Digital Transformation in Micro-Economic Organizations in Vietnam: Current implementation and policy implications

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Abstract: Digital transformation has become an increasingly important driver of competitiveness and sustainability; however, its adoption among micro-economic organizations remains uneven and insufficiently understood. This study aims to assess the current state of digital transformation among micro-economic organizations in Vietnam and to identify practical support solutions to enhance their digital transformation capacity. Using an applied and descriptive research design, the study analyzes survey data collected from 297 micro-enterprises and household businesses, primarily in the retail and food and beverage sectors.

The findings indicate that digital transformation among microeconomic organizations remains in its early stages. Most enterprises rely on basic digital tools for sales, communication, and transaction management, while the adoption of advanced technologies for integrated management and data-driven decision-making remains limited. Awareness of digital transformation is generally intuitive and fragmented, with only a small proportion of firms having formal strategies or dedicated personnel. Nevertheless, the results reveal a strong willingness to engage in digital transformation when appropriate training, guidance, and support are provided. Correlation analysis further highlights the prominent role of managerial awareness and strategic orientation in shaping technology adoption.

Based on these findings, the study emphasizes the need for targeted, practice-oriented support programs focusing on capacity building, simplified digital transformation roadmaps, and access to affordable digital solutions. The study contributes empirical insights to the literature on digital transformation in

micro-economic organizations and provides policy-relevant implications for promoting inclusive digital development.

1. Introduction

In an increasingly volatile market environment and amid rapid technological change, digital transformation has emerged as a key driver of innovation and competitiveness for businesses. Previous studies indicate that digital transformation plays a critical role in enhancing organizational resilience, operational efficiency, and long-term sustainability, particularly for small and medium-sized enterprises (SMEs) (Elsa et al., 2025; Hafeez et al., 2025). Consequently, digital transformation has gradually shifted from being a technological option to becoming a strategic necessity in contemporary business contexts.

From an academic perspective, digital transformation began to attract substantial scholarly attention around 2013, closely associated with the development of the digital economy (Omol et al., 2023). According to Van Veldhoven and Vanthienen (2023), the evolution of this concept reflects a gradual transition across three distinct stages. The first stage, digitization, emerged in the 1960s and focused on converting analog information into digital formats, thereby laying the foundation for basic data storage and electronic transactions. This was followed by the digitalization stage in the 1990s, which emphasized the application of digital technologies to improve and automate business processes. More recently, digital transformation has been conceptualized as a broader, more comprehensive phenomenon encompassing fundamental changes in organizational structures, business models, and value-creation mechanisms enabled by digital technologies (Matt et al., 2015).

At the global level, investment in digital transformation technologies and services has increased significantly over the past decade. According to Statista (2025), global spending on digital transformation technologies and services has continued to rise and is projected to reach approximately 3.9 trillion U.S. dollars by 2027. This trend highlights the strategic importance of digital transformation for both enterprises and national economies. Consequently, participation in the digital economy has become an urgent imperative for firms seeking to remain competitive and achieve sustainable development.

Despite its growing importance, the digital transformation process remains uneven across organizational types. Numerous academic studies and industry reports indicate that micro-economic organizations and micro-enterprises face substantial barriers to adopting digital technologies. These challenges include limited digital knowledge and skills, financial constraints, shortages of human resources, and restricted access to suitable digital platforms. A regional survey conducted by Cisco Systems (2021) revealed that small and micro businesses in the Asia–Pacific region continue to struggle with issues related to digital capabilities, technological infrastructure, and strategic orientation, resulting in many firms remaining at a pre-digital or early digitalization stage.

In Vietnam, digital transformation has progressed more rapidly among large enterprises and multinational corporations, which possess stronger technological infrastructure and greater capacity to adopt advanced solutions such as big data analytics and artificial intelligence (Statista, 2023). However, this progress contrasts sharply with the situation of micro and small enterprises. According to the General Statistics Office of Vietnam (GSO, 2023), large enterprises account for only 2.9% of firms, whereas nearly 97% are micro, small, and medium-sized enterprises. Furthermore, data from the Ministry of Information and Communications (2022) indicate that only approximately 26% of micro and small enterprises have

initiated digital transformation activities. This disparity reflects a widening digital divide between enterprise groups and raises concerns about the ability of microeconomic organizations to participate effectively in the digital economy and related value chains.

In this context, assessing the current state of digital transformation among micro-economic organizations is both necessary and timely. Micro-economic organizations typically operate with limited organizational capacity, lack specialized information technology personnel, and face significant resource constraints. Nevertheless, these organizations often demonstrate high levels of flexibility and adaptability, suggesting that appropriate and targeted support can substantially enhance their digital transformation efforts.

Accordingly, the design and implementation of digital transformation support programs tailored to the specific characteristics of micro-economic organizations have become increasingly important. These programs should emphasize simplicity, practicality, and cost feasibility, enabling rapid adoption while remaining aligned with the limited level of digital readiness among such organizations. This perspective is consistent with recent national policy orientations in Vietnam, including the National Digital Transformation Strategy to 2025 with a vision to 2030 (Decision No. 749/QD-TTg), the Politburo's Resolution No. 57-NQ/TW (2024) on breakthroughs in national digital transformation, and the Government's Action Program No. 03/NQ-CP (2025). These policies recognize micro and small enterprises as central actors in the national digital transformation agenda, while emphasizing the need for coordinated support from the government, large enterprises, and intermediary organizations.

Among microeconomic organizations in Vietnam, micro retail businesses and food and beverage (F&B) establishments are among the most prevalent, particularly in urban areas and the southern region. According to GSO (2023), these sectors account for a substantial share of micro-enterprises and are characterized by high transaction frequency, direct interaction with end consumers, and flexible operational structures. More importantly, retail and F&B businesses are well-positioned to adopt basic digital solutions, including point-of-sale (POS) systems, inventory management software, e-accounting tools, digital delivery platforms, and social media marketing via platforms such as Facebook, Zalo, and TikTok. These technologies generally require relatively low investment and minimal technological infrastructure, making them suitable for micro-scale operations.

Therefore, focusing on micro-retail and food and beverage enterprises provides a relevant empirical context for examining digital transformation practices among microeconomic organizations. This focus enables the identification of current adoption levels, practical challenges, and feasible support mechanisms that can be scaled or adapted to other micro-enterprise sectors. Based on the above considerations, this study aims to assess the current state of digital transformation among micro-economic organizations in Vietnam and to propose practical support solutions to enhance their digital transformation capacity. Specifically, the study addresses the following research questions:

RQ1: What is the current state of digital transformation and the associated digital transformation needs of micro-economic organizations in Vietnam?

RQ2: What practical solutions can support microeconomic organizations in enhancing their capacity for digital transformation?

The findings of this study are expected to provide practical insights for policymakers, support organizations, and micro-enterprises by contributing to the design and implementation of effective digital transformation support programs. The remainder of the paper is structured as follows. The next section reviews the theoretical background of digital transformation, followed by the research methodology, empirical results, discussion, and policy-oriented recommendations. The paper concludes with a summary of key findings and implications.

2. Literature review

2.1 The concept of digital transformation

Digital transformation has been widely recognized as a multidimensional process that extends beyond the mere adoption of digital technologies. Existing studies suggest that digital transformation entails integrating digital technologies with changes in business models, organizational structures, and value-creation mechanisms, thereby enabling firms to enhance performance and competitiveness in dynamic environments (Elsa et al., 2025). Scholars emphasize that digital transformation is not limited to technological upgrades but also encompasses strategic, managerial, and organizational dimensions. Kane et al. (2017) highlight the roles of leadership, organizational structure, and strategic alignment, while Lungu and Georgescu (2024) stress the importance of organizational culture, data-driven decision-making, and external collaboration in supporting successful digital transformation. Collectively, these perspectives indicate that digital transformation requires a coordinated integration of technological and organizational capabilities.

Despite its growing importance, there is no single, universally accepted definition of digital transformation due to its inherently complex and evolving nature (Schallmo et al., 2017). In general, digital transformation is understood as a strategic process through which organizations leverage digital technologies to improve operations, develop new business models, and enhance customer interactions (Verhoef et al., 2021). Recent studies further suggest that digital transformation enables firms to adapt to changing market demands and build sustainable competitive advantages in digitalized markets (Hermann et al., 2024; Mai et al., 2024). Given the focus of this study, the definition proposed by Soluk and Kammerlander (2021) is adopted, which conceptualizes digital transformation as the use of digital technologies to improve business operations, products, services, and business models. This definition provides an appropriate conceptual foundation for examining digital transformation practices within micro-economic organizations, which face similar transformation requirements to larger firms but operate under more constrained resources.

2.2 Fundamental theories in digital transformation

Existing studies on digital transformation have applied several fundamental theories to explain and guide this complex process, ranging from technology adoption to strategic reconfiguration for competitive advantage. These theories provide important conceptual lenses for understanding how organizations respond to digital change under varying resource conditions. Among these perspectives, dynamic capabilities theory is the most frequently cited and is widely regarded as a leading framework for explaining successful digital transformation (Elsa et al., 2025; Sagala & Őri, 2025). In digital transformation research, this theory is commonly used to describe how firms, particularly SMEs, navigate digital change by sensing technological opportunities and threats, seizing them through resource mobilization, and transforming business models and internal processes to adapt to changing environments (Guimarães et al., 2023; Hafeez et al., 2025; Parra-Sánchez & Talero-Sarmiento, 2023). Beyond transformation pathways, dynamic capabilities theory has also been applied to explain SMEs' adaptability in volatile, uncertain, complex, and ambiguous (VUCA) environments, as well as the development of organizational resilience through digital technology adoption (Sagala & Őri, 2025).

Closely related to this perspective, the resource-based view (RBV) has been identified as another core theoretical foundation in studies of digital transformation in SMEs. RBV emphasizes how firm-specific resources—including digital assets, human skills, and organizational culture—can be strategically leveraged to generate competitive advantage in the digital era (Syah et al., 2025). In this context, digital resources and internal capabilities are viewed as strategic assets that contribute to post-transformation performance and sustainability, rather than merely supporting operational efficiency. In addition,

endogenous growth theory has been employed to explain the mechanisms underlying successful digital transformation (Sagala & Őri, 2024). From this perspective, investment in information technology must be accompanied by complementary innovation in human resources, production, and marketing to generate sustained returns. Accordingly, digital transformation is conceptualized not as a standalone technological initiative but as a comprehensive business strategy that integrates technological and organizational development.

At a more micro-level, technology acceptance theories, including the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and the Unified Theory of Acceptance and Use of Technology (UTAUT), have been widely applied to examine factors influencing the adoption and continued use of digital technologies by individuals and organizations (Michelotto & Joia, 2024; Syah et al., 2025). These theories help analyze the adoption of specific digital tools, such as mobile payment systems, enterprise resource planning (ERP), and accounting information systems (AIS), which are highly relevant to SMEs and micro-enterprises. These theories offer complementary perspectives on digital transformation. Although these theoretical perspectives have primarily been developed in the context of firms and SMEs, they provide a valuable foundation for interpreting challenges of digital transformation and support the needs of microeconomic organizations, which face similar transformation requirements but operate under more severe resource constraints.

2.3 Factors affecting digital transformation in businesses

The literature on digital transformation identifies a range of factors that influence firms' ability to initiate and implement digital transformation initiatives. These factors are commonly classified into internal (micro-level) and external (macro-level) dimensions, reflecting both organizational readiness and environmental pressures. Rather than providing an exhaustive list of determinants, this section synthesizes key factors that are particularly relevant to SMEs and micro-economic organizations.

At the micro-level, internal capabilities play a central role in shaping digital transformation outcomes. Dynamic capabilities are often regarded as a core mechanism that enables firms to adapt and innovate in response to digital change (Liu et al., 2024). These capabilities typically involve sensing technological opportunities, seizing them through effective decision-making and resource mobilization, and transforming organizational processes and business models accordingly (Gyamerah et al., 2025; Liu et al., 2024). In addition to organizational capabilities, individual-level competencies such as creativity, intuition, and empathy have been shown to support digital innovation, particularly in small and resource-constrained firms (Cannas, 2021). Moreover, digital transformation leadership has been consistently identified as a critical success factor, as leaders play a key role in fostering organizational flexibility and guiding firms through digital change processes (Gyamerah et al., 2025; Ramadan et al., 2023; Sharma et al., 2025).

Another important group of internal factors relates to organizational culture and people. Organizational culture is widely regarded as a strategic asset that can either facilitate or hinder digital transformation efforts (Sjachriatin et al., 2023). Studies suggest that a supportive digital culture enhances employees' openness to change, while poorly managed cultural change may generate resistance and negatively affect transformation outcomes (Kargas et al., 2023). At the individual level, employees' attitudes, personal characteristics, and self-efficacy have been found to significantly influence digital readiness and willingness to adopt new digital practices (Nguyen Thi Thu Thuy et al., 2023). In addition to capabilities and culture, resources and strategic orientation constitute a third key group of internal factors. Access to technological infrastructure, financial resources, and digital knowledge provides the foundational conditions for digital transformation initiatives (Hasbullah et al., 2024; Omrani et al., 2024). The presence of a clear digital strategy further supports SMEs by guiding resource allocation decisions and improving overall performance during the transformation process (Gyamerah et al., 2025; Prihandono et al., 2024).

At the macro level, external environmental factors also significantly influence firms' digital transformation decisions. Market pressures, including competitive intensity and evolving customer expectations, are widely recognized as primary external drivers of SMEs' digital transformation (Kargas et al., 2023; Prihandono et al., 2024). External shocks, such as the COVID-19 pandemic, have further accelerated digital transformation by compelling SMEs to adopt digital solutions to survive and maintain operations rapidly (Kuczewska et al., 2023). However, evidence suggests that digital transformation strategies are more likely to be effective when supported by stakeholder collaboration and by enabling institutional environments. In particular, legal frameworks, policy incentives, and government support programs can provide critical encouragement and reduce barriers to SMEs' engagement in digital transformation initiatives (Cannas, 2021; Sharma et al., 2025).

Taken together, the literature indicates that a combination of internal readiness and external enabling conditions shapes digital transformation. For micro-economic organizations, limited resources, managerial capacity, and technological expertise tend to amplify the importance of targeted support mechanisms that address both internal capabilities and external constraints. These insights provide a valuable foundation for analyzing digital transformation practices and identifying appropriate support solutions for micro-economic organizations in the empirical sections of this study.

3. Research methods

This study employs an applied, descriptive research design to capture the current state of digital transformation among microeconomic organizations in Vietnam. Rather than testing hypotheses or developing complex theoretical models, the study focuses on providing practical evidence to support feasible policy recommendations and support programs for digital transformation. Accordingly, descriptive statistical analysis is employed as the primary analytical approach.

3.1 Sample size and sampling method

To ensure an acceptable level of reliability and analytical usefulness within practical resource constraints, the survey sample comprises 300 observations, representing micro-enterprises and micro household businesses across Vietnam. A non-probability convenience sampling method was applied, whereby survey respondents were selected based on accessibility and willingness to participate.

The chosen sample size was determined based on three primary considerations. First, it satisfies commonly accepted minimum requirements for reliable descriptive statistics and group comparisons in applied research contexts, particularly when multiple variables and subgroup analyses are involved (Hair Jr et al., 2019). Second, a sample of this size enables cross-sectional comparisons across industry sectors, levels of digital awareness, and geographic regions, while remaining feasible in terms of time, cost, and implementation capacity. Third, it helps limit sampling error to an acceptable level for descriptive and exploratory research.

The study focuses on two representative sectors within the micro-economic segment: micro retail businesses and micro food and beverage (F&B) establishments. Survey respondents were business owners, managers, or key decision-makers responsible for daily operations and technology-related decisions.

3.2 Survey instrument design

The survey questionnaire was developed in accordance with official national guidelines and the study's specific objectives. The primary reference framework for questionnaire design was Decision No. 1567/QD-BKHCN (2025) issued by the Vietnam Ministry of Science and Technology, which provides standardized criteria for assessing enterprise-level digital transformation in Vietnam.

In addition to these criteria, supplementary question groups were included to capture information relevant to the study's analytical objectives, including digital readiness, current adoption levels, support needs, and perceived barriers. The questionnaire consisted of four main sections: (1) digital awareness and perception; (2) adoption and use of digital technologies by business function and sector; (3) outcomes and future orientation of digital transformation; and (4) barriers and challenges encountered during the digital transformation process. Participation in the survey was voluntary, and respondents were informed of the research purpose prior to data collection. All responses were anonymized to ensure confidentiality.

Survey data were coded and analyzed using SPSS (latest version) to conduct fundamental quantitative analyses, including frequency distributions, descriptive statistics, and group comparisons. Specifically, one-way analysis of variance (ANOVA) was employed to identify statistically significant differences in digital technology adoption across groups characterized by digital transformation planning status, investment levels, or digital awareness levels.

4. Results

4.1 Description of the research sample

Of the 350 questionnaires distributed, 300 were returned, resulting in a response rate of approximately 85.7%. After data screening, 297 valid questionnaires were retained for subsequent analysis. By industry classification, food and beverage (F&B) businesses accounted for 64.3% of the sample, whereas retail enterprises accounted for 35.7%.

With respect to geographic distribution, the majority of surveyed firms were located in Ho Chi Minh City and several provinces in southern Vietnam. This distribution reflects the economic centrality of these areas and the high concentration of microeconomic organizations operating within them.

Regarding firm size, the results presented in Table 2.2 indicate that most surveyed enterprises and household businesses employed fewer than 10 employees and reported annual revenues below VND 5 billion. Accordingly, the majority of observations in the sample meet the criteria for micro-enterprises as defined under Vietnam's Law on Support for Small and Medium-Sized Enterprises (2017).

Table 1: Distribution of Surveyed Enterprises by Firm Size and Annual Revenue

Firm Size (Number of Employees)	Annual Revenue in 2024				Total
	Below VND 2 billion	VND 2 – below 5 billion	VND 5 – 10 billion	Above VND 10 billion	
Fewer than 10 employees	203	-	-	-	203
10–49 employees	1	-	68	-	69
50–199 employees	-	9	-	10	19
More than 200 employees	6	-	-	-	6
Total	210	9	68	10	297

The statistical results indicate that the majority of enterprises in the sample are tiny, with limited revenue and few employees. Most of these firms lack dedicated departments or personnel responsible for information technology or digital transformation. Instead, decisions related to the adoption and use of digital technologies are typically made directly by business owners or key managers. This characteristic accurately reflects the prevailing governance structure of Vietnam's microeconomic sector, in which individual entrepreneurs play a decisive role in shaping strategic orientation and the extent to which digital transformation initiatives are implemented.

4.2 Assessing the level of awareness regarding the digital transformation strategy

The survey results indicate that most microeconomic organizations exhibit some awareness of the role of digital transformation in business operations. Many respondents perceive the adoption of digital technologies as necessary to expand sales channels, enhance customer reach, and maintain competitiveness in an increasingly dynamic market. This awareness has become particularly pronounced in the post–COVID-19 period, during which traditional sales channels were disrupted, and digital platforms emerged as critical tools for sustaining business activities.
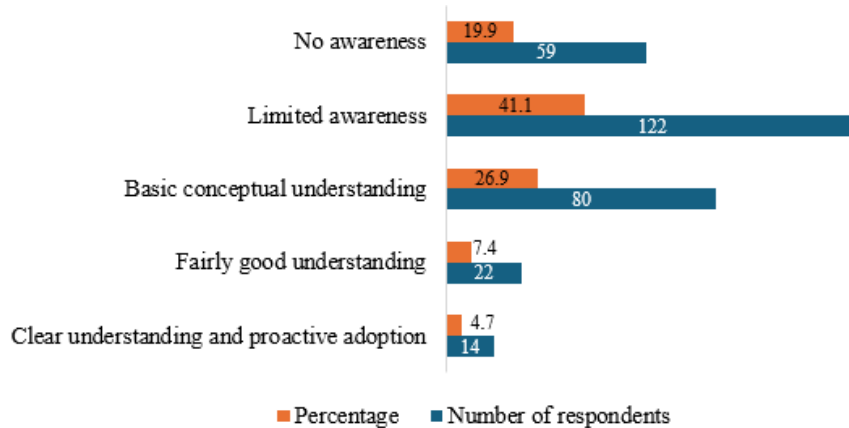
Figure 1: Statistics on businesses' awareness of digital transformation

However, the overall level of awareness of digital transformation among micro-enterprises remains limited and largely intuitive. A considerable proportion of firms report only a superficial understanding or lack a clear comprehension of the core nature of digital transformation. In contrast, the share of enterprises that demonstrate a thorough understanding and proactively implement digital transformation initiatives remains relatively small. As a result, only a limited number of firms have developed clear digital transformation strategies or implementation plans. For many micro-enterprises, digital transformation is still primarily perceived as the use of social media platforms or isolated online tools, rather than as a systematic process involving fundamental changes in business models and management practices.

4.3 Assessment of digital technology usage

The current state of digital technology adoption among microeconomic organizations indicates that digital transformation remains in its early stages. Most enterprises have adopted a limited set of basic digital tools for their daily business operations, particularly those that are readily accessible, low-cost, and do not require advanced technical skills. These tools are primarily used to support sales activities, communication, and customer relationship management, reflecting a need for rapid market adaptation rather than for implementing a comprehensive, systematic digital transformation strategy.

Table 2: Distribution of Surveyed Enterprises by Firm Size and Annual Revenue

Assessment Item	Category	Number of Enterprises	Percentage
Customer communication channels	Email	83	17.6%
	Social media (E.g., Facebook, Instagram)	268	56.8%
	Integrated chatbots or automated customer support	53	11.2%
	Websites supporting ordering and customer service	68	14.4%

Assessment Item	Category	Number of Enterprises	Percentage
Use of data analytics tools to support decision-making	Not used	51	17.2%
	Yes, manual tools (e.g., Excel, summary tables)	11	3.7%
	Yes, reporting and dashboard software	160	53.9%
	Yes, advanced analytics (e.g., artificial intelligence)	75	25.3%
Information security measures	None	116	28.6%
	Basic antivirus software only	98	24.2%
	Regular data backup	105	25.9%
	Security policies and access control	65	16.0%
	Comprehensive security solutions (e.g., MFA, encryption, system monitoring)	21	5.2%
Use of storage or operational platforms	Not used	98	22.0%
	VNPT	85	19.1%
	Viettel	91	20.4%
	FPT	51	11.4%
	Google	61	13.7%
	Microsoft	56	12.6%
	Amazon	4	0.9%

Social media platforms such as Facebook and Zalo are widely used as primary sales channels and tools for customer interaction among micro-enterprises. In addition, some firms employ basic sales management software, electronic payment applications, or spreadsheet tools to manage orders and monitor revenue. These tools contribute to improving customer reach and enhancing transactional flexibility; however, their use remains fragmented and lacks systematic integration.

In contrast, the adoption of advanced digital technologies for operational management and decision-making remains limited. Integrated management systems, data analytics tools, and automation solutions have not been widely implemented. This situation indicates that most enterprises remain at the stage of digitizing individual business activities rather than having fully transitioned to a comprehensive, systematic digital transformation.

4.4 Digital Transformation Outcomes and Future Orientation

Some enterprises have reported initial positive outcomes from adopting digital technologies, particularly in sales activities, customer communication, and transaction management. The expansion of online sales channels has enabled firms to reach a broader customer base and enhanced operational flexibility in their business activities.

However, the outcomes achieved to date remain primarily short-term and have not yet resulted in fundamental changes in business models or managerial effectiveness. Most micro-enterprises have not fully leveraged digital transformation to optimize operational processes, improve management efficiency, or support data-driven decision-making. Nevertheless, the majority of surveyed enterprises express a firm intention to pursue further digital transformation, provided they receive appropriate support, including training, advisory services, and access to suitable technological solutions.

4.5   Challenges and Support Needs

The survey results indicate that micro-economic organizations face multiple barriers in their digital transformation processes. The most prominent challenges include insufficient digital knowledge and skills, financial constraints, and the lack of appropriate implementation guidance. Many enterprises report strong motivation to pursue digital transformation; however, they lack clear roadmaps and practical guidance for implementing these initiatives effectively.

Regarding support needs, micro-enterprises express a strong interest in efficient digital skills training programs, affordable, easy-to-implement technological solutions, and advisory services tailored to the specific characteristics of small-scale operations. These needs underscore the critical role of support programs that are closely aligned with the practical realities and constraints of the micro-economic sector.

4.6   Correlation Analysis

The results of the correlation analysis indicate that awareness of digital transformation, the level of strategic planning, the presence of dedicated personnel, and the availability of budgets for digital transformation are all positively associated with the level of technology adoption within enterprises. Among these factors, awareness and strategic orientation play a more prominent role than factors related solely to technological investment.

These findings confirm that digital transformation in the microeconomic sector is primarily a matter of managerial orientation and strategic direction rather than merely a matter of technology investment. This empirical evidence provides an important foundation for the support solutions and policy recommendations proposed in the subsequent section.

5.   Discussion

Drawing on empirical findings on enterprises' awareness of digital transformation, current patterns of digital technology use, perceived challenges, and future orientation, this study highlights the critical importance of targeted support mechanisms for microeconomic organizations. The results collectively suggest that digital transformation in this sector is constrained not primarily by a lack of motivation but by limited understanding and managerial capacity.

The findings indicate that the level of awareness of digital transformation among micro-enterprises remains relatively low. A substantial proportion of surveyed firms demonstrate only a vague or superficial understanding of digital transformation, often conflating it with basic computerization or the isolated use of digital tools. This observation is consistent with prior studies emphasizing that, in small and resource-constrained firms, digital transformation is frequently perceived in intuitive rather than strategic terms. The lack of a clear distinction between digitization and digital transformation may partly explain why most enterprises have not yet developed formal digital transformation strategies or roadmaps. Moreover, the concentration of decision-making authority among business owners, who often lack formal digital expertise, further limits micro-enterprises' ability to plan and implement digital initiatives systematically.

Despite these constraints, the results reveal a notable paradox: limited awareness alongside a relatively high willingness to engage in learning and transformation activities. While only a small share of firms report having concrete digital transformation plans, a majority express strong interest in participating in digital skills training, particularly when such programs are short-term, practice-oriented, and directly applicable to their daily operations. This finding suggests that micro-enterprises may be more receptive to experiential and problem-driven learning approaches than to abstract or technology-centric interventions. It also aligns with the notion that, in the context of micro-enterprises, digital transformation

is more likely to emerge through incremental learning and "learning-by-doing" processes rather than through comprehensive top-down strategies.

The analysis further indicates that, although current levels of digital technology adoption remain modest and fragmented, there are early signs of readiness and initial benefits among a subset of enterprises. Basic digital practices, such as online sales channels, social media engagement, and simple management software, have enabled some firms to improve customer reach, enhance operational flexibility, and achieve short-term performance gains. However, these improvements have not yet translated into fundamental changes in business models or management effectiveness. The limited adoption of integrated management systems, data analytics, and automation tools suggests that most micro-enterprises remain at the stage of digitizing individual activities rather than undergoing complete digital transformation. This pattern reflects the absence of structured guidance and tailored support that could help enterprises move beyond ad hoc technology use toward more coherent transformation pathways.

Digital transformation in the micro-economic sector should be understood primarily as a managerial and organizational challenge rather than a purely technological one. Awareness, strategic orientation, and human capacity appear to play a more decisive role than the availability of technology itself. These insights reinforce the argument that adequate digital transformation support for micro-enterprises must address cognitive, organizational, and capability-related constraints, as well as technological considerations. The findings thus provide a strong conceptual basis for developing context-sensitive support programs and policy interventions.

6. Policy Implications and Support Programs

Based on the empirical findings and the preceding discussion, this study highlights several important policy implications for promoting digital transformation among microeconomic organizations in Vietnam. The results indicate that while motivation and willingness to engage in digital transformation exist, micro-enterprises face persistent constraints related to awareness, managerial capacity, and access to appropriate support mechanisms. Accordingly, policy interventions should prioritize capability building, practical guidance, and contextualized support, rather than focusing solely on technology provision.

6.1 Strengthening Digital Awareness and Managerial Capacity

First, the findings suggest that enhancing awareness of digital transformation among micro-enterprises should be a primary policy priority. Many firms continue to perceive digital transformation in narrow or intuitive terms, often equating it with the use of basic technologies rather than a systematic process of organizational change. This underscores the need for awareness-raising initiatives that clearly differentiate between digitization and digital transformation, while emphasizing the managerial and strategic dimensions of digital change.

Public support programs should therefore focus on improving the digital literacy of business owners and managers through targeted communication campaigns, introductory workshops, and simplified guidance materials. Such initiatives should use accessible language and real-world examples drawn from micro-enterprise contexts to ensure relevance and comprehension. Improving managerial understanding is particularly critical given the dominant role of business owners in decision-making within microeconomic organizations.

6.2 Designing Practice-Oriented and Modular Training Programs

Second, the strong demand for training identified in the survey points to the importance of designing practice-oriented digital skills development programs tailored to micro-enterprises. Training initiatives

should prioritize short-term, modular formats that allow participants to acquire specific skills aligned with their immediate operational needs. Rather than emphasizing abstract technological concepts, training content should focus on hands-on applications such as managing online sales channels, using basic accounting and inventory software, improving customer engagement through digital platforms, and ensuring basic data security.

In addition, training programs should adopt a "learning-by-doing" approach, enabling participants to apply newly acquired skills directly within their businesses. This approach is particularly suitable for micro-enterprises, where time constraints and limited resources reduce the feasibility of long-term or highly theoretical training interventions. Partnerships between public agencies, business associations, and technology providers can further enhance the effectiveness and scalability of such programs.

6.3 Developing Step-by-Step Digital Transformation Roadmaps

Third, the lack of formal digital transformation strategies among micro-enterprises underscores the need for simplified, phased digital transformation roadmaps. Rather than promoting comprehensive transformation models that may be unrealistic for small-scale operations, policymakers should support the development of step-by-step frameworks that reflect varying levels of digital readiness.

These roadmaps could guide enterprises through progressive stages, starting with basic digital adoption (e.g., online presence and digital payments), advancing to process optimization (e.g., integrated sales and inventory management), and ultimately supporting data-informed decision-making. Clear milestones and practical benchmarks would help micro-enterprises assess their progress and reduce uncertainty associated with digital transformation initiatives.

6.4 Fostering Support Ecosystems and Institutional Coordination

Finally, the findings highlight the importance of coordinated support ecosystems involving government agencies, intermediary organizations, industry associations, and technology providers. Isolated interventions cannot effectively drive digital transformation among micro-enterprises. Instead, an integrated approach is required that combines training, advisory support, financial incentives, and regulatory facilitation.

Policy frameworks should encourage collaboration among stakeholders to ensure consistency and continuity in the provision of support. Intermediary organizations, in particular, can play a crucial role in translating national digital transformation strategies into actionable guidance for micro-enterprises, bridging the gap between policy objectives and on-the-ground implementation.

7. Conclusion

This study examined the current state of digital transformation among micro-economic organizations in Vietnam, with a particular focus on awareness, technology adoption practices, challenges, and support needs. By employing an applied and descriptive research design, the study provides empirical insights into how micro-enterprises engage with digital transformation in practice and identifies key constraints that limit their ability to progress beyond basic digital adoption.

From a practical and policy perspective, these findings highlight that digital transformation in the micro-economic sector should be approached primarily as a managerial and organizational challenge rather than solely as a technological one. Effective support mechanisms should therefore emphasize awareness-building, capacity development, and the provision of practical, context-sensitive guidance. Training programs, simplified digital-transformation roadmaps, and access to affordable, suitable digital solutions are essential to enabling micro-enterprises to advance their digital-transformation journeys sustainably.

This study contributes to the literature on digital transformation by extending empirical evidence to microeconomic organizations. This segment has received relatively limited scholarly attention compared with SMEs and larger firms. By focusing on applied insights and policy-oriented implications, the study offers a foundation for designing targeted support programs aligned with the specific constraints and characteristics of micro-enterprises.

Several limitations should be acknowledged. The use of convenience sampling limits the generalizability of the findings, and the cross-sectional nature of the data precludes examination of long-term transformation dynamics. Future research could address these limitations by employing longitudinal designs, comparative analyses across sectors or regions, or mixed-method approaches to deepen understanding of digital transformation pathways in micro-economic organizations.

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