Matrik: Jurnal Manajemen, Teknik Informatika, dan Rekayasa Komputer
Vol. 25, No. 2, March 2026, pp. 385∼402
ISSN: 2476-9843, accredited by Kemenristekdikti, Decree No: 10/C/C3/DT.05.00/2025
DOI: 10.30812/matrik.v25i2.6128

Dynamic Capability Drives Digital Transformation: SEM Evidence on Sustained Competitive Advantage in Emerging Markets

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Article Info

Article history:

Received February 23, 2026
Revised March 03, 2026
Accepted March 10, 2026

Keywords:

Capability Orchestration;
Digital Strategy;
Dynamic Capability Theory;
Sustainable Competitiveness.

ABSTRACT

This study aims to examine the influence of dynamic capabilities on sustained competitive advantage and to investigate the mediating role of digital transformation in firms in emerging markets. Based on Dynamic Capabilities Theory, digital transformation is conceptualized as a process driven by strategic capabilities, rather than simply technology adoption. Data were collected from 247 top- and middle-level managers from medium- and large-sized firms in Indonesia. Analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed relationships. The results show that dynamic capabilities have a significant positive influence on digital transformation (= 0.61, p ¡ 0.001) and sustained competitive advantage (= 0.29, p ¡ 0.01). Furthermore, digital transformation significantly enhances sustained competitive advantage (= 0.54, p ¡ 0.001). Mediation analysis confirmed that digital transformation partially mediates the relationship between dynamic capabilities and sustained competitive advantage (indirect = 0.33, p ¡ 0.001), indicating that digital transformation acts as a strategic transmission mechanism. This model explains 37% of the variance in digital transformation and 58% of the variance in sustained competitive advantage. In conclusion, this study shows that dynamic capabilities are important drivers of sustained competitive advantage, both directly and indirectly through digital transformation. These findings highlight the importance of aligning digital initiatives with organizational capabilities to achieve long-term competitive performance in a dynamic and uncertain environment.

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How to Cite:
Supriyadi and Firmansyah, ”Dynamic Capability as a Strategic Enabler of Digital Transformation: A Structural Equation Modeling Analysis of Sustainable Competitive Advantage in Emerging Markets”, *MATRIK: Jurnal Manajemen, Teknik Informatika, dan Rekayasa Komputer*, Vol. 25, No. 2, pp. 385-402, March, 2026.

1. INTRODUCTION

The rapid diffusion of digital technologies such as artificial intelligence, big data analytics, cloud computing, and digital platforms has fundamentally reshaped competitive dynamics across industries. Digitalization transforms value creation mechanisms, customer engagement models, and competitive positioning logic, forcing firms to rethink how strategic advantage is constructed and sustained [1]. In this increasingly turbulent environment, traditional resource-based advantages rooted in asset ownership are no longer sufficient to secure long-term competitiveness. Instead, firms must continuously renew, reconfigure, and orchestrate their strategic resources to remain viable in digitally disrupted markets.

Digital transformation has evolved beyond mere technological implementation into a comprehensive strategic renewal process that reshapes organizational structures, routines, and managerial cognition [2, 3]. It involves redesigning business models, integrating digital infrastructures across functional domains, and embedding digital capabilities into core strategic processes. Despite substantial investments in digital initiatives, however, performance outcomes remain uneven. While some firms successfully leverage digital transformation to achieve sustainable competitive advantage, others fail to translate digital investments into measurable strategic returns [4]. This inconsistency raises an important theoretical question regarding the underlying conditions that determine whether digital transformation generates long-term competitive value.

Empirical findings on the performance implications of digital transformation remain fragmented. Some studies document significant positive effects on innovation performance and competitiveness [5], whereas others demonstrate that digital investments alone do not guarantee superior performance [6, 7]. Such mixed results suggest that digital transformation may not directly produce sustainable competitive advantage. Rather, its effectiveness may depend on deeper organizational capabilities that enable firms to align digital initiatives with broader strategic objectives. In this regard, Dynamic Capability Theory provides a compelling explanatory lens. Dynamic capabilities refer to a firm's ability to sense environmental changes, seize emerging opportunities, and transform or reconfigure organizational resources accordingly [8, 9]. These higher-order capabilities enable firms to adapt under conditions of uncertainty and technological disruption, thereby shaping their ability to extract value from digital initiatives.

However, a critical research gap emerges at the intersection of digital transformation and dynamic capability literature. Prior studies tend to treat these constructs as conceptually parallel rather than causally integrated phenomena. Research on digital transformation predominantly emphasizes technological adoption and business model innovation [10, 11], while dynamic capability research focuses on adaptive processes and strategic renewal mechanisms [12]. Limited empirical work explicitly examines whether digital transformation functions as a mediating mechanism through which dynamic capabilities influence sustainable competitive advantage. As a result, the internal transmission process linking higher-order capabilities to competitive outcomes remains insufficiently explained, creating a "black box" in understanding digital competitiveness [13].

This gap becomes more pronounced in emerging markets. Much of the existing empirical evidence is concentrated in developed economies characterized by institutional stability and resource abundance. In contrast, emerging market firms operate under higher institutional volatility, regulatory uncertainty, and resource constraints [14]. Under such conditions, the strategic role of dynamic capabilities may become even more critical in enabling effective digital transformation. Nevertheless, systematic empirical examination of how dynamic capability translates into sustainable competitive advantage through digital transformation within emerging market settings remains limited. This contextual imbalance restricts the generalizability of existing theoretical explanations [15].

Furthermore, although Dynamic Capability Theory posits that higher-order capabilities enable strategic renewal and long-term competitiveness [16, 17], empirical validation of the specific mechanisms by which these capabilities generate sustained advantage, particularly through digital transformation, remains underdeveloped. Without clarifying this mediating pathway, the relationship between capability development and performance outcomes risks being oversimplified. Addressing this mechanism-based gap is essential for advancing both strategic management and digital transformation scholarship [18].

To respond to these theoretical, empirical, and contextual gaps, this study proposes and empirically tests an integrated framework that positions digital transformation as a mediating strategic mechanism linking dynamic capability and sustainable competitive advantage. Rather than conceptualizing digital transformation as an exogenous technological driver, this research reframes it as a capability-enabled process of strategic orchestration. This perspective clarifies how sensing, seizing, and transforming capabilities are mobilized to convert digital initiatives into long-term competitive outcomes in institutionally dynamic environments.

Accordingly, this study seeks to answer the following research question: How does dynamic capability influence sustainable competitive advantage, and does digital transformation mediate this relationship in emerging market firms? Based on Dynamic Capability Theory, this study hypothesizes that dynamic capability positively influences digital transformation, that digital transformation enhances sustainable competitive advantage, and that digital transformation mediates the relationship between dynamic capability and sustainable competitive advantage. By empirically examining these relationships, this research extends the explanatory scope of Dynamic Capability Theory. It contributes to digital strategy literature by unpacking the mediating mechanism through which higher-order capabilities generate sustained competitiveness in emerging markets.

2. RESEARCH METHOD

2.1. Research Design

This study employs a quantitative explanatory research design to test the causal relationships among dynamic capability, digital transformation, and sustainable competitive advantage. The research is theory-testing in nature, grounded in Dynamic Capability Theory, and seeks to validate the mediating role of digital transformation within a structural model [19]. A cross-sectional survey approach was utilized to capture managerial perceptions at a single point in time. This design is appropriate for examining latent, multidimensional strategic constructs at the firm level. The unit of analysis is the firm, while the unit of observation is top- and middle-level managers involved in strategic and digital decision-making processes [20].

2.2. Research Framework and Flow

To enhance methodological clarity, this study followed a structured and sequential research framework grounded in Dynamic Capability Theory. The research process began with an extensive literature review to identify theoretical gaps and establish a coherent conceptual foundation. Key constructs, including dynamic capability, digital transformation, and sustainable competitive advantage, were clearly defined and theoretically integrated within the framework of strategic management literature. A research model was subsequently developed to illustrate the hypothesized relationships among the variables. This initial stage ensured a strong alignment between research objectives, theoretical foundations, and model specification.

The second stage focused on hypothesis development and the formulation of the research design. Prior empirical findings and theoretical arguments were used to translate conceptual relationships into testable hypotheses. A quantitative explanatory research design was selected to examine the structural relationships proposed in the conceptual model. The firm served as the unit of analysis, with data obtained from top- and middle-level managers who acted as key informants due to their involvement in strategic decision-making. A cross-sectional survey was conducted to capture managerial perceptions of capability development and the implementation of digital strategies.

The third stage involved instrument development and the implementation of data collection procedures. Measurement items were adapted from previously validated studies to ensure construct reliability and validity. A Likert-scale questionnaire was used to capture respondents' evaluations of strategic capabilities, digital transformation practices, and competitive performance outcomes. Purposive sampling criteria were used to select firms that had relevant experience in digital transformation initiatives. Data collection was conducted during a specified time period, and the responses were carefully screened to ensure completeness, consistency, and suitability for statistical analysis.

The fourth stage consisted of data analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM). The measurement model was first evaluated to assess indicator reliability, convergent validity, discriminant validity, and internal consistency reliability. Confirmation of satisfactory psychometric properties allowed the analysis to proceed to structural model evaluation. Path coefficients and hypothesis significance were then tested to determine the relationships among constructs. Bootstrapping procedures were applied to assess the stability and robustness of the parameter estimates. This analytical procedure ensured statistical rigor and reduced the potential for bias in interpreting structural relationships.

The final stage focused on mediation testing, interpretation of the findings, and theoretical integration. The indirect effect of dynamic capability on sustainable competitive advantage through digital transformation was examined using bootstrapping techniques. The magnitudes of the direct, indirect, and total effects were analyzed to determine the mediation structure. Interpretation of the results was conducted within the framework of Dynamic Capability Theory and the contextual characteristics of emerging markets. This systematic process ensured that theoretical reasoning, empirical testing, and strategic implications were logically integrated and methodologically transparent.

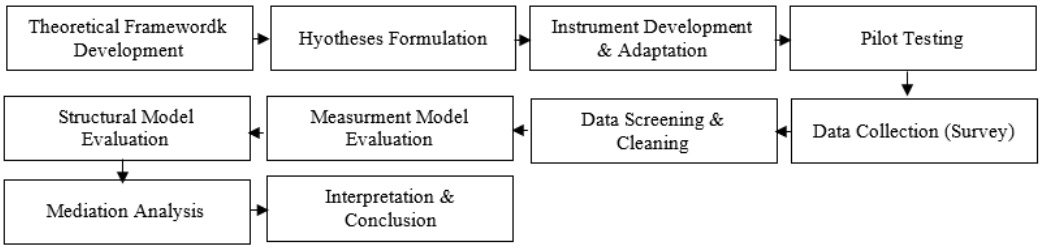

Figure 1. Research process flow

Figure 1 presents the overall research process adopted in this study. The research begins with the development of a theoretical framework grounded in Dynamic Capability Theory, supported by an extensive review of prior literature on dynamic capability, digital transformation, and sustainable competitive advantage. The literature review was conducted to identify conceptual relationships and research gaps that underpin the proposed research model. Based on this theoretical foundation, several testable hypotheses were formulated to explain the relationships among the constructs. A quantitative explanatory research design was then selected to examine these relationships empirically. Measurement indicators were adapted from previously validated studies to ensure construct reliability and validity, and a structured Likert-scale questionnaire was developed to capture managerial perceptions of organizational capabilities, digital transformation practices, and competitive performance.

Figure 1 further illustrates the subsequent stages of the research process, including data collection, data preparation, and statistical analysis. Survey responses were collected from managers involved in strategic decision-making and were screened to ensure completeness and consistency before analysis. The measurement model was evaluated using Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess indicator reliability, convergent validity, discriminant validity, and internal consistency reliability. Once the measurement model's adequacy was confirmed, the structural model was evaluated to test the hypothesized relationships among the constructs. Mediation analysis was also performed to examine the role of digital transformation as a strategic mechanism linking dynamic capability and sustainable competitive advantage. The findings obtained from these analyses were subsequently interpreted within the theoretical perspective of Dynamic Capability Theory to generate relevant theoretical and managerial implications.

2.3. Population and Sampling

The empirical setting of this study is Indonesia, an emerging market characterized by institutional dynamism, regulatory transformation, and rapid digital diffusion across industries. As one of the largest economies in Southeast Asia, Indonesia provides a relevant context for examining how firms respond strategically to digital transformation pressures. The country's heterogeneous industrial structure and varying levels of technological readiness create a rich environment for investigating organizational adaptation. Accelerated adoption of digital platforms, enterprise systems, and data-driven decision-making further reinforces the relevance of this context. This environment provides strong theoretical and practical grounds for testing mediation models within a dynamic emerging economy.

This study employed a purposive sampling technique to ensure that selected respondents met specific analytical criteria aligned with the research objectives. Purposive sampling enables researchers to focus on information-rich cases that provide valid insights into the phenomenon under investigation. The sampling criteria were designed to ensure organizational maturity and sufficient experience in digital transformation initiatives. Restricting participation to firms that met predetermined conditions enhanced the reliability and contextual relevance of the collected data. Such a sampling design strengthens internal validity while maintaining analytical rigor.

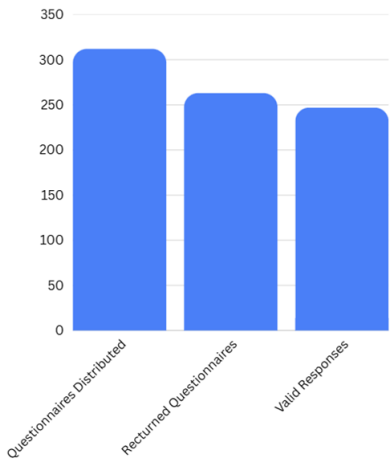

Figure 2. Survey response and data screening results

Figure 2 presents the survey response and data screening results used to determine the final research sample. The sampling procedure applied several eligibility criteria to ensure the relevance and reliability of the collected data. Firms were required to have operated for at least five years to ensure that participating organizations had progressed beyond the early survival stage. They had developed relatively stable operational systems and governance structures. Organizations with longer operational histories are more likely to have experienced environmental turbulence and strategic adjustments. These conditions are essential when examining mediation relationships involving organizational capabilities and digital transformation processes. Firms were also required to have implemented digital initiatives for at least 2 years to ensure that digital transformation activities were sufficiently embedded in organizational operations rather than remaining at an exploratory stage. Respondents were required to occupy strategic positions within their organizations, such as director, senior manager, or department head, as individuals in these roles possess comprehensive knowledge of strategic decision-making, digital investment policies, and organizational performance outcomes. Data collection was conducted between March and June 2025, during which 312 questionnaires were distributed to eligible firms, and 263 were returned. Screening procedures were subsequently applied to assess completeness and response consistency before analysis, resulting in a final dataset of 247 valid responses. The resulting response rate of 79.2 percent is considered satisfactory for organizational survey research, and the final sample size meets the ten-times rule and the statistical power requirements for estimating mediation effects using PLS-SEM, thereby ensuring adequate robustness for hypothesis testing.

2.4. Operationalization of Variables

Dynamic Capability (DC) in this study is conceptualized as a higher-order construct representing a firm's strategic ability to adapt and renew resources in response to environmental turbulence. The concept originates from the dynamic capability framework developed by David Teece, which emphasizes sensing, seizing, and transforming as core organizational processes. As a higher-order construct, DC integrates multiple organizational routines rather than representing a single operational activity. This modeling approach allows a more comprehensive measurement of adaptive capacity in dynamic markets. A hierarchical structure enables the study to capture both the multidimensional characteristics and the aggregated strategic effect of dynamic capability.

The first-order dimensions of Dynamic Capability consist of sensing, seizing, and transforming. Sensing refers to a firm's ability to identify technological trends, market opportunities, and emerging threats. Seizing represents the ability to mobilize resources and make timely strategic decisions to capture identified opportunities. Transforming reflects the firm's ability to reconfigure internal processes, organizational structures, and strategic assets to sustain competitiveness. Nine measurement items were employed to capture these three dimensions and ensure adequate representation of each capability domain. This multidimensional operationalization strengthens construct validity within the PLS-SEM analytical framework.

Digital Transformation (DT) is defined as the degree to which firms integrate digital technologies into business processes and strategic renewal initiatives. The construct reflects not only technological adoption but also broader organizational change driven by digital innovation. DT is operationalized through three primary dimensions: process digitalization, digital infrastructure, and business model renewal. Process digitalization measures the extent to which operational workflows are automated or digitally integrated. Digital infrastructure assesses the availability and sophistication of technological systems supporting organizational activities, whereas business model renewal evaluates strategic innovation enabled by digital technologies.

Eight measurement items were developed to capture Digital Transformation across its three dimensions. These indicators represent both operational and strategic aspects of digital implementation within organizations. Including business model renewal ensures the construct extends beyond technological upgrades and incorporates value-creation mechanisms. This comprehensive operationalization aligns with the contemporary view that digital transformation is both technological and strategic. Multidimensional measurement also enables the study to capture the mediating role of digital transformation in the relationship between dynamic capability and sustainable competitive advantage.

Sustainable Competitive Advantage (SCA) is conceptualized as a firm's long-term superior performance and strategic differentiation relative to competitors. The construct represents the outcome variable in the research model and reflects enduring organizational success. SCA is operationalized through three dimensions: market position, performance sustainability, and strategic differentiation. Market position assesses a firm's competitive standing within its industry, performance sustainability captures financial and operational consistency over time, and strategic differentiation measures the uniqueness of value propositions offered to the market. Seven measurement items were used to represent these dimensions, ensuring a robust assessment of long-term competitiveness in emerging markets such as Indonesia.

Table 1 presents the operational definitions of the variables used in this study, including constructs, conceptual definitions, dimensions, and the number of measurement items. The table functions as a bridge between theoretical concepts and empirical measurement. Clear specification of how each construct is operationalized improves research transparency and replicability. Operational

clarity is particularly important in quantitative research using Structural Equation Modeling (SEM), as it allows readers to understand how abstract strategic concepts are translated into measurable indicators.

Table 1. Operational Definition of Variables

Construct	Definition	Dimensions	No. of Items
Dynamic Capability (DC)	The firm's ability to sense, seize, and reconfigure resources in response to environmental change	Sensing, Seizing, Transforming	9
Digital Transformation (DT)	Degree of digital integration in business processes and strategic renewal	Process Digitalization, Digital Infrastructure, Business Model Renewal	8
Sustainable Competitive Advantage (SCA)	The firm's long-term superior performance and strategic differentiation	Market Position, Performance Sustainability, Strategic Differentiation	7

Dynamic Capability (DC) represents the first construct in this study and is defined as the firm's ability to sense, seize, and reconfigure resources in response to environmental change. This definition is grounded in Dynamic Capability Theory, which emphasizes organizational adaptability in turbulent and rapidly evolving markets. The construct captures higher-order organizational processes rather than static resources. Such processes reflect the firm's strategic agility and responsiveness to external challenges. Conceptualizing DC in this manner aligns the study with established theoretical foundations in strategic management literature.

Dynamic Capability is operationalized through three core dimensions: sensing, seizing, and transforming. The sensing dimension refers to the firm's ability to identify emerging opportunities and potential threats in the external environment. Seizing represents the capability to mobilize resources and implement strategic actions to capture identified opportunities. Transforming reflects the organization's ability to reconfigure internal assets, processes, and structures to sustain competitiveness over time. These dimensions collectively provide a comprehensive representation of organizational adaptive capacity.

Nine measurement items capture the construct of Dynamic Capability, distributed across three dimensions. Multiple indicators represent each dimension to ensure adequate coverage of the construct. The use of several items enhances measurement reliability and reduces potential measurement error. Multiple indicators also allow the construct to reflect the multidimensional nature of dynamic capability better. This measurement design strengthens construct validity within the structural model.

Digital Transformation (DT) constitutes the second construct in the research model and is defined as the degree of digital integration within business processes and strategic renewal initiatives. This definition extends beyond simple technology adoption and emphasizes strategic alignment between digital technologies and organizational objectives. Digital transformation is accordingly viewed as an organizational change process that reshapes operational activities and value creation mechanisms. The construct reflects the depth to which digital technologies are embedded in the firm's strategic and operational activities-such a conceptualization positions DT as a strategic construct rather than merely a technological phenomenon.

Three dimensions are used to measure Digital Transformation: process digitalization, digital infrastructure, and business model renewal. Process digitalization captures the extent to which operational workflows are automated and supported by digital technologies. Digital infrastructure refers to the technological foundation that enables integration, connectivity, and data-driven decision-making within the organization. Business model renewal reflects the transformation of value propositions, revenue mechanisms, and strategic positioning enabled by digital innovation. These dimensions collectively represent a comprehensive perspective of digital integration within firms.

Eight measurement items are employed to capture the construct of Digital Transformation. These indicators assess both the intensity and scope of digital implementation across organizational activities. Multiple indicators enable the measurement to capture both operational and strategic aspects of digitalization. Such an approach ensures that the construct reflects holistic transformation rather than isolated technological initiatives. The operationalization, accordingly, aligns with contemporary perspectives in the digital strategy and innovation literature.

Sustainable Competitive Advantage (SCA) represents the third construct in the research model and is defined as the firm's long-term superior performance and strategic differentiation relative to competitors. This definition emphasizes durability and sustainability rather than short-term performance gains. The construct reflects the organization's ability to maintain a superior market position over an extended period. Emphasis on sustainability distinguishes this concept from temporary competitive advantages arising from short-term strategic actions. Within the research framework, this construct functions as the primary outcome variable.

Three dimensions are used to operationalize Sustainable Competitive Advantage: market position, performance sustainability, and strategic differentiation. Market position reflects the firm's relative standing and competitiveness within its industry. Performance sustainability captures the organization's ability to maintain stable financial and operational outcomes over time. Strategic differentiation represents the uniqueness of products, services, or strategic positioning that distinguishes the firm from its competitors. These

dimensions collectively illustrate the long-term strength of organizational competitiveness.

Seven measurement items are used to assess the Sustainable Competitive Advantage construct. The distribution of measurement items across constructs supports reliable and stable estimation in PLS-SEM analysis. Table 1 demonstrates that each variable is clearly defined, theoretically grounded, and empirically measurable. Alignment between conceptual definitions, dimensions, and indicators strengthens the methodological rigor of the research design. Structured operationalization of variables enhances the credibility and analytical robustness of the study.

3. RESULT AND ANALYSIS

This section presents the study's empirical results and provides a comprehensive discussion of the findings. The analysis examines the relationships among dynamic capability, digital transformation, and sustainable competitive advantage in emerging-market firms. The results are presented using descriptive statistics, structural model evaluation, and interpretative discussion supported by tables, figures, and equations to facilitate reader understanding.

3.1. Empirical Results and Model Evaluation

Empirical results begin with the evaluation of the measurement model to ensure that all constructs meet established reliability and validity criteria. This step is essential in PLS-SEM analysis because structural relationships can be meaningfully interpreted only when measurement indicators are statistically sound. Evaluation procedures include indicator reliability, convergent validity, internal consistency, and discriminant validity. Each construct—Dynamic Capability, Digital Transformation, and Sustainable Competitive Advantage was examined systematically. Findings demonstrate strong psychometric properties across all assessment criteria.

Table 2. Indicator Reliability (Outer Loadings)

Construct	Indicator	Loading
Dynamic Capability	DC1	0.781
	DC2	0.842
	DC3	0.865
	DC4	0.824
	DC5	0.884
	DC6	0.802
	DC7	0.721
	DC8	0.847
	DC9	0.832
Digital Transformation	DT1	0.831
	DT2	0.854
	DT3	0.876
	DT4	0.845
	DT5	0.821
	DT6	0.834
	DT7	0.799
	DT8	0.862
Sustainable Competitive Advantage	SCA1	0.823
	SCA2	0.847
	SCA3	0.872
	SCA4	0.884
	SCA5	0.856
	SCA6	0.835
	SCA7	0.819

Table 2 presents the indicator reliability results based on the outer loadings of each measurement item used in the research model. Indicator reliability was evaluated to determine the extent to which each observed variable accurately represents its corresponding latent construct. Outer loading values range from 0.721 to 0.884, exceeding the commonly recommended threshold of 0.70 in Partial Least Squares Structural Equation Modeling (PLS-SEM). Values above this threshold indicate that each measurement item demonstrates sufficient reliability in reflecting the intended construct. These results suggest that the indicators used in this study exhibit acceptable measurement quality and meaningfully contribute to the assessment of the latent variables.

Indicators representing the Dynamic Capability construct exhibit strong loadings across all measurement items. The outer loadings for DC1 through DC9 range from 0.721 to 0.884, indicating a high level of consistency among the indicators associated with this construct. Such values suggest that the measurement items effectively capture the firm's capability to sense opportunities, seize emerging possibilities, and reconfigure organizational resources in response to environmental change. The empirical evidence, consequently, supports the adequacy of the selected indicators in representing the theoretical dimensions of dynamic capability.

Measurement items associated with the Digital Transformation construct also exhibit strong indicator reliability. Loading values for indicators DT1 to DT8 range from 0.799 to 0.876, all of which exceed the recommended threshold. These results indicate that the indicators reliably reflect organizational efforts to integrate digital technologies, transform operational processes, and strengthen digital capabilities. Strong indicator–construct relationships confirm that the measurement items appropriately capture the multidimensional nature of digital transformation within the organizational context.

Indicators of Sustainable Competitive Advantage show similarly high loadings. The outer loadings for SCA1 through SCA7 range from 0.819 to 0.884, indicating strong consistency among the items measuring this construct. These indicators reflect key aspects of sustained firm performance, strategic positioning, and the ability to maintain competitive advantage. The stability of these loading values indicates that the construct is measured with high empirical reliability.

Overall, the indicator reliability results confirm that all measurement items meet the recommended criteria for PLS-SEM analysis. Loading values exceeding 0.70 indicate that each indicator explains more than 50 percent of the variance of its corresponding latent construct. High loading values strengthen the validity of the measurement model and demonstrate that the indicators function as reliable empirical representations of the theoretical constructs. All indicators were retained for subsequent structural model evaluation and hypothesis testing.

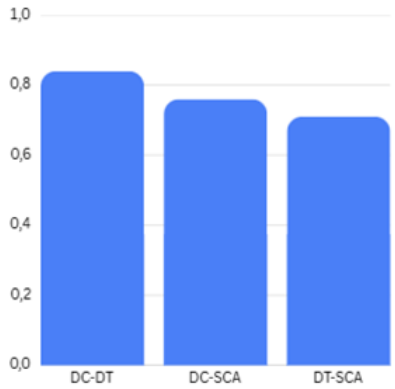

Figure 3. Discriminant validity (HTMT Comparison)

Figure 3 presents the discriminant validity assessment using the Heterotrait–Monotrait ratio (HTMT) comparison. Discriminant validity was evaluated to ensure that each construct in the research model is empirically distinct from the others. The HTMT approach is widely recommended in Partial Least Squares Structural Equation Modeling (PLS-SEM) because it provides a more sensitive assessment of construct distinctiveness. The results displayed in Figure 3 indicate that the HTMT values among the constructs remain below the recommended threshold, confirming that each construct captures a unique conceptual domain within the model.

Consistency in outer loading values across the three constructs also reflects the stability of the measurement model. Indicators measuring Dynamic Capability demonstrate strong alignment with the sensing, seizing, and transforming dimensions that characterize the construct. Measurement items associated with Digital Transformation show robust contributions, particularly in capturing aspects of digital integration and process digitalization within organizational operations. Indicators representing Sustainable Competitive Advantage exhibit similarly stable and high loadings, indicating reliable measurement of long-term competitive performance. This overall consistency strengthens the conceptual coherence of the measurement framework.

Convergent validity was further evaluated using the Average Variance Extracted (AVE) criterion. AVE values were recorded at 0.64 for Dynamic Capability, 0.67 for Digital Transformation, and 0.69 for Sustainable Competitive Advantage. All values exceed the recommended threshold of 0.50, indicating that each construct explains more than half of the variance of its associated indicators. These findings confirm that the measurement model demonstrates satisfactory convergent validity and strong explanatory capacity at the construct level.

Table 3. Construct Reliability and Convergent Validity

Construct	AVE	Composite Reliability	Cronbach Alpha
Dynamic Capability	0.64	0.90	0.87
Digital Transformation	0.67	0.92	0.90
Sustainable Competitive Advantage	0.69	0.91	0.88

Results presented in Table 3 demonstrate satisfactory convergent validity across all constructs. The Average Variance Extracted (AVE) values are 0.64 for Dynamic Capability, 0.67 for Digital Transformation, and 0.69 for Sustainable Competitive Advantage. Each value exceeds the recommended minimum threshold of 0.50, indicating that the constructs capture a substantial proportion of variance from their respective indicators. These findings confirm that the measurement items adequately represent their latent constructs. The measurement model thus demonstrates strong construct-level explanatory power.

Relatively high AVE values reported in Table 3 also indicate strong internal convergence among indicators within each construct. The AVE of 0.69 for Sustainable Competitive Advantage suggests considerable shared variance among indicators of performance outcomes and strategic differentiation. This level of convergence reflects a coherent representation of long-term competitive positioning within the measurement framework. Consistency among indicator contributions strengthens the empirical validity of the construct operationalization. The results consequently support the adequacy of the measurement model's convergent validity.

Internal consistency reliability was further assessed using Composite Reliability (CR), as summarized in Table 3. Composite Reliability values range from 0.90 for Dynamic Capability to 0.92 for Digital Transformation, all exceeding the recommended threshold of 0.70. High CR values indicate that the indicators consistently measure their underlying latent constructs. Composite Reliability is particularly suitable in the PLS-SEM context because it accounts for variations in the outer loadings. The constructs thus exhibit strong internal reliability and measurement stability.

Additional reliability verification was conducted using Cronbach's Alpha, with results also reported in Table 3. Alpha values range from 0.87 for Dynamic Capability to 0.90 for Digital Transformation, surpassing the commonly accepted threshold of 0.70. Such results confirm that the indicators maintain consistent internal measurement. Alignment between Composite Reliability and Cronbach's Alpha further reinforces the robustness of the measurement model. The constructs consequently demonstrate high internal consistency and dependable measurement properties.

Discriminant validity was evaluated using the Heterotrait–Monotrait (HTMT) ratio criterion, with comparative results illustrated in Figure 3. HTMT values range from 0.71 to 0.84, remaining below the conservative threshold of 0.85. These results indicate that each construct is empirically distinct from the others. Dynamic Capability and Digital Transformation maintain conceptual relationships while remaining statistically separable. Clear differentiation among constructs prevents conceptual overlap and supports the structural integrity of the model.

Table 4. Discriminant Validity (HTMT Ratio)

Construct	DC	DT	SCA
Dynamic Capability	-	0.84	0.76
Digital Transformation	0.84	-	0.71
Sustainable Competitive Advantage	0.76	0.71	-

Results reported in Table 4 demonstrate satisfactory discriminant validity among the three constructs using the Heterotrait Monotrait (HTMT) ratio criterion. HTMT values range from 0.71 to 0.84, remaining below the conservative threshold of 0.85 recommended in PLS-SEM literature. The relationship between Dynamic Capability and Digital Transformation shows the highest HTMT value of 0.84, yet still within the acceptable boundary. Lower HTMT values are observed between Digital Transformation and Sustainable Competitive Advantage (0.71) and between Dynamic Capability and Sustainable Competitive Advantage (0.76). These results indicate that each construct maintains sufficient empirical distinction.

The evidence presented in Table 4 confirms that the constructs represent distinct theoretical phenomena despite their conceptual relationships. Absence of excessive correlations among constructs strengthens the integrity of the structural model. Clear separation between capability development, digital transformation processes, and competitive advantage outcomes prevents measurement redundancy. Conceptual proximity between Dynamic Capability and Digital Transformation is theoretically expected, yet the HTMT results confirm that both constructs remain empirically distinguishable. Discriminant validity is satisfactorily established across the measurement model.

Overall evaluation of the measurement model indicates strong reliability and validity across all assessment dimensions. Indicator reliability, convergent validity, internal consistency, and discriminant validity were successfully demonstrated by the results

reported in Tables 3 and 4. Empirical evidence confirms that each construct is measured with adequate precision and consistency. A statistically robust measurement foundation allows structural relationships to be interpreted with greater confidence. The validated measurement model thus provides a rigorous basis for subsequent structural analysis and hypothesis testing.

3.2. Structural Model Evaluation

Confirmation of the measurement model was followed by evaluation of the structural model to examine the hypothesized relationships among the constructs. The analysis employed bootstrapping with 5,000 resamples to obtain robust standard errors and reliable t-statistics. This non-parametric resampling technique is particularly appropriate in PLS-SEM because it does not require assumptions of normal data distribution. Repeated subsampling increases the precision of parameter estimates and improves statistical reliability. Hypothesis testing thus becomes more empirically rigorous and statistically dependable.

Structural model evaluation focused on four key criteria: path coefficients, statistical significance, coefficient of determination (R^2), and predictive relevance (Q^2). These indicators collectively determine whether the theoretical framework is supported by empirical evidence. Path coefficients assess the strength and direction of relationships between constructs, while statistical significance indicates whether these relationships are beyond chance. Coefficients of determination and predictive relevance provide insight into the explanatory and predictive capabilities of the proposed research model.

Table 5. Structural Path Coefficients

Hypothesis	Path	β	t-value	p-value	Result
H1	Dynamic Capability $\longrightarrow$ Digital Transformation	0.61	11.42	$<$0.001	Supported
H2	Digital Transformation $\longrightarrow$ Sustainable Competitive Advantage	0.54	9.87	$<$0.001	Supported
H3	Dynamic Capability $\longrightarrow$ Sustainable Competitive Advantage	0.29	4.21	$<$0.01	Supported

Results presented in Table 5 demonstrate that Dynamic Capability exerts a strong and statistically significant positive effect on Digital Transformation (β = 0.61, t = 11.42, p $<$ 0.001). The magnitude of the coefficient indicates a substantial structural influence within the model. A high t-value confirms statistical significance at the 1 percent level, providing strong empirical support for Hypothesis 1. Organizations possessing stronger sensing, seizing, and transforming capabilities tend to implement digital initiatives more effectively. Digital transformation thus emerges as a capability-driven strategic process rather than merely a technological adoption activity.

Evidence reported in Table 5 also highlights the strategic importance of higher-order organizational capabilities in enabling digital strategy execution. Firms that continuously monitor environmental changes and technological developments are more capable of identifying digital opportunities. The ability to reconfigure resources enables organizations to integrate digital technologies into operational and managerial processes. These findings support the theoretical argument that digital transformation represents the operational manifestation of dynamic capabilities in contemporary business environments.

The second structural relationship reported in Table 5 indicates that Digital Transformation significantly enhances Sustainable Competitive Advantage (β = 0.54, t = 9.87, p $<$ 0.001). The magnitude of the coefficient suggests a strong effect size within the context of organizational research. Statistical significance confirms that digital initiatives contribute directly to long-term competitive positioning. Firms that successfully integrate digital infrastructure and redesign their business processes tend to achieve superior performance outcomes. Digital transformation thus functions as a key strategic driver of sustainable competitiveness.

Results in Table 5 further reveal that Dynamic Capability also exerts a direct positive influence on Sustainable Competitive Advantage (β = 0.29, t = 4.21, p $<$ 0.01). The magnitude of this coefficient is moderate compared with the effect of digital transformation, yet the relationship remains statistically significant. Higher-order capabilities thus independently contribute to competitive strength. Organizations that can continuously adapt and reconfigure their resource base maintain strategic flexibility in turbulent environments, enabling them to sustain competitive advantage over time.

The simultaneous presence of significant direct and indirect relationships reported in Table 5 indicates partial mediation within the structural model. Dynamic Capability influences Sustainable Competitive Advantage both directly and indirectly through Digital Transformation. This layered mechanism highlights the importance of capability deployment rather than mere capability possession. Empirical evidence thus reinforces the argument that dynamic capabilities must be translated into digital initiatives to generate sustainable strategic outcomes. Firms that actively translate strategic adaptability into digital initiatives gain stronger performance benefits.

Table 6. Coefficient of Determination and Predictive Relevance

Construct	R^2	Q^2
Digital Transformation	0.37	0.29
Sustainable Competitive Advantage	0.58	0.41

Results presented in Table 6 indicate the explanatory power of the structural model through the coefficient of determination (R^2). The R^2 value for Digital Transformation is 0.37, indicating that Dynamic Capability explains 37 percent of the variance in digital transformation activities. This level of explanatory power is considered moderate within social science research and suggests a meaningful structural relationship between the constructs. The result confirms that organizations possessing stronger dynamic capabilities are more likely to implement digital initiatives effectively. Empirical evidence thus supports the theoretical assumption that organizational capabilities play a critical role in enabling digital transformation.

The findings reported in Table 6 also show that the R^2 value for Sustainable Competitive Advantage is 0.58. This result indicates that Dynamic Capability and Digital Transformation jointly explain 58 percent of the variance in sustainable competitive advantage. Such a value represents substantial explanatory power in organizational and management research. The model's strong predictive capacity suggests that integrating capability development with digital initiatives significantly contributes to long-term competitive positioning. Firms that successfully align these strategic dimensions tend to achieve stronger and more sustainable market performance.

The predictive relevance of the model was further evaluated using the Stone–Geisser Q^2 statistic, which assesses out-of-sample predictive performance. Values presented in Table 6 show Q^2 scores of 0.29 for Digital Transformation and 0.41 for Sustainable Competitive Advantage. Both values exceed zero, confirming that the structural model possesses adequate predictive relevance. Higher Q^2 values for sustainable competitive advantage indicate greater predictive accuracy for the model's outcome variable. These results demonstrate that the proposed model not only explains relationships among constructs but also possesses meaningful predictive capability.

Overall evaluation based on the statistics presented in Table 6 confirms that the structural model exhibits satisfactory explanatory power and predictive relevance. Moderate R^2 values combined with positive Q^2 results indicate that the model is empirically robust and theoretically meaningful. Capability-driven digital transformation appears to play a central role in shaping sustainable competitive advantage. Empirical evidence provides strong support for the proposed theoretical framework and establishes a solid basis for further discussion of strategic implications.

Sustainable competitive advantage demonstrates an R^2 value of 0.58, reflecting strong explanatory power. Dynamic capability and digital transformation collectively explain 58 percent of the variance in long-term competitiveness. This value indicates that the model captures key determinants of strategic sustainability.

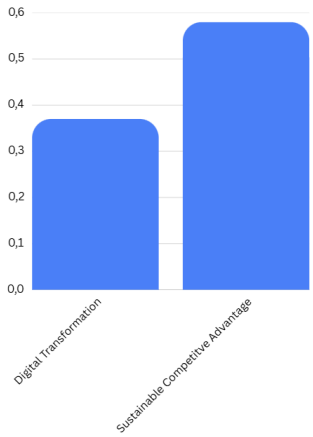

Figure 4. R^2 Explanatory power

Figure 4 illustrates the explanatory power of the structural model through the coefficient of determination (R^2) values for the endogenous constructs. The model explains 37 percent of the variance in Digital Transformation, indicating that Dynamic Capability plays a substantial role in shaping organizational digital initiatives. This level of explanatory power is considered moderate in

social science research but remains theoretically meaningful. The result suggests that firms possessing stronger sensing, seizing, and transforming capabilities are more likely to implement digital transformation strategies successfully.

Figure 4 also shows that the model explains 58 percent of the variance in Sustainable Competitive Advantage. This value represents substantial explanatory power within the context of strategic management research. The result indicates that the combined influence of Dynamic Capability and Digital Transformation contributes significantly to long-term competitive positioning. Organizations that integrate internal capabilities with digital initiatives tend to achieve stronger, more sustainable market performance.

The Stone–Geisser Q^2 values further support predictive relevance illustrated in Figure 4. Digital Transformation records a Q^2 value of 0.29, while Sustainable Competitive Advantage reaches 0.41. Both values exceed zero, indicating that the model possesses adequate predictive capability beyond the estimation sample. Higher predictive relevance for Sustainable Competitive Advantage suggests that the structural model effectively explains the outcome variable in the research framework.

Structural evaluation presented in Figure 4 confirms the robustness and coherence of the proposed research model. Moderate to substantial explanatory power, combined with positive predictive relevance, indicates that the model performs well at explaining and predicting organizational outcomes. Empirical evidence strengthens the validity of the theoretical framework linking Dynamic Capability, Digital Transformation, and Sustainable Competitive Advantage. These findings provide a solid foundation for interpreting the structural relationships and discussing their broader strategic implications.

3.3. Mediation Analysis

A mediation analysis was conducted to examine whether digital transformation serves as a transmission mechanism linking dynamic capability and sustainable competitive advantage. An indirect relationship was tested using a bootstrapping procedure with 5,000 resamples. This approach allows robust estimation of indirect effects without assuming normal distribution, which is particularly appropriate for Partial Least Squares Structural Equation Modeling (PLS-SEM). Evaluation of mediation focuses on the magnitude, statistical significance, and proportion of the indirect effect. Such analysis clarifies the internal strategic mechanism connecting higher-order capabilities to competitive outcomes.

Table 7. Indirect Effect (Bootstrapping Mediation Result)

Path	Indirect Effect (β)	t-value	p-value	Result
Dynamic Capability $\longrightarrow$ Digital Transformation $\longrightarrow$ Sustainable Competitive Advantage	0.33	7.95	$<$0.001	Significant

Results reported in Table 7 demonstrate that the indirect effect of Dynamic Capability on Sustainable Competitive Advantage through Digital Transformation is positive and statistically significant (β = 0.33, t = 7.95, $p < 0.001$). The magnitude of the indirect coefficient indicates a meaningful mediation pathway within the structural model. A high t-value confirms statistical significance at the 1 percent level, providing strong empirical support for the mediating role of digital transformation. The findings indicate that a substantial portion of dynamic capability's influence on competitive advantage is transmitted through the implementation of digital initiatives.

The evidence presented in Table 7 highlights the strategic mechanism by which organizational capabilities are translated into long-term performance outcomes. Firms with strong sensing, seizing, and transforming capabilities are better able to identify digital opportunities and integrate emerging technologies into operational processes. Digital transformation functions as a strategic conduit that converts organizational capabilities into tangible competitive benefits. Capability deployment through digital initiatives plays a crucial role in strengthening sustainable competitive advantage.

The statistical significance of the mediation effect reported in Table 7 also reinforces the theoretical argument that digital transformation serves as a critical intermediary in capability-based competition. Dynamic capability alone may not directly generate competitive advantage unless it is operationalized through technological and organizational transformation. Digital initiatives allow firms to redesign business processes, enhance efficiency, and create new value propositions in the marketplace. This transformation mechanism strengthens the linkage between internal capabilities and external competitive positioning.

Overall mediation analysis presented in Table 7 confirms that Digital Transformation partially mediates the relationship between Dynamic Capability and Sustainable Competitive Advantage. The presence of both significant direct and indirect effects indicates that multiple strategic pathways shape competitive advantage. Organizations benefit not only from possessing dynamic capabilities but also from effectively deploying those capabilities through digital transformation initiatives. Empirical evidence provides strong support for the proposed mediation framework and highlights the strategic importance of integrating capability development with digital transformation strategies.

The direct influence of dynamic capability on sustainable competitive advantage also remains statistically significant (β = 0.29, p $<$ 0.01). The simultaneous presence of significant direct and indirect effects indicates partial mediation rather than full mediation. Dynamic capability enhances competitiveness independently and strengthens its influence when operationalized through digital transformation. Comparison of coefficients shows that the indirect effect is slightly larger than the direct effect, highlighting the central role of digital transformation in amplifying strategic outcomes.

The total influence of dynamic capability on sustainable competitive advantage is calculated as the sum of direct and indirect effects (β_total = 0.62). This relatively high coefficient demonstrates the overall strategic importance of dynamic capability in determining long-term competitiveness. More than half of this total influence flows through digital transformation initiatives. Such a pattern emphasizes that capability deployment is more impactful than capability possession alone.

Table 8. Mediation Effect Summary

Effect Type	Coefficient
Direct Effect (DC $\longrightarrow$ SCA)	0.29
Indirect Effect (DC $\longrightarrow$ DT $\longrightarrow$ SCA)	0.33
Total Effect	0.62
VAF	53%
Mediation Type	Partial Mediation

The results summarized in Table 8 present the decomposition of the direct, indirect, and total effects between Dynamic Capability and Sustainable Competitive Advantage. The direct effect of Dynamic Capability on Sustainable Competitive Advantage is reported at 0.29, indicating that organizational capabilities independently contribute to competitive performance. The indirect effect transmitted through Digital Transformation reaches 0.33, reflecting a substantial mediation pathway. The combined influence of direct and indirect relationships yields a total effect of 0.62, demonstrating a strong overall impact of Dynamic Capability on long-term competitive outcomes.

The evidence shown in Table 8 indicates that the magnitude of the indirect effect slightly exceeds that of the direct effect. This pattern suggests that Dynamic Capability's influence is largely operationalized through digital transformation initiatives. Organizations with strong sensing, seizing, and transforming capabilities tend to convert these competencies into digital strategies and technological integration. The implementation of digital initiatives serves as a key strategic channel through which internal capabilities translate into sustainable market advantages.

Strength of the mediation mechanism was further evaluated using the Variance Accounted For (VAF) metric presented in Table 8. The VAF value of 53 percent indicates that more than half of Dynamic Capability's total influence on Sustainable Competitive Advantage is transmitted through Digital Transformation. This proportion reflects a substantial mediating contribution within the structural model. A mediation effect of this magnitude highlights the central role of digital initiatives in converting organizational capabilities into measurable competitive outcomes.

Interpretation of the VAF value shown in Table 8 follows widely accepted mediation criteria in structural equation modeling. VAF values between 20 percent and 80 percent indicate partial mediation. The obtained value of 53 percent confirms that Digital Transformation partially mediates the relationship between Dynamic Capability and Sustainable Competitive Advantage. Competitive advantage emerges not only from the direct deployment of organizational capabilities but also from the strategic integration of digital transformation processes. These findings reinforce the theoretical proposition that capability-driven digitalization represents a critical pathway toward sustainable competitiveness.

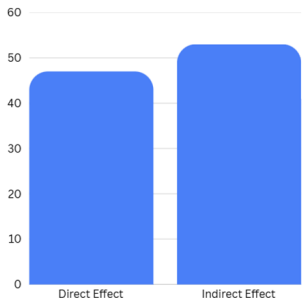

Figure 5. Variance Accounted For (VAF) contribution

Figure 5 illustrates the contribution of mediation using the Variance Accounted For (VAF) metric within the structural model. The mediation structure shows that a substantial portion of Dynamic Capability's influence on Sustainable Competitive Advantage is transmitted through Digital Transformation. A VAF value exceeding 50 percent indicates that digital transformation represents a dominant pathway through which organizational capabilities generate competitive outcomes. This result reinforces the importance of translating higher-order capabilities into concrete strategic actions that reshape organizational processes and technological infrastructures.

The theoretical implications illustrated in Figure 5 extend the development of Dynamic Capability Theory in the context of digital transformation. Higher-order organizational capabilities, such as sensing, seizing, and transforming, do not automatically yield sustainable competitive advantage unless they are operationalized through strategic initiatives. Digital transformation represents a contemporary mechanism through which firms deploy these capabilities to respond to technological disruption and market turbulence. Integration between technological renewal and adaptive capability development strengthens organizations' capacity to sustain long-term competitive performance.

The managerial implications of Figure 5 emphasize the importance of aligning capability development with digital strategy implementation. Organizations investing in dynamic capabilities must simultaneously embed these competencies within digital initiatives such as process digitalization, platform integration, and data-driven decision systems. Capability development without digital execution may limit the realization of competitive benefits. Effective synchronization between organizational capabilities and digital transformation strategies becomes a critical determinant of sustainable organizational success.

Overall mediation evidence presented in Figure 5 confirms that Digital Transformation functions as a pivotal intermediary variable within the proposed structural framework. Significant indirect effects, strong statistical significance, and a VAF exceeding 50% collectively validate the hypothesized mediation pathway. Empirical findings strengthen the explanatory depth of the research model by clarifying the mechanism linking Dynamic Capability and Sustainable Competitive Advantage. The results provide robust empirical support for the role of capability-driven digital transformation in shaping competitive outcomes within contemporary organizational environments.

3.4. Discussion of Findings

Empirical findings provide strong support for the proposed theoretical framework linking dynamic capability, digital transformation, and sustainable competitive advantage. The significant path coefficient from dynamic capability to digital transformation (β = 0.61, $p < 0.001$) indicates a structurally strong relationship. This magnitude suggests that organizational capabilities function as primary drivers of digital transformation initiatives. Firms do not achieve digital maturity merely through technological investment but through the development of strategic adaptability.

The strength of this coefficient reinforces the argument that digital transformation is fundamentally capability-driven. Sensing environmental changes enables firms to identify emerging digital opportunities, while seizing and transforming capabilities allow organizations to mobilize and reconfigure resources accordingly. Empirical evidence demonstrates that these higher-order capabilities significantly accelerate digital implementation. Such findings challenge technology-centric perspectives that emphasize digital infrastructure while neglecting strategic processes within organizations.

A positive, statistically significant relationship between digital transformation and sustainable competitive advantage (β = 0.54, $p < 0.001$) further underscores the strategic value of digitalization. The magnitude of 0.54 indicates a strong performance effect within the standards of organizational research. Digital integration, process automation, and business model innovation collectively enhance long-term competitiveness. Digital transformation functions as a strategic renewal mechanism rather than merely a short-term efficiency tool.

A relatively high R^2 value of 0.58 for sustainable competitive advantage strengthens this conclusion. More than half of the variance in long-term competitiveness is explained by dynamic capability and digital transformation. Such explanatory power is considered substantial within organizational and strategic management research. The result confirms that the proposed model captures key determinants of sustainable performance.

Figure 6 illustrates the comparative strength of direct and indirect effects within the structural model. Mediation results demonstrate that Digital Transformation represents a substantial pathway through which Dynamic Capability influences Sustainable Competitive Advantage. The Variance Accounted For (VAF) value of 53 percent indicates that more than half of the total effect of Dynamic Capability on competitive advantage is transmitted through digital transformation. This outcome clarifies that dynamic capability does not automatically translate into superior organizational performance unless it is operationalized through concrete digital initiatives. Capability deployment, rather than mere capability possession becomes the decisive factor in achieving sustainable competitive outcomes.

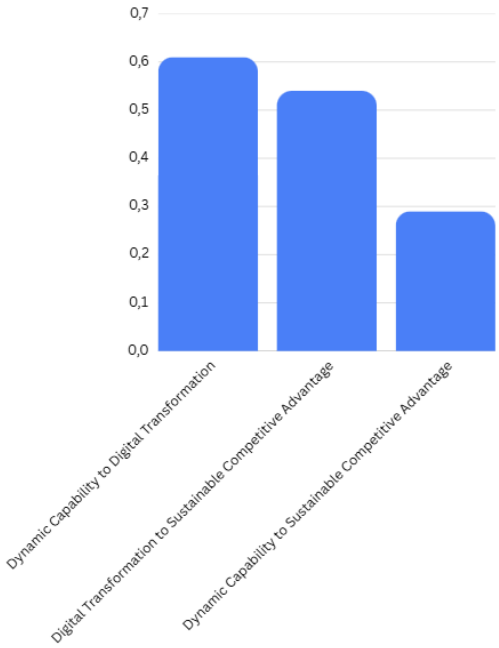

Figure 6. Effect strength comparison

The evidence presented in Figure 6 also reveals a layered strategic mechanism within the research model. Dynamic Capability contributes directly to Sustainable Competitive Advantage with a coefficient of 0.29, while its influence is further amplified through Digital Transformation with an indirect effect of 0.33. Such a layered effect indicates that firms benefit from dynamic capability across multiple strategic pathways. Stronger competitive gains emerge when organizational capabilities are embedded within digital transformation processes that reshape operational and strategic activities. The comparative effect strength highlights the central role of digital initiatives in maximizing the strategic value of dynamic capabilities.

The empirical relationships shown in Figure 5 help clarify inconsistencies identified in prior research regarding the performance implications of digital transformation. Previous studies have reported mixed findings, partly due to the absence of an integrated capability-based framework. Demonstrating that Digital Transformation mediates the relationship between Dynamic Capability and Sustainable Competitive Advantage provides a clearer causal explanation. Digital transformation alone does not guarantee superior performance unless supported by underlying strategic capabilities that enable firms to sense opportunities, reconfigure resources, and implement technological change effectively.

Theoretical implications illustrated in Figure 6 extend the Dynamic Capability perspective by integrating it with digital transformation research. Findings suggest that digital transformation represents a practical manifestation of dynamic capability in the digital era. Higher-order capabilities enable organizations to identify technological opportunities and translate them into strategic digital initiatives. Conceptual integration advances existing literature by positioning digitalization as an outcome of capability deployment rather than as an independent driver of performance.

The contextual relevance of the relationships depicted in Figure 6 is particularly important for firms operating in emerging markets. Institutional volatility, resource constraints, regulatory uncertainty, and uneven technological infrastructure often characterize such contexts. Strategic flexibility and resource reconfiguration become essential determinants of organizational survival and growth. Strong structural coefficients and substantial explanatory power observed in this study suggest that capability-based digital orchestration is increasingly critical in dynamic, uncertain environments.

Overall interpretation of the structural relationships presented in Figure 6 confirms that sustainable competitive advantage in the digital era emerges from the strategic alignment between Dynamic Capability and Digital Transformation. Organizations achieve long-term competitive sustainability when they continuously sense emerging opportunities, reconfigure internal resources, and integrate digital technologies into their strategic core. Comparing these findings with prior research strengthens both the theoretical justification and the empirical robustness of the integrated capability-based digitalization framework.

4. CONCLUSION

This study confirms that dynamic capability is a critical driver of digital transformation and sustainable competitive advantage for firms operating in emerging markets. Empirical results demonstrate that dynamic capability significantly influences digital transformation (β = 0.61, p $<$ 0.001), which, in turn, strengthens sustainable competitive advantage (β = 0.54, p $<$ 0.001). Digital transformation partially mediates this relationship, as indicated by a Variance Accounted For (VAF) value of 53 percent. Such findings provide a clear theoretical contribution by positioning digital transformation as a capability-enabled strategic mechanism rather than merely a technological initiative. Empirical clarification of the mediating process through which higher-order capabilities translate into long-term competitiveness extends the dynamic capability framework into the digital strategy domain. The study therefore offers a more precise explanation of performance outcomes in emerging market contexts.

Managerial implications derived from the findings suggest that firms should prioritize capability development, particularly sensing, seizing, and resource reconfiguration, before intensifying digital investments. Strategic alignment between capability development and digital initiatives becomes essential for achieving sustainable value creation. Digital transformation efforts must be embedded within organizational processes and strategic decision-making rather than implemented solely as technological upgrades. Limitations of the study include the cross-sectional research design and the single-country empirical context, both of which restrict causal interpretation and generalizability. Future research is encouraged to adopt longitudinal designs and to incorporate contextual moderating variables, such as environmental turbulence or organizational culture. Such extensions would further refine understanding of capability-driven digital competitiveness and enhance the robustness of theoretical explanations in dynamic organizational environments.

5. ACKNOWLEDGEMENTS

The authors would like to express their sincere appreciation to all individuals who contributed to the completion of this research. Special thanks are extended to colleagues and experts who provided valuable insights, constructive feedback, and academic discussions during the research process. Their contributions greatly assisted in refining the conceptual framework and strengthening the analytical approach of this study.

The authors also acknowledge support for language assistance, writing support, and proofreading, which significantly improved the clarity and quality of the manuscript. Furthermore, appreciation is given to all respondents who participated in the data collection process and provided essential information for this research. Their cooperation and willingness to share knowledge made this study possible.

6. DECLARATIONS

AI USAGE STATEMENT

The authors acknowledge that Artificial Intelligence tools, including ChatGPT developed by OpenAI, were utilized to support language refinement, grammar correction, and paraphrasing during the manuscript preparation process. The authors confirm that all research ideas, data analysis, interpretations, and conclusions presented in this article are entirely the authors' own and were not generated by the AI tool.

AUTHOR CONTIBUTION

Supriyadi, the first author, conceived and designed the research, conducted data collection and data analysis, and drafted the initial manuscript. Firmansyah, the second author, contributed to the literature review, the refinement of the research methodology, and the interpretation of results, and provided critical revisions to improve the quality and academic rigor of the manuscript. Both authors reviewed and approved the final version of the manuscript.

FUNDING STATEMENT

This study was conducted without any financial support from public, commercial, or not-for-profit funding agencies. The research was fully self-funded by the authors as part of their academic and professional development initiatives. All stages of the research process, including data collection, analysis, and manuscript preparation, were carried out independently without external financial assistance. The absence of external funding ensured that the study was conducted with full academic autonomy and without any potential financial influence. The authors confirm that no grants, sponsorships, or institutional funding were received for this research.

COMPETING INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirm that there are no financial, personal, or professional relationships that could be perceived as influencing the research outcomes. No external parties had any role in the design of the study, data collection, analysis, interpretation of results, or decision to publish the manuscript. The research was conducted objectively and independently, based solely on academic and scientific considerations. The authors are fully responsible for the content and integrity of this article.

REFERENCES

[1] A. M. Al-Absi and M. A. Ali, "Investigating the mediating role of strategic flexibility on strategic planning and competitive advantage in Yemeni cement companies," *Problems and Perspectives in Management*, vol. 23, no. 4, pp. 696–713, 2025, https://doi.org/10.21511/ppm.23(4).2025.47.

[2] A. Fadhillah, "Driving Business Performance in Jakarta's Fried Chicken MSMEs: The Role of Product and Service Innovation in Creating Competitive Advantage," *Journal of Strategic Innovation in Economics and Business*, vol. 1, no. 2, pp. 36–55, 2025, https://doi.org/10.65101/sinebis.v1i2.166.

[3] A. S. Mahar, Y. Zhang, B. Sadiq, and R. F. Gul, "Sustainability Transformation Through Green Supply Chain Management Practices and Green Innovations in Pakistan's Manufacturing and Service Industries," *Sustainability*, vol. 17, no. 5, pp. 1–28, 2025, https://doi.org/10.3390/su17052204.

[4] T. Wahyudi, E. Arisondha, M. H. B. Bakar, and N. Soleha, "Green product innovation, and AI adoption: The moderating role of intellectual capital in achieving competitive advantage," *Journal of Accounting and Investment*, vol. 26, no. 3, pp. 1231–1254, 2025, https://doi.org/10.18196/jai.v26i3.26788.

[5] I. S. A. Koliby, N. A. B. Mehat, A. K. Al-Swidi, and M. A. Al-Hakimi, "Unveiling the linkages between entrepreneurial culture, innovation capability, digital marketing capability and sustainable competitive performance of manufacturing SMEs: evidence from emerging countries," *The Bottom Line*, vol. 37, no. 4, pp. 473–500., 2024, https://doi.org/10.1108/BL-08-2023-0241.

[6] E. N. Shebeshe and D. Sharma, "Sustainable supply chain management and organizational performance: the mediating role of competitive advantage in Ethiopian manufacturing industry," *Future Business Journal*, vol. 10, no. 47, pp. 2–16, 2024, https://doi.org/10.1186/s43093-024-00332-6.

[7] A. Rasyid and A. Djakasaputra, "The Relationship Between Seller Ethical Habits, Customer Satisfaction, and Customer Trust and Loyalty," *International Journal of Management Science and Application*, vol. 4, no. 2, pp. 1–13, 2025, https://doi.org/10.58291/ijmsa.v4i2.365.

[8] M. A. Salam and M. A. Jahed, "CSR orientation for competitive advantage in business-to-business markets of emerging economies: the mediating role of trust and corporate reputation," *Journal of Business Industrial Marketing*, vol. 38, no. 11, pp. 2277–2293, 2023, https://doi.org/10.1108/JBIM-12-2021-0591.

[9] A. Kokkinou, "Data analytic capability as an enabler of CSRD readiness: a moderated mediation analysis," *Journal of Global Responsibility*, vol. 1, no. 21, pp. 1–21, 2025, https://doi.org/10.1108/jgr-04-2025-0119.

[10] M. Almalki and M. M. Al-Shammari, "An investigation into knowledge management adoption and sustainable competitive advantage in an emerging market economy," *Global Knowledge, Memory and Communication*, vol. 74, no. 7, pp. 2270–2301, 2023, https://doi.org/10.1108/GKMC-02-2023-0039.

[11] S. Khurram, A. E. Jaffery, M. Tauseef, and R. Abrar, "The Dark Side of Leadership: How Abusive Supervision Fuels Turnover and Workplace Deviance in Entrepreneurial Healthcare Settings," *Journal of Entrepreneurship and Business Venturing*, vol. 5, no. 1, pp. 320–343, 2025, https://doi.org/10.56536/jebv.v5i1.197.

[12] A. F. Dalain, A. Al-Karabsheh, M. Allahham, W. I. Almajali, M. A. Y. Yamin, and T. M. Habboush, "Business Resilience as a Mediator in the Link Between Digital Logistics Strategies and Competitive Advantage: Insights from Emerging Markets," *Logistics*, vol. 9, no. 3, pp. 1–19, 2025, https://doi.org/10.3390/logistics9030078.

[13] M. Ghobakhloo, B. Foroughi, M. Fathi, M. Al-Emran, M. A. Al-Sharafi, and M. F. Mubarak, "Building antifragile manufacturing systems through strategic technology integration," *Journal of Manufacturing Technology Management*, vol. 36, no. 9, pp. 221–242, 2025, https://doi.org/10.1108/jmtm-08-2025-0789.

[14] T. Niguse, S. Kant, and B. Borji, "Green innovation strategy, sustainable business model innovation and sustainable competitive advantage with mediating role of green intellectual capital in emerging markets: evidence from Ethiopian eco-hotels," *Future Business Journal*, vol. 11, no. 244, pp. 1–19, 2025, https://doi.org/10.1186/s43093-025-00669-6.

[15] A. K. Gupta, "Innovation dimensions and firm performance synergy in the emerging market: A perspective from Dynamic Capability Theory Signaling Theory," *Technology in Society*, vol. 64, no. 101512, pp. 1–20, 2021, https://doi.org/10.1016/J.TECHSOC.2020.101512.

[16] M. M. Lucas, L. Moreno-Luna, A. O. S. B. Roets, and S. Al-Jaberi, "Technological, organisational and environmental drivers of sustainability in hotels," *South African Journal of Business Management*, vol. 55, no. 1, pp. 1–11, 2024, https://doi.org/10.4102/sajbm.v55i1.4815.

[17] K. Yum and B. Yoo, "The Impact of Service Quality on Customer Loyalty through Customer Satisfaction in Mobile Social Media," *Sustainability*, vol. 15, no. 11214, pp. 1–14, 2023, https://doi.org/10.3390/su151411214.

[18] Z. Zafar, W. Li, I. Khan, S. Liu, and M. Iqbal, "Assessing sustainable performance using green entrepreneurial orientation, innovation, and technology dynamism: a study on Chinese manufacturing SMEs," *Clean Technologies and Environmental Policy*, vol. 28, no. 82, pp. 1–15, 2026, https://doi.org/10.1007/s10098-026-03426-7.

[19] V. V. Prokhorova, S. A. Mushnykova, O. Fridman, and V. V. Chernov, "The Balanced Potential of Enterprises in the Context of Ensuring Crisis Management of Their Sustainable Development," *Business Inform*, vol. 2, no. 2, pp. 328–337, 2025, https://doi.org/10.32983/2222-4459-2025-5-328-337.

[20] I. Morishita, S. Pankham, and S. Lekcharoen, "Advancing Sustainable Retail Performance Through Digital Transformation and Social Media Use: A Dual-Method FCM–SEM Approach in an Emerging Market," *Sustainability*, vol. 17, no. 23, pp. 1–36, 2025, https://doi.org/10.3390/su172310652.