

When Do Organizational Capabilities Matter Most? Environmental Dynamism as a Boundary Condition in an Emerging-Market Telecommunications Sector

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Abstract

Organizational capabilities are widely recognized as key drivers of firm performance; however, their value depends on the environmental conditions in which they are deployed. This study considers environmental dynamism as a boundary condition that influences the relationship between organizational capabilities and organizational performance in an emerging-market telecommunications sector. This research is grounded mainly in Contingency Theory, with further insights from Dynamic Capabilities Theory. It views organizational capabilities as encompassing marketing, learning, innovation, and integrative dimensions. In examining organizational performance, the study distinguishes explicitly between financial and non-financial outcomes. To gather data, the study conducted a cross-sectional survey targeting managers from four leading telecommunications operators in Nigeria. Of the 364 questionnaires distributed, 289 were returned and deemed usable, yielding a robust response rate of 79.4%. The hypotheses were tested using Partial Least Squares Structural Equation Modeling (PLS-SEM), incorporating 5,000 bootstrap resamples to ensure statistical rigor. Results indicate that organizational capabilities are positively associated with financial performance ($\beta = .40, p < .001$) and non-financial performance ($\beta = .47, p < .001$). Environmental dynamism is also positively associated with both financial ($\beta = .28, p < .001$) and non-financial performance ($\beta = .30, p < .001$). Notably, environmental dynamism positively moderates the relationships between organizational capabilities and both financial ($\beta = .17, p < .001$) and non-financial performance ($\beta = .19, p < .001$). Simple-slope analysis shows that the strength of capability-performance relationships increases as environmental dynamism intensifies. These findings demonstrate that the performance relevance of organizational capabilities is context-dependent and becomes more pronounced under dynamic environmental conditions.

1. Introduction

Organizations increasingly operate in environments characterized by technological disruption, rapidly changing customer expectations, competitive intensity, and regulatory change. Under such conditions, competitive advantage depends not only on the resources firms possess but also on their capacity to deploy, integrate, and reconfigure those resources in response to environmental developments (Teece, 2007, 2018). As a result, organizational capabilities have become central to strategic-management research. These capabilities reflect the routines, competencies, and processes through which organizations convert their available resources into tangible market and organizational results (Barney, 1991; Helfat & Peteraf, 2015; Morgan et al., 2009). Research generally associates stronger organizational capabilities with superior firm performance. Marketing capabilities, for example, enable firms to acquire and interpret market intelligence and translate it into effective market responses (Morgan et al., 2009; Morgan et al., 2019). Learning capabilities facilitate the acquisition, dissemination, and application of knowledge, while innovation capabilities enable firms to develop and implement new solutions in response to changing market requirements (Ferreira & Coelho, 2020). Integrative capabilities further enable organizations to coordinate specialized resources and knowledge across functional boundaries. Collectively, these capabilities can enhance firms' ability to respond to customers, exploit emerging opportunities, and sustain competitive performance.

However, while organizational capabilities are associated with performance, an important theoretical question remains unresolved: Are organizational capabilities equally valuable across all environmental conditions? Understanding this question matters, as a capability's strategic value often hinges on the context in which it is applied. Contingency Theory challenges the notion of a universally optimal organizational design, arguing instead that effectiveness arises from the alignment or fit between a firm's internal structures and the external environment (Donaldson, 2001). In parallel, Dynamic Capabilities Theory (DCT) places environmental change at the heart of the capability discussion, suggesting that capabilities focused on sensing, seizing, and reconfiguring become especially critical when organizations face shifting technologies, markets, and competitive landscapes (Teece, 2007, 2018).

From this perspective, the relationship between organizational capabilities and performance may depend on environmental dynamism. Environmental dynamism refers to the degree and unpredictability of change in a firm's external environment, including changes in technology, competitive conditions, and regulatory arrangements (Jansen et al., 2006; Schilke, 2014). When environmental conditions are relatively stable, established routines and resource configurations may remain adequate for extended periods. Under highly dynamic conditions, however, existing knowledge, technologies, and market approaches can become obsolete more rapidly, increasing the strategic importance of organizational capabilities that facilitate learning, innovation, market responsiveness, and resource integration (Helfat & Peteraf, 2015; Teece, 2018).

Yet, translating this theoretical logic into empirical reality has proven more complex than anticipated. While dynamic capabilities can enhance performance, their impact is not guaranteed, nor is it consistent across all organizational settings (Schilke, 2014; Wilden et al., 2016). Developing such capabilities also demands significant managerial focus, resource allocation, and coordination. As a result, capabilities that deliver considerable value in fast-changing environments may have very different effects under stable conditions. This underscores that the truly important question is not merely whether organizational capabilities matter, but under what circumstances they matter most. The distinction is particularly relevant in emerging markets, where firms often confront simultaneous technological, competitive, institutional, and regulatory changes. Much of the established capabilities literature has developed in advanced-economy contexts, even though environmental conditions in emerging economies may alter the value and deployment of organizational capabilities. Institutional constraints, infrastructure conditions, regulatory interventions, market growth, and rapidly changing consumer behavior can create distinctive combinations of opportunities and uncertainty for firms operating in such markets.

Nigeria's telecommunications sector provides an appropriate empirical context for examining this issue. The sector has undergone substantial technological and market transformation driven by mobile broadband, data-intensive services, digital platforms, and changing customer expectations. At the same time, telecommunications operators operate in an actively regulated environment and face intense competition for subscribers, usage, customer loyalty, and digital-service adoption. These conditions require firms to continually interpret market developments and coordinate marketing, learning, innovation, and integrative activities. Environmental dynamism may therefore determine how well these capabilities translate into superior organizational outcomes. The Nigerian setting is also theoretically important because African emerging markets remain comparatively underrepresented in mainstream strategic capability research. Empirical studies of organizational capabilities in Nigeria have generally supported their relevance to firm performance, particularly marketing- and innovation-related capabilities. Nevertheless, substantially less attention has focused on whether the performance implications of those capabilities change as environmental conditions become more dynamic. Examining this contingency matters because applying capability-performance assumptions developed predominantly in advanced economies to emerging-market firms without explicitly accounting for contextual conditions may obscure important boundary effects.

A second limitation concerns how organizational performance is measured. Firm performance is frequently represented through financial indicators alone, although capabilities may influence financial and non-financial outcomes differently. Financial Performance captures outcomes such as profitability, revenue growth and market share. In contrast, Non-Financial Performance reflects strategically important market-based outcomes such as brand equity, customer loyalty and brand trust. Separating these dimensions permits a more precise assessment of whether environmental dynamism alters capability relationships similarly across different organizational outcomes.

Building on this foundation, the present study investigates how Environmental Dynamism shapes the relationship between Organizational Capabilities and Organizational Performance within Nigeria's telecommunications sector. Here, Organizational Capabilities include marketing, learning, innovation, and integrative competencies. Environmental Dynamism is understood as the combined effects of technological turbulence, competitive intensity, and regulatory uncertainty. For clarity, Organizational Performance is considered along two dimensions: Financial and Non-Financial Performance.

Drawing primarily on Contingency Theory and complemented by Dynamic Capabilities Theory, the study proposes that Organizational Capabilities are positively associated with performance but that the strength of this relationship depends on the level of Environmental Dynamism. In other words, environmental conditions are not merely background characteristics; they constitute a theoretically meaningful boundary condition that determines when organizational capabilities become particularly relevant to performance. The study makes three principal contributions. First, it shifts the capability-performance debate from the conventional question of whether capabilities are associated with performance towards the more contextually informative question of when those capabilities matter most. By modeling Environmental Dynamism as a moderator, the study explicitly tests the contingent value of Organizational Capabilities.

Second, the study integrates Contingency Theory and Dynamic Capabilities Theory to explain the capability environment performance relationship. Contingency Theory provides the fundamental logic of organizational environmental fit. At the same time, DCT explains why capabilities concerned with learning, innovation, market responsiveness, and resource integration may become particularly valuable as environmental change increases (Teece, 2007, 2018). This integration provides a more context-sensitive explanation of organizational capability effectiveness.

Third, the study provides evidence from an underrepresented African emerging-market telecommunications context and distinguishes between Financial and Non-Financial Performance. This enables examination of whether Environmental Dynamism strengthens capability-performance relationships consistently across different organizational outcomes. In doing so, the study extends the contextual domain of capability research and contributes to understanding how organizations operating amid technological, competitive, and regulatory change can derive greater performance value from their internal capabilities.

Accordingly, the study considers the following overarching question: To what extent does Environmental Dynamism condition the relationship between Organizational Capabilities and Financial and Non-Financial Performance in an emerging-market telecommunications sector?

2 Literature Review and Hypotheses Development

2.1 Organizational Capabilities

Organizational capabilities are best understood as a firm's ability to deploy, coordinate, and reconfigure its resources through established processes and routines to achieve strategic goals (Helfat & Peteraf, 2015; Teece, 2018). Even when firms have access to similar tangible and intangible resources, their ability to mobilize and leverage those resources can lead to significant performance differences. In this way, capabilities serve as the crucial link between simply possessing resources and transforming them into meaningful organizational outcomes.

Within the strategic management literature, scholars often distinguish between ordinary capabilities which allow firms to maintain ongoing operations and dynamic capabilities, which enable organizations to adapt and reconfigure resources in response to changing environments (Teece, 2014; Wilden et al., 2016). This distinction matters in dynamic industries, where operational efficiency alone may not sustain competitive advantage. As technologies, customer preferences, and market conditions evolve rapidly, firms need to cultivate capabilities that help them spot new opportunities, learn from

environmental cues, innovate, and coordinate effective organizational responses.

In this study, Organizational Capabilities are represented through four complementary dimensions: marketing capability, learning capability, innovation capability and integrative capability. Marketing capability concerns the firm's ability to understand markets and deploy marketing resources effectively. It encompasses market sensing, customer understanding, and translating market intelligence into appropriate strategic responses (Morgan et al., 2009, 2019). Learning capability concerns the acquisition, interpretation, dissemination, and application of knowledge, enabling organizations to update assumptions and improve responses to environmental developments.

Innovation capability represents the organizational capacity to develop, adopt, and implement new ideas, processes, and market solutions. It allows firms to respond creatively to emerging technological and competitive opportunities. Integrative capability, meanwhile, concerns the firm's ability to coordinate knowledge, resources and activities across organizational functions. This capability is especially important when successful market responses require collaboration among marketing, technology, operations, innovation, and customer-service functions.

These dimensions function in concert rather than as stand-alone elements. For example, market information alone offers little strategic value if a firm cannot learn from it. Similarly, organizational learning may yield only modest performance gains if it is not paired with the ability to innovate, and even the most promising innovations can falter without the integrative capacity required for effective, coordinated implementation. As such, this study views Organizational Capabilities as an integrated, higher-order organizational competence one that emerges from the interplay of these complementary dimensions.

2.2 Environmental Dynamism

Environmental Dynamism describes the rate, magnitude, and unpredictability of changes in an organization's external environment (Jansen et al., 2006; Schilke, 2014). Dynamic environments are characterized by changing technologies, shifting customer requirements, intensified competitive actions, and evolving institutional or regulatory arrangements. Such changes increase uncertainty because existing information, routines, and strategic assumptions can become obsolete more rapidly.

This study conceptualizes Environmental Dynamism through three dimensions: technological turbulence, competitive intensity, and regulatory uncertainty. Technological turbulence refers to the rate and unpredictability of technological change affecting firms and markets. Rapid technological development can create new products, distribution systems, customer interfaces, and business models while simultaneously reducing the value of established technologies and competencies. Under technologically turbulent conditions, firms must continuously learn and adapt to recognize and exploit emerging technological opportunities (Teece, 2018).

Competitive intensity reflects the degree of competitive pressure arising from rivals' actions, market-entry threats, pricing strategies, innovation, and efforts to acquire or retain customers. High competitive intensity reduces firms' ability to rely on established market positions and increases pressure to differentiate, respond quickly, and innovate continuously. Competitive actions can therefore increase the strategic importance of market sensing, innovation, and resource-coordination capabilities.

Regulatory uncertainty refers to unpredictability around regulatory policies, requirements, and interventions that affect organizational decisions and operations. Regulatory changes may alter operating requirements, investment priorities, competitive structures, and the strategic options available to firms. This dimension is particularly relevant in telecommunications, where firms operate within formal licensing, spectrum, quality-of-service, consumer-protection and other regulatory frameworks.

Environmental Dynamism should therefore not be interpreted exclusively as a threat. Dynamic environments can generate uncertainty while also creating opportunities. Technological change may create new service possibilities; competitive intensity can stimulate market innovation; and regulatory developments can alter competitive opportunities. Performance consequences depend partly on whether firms can interpret and respond to these changes (Teece, 2007, 2018).

2.3 Organizational Performance

Organizational performance is inherently multidimensional, capturing how effectively firms achieve strategically important outcomes. While financial indicators are crucial, depending solely on these measures can lead to an incomplete understanding of organizational effectiveness. Financial metrics generally reflect realized economic results, whereas non-financial measures often capture customer and market outcomes that may signal future financial performance.

Accordingly, this study distinguishes between Financial Performance (FP) and Non-Financial Performance (NFP). Financial Performance includes profitability, revenue growth, and market share key indicators of a firm's economic and competitive achievements and widely used in strategic-management research.

Non-Financial Performance captures outcomes relating to brand equity, customer loyalty, and brand trust. Such measures are particularly relevant in-service markets because customer perceptions and relationships constitute important sources of longer-term organizational value. Strong customer loyalty and trust can reduce switching behavior and support future revenue, while brand equity can enhance differentiation and strengthen customer preference.

Distinguishing FP from NFP is particularly important for this study because Organizational Capabilities and Environmental Dynamism may relate differently to proximal customer-market outcomes and broader financial outcomes. Treating performance as a single aggregate construct could conceal these differences.

2.4 Theoretical Foundation

Contingency Theory

Contingency Theory serves as the primary theoretical foundation for this study. At its core, the theory argues that organizational effectiveness is achieved not through universally optimal structures, but by aligning internal organizational features with the specific external conditions in which a firm operates (Donaldson, 2001). Applied to organizational capabilities, this perspective implies that a capability's performance relevance depends partly on the environment in which it is deployed. A capability that generates substantial value under rapid technological and competitive change may be less consequential when environmental conditions are stable and predictable. Conversely, increasing environmental dynamism can raise the value of

capabilities that enable firms to learn, innovate, interpret markets, and coordinate rapid responses.

The theory therefore provides the fundamental rationale for treating Environmental Dynamism as a moderator, rather than simply another antecedent of performance. The question is not only whether environmental conditions relate to performance, but whether they change the strength of the relationship between internal Organizational Capabilities and organizational outcomes.

Dynamic Capabilities Theory

Dynamic Capabilities Theory complements the contingency argument by explaining why capabilities may become increasingly important under changing environmental conditions. DCT defines dynamic capabilities as firms' capacities to integrate, build, and reconfigure internal and external competencies in response to changing environments (Teece et al., 1997). Teece (2007) subsequently organized these capabilities around the processes of sensing opportunities and threats, seizing opportunities, and reconfiguring organizational resources. DCT therefore places environmental change at the center of the capability-performance argument. Where environmental conditions are stable, firms may obtain substantial value from established operational routines. As environmental dynamism increases, however, firms require greater capacity to detect changes, acquire new knowledge, innovate, and reconfigure resources (Teece, 2007, 2018).

The four capability dimensions examined in this study correspond closely with this logic. Marketing capability supports market sensing; learning capability facilitates knowledge acquisition and interpretation; innovation capability assists opportunity exploitation; and integrative capability supports the reconfiguration and coordination of organizational resources.

Combining Contingency Theory and DCT therefore provides a coherent theoretical explanation. Contingency Theory explains why capability effectiveness depends on environmental conditions, while DCT explains why adaptive organizational capabilities should become especially valuable as those conditions become more dynamic.

2.5 Organizational Capabilities and Organizational Performance

Organizational capabilities empower firms to turn resources and information into coherent market actions. Marketing capabilities, for instance, enhance a firm's understanding of both customers and competitors. Learning and innovation capabilities support ongoing knowledge renewal and the practical application of new solutions, while integrative capabilities ensure these various activities are coordinated seamlessly across organizational boundaries.

A substantial body of research consistently finds that organizational capabilities are positively associated with firm performance. For example, marketing capabilities have been linked to superior outcomes by enabling more effective resource deployment and improving market responsiveness (Morgan et al., 2009, 2019). Similarly, dynamic and innovation capabilities contribute to performance by enhancing a firm's adaptability and ability to seize opportunities in changing markets (Ferreira & Coelho, 2020). In emerging-market settings such as Nigeria, these capabilities may be even more critical due to the prevalence of institutional constraints, infrastructure limitations, and rapid market evolution. Evidence from Nigeria underscores the importance of marketing, innovation, and adaptive organizational competencies for achieving competitive and organizational success.

From a resource-based view (RBV), resources create value only when firms possess the organizational competencies needed to deploy them effectively. From the perspective of Dynamic Capabilities Theory (DCT), capabilities are especially valuable because they enable firms to adapt and reconfigure themselves to maintain performance as conditions evolve (Teece, 2018).

Given that Financial and Non-Financial Performance represent distinct outcomes, this study hypothesizes their relationships with organizational capabilities separately.

H1a: Organizational Capabilities are positively associated with Financial Performance.

H1b: Organizational Capabilities are positively associated with Non-Financial Performance.

2.6 Environmental Dynamism and Organizational Performance

Environmental Dynamism creates both challenges and opportunities for organizational performance. Technological turbulence can render existing competencies obsolete while also creating opportunities for new products, services, and customer experiences. Competitive intensity can erode established market positions while motivating firms to improve efficiency, differentiation, and responsiveness. Regulatory uncertainty can constrain strategic options but may also alter industry structures and create new competitive opportunities.

The relationship between dynamism and performance is therefore theoretically complex. Environmental change does not necessarily produce poor performance. Firms that can identify and exploit opportunities arising from change may benefit from dynamic conditions. DCT specifically suggests that environmental change creates opportunities for organizations possessing appropriate adaptive capabilities (Teece, 2007).

In telecommunications, technological advances can expand data services, digital platforms, and customer-engagement opportunities. Competitive pressure can stimulate improved offerings and stronger customer orientation, while regulatory developments can influence industry investment and competition. Consequently, Environmental Dynamism may be positively associated with performance when firms can respond effectively to the opportunities generated by environmental change.

Accordingly:

H2a: Environmental Dynamism is positively associated with Financial Performance.

H2b: Environmental Dynamism is positively associated with Non-Financial Performance.

2.7 Moderating Role of Environmental Dynamism

The central proposition of this study is that Environmental Dynamism conditions the relationship between Organizational Capabilities and Performance. This proposition moves beyond examining the independent relationships between capabilities, environmental conditions, and performance and instead focuses on their interaction.

Under relatively stable environmental conditions, existing organizational routines may remain effective longer. The marginal performance value of advanced learning, innovation, market-sensing and integrative capabilities may therefore be comparatively limited because firms face fewer requirements

for continuous strategic adaptation. As Environmental Dynamism increases, however, existing knowledge and routines can become obsolete more quickly. Firms must interpret changing customer preferences, monitor competitor actions, evaluate emerging technologies and respond to regulatory developments. These requirements increase the value of capabilities that enable organizations to acquire knowledge, innovate, and coordinate strategic responses.

Empirical studies on dynamic capabilities indicate that environmental conditions can influence how strongly organizational capabilities drive performance, though the nature and strength of these relationships often vary by context (Schilke, 2014; Wilden et al., 2016). This finding reinforces the core contingency perspective: the value of capabilities is not fixed, but instead depends on the environment in which they are deployed.

For telecommunications operators in Nigeria, this suggests that marketing, learning, innovation, and integrative capabilities become especially important as technological turbulence, competitive intensity, and regulatory uncertainty rise. Firms with stronger capabilities are likely better equipped to interpret environmental shifts and translate them into effective strategic actions than those with less-developed capability profiles.

Environmental Dynamism is therefore expected to strengthen the positive relationship between Organizational Capabilities and both dimensions of Organizational Performance.

H3a: Environmental Dynamism positively moderates the relationship between Organizational Capabilities and Financial Performance, such that the positive relationship becomes stronger at higher levels of Environmental Dynamism.

H3b: Environmental Dynamism positively moderates the relationship between Organizational Capabilities and Non-Financial Performance, such that the positive relationship strengthens at higher levels of Environmental Dynamism.

2.8 Conceptual Framework

The conceptual framework integrates the direct and contingent relationships proposed in the study. Organizational Capabilities are modeled as an antecedent of Financial and Non-Financial Performance. At the same time, Environmental Dynamism has both direct relationships with these performance dimensions and a moderating role in the Organizational Capabilities–Performance relationships.

The model can be expressed conceptually as:

Organizational Capabilities → Financial Performance

Organizational Capabilities → Non-Financial Performance

Environmental Dynamism → Financial Performance

Environmental Dynamism → Non-Financial Performance

and, centrally:

Organizational Capabilities × Environmental Dynamism → Financial Performance

Organizational Capabilities × Environmental Dynamism → Non-Financial Performance

Thus, the conceptual model proposes that the performance relevance of Organizational Capabilities is not constant but varies according to the dynamism of the external environment.

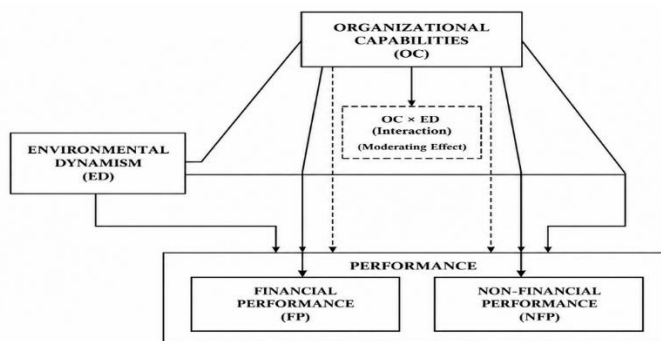


Figure 1: Conceptual Framework

Source: Researcher Conceptualization (2026)

3 Methodology

3.1 Research Design and Study Context

The study adopted a quantitative, cross-sectional survey design to examine the relationships among Organizational Capabilities, Environmental Dynamism, and Organizational Performance in Nigeria's telecommunications sector. A quantitative design was appropriate because the study tested theoretically specified relationships among latent constructs using data collected from managerial respondents (Creswell & Creswell, 2018; Saunders et al., 2019). Nigeria's telecommunications sector offers a particularly relevant setting for this study, as operators face ongoing technological change, intense competitive pressures, and active regulatory intervention. These dynamic conditions make the sector an ideal empirical context for exploring how Environmental Dynamism influences the relationship between Organizational Capabilities and organizational outcomes.

The unit of analysis was the telecommunications firm, while managers served as key informants because of their knowledge of organizational strategies, market developments, capability deployment, and performance outcomes.

3.2 Population, Sample and Sampling Procedure

The study population comprised 6,825 senior managers and managers across four major Nigerian telecommunications operators: MTN Nigeria (2,001) (MTN Nigeria Communications Plc, 2025), Airtel Nigeria (1,603) (Airtel Africa Plc, 2025), Globacom (1,891) (Globacom HR Department, 2025), and 9mobile (1,330) (9mobile HR Department, 2025). The study selected managers as key informants because of their knowledge of organizational capabilities, environmental conditions, and performance (Kumar et al., 1993; Homburg et al., 2010).

Using Cochran's finite-population procedure, the study determined a target sample of 364 and proportionally allocated it across the four operators. The study then used purposive sampling to select knowledgeable managerial respondents. Of the 364 questionnaires administered, 289 usable responses were obtained, representing a 79.4% response rate. The achieved sample also exceeded the minimum requirement established through an a priori statistical power assessment.

3.3 Data Collection

Primary data collection involved administering a structured questionnaire to managers based at both the headquarters and selected regional offices of the telecommunications operators. The survey reached participants in Lagos and key regional cities such as Port Harcourt, Enugu, Ibadan, Abuja, and Kano, ensuring the data extended beyond the corporate headquarters. Most questionnaires were distributed using a drop-and-pick approach, with online distribution used where suitable. Respondents typically had three days to complete the survey, and follow-up reminders were provided to maximize participation. Overall, data collection spanned roughly three weeks, and respondent were informed that their responses would be treated confidentially and used for academic purposes. The structural analysis required no personally identifying information.

3.4 Measurement of Constructs

All constructs were measured using multi-item scales adapted from established literature and contextualized to the Nigerian telecommunications environment. Respondents recorded responses on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

Organisational Capabilities

Organizational Capabilities were conceptualized as a higher-order construct comprising four complementary dimensions: Marketing Capability, Learning Capability, Innovation Capability and Integrative Capability. Marketing Capability describes the firm's ability to understand customers and competitors and to deploy marketing resources strategically. Learning Capability reflects how well an organization acquires, shares, and applies relevant knowledge throughout the firm. Innovation Capability gauges a firm's capacity to generate and implement new ideas and solutions. At the same time, Integrative Capability highlights the ability to coordinate resources, knowledge, and activities across different functions within the organization.

This multidimensional approach underscores that effective capabilities emerge not from any single organizational strength, but from how market-sensing, learning, innovation, and resource-integration processes work together.

Environmental Dynamism was measured using three dimensions: Technological Turbulence, Competitive Intensity, and Regulatory Uncertainty.

Technological Turbulence reflects the extent and speed of technological changes impacting the industry. Competitive Intensity measures the level of competitive pressure and market rivalry facing telecommunications operators. Regulatory Uncertainty captures the unpredictability of regulatory policies, requirements, and interventions that influence firms' operations and strategic choices.

This multidimensional specification acknowledges that environmental change in telecommunications is multifaceted. Firms often face technological developments, competitive actions, and regulatory shifts simultaneously.

Organisational Performance

Organizational Performance was separated into Financial Performance and Non-Financial Performance.

Financial Performance was assessed through managerial perceptions of profitability, revenue growth, and market share. Non-Financial Performance captured brand equity, customer loyalty and brand trust. The separation of the two performance dimensions enabled the study to determine whether Organizational Capabilities and Environmental Dynamism exhibited different relationships with financial and customer-market outcomes.

3.5 Pilot Testing, Reliability and Validity

Before the main survey, the questionnaire was pilot-tested with 30 professionals with experience in telecommunications marketing, brand management, and innovation. The pilot exercise assessed the clarity, relevance, and internal consistency of the measurement items.

During the pilot study, Cronbach's alpha coefficients ranged from 0.768 to 0.832, all above the commonly accepted minimum threshold of 0.70. Based on feedback, we made minor adjustments to item wording and contextual details before proceeding with full-scale data collection.

For the main analysis, we assessed measurement quality by examining indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Internal consistency was evaluated using Cronbach's alpha, ρ_A , and composite reliability; convergent validity was assessed through Average Variance Extracted (AVE); and discriminant validity was established using both the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio (Henseler et al., 2015; Hair et al., 2022).

3.6 Data Screening and Common Method Bias

Before estimating the measurement and structural models, we carefully screened the data. Missing values represented less than 5% of all responses and were addressed using mean substitution. Multivariate outlier analysis revealed no problematic cases at the chosen significance level. Additionally, the distribution of measurement items was deemed acceptable, as skewness ranged from -1.12 to 0.94 and kurtosis from -1.36 to 1.41 . Because the predictor and criterion constructs were measured from the same respondents, we assessed common method bias. Harman's single-factor test indicated that the first unrotated factor accounted for 34.7% of the total variance, below the conventional 50% benchmark (Podsakoff et al., 2003). Structural collinearity diagnostics provided additional evidence that problematic collinearity was not present.

To assess potential non-response bias, we compared responses from the earliest and latest participant groups. The analysis revealed no statistically significant differences across the key constructs ($p > .05$), indicating that non-response bias was unlikely to materially affect the study's findings.

3.7 Data Analysis

We conducted the initial data screening and descriptive analysis using SPSS version 27. For the main model estimation, we used SmartPLS version 4 to evaluate both the measurement and structural models. We chose Partial Least Squares Structural Equation Modeling (PLS-SEM) because the study examined latent multidimensional constructs, required simultaneous estimation of several structural relationships, and involved explicit testing of interaction effects (Hair et al., 2019, 2022). The analysis followed a two-stage approach. First, we assessed the measurement model to confirm indicator reliability, internal consistency, convergent validity, and discriminant validity. We also evaluated higher-order construct specifications before interpreting structural relationships.

Second, we evaluated the structural model using standardized path coefficients (β), t -statistics, p -values, and confidence intervals. We determined statistical significance through non-parametric bootstrapping with 5,000 resamples. We assessed the model's explanatory power using the coefficient of determination (R^2). We also examined effect sizes (f^2) and predictive relevance (Q^2) and the model's substantive and predictive qualities (Hair et al., 2022).

3.8 Moderation Analysis

The main analytical goal was to assess whether Environmental Dynamism alters the strength of the relationship between Organizational Capabilities and Organizational Performance. To address this, interaction terms were estimated for:

Organizational Capabilities $\times$ Environmental Dynamism $\rightarrow$ Financial Performance

and

Organizational Capabilities $\times$ Environmental Dynamism $\rightarrow$ Non-Financial Performance.

We evaluated the moderation hypotheses using the sign, magnitude, and statistical significance of the interaction coefficients generated through the PLS-SEM bootstrapping procedure. A positive and statistically significant interaction coefficient indicates that the positive relationship between Organizational Capabilities and performance strengthens as Environmental Dynamism increases. To interpret statistically significant interactions, the moderation relationships were further examined using simple-slope analysis. The relationship between Organizational Capabilities and each performance dimension was examined at relatively low, medium, and high levels of Environmental Dynamism. This procedure allowed the analysis to move beyond statistical significance and demonstrate how the capability-performance relationship changes across different environmental conditions.

Accordingly, Environmental Dynamism was considered not just as an additional factor influencing performance, but as a theoretically defined boundary condition in the relationship between Organizational Capabilities and performance. This analytical approach directly tests the study's central contingency argument: that the performance relevance of Organizational Capabilities depends on the level of environmental dynamism in which they are deployed.

4 Results

4.1 Measurement Model Assessment

Before evaluating the structural relationships, we assessed the measurement model for internal consistency reliability, convergent validity, and discriminant validity. All constructs showed strong reliability, with Cronbach's alpha values between 0.82 and 0.86, and composite reliability (CR) values from 0.88 to 0.91; well above the recommended 0.70 threshold (Hair et al., 2022).

Looking at the individual dimensions, Marketing Capability had $\alpha = 0.84$ and CR = 0.90; Learning Capability, $\alpha = 0.83$ and CR = 0.89; Innovation Capability, $\alpha = 0.86$ and CR = 0.91; and Integrative Capability, $\alpha = 0.84$ and CR = 0.90. For Environmental Dynamism, Technological Turbulence showed $\alpha = 0.82$ and CR = 0.88; Competitive Intensity, $\alpha = 0.83$ and CR = .89; and Regulatory Uncertainty, $\alpha = 0.84$ and CR = 0.90. Both Financial Performance ($\alpha = 0.86$; CR = 0.91) and Non-Financial Performance ($\alpha = 0.85$; CR = 0.90) also met the criteria for satisfactory reliability.

Convergent validity was established because all Average Variance Extracted (AVE) values exceeded 0.50. AVEs were 0.68, 0.66, 0.70, and 0.68 for Marketing, Learning, Innovation, and Integrative Capabilities, respectively; .64, .66, and .68 for Technological Turbulence, Competitive Intensity, and Regulatory Uncertainty; and .72 and .70 for Financial and Non-Financial Performance, respectively. We also established discriminant validity using the Fornell-Larcker and HTMT criteria, with all HTMT ratios below .90 (Henseler et al., 2015; Hair et al., 2022).

Table 1. Reliability and Convergent Validity

	Cronbach alpha	Composite reliability	Average Variance Extracted
Marketing Capability	.84	.90	.68
Learning Capability	.83	.89	.66
Innovation Capability	.86	.91	.70
Integrative Capability	.84	.90	.68
Technological Turbulence	.82	.88	.64
Competitive Intensity	.83	.89	.66
Regulatory Uncertainty	.84	.90	.68
Financial Performance	.86	.91	.72
Non-Financial Performance	.85	.90	.70

4.2 Structural Model Assessment

We assessed structural collinearity using the Variance Inflation Factor (VIF). The VIF values for the focal constructs were 2.32 for Organizational Capabilities and 1.96 for Environmental Dynamism, indicating that collinearity did not threaten the structural estimates (Hair et al., 2022; Kock, 2015).

The full structural model explained 68% of the variance in Financial Performance ($R^2 = .68$) and 71% of the variance in Non-Financial Performance ($R^2 = .71$). Predictive relevance was also established, with $Q^2 = .36$ for Financial Performance and $Q^2 = .40$ for Non-Financial Performance. These positive Q^2 values indicate satisfactory predictive relevance.

The effect-size analysis showed that Organizational Capabilities had medium effects on Financial Performance ($f^2 = .28$) and Non-Financial Performance ($f^2 = .31$). Environmental Dynamism similarly produced medium effects on Financial Performance ($f^2 = .16$) and Non-Financial Performance ($f^2 = .18$).

4.3 Direct Effects and Hypothesis Testing

Bootstrapping with 5,000 resamples revealed that all four key direct relationships were positive and statistically significant.

Table 2. Direct Structural Effects

H1a	OC → Financial Performance	.40	10.04	<.001	Supported
H1b	OC → Non-Financial Performance	.47	10.91	<.001	Supported
H2a	ED → Financial Performance	.28	4.76	<.001	Supported
H2b	ED → Non-Financial Performance	.30	4.98	<.001	Supported

Organizational Capabilities showed positive associations with both Financial Performance ($\beta = .40$, $t = 10.04$, $p < .001$) and Non-Financial Performance ($\beta = .47$, $t = 10.91$, $p < .001$), providing support for H1a and H1b. Environmental Dynamism was likewise positively linked to Financial Performance ($\beta = .28$, $t = 4.76$, $p < .001$) and Non-Financial Performance ($\beta = .30$, $t = 4.98$, $p < .001$), supporting H2a and H2b.

4.4 Moderating Effect of Environmental Dynamism

The study's central objective was to determine whether Environmental Dynamism conditions the relationship between Organizational Capabilities and performance. Table 3 presents the interaction results.

Table 3. Moderating Effect of Environmental Dynamism

H3a	OC × ED → FP	.40	.17	.043	3.95	<.001	[.086, .254]	Supported
H3b	OC × ED → NFP	.47	.19	.057	3.35	.001	[.078, .302]	Supported

Environmental Dynamism significantly moderated the relationship between Organizational Capabilities and Financial Performance ($\beta = .17$, $SE = .043$, $t = 3.95$, $p < .001$, 95% CI [.086, .254]). The interaction coefficient was positive and its confidence interval excluded zero, supporting H3a.

Similarly, Environmental Dynamism positively moderated the relationship between Organizational Capabilities and Non-Financial Performance ($\beta = .19$, $SE = .057$, $t = 3.35$, $p = .001$, 95% CI [.078, .302]), supporting H3b. Thus, the positive association between Organizational Capabilities and both performance dimensions strengthens as Environmental Dynamism increases.

4.5 Simple-Slope Analysis

Simple-slope analysis clarified the significant interaction effects at low (-1 SD), mean, and high ($+1$ SD) levels of Environmental Dynamism.

Table 4. Conditional Effects of Organizational Capabilities at Different Levels of Environmental Dynamism

	Low	Mean	High
Financial Performance	.23	.40	.57
Non-Financial Performance	.28	.47	.66

For Financial Performance, the conditional association of Organizational Capabilities increased from $\beta = .23$ at low Environmental Dynamism to $\beta = .40$ at the mean and $\beta = .57$ at high Environmental Dynamism. For Non-Financial Performance, the corresponding conditional effects increased from $\beta = .28$ to $\beta = .47$ and $\beta = .66$, respectively.

These results demonstrate a consistent strengthening pattern. Organizational Capabilities remain positively associated with both performance dimensions under relatively low Environmental Dynamism, but the relationship magnitude increases progressively as environmental conditions become more dynamic.

4.6 Discussion of Findings

This study investigated whether the performance implications of Organizational Capabilities (OC) are influenced by Environmental Dynamism (ED) in Nigeria's telecommunications sector. The findings point to three main conclusions. First, Organizational Capabilities are positively associated with both Financial Performance (FP) and Non-Financial Performance (NFP). Second, Environmental Dynamism has significant positive direct associations with both performance dimensions. Third, and most importantly, Environmental Dynamism positively moderates the Organizational Capabilities–performance relationship. The simple-slope results further show that the performance contribution of Organizational Capabilities becomes progressively stronger as Environmental Dynamism increases.

These findings matter because they shift the capability–performance debate from whether organizational capabilities matter to when they are most consequential. The results provide empirical support for the central logic of Contingency Theory and complement the Dynamic Capabilities perspective.

Organizational Capabilities and Financial Performance

The analysis identified a positive and statistically significant relationship between Organizational Capabilities and Financial Performance ($\beta = .40$, $t = 10.04$, $p < .001$). This suggests that telecommunications firms with stronger marketing, learning, innovation, and integrative capabilities are more likely to report robust financial results. The medium effect size ($f^2 = .28$) further underscores that this relationship is not just statistically significant, but also substantively meaningful in practical terms.

This result aligns with the Dynamic Capabilities perspective, which holds that competitive performance depends not only on a firm's resource base, but also on its ability to integrate, deploy, and reconfigure those resources as circumstances change (Teece, 2007, 2018). In this view, capabilities serve as the organizational mechanisms that help firms detect market shifts, acquire and share knowledge, develop new solutions, and coordinate resources effectively across functional areas.

This interpretation is particularly relevant to telecommunications because competitive advantage in the sector depends on more than possession of physical infrastructure or financial resources. Firms must continuously interpret market information, respond to evolving customer requirements, coordinate technological and commercial functions, develop new service propositions and deploy organizational knowledge effectively. Strong organizational capabilities can therefore enable more productive use of existing resources and improve the organization's capacity to respond to emerging opportunities.

This result broadly aligns with international research linking organizational and dynamic capabilities to firm performance. For instance, Forlano et al. (2022) highlight that firms operating in dynamic environments benefit from intentional organizational learning and capability-development processes, which help resources and routines adapt over time. Likewise, recent dynamic-capability research emphasizes that capabilities support performance by equipping organizations to respond effectively to changes that could otherwise erode the value of established routines.

In the Nigerian context, this finding is also consistent with the proposition that capability development matters in service-intensive and rapidly changing markets. The result therefore extends the capability–performance relationship to Nigeria's telecommunications sector. It shows that the strategic value of organizational capabilities is reflected in financial outcomes such as profitability, revenue growth, and market share. However, because this study employs a cross-sectional research design, the coefficient should be viewed as indicating a significant positive association within the estimated structural model, rather than as conclusive evidence of a causal relationship over time.

Organizational Capabilities and Non-Financial Performance

Organizational Capabilities also had a significant positive relationship with Non-Financial Performance ($\beta = .47$, $t = 10.91$, $p < .001$). The corresponding effect size ($f^2 = .31$) indicates a medium substantive effect. The coefficient is numerically larger than that for Financial Performance ($\beta = .40$), although the present study does not formally test the difference between these coefficients.

This finding suggests that organizational capabilities are strongly associated with customer-, brand-, and market-related outcomes. Marketing capability enables firms to interpret customer requirements and coordinate market responses; learning capability facilitates acquiring and using new knowledge; innovation capability supports developing and implementing new solutions; and integrative capability facilitates coordination across organizational functions. Collectively, these capabilities can contribute to outcomes such as customer satisfaction, loyalty, brand equity, responsiveness, and competitive positioning.

This result aligns with Dynamic Capabilities Theory, which suggests that the value of organizational capabilities may first appear in market-facing and operational improvements before it is fully captured in financial outcomes. For instance, advances in organizational learning and customer responsiveness can help build stronger customer relationships, while enhanced innovation and integration capabilities may lead to better service quality and faster response times. Over time, these improvements can translate into sustained financial performance. This finding reinforces the importance of conceptualizing organizational performance multidimensionally. Restricting performance measurement to profitability or revenue growth could obscure important ways through which organizational capabilities generate value. The results show that capabilities are significantly associated with both financial and non-financial outcomes, with a particularly strong relationship for the latter.

Environmental Dynamism and Financial Performance

Environmental Dynamism showed a positive and statistically significant association with Financial Performance ($\beta = .28$, $t = 4.76$, $p < .001$), accompanied by a medium effect size ($f^2 = .16$). In this study, Environmental Dynamism encompasses technological turbulence, competitive intensity, and regulatory uncertainty. This finding indicates that differences in these external factors are systematically linked to financial outcomes among the telecommunications firms analyzed. This positive coefficient requires careful interpretation. It should not be taken to mean that technological turbulence, competitive pressure, or regulatory uncertainty is inherently beneficial. Dynamic environments can create substantial adjustment costs, increase uncertainty, and undermine existing competitive advantages. At the same time, environmental change may create new market opportunities, stimulate organizational adaptation, and increase potential returns for firms that respond effectively.

This interpretation aligns with the broader dynamic-capabilities literature, which views environmental change as both a challenge and a catalyst for organizational adaptation. Forlano et al. (2022) note that environmental dynamism pushes organizations to enhance learning processes and develop their capabilities. Ultimately, the consequences of environmental dynamism depend in part on how well firms interpret and respond to the changes they face.

The finding is particularly relevant to telecommunications, where technological developments, competitive actions and regulatory changes can rapidly alter service configurations and market opportunities. Consequently, the observed positive relationship should be understood within the broader capability configuration examined in the study rather than as evidence that environmental turbulence automatically improves financial performance.

Environmental Dynamism and Non-Financial Performance

Environmental Dynamism was also positively related to Non-Financial Performance ($\beta = .30$, $t = 4.98$, $p < .001$), with a medium effect size ($f^2 = .18$). This indicates that dynamic environmental conditions are associated not only with financial outcomes but also with customer-, market- and brand-related outcomes.

One possible interpretation is that dynamic market environments increase the strategic importance of responsiveness. Rapid technological change can alter customers' expectations regarding service quality, digital accessibility and convenience; competitive intensity can increase pressure to differentiate offerings and strengthen customer relationships; while regulatory changes can require firms to modify service and market practices. Firms that respond

appropriately to these pressures may consequently experience stronger customer and market outcomes.

However, the positive direct relationship between ED and performance should not overshadow the study's more important theoretical result. Environmental Dynamism is not merely an external predictor of performance; it also changes the strength of the relationship between Organizational Capabilities and performance. The interaction effects therefore provide a more nuanced explanation than the direct ED coefficients alone.

Environmental Dynamism as a Boundary Condition of the Organizational Capabilities–Performance Relationship

The principal contribution of this study concerns the moderating role of Environmental Dynamism. The interaction between Organizational Capabilities and Environmental Dynamism was positive and statistically significant for Financial Performance ($\beta = .17$, $t = 3.95$, $p < .001$, 95% CI [.086, .254]) and Non-Financial Performance ($\beta = .19$, $t = 3.35$, $p = .001$, 95% CI [.078, .302]). Because neither confidence interval includes zero, the findings provide evidence that Environmental Dynamism systematically conditions the relationship between Organizational Capabilities and both dimensions of organizational performance.

The positive interaction coefficients show that the link between Organizational Capabilities and performance becomes stronger as Environmental Dynamism increases. This finding provides direct empirical support for the study's core contingency argument: the value of organizational capabilities for performance is not fixed but varies with external environmental conditions.

The simple-slope analysis makes this relationship particularly clear. For Financial Performance, the conditional effect of Organizational Capabilities increased from $\beta = .23$ under low Environmental Dynamism (-1 SD) to $\beta = .40$ at the mean and $\beta = .57$ under high Environmental Dynamism ($+1$ SD). For Non-Financial Performance, the corresponding conditional effects increased from $\beta = .28$ to $\beta = .47$ and ultimately to $\beta = .66$.

Accordingly, Organizational Capabilities remain positively associated with performance even when Environmental Dynamism is relatively low. However, their estimated performance contribution becomes considerably stronger as technological turbulence, competitive intensity and regulatory uncertainty increase. The results therefore do not suggest that capabilities are irrelevant in relatively stable environments. Rather, they show that the value associated with those capabilities is amplified under more dynamic conditions.

This pattern strongly supports Contingency Theory. The theory rejects the assumption that a single organizational arrangement will be equally effective across all environments and instead emphasizes the importance of fit between organizational characteristics and contextual conditions. Applied to the present study, strong marketing, learning, innovation, and integrative capabilities appear particularly valuable when firms face greater environmental change.

These results also reinforce the logic of Dynamic Capabilities Theory. Dynamic capabilities gain strategic significance in environments where resources, routines, and competitive positions can quickly lose value as conditions evolve. As environmental dynamism intensifies, organizations must better sense change, acquire new knowledge, develop innovative responses, and reconfigure their resources. The upward trend in slopes observed in this study supports this reasoning: firms with stronger organizational capabilities experience increasingly greater performance benefits as their environments become more dynamic.

Nevertheless, the wider empirical literature demonstrates that this relationship is not necessarily universal. Schilke (2014), for instance, reported a nonlinear relationship in which the competitive value of dynamic capabilities was strongest at intermediate levels of environmental dynamism rather than at the highest level. Park and Xiao (2020) similarly found that environmental dynamism could impede the positive performance contribution of explored dynamic capabilities among emerging-market firms. More recent research has also produced context-dependent findings, including cases in which environmental dynamism weakens particular capability–performance relationships or produces insignificant moderation effects.

These contrasting findings actually underscore the significance of the present results. They highlight that Environmental Dynamism cannot be viewed as a universally positive or negative moderator. Instead, its influence depends on the capabilities considered, the organizational context, sector characteristics, and the performance outcomes assessed. Recent systematic reviews also note that environmental dynamism acts mainly as a conditional factor, with its effect on capability returns varying across contexts.

The present Nigerian telecommunications evidence contributes to this debate by demonstrating a positive linear amplification pattern within the range of environmental conditions represented in the sample. This qualification is important. The results establish that higher observed levels of Environmental Dynamism strengthen the OC–performance relationship in this dataset; they do not establish that capability returns would continue increasing indefinitely under extreme levels of environmental turbulence.

Financial versus Non-Financial Performance under Environmental Dynamism

A further insight emerges when we consider the two performance dimensions separately. The interaction coefficient for Non-Financial Performance ($\beta = .19$) is numerically higher than that for Financial Performance ($\beta = .17$). Under high environmental dynamism, the conditional slope for NFP reaches $\beta = .66$ compared to $\beta = .57$ for FP. This pattern suggests that the capability–environment fit may be particularly relevant for market- and customer-oriented outcomes.

While these numerical differences are not statistically significant—since the study did not conduct a formal coefficient-difference test—the observed trend is nonetheless substantively meaningful.

Under highly dynamic conditions, firms must respond rapidly to changing customer expectations, competitor initiatives, technological developments, and regulatory requirements. Marketing and learning capabilities can improve environmental sensing and interpretation; innovation capability can facilitate appropriate strategic responses; and integrative capability can support coordination across organizational functions. These mechanisms may have particularly immediate implications for customer satisfaction, loyalty, brand equity, service responsiveness, and competitive positioning.

Financial outcomes may take time to manifest, as improvements in customer relationships and market responsiveness often occur before they are reflected in profitability or revenue growth. This lag plausibly explains why the conditional relationship is stronger for Non-Financial Performance.

Overall Interpretation

Taken together, the findings demonstrate that the capability–performance relationship in Nigeria's telecommunications sector is both direct and contingent. Organizational Capabilities are positively associated with Financial and Non-Financial Performance, while Environmental Dynamism is

independently associated with both outcomes. More importantly, the significant interaction effects demonstrate that Environmental Dynamism changes the strength of the Organizational Capabilities–performance relationship.

The progression of the simple slopes captures the central empirical contribution succinctly:

Financial Performance: .23 → .40 → .57

Non-Financial Performance: .28 → .47 → .66

Thus, the question posed in the title—When do organizational capabilities matter most?—can be answered empirically within the boundaries of the present sample: the positive association between Organizational Capabilities and performance is strongest at higher observed levels of Environmental Dynamism.

This finding advances the discussion beyond a universalistic interpretation of capabilities. Strong organizational capabilities are associated with superior performance, but the magnitude of that association depends partly on the external conditions the organization faces. The evidence therefore posits a strong organizational boundary condition in the Organizational Capabilities–performance relationship. It provides an empirical bridge between Contingency Theory and the Dynamic Capabilities perspective in an emerging-market telecommunications setting.

4.7 Theoretical Implications, Managerial Implications and Contribution to Knowledge

Theoretical Implications

This study makes three principal theoretical contributions. First, it extends the organizational capabilities literature by showing that the relationship between Organizational Capabilities and performance is contingent on Environmental Dynamism. Although capabilities were positively associated with Financial Performance ($\beta = .40$) and Non-Financial Performance ($\beta = .47$), these relationships strengthened as Environmental Dynamism increased. This finding moves the capability–performance debate beyond whether capabilities matter to the more contextually relevant question of when they matter most.

Second, the findings extend Contingency Theory by identifying Environmental Dynamism as a boundary condition in the Organizational Capabilities–performance relationship. Contingency Theory holds that organizational effectiveness is achieved when internal organizational characteristics align with external environmental conditions, rather than relying on a universally superior organizational structure (Donaldson, 2001). The significant $OC \times ED$ interactions for Financial Performance ($\beta = .17, p < .001$) and Non-Financial Performance ($\beta = .19, p = .001$) support this proposition. More importantly, the simple-slope analysis demonstrates the nature of the contingency: the OC–FP relationship increases from $\beta = .23$ under low ED to $\beta = .57$ under high ED, while the OC–NFP relationship increases from $\beta = .28$ to $\beta = .66$. Thus, the performance relevance of organizational capabilities varies systematically with environmental conditions.

Third, these findings reinforce Dynamic Capabilities Theory (DCT) by demonstrating that organizational capabilities become especially valuable in dynamic environments. According to DCT, firms require capabilities that help them sense environmental changes, seize new opportunities, and reconfigure resources as competitive and technological landscapes evolve (Teece, 2007, 2018). The observed strengthening of conditional effects aligns with this logic. Importantly, the results also highlight a key contextual nuance: the value of capabilities is not consistent across all environmental conditions. By integrating DCT with Contingency Theory, the study provides a more holistic and context-sensitive explanation of capability effectiveness than either theory can offer on its own.

The study also contributes contextually by extending capability–environment research to an African emerging-market telecommunications setting. Much of the established dynamic-capability literature has developed from advanced-economy contexts. Evidence from Nigeria shows that capability–environment alignment is also relevant in an institutional environment characterized by technological change, competitive pressure, and regulatory uncertainty. This responds to calls for greater contextualization of management theories across emerging markets rather than assuming that relationships established in developed economies necessarily operate identically elsewhere.

Managerial Implications

The findings have important implications for managers in telecommunications and other technology-intensive service industries. Most importantly, managers should not treat organizational capabilities as static assets whose value remains constant regardless of external conditions. The significant interaction effects show that capability deployment becomes especially important as technological, competitive, and regulatory conditions become more dynamic.

Telecommunications firms should therefore strengthen four complementary capability domains: marketing, learning, innovation, and integration. Marketing capability enables firms to sense changing customer requirements and competitor activities; learning capability supports acquiring and using new knowledge; innovation capability facilitates developing appropriate responses; and integrative capability enables coordination of resources and expertise across functional boundaries. The results also suggest linking capability investment to systematic environmental monitoring. Managers should continuously assess technological developments, competitive actions, and regulatory changes and adjust capability deployment accordingly. As environmental dynamism intensifies, organizations may need to accelerate learning processes, shorten innovation cycles, improve cross-functional coordination, and strengthen market-sensing mechanisms.

The stronger conditional relationship observed for Non-Financial Performance also highlights the importance of customer- and market-based outcomes. At high ED, the conditional OC–NFP relationship reached $\beta = .66$ compared with $\beta = .57$ for FP. Although these coefficients were not formally tested for statistical difference, the pattern suggests that capabilities may have particularly important implications for outcomes such as brand equity, customer loyalty, responsiveness and customer trust under dynamic conditions. Managers should therefore evaluate capability investments using both financial and non-financial performance indicators rather than relying exclusively on short-term financial measures.

Contribution to Knowledge

The main contribution to knowledge is the empirical demonstration that Environmental Dynamism serves as a boundary condition in the relationship between Organizational Capabilities and Performance within an emerging-market telecommunications context.

This study confirms the following contingent relationship:

Organizational Capabilities $\times$ Environmental Dynamism $\rightarrow$ Organizational Performance

More specifically:

OC × ED → Financial Performance: $\beta = .17, p < .001$

OC × ED → Non-Financial Performance: $\beta = .19, p = .001$

The simple-slope results provide further substantive evidence of this contribution. The conditional relationship between Organizational Capabilities and Financial Performance increases from $.23 \rightarrow .40 \rightarrow .57$, while the corresponding relationship with Non-Financial Performance increases from $.28 \rightarrow .47 \rightarrow .66$ as Environmental Dynamism moves from low to high levels.

Accordingly, this study offers a nuanced capability–performance explanation: Organizational Capabilities are positively linked to performance under all environmental conditions considered, but their performance relevance intensifies as Environmental Dynamism rises. This finding supports integrating Contingency Theory and Dynamic Capabilities Theory, showing that fully understanding organizational performance requires attention not only to the capabilities firms possess but also to the environmental context in which they are deployed.

5 Conclusion, Limitations and Future Research

5.1 Conclusion

This study examined when Organizational Capabilities matter most for organizational performance by investigating Environmental Dynamism as a boundary condition in Nigeria's telecommunications sector. Drawing principally on Contingency Theory and complemented by Dynamic Capabilities Theory, the study examined the direct relationships between Organizational Capabilities and Environmental Dynamism and Financial and Non-Financial Performance and, more importantly, whether Environmental Dynamism conditions the Organizational Capabilities–performance relationship.

The findings indicate that Organizational Capabilities are positively linked to both Financial Performance ($\beta = .40, p < .001$) and Non-Financial Performance ($\beta = .47, p < .001$). Environmental Dynamism also positively relates to Financial Performance ($\beta = .28, p < .001$) and Non-Financial Performance ($\beta = .30, p < .001$). Most importantly, the study's central result lies in the significant interaction effects: Environmental Dynamism positively moderates the relationship between Organizational Capabilities and both Financial Performance ($\beta = .17, p < .001$) and Non-Financial Performance ($\beta = .19, p = .001$).

The simple-slope analysis provides additional substantive interpretation. The conditional relationship between Organizational Capabilities and Financial Performance increases from $\beta = .23$ at low Environmental Dynamism to $\beta = .40$ at the mean and $\beta = .57$ at high Environmental Dynamism. Similarly, the relationship with Non-Financial Performance increases from $\beta = .28$ to $\beta = .47$ and $\beta = .66$, respectively.

The findings therefore demonstrate that Organizational Capabilities remain valuable across the environmental conditions examined, but their positive association with performance becomes progressively stronger as Environmental Dynamism increases. Environmental Dynamism consequently represents an important boundary condition of the Organizational Capabilities–performance relationship. In an emerging-market telecommunications environment characterized by technological turbulence, competitive intensity, and regulatory uncertainty, the performance relevance of organizational capabilities depends partly on the environmental conditions under which those capabilities are deployed.

5.2 Limitations

Several limitations should be kept in mind when interpreting these findings. First, this study employed a cross-sectional design, with data collected at a single point in time. Therefore, although the structural relationships are theoretically grounded and statistically significant, the results should not be interpreted as definitive evidence of causality over time.

Second, the analysis relied primarily on managerial perceptions obtained through self-reported questionnaires. While assessments of reliability, validity, common-method bias, and non-response bias indicated strong measurement quality, perceptual measures may still be influenced by individual judgment and common-method effects.

Third, the empirical focus on Nigeria's telecommunications sector makes the findings particularly relevant to contexts characterized by high technological intensity, competitive pressure, and regulatory complexity. However, these same features may limit the generalizability of the results to other sectors or national environments.

Finally, Environmental Dynamism was conceptualized as technological turbulence, competitive intensity, and regulatory uncertainty. While these dimensions capture important sources of environmental change, other contextual conditions—including macroeconomic volatility, institutional uncertainty, and market disruption—may also shape capability effectiveness.

5.3 Future Research

Future research could address these limitations in several ways. Longitudinal studies, for example, would be especially valuable for tracking how Organizational Capabilities and Environmental Dynamism evolve, and for determining whether capability development leads to subsequent changes in organizational performance.

Research could also replicate the model across other technology-intensive and service industries, such as banking, fintech, insurance, and digital services, as well as across other African and emerging-market economies. Cross-country studies could determine whether institutional and regulatory differences alter the observed capability–environment relationship.

Future research may also disaggregate Environmental Dynamism and examine whether Technological Turbulence, Competitive Intensity, and Regulatory Uncertainty moderate differently across organizational capabilities. Similarly, the four capability dimensions—Marketing, Learning, Innovation, and Integrative Capabilities—could be examined separately to determine which capabilities become most consequential under particular environmental conditions.

Finally, future studies could investigate nonlinear and threshold effects. The present findings demonstrate a positive strengthening pattern across the observed levels of Environmental Dynamism. Still, they do not establish that capability returns will continue increasing indefinitely as environmental

turbulence intensifies. Examining curvilinear relationships could therefore clarify whether extremely turbulent conditions eventually constrain firms' ability to convert Organizational Capabilities into superior performance.

Overall, the study shows that understanding organizational performance requires attention not only to what capabilities firms possess, but also to the environmental conditions under which they deploy those capabilities.

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