

Digital Capabilities and IT Governance as Drivers of Firm Performance: A Multilevel Study in Emerging Markets

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ABSTRACT: This study explores the role of Strategic IT Planning (SITP) in fostering Sustainable Competitive Advantage (SCA) among firms operating in emerging economies. With the rapid pace of digital transformation reshaping global competition, aligning IT strategy with business goals has become critical. Drawing on a combination of primary and secondary datasets, the research examines the impact of SITP maturity on firm performance, the mediating influence of digital capabilities, and the moderating role of national digital readiness. The methodology includes firm level survey data integrated with national indicators across multiple emerging markets. Hierarchical Linear Modeling (HLM) is employed to analyze multi level panel data, capturing the nested relationships between organizational practices and country level digital infrastructure. The study applies Structural Equation Modeling (SEM) to validate the effects of SITP on SCA through digital capabilities. Results indicate that higher levels of SITP maturity significantly correlate with improved firm performance and long term competitive positioning. Digital capabilities such as ERP, CRM, and analytics mediate this relationship by enhancing business alignment and operational coherence. Furthermore, the National Readiness Index (NRI) and digital infrastructure metrics moderate the effectiveness of SITP, with distinct cutoff points observed across countries. The findings underscore the importance of aligning internal IT governance structures with external digital environments. Policymakers are encouraged to support firms through investments in infrastructure, cybersecurity, and workforce development. Meanwhile, firms are advised to adopt flexible, data driven strategic planning practices.

Keywords: Strategic IT Planning, Sustainable Competitive Advantage, Digital Capabilities, Emerging Economies, IT Governance, National Readiness Index, Hierarchical Linear Modeling.



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INTRODUCTION

In emerging economies, where firms face constraints such as limited resources, volatile markets, and infrastructural gaps, aligning IT with business goals is crucial. This study uniquely emphasizes

how Strategic IT Planning (SITP) addresses these challenges to achieve sustainable performance. Strategic IT Planning (SITP) serves as a foundational mechanism through which firms align technological investments with long term strategic goals, enabling adaptability in rapidly changing environments. For firms in emerging markets, SITP provides a clear framework to embed IT capabilities into daily operations and support business transformation (Bughin et al., 2021).

Sustainable Competitive Advantage (SCA) is conceptually defined as the capacity of a firm to deliver superior performance persistently, often through unique resource configurations that are difficult to replicate (Amit & Han, 2017). The realization of SCA in emerging economies is particularly complex due to heterogeneous consumer behavior, economic instability, and institutional voids. Within this context, SITP enables organizations to more effectively allocate resources, improve operational efficiency, and strengthen customer engagement (Zaki, 2019). Such adaptive capabilities are essential for long term strategic resilience.

Despite growing attention to the strategic role of IT in organizational transformation, the majority of SITP research remains concentrated in developed economies. There is a clear disparity in empirical focus, with limited studies addressing how firms in emerging markets conceptualize, implement, and benefit from SITP practices (Zaki, 2019; PRICOPOAIA et al., 2024). This gap is critical, as strategic planning mechanisms must be tailored to the unique institutional and market contexts found in developing economies (Zolochevskaya et al., 2019).

Moreover, the measurement of SCA in empirical research has evolved to include both financial and non financial dimensions, such as market share, innovation capacity, and customer loyalty (Gathmyr et al., 2024). The Balanced Scorecard has been widely applied to assess the impact of strategic initiatives on firm performance, particularly in the context of digital transformation (Maydanova et al., 2019). In emerging economies, multidimensional assessments are essential to capture the dynamic interplay between strategy and performance, especially given fluctuating external conditions.

In addition to institutional limitations, firms in emerging markets face a host of internal challenges in aligning IT strategy with corporate goals. Inadequate technological infrastructure, scarcity of digital talent, and cultural resistance to change are among the primary barriers (Azieva et al., 2021). Organizational inertia, stemming from traditional management practices, frequently hinders the effective implementation of SITP. Addressing these barriers requires visionary leadership and a firm wide commitment to strategic agility (Shabdin et al., 2024).

Digital transformation has further complicated the strategic planning process. As organizations embrace data driven decision making and agile methodologies, traditional linear planning models are becoming obsolete. Hybrid strategic frameworks that incorporate real time feedback loops and iterative learning processes are increasingly necessary (Lazić (Lazić & Jović, 2019). This evolution demands that SITP be viewed not merely as a planning exercise, but as a dynamic and adaptive capability that responds to internal and external uncertainties (Reynolds, 2024).

Empirical studies linking SITP and firm performance in emerging markets highlight the criticality of strategic alignment for organizational agility and innovation (Furr et al., 2022). Firms that institutionalize SITP across planning horizons exhibit higher responsiveness to market changes and more efficient resource deployment (Reynolds, 2024). Additionally, firms that embed IT planning within product development and operational frameworks tend to achieve faster innovation cycles and greater market success (Kuzu, 2020).

This study aims to fill the empirical and conceptual gaps by systematically investigating the role of SITP in enhancing sustainable competitive advantage in emerging economies. It contributes to the existing literature by integrating firm level strategic alignment frameworks with country level digital readiness indicators, offering a comprehensive, multilevel analysis. The research objectives are threefold: (1) to assess the impact of SITP on SCA, (2) to examine the mediating or moderating role of firm level digital capabilities, and (3) to explore how national digital readiness influences the SITP–SCA relationship. Through this approach, the study seeks to advance both theoretical understanding and practical insights into how firms in emerging markets can leverage IT planning for long term strategic advantage.

METHOD

This chapter outlines the methodological framework used to examine the relationship between Strategic IT Planning (SITP), digital capabilities, and Sustainable Competitive Advantage (SCA) in firms operating within emerging economies. It details the operationalization of key constructs, data sources, sampling approach, and analytical strategies employed in this study.

Strategic IT Planning (SITP) is defined as a multidimensional construct with six elements: (1) formal IT planning documents, (2) IT governance mechanisms, (3) integration with corporate strategy, (4) technology–business alignment, (5) risk and benefit management, and (6) IT skill development. The operationalization draws on established frameworks such as the Strategic Alignment Maturity Model (SAMM) and governance models by Weill and Ross.

Following Batra et al. (2017), SITP is measured using structured survey instruments that assess the degree of alignment between IT and business strategy, efficiency in IT resource allocation, and overall planning maturity. Each item is rated on a five point Likert scale and aggregated to form an SITP maturity index. Meyfroodt et al. (2019) emphasize the importance of contextual adaptation in measurement strategies; thus, the survey was calibrated to reflect the constraints and needs of emerging market firms, particularly in manufacturing and services sectors.

Firm level data are derived from two main sources:

1. World Bank Enterprise Surveys (WBES, 2019–2025), which include detailed information on sales growth, employment, innovation, digital technology use (ERP, CRM, e commerce, analytics), and firm demographics (size, age, ownership, industry).

2. A primary survey designed to capture SITP dimensions, distributed to CIOs or IT strategy decision makers within the sampled firms.

These datasets align with recommendations by Ouakouak (2017) and Pollanen et al. (2016), who endorse the use of comprehensive firm level surveys for studying innovation, growth, and IT adoption practices across multiple economic contexts. The datasets allow for direct linkage of strategic IT initiatives to firm performance metrics.

Macro level enablers and moderators are operationalized using country level datasets, including:

- Network Readiness Index (NRI)
- E Government Development Index (EGDI)
- Global Innovation Index (GII)
- ITU internet and broadband statistics
- ISO 27001 certification counts
- World Bank Worldwide Governance Indicators (WGI)
- Penn World Table for GDP per capita (PPP) and human capital

These datasets enable the modeling of digital readiness, regulatory quality, and national infrastructure that influence SITP effectiveness.

The study targets firms from 20+ countries classified as emerging markets by the IMF World Economic Outlook. Stratified sampling is used to ensure representation across firm sizes, sectors, and ownership types. The target sample is ≥ 300 firms per country. Data harmonization aligns WBES firm level indicators with corresponding country level data using ISO3 codes and survey year alignment (± 1).

Given the nested nature of the data (firms within countries), Hierarchical Linear Modeling (HLM) is employed to estimate the relationships. This approach accommodates both within country and between country variance (Thompson et al., 2020). It allows testing of both direct effects (SITP $\rightarrow$ SCA) and cross level interactions (SITP $\times$ digital readiness).

In addition, Generalized Estimating Equations (GEEs) are used for robustness checks, addressing longitudinal correlations and allowing for flexible error structures (Mrayyan, 2019). Where applicable, Structural Equation Modeling (SEM) is also applied to explore interrelationships among SITP dimensions and outcome variables while simultaneously modeling mediators and moderators (Pollanen et al., 2016).

All primary data collection follows ethical research guidelines, ensuring informed consent and data anonymity. National WBES protocols were also adhered to in secondary data usage.

This chapter establishes a rigorous methodological foundation for investigating how SITP affects firm level performance and competitive advantage. By integrating firm and country level data using sophisticated statistical models, the study provides a comprehensive analysis of strategic IT practices in emerging economies.

RESULT AND DISCUSSION

This chapter presents the empirical findings from the multilevel analysis examining the effects of Strategic IT Planning (SITP) on Sustainable Competitive Advantage (SCA), mediated by digital capabilities and moderated by national digital readiness. The results are organized into three subsections, reflecting the core research hypotheses.

Main Effect of SITP on Sustainable Competitive Advantage

Effect Size and Significance

The multilevel regression models confirm a positive and statistically significant relationship between SITP and SCA across the sampled firms. The average effect size ($\beta = 0.217$, $p < 0.001$) aligns with findings from Wei et al. (2021), who observed moderate to strong correlations (0.3–0.5) between IT alignment and performance in similar empirical contexts. Firms with higher SITP maturity demonstrated superior performance across key dimensions: 3 year sales growth, innovation output, and export intensity.

Table 1. Main Regression Estimates

Model	SITP Coefficient (β)	p value	R ²	N
Base	0.217***	<0.001	0.19	4,200
+ Digital Capabilities	0.141***	<0.001	0.23	4,200
+ Country Readiness	0.102**	0.004	0.27	4,200

Contributions of SITP Dimensions

Disaggregated analysis revealed that certain SITP dimensions particularly IT governance, integration with corporate strategy, and structured benefit/risk management exerted the strongest effects on firm performance (Liu et al., 2023). These dimensions contribute to improved strategic agility and innovation capacity (Lin & Mao, 2023). Managerial involvement and adaptive planning also proved influential in dynamic sectors.

Table 2. Effect of SITP Dimensions on SCA (Standardized Coefficients)

SITP Dimension	Coefficient (β)	p value
IT Governance	0.188***	<0.001
Corporate Integration	0.172***	<0.001
Benefit/Risk Management	0.165**	0.008
Planning Formality	0.089*	0.037
Skills Development	0.072	0.093

Contextual and Industry Level Effects

The effect of SITP varied across industries. In high tech sectors and volatile markets, strategic alignment demonstrated amplified outcomes, supporting claims by Lin & Mao (2023) and Liu et al. (2023) that SITP's impact is context dependent. External economic and regulatory conditions moderated the SITP performance link, highlighting the importance of industry specific planning flexibility.

Mediation by Digital Capabilities

Technology Driven Alignment

The inclusion of digital capability indicators ERP, CRM, analytics, and e commerce demonstrated partial mediation of the SITP–SCA link. Firms that deployed these tools effectively converted IT planning into measurable performance improvements (Imran et al., 2021). ERP and CRM systems enhanced process coherence and customer interaction, while analytics supported strategic responsiveness.

Digital Capability Measurement

Digital capabilities were operationalized through both binary technology adoption and maturity indices incorporating infrastructure, literacy, and IT strategy metrics (Imran et al., 2021). Higher digital maturity scores were associated with greater SITP leverage, validating the role of digital readiness in strategic alignment.

Performance Mediation

IT adoption strengthened innovation speed, customer satisfaction, and internal decision making quality, confirming its mediating role. Structural equation models supported these relationships, with partial mediation effects statistically significant at $p < 0.01$.

Table 3. Mediation Model Results

Path	Coefficient (β)	p value
SITP → Digital Capabilities	0.293***	<0.001
Digital Capabilities → SCA	0.279***	<0.001
SITP (direct) → SCA	0.141***	<0.001

Moderation by National Digital Readiness

Infrastructure and Investment Environment

National level readiness, measured via NRI, EGDI, and broadband access, moderated the SITP–SCA relationship. In countries with high infrastructure quality, firms extracted greater value from strategic IT efforts (Ardito, 2023). Conversely, limited infrastructure constrained IT investment impacts.

Regulatory and Institutional Moderators

Empirical evidence from Aghazadeh et al. (2023) confirms the moderating role of digital governance, cybersecurity policies, and e government services. Firms operating in countries with well established regulatory environments reported more consistent performance improvements from SITP.

Threshold Effects and Policy Linkages

Threshold analyses showed diminishing returns in moderately ready countries unless connectivity and skills reached essential levels (Alshammari & Asaari, 2024)). These findings support the call for integrative national digital strategies.

Table 4. Moderation Analysis: SITP × National Readiness

Moderator	Interaction Term	Coefficient (β)	p value
NRI Score	SITP × NRI	0.098**	0.012
EGDI Score	SITP × EGDI	0.105**	0.009
ISO 27001 Count	SITP × ISO	0.066*	0.046

Together, these results confirm SITP's robust influence on firm performance, mediated by internal capabilities and moderated by external digital environments. The next chapter interprets these findings within theoretical and managerial contexts.

This chapter interprets the empirical findings in theoretical and practical contexts, focusing on four themes: (1) theoretical implications, (2) strategic IT maturity, (3) national digital readiness and policy interventions, and (4) comparisons between emerging and developed economies.

The empirical findings strongly support established governance and alignment theories, offering both conceptual validation and applied insights. Governance frameworks highlight the significance of well defined organizational structures, decision rights, and accountability systems in promoting IT business alignment (Batra et al., 2016). In the context of digitalization, where rapid changes demand agility, this alignment becomes even more essential. The Strategic Alignment Model (SAM), widely referenced in the literature, posits that performance improves when IT initiatives are tightly coupled with business objectives (Ladera-Castañeda et al., 2024). This study confirms these assertions, demonstrating that firms with mature SITP practices particularly in IT governance, strategic integration, and benefit/risk management achieve superior performance metrics, including innovation adoption, revenue growth, and export intensity.

In addition to theoretical contributions, the findings yield actionable recommendations for organizations aiming to build strategic IT maturity. A foundational step is the comprehensive assessment of a firm's digital capability and readiness. Tools like the IT Capability Maturity Framework (IT CMF) help evaluate the current maturity level and identify strategic gaps (George & Desmidt, 2016). Equally important is fostering a culture of continuous learning, experimentation, and agility. Organizations should invest in training programs to build digital literacy across all departments and empower employees to innovate (Palka et al., 2020). Strong digital leadership is essential for guiding transformation and facilitating cross functional collaboration. Leaders must not only allocate resources but also inspire shared commitment to strategic IT goals (KAVUKOĞLU & İşçi, 2023). Finally, leveraging data analytics to support

evidence based decision making enables firms to align IT investments with market trends and evolving customer needs, thereby enhancing overall performance (Usliani & Setyaningrum, 2024).

Moreover, the results underline the vital role of the national digital ecosystem in determining the success of strategic IT planning. Effective SITP is not an isolated firm level phenomenon; it interacts with national infrastructure, regulatory clarity, institutional quality, and labor market competencies. Policymakers, therefore, are central enablers of digital transformation. Investments in broadband connectivity, cloud infrastructure, and mobile networks form the foundation for firms to adopt and scale IT solutions (Meyfroodt et al., 2019). Equally important is the reform of educational systems to cultivate digital skills, particularly through STEM oriented curricula and lifelong learning programs (ERDEM, 2021). Public private partnerships, digital innovation hubs, and open data platforms can further stimulate ecosystem wide innovation by integrating resources and knowledge (Krasniqi & Elezaj, 2023). In tandem, regulations on data privacy, cybersecurity, and intellectual property protection must be robust and adaptive to engender trust in digital technologies (Ershadi & Dehdazzi, 2019).

Comparative analysis with developed countries reveals both converging patterns and context specific divergences. On one hand, the strategic logic of SITP focused on alignment, integration, and governance is universally applicable. Developed economies, due to their mature IT ecosystems, often demonstrate clear and consistent linkages between IT alignment and firm performance (Oyadomari et al., 2023). However, in emerging markets, these relationships are complicated by infrastructural limitations, institutional volatility, and cultural norms. Firms must therefore adopt more flexible, context responsive approaches that blend rational planning models with adaptive strategies (Purwatiningsih, 2024). This study supports such hybridity, suggesting that firms combining structured planning with real time responsiveness to environmental uncertainty achieve better results (Ouakouak, 2017).

Furthermore, the digital transformation pathways differ markedly across contexts. Developed countries typically follow linear progressions marked by systematic investment in R&D, digital infrastructures, and regulatory innovations (Dhlamini, 2024). In contrast, emerging economies experience more fragmented or leapfrogged development patterns, relying on mobile first strategies or open source platforms. These patterns necessitate strategic experimentation and improvisation, which, although riskier, often yield creative and locally relevant solutions. Thus, while governance and alignment models provide a common theoretical foundation, their operationalization must be tailored to socio economic and institutional contexts.

In conclusion, this chapter affirms the strategic salience of SITP as a key enabler of sustainable competitive advantage in emerging economies. It emphasizes the dual importance of internal organizational readiness and external enabling conditions. For firms, developing digital maturity involves embedding IT into core strategic processes, supported by strong leadership, a culture of innovation, and analytics based decision making. For policymakers, enhancing national digital readiness through infrastructure, education, regulation, and collaboration is paramount. The interplay between firm capabilities and national contexts ultimately determines the trajectory and success of digital transformation. As digital ecosystems continue to evolve, future research should deepen these insights by exploring longitudinal dynamics, sectoral nuances, and policy effectiveness in shaping IT driven competitiveness.

CONCLUSION

This study demonstrates that Strategic IT Planning (SITP) is a central driver of Sustainable Competitive Advantage (SCA) for firms in emerging economies. Higher SITP maturity reflected in IT–business alignment, structured governance, and proactive leadership enhances innovation, operational efficiency, and responsiveness to market changes. Digital capabilities, including ERP, CRM, and analytics, act as mediators that translate planning into tangible performance gains. At the same time, national digital readiness, encompassing infrastructure, regulatory frameworks, and workforce skills, strengthens the effectiveness of firm-level SITP.

Practically, these findings highlight the dual responsibility of firms and policymakers. Firms must embed IT into core strategies, foster innovation-oriented cultures, and adopt adaptive planning models. Governments, in turn, should invest in enabling environments through digital infrastructure, education, and regulatory clarity. Together, these internal and external efforts create pathways for long-term resilience and competitiveness in the evolving digital economy. Future research should extend these insights by applying longitudinal approaches and sector-specific analyses to refine context-sensitive strategies.

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