# Navigating Digital Transformation in the Distribution Sector in Emerging Economies: Insights from Vietnam

**Minh Tuan Vu[1]** | **Hai Ninh Nguyen[2*]**

1. Foreign Trade University, Vietnam. Email: 923018@ftu.edu.vn
2. Corresponding Author, Department of Marketing - School of International Business and Economics – Foreign Trade University (FTU), Vietnam. Email: nguyen.haininh@ftu.edu.vn

| ARTICLE INFO | ABSTRACT |
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| **Article type:**<br>Research Article<br><br>**Article History:**<br>Received 30 September 2024<br>Revised 01 May 2025<br>Accepted 04 May 2025<br>Published Online 04 September 2025<br><br>**Keywords:**<br>Digital transformation,<br>Technology infrastructure,<br>Leader support,<br>Financial investment,<br>Market pressure. | This study aims to investigate the key determinants influencing digital transformation adoption in Vietnam's distribution sector, focusing on factors such as technology infrastructure, leader support, financial investment, market pressure, and organizational readiness to change. Utilizing a quantitative research approach, the researchers collected data from 288 managers and staff through structured questionnaires. The analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM), revealing that market pressure and readiness to change are the most significant predictors of digital transformation. Contrary to prior assumptions, leadership support and financial investment did not directly influence adoption; rather, they contributed indirectly by shaping organizational culture. The study offers practical implications for managers in emerging economies and contributes to the theoretical understanding of digital transformation drivers. |

## 1. Introduction

In such a rapidly digitalizing economy, digital transformation has emerged as pivotal in evolving global business practices (Pham & Nguyen, 2023). To facilitate the integration into global markets, companies need to upgrade their digital infrastructures (Ngo, 2022) and processes to meet the complicated demands of a tech-savvy consumer base (Akbari et al., 2023), thereby enhancing operational efficiencies and competitive advantages (Nguyen & Dao, 2023). However, according to Nguyen et al. (2022), digital transformation has faced challenges drawn from internal and external stimuli, including technology infrastructure, staff skills, support of leaders, investment, and organizational readiness.

Organizational readiness, encompassing the workforce's psychological preparedness and technical skills, is primarily essential to effectively adopt new technologies (Phan, 2021). In Vietnam, many companies face challenges in this area due to a lack of digital skills and resistance to change among employees, which can impede the progress of digital transformation projects (Ngo, 2022). Companies that actively cultivate a supportive environment for digital skills development and continuous learning are better positioned to navigate these challenges and achieve successful outcomes (Pham & Nguyen, 2023).

Financial investment is another critical component, where high costs for technology acquisition (Sang, 2023) and personnel training pose challenges, particularly for smaller firms that may need more capital (Phan & Dinh, 2023). This financial disparity often determines the scope and scale of DT initiatives, with larger firms being able to invest more substantially in cutting-edge technologies, thereby gaining a competitive edge (Tran, 2021). Moreover, the role of leadership in driving digital transformation cannot be overstated (Nguyen et al., 2022). Leaders who prioritize digital strategies and cultivate a culture of innovation are crucial for overcoming internal resistance and ensuring successful implementation.

Market pressures, driven by changing consumer expectations and the rapid adoption of mobile and internet technologies, further compel companies to adopt digital solutions (Ngo, 2022). The ability to meet these demands through enhanced digital capabilities can effectively differentiate the companies in the marketplace, enabling companies to offer more personalized services (Akbari et al., 2023; Nguyen & Dao, 2023). This is particularly crucial in sectors such as distribution, where digital platforms can streamline operations and improve customer satisfaction (Kane et al., 2015; Porter & Heppelmann, 2014).

However, the challenges are broader than those driven by internal factors. External factors, such as government policies and regulatory frameworks, also significantly shape the digital transformation landscape (Phan & Dinh, 2023). In Vietnam, government initiatives have been crucial in promoting digital transformation, providing support through various programs to enhance digital skills and infrastructure (Nguyen et al., 2022). However, these efforts must be complemented by private sector initiatives to address the gaps in technology adoption and skills development (Weiner, 2009). Furthermore, international partnerships and collaborations can provide additional resources and expertise, helping Vietnamese companies accelerate their digital transformation efforts (Ngo, 2022).

In conclusion, despite the extensive body of literature on digital transformation across various sectors, there is limited research focused specifically on the distribution sector in emerging economies, especially Vietnam, where unique challenges, such as market volatility, infrastructure limitations, and regulatory constraints, play a critical role in shaping digital adoption. This study addresses a critical gap by examining how internal factors (e.g., organizational readiness) and external pressures (e.g., market demand) interact to influence digital transformation in the context of Vietnam's distribution sector. Unlike prior studies that predominantly focus on developed markets, this research offers insights into the specific drivers and barriers faced by businesses in an emerging market context, making a novel contribution to the field of digital transformation.

The importance and necessity of this research lie in the fact that the distribution sector in emerging economies such as Vietnam is undergoing rapid digitalization, driven by increasing consumer expectations and competitive pressures. Companies that fail to adapt risk losing market share and operational efficiency. Therefore, understanding the key factors that facilitate or hinder digital transformation in this sector is crucial for both scholars and practitioners who aim to develop effective strategies for navigating this complex landscape. By addressing these issues, this study not only fills a significant research gap but also provides practical implications for managers seeking to enhance their digital capabilities in a highly dynamic environment.

## 2. Literature Review

Digital transformation is defined by Vial (2021) as a process where digital technologies create disruptions, triggering strategic responses from organizations to alter their value creation paths, while managing structural changes and organizational barriers. The digital transformation involves adopting technologies such as artificial intelligence (AI), big data analytics, cloud computing, and the Internet of Things (IoT) to enable significant business improvements, streamline operations, and create new business models (Akbari et al., 2023). Tang (2021) confirmed that integrating these technologies has improved both the performance of staff and organizational productivity at large.

According to Nadkarni and Prügl (2021), digital transformation involves technological upgrades and necessitates significant changes in organizational structures and processes. The shift towards digital business ecosystems requires firms to adopt malleable organizational designs that enable continuous adaptation (Hanelt et al., 2020). This transformation is crucial for staying competitive in a rapidly evolving market landscape (Bresciani et al., 2021).

The importance of digital transformation is further highlighted by its impact on international business, where digital tools and platforms facilitate the internationalization process and assist in overcoming barriers to market entry (Pereira et al., 2022). Digital transformation allows businesses to engage in new forms of international trade, leveraging digital channels to reach global markets (Ciuriak & Ptashkina, 2018). This shift is supported by international standards and regulations that provide a framework for secure and efficient digital transactions (Vidas et al., 2019).

This study builds upon several key theoretical frameworks to explore the factors influencing digital transformation in the distribution sector of emerging economies such as Vietnam. The Technology-Organization-Environment (TOE) framework (Tornatzky & Fleischer, 1990) provides a comprehensive lens through which the technological readiness, organizational readiness, and environmental pressures affecting digital adoption can be examined. The Dynamic Capabilities Theory (Teece et al., 1997) further emphasizes the importance of an organization's ability to reconfigure its internal capabilities in response to external changes, such as market volatility and regulatory shifts. Additionally, Institutional Theory highlights the influence of external institutional pressures, including government regulations and industry standards, in driving firms towards digital transformation. These theoretical perspectives collectively support the investigation of how internal factors (e.g., readiness to change) and external pressures (e.g., market demand, regulatory environment) interact to shape digital transformation outcomes.

In the context of Vietnam's distribution sector, businesses face unique challenges, including limited technology infrastructure, resistance to change among employees, and intense competition driven by rapid digitalization of consumer preferences. The empirical setting of this study focuses on addressing these context-specific factors, providing a deeper understanding of the dynamics at play in an emerging market environment. By exploring these factors, this study aims to bridge the gap in the existing literature on digital transformation, which has predominantly focused on developed markets, and has often overlooked the unique constraints faced by firms in developing economies.

Readiness to change is a critical factor in successfully adopting digital transformation initiatives (Gao et al., 2022). It involves both technical capabilities and cultural aspects, such as willingness of employees and management to embrace new technologies and processes (Porfírio et al., 2021). A high level of readiness to change is often associated with a supportive organizational culture that values innovation and continuous learning (Verhoef et al., 2021).

Technical readiness includes having the necessary infrastructure and skills to support digital initiatives (Liew et al., 2022). This involves investment in modern IT systems and the development of a skilled workforce capable of utilizing these systems effectively (Andriole, 2018). Moreover, a culture that supports innovation, experimentation, and risk-taking is crucial for successfully implementing digital transformation initiatives (Camarinha-Matos et al., 2019).

Cultural readiness also involves leadership's role in fostering a vision for digital transformation and engaging employees throughout the process (Guinan et al., 2019). Effective communication and transparency are key strategies for building a culture open to change (Abad-Segura et al., 2020). In this context, organizations with high readiness to change are better positioned to leverage digital transformation to achieve competitive advantages and operational efficiencies (Feroz et al., 2021).

**H1:** Readiness to change positively influences the adoption of digital transformation.

Technology infrastructure is fundamental to successfully implementing digital transformation, providing the essential tools and platforms for integrating digital technologies (Verhoef et al., 2021). It includes hardware, software, networks, and data centers, all crucial for supporting digital applications and services (Nadkarni & Prügl, 2021). The quality and availability of these infrastructures significantly impact an organization's ability to implement digital solutions effectively (Hanelt et al., 2020).

Differences in technological infrastructure can pose challenges for uniform digital transformation across different regions and industries; therefore, organizations with more advanced infrastructure are generally better equipped to adopt and integrate new technologies, enabling them to achieve higher levels of efficiency and innovation (Ciuriak & Ptashkina, 2018). In contrast, those with less developed infrastructure may need to improve their digital transformation efforts (Vidas et al., 2019).

A robust technology infrastructure supports an organization's readiness to change by enabling the seamless integration of digital tools and platforms. For example, cloud computing platforms provide scalable and flexible resources, reducing the need for significant upfront investments in physical infrastructure (Tang, 2021). High-speed internet connectivity is also critical for the efficient use of online applications and services, which are increasingly integral to business operations (Pereira et al., 2022). Through adequate infrastructure, organizations may be able to handle issues such as data bottlenecks, security vulnerabilities, and system incompatibilities, all of which can impede digital transformation efforts (Abad-Segura et al., 2020).

Moreover, technology infrastructure is essential for adopting advanced digital technologies, such as AI, IoT, and big data analytics (Feroz et al., 2021). These technologies require sophisticated infrastructure, including powerful servers, extensive data storage capabilities, and robust cybersecurity measures (Nadkarni & Prügl, 2021). For instance, AI applications often need large datasets and substantial computational power, which are only feasible by advanced infrastructure (Liew et al., 2022). IoT devices, which collect and transmit vast amounts of data, depend on reliable networks and processing capabilities (Camarinha-Matos et al., 2019). Therefore, the availability of such infrastructure is critical to effectively adopting and integrating these technologies into business operations.

**H2a:** The technology infrastructure positively impacts the readiness to change

**H2b:** The technology infrastructure positively impacts digital transformation.

Leadership support is a critical success factor in digital transformation, influencing the vision, strategy, and overall direction in the transformation process. Influential leaders champion digital initiatives, allocate necessary resources, and create an environment encouraging innovation and risk-taking (Sandkuhl et al., 2020). Leadership support also ensures that the organizational culture is conducive to change, with leaders playing a key role in communicating the vision and benefits of digital transformation (Jardak & Ben Hamad, 2022).

Leadership is essential in overcoming resistance to change, often a significant barrier to digital transformation (Nazir, 2019). Leaders must actively engage with employees, provide clear communication about the goals and processes of digital transformation, and ensure that all stakeholders are aligned with the transformation objectives (Guan, 2023). Additionally, leaders must foster a culture of continuous learning and adaptability, essential for navigating the rapid technological changes that characterize digital transformation (Arner et al., 2019).

Successful digital transformation often requires transformational leadership that inspires and motivates organizations to embrace new technologies and processes (You & Zhao, 2023). Such leaders not only guide the technical aspects of the transformation but also address the human and cultural elements, ensuring a holistic approach to change (Arner et al., 2019).

**H3a:** Leadership support positively affects the readiness to change

**H3b:** Leadership support positively affects the digital transformation

Financial investment is a crucial enabler of digital transformation, providing the necessary resources to acquire new technologies, train employees, and implement digital strategies (Alexander & Karametaxas, 2021). The level of investment required can vary significantly depending on the scale

and scope of the digital initiatives being undertaken (You & Zhao, 2023). For instance, substantial investment is needed to establish a robust digital infrastructure, integrate advanced technologies such as AI and IoT, and develop digital platforms (Arner et al., 2019).

In addition to direct technology costs, digital transformation often involves significant investments in change management and process reengineering (Guan, 2023). Companies must allocate resources to train employees, develop new skills, and adapt organizational processes to new digital tools and methodologies (Rumyantseva et al., 2021). Financial constraints can pose a significant barrier to digital transformation, particularly for small and medium-sized enterprises (SMEs), which may need help to secure the necessary funding.

Moreover, the relationship between digital transformation and financial investment is often reciprocal. While financial investment facilitates digital transformation, the successful implementation of digital technologies can, in turn, improve financial performance by increasing efficiency and enabling new revenue streams (Arner et al., 2019). This positive feedback loop underscores the importance of strategic financial planning and investment in digital capabilities (Xue et al., 2022).

**H4a:** Financial investment positively impacts the readiness to change.

**H4b:** Financial investment positively impacts the digital transformation.

Market pressure is a significant driver of digital transformation, compelling organizations to innovate and adapt to remain competitive. The rise of digital-savvy consumers, the emergence of new digital competitors, and the need to meet regulatory requirements all contribute to market pressure (Alexander & Karametaxas, 2021). Companies increasingly need to adopt digital technologies to enhance customer experiences, streamline operations, and develop new business models to stay relevant (Belozyorov et al., 2020).

In highly competitive industries, market pressure is particularly acute. Companies face the threat of being outperformed by more digitally advanced competitors if they fail to keep pace with technological advancements. For example, the financial sector has seen a surge in digital transformation initiatives driven by fintech innovations and the need for greater financial inclusion (Ciuriak & Ptashkina, 2019).

Regulatory changes also play a role in market pressure. Governments and regulatory bodies worldwide are increasingly implementing policies that require companies to adopt digital technologies to ensure transparency, security, and compliance (Rodríguez-Abitia & Correa, 2021). This regulatory environment can pressure companies to accelerate digital transformation efforts (Teng et al., 2022).

**H5a:** Market pressure positively influences the adoption of digital transformation.

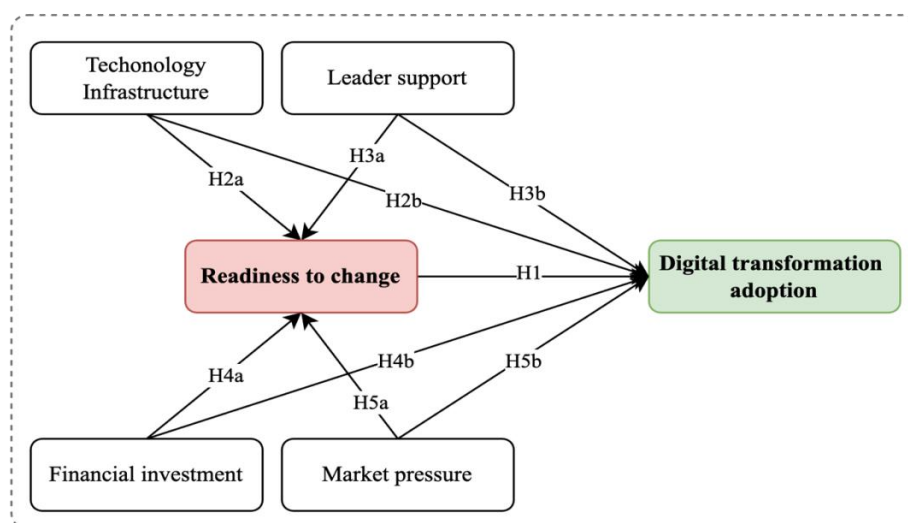**H5b:** Market pressure positively influences the readiness to change



**Fig. 1. Proposed Research Model**

## 3. Research Methodology and Scales Development

### 3-1. Research Methods

This study aims to explore and investigate the key factors that impact the adoption of digital transformation in the distribution sector in Vietnam. The primary goal is to understand how various stimuli, such as technology infrastructure, leader support, financial investment, market pressure, readiness to change, and digital transformation adoption, affect the success of digital transformation efforts within this sector. The study employed a quantitative research method using a structured questionnaire to collect data on the relationships between these variables. The survey targeted managers and staff working in distribution companies across Vietnam. These companies were chosen because they are actively involved in the distribution industry, ensuring the study's relevance to the sector. Data collection was conducted during two months, from April to June 2024.

This study employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique for data analysis. PLS-SEM is a statistical tool well-suited for studies exploring complex relationships between variables. It allows for testing proposed hypotheses by examining the strength and significance of the relationships between the constructs. Following the guidelines of Hair et al. (2016), the minimum sample size for this study was determined to be greater than ten times the number of paths in the model. Having six proposed paths implies that the minimum sample size should be, at least, 60 respondents. To ensure a robust sample, the questionnaire was distributed to 300 selected respondents through Google Forms, targeting managers and staff who are knowledgeable about their company's digital transformation efforts. After carefully reviewing the responses and eliminating any incomplete or erroneous submissions, the study obtained 288 reliable responses, representing a response rate of 96%.

The measurement model was evaluated using Outer loadings analysis to ensure indicator reliability, Cronbach's Alpha for internal consistency, Average Variance Extracted (AVE) for convergent validity, and Composite Reliability. Multicollinearity among predictor variables was assessed using Variance Inflation Factor (VIF), ensuring that all predictors met the criteria for acceptable independence.

The structural model was evaluated through a comprehensive set of analyses. $R^2$ (Coefficient of Determination) was used to assess the amount of variance explained by the independent variables in the dependent constructs, indicating the overall predictive power of the model. $Q^2$ (Predictive Relevance) was examined using the blindfolding procedure to ensure the model's ability to predict out-of-sample data. Additionally, $f^2$ (Effect Size) analysis was conducted to determine the relative impact of each independent variable on the dependent variables, categorizing the effect sizes into small, medium, and large contributions.

Finally, the structural model was validated using a bootstrapping procedure with 5000 resamples to test the significance of the hypothesized path coefficients, ensuring the robustness of the model in confirming the relationships between constructs.

### 3-2. Scale Development

In order to measure the critical factors of interest, the study adopted the established scales from prior research, with some adaptations. These scales had been rigorously tested in earlier studies and were selected to ensure the accuracy and reliability of the measurements. Before administering the survey, all items in the questionnaire were translated into Vietnamese and adjusted to reflect the specific context of digital transformation in the distribution sector. This approach helped ensure the questions were clear and meaningful to the respondents.

- The **Technology Infrastructure (TI)** scale includes four items focusing on the company's IT readiness for digital transformation. These items were adopted from the research studies conducted by Vial (2021), Bharadwaj et al. (2013), Matt et al. (2015), and Kane et al. (2015). For example, one of the items asks respondents to evaluate whether their organization has a well-established IT infrastructure that supports digital transformation.
- **Leader Support (LS)** is another crucial factor that assesses how actively top management promotes and supports digital transformation initiatives. This scale consists of four items based on research by Nguyen et al. (2022), Kane et al. (2015), and Westerman et al. (2014). The

questions explore whether leaders allocate resources for digital transformation and are personally involved in related projects.

- The **Financial Investment (FI)** scale measures the level of financial commitment to digital transformation within the company. This scale comprises four items sourced from Vial (2021), Bharadwaj et al. (2013), and Matt et al. (2015). The questions focus on the company's willingness to invest in new technologies, training, and infrastructure upgrades that support digital transformation.
- The **Market Pressure (MP)** scale captures external pressures that push companies toward digital transformation, such as competition, customer expectations, and regulatory requirements. Four items adopted from Bharadwaj et al. (2013), Matt et al. (2015), Kane et al. (2015), and Vial (2021) were used to evaluate the level of market-driven pressure.
- **The Readiness to Change (RC)** is another crucial variable, reflecting how prepared and willing the organization and its employees are to embrace digital transformation. The scale for this factor includes four items selected from Westerman et al. (2014), Kane et al. (2015), and Bharadwaj et al. (2013). These items assess whether employees are ready to adopt new technologies and whether the company fosters a culture that supports digital innovation.
- **Digital Transformation Adoption (DTA)** was measured using four items adopted from Matt et al. (2015), Vial (2021), and Bharadwaj et al. (2013). This scale assesses the extent to which digital technologies have been successfully implemented and integrated into the organization's operations. It includes questions about the regular use of digital tools in daily operations and whether the company continuously expands its digital capabilities to stay competitive.

## 4. Findings

### 4-1. Assessment of the Measurement Model

The findings of this study provide a comprehensive understanding of the factors influencing digital transformation adoption within the distribution sector, as outlined in Table 1, including the outer loadings, construct reliability, and validity. The outer loadings for all constructs exceeded the commonly accepted threshold of 0.7, demonstrating that each observed variable was a strong and reliable indicator of its respective latent construct. For instance, the Digital Transformation Adoption (DTA) construct, measured through four items, displayed loadings ranging from 0.815 to 0.844. These strong loadings suggest that the items effectively capture the underlying construct of digital transformation adoption, indicating that respondents clearly and consistently understood what digital transformation entails and what is its importance in their organizations.

**Table 1. Outer Loadings, Construct Reliability, and Validity**

| Constructs | Items | Loadings | CA | CR | AVE |
|---|---|---|---|---|---|
| Digital transformation adoption (DTA) | DTA1 | 0.823 | 0.850 | 0.899 | 0.69 |
| | DTA2 | 0.844 | | | |
| | DTA3 | 0.840 | | | |
| | DTA4 | 0.815 | | | |
| Initial Financial Investment (IFI) | IFI1 | 0.852 | 0.780 | 0.872 | 0.695 |
| | IFI2 | 0.794 | | | |
| | IFI4 | 0.854 | | | |
| Leader support (LS) | LS1 | 0.804 | 0.778 | 0.871 | 0.693 |
| | LS2 | 0.821 | | | |
| | LS4 | 0.872 | | | |
| Market pressure (MP) | MP1 | 0.842 | 0.750 | 0.856 | 0.666 |
| | MP2 | 0.808 | | | |
| | MP3 | 0.796 | | | |
| Readiness to Change (RC) | RC1 | 0.846 | 0.805 | 0.885 | 0.719 |
| | RC2 | 0.838 | | | |
| | RC3 | 0.861 | | | |
| Technology infrastructure (TIF) | TIF1 | 0.833 | 0.850 | 0.899 | 0.689 |
| | TIF2 | 0.851 | | | |
| | TIF3 | 0.810 | | | |
| | TIF4 | 0.826 | | | |

Additionally, the reliability of the constructs was confirmed by high Cronbach's Alpha (CA) values, all of which exceeded the recommended threshold of 0.7. The DTA construct had a CA of 0.85, confirming internal solid consistency, implying that the items were highly correlated and provided reliable measurements of the construct. Similarly, the Technology Infrastructure (TIF) construct had a CA of 0.85, which suggests that the items within this construct consistently captured the level of technological infrastructure available in the organizations. The high Composite Reliability (CR) values for all constructs, such as 0.899 for DTA and 0.899 for TIF, further reinforced the model's internal consistency, indicating that the items were reliable and capable of capturing the construct's complete variance.

Furthermore, the Average Variance Extracted (AVE) values for all constructs were above the threshold of 0.5, with DTA achieving an AVE of 0.69, which indicates strong convergent validity. Convergent validity ensures that the items used to measure a particular construct are closely related and measure the same underlying concept. For example, the high AVE for DTA confirms that the four items measuring digital transformation adoption reflect the same phenomenon and that there is minimal error variance. This is particularly important for understanding how organizations perceive and approach digital transformation, as it ensures that the construct captures a unified understanding of the process across different companies.

The analysis of Table 2, which presents the Heterotrait-Monotrait Ratio (HTMT), provides further validation of the model by confirming the discriminant validity of the constructs. Discriminant validity examines whether constructs that are intended to measure different aspects of a phenomenon are genuinely distinct from one another. In this study, all HTMT values were below the recommended threshold of 0.85, indicating that the constructs were well-differentiated. For example, the HTMT value between DTA and IFI was 0.120, which confirms that financial investment and digital transformation adoption are distinct constructs. This distinction suggests that while financial investment is a critical enabler of digital transformation, it operates as a separate factor from the process of digital transformation adoption itself. In other words, while companies may need to invest financially to support digital initiatives, more than financial investment is needed to fully capture the complexity of digital transformation adoption.

**Table 2.** *HTMT*

|      | DTA   | IFI   | LS    | MP    | RC    | TIF |
|------|-------|-------|-------|-------|-------|-----|
| DTA  |       |       |       |       |       |     |
| IFI  | 0.120 |       |       |       |       |     |
| LS   | 0.327 | 0.133 |       |       |       |     |
| MP   | 0.612 | 0.119 | 0.142 |       |       |     |
| RC   | 0.761 | 0.218 | 0.558 | 0.339 |       |     |
| TIF  | 0.429 | 0.055 | 0.050 | 0.265 | 0.518 |     |

The relationship between DTA and LS, with an HTMT value of 0.327, indicates a moderate correlation between the two constructs. This finding suggests that leader support significantly promotes digital transformation, but it is distinct from the overall adoption process. The moderate correlation implies that leadership is a necessary, but not sufficient, condition for digital transformation success. Leaders can guide and facilitate digital initiatives by setting strategic priorities, allocating resources, and encouraging innovation, while other factors, such as market pressure and organizational readiness, are also essential for successful adoption.

The relationship between MP and DTA was more potent, with an HTMT value of 0.612. This indicates that external pressures, such as competition and customer demands, are highly influential in driving the adoption of digital transformation. The role of market pressure in digital transformation is well-documented in the literature, with organizations often adopting digital strategies to remain competitive and meet evolving customer expectations. The strong relationship between MP and DTA in this study supports this notion, implying that organizations in the distribution sector are exceptionally responsive to external market forces when deciding to implement digital technologies and processes.

　　　The most substantial HTMT value in the analysis was identified between DTA and RC, with a value of 0.761. This suggests a strong relationship between an organization's readiness to change and its ability to adopt digital transformation initiatives. Readiness to change reflects the organizational culture, flexibility, and openness to adopting new technologies and processes. The high correlation between RC and DTA highlights the importance of fostering an adaptable and innovative culture to implement digital transformation successfully. Organizations more prepared to embrace change are better positioned to implement digital technologies effectively. This is critical in the fast-evolving distribution sector, where digital capabilities can provide a competitive edge.
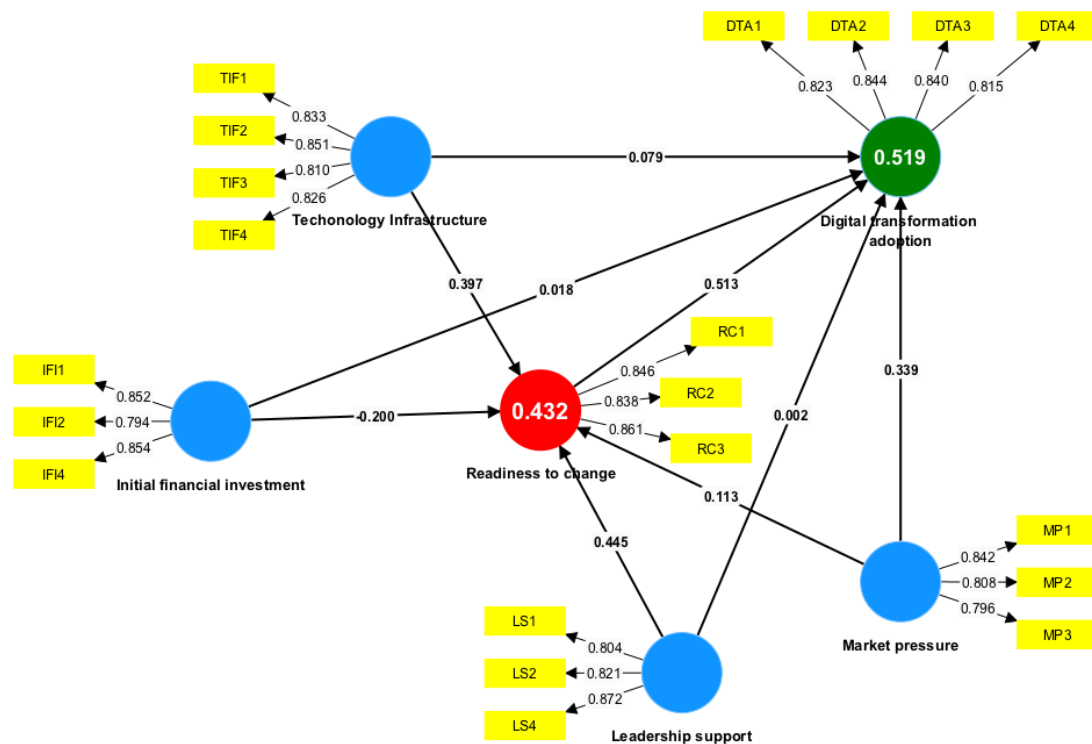


**Fig. 2.  Measurement Model Results**

## 4-2. Assessment of the Structural Model

In Table 3, the model's performance is evaluated through the Variance Inflation Factor (VIF), R-squared (R2), Q-squared (Q2), and the Standardized Root Mean Square Residual (SRMR). The VIF values for all constructs were below 5, indicating that multicollinearity was not a concern in this model. Multicollinearity occurs when independent variables are highly correlated, distorting the interpretation of the model's results. In this study, the low VIF values suggest that the independent variables—such as leader support, financial investment, market pressure, readiness to change, and technology infrastructure—were not excessively correlated, allowing for a more reliable interpretation of the relationships between variables.

**Table 3.  VIF, R2, Q2, SMRM**

| Constructs | VIF | | | | | R2 | Q2 | SMRM |
|---|---|---|---|---|---|---|---|---|
| | *IFI* | *LS* | *MP* | *RC* | *TIF* | | | |
| DTA | 1.090 | 1.376 | 1.095 | 1.760 | 1.327 | 0.519 | 0.345 | 0.058 |
| RC | 1.019 | 1.027 | 1.072 | | 1.05 | 0.432 | 0.300 | |

　　　The R-squared (R2) value for DTA was 0.519, which suggests that the independent variables explained approximately 51.9% of the variance in digital transformation adoption. This moderate level of explanatory power indicates that while the model captures a significant portion of the factors influencing digital transformation adoption, other factors are likely contributing to the process. The R2 value for Readiness to Change (RC) was 0.432, indicating that the model explains 43.2% of the variance in readiness to change. This shows that factors such as market pressure, leader support, and

technology infrastructure are essential in shaping an organization's readiness to embrace digital transformation.

The Q-squared $(Q^2)$ values for DTA and RC were 0.345 and 0.3, respectively, more significant than zero, indicating that the model has good predictive relevance. The Q2 value measures the model's ability to predict future outcomes. In this case, the positive Q2 values suggest that the model can accurately predict the likelihood of adoption of digital transformation and readiness to change within the organizations studied. This predictive relevance is critical for organizations looking to implement digital transformation strategies, as it provides insights into which factors are most likely to drive successful outcomes.

Finally, the Standardized Root Mean Square Residual (SRMR) value was 0.058, below the threshold of 0.08, indicating that the model fits well. The SRMR measures the difference between the observed and model-implied correlations, with lower values indicating a closer fit between the model and the data. In this study, the SRMR value confirms that the model accurately represents the relationships between the variables, providing confidence in the validity of the findings.

**Table 4. Bootstrapping Results**

| Paths | $\beta$ | *p-values* | Decision |
|---|---|---|---|
| IFI -> DTA | 0.018 | 0.669 | Rejected |
| IFI -> RC | -0.200 | 0.000 | Accepted |
| LS -> DTA | 0.002 | 0.974 | Rejected |
| LS -> RC | 0.445 | 0.000 | Accepted |
| MP -> DTA | 0.339 | 0.000 | Accepted |
| MP -> RC | 0.113 | 0.027 | Accepted |
| RC -> DTA | 0.513 | 0.000 | Accepted |
| TIF -> DTA | 0.079 | 0.159 | Rejected |
| TIF -> RC | 0.397 | 0.000 | Accepted |

The research results reveal several important insights into the factors influencing digital transformation adoption and readiness to change within organizations. The analysis indicates that initial financial investment (IFI) has no significant direct impact on digital transformation adoption (DTA), as indicated by a low coefficient of 0.018 and the p-value of 0.669, suggesting that merely investing in digital initiatives does not necessarily lead to adoption. However, IFI has a significant negative impact on readiness to change (RC), with a coefficient of -0.200 and the p-value of 0.000, indicating that higher financial investments may reduce organizational flexibility and willingness to embrace new changes, possibly due to a perceived sense of security in existing technology. On the other hand, leader support (LS) does not directly impact DTA, with a coefficient of 0.002 and the p-value of 0.974, but it has a significant positive effect on RC (0.445, p = 0.000). This suggests that while leadership alone may not directly drive digital adoption, strong leader support fosters a culture of readiness to change, which is crucial for transformation. Market pressure (MP) significantly influences DTA and RC, with coefficients of 0.339 and 0.113, respectively, showing that external factors such as competition and customer demands are critical in pushing companies toward digital adoption and making them more adaptable to change.

The most impactful relationship was between RC and DTA, with a coefficient of 0.513 and the p-value of 0.000, highlighting that an organization's preparedness for change is the strongest predictor of digital transformation success. Technology infrastructure (TIF), while not directly affecting DTA (0.079, p = 0.159), significantly enhances RC (0.397, p = 0.000), showing that a strong technological foundation is essential for creating an environment ready for transformation, even though it may not directly drive the adoption process. These findings underscore the importance of fostering organizational readiness, responding to market pressures, and having leadership support to successfully implement digital transformation. Additionally, while financial investment and technology infrastructure are necessary, they are insufficient conditions for success.

## 5. Discussion and Implications
The findings underscore the prominent role of market pressure and organizational readiness in

enabling digital transformation (DT) in Vietnam's distribution sector. These results echo prior research on the influence of external forces and internal preparedness in shaping digital adoption, particularly in emerging economies. Market pressure, reflecting heightened customer expectations and competitive dynamics, directly influenced both readiness and adoption, reaffirming its catalytic effect (Nguyen & Dao, 2023; Kane et al., 2015). Organizational readiness, conceptualized as both technical and cultural preparedness (Weiner, 2009), significantly mediated the effects of other factors. While leadership support and financial investment have often been treated as direct drivers of DT, the present study finds their effects to be indirect, operating through readiness mechanisms. This diverges from findings in other contexts (Anwar et al., 2020; Fan et al., 2023), suggesting that in resource-constrained settings, symbolic leadership and underutilized capital may not translate into transformative outcomes. These insights call attention to the importance of embedding strategic intent within organizational culture and aligning resources with change readiness. In doing so, the study reinforces the need to contextualize DT models for developing markets, where institutional support and absorptive capacity remain limited.

Theoretically, this study contributes to digital transformation (DT) theory by reframing the emphasis from static resources (e.g., financial capital, leadership presence) to dynamic organizational enablers. First, it foregrounds readiness to change as a central construct in shaping DT outcomes, emphasizing the mediating role of internal preparedness over mere resource availability. This finding extends the statement that psychological and structural readiness is fundamental for technology-driven change. Second, the study explains why leadership support and financial investment require deliberate configuration and alignment with internal capacities to be effective. Rather than acting as direct drivers, these resources exert influence through how they are mobilized within organizational structures. Third, the study highlights contextual contingencies that moderate the relationship between traditional DT drivers and adoption, particularly in emerging economies characterized by institutional gaps and limited absorptive capacity. Fourth, the confirmation of market pressure as the strongest predictor reinforces contingency-based perspectives, suggesting that external forces—not internal ambition alone—often serve as primary catalysts for transformation in volatile environments.

Practically, the findings of this study offer several important insights for managers and leaders in Vietnam's distribution sector seeking to implement digital transformation within their organizations. First, the results emphasize the need for organizations to cultivate a culture of readiness to change. Since readiness to change is the strongest predictor of adopting digital transformation, companies should invest in developing flexible and adaptable work environments. This includes fostering an openness to innovation and providing training to equip employees with the skills to navigate digital shifts. Managers should encourage a receptive mindset to technological change, directly enhancing the organization's ability to adopt digital initiatives. Second, while financial investment is necessary to support technological infrastructure, organizations should be cautious about over-investing in technology at the expense of adaptability. The negative relationship between initial financial investment and readiness to change suggests that heavy investment in existing systems may reduce an organization's flexibility, making it less willing to embrace new changes. Leaders should balance their investments in technology with efforts to maintain organizational agility, ensuring that financial resources do not create structural rigidity. Third, the role of leader support in fostering readiness to change highlights the importance of leadership in shaping organizational culture. Leaders should not only provide strategic direction for digital initiatives but also actively engage in promoting a culture of change within the organization. This includes communicating the importance of digital transformation and ensuring that employees are empowered to participate in the transformation process. However, the findings suggest that leadership support alone may not be enough to drive adoption directly—leaders must also ensure that the necessary market conditions and cultural readiness are in place. Fourth, the significant role of market pressure in driving both readiness to change and digital transformation adoption suggests that organizations should remain vigilant of external forces, such as competition and customer demands. Managers should continuously monitor market trends and adjust their digital strategies to stay competitive. Organizations responsive to external pressures are more likely to succeed in their digital transformation efforts, as they are motivated by the need to meet evolving market demands.

## 6. Conclusion

The findings of this study offer valuable insights into the factors influencing digital transformation adoption (DTA) and readiness to change (RC) within organizations, particularly in the distribution sector. The results demonstrate both consistencies and deviations from previous research on digital transformation. This study contributes to the digital transformation literature by addressing a critical gap in research focused on the distribution sector in emerging economies, specifically in Vietnam. By integrating the Technology-Organization-Environment (TOE) framework, Dynamic Capabilities Theory, and Institutional Theory, the study offers a novel theoretical model that captures the interplay between internal readiness and external pressures in driving digital adoption. Methodologically, the use of Partial Least Squares Structural Equation Modeling (PLS-SEM) allows for an in-depth examination of direct and mediating effects, providing new insights into the mechanisms underlying digital transformation. Furthermore, the context-specific findings offer valuable implications for managers and policymakers, highlighting the importance of organizational adaptability and market responsiveness. These contributions extend the understanding of digital transformation beyond the context of developed economies, offering a foundation for future research in diverse industrial and geographical settings.

## 7. Limitations and Future Research

Despite the valuable contributions of this study, several limitations should be acknowledged. Firstly, The research is specific to the distribution sector in Vietnam, which may limit the generalizability of the findings to other industries or regions. Further studies should expand the scope by examining similar factors in different industries, such as manufacturing, finance, and healthcare, or exploring cross-country comparisons to investigate how digital transformation drivers vary across contexts. Secondly, the study relies on self-reported data from organizational respondents, which could introduce bias, as participants may overestimate or underestimate their organization's readiness to change or the level of leadership support for digital transformation. Future research should consider integrating objective data, such as actual performance metrics or digital maturity assessments, to provide a more comprehensive view of digital transformation. Moreover, this research focuses primarily on internal organizational factors (e.g., leadership, investment, readiness to change) and external pressures (e.g., market pressure). Future studies could explore other external variables, such as government regulations, global partnerships, and technological advancements, to understand their influence on digital transformation. Finally, longitudinal research would be valuable for examining how digital transformation evolves, allowing for a better understanding of the long-term impacts of financial investments, leadership strategies, and market dynamics on digital transformation outcomes.

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## Appendices: Measurement Scales

### Appendix A. Technology Infrastructure (TI)

| | |
|---|---|
| TI_1 | Our organization has a well-established IT infrastructure to support digital transformation. |
| TI_2 | We continuously upgrade our technology to meet the demands of digital solutions. |
| TI_3 | Our IT systems are integrated and work efficiently across different departments. |
| TI_4 | We have access to the necessary hardware and software for implementing digital tools. |

### Appendix B. Leader Support (LS)

| | |
|---|---|
| LS_1 | Top management actively promotes the adoption of digital initiatives. |
| LS_2 | Leaders allocate adequate resources for digital transformation efforts. |
| LS_3 | Top management provides a clear vision and strategy for digital initiatives. |
| LS_4 | Leaders are personally involved in digital transformation projects. |

### Appendix C. Initial Financial Investment (IFI)

| | |
|---|---|
| IFI_1 | Our organization invests significantly in digital technologies. |
| IFI_2 | We have sufficient financial resources allocated for digital transformation initiatives. |
| IFI_3 | We prioritize long-term financial commitments to digital transformation. |
| IFI_4 | We allocate funds specifically for the training and development of digital skills. |

### Appendix D. Market Pressure (MP)

| | |
|---|---|
| MP_1 | Our competitors are adopting digital transformation strategies, pushing us to innovate. |
| MP_2 | Customers demand digital services and products, requiring us to adapt. |
| MP_3 | We face regulatory pressure to digitize our business operations. |
| MP_4 | Our industry rapidly moves toward digitalization, creating pressure to adopt new technologies. |

### Appendix E. Readiness to Change (RC)

| | |
|---|---|
| RC_1 | Our employees are willing to embrace new digital processes and tools. |
| RC_2 | Our company culture supports innovation and digital change. |
| RC_3 | We have the skills and knowledge necessary for implementing digital transformation. |
| RC_4 | Employees are trained to effectively use new digital technologies. |

### Appendix F. Digital Transformation Adoption (DTA)

| | |
|---|---|
| DTA_1 | We have successfully implemented key digital transformation initiatives. |
| DTA_2 | Our company has integrated digital technologies across all departments. |
| DTA_3 | Digital tools are regularly used in our day-to-day operations. |
| DTA_4 | We measure the performance of digital transformation efforts against clear KPIs. |