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INFORMATION TECHNOLOGY CAPABILITIES ENHANCE BUSINESS PERFORMANCE: THE ROLE OF ORGANISATIONAL AGILITY, AMBIDEXTERITY, AND REGULATORY SUPPORT

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ABSTRACT

In pursuing a market position, enterprises have increasingly turned to information technology (IT) to help improve their performance. Our research assesses the influence of IT capabilities as a strategic resource for business performance within the context of dynamic capabilities theory. It also examines the mediating role of organisational ambidexterity and agility in the relationship between IT capabilities and business performance, thereby shedding light on the mechanisms through which IT capabilities impact overall organisational success. The role of regulatory support in digital transformation is also investigated. This paper uses Partial Least Squares Structural Equation Modelling to analyse 321 respondents from Vietnamese enterprises. The results highlight the mediating effects of organisational agility and ambidexterity on the relationship between IT capabilities and business performance. These findings confirm that regulatory support moderates the association between organisational ambidexterity and business performance. Limitations and future research directions are discussed in the paper as well.

Keywords: *business performance, IT capabilities, organisational agility, organisational ambidexterity, regulatory support*

INTRODUCTION

The dynamic capabilities perspective highlights firms' ability to overcome core rigidities, rapidly sense their environment, absorb new knowledge, integrate internal and external resources, and innovate in operation models while facing rapidly changing environments (Ajgaonkar et al., 2022; Ellström et al., 2022). In the context of economic decline, organisational agility is key for firms to survive and maintain their position in the market. Firms must accumulate and effectively combine resources to build core competencies, gain agility, and achieve a high level of performance. In addition to facilitating internal resources, organisational ambidexterity—a firm's capacity to concurrently explore and exploit internal resources—has also been identified as a critical capability that stems from operational proficiency and serves as a precursor to improving business performance (Cenamor et al., 2019; Mura et al., 2021).

Recent research suggests that information technology capabilities can play a crucial role in enhancing both organisational agility and ambidexterity. By providing flexible, responsive, and data-driven systems, IT can enable organisations to pivot quickly in response to environmental shifts while also supporting the dual objectives of innovation and efficiency. Favourable regulatory frameworks that encourage technological innovation and investment can help organisations thrive in today's business landscape (Alkahtani et al., 2020). Previous studies have further suggested that a government's actions can also greatly influence organisational performance (Alkahtani et al., 2020; Vu & Tran, 2021), but the impact of government support for gaining organisational agility and ambidexterity remains ambiguous.

Besides that, most studies focus on isolated pairings, such as IT capabilities and agility (Cherian et al., 2023), or ambidexterity and innovation (Lee et al., 2023). This fragmented view fails to capture the synergistic potential and nuanced interplay when these factors operate in conjunction. A comprehensive model incorporating all four constructs would provide a more realistic and insightful understanding of how firms can leverage IT to achieve agility and ambidexterity in varying regulatory contexts.

Given these research gaps, this study examines the interplay of IT capabilities, organisational agility, ambidexterity, and regulatory support within a single model. The current study focuses on the following questions:

RQ1: How do IT capabilities influence business performance through organisational agility and organisational ambidexterity?

RQ2: How does regulatory support moderate the relationship between agility, ambidexterity, and performance?

By delving into the complex relationships between IT capabilities and business performance, which are mediated by the organisational constructs of ambidexterity and agility, the study offers valuable insights into how organisations can strike a delicate balance between innovation and efficiency through their IT investment while simultaneously bolstering their adaptability and responsiveness in the face of ever-evolving business landscapes. The study could contribute to a more nuanced understanding of how firms can leverage IT to navigate today's dynamic business landscape, while also informing policymakers on how to create regulatory environments that foster innovation and competitiveness.

The next section reviews existing literature to establish a theoretical foundation for our hypotheses and then proposes a comprehensive model that integrates these constructs. Following this, we outline our research methodology, including data collection and analysis techniques. Finally, we discuss the implications of our findings for both theory and practice, offering insights for managers and policymakers alike.

LITERATURE REVIEW

Dynamic Capabilities View

The dynamic capabilities view (DCV) emphasises the processes by which organisations integrate, build, and reconfigure internal and external competencies in response to environmental change (Kapoor & Aggarwal, 2020). The theory integrates key elements of modern global competition—namely innovation, cooperation, and strategic coordination—to explain how firms achieve long-term success in turbulent markets. It highlights the critical significance of both internal and external resources in enhancing business performance (Sainsbury, 2021). Internal resources, such as IT capabilities, serve a pivotal role in facilitating an organisation's ability to adapt and innovate in response to dynamic market conditions (Varma et al., 2020). IT capabilities enable firms to efficiently gather and process information, thus improving decision-making and responsiveness (Chatterjee et al., 2023; Magistretti et al., 2021). Organisational agility and ambidexterity further enhance a firm's capacity to adapt and exploit new opportunities while simultaneously maintaining existing competencies. External resources, in particular regulatory support, can have a substantial influence on business performance by providing a conducive environment for innovation, growth, and competitiveness (Hussain et al., 2022). Based on this view, prior papers

have suggested that organisations must develop IT capabilities, organisational ambidexterity, and agility to obtain competitive advantages and achieve superior performance.

Business Performance and IT Capabilities

The concept of business performance encompasses the strategic and planning elements directed at the achievement of organisational objectives, with a specific focus on the inputs and outputs involved (Mura et al., 2021). At the same time, business performance revolves around the realisation of objectives through the effective employment of organisational capabilities to yield the desired outcomes (Agustia et al., 2022). The evaluation of business performance comprises comprehensive metrics closely linked to economic value, shareholder returns, and customer satisfaction (Agustia et al., 2022; Pellegrino et al., 2024; Sharma et al., 2025). The article focuses on business results as well as the development of core capabilities of the business from the perspective of managers.

IT capabilities refer to the combination of a company's IT assets, technical and management skills, and IT practices, which involve IT knowledge and proficiency that enable the company to capitalise on IT systems, design, applications support, and systems analysis (Chen et al., 2025; Mao et al., 2021; Panda & Rath, 2021). These capabilities also consist of management skills that promote information system implementation and IT skills that aid in identifying future business requirements, which is vital for management change (Steininger et al., 2022). IT capabilities include IT-related asset stocks and physical assets, such as hardware platforms, software applications, data repositories, and other networking and object-based technologies to support business activities (Cassia et al., 2020; Felipe et al., 2020). This article takes a comprehensive perspective of IT capabilities, reflecting the commonalities and potential synergies between a business's various IT assets and resources. Accordingly, IT capabilities are identified as a second-order construct with two dimensions: IT infrastructure, and IT management and practical skills.

IT capabilities serve as pivotal enablers for optimising resource utilisation and enhancing organisational performance by shaping implementation processes. Their influence on business performance critically depends on the alignment between IT strategy and overall corporate strategy (Chen et al., 2025; Le & Hoang, 2024; Panda, 2022). Furthermore, they support decision-making through internal coherence and strategic alignment with organisational goals (Felipe et al., 2020). To fully leverage these capabilities, both end users and IT personnel must acquire the requisite skills and knowledge (Panda & Rath, 2021). While IT investment positively affects productivity, its impact on profitability remains contested due to inconclusive empirical evidence (Dong et al., 2021). Differences in firm performance can be attributed to the uneven distribution of firm-specific

resources among IT adopters (Dong et al., 2021). The dynamic capabilities view underscores the role of IT capabilities as internal resources that drive performance under dynamic market conditions. Based on these arguments, we propose the following hypothesis:

H1: IT capabilities positively impact business performance.

IT Capabilities and Organisational Agility

Organisational agility is defined as a business's ability to sense and rapidly respond to changes in the business environment (Walter, 2021). Firms' agility is the ability to actively predict and seize market opportunities to take new business approaches and obtain early advantages in the midst of changing conditions (Mao et al., 2021; Panda, 2022). Agile organisations can defensively adapt to market conditions and protect themselves from market disruption. Hence, organisational agility can be offensive, defensive, or a mixture of the two because a firm's products or markets do not develop at the same rate. In this article, organisational agility focuses on the ability to predict and adapt to volatility in market conditions (Walter, 2021).

IT capabilities help businesses adapt to opportunities and problems either proactively or reactively (Mao et al., 2021). Several characteristics of IT infrastructure and IT skills aid organisations in anticipating a wide range of IT-enabled situations and responding rapidly to opportunities, thus contributing to proactive agility (Panda & Rath, 2021). Reactive agility is developed as firms increase their knowledge to improve quality using IT-based communication and coordination tools, thereby allowing them and their stakeholders to understand and engage in transactional process changes (Felipe et al., 2020; Mao et al., 2021). Additionally, as digital platforms increase the inherent flexibility of a firm's resources (Panda, 2022), they allow organisations to deploy their resources in order to respond to market opportunities. Thus, we offer the following hypothesis:

H2: IT capabilities positively affect organisational agility.

IT Capabilities and Organisational Ambidexterity

Organisational ambidexterity is defined as the capability of organisations to simultaneously satisfy aspects of operational exploration and exploitation (Mura et al., 2021). It refers to a firm's ability to alter or establish new business processes while increasing productivity by boosting efficiency and reducing costs and errors (Huang et al., 2021). Simultaneous needs and demands from the market can sometimes cause tension within an organisation. However, ambidextrous organisations can cope with them by exploring new business processes and products in addition to leveraging the existing conditions (Dranev et al., 2020).

Firms should be able to engage in both exploration and exploitation in a way that complements and balances them, rather than intensifying tension between them (Sharma et al., 2025). The organisation's ability to simultaneously exploit and explore internal resources is identified as a necessary and inseparable capability of a business in this article.

IT capabilities that pervade and infuse everyday business processes and activities allow organisations to manage their resources better and simultaneously perform tasks (Chen et al., 2025; Trieu et al., 2023b). Organisations with limited resources and high IT capabilities are more likely to benefit from organisational ambidexterity. This is because organisations must offer the appropriate management information (inventory, business task status, etc.) to enable their members in various functions to pursue two distinct goals simultaneously (Priyanka et al., 2022). Organisations with high IT integration may digitise their management information and make it freely accessible to their members across all functional units, thus ensuring cross-functional coordination at a relatively low cost (Trieu et al., 2023a). Additionally, organisations with high IT acquisition are better equipped to use IT capabilities to support their diverse business tasks, thereby freeing up resources to boost ambidextrous involvement (Cha & Kim, 2024). Previous research in various settings has also found substantial evidence that IT capabilities may help enterprises' coordination processes in terms of inter-organisational interactions, which improves an organisation's ambidextrous position (Bae et al., 2024; Cha & Kim, 2024).

Furthermore, the theory of dynamic capabilities is used to explain the interactions between IT capabilities with both organisational agility and ambidexterity. The diffusion of IT platforms can simultaneously promote aligned activities and resources with partners to reach short-term goals while also adopting their cognition and behaviours for long-term survival (Abdul Halim et al., 2023). Hence, in line with previous studies, the following hypotheses are proposed:

H3: IT capabilities positively affect organisational ambidexterity.

Business Performance, Organisational Agility, and Organisational Ambidexterity

Within the framework of dynamic capabilities theory, organisational agility is vital for a business's development and success in the context of unpredictability and dynamism (Ajgaonkar et al., 2022; Panda, 2022). It provides the sensing, seizing, and transforming skills that are essential for maintaining the organisation over time as consumers, rivals, and technology evolve (Awwad et al., 2022; Darvishmotevali et al., 2020; Ilmudeen, 2022). Through changes in goods, services, channels, and market segments, organisational agility increases value generation, capture, and

competitive advantage. Hence, strong operational agility may allow businesses to respond rapidly to changing demands by increasing operational flexibility, cutting costs, and enhancing customer retention (Cherian et al., 2023). Flexibility in forming strategic, extended, or virtual relationships with partners also positively influences corporate performance (Nguyen et al., 2024). Finally, customer agility enables businesses to respond rapidly to customer-based possibilities by acting creatively and launching new goods, promotions, or services to boost revenue, competitive advantage, and industry position (Ly, 2024; Panda, 2022). Overall, agile organisations have a diverse set of market-response alternatives to achieve business performance.

However, one perspective suggests that excessive organisational agility may not always translate into improved business performance. The rationale for this viewpoint is the contention that although relentless agility allows firms to respond rapidly to market changes, it may come at the cost of long-term resource allocation and strategic focus (Weng et al., 2024). Overemphasising agility but without strategic alignment can lead to resource fragmentation and a lack of commitment to core competencies, thus potentially undermining overall business performance (Sharma et al., 2025; Walter, 2021). Therefore, we propose the following hypothesis:

H4: Organisational agility positively affects business performance.

In addition to agility, organisational ambidexterity can significantly influence business performance. When exploitation and exploration are combined, the company has a greater ability to adapt to changing conditions, create new ideas, and execute innovation increases (Jiang et al., 2022). Prior research also found that when ambidextrous firms have both features, they can simultaneously increase sales and improve performance (Dranev et al., 2020). Such firms tend to maximise performance by harnessing the current abilities of software and discovering business resources and innovative processes (Chen et al., 2025; Iborra et al., 2020; Mura et al., 2021). Notably, existing empirical studies have confirmed the positive correlation between organisational ambidexterity and business performance (Oduro & De Nisco, 2023; Trieu et al., 2023a).

From the perspective of dynamic capability, the pursuit of organisational ambidexterity might not always support business performance. Although the theory acknowledges the importance of simultaneously exploring new opportunities and exploiting existing competencies, it also recognises that excessive focus on ambidexterity can lead to resource allocation dilemmas and potential trade-offs between exploration and exploitation (Jiang et al., 2022). For instance, overcommitting resources to exploration can hinder an organisation from fully leveraging its existing capabilities, thereby impacting operational efficiency and immediate performance. Striking an appropriate balance between

exploration and exploitation can be challenging, and, if not managed effectively, it can lead to suboptimal outcomes (Trieu et al., 2023b). Trying to balance exploration and exploitation can make firms slower to react to market changes compared to firms with more focused strategies. The need for internal consensus and balancing conflicting objectives can delay decision-making and execution. Therefore, the dynamic capability view suggests that although ambidexterity is a valuable concept, its implementation must be carefully calibrated to align with an organisation's specific context and strategic objectives to ensure that it enhances—rather than hampers—overall business performance. Hence, based on prior literature, we propose the following hypothesis:

H5: Organisational ambidexterity positively affects business performance.

Moderating Role of Regulatory Support

Government policies, regulations, incentives, and support programs can significantly impact various aspects of business operations, which encompass tax incentives, subsidies, industry-specific regulations, trade policies, and other policies (Otache & Usang, 2022; Zhu et al., 2023). The level and nature of government support can vary greatly between countries and regions. Most past research on technology adoption and innovation dissemination concentrated on the implementation stage, with little attention paid to other processes (Zehir & Zehir, 2020). However, policies and regulatory support are crucial components that enable organisations to become aware of technological innovations, perform preliminary research, and determine whether to embrace or disregard certain IT developments (Wang et al., 2019). Government-led initiatives requiring the adoption of digital applications are one way to overcome such reluctance (Otache & Usang, 2022). In this study, the regulatory supports aim to facilitate organisational ambidexterity and agility in enterprises.

A previous study suggested that regulatory support for digital transformation by governments can significantly impact business performance (Alkahtani et al., 2020; Zhu et al., 2023), allowing exploratory operation, one of the two aspects of organisational ambidexterity, to prosper. In contrast, exploitative operation is more advantageous to firm performance in the presence of support from higher authorities (Liu et al., 2019; Otache & Usang, 2022). Regulatory support does not directly push ambidexterity. Instead, it acts as a critical moderator, influencing the conditions under which firms are more likely to succeed with ambidextrous strategies (Otache & Usang, 2022). By easing resource constraints, shaping strategic choices, enhancing legitimacy, and influencing institutional norms, government support can amplify the positive relationship between organisational ambidexterity and business performance.

Clear regulatory frameworks, stable economic policies, or investments in infrastructure, can reduce uncertainty and provide a more predictable operating environment (Syarif & Aysan, 2025). This allows firms to be more confident in making the quick decisions and investments required for agility. The relationship between organisational agility and business performance is expected to strengthen with adequate support from management and the government (AlNuaimi et al., 2022; Otache & Usang, 2022). However, a lack of assistance from the authorities can reduce firms' motivation for allocating resources to product innovation competencies and developing and obtaining innovation capabilities (Chen Lu-Jui et al., 2023; Otache & Usang, 2022). Hence, we propose the following hypotheses:

H6: Regulatory support positively affects business performance.

H7: Regulatory support moderates the relationship between organisational agility and business performance such that the relationship strengthens as support increases.

H8: Regulatory support moderates the relationship between organisational ambidexterity and business performance such that the relationship strengthens as support increases.

Applying the perspectives of the dynamic capability view to establish a comprehensive framework that interrelates key variables (e.g., IT capabilities, organisational agility, ambidexterity, regulatory support, and business performance) underpins how IT resources can be effectively managed in a dynamic context to enhance business performance. Figure 1 illustrates the research model in this study with hypothesis development.

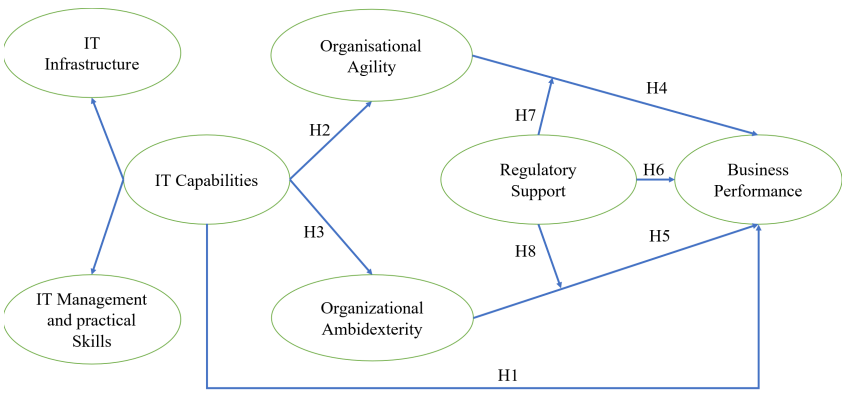

Figure 1. Research model

METHODOLOGY

Data Collection

In this study, we adopt a quantitative approach and engage with executives working at various firms in Vietnam to gain in-depth insights into how senior managers and the board or management teams interpret and value the effects of IT capabilities on business performance. By gathering data from different firms, we construct a large pool of respondents and provide more detailed and accurate results than studies with less data collection (Zehir & Erdogan, 2011). All the measurement items are adapted from prior research with slight modifications to fit the Vietnamese context and business environment. The original version of the questionnaire was written in English. To finalise the questionnaire, we took three steps. First, the questionnaire was translated into Vietnamese. Second, a focus group with three scholars and three company managers evaluated the meaning of every statement in the Vietnamese-language questionnaire. Thereafter, they suggested some modifications to ensure that the respondents would correctly understand the questions. Third, a pilot test was conducted with 25 managers to ensure the absence of errors and adequacy of the arguments. According to Cohen (1988) and Westland (2010), the minimum sample size selection with 23 observed variables and 5 latent variables in the research model was 150, based on an anticipated effect size of 0.3, a desired probability of 0.05, and statistical power of 0.8.

After the pilot test, the Vietnamese questionnaire was modified and validated and, then, distributed to companies operating in Vietnam. We conducted a series of surveys with 400 business representatives, distributed via the Google form and a face-to-face interview. Local authorities sent the questionnaire directly to leaders, managers, or representatives of businesses operating in three main regions, including Ho Chi Minh City, as well as in Binh Duong and Dong Nai provinces. Among the 400 participants, approximately 200 were surveyed face-to-face at four business conferences organised by city or provincial governments from June 2022 to September 2023. Given the invaluable support from local authorities in making official announcements requesting the collection of data from firms in these regions, we obtained data from 321 valid respondents under nonprobability snowball sampling techniques.

Among these 321 respondent firms, 47% operate in the manufacturing sector. The majority, 71.3%, are limited liability companies. The data also demonstrate a relatively equal distribution among the companies of various sizes, and most of the firm representatives were senior managers or directors. Table 1 lists the demographic details.

Table 1
Demographic details

	Respondents	Percentage
Business sector		
Manufacturing	151	47.0
Educational services	19	5.9
Financial consultation and services	56	17.4
IT services	33	10.3
Others	62	19.3
Company structure		
Joint stock company	48	15.0
Foreign-invested enterprise	10	3.1
Limited liability company	229	71.3
Private company	25	7.8
Others	9	2.8
Company size		
<20 employees	59	18.4
20–50 employees	74	23.1
51–99 employees	50	15.6
100–200 employees	50	15.6
200–400 employees	74	23.1
>400 employees	14	4.4
Job positions		
Board of management team and directors	86	30
Senior managers	235	70

Measurement Items

The variables were measured using a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). The measurement scale for all constructs is adapted from earlier empirical research and is widely used by various researchers.

IT capabilities

IT capabilities have received a great deal of academic attention, and various measurement scales have been developed to measure them. In this study, the IT capabilities of a firm are related to the tangible internal IT resources as well

as the ability to apply and manage all IT facilities. Hence, IT infrastructure, IT management, and practical skills are used to measure the second-order construct of IT capabilities (Chakravarty et al., 2013; Garbellano & Da Veiga, 2019).

Business performance

This study uses managers' perceptions of business performance, which is the level of achievement in sales, revenue, and profit compared to the goals/targets of the firms (Nguyen et al., 2021; Trieu et al., 2023b).

Organisational agility

Adapted from Chakravarty et al. (2013), we used the scale to measure firms' abilities to actively forecast and obtain early advantages in shifting conditions and defensively adjust to changes and market disruptions. Our strategy emphasises building capabilities to prepare for a wide range of scenarios, the ability and speed of modifying the positioning strategy, and the ability to adjust to abnormal conditions and recover.

Organisational ambidexterity

Based on scales used in previous studies (Lee et al., 2015; Trieu et al., 2023b), this study uses a scale with four items that demonstrate both the exploration and exploitation capabilities of firms in the following areas: (1) implementing operational innovations that are difficult for other firms to replicate; (2) implementing deep innovations in business operations; (3) reducing the cost of existing business operations; and (4) improving the efficiency of existing business operations.

Regulatory support

Regulatory assistance is the degree to which governments implement favorable regulations to assist businesses in financing and accessing new information or technology. Modifying the scale by Liao and Yu (2012) based on the practical policy implications, we develop a five-item scale to measure regulatory support by government (Liao & Yu, 2012): (1) current legal provisions support enterprises in the transformation and upgrading of technology; (2) changes by institutions and policies on technology in the industry always occur promptly; (3) current policies meet the needs of enterprises' technology transformation; (4) enterprises can easily access supporting policies in transformation; and (5) existing laws and regulations are sufficient to protect enterprises in applying the digital transformation. Table 2 provides a more detailed overview of the variables measured.

Table 2

Measurement items

Constructs	Items	Observed variables	Sources
IT infrastructure	ITI1	We have a good IT development plan	Adapted from previous studies (Chakravarty et al., 2013; Garbellano & Da Veiga, 2019)
	ITI2	We have invested extensively in building our IT infrastructure	
	ITI3	We have modern IT infrastructure	
	ITI4	We regularly upgrade our IT equipment and applications	
IT management and practical skills	ITS1	We have strong IT skills	Adapted from previous studies (Chakravarty et al., 2013; Garbellano & Da Veiga, 2019)
	ITS2	We have sufficient IT knowledge	
	ITS3	Our IT skills are comparable to those of the best in the industry	
	ITS4	We invest heavily in our IT human resources	
Business performance	FP1	Organisational capabilities toward sustainable development	Adapted from previous studies (Liao & Yu, 2012; Nguyen et al., 2021; Trieu et al., 2023b)
	FP2	Performance meets the annual profit target.	
	FP3	Performance meets the target in market share.	
	FP4	Our performance satisfies the overall goal.	
Organisational agility	OAG1	When the unexpected happens, we can improvise solutions to adjust the workflow	Adapted from previous studies (Chakravarty et al., 2013; Warner & Wäger, 2019)
	OAG2	When an unexpected event occurs, we collect key information and review the consequences with a variety of remedies	
	OAG3	We can easily modify our positioning strategy	
	OAG4	Our organisation is pliable in that we can adjust to abnormal conditions	
Organisational ambidexterity	OAM1	Reduce current business operating costs	Adapted from previous studies (Lee et al., 2015; Trieu et al., 2023a)
	OAM2	Improve the cycle time of existing business operations	
	OAM3	Implement sweeping innovations in business operations	
	OAM4	Implement fundamental innovation in business activities	

(*continued*)

Table 2
(*continued*)

Constructs	Items	Observed variables	Sources
Regulatory support	RS1	Current legal provisions support enterprises in the transformation and upgrading of technology	Adapted from previous studies (Liao & Yu, 2012)
	RS2	Changes in institutions and policies related to technology in the industry always occur promptly	
	RS3	Current policies meet the needs of enterprises' technology transformation	
	RS4	Existing laws and regulations are sufficient to protect enterprises in applying digital transformation	
	RS5	Enterprises can easily access supporting policies in transformation	

Data Analysis Approach

The primary analytical tool used is the partial least squares-structural equation modeling (PLS-SEM) technique. PLS-SEM is an excellent fit for complex models with complex structures and multiple construct interactions, and it has been widely used in social science (Ali et al., 2018; Han et al., 2018). PLS-SEM does not require a large sample size and is well suited to this predictive research with a sample size of around 300 (Hair et al., 2019). The data analysis procedure includes two main assessments: one for the reliability and validity of the measurement model and another for the relationships within the structural model.

Common Method Bias

The use of non-probability sampling and cross-sectional data constrains the robustness of findings by introducing common method bias, limiting generalisability, and restricting the ability to establish causality or track changes over time. Common method bias (CMB) frequently exists in behavioural studies in which the same respondents choose both the indicator and criterion elements. We design an assessment method that Kock (2015) developed to test CMB. Accordingly, if the highest value of the full collinearity variance inflation factor (FCVIF) among all variables is greater than 3.3, it is considered a sign of pathological collinearity and suggests that a model could be contaminated by CMB (Kock, 2015). The FCVIF of the constructs are presented in Table 3. The highest FCVIF value of the latent

variables was 2.346 (for IT management and practical skills), which is less than 3.3. It is thus proven that the data employed in this research is not subject to CMB.

RESULTS

Reliability, Convergent Validity, and Discriminant Validity

The PLS-SEM technique involves two steps to analyse data (Hair et al., 2014). First, this study assesses the measurement model, which entails assessing the correlations between latent variables and their indicators (reliability and validity testing). Second, the hypotheses between constructs are examined using the structural model (Caldeira & Kastenholz, 2018).

The Cronbach's alpha must be above 0.6 to ensure item reliability for assessing the measurement model. Furthermore, any indications with outer loadings of less than 0.6 should be removed (Henseler et al., 2012). The composite reliability (CR) of all the constructs must be more than 0.6 in order to demonstrate good internal consistency. The average variance extracted (AVE) of all the factors must also be greater than 0.5 in order to show good levels of convergent validity. Table 3 shows that all the requirements for reliability and convergent validity are satisfied.

The study also follows Fornell and Larcker (1981) and the heterotrait-monotrait ratio (HTMT) (Roemer et al., 2021) standards for discriminant validity. According to Fornell and Larcker, the square roots of the AVE in the diagonal of each construct must be significantly above the correlation coefficient of that construct with other components. Additionally, the HTMT proposes that the ratio between the geomean value of item correlations across constructs and the geomean of correlations for items in a single construct should not exceed 0.9 (Franke & Sarstedt, 2019; Henseler et al., 2015). As shown in Table 4, all values are in the aforementioned range, thus satisfying the requirements for discriminant validity.

Table 3
Key indicators

Variables	Items	Mean	SD	Loadings	VIF	Alpha	CR	AVE	FCVIF
IT infrastructure	ITI1	3.916	0.814	0.597	1.246	0.702	0.816	0.528	1.857
	ITI2	3.748	0.833	0.809	1.573				
	ITI3	3.826	0.840	0.713	1.333				
	ITI4	3.779	0.807	0.770	1.457				
IT management and practical skills	ITS1	3.642	1.017	0.805	1.628	0.743	0.838	0.565	2.346
	ITS2	3.586	0.872	0.681	1.364				
	ITS3	3.667	0.909	0.784	1.548				
	ITS4	3.698	0.816	0.731	1.365				
Business performance	FP1	3.614	0.927	0.760	1.339	0.688	0.810	0.518	1.914
	FP2	3.629	0.818	0.770	1.441				
	FP3	3.586	0.889	0.694	1.266				
	FP4	3.558	0.867	0.648	1.199				
Organisational agility	OAG1	3.654	1.030	0.812	1.462	0.671	0.802	0.506	2.205
	OAG2	3.685	0.870	0.617	1.197				
	OAG3	3.539	1.062	0.720	1.287				
	OAG4	3.607	0.894	0.682	1.222				

(*continued*)

Table 3
(*continued*)

Variables	Items	Mean	SD	Loadings	VIF	Alpha	CR	AVE	FCVIF
Organisational ambidexterity	OAM1	3.498	1.005	0.699	1.278	0.677	0.804	0.506	1.850
	OAM2	3.763	0.875	0.704	1.341				
	OAM3	3.617	1.014	0.696	1.244				
	OAM4	3.617	0.805	0.747	1.261				
Regulatory support	RS1	3.495	1.108	0.757	1.398	0.761	0.838	0.509	1.598
	RS2	3.520	0.947	0.725	1.476				
	RS3	3.654	0.901	0.708	1.462				
	RS4	3.614	0.872	0.679	1.407				
	RS5	3.676	0.921	0.696	1.399				
Second-order construct IT Capabilities	IT Infrastructure	0	1	0.885	1.715	0.785	0.902	0.821	1.697
	IT management and practical skills	0	1	0.927	1.715				

Notes: SD = standard deviation; CR = composite reliability; AVE = average variance extracted; VIF = variance inflation factor; FCVIF = full collinearity variance inflation factor.

Table 4
Discriminant validity

Heterotrait-Monotrait Ratio (HTMT)						
	(1)	(2)	(3)	(4)	(5)	(6)
(1) Business performance						
(2) IT Infrastructure	0.669					
(3) IT management and practical skills	0.763	0.860				
(4) Organisational agility	0.843	0.595	0.715			
(5) Organisational ambidexterity	0.735	0.504	0.740	0.892		
(6) Regulatory support	0.639	0.456	0.590	0.789	0.574	
(Second-order construct) IT Capabilities	0.783	x	x	0.710	0.683	0.565

Path Analysis and Hypothesis Testing

After the measurement model was analysed, the internal model was reviewed. Our hypotheses were then tested using 5,000-sample bootstrapping to generate significant values in a two-tailed *t*-test (Caldeira & Kastenholz, 2018). Table 5 indicates that all the hypotheses, except H7, are accepted. IT capabilities exert a positive influence on business performance ($\beta = 0.292$), organisational agility ($\beta = 0.519$), and ambidexterity ($\beta = 0.513$) at a 99% confidence level. The positive impact of organisational ambidexwterity and agility on business performance is supported by a *p*-value < 0.01. Hypothesis H6, indicating the impact of regulatory support on business performance, is substantiated with $\beta = 0.130$ at a 90% confidence level. Furthermore, regulatory support moderates the relationship between organisational ambidexterity and business performance with $\beta = 0.184$ and *p*-value < 0.01.

Table 5 presents the results of hypothesis testing regarding the moderating role of regulatory support on the relationships between organisational factors and business performance. The results indicate a non-significant effect for H7, which there is not enough evidence to support the moderating effect of regulatory support on the relationship between organisational agility and business performance. In contrast, the hypothesis of moderating effect of regulatory support on the relationship between organisational ambidexterity and business performance (H8) is supported ($\beta = 0.184$; *p*-value < 0.01). The f^2 is 0.057, which, although small, suggests a meaningful moderation effect. These findings imply that while regulatory support does not significantly influence the agility-performance relationship, it does enhance the positive effect of ambidexterity on business performance.

Table 5

Path analysis

Hypotheses	β	SD	T	T	95%		Results	f^2
					LB	UB		
H1: IT capabilities → Business performance	0.292	0.070	4.180	0.000	0.153	0.424	Supported	0.109 (Small)
H2: IT capabilities → Organisational agility	0.519	0.051	10.198	0.000	0.419	0.620	Supported	0.369 (Large)
H3: IT capabilities → Organisational ambidexterity	0.513	0.049	10.414	0.000	0.416	0.611	Supported	0.357 (Large)
H4: Organisational agility → Business performance	0.294	0.062	4.755	0.000	0.169	0.410	Supported	0.084 (Small)
H5: Organisational ambidexterity → Business performance	0.167	0.059	2.824	0.005	0.058	0.289	Supported	0.031 (Small)
H6: Regulatory support → Business performance	0.130	0.073	1.790	0.074	−0.006	0.277	Supported	0.022 (Small)
H7: The moderating effect of regulatory support on organisational agility & business performance	−0.045	0.050	0.904	0.366	−0.149	0.052	Not supported	0.003
H8: The moderating effect of regulatory support on organisational ambidexterity & business performance	0.184	0.056	1.790	0.001	0.073	0.293	Supported	0.057 (Small)

Notes: β = Estimate; SD = Standard deviation; T = T-values; P = *p*-values; 95% = 95% Confidence Intervals; f^2 = Effect size f^2

The variance explanation of endogenous constructs (R^2) is 50.5%. We also determined the predictive relevance (Q^2) of the research model, which are listed in Tables 6. The corresponding component model of the dependent variable business performance has $Q^2 = 0.250$ (in the range of 0.25–0.5), so this model has medium predict accuracy (Hair et al., 2019).

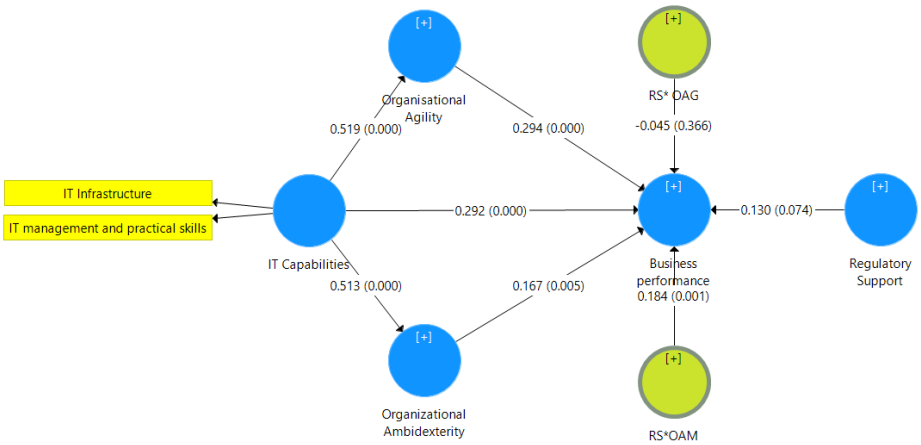

Figure 2. Path analysis results

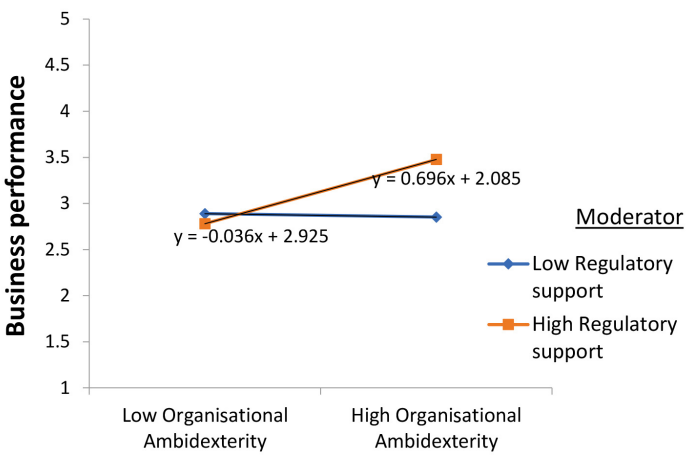

Figure 3. The moderating effect of regulatory support in the relationship between organisational ambidexterity and business performance

Table 6

Predictive relevance (Q^2)

	SSO	SSE	Q^2 (=1-SSE/SSO)
Business performance	1,284.000	962.961	0.250
IT capabilities	642.000	642.000	0.000
Organisational agility	1,284.000	1,114.120	0.132
Organisational ambidexterity	1,284.000	1,118.551	0.129
Regulatory support	1,605.000	1,605.000	0.000

Notes: SSO = sum of squares for the construct; SSE = sum of squares for the error.

Table 7

PLS-predict assessment of manifest indicators of endogenous construct

	PLS-SEM		LM	PLS-SEM - LM
	RMSE	Q2Predict	RMSE	RMSE
FP1	0.842	0.182	0.798	0.044
FP4	0.801	0.150	0.814	–0.012
FP3	0.805	0.183	0.820	–0.015
FP2	0.753	0.158	0.739	0.015
OAG4	0.826	0.154	0.811	0.015
OAG1	0.958	0.141	0.888	0.069
OAG2	0.830	0.094	0.786	0.044
OAG3	0.996	0.132	0.936	0.059
OAM4	0.733	0.175	0.743	–0.010
OAM1	0.948	0.115	0.908	0.040
OAM2	0.840	0.086	0.820	0.019
OAM3	0.953	0.121	0.952	0.001

All indicators have $Q^2 > 0$, meaning the PLS-SEM model outperforms the naïve (mean-based) benchmark for every manifest indicator (Shmueli et al., 2019). The PLS-SEM < LM performs in only 3 of 12 endogenous constructs' indicators, so the model has low predictive power overall.

Organisational ambidexterity and agility function as mediators that explain how IT capabilities influence business performance, which provides a deeper understanding of the process through which IT capabilities affect performance. Table 8 shows the testing results of mediating effects.

Table 8
Mediating effects

	β	T	P	95%		Results
				LB	UB	
Direct effect: IT capabilities → Business performance	0.292	4.180	0.000	0.153	0.424	Supported
Indirect effect: IT capabilities → Organisational agility → Business performance	0.153	4.463	0.000	0.089	0.223	Supported
Indirect effect: IT capabilities → Organisational ambidexterity → Business performance	0.086	2.729	0.006	0.032	0.155	Supported

IT capabilities—encompassing technological competencies such as social media analytics, data analytics, cloud computing, and artificial intelligence—serve as foundational resources that enable firms to achieve this agility (Castillo et al., 2021; Onngam & Charoensukmongkol, 2023; 2024). However, the relationship between IT capabilities and firm performance, typically measured through metrics like profitability, growth, or customer satisfaction, is confirmed. Besides that, organisational agility acts as a critical mediator, transforming IT capabilities into actionable strategies that enhance performance (AlNuaimi et al., 2022). Firm size and industry type can influence the effectiveness of IT capabilities, with smaller firms facing resource constraints that limit agility (Weng et al., 2024). However, organisational agility is a critical mediator, particularly for social media and data analytics capabilities (Castillo et al., 2021; Kerdpitak et al., 2024; Onngam & Charoensukmongkol, 2023; 2024), which in turn drives performance outcomes such as customer engagement and financial gains. IT capabilities also enhance business performance by supporting organisational ambidexterity—the ability to simultaneously explore innovations and exploit existing competencies. Though the effect is weaker than agility's, it still highlights a meaningful pathway.

DISCUSSION

From the dynamic capabilities view, the study confirms the positive effects of IT capabilities on organisational agility and ambidexterity, as well as the positive correlations between these constructs and business performance with the moderating effects of regulatory support. Consistent with prior empirical research, we found that IT capabilities have both direct and indirect effect on business performance through organisational agility and organisational ambidexterity (Chen et al., 2025; Cherian et al., 2023; Gu et al., 2021; Lee et al., 2023; Mao et al., 2021; Panda & Rath, 2021). IT capabilities and applications in multiple business functions,

such as marketing and operations, help organisations process information gathered from markets and customers. Therefore, they enable a base of agile abilities through both predicting market demands (entrepreneurial agility) and adapting to conditions (adaptive agility) by having flexibility in the firm's resources, eventually having positive effects on business performance (Tallon et al., 2019). IT capabilities also help organisations engage in cross-functional coordination to boost innovation and efficiency, thus simultaneously facilitating organisational ambidexterity. The creation of new operations and reconfigurations to effectively deal with changes in the environment drive high effectiveness in organisational performance.

Regulatory support has a significant impact on business performance, consistent with previous studies (Otache & Usang, 2022; Wang et al., 2019). We find that firms with higher regulatory support can leverage their ambidexterity to a greater extent to enhance their business performance (Alkahtani et al., 2020; Doblinger et al., 2017; Otache & Usang, 2022). These results align with the suggestions by (Wang et al., 2019) in which legal provisions and authorities' financial investments that promote technological transformation not only create opportunities to increase effectiveness but also facilitate the influence of exploring and exploiting digital platforms in pursuit of market opportunities on organisational outcomes (Wang et al., 2019). An organisation in which employees are encouraged to use IT applications to create contracts or initiate business transactions and manage organisational communication is more likely to link cross-functional resources and obtain effective results more rapidly. Clear standards for IT use also help diminish concerns about legal issues and disputes while facilitating interoperability between different firms, such as banks, suppliers, and warehouses.

Nevertheless, contrary to the expectations of Wang et al. (2019), our results indicate that regulatory support plays an insignificant moderating role in the relationship between agility and performance. In other words, an increase or decrease in government assistance might not necessarily motivate or discourage firms from rapidly allocating resources to adapt or respond to market opportunities in order to improve their business performance. From an evolutionary perspective, a firm's long-term performance and survival depend on its agility and the capacity to adapt to unanticipated changes in its environment (Lehn, 2018). Given the massive advances in technology and customer behaviour over the past several years, most businesses in various sectors have experienced rapid and significant changes in their environment (Darvishmotevali et al., 2020). Hence, it is plausible to expect that, to ensure market survival, firms actively and constantly seek methods and alternatives to enhance their agility regardless of whether they have established guidelines and government financing for digital transformation. Hence, our research implies that a decline in digital regulatory support from

management boards and the government does not inevitably limit organisations' ability to adapt and improve their performance, given their existing obligation to adjust and remain in the market. Besides that, a supportive regulatory environment could directly enhance performance by reducing operational costs or increasing market access, as suggested in discussions on government roles in SME development (Onngam & Charoensukmongkol, 2024), it might not manifest as a moderation effect, leading to non-significant results in the interaction term.

Theoretical Contributions

Existing research on IT capabilities and their correlation with business performance through variables for organisational agility, ambidexterity, and regulatory support make specific contributions to the literature. The findings expand the DCV by showing that IT capabilities also empower firms to simultaneously exploit existing processes and explore new innovations. This dual capability is critical in sustaining performance over time, especially in complex and evolving environments. The result reinforces the view that dynamic capabilities are not unidimensional; rather, firms must orchestrate multiple, complementary dynamic capabilities (e.g., agility for responsiveness, ambidexterity for strategic balance) to fully realise performance outcomes (Kapoor & Aggarwal, 2020; Sainsbury, 2021).

By demonstrating more specific underlying mechanisms through which IT competency contributes to organisational results, our paper applies the dynamic capabilities viewpoint, providing a holistic model in IT competency-business performance correlation studies. Although agility has become increasingly crucial in current business contexts, empirical research on and thorough knowledge about how businesses create and exploit agility for improved performance is in short supply (Cherian et al., 2023; Panda & Rath, 2021). Additionally, prior research has identified the effects of various forms of IT capabilities on developing an ambidextrous posture and the impact of an ambidextrous stance on performance (Jiang et al., 2022; Priyanka et al., 2022; Sharma et al., 2025), but it is disjointed and inconsistent. Our study represents an initial attempt to integrate these factors and illustrate that IT capabilities can lead to higher performance by enabling organisational agility, entrepreneurial or adaptive abilities, and ambidexterity.

Our research introduces regulatory support as a new factor that moderates the relationships between agility, ambidexterity, and business performance. Prior studies have attempted to incorporate the knowledge base, environmental dynamism, and many other contingency factors to further explain the correlations between these variables (Chen et al., 2025; Gayed & El Ebrashi, 2023; Panda & Rath, 2021; Sharma et al., 2025; Trieu et al., 2023b). Notably, government policies can

encourage or motivate firms to invest in innovation, research and development, and flexibility. For example, tax credits for R&D expenditure can encourage firms to explore new technologies and markets (Zhu et al., 2023). These policies can help firms enhance their organisational ambidexterity by making it financially viable and attractive. Regulatory matters, such as digital policies and financial aid, have rarely been examined, especially in emerging countries such as Vietnam. Hence, this study not only extends the literature regarding new moderators but also serves as crucial empirical evidence in the context of different cultural and national boundaries. Regional digital transformation policy refers to the efforts and measures taken to build a regional digital transformation system, thereby enhancing IT capabilities by increasing IT spending. A regional digital transformation system can drive the development of innovation processes and improve the performance of businesses in that region (Felipe et al., 2020; Panda & Rath, 2021).

Practical Implications

Our findings have some implications for practitioners. The findings highlight the significance of underlying processes that promote improved organisational outcomes through IT capabilities, managers should incorporate IT into their business activities to improve performance (Matarazzo et al., 2021; Steininger et al., 2022). The role of IT can include electronic marketplaces (e.g., online forms of payment, contracts, and communication) and regular face-to-face interactions (e.g., facial recognition technology to enable secure entry).

Effective IT capabilities can serve as catalysts for organisational ambidexterity. The high IT capabilities with support of new technology (such as cloud platform, machine learning, AI, Enterprise Resource Planning [ERP] system, etc.) could enable firms to gather and analyse vast amounts of data, which can support innovation and adaptability efforts. At the same time, it can enhance operational efficiency, thereby contributing to the exploitation of existing resources. For instance, data analytics tools and digital platforms and social media applications can provide organisations with real-time insights into customer preferences and market trends. This information can be used not only to optimise current operations but also to identify new opportunities for product or service innovation.

Moreover, practitioners must apply IT skills effectively to understand that IT enables agility, allowing it to respond quickly to a problem. In a business-to-business context, tracking mechanisms that log user activity and data-mining systems that help predict user behaviour based on previous behaviour enable the direct monitoring of participant behaviour, thereby boosting the credibility

of electronic marketplaces. Credibility then fosters market participants' trust and sense of security. For business-to-consumer markets, organisations can incorporate real-time messaging and artificial intelligence to respond rapidly to customer demand in order to boost their revenue, competitive advantage, and industry position (Khalil & Belitski, 2020; Magistretti et al., 2021).

Managers should take advantage of government financial support and digital policies to promote business performance and strengthen their organisational ability to exploratory and exploitative operation. Timely changes in digital regulations and support allow corporate payroll software to transmit data to tax authorities automatically, and investment in the development of programmers with IT knowledge are clear examples of how leaders can help enhance digitisation at firms. Providing higher education or consulting and management guidance can help businesses catch up to more digitised competitors. Government policies can act as catalysts or inhibitors, ultimately influencing the extent to which ambidexterity positively impacts a firm's overall performance. Understanding this interaction is crucial for both researchers and practitioners seeking to navigate the complex landscape of strategic management and government-business relations.

CONCLUSION

In conclusion, this research examines the complex relationships between IT capabilities, organisational agility, ambidexterity, and business performance, as well as the moderating role of regulatory support. Using data collected from 321 respondents in Vietnam, we reveal the benefits of IT capabilities for organisational agility and ambidexterity, as well as the positive correlations between these outcomes and business performance. Moreover, the role of regulatory support in enhancing the relationship between organisational ambidexterity and business performance is highlighted. These insights have practical implications for organisations seeking to leverage their IT capabilities and adapt to dynamic environments while navigating the influence of external regulatory factors.

Limitations and Future Research

This study has several limitations. First, causal inferences cannot be drawn due to the use of cross-sectional data and the potential variability of key factors over time and across organisational contexts. The data, collected exclusively from Vietnamese organisations, reflect correlational rather than causal relationships. Future research should adopt longitudinal designs and broader respondent groups to enable more generalisable and causally robust conclusions. Employing

multimethod approaches and theoretical frameworks beyond the DCV may also yield deeper insights into the role of IT capabilities and the diffusion of digital technologies for business advancement. Additionally, the model's low predictive power suggests the need to examine further endogenous constructs. Future studies could explore the moderating effects of environmental stimuli on the relationships between IT skills, organisational agility, ambidexterity, and performance.

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