priori power analysis indicates the study is better powered to detect the foresight effect than the smaller systems thinking and vision effects, further cautioning against treating the coefficient ranking as conclusive; and the contextual literature base leans on regional, telecommunications-sector and dissertation-level sources, even though the theoretical grounding itself is drawn from established international theory. Future research would benefit from comparative designs spanning construction and other sectors, objective or multi-source competitiveness measures, and qualitative work on how Abuja managers actually exercise these capabilities.

Implications of the Study

This study extends Maccoby's (2011) Strategic Intelligence Theory, combined with the resource-based view, dynamic capabilities and Porter's framework, by deriving and testing three propositions linking foresight, systems thinking and vision to competitiveness through distinct mechanisms: sensing, resource reconfiguration, and commitment to a competitive basis. The discriminant validity results temper this contribution, however, since systems thinking and strategic vision may not be empirically separable dimensions in this setting; this is itself a finding worth reporting, and it points toward testing strategic intelligence as a second-order construct in future work.

For managers, the findings suggest that investing in structured environmental scanning, cross-functional integration, and a clearly articulated strategic direction is associated with stronger competitive positioning, and the recommendations that follow translate this into concrete practice.

The FCDA and the Bureau of Public Procurement shape how firms compete in the Territory through planning approval, regulatory compliance, and tender processes, and both are directly relevant to the recommendations below: regulatory predictability and transparent, foresight-friendly procurement timelines would make it easier for firms to act on the environmental scanning and long-term planning recommended here.

Recommendations

Based on the results, and connected explicitly to the standardised path coefficients and effect sizes reported in Table 6, the study recommends the following:

- (i) Strategic foresight recorded the largest association with organizational competitiveness ($\beta = 0.373$, $f^2 = 0.124$). Construction and infrastructure firms should accordingly prioritise strengthening strategic foresight processes, for example by creating strategic intelligence units responsible for periodic environmental scanning, competitor analysis, and review of regulatory developments, particularly those originating from the FCDA and the Bureau of Public Procurement.

(ii) Strategic vision showed a smaller but still significant association ($\beta = 0.270$, $f^2 = 0.053$). Firms should articulate and communicate a shared strategic vision, defining long-term strategic direction and measurable goals for innovation, project quality, client experience and market growth.

(iii) Systems thinking showed the smallest, though still significant, association ($\beta = 0.267$, $f^2 = 0.052$). Cross-functional decision making should be encouraged through decision teams spanning project operations, marketing, client services, finance, technology, and regulatory affairs, supported by regular integrated planning meetings.

Because the three predictor dimensions could not be fully distinguished statistically (Table 3; inner VIF up to 5.59), these recommendations are best treated as a coordinated package rather than a strict investment priority order.

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Author Declaration of Originality

I certify that this manuscript has not been submitted for publication elsewhere. I duly acknowledged and referenced all sources used. I have taken full responsibility for the originality, accuracy, and integrity of the work presented in this manuscript.