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LEVERAGING IT CAPABILITIES TO ENHANCE INVESTMENT DECISIONS IN NIGERIAN PRIVATE SECTOR FIRMS

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Abstract

This study investigates the influence of information technology (IT) capability dimensions on investment decision processes in Nigerian private firms. Drawing on the Resource-Based View (RBV), the study examines four key IT capabilities—IT infrastructure capability, IT human capability, IT relationship capability, and IT integration capability to determine their relative contribution to investment decision quality. A quantitative research design was adopted, and data were collected from 367 managers, finance officers, and IT professionals across major commercial cities including Lagos, Abuja, Rivers, and Kano. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to assess the measurement and structural models. The findings reveal that IT human capability and IT infrastructure capability have significant positive effects on investment decision processes, underscoring the importance of skilled IT personnel and robust technological systems in supporting data-driven evaluations. In contrast, IT relationship capability and IT integration capability do not significantly influence investment decisions, suggesting potential weaknesses in IT–business alignment and system interoperability within the Nigerian private sector. The model explains 61.2% of the variance in investment decision processes, indicating substantial predictive power. The study contributes to IT capability literature by highlighting context-specific factors affecting strategic decision-making in emerging economies. It recommends enhanced IT training initiatives, investment in digital infrastructure, and improved integration strategies to strengthen decision quality and organizational competitiveness.

Keywords: IT Infrastructure Capability, IT Human Capability, IT Relationship Capability, IT Integration Capability, Investment Decision

1. Introduction

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Information technology (IT) has become a fundamental driver of organizational competitiveness, operational efficiency, and strategic decision-making in contemporary business environments. As firms increasingly rely on digital tools to process information, automate operations, and analyze data, IT capabilities play a vital role in shaping how managerial decisions are made particularly investment decisions that involve significant financial commitments and long-term strategic consequences (Ojomo, 2024). In emerging economies such as Nigeria, digital transformation is accelerating across private firms due to increased adoption of analytics, enterprise systems, and cloud technologies, creating new avenues for strategic value creation through IT-enabled decision-making (Oladeinde, et al., 2023).

Investment decision processes involve identifying opportunities, evaluating risks, forecasting outcomes, and allocating capital to maximize returns. These decisions rely heavily on the quality of information available to managers and the tools that support analytical reasoning. Prior studies emphasize that investment decisions are shaped by both financial and non-financial factors, including technological infrastructure, managerial competence, market information, and institutional influences (Abdul Kareem et al., 2023; Alghorbany et al., 2024). With the growing complexity of business environments, IT capabilities have become indispensable in supporting timely, data-driven, and evidence-based investment decisions.

In the Nigerian private sector, firms are increasingly adopting digital capabilities such as artificial intelligence, data analytics, enterprise resource planning systems, and real-time dashboards to support strategic decisions. Studies show that emerging technologies significantly improve decision accuracy, forecasting, and strategic flexibility (Bokhari & Myeong, 2022; Yoshikuni et al., 2023). However, the extent to which these digital resources translate into better investment decisions depends on a firm's underlying IT capability base, including the skills of IT personnel and the quality of technological integration.

Despite rapid digital transformation, many private firms in Nigeria still experience challenges in leveraging IT capabilities effectively. Issues such as weak infrastructure, inadequate IT human skills, misalignment between IT and business units, and limited system integration hinder the ability to convert digital resources into strategic decision support (Oladeinde et al., 2023). These constraints potentially limit the quality, speed, and reliability of investment decisions in sectors that require robust digital support for evaluating complex financial risks and opportunities.

Investment decision-making in Nigerian private firms is increasingly complex due to heightened market uncertainty, rapid technological change, and the need for timely access to reliable information (Oladeinde, et al., 2023). Although many firms have adopted digital tools and IT systems, questions remain about their effectiveness in supporting the quality of investment decisions. Existing research shows that firms with weak IT infrastructure, low digital skills, and poor data integration often struggle to evaluate investment risks, perform accurate forecasting, and make evidence-based financial decisions (Elwan, 2025; Oluoha et al., 2022). This suggests that investment decisions may be compromised when IT capabilities are not sufficiently developed or strategically aligned with business objectives.

Moreover, empirical studies in Nigeria have largely focused on public investment, financial constraints, and sector-level performance, with limited attention to how IT capability

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dimensions influence internal investment decision processes in private organizations (Adeosun et al., 2021; Ezejiofor et al., 2017). The absence of robust empirical evidence creates a knowledge gap regarding the link between digital capability maturity and strategic financial decisions. This gap hinders firms' ability to design strategies for leveraging IT to improve decision outcomes and restricts policymakers' understanding of how digital transformation supports private sector growth. Therefore, there is a pressing need to examine how IT infrastructure, human competence, system integration, and IT–business relationships individually and collectively shape investment decision processes in Nigerian private firms.

Given the central role of investment decisions in determining firm growth, profitability, and competitiveness, examining the influence of IT capabilities on investment decision processes is both timely and essential. While prior studies have explored IT capability effects on performance, innovation, and governance (Ilmudeen, 2022; Joshi, et al., 2022), there is limited empirical evidence on how IT capability dimensions shape investment decision-making within private Nigerian firms. This study aims to fill this gap by assessing the impact of IT infrastructure capability, IT human capability, IT relationship capability, and IT integration capability on investment decision processes.

2. Literature Review and Hypotheses Development

2.1 Investment Decision Processes

Investment decision processes refer to the systematic steps through which firms evaluate potential investment opportunities and determine the allocation of financial resources to maximize value. These processes typically involve information gathering, evaluation, risk assessment, forecasting, and capital allocation. Information gathering involves collecting quantitative and qualitative data about investment alternatives, market trends, and financial performance indicators (Abdul Kareem et al., 2023). Evaluation includes comparing options based on financial metrics such as net present value, internal rate of return, and cost–benefit analysis (Ezejiofor et al., 2017). Risk assessment examines uncertainties, market volatility, technological risks, and institutional constraints, which are significant in developing countries like Nigeria (Elwan, 2025). The final stage, capital allocation, involves choosing the most viable investment alternative and committing financial resources toward its execution.

Investment decision processes are heavily dependent on the availability of timely, reliable, and accurate information (Abdul Kareem, Fayed, Rady, Amin El-Regaily & Nema, 2023). Digital technologies such as analytics dashboards, enterprise systems, and AI-driven tools significantly enhance the depth and speed of analysis required for strategic investments (Frempong et al., 2022; Bokhari & Myeong, 2022). Thus, the quality of investment decisions is closely linked to a firm's technological capabilities and the ability of IT systems to support informed decision-making.

2.2 Information Technology (IT) Capabilities

IT capabilities refer to a firm's ability to deploy and utilize IT resources such as infrastructures, human expertise, governance processes, and system integration to support organizational objectives (Joshi et al., 2022). They extend beyond the mere possession of technologies and focus on the skills, processes, and competencies that enable firms to generate strategic value from IT assets. According to the Resource-Based View (RBV), IT capabilities serve as

valuable, rare, inimitable, and non-substitutable resources that provide competitive advantage (Shuaibu, 2025).

In decision-making contexts, IT capabilities enhance a firm's ability to collect, process, integrate, and interpret information, resulting in improved strategic choices, reduced uncertainty, and more efficient investment evaluations (Hussein et al., 2023). They also support advanced analytics, real-time reporting, and cross-functional coordination, which are essential for accurate investment forecasting and risk management (Oluoha et al., 2022; Yoshikuni et al., 2023).

2.2.1 Dimensions of IT Capabilities

a. IT Infrastructure Capability

IT infrastructure capability refers to the technical foundation that supports an organization's digital operations (Dahiya & Mathew, 2018). It includes hardware, software applications, databases, networks, cloud computing, and enterprise systems that enable seamless access to information (Cassia et al., 2024). A robust IT infrastructure enhances data collection, storage, and retrieval, improving managers' ability to perform technical and financial evaluations during investment decision-making (Chen et al., 2018). Studies show that IT infrastructure significantly supports knowledge sharing, real-time analytics, and innovation capabilities, all of which are necessary for generating high-quality investment insights (Frempong et al., 2022; Oladeinde et al., 2023).

b. IT Human Capability

IT human capability encompasses the knowledge, skills, experience, and competencies of IT personnel who manage digital systems and support data-driven decisions. These include technical skills such as programming, data analytics, cybersecurity, and system maintenance, as well as managerial skills such as IT governance and digital strategy development (Cho et al., 2023; Rachmad, 2025). Skilled IT professionals enable advanced information processing, enhance technological problem-solving, and improve the reliability of digital tools used in evaluating investment alternatives. Evidence shows that strong IT human capability promotes organizational agility, innovation, and effective decision-making (Atobishi et al., 2024; Shuaibu, 2025).

c. IT Relationship Capability

IT relationship capability refers to the quality of collaboration, communication, and alignment between IT units and business units within an organization. It also encompasses relationships with external technology partners such as vendors, consultants, and software providers (Parente et al., 2022). Strong IT–business alignment ensures that technological solutions are tailored to organizational needs, including investment analysis and financial planning (Joshi et al., 2022). Effective relational capability reduces information asymmetry, enhances coordination during decision-making, and improves the overall strategic use of IT resources (Obiki-Osafiele et al., 2024).

d. IT Integration Capability

IT integration capability is the extent to which IT systems, applications, and data sources within an organization are interconnected and interoperable. It enables seamless data flow across

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departments, real-time information access, and standardized processes (Hussein et al., 2023). Integrated IT systems reduce duplication, minimize errors, and furnish managers with holistic, timely, and accurate information necessary for investment analysis (Oluoha et al., 2022). IT integration significantly enhances decision-making quality by supporting advanced analytics, enabling multi-source data evaluation, and facilitating enterprise-wide visibility of financial and operational indicators (Yoshikuni et al., 2023).

2.3 Empirical Review

2.3.1 IT Capabilities and Firm Performance

Extensive research demonstrates that IT capabilities positively impact firm performance across a wide range of organizational and industry contexts. Firms with strong IT capability bases tend to achieve superior operational efficiency, enhanced strategic alignment, and improved innovation outcomes. For instance, studies show that robust IT infrastructure enhances knowledge sharing, accelerates information flow, and supports technological innovation, which collectively contribute to better financial and non-financial performance (Cassia et al., 2024). These infrastructures provide the digital backbone that enables organizations to deploy data-driven tools, integrate enterprise systems, and coordinate activities across departments, thereby improving productivity and responsiveness.

In addition to infrastructure, IT human capability plays a crucial role in determining organizational success. Skilled IT personnel facilitate effective utilization of technological tools, support data analytics, and contribute to strategic decision-making by translating technical insights into actionable business intelligence. Empirical findings from public and private sector organizations suggest that IT human capability significantly enhances organizational agility, digital transformation success, and overall performance (Atobishi et al., 2024; Rachmad, 2025). Furthermore, IT governance capability another critical dimension helps firms establish structured processes for managing IT investments, aligning digital initiatives with business priorities, and ensuring accountability. Evidence reveals that well-developed IT governance improves financial performance, operational efficiency, and strategic alignment by minimizing waste, reducing risks, and optimizing resource allocation (Joshi et al., 2022).

Studies conducted in the Nigerian context further support the importance of IT capabilities in driving performance improvements. For instance, Oladeinde et al. (2023) report that Nigerian enterprises that adopt advanced analytics, AI-powered decision tools, and digital governance frameworks experience measurable improvements in organizational effectiveness. Similarly, Shafa (2025) finds that AI-driven business intelligence systems enhance decision quality and strategic outcomes among U.S. and African firms. These findings highlight the universal value of IT capabilities and emphasize their relevance for emerging economies like Nigeria, where digital maturity remains uneven but rapidly evolving.

2.3.2 IT Capabilities and Decision Processes

Empirical studies further demonstrate that IT capabilities significantly enhance decision-making processes by improving data quality, analytical capabilities, and organizational coordination mechanisms. Effective decision-making relies on timely access to accurate information, and IT capabilities enable firms to aggregate and analyze large volumes of data

from diverse sources. For instance, integrated IT systems support the development of real-time dashboards that allow managers to visualize, interpret, and respond rapidly to operational and financial information (Frempong et al., 2022). These dashboards offer predictive insights, trend analysis, and performance monitoring features that strengthen managers' ability to evaluate investment opportunities with greater precision.

Moreover, IT infrastructure and analytics tools reduce decision latency and improve forecasting accuracy, enabling organizations to assess investment risks and returns more reliably. Advanced analytic tools such as AI algorithms, machine learning models, and smart data-processing systems help reduce uncertainty by offering simulations, scenario analyses, and predictive insights that support investment evaluations (Bokhari & Myeong, 2022). Empirical studies confirm that firms with strong IT analytic capabilities make faster and more consistent decisions, resulting in better resource allocation and improved competitive positioning.

IT relationship capability also plays a central role in enhancing decision processes and fostering communication and collaboration between IT specialists and business managers, IT relationship capability ensures that technological tools align with strategic needs, including investment planning (Obiki-Osafiele et al., 2024). Strong relational capability reduces information asymmetry, promotes shared understanding of goals, and ensures that decision-support systems are appropriately configured for financial evaluation tasks. Additionally, IT governance and integration capabilities reduce fragmentation in decision-making by creating standardized processes, improving interoperability among systems, and ensuring consistent access to high-quality data across departments (Hussein et al., 2023; Xue, Liang & Boulton, 2008). When systems are integrated and governance structures are clear, organizations can make more rational, evidence-based investment decisions.

2.4 Gaps in Prior Research

Although global research links IT capabilities to performance and decision-making, studies examining how IT capabilities influence investment decision processes remain limited, particularly in developing economies. Much of the Nigerian literature emphasizes public investment, financial constraints, or sector-specific investment patterns (Adeosun et al., 2021; Elwan, 2025), with limited focus on how IT capabilities support internal strategic financial decisions. Few studies have empirically tested the distinct roles of IT infrastructure, human capability, relational capability, and integration capability in shaping investment decision-making within Nigerian private firms. This gap is critical because digital maturity varies significantly across Nigerian firms, and understanding these relationships is essential for improving strategic investment quality in the private sector.

2.5 Hypotheses Development

H1: IT Infrastructure Capability → Investment Decision Process

IT infrastructure capability refers to the technological backbone that supports an organization's digital activities, including hardware, software applications, networks, databases, servers, cloud platforms, and enterprise systems. A strong IT infrastructure enables firms to collect, store, and process large volumes of data essential for strategic investment appraisal. Prior studies emphasize that robust IT infrastructure enhances knowledge-sharing, innovation, and

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real-time analytics by facilitating seamless access to high-quality information across organizational units (Cassia et al., 2024). Furthermore, decision-support systems and enterprise applications embedded within IT infrastructures allow firms to perform advanced analysis, evaluate alternative scenarios, and simulate investment outcomes with greater accuracy and speed (Chen et al., 2018). As investment decisions rely heavily on timely and reliable information, firms with stronger IT infrastructure are better positioned to interpret financial indicators, forecast market trends, and mitigate uncertainty.

H1: *IT infrastructure capability has a positive and significant effect on the investment decision process*

H2: IT Human Capability → Investment Decision Process

IT human capability refers to the skills, expertise, and competencies of employees responsible for managing, deploying, and interpreting technological tools within an organization. These capabilities include technical skills such as programming, data analytics, cybersecurity, and system maintenance, as well as managerial competencies such as IT governance, problem-solving, and strategic digital planning. Research shows that skilled IT personnel play a vital role in facilitating digital transformation, fostering organizational agility, and enabling firms to fully leverage analytical tools during decision-making (Cho et al., 2023; Atobishi et al., 2024). In the context of investment decisions, IT staff support the interpretation of complex financial data, optimize the use of enterprise systems, and ensure the reliability of analytical models used to evaluate risks and returns. Their ability to troubleshoot problems, customize decision-support applications, and train end-users enhances the quality of strategic choices. Thus, firms with strong IT human capability are better equipped to generate accurate analyses and make informed investment decisions.

H2: *IT human capability has a positive and significant effect on the investment decision process.*

H3: IT Relationship Capability → Investment Decision Process

IT relationship capability refers to the organization's ability to foster strong collaborative ties between IT specialists, business managers, and external technology partners. It encompasses communication quality, cross-functional cooperation, trust, and the degree of alignment between IT and business objectives. Empirical evidence shows that when IT and business units maintain strong relational ties, technological solutions are more effectively aligned with organizational needs, including investment planning and financial evaluation (Parente et al., 2022). High-quality IT–business relationships reduce information asymmetry, enhance understanding of investment goals, and improve the customization of technological tools to support decision processes. Additionally, relational capability extends to interactions with vendors, consultants, and IT service providers, enabling firms to access external expertise and emerging technologies that enrich decision-making (Joshi et al., 2022). Hence, improving communication, strengthening coordination, and ensuring strategic alignment, IT relationship capability contributes significantly to the accuracy, comprehensiveness, and reliability of investment decisions.

H3: *IT relationship capability has a positive and significant effect on the investment decision process.*

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H4: IT Integration Capability → Investment Decision Process

IT integration capability represents the extent to which an organization's information systems, databases, and digital platforms are interconnected and able to exchange information seamlessly. Integrated systems eliminate data silos, reduce duplication, and ensure that decision-makers have access to accurate, consistent, and real-time information across departments. Prior studies highlight that effective integration enhances the quality of decision-making by enabling data flow, improving transparency, and supporting enterprise-wide access to financial and operational metrics (Hussein et al., 2023). Integrated IT environments also facilitate advanced analytics and predictive modeling by consolidating information from diverse functional areas (Oluoha et al., 2022). In investment decision contexts, this capability strengthens firms' ability to assess risks, compare investment alternatives, perform scenario analysis, and evaluate financial performance comprehensively. The ability to aggregate multi-source data reduces uncertainty, improves forecasting, and supports rational capital allocation.

H4: *IT integration capability has a positive and significant effect on the investment decision process.*

2.6. Theoretical and Conceptual Framework

Resource-Based View (RBV)

The Resource-Based View (RBV) posits that firms achieve superior performance when they possess valuable, rare, inimitable, and non-substitutable resources (Shuaibu, 2025). Within the IT literature, RBV has been widely used to explain how digital assets, technical competencies, and organizational routines contribute to competitive advantage. IT capabilities including infrastructure, human skills, integration, and relational mechanisms fit RBV criteria because they enable firms to deploy technology in a manner that generates strategic value and is difficult for competitors to imitate (Joshi et al., 2022). RBV emphasizes the strategic importance of complementary organizational competencies that determine how IT resources are configured and used. In the context of investment decision-making, RBV suggests that IT capabilities enhance managerial access to high-quality information, sophisticated analytics, and timely insights, thereby improving the quality of investment choices and reducing uncertainty.

Dynamic Capability Theory

Dynamic Capability Theory (DCT) extends RBV by emphasizing a firm's ability to reconfigure, integrate, and renew its resource base in response to changing environments (Atobishi et al., 2024). IT capabilities form part of these dynamic capabilities because they enable firms to sense opportunities, integrate knowledge, and respond effectively to market and technological changes. When applied to investment decision processes, DCT suggests that IT capabilities allow firms to evaluate investment alternatives more efficiently, adapt analytical tools to new contexts, and update decision procedures in response to emerging digital innovations (Yoshikuni et al., 2023). Although optional in this study, DCT reinforces the argument that IT capabilities are not static assets but strategic enablers that shape organizational responsiveness, agility, and decision quality.

How IT Capabilities Contribute to Decision Quality

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IT capabilities enhance decision quality by improving the accuracy, timeliness, completeness, and accessibility of information used during investment evaluations. Integrated systems, for example, facilitate real-time data flow across departments, allowing managers to assess risks and returns based on comprehensive and updated information (Hussein et al., 2023). IT human capability supports analytical interpretation, ensuring that data-driven tools are used effectively during decision-making (Cho et al., 2023). IT relationship capability enhances communication and alignment between IT experts and business managers, creating shared understanding around financial decisions (Parente et al., 2022). Collectively, these capabilities reduce uncertainty, improve forecasting accuracy, and strengthen the objectivity and consistency of investment decisions (Oluoha et al., 2022; Frempong et al., 2022).

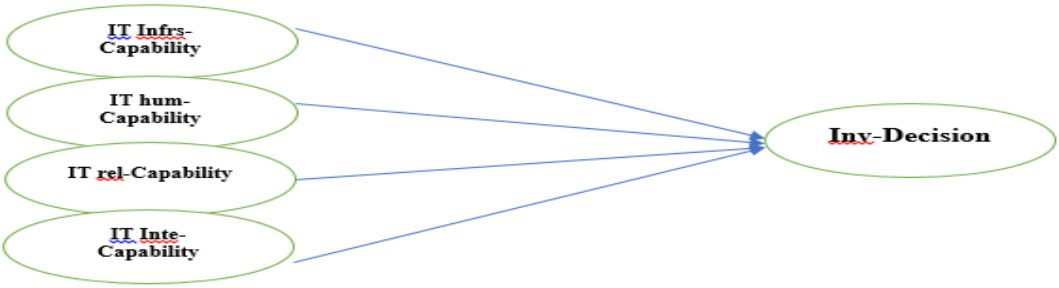

Figure 1 Conceptual framework

3. Methodology

This study adopted a quantitative research design using a cross-sectional survey approach to examine the influence of IT capability dimensions on the investment decision processes of Nigerian private firms. A quantitative design is appropriate because it enables statistical testing of relationships between latent variables, while a cross-sectional approach facilitates the collection of data from multiple firms within a specific timeframe. The target population comprised managers, senior staff, and IT professionals working in medium and large private firms across Lagos, Abuja, Rivers, and Kano locations representing Nigeria's major commercial and industrial centers. A structured questionnaire was employed as the primary data collection instrument, capturing respondents' perceptions of IT infrastructure capability, IT human capability, IT relationship capability, IT integration capability, and investment decision processes using a five-point Likert scale. The sample size was determined using established SEM rules, which recommend a minimum of 10 respondents per indicator; accordingly, 400 questionnaires were proportionally and randomly distributed across Lagos, Abuja, Rivers, and Kano and 367 valid responses were retrieved for analysis

Items for each construct were adapted from validated measurement scales in previous IT capability and decision-making studies (e.g., Joshi et al., 2022; Hussein et al., 2023; Oluoha et al., 2022). Prior to full administration, the questionnaire underwent content validation by academic experts and pilot testing with selected industry participants to ensure clarity and reliability. The final instrument demonstrated acceptable psychometric properties, with preliminary reliability coefficients exceeding the recommended 0.70 threshold. Respondents

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completed the questionnaires either physically or electronically, depending on organizational requirements and accessibility.

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS version 4. PLS-SEM was selected due to its suitability for exploratory research, complex models with multiple latent constructs, and its ability to handle smaller sample sizes and non-normal data distributions. The analysis followed a two-step approach: (1) assessment of the measurement model to evaluate indicator reliability, internal consistency, convergent validity (using AVE), and discriminant validity (using HTMT), and (2) assessment of the structural model to test hypothesis paths, coefficient significance, predictive accuracy (R^2), effect sizes (f^2), and predictive relevance (Q^2). Bootstrapping (5000 resamples) was used to assess the significance of path coefficients. This methodological approach ensures robust and reliable empirical findings regarding the effects of IT capabilities on investment decision processes in Nigerian private firms.

4. Results

4.1 Respondents' Demographics

A total of 367 valid responses were obtained from managers, senior staff, IT professionals, and finance officers across private firms in Lagos, Abuja, Rivers, and Kano. The sample comprised 58.6% males and 41.4% females, reflecting the gender distribution typical of Nigeria's private sector. Most respondents were within the productive mid-career age brackets, with 34.9% aged 25–34, 42.8% aged 35–44, 17.4% aged 45–54, and 4.9% aged 55 and above. Educationally, 48.0% held bachelor's degrees, 37.6% master's degrees, 5.2% doctorate degrees, and 9.3% professional certifications, indicating a highly skilled workforce. In terms of job roles, 38.7% were middle-level managers, 26.2% senior managers, 19.3% IT officers or analysts, and 15.8% finance and strategy officers. Work experience was also substantial, with 20.2% having less than 5 years' experience, 36.8% having 5–10 years, 27.8% having 11–15 years, and 15.2% having over 15 years. Overall, the demographic distribution shows a well-diversified and experienced sample appropriate for evaluating IT capabilities and investment decision processes in Nigerian private firms.

4.2 Measurement Model Evaluation

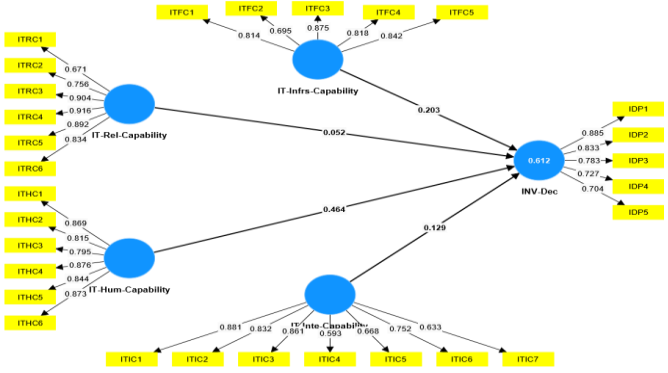

Figure 2 Path model

Table 1: Indicator Loadings for Measurement Model

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Construct	Indicator	Loading
IT Relationship Capability (ITRC)	ITRC1	0.671
	ITRC2	0.756
	ITRC3	0.904
	ITRC4	0.916
	ITRC5	0.892
	ITRC6	0.834
IT Infrastructure Capability (ITFC)	ITFC1	0.814
	ITFC2	0.695
	ITFC3	0.875
	ITFC4	0.818
	ITFC5	0.842
IT Human Capability (ITHC)	ITHC1	0.869
	ITHC2	0.815
	ITHC3	0.795
	ITHC4	0.876
	ITHC5	0.844
	ITHC6	0.873
IT Integration Capability (ITIC)	ITIC1	0.881
	ITIC2	0.832
	ITIC3	0.861
	ITIC4	0.593
	ITIC5	0.668
	ITIC6	0.752
	ITIC7	0.633
Investment Decision Process (IDP)	IDP1	0.885
	IDP2	0.833
	IDP3	0.783
	IDP4	0.727
	IDP5	0.704

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The indicator loadings presented in Table 1 demonstrate that the measurement model exhibits strong convergent validity, as most items load above the recommended threshold of 0.70, indicating that the indicators reliably represent their respective constructs. IT Relationship Capability shows high loadings, particularly for ITRC3-(0.904), ITRC4-(0.916), ITRC5-(0.892), and ITRC6-(0.834) reflecting strong cohesion within the construct. IT Infrastructure Capability indicators also perform well, with loadings ranging from 0.695 to 0.875, while IT Human Capability displays consistently high loadings, all above 0.79, suggesting robust representation of the underlying human IT competence. IT Integration Capability exhibits mixed loadings, with strong indicators such as ITIC1 (0.881) and ITIC3 (0.861), although a few items fall slightly below the optimal range (e.g., ITIC4 at 0.593 and ITIC7 at 0.633), which may require further examination. The Investment Decision Process construct exhibits excellent indicator reliability, with all loadings above 0.70, and IDP1 achieving the highest loading at 0.885. Overall, the measurement results confirm that the constructs demonstrate satisfactory reliability and convergent validity acceptable for SEM-PLS structural analysis.

4.2 Reliability (Cronbach Alpha, CR and AVE)

Table 2 Reliability and AVE

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
INV-Dec	0.851	0.891	0.623
IT-Hum-Capability	0.920	0.938	0.715
IT-Infrs-Capability	0.869	0.905	0.658
IT-Inte-Capability	0.871	0.900	0.568
IT-Rel-Capability	0.910	0.931	0.695

The reliability and validity results presented in Table 2 indicate that all constructs demonstrate strong internal consistency and convergent validity, meeting the recommended thresholds for SEM-PLS analysis. Cronbach's alpha values for all constructs range from 0.851 to 0.920, exceeding the minimum criterion of 0.70, which confirms that the items within each construct are highly consistent. Similarly, composite reliability (rho_c) values fall between 0.891 and 0.938, further supporting the robustness of internal reliability across the constructs. The Average Variance Extracted (AVE) values for the constructs also meet or exceed the recommended threshold of 0.50, with values ranging from 0.568 for IT Integration Capability to 0.715 for IT Human Capability, indicating that each construct explains more than half of the variance in its indicators. IT Human Capability and IT Relationship Capability, in particular, demonstrate very strong convergent validity with AVE values above 0.69. Overall, these results confirm that the measurement model possesses adequate reliability and convergent validity, ensuring that the constructs are statistically sound for subsequent structural model evaluation.

Table 3 Discriminant validity (HTMT)

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	INV-Dec	IT-Hum-Capability	IT-Infrs-Capability	IT-Inte-Capability	IT-Rel-Capability
INV-Dec					
IT-Hum-Capability	0.822				
IT-Infrs-Capability	0.736	0.793			
IT-Inte-Capability	0.761	0.786	0.821		
IT-Rel-Capability	0.715	0.800	0.700	0.782	

The HTMT results in Table 3 indicate that the constructs in the model largely meet the discriminant validity requirements, demonstrating that each construct is empirically distinct from the others. All HTMT values fall below the conservative upper threshold of 0.90 and remain within acceptable bounds for conceptually related constructs. The relationships between Investment Decision Process and the IT capability dimensions range from 0.715 to 0.822, suggesting that while they are related, they do not overlap conceptually. Similarly, the relationships between IT Infrastructure Capability and other constructs fall between 0.700 and 0.821, indicating clear distinction. However, the HTMT values between IT Human Capability and IT Relationship Capability (0.900), and IT Human Capability and IT Integration Capability (0.886) are close to the upper limit, reflecting a strong association but still within acceptable discriminant validity thresholds. These results imply that although IT capability dimensions are inherently correlated as expected in capability-based models they remain sufficiently distinct to justify their treatment as separate constructs. Overall, the HTMT outcomes confirm acceptable discriminant validity, supporting the adequacy of the measurement model for structural analysis.

4.3 Structural Model Results

The structural model was assessed to evaluate the hypothesized relationships between the IT capability dimensions and the investment decision process. Following confirmation of the reliability and validity of the measurement model, the structural analysis examined the strength and significance of the path coefficients, the model's explanatory power (R^2), effect sizes (f^2), and predictive relevance (Q^2). Bootstrapping with 5,000 resamples was employed to determine the statistical significance of the relationships. The results provide insight into how IT infrastructure, IT human capability, IT relationship capability, and IT integration capability contribute to explaining variations in investment decision processes among Nigerian private firms. The findings highlight the relative importance of each IT capability dimension in shaping decision quality and offer empirical evidence supporting the theoretical expectations of the Resource-Based View.

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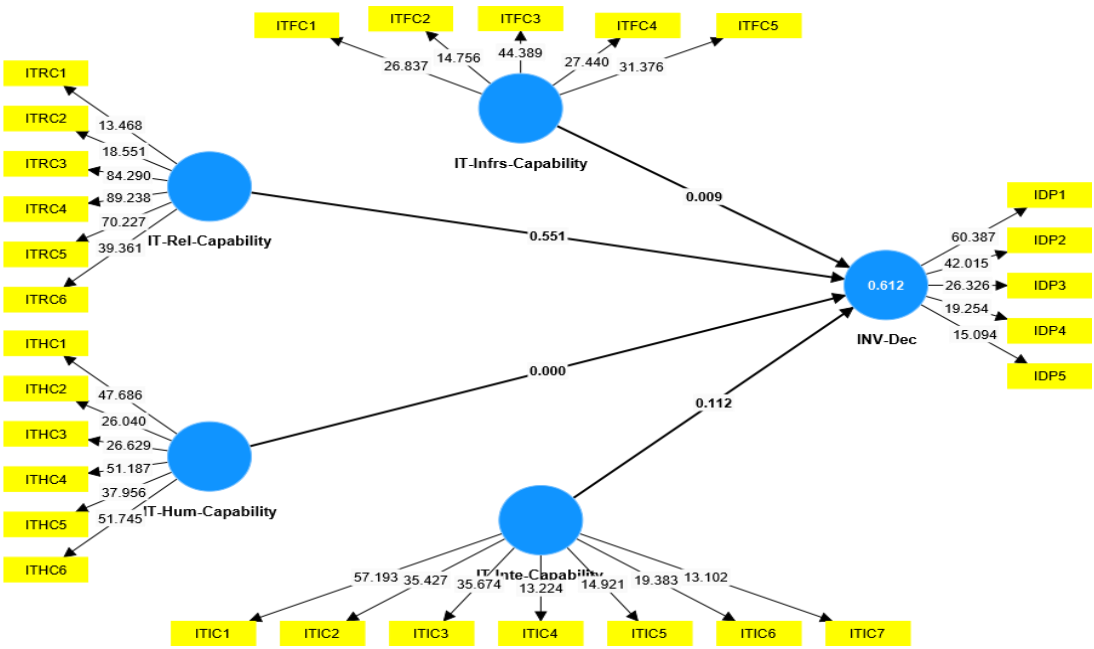

Figure 3 Structural model

Test of Hypotheses

	Beta	Mean	STDEV	T stat	P values	Decision
IT-Infrs-Capability -> INV-Dec	0.203	0.207	0.078	2.614	0.009	Support
IT-Inte-Capability -> INV-Dec	0.129	0.132	0.081	1.591	0.112	Not Support
IT-Hum-Capability -> INV-Dec	0.464	0.457	0.105	4.407	0.000	Support
IT-Rel-Capability -> INV-Dec	0.052	0.058	0.086	0.597	0.551	Not Support

R^2- 0.612

The structural model results reveal important insights into the extent to which different IT capability dimensions influence the investment decision process in Nigerian private firms. First, IT Infrastructure Capability demonstrated a positive and statistically significant effect on investment decision processes ($\beta = 0.203$, $p = 0.009$). This finding suggests that firms with better hardware, software, and digital platforms are more capable of generating accurate, timely, and reliable information required for effective investment appraisal. The significance of this relationship aligns with existing literature, which asserts that robust IT infrastructure enhances analytical capability, improves data accessibility, and facilitates evidence-based strategic decision-making within firms.

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In contrast, IT Integration Capability did not show a statistically significant effect on investment decision processes (β = 0.129, p = 0.112). Despite its positive coefficient, the lack of statistical significance implies that while integration may contribute to smoother information flow, its impact is not strong enough in the current sample to meaningfully shape investment decision outcomes. This result may reflect integration challenges within Nigerian firms, such as fragmented systems, low interoperability, or limited adoption of enterprise-wide platforms, which could weaken the potential benefits of IT integration on the decision-making process. The finding highlights a potential capability gap that organizations need to address if they aim to transition toward more digitally coordinated investment evaluations.

The results also show that IT Human Capability has the strongest and most significant effect on investment decision processes (β = 0.464, p = 0.000). This highlights the importance of IT personnel's skills, expertise, and analytical competencies in shaping the quality of strategic financial decisions. Skilled IT professionals play a crucial role in interpreting complex datasets, guiding the use of analytics tools, customizing decision-support systems, and ensuring that managers receive accurate insights during investment evaluations. The significance of this relationship aligns with prior studies, which consistently show that human capital is a critical determinant of how effectively digital infrastructures and tools are leveraged for strategic advantage.

Conversely, IT Relationship Capability did not exert a significant effect on investment decision processes (β = 0.052, p = 0.551). This suggests that collaboration between IT units and business departments, although important in theory, may not be adequately strong or strategically aligned in many Nigerian private firms to influence investment outcomes. Weak cross-functional communication channels, insufficient alignment between IT and finance departments, or limited trust and coordination with external technology partners may explain the insignificance of this relationship. The finding indicates the need for firms to strengthen IT–business alignment to ensure that technology solutions effectively support strategic financial decisions.

Finally, the model's explanatory power is reflected in an R^2 value of 0.612, indicating that the combined IT capability dimensions explain 61.2% of the variance in investment decision processes. This represents a substantial level of predictive ability, demonstrating that IT capabilities collectively play a major role in shaping how Nigerian firms evaluate and select investment opportunities. Although not all dimensions were statistically significant, the overall model suggests that IT resources and competencies form an important foundation for strategic decision-making, consistent with the Resource-Based View. Strengthening human capability and infrastructure while improving integration and relational structures may further enhance decision quality across the private sector.

Moreover, the findings of this study provide meaningful insights into how IT capabilities shape investment decision processes in Nigerian private firms. Among the four capability dimensions examined, IT Human Capability emerged as the strongest predictor of decision quality, indicating that skilled personnel, technical expertise, and analytical competence significantly enhance firms' ability to interpret data and evaluate investment opportunities. IT Infrastructure Capability also showed a positive and significant influence, underscoring the importance of technological resources such as hardware, software, connectivity, and analytic tools in

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supporting timely and reliable decision-making. In contrast, IT Integration Capability and IT Relationship Capability did not demonstrate significant effects, suggesting that system interoperability, cross-departmental collaboration, and IT–business alignment may still be underdeveloped within many Nigerian firms. The R^2 of 0.612 further confirms that IT capabilities collectively explain a substantial proportion of the variation in investment decision processes, highlighting their strategic relevance in the digital era.

The results contribute to the Resource-Based View by showing that IT infrastructure and human capability represent high-value organizational resources capable of enhancing strategic decision outcomes. The findings also provide practical implications for managers, who should prioritize continuous IT upskilling, investment in digital infrastructure, and gradual strengthening of system integration and IT–business collaboration. Policymakers can also leverage the insights to promote digital literacy initiatives and incentivize ICT investments across the private sector. Although the study is limited by its cross-sectional design and firm-specific sample, it lays a foundation for future research to explore additional digital capabilities—such as data governance or AI readiness—and to conduct comparative assessments across sectors or regions. Taken together, this study concludes that IT human capability and IT infrastructure are key enablers of high-quality investment decisions in Nigerian private firms, reinforcing their strategic importance in contemporary business environments.

5. Conclusion and Recommendations

This study examined the influence of IT capability dimensions IT infrastructure capability, IT human capability, IT integration capability, and IT relationship capability on investment decision processes in Nigerian private firms. The findings show that IT human capability and IT infrastructure capability significantly enhance the quality, accuracy, and effectiveness of investment decisions. This highlights the central role of skilled IT professionals and robust technological systems in supporting data-driven evaluations, forecasting, and risk assessment. Conversely, IT integration capability and IT relationship capability did not show significant effects, suggesting that system interoperability, IT–business alignment, and cross-functional collaboration may still be underdeveloped in many Nigerian firms. Overall, the results confirm that IT capabilities explain a substantial proportion of the variance in investment decision processes ($R^2 = 0.612$), underscoring their strategic importance in modern business environments and providing empirical support for the Resource-Based View. The study concludes that building strong IT human capacity and infrastructure remains essential for improving strategic investment decisions in the Nigerian private sector.

Based on the findings, several recommendations are proposed for managers, firms, and policymakers. First, managers should prioritize investment in IT human capability by providing continuous training, professional development, and exposure to modern data analytics and digital decision-support tools. Strengthening technical and analytical competence will directly improve the quality of strategic decisions. Second, firms should continue upgrading their IT infrastructure, including data management platforms, digital connectivity, and enterprise applications, to ensure that decision-makers have timely access to accurate information. Third, organizations should make deliberate efforts to improve IT integration capability by adopting interoperable systems, strengthening data governance, and

implementing enterprise-wide digital solutions that reduce silos and enhance information flow. Fourth, firms need to enhance IT–business relationship capability by improving communication channels, building cross-functional teams, and aligning IT initiatives with corporate strategy to ensure that technology investments support decision-making needs.

Additionally, policymakers should create incentives for private firms to invest in digital infrastructure, support ICT capacity-building programs, and promote national frameworks that encourage digital readiness and data-driven management. Future research may expand the model by examining other digital factors such as data governance, AI readiness, or cybersecurity maturity and comparing results across sectors or regions. Strengthening these digital elements will help Nigerian private firms make more effective investment decisions in an increasingly competitive digital economy.

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