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The Rationale and Factors of Digital Transformation of Small and Medium Enterprises in Bangkok Metropolitan

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Abstract

Background and Aim: The transition to the digital age is the process of integrating digital technologies across all aspects of an organization, from work processes and business models to how value is delivered to customers. This allows organizations to adapt and remain competitive in an era where technology is rapidly changing. It can be said that this transformation enhances work efficiency, as digital technology automates repetitive tasks, reduces costs, and increases the speed of operations. It also supports improving customer experiences by analyzing customer data, enabling businesses to better understand customer needs and improve products and services to meet customer expectations. Additionally, it fosters the creation of innovations, with digital technology serving as a key tool in developing new products and services that cater to market demands. This study employs a quantitative research methodology, with two primary objectives: (1) to study the level of importance of each component of technology, organizational structure, business environment, digital transformation, and business model evolution among small and medium-sized enterprises (SMEs) in Bangkok; and (2) to investigate the interrelationships and influence between latent variables in technology, organizational structure, business environment, digital transformation, and business model innovation within these enterprises. The research incorporates both descriptive statistics, using percentage-based analyses, and inferential statistics, applying Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to test the hypothesized relationships and model fit.

Materials and Methods: This research used a questionnaire as a tool for data collection, consisting of six sections. Section 1 includes open-ended questions, where respondents can answer according to their actual situation. Sections 2 to 6 contain closed-ended questions, with the answers evaluated using a Likert scale. The target population consists of operators of small and medium-sized enterprises (SMEs) in the Bangkok area. The sample size was determined to be 20 times the number of observed variables. Therefore, with 24 observed variables in this research, the sample size was 480 respondents. The result of the IOC test was 0.87, and the reliability test result was 0.766.

Results: The analysis of organizational variables revealed the most important question regarding employee involvement. For business environment variables, the most important question concerns competition pressure. In the technology variables, the most important question was about financial resources. In terms of digital transformation, the most important question was about the adoption of digital technologies. Regarding business model changes, the most important question was about expanding new sales channels. The most significant influence path was the one between the organizational variables and technology variables, with a coefficient of 0.85. The overall fit index was: χ^2/df=0.295, GFI=1.00, NFI=0.98, CFI=1.00, RMSEA=0.0071.

Conclusion: Digital transformation is crucial for the growth of organizations by integrating online communication systems and various online technologies. This helps create value, new experiences, and wider access to consumers, leading to new business models. Therefore, new business models arise from the combination of technological innovation, expertise, and the use of both tangible and intangible assets. This approach can generate profits and create new ways of conducting business.

Keywords: Digital Transformation; Organization; Business Environment; Technology; Business Model Change

Introduction

Digital transformation is an intricate and multifaceted process that entails the seamless integration of advanced digital technologies into every facet of an organization's operations, encompassing work processes, business models, and customer value delivery mechanisms. This transformation is not just about adopting new technologies but reimagining traditional business paradigms to stay competitive in an era of continuous technological disruption (Thai Print Association, 2025). According to the Electronic Transactions Development Agency (ETDA, 2025), a significant portion of Thai small and medium-sized

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enterprises (SMEs) are at an intermediate stage of readiness for digital transformation, with 44.81% of businesses reporting moderate preparedness.

However, SMEs operating in the Bangkok metropolitan region face a particularly challenging landscape. Data from research by ETDA (2023) and Thailand4 (2023) highlights several key obstacles impeding their digital transformation journeys. A substantial 62.72% of SME operators report a deficiency in critical digital skills and capabilities, while 52.87% cite the prohibitive costs of implementing technology as a major barrier. Moreover, nearly 50% struggle with the lack of actionable data and insights, which hinders their ability to make informed decisions and effectively strategize their digital transformation efforts.

These findings underscore the urgent need for tailored support mechanisms, focused upskilling initiatives, and strategic investments in both technology infrastructure and data analytics. Such interventions are crucial to bridge the digital divide and empower Thai SMEs, particularly those in the Bangkok region, to not only overcome these barriers but also to thrive in an increasingly digitalized business environment. Addressing these challenges will be fundamental in ensuring that SMEs can successfully navigate the complexities of digital transformation, unlocking new opportunities for growth, efficiency, and long-term sustainability.

According to The Economist (2025), a survey by the Economist Intelligence Unit found that 9 out of 10 companies believe digital transformation is essential for current success. Nearly 4 out of 5 companies (79%) stated that without digital transformation, they would be at a competitive disadvantage within 3 years. Furthermore, digital transformation helps reduce costs by 30% and significantly decreases the time required for document preparation, as companies are adopting new technologies such as the internet, blockchain, robotics, and artificial intelligence.

Support to Emeritus (2024), digital transformation is crucial for enhancing customer experience. By working with the latest technologies, businesses can align with customer demands, leading to increased customer satisfaction and better experiences. Digital transformation in business creates new communication channels such as email, mobile applications, chatbots, and social media, which are modern digital communication tools being implemented in companies' transformation. It can be said that customer expectations are the main driver of digital transformation. Additionally, changing market trends and the evolving strategies of competitors also drive digital transformation. Therefore, digital transformation is critical for improving customer experiences, as working with the latest technologies helps brands align with customer needs, resulting in greater customer satisfaction and better experiences.

Zhang, Qi, et al. (2024) state that the heart of the digital economy lies in transforming traditional business and production models, growing rapidly as a result of the shift to digital organizations. According to the Global Digital Economy White Paper (2022), the value added by the digital economy in 47 countries reached $38.1 trillion in 2021, representing 45.0% of the gross domestic product (GDP). This growth is significant because the adoption of digital technologies such as social media, online videos, and digital advertising has become an essential part of the digital economy.

In terms of Thailand, the International Trade Administration (2024) found that digital transformation has supported the development of the digital economy, contributing approximately 6% of Thailand's GDP in 2023, or $36 billion. It is expected to rise to around 11% of GDP by 2027. After the COVID-19 pandemic, Thailand quickly adopted digital technologies in both the public and private sectors. This transformation has been supported by the government, which aims to position Thailand as the ICT hub of the region. As a result, the ICT sector has grown, driven by the adoption of technology across all industries, increased smartphone and internet usage, and the booming e-commerce sector. This growth has attracted competition, with both domestic and international players, such as Huawei, ZTE, Intel, Ericsson, Cisco, Samsung, and HPE, competing for market share.

According to the study by ETDA (2025), which collected data from 1,725 companies, it was found that the majority of Thai SME entrepreneurs are moderately ready for digital transformation, accounting for 44.81%. These entrepreneurs understand and can adapt to digital changes appropriately, but lack

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comprehensive digital integration within their organizations. The second-largest group, accounting for 31.30%, is highly prepared and able to access and utilize digital tools to their fullest potential to achieve organizational goals. The remaining 20.47% are in the low-preparedness category, unable to fully leverage digital tools to create added value for their businesses.

Furthermore, this study focuses on SME entrepreneurs in Bangkok, which has the largest number of such businesses, to develop entrepreneurs for digital transformation. Entrepreneurs need to urgently enhance marketing skills and adopt digital transformation, including using online technologies, to stay competitive in an ever-changing environment. This transformation also includes responding to the behavior of modern consumers and fostering digital change skills. Therefore, the study aims to explore which elements are crucial, which ones hold the most importance, and how they relate to the development of entrepreneurs.

Objectives

1. To study the level of importance of each component in the areas of technology, organization, business environment, digital transformation, and business model changes for small and medium-sized enterprises (SMEs) in Bangkok.
2. To investigate the interrelationship between the latent variables in the areas of technology, organization, business environment, digital transformation, and business model changes for small and medium-sized enterprises (SMEs) in Bangkok.

Literature review

Based on the literature review (Liang, D. and Tian, J., 2024; Van de Wetering, R., et., al., 2023; Zhang, X., et., al., 2022, Jovic, M., et., al., 2022 and Trakowska, K., 2019) the variable of *technology* can be defined as follows: It refers to the implementation of data security measures, including the integration of online information systems across the organization, adherence to online data security standards, and the existence of a fund to improve the quality of digital technologies. It also includes having risk mitigation systems for digital technologies, employing experts in information technology, continuously updating digital technologies within the organization, and utilizing digital technologies to create new business opportunities. Furthermore, there is an investment in new technologies to enhance business development. *The organizational aspect* refers to having a clear vision for digital transformation, as well as actively promoting digital change within the organization. It includes having sufficient financial resources to implement digital technologies. Furthermore, the organization must have human resources with the capability and skills in digital technologies. Investment in building digital knowledge for employees, along with providing training on digital transformation, is essential. The organization should also encourage the sharing of knowledge related to digital transformation among employees. Additionally, there should be efforts to develop new roles and services related to digital and digital transformation. The organization must also create opportunities for the development of digital technologies within the organization.

The business environment refers to the pressure that organizations receive from competitors and business partners to undergo digital transformation, including the adoption of new technologies. It also involves the organization collaborating with research institutions to develop new approaches to digital transformation. Furthermore, the organization must adhere to various standards and conduct business in a socially responsible manner, with the support of digital transformation and digital changes. *The digital transformation* aspect refers to the organization's collaboration with new partners to drive the development of new digital transformation initiatives. It involves the adoption of digital technologies both internally within the organization and externally in its operations. The *business model change* aspect refers to the organization's ability to generate revenue from new sources through the application of digital technologies. It includes the organization's capacity to enter new markets as a result of digital transformation, leading to the development of new products and services. Furthermore, it allows the organization to create new sales channels and develop new ways of charging for services, all driven by digital transformation.

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Liang, D. and Tian, J. (2024) state that the Resource-Based View (RBV) theory hypothesizes that an organization's competitive advantage arises from a combination of resources and capabilities that are unique, rare, non-imitable, and non-substitutable, which are controlled by the organization. Within the framework of this theory, digital transformation enhances competitive advantage through three core resource perspectives: elevating organizational innovation, improving organizational efficiency, and supporting capital market presence. By improving innovation, enhancing efficiency, and supporting the availability of capital, digital transformation strengthens the organization's competitive edge. This theory is related to the variables of technology, organization, business environment, digital transformation, and business model changes.

According to the study by Diaz-Aracibia, J., et al. (2024), it was found that small and medium-sized enterprises (SMEs) in developing countries adopt advanced technologies, such as cloud computing and artificial intelligence, less frequently than those in developed countries. Furthermore, various factors, such as the entrepreneurial ecosystem and external social influences, as well as initiatives from the government and private sector, play a crucial role in shaping the adoption of technology. The study emphasizes the important role of community-driven efforts in promoting technology adoption more than government and private sector initiatives.

In terms of organization, Leorach, C. (2022) states that the concept of digital transformation has garnered significant attention from organizations and agencies worldwide, especially business organizations. This is due to the rapid development of digital technologies that have permeated all sectors. Many organizations have come to realize the importance of transformation to remain competitive. Digital transformation is an organizational change strategy where digital technologies are used to support operations. This transformation is related to the direction of operations both within and outside the organization. It must begin with top executives recognizing its significance and planning the operation by driving and inspiring personnel to create new mindsets that will lead to change.

From the study of the business environment, According to the study by Sombunrattanachok, T., et., al. (2021), the business environmental factors that support the creation of a digital entrepreneurship society or digital transformation include financial support, government policies, government support measures, entrepreneurial knowledge education, knowledge transfer for research and development, professional services for businesses, market openness, national infrastructure systems, and social and cultural equality.

The digital transformation, according to Bangkok Bank (2024) states that digital transformation refers to the shift towards a new model by integrating digital technologies to improve processes or apply them to achieve desired outcomes in business operations. While technologies such as Cloud, Artificial Intelligence (AI), Internet of Things (IoT), Automation, and other innovations and modern technologies in various forms may currently be viewed as expensive tools, SME entrepreneurs may not see them as worthwhile investments unless they can define clear business intentions and the appropriate model for utilizing digital technologies effectively to achieve the desired results.

In terms of change in business model supported by Adama, H., et al. (2024), Digital transformation brings both challenges and opportunities for creating innovation in business models. Organizations must cope with technological, cultural, and strategic complexities to successfully innovate their business models in response to digital change. By leveraging digital transformation as a catalyst, organizations can drive sustainable growth, differentiation, and value creation in the digital age. This can be achieved by utilizing key factors to address challenges and seize opportunities while adapting their business operations with appropriate and sufficient digital technologies.

Conceptual Framework

The conceptual framework underpinning this study integrates several pivotal variables, as evidenced by a range of scholarly contributions. The technology variable, explored by Diaz-Aracibia, J., et al. (2024), Sharabati, A., et al. (2024), and Hendrawan, S., et al. (2024), underscores the critical role that technology plays in driving digital transformation within SMEs. These scholars emphasize the transformative power

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of technological integration in enhancing operational efficiency and fostering competitive advantage. The organization variable is examined in the works of Chanjira L. (2022) and Kumar, M. (2023), who highlight how organizational factors such as leadership, resources, and internal processes directly influence the adoption and implementation of digital technologies. Their findings indicate that organizational readiness and adaptability are crucial in facilitating the digital transformation journey, ensuring that SMEs can modernize effectively. The business environment variable, drawn from the research of Jovic, M., et al. (2022), illuminates the importance of both internal and external business environments in shaping the digital transformation landscape. According to Jovic and colleagues, the dynamic nature of the business environment, characterized by competitive pressures, market demands, and regulatory influences, necessitates a proactive approach by organizations to integrate digital technologies and remain agile in a rapidly evolving landscape.

The digital transformation variable, supported by the study of Malewska, K., et al. (2024), explores how the adoption of digital systems profoundly impacts business models and organizational processes. Malewska and colleagues demonstrate that the strategic deployment of digital technologies not only enhances operational efficiencies but also drives the need for continuous adaptation of business strategies in response to technological advancements. Finally, the business model change variable is grounded in the research of Adama, H., et al. (2024), who reveal that digital transformation introduces both challenges and opportunities for organizations to rethink and innovate their business models. The ability to adapt business models to incorporate new digital opportunities is essential for SMEs seeking to thrive in the digital era, making this variable crucial to the overall transformation process.

The selection of this conceptual framework is grounded in its ability to comprehensively capture the multifaceted nature of digital transformation within SMEs. Each variable, technology, organization, business environment, digital transformation, and business model change was chosen based on its critical role in driving or facilitating the digital transformation process. By integrating insights from multiple scholarly sources, the framework effectively represents the complex, interconnected factors that influence the digital evolution of SMEs. By adopting this framework, the study is positioned to analyze the interplay between these variables and their collective impact on the digital transformation journey of SMEs. This holistic approach is particularly suited to understanding the complex dynamics at play and provides a clear structure for evaluating how SMEs can navigate the digital transformation process. In the next section, the relationship pathways and research hypotheses are presented.

The path influence according to the relationship pathways of latent variables, the conceptual framework for research developed from a literature review, and the research hypotheses are as follows.
From the study by Song, Q., et al. (2023) titled How Technological, Organizational, and Environmental Factors Drive Enterprise Digital Innovation: Analysis Based on the Dynamic FsQCA Approach, the researchers found a relationship between organizational and technological factors, which is also connected to environmental factors. Specifically, if an organization is large, has high levels of investment, and possesses capable management teams, it helps improve the quality of digital innovation and high-quality technological factors.

This is supported by the study of Shahzad, A., et al. (2023), which examined the Adoption of Fourth Industrial Revolution 4.0 among Malaysian Small and Medium Enterprises (SMEs). The study found a relationship between organizational and technological factors. When organizations face competitive pressure and receive support from top management, it positively affects the level of technology adoption within organizations in Malaysia. This leads to a competitive advantage and helps the organization achieve success more easily. From the literature review, it can be formulated as a hypothesis that:

Hypothesis 1: Organizational factors have a positive relationship with technological factors
In the study by Xu, J., et al. (2022) titled Role of Digitalization in Environment, Social, and Governance, and Sustainability: Review-Based Study for Implications, a relationship was found between the business environment and the transition to digitalization. The study shows that adopting digital technologies in organizations helps them achieve greater success compared to operations that do not use digital systems.

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Therefore, the use of digital technologies must be environmentally friendly to ensure environmental sustainability.

Similarly, Jovic, M., et al. (2022) conducted a study titled Factors of Digital Transformation in the Maritime Transport Sector, which found a relationship between business environment factors and the transition to digitalization. The study highlights that both internal and external business environments must be responsible for business operations, which helps drive the digital transition by setting regulations and guidelines to ensure an effective transition. From the literature review, can be formulated as a hypothesis that:

Hypothesis 2: Business environment factors have a positive relationship with the digital transformation factors

From the study by Begnini, S., et al. (2023) titled The Relationship Between the Use of Technologies and Digitalization Strategies for Digital Transformation in Family Businesses, a relationship was found between technology and the digital transformation of SMEs.

This is further supported by the study of Teng, X., et al. (2022) titled Research on the Relationship Between Digital Transformation, which found a relationship between technology and digital transformation in businesses. The study explains that improvements in technologies such as cloud computing, the Internet of Things (IoT), and big data, as well as the open platforms provided by cloud computing for artificial intelligence, IoT, real-time data sharing, and big data, promote digital transformation. These technological advancements lead to rapid technological growth. Furthermore, social media technologies impact organizations, changing business models in a borderless manner.

From the literature review, can be formulated as a hypothesis that:

Hypothesis 3: Technological factors have a positive relationship with digital transformation factors

A relationship between digital transformation and business model innovation was found in the study by Malewska, K., et al. (2024) titled *The Missing Link Between Digital Transformation and Business Model Innovation in Energy SMEs: The Role of Digital Organizational Culture.* The study explains that the increased use of digital systems impacts the business models of companies, enabling new forms of collaboration between companies and leading to the creation of new products and services. Key initiatives related to business models on digital platforms are involved, and digital technologies play a crucial role in shaping business operations. The use of appropriate business models fosters technological innovation, which becomes a key driver for the creation of new business models. Thus, the study identifies a significant relationship between these variables, which contributes to the successful transition to digital transformation. From the literature review, can be formulated as a hypothesis that:

Hypothesis 4: Digital transformation factors have a positive relationship with change in business model factors

From the study, the organizational latent variable consists of 5 observable variables, the business environment latent variable consists of 4 observable variables, the technology latent variable consists of 7 observable variables, the digital transformation latent variable consists of 3 observable variables, and the business transformation latent variable consists of 5 observable variables (Liang, D. and Tian, J., 2024; Van de Wetering, R., et., al., 2023; Zhang, X., et., al., 2022, Jovic, M., et., al.,2022 and Trakowska, K., 2019). The conceptual framework for this research is shown in Figure 1.

Methodology

The researcher employed a quantitative research approach. In the quantitative research section, descriptive statistics and inferential statistics were used as the main research methods. For the study, a questionnaire was distributed to the target population group. The questionnaire was sent via electronic systems and/or Google Forms, as it provides a convenient way for respondents to read, review, think, and analyze their answers without being pressured by a strict time limit. The target population group was asked to complete the questionnaire on their own.

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Data collection for this study will be conducted through the administration of a structured questionnaire. The sample size is determined to be 480 participants, following the guidelines established by Hair et al. (1998), which recommend a sample size that is 20 times the number of observed variables in the model. This approach ensures that the sample is sufficiently representative to allow for reliable and statistically significant analysis of the relationships between the variables under investigation.

Target Population and Sample Group

The target population consists of entrepreneurs running small and medium-sized enterprises (SMEs) in the Bangkok metropolitan area. It was found that SMEs represent the largest group, with a total of 521,492 businesses (Office of Small and Medium Enterprises Promotion, 2023). As for the sample group, the researcher followed the guideline of Hair et al. (1998), which recommends a sample size of 5 to 20 times the number of observed variables. Therefore, with 24 observed variables in this study, the required sample size was calculated as 480 samples (24 variables × 20). Data was collected from managers or individuals with decision-making responsibilities or representatives from each business, with one respondent per business. The researcher used a purposive sampling method to select the sample group.

Research Tools

This study used a questionnaire as the tool for data collection. The questionnaire consists of 6 sections. Section 1: The question format in the questionnaire is open-ended, allowing respondents to answer based on their own real experiences. Sections 2-6: The question format in the questionnaire is closed-ended, and the responses are evaluated using a Likert scale. In this study, the researcher used a five-point rating scale. (numeric scale)

Validity and Reliability

Based on the feedback from the experts, the researcher made adjustments to the questionnaire to improve its content validity. These adjustments included adding subjects to the sentences, correcting informal language, making the wording more appropriate, and changing the term 'entrepreneur' to 'organization.' After these revisions, the overall content validity index of the questionnaire was 0.87, indicating good content validity. This revised version of the questionnaire is now ready for data collection.

Reliability was assessed using Cronbach's alpha coefficient, based on the criteria set by Nunnally (1978: 97-146) and Cronbach (1990: 204), which specify that the coefficient should be greater than 0.70. The test results showed that all variables had Cronbach's alpha values above 0.70, meeting the accepted threshold. If any indicator had been removed, the alpha coefficient would have been lower than the overall Cronbach's alpha. The overall reliability of the questionnaire was 0.766, which meets the required standard set by Cronbach (1990: 204).

Data Analysis

Confirmatory Factor Analysis (CFA) is a technique used to confirm the factor structure of a set of observed variables. It typically follows exploratory factor analysis (EFA), which is performed first to explore potential factor structures (Brown, T., 2015). According to Hancock, G. R., & Mueller, R. O. (2001), CFA has become an essential tool in many areas of social and behavioral sciences. It helps researchers examine causal relationships between latent variables (unobserved constructs) and observed variables in a model that is pre-specified based on theory.

Structural Equation Modeling (SEM) is a statistical technique widely used to test and estimate causal relationships between observed and latent variables. It allows for the analysis of multiple relationships simultaneously and can accommodate more than one dependent variable. This capability makes SEM a popular tool among researchers (Siriwat, A., et. al., 2021)

Results

From Objective 1 (Table 1): To study the level of importance of each component of technology, organization, business environment, digital transformation, and business model changes for entrepreneurs of small and medium-sized enterprises (SMEs) in Bangkok. The statistical method used in the research is Confirmatory Factor Analysis (CFA). The results of the factor loadings for the latent variable of

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organizational aspects reveal that the observed variable "employees in the organization have opportunities to participate in the development or implementation of digital technology" (ORG5) has the highest significance within the organizational latent variable (B = 0.42, *t* = *8.66*). The second highest is "the organization is aware that digital transformation can impact the business" (ORG4) (B = 0.40, *t*=8.66), followed by "the organization provides continuous training for employees on digital transformation" (ORG3) (B = 0.427, *t*=6.42).

When considering the factor loadings of the latent variable for the business environment, it was found that the observed variable "the organization faces pressure from business competition due to the digital transformation of competitors" (ENV2) has the highest significance within the business environment latent variable (B = 0.57, *t*=17.94). The second highest is "the organization collaborates with research institutions to develop new business strategies" (ENV3) (B = 0.50, *t*=18.06), followed by "the organization faces pressure from business partners and other relevant stakeholders" (ENV1) (B = 0.48, *t*=16.84).

Table 1 Confirmatory factor analysis

Construct/Item	Loading	*t-value*	AVE	CR
Organization		0.65	0.77	
ORG1		0.20	5.23	
ORG2		0.20	6.78	
ORG3		0.27	6.42	
ORG4		0.40	8.66	
ORG5		0.42	8.66	
Business Environment			0.74	0.85
ENV1			0.48	16.84
ENV2			0.57	17.94
ENV3			0.50	18.06
ENV4			0.23	6.42
Technology	0.81	0.93		
TEC1	0.28	9.85		
TEC2	0.37	12.44		
TEC3	0.49	17.28		
TEC4	0.54	16.48		
TEC5	0.51	19.39		
TEC6	0.26	7.35		
TEC7	0.35	11.53		
Digital Transformation			0.57	0.60
DIG1			0.46	10.28
DIG2			0.59	12.25
DIG3			0.27	7.20
Business Model Change			0.71	0.85
BUS1			0.21	7.43
BUS2			0.32	11.81
BUS3			0.33	11.47
BUS4			0.60	24.61
BUS5			0.59	21.41

When considering the factor loadings of the latent variable for technology, it was found that the observed variable "the organization has funding to implement new digital technologies" (TEC4) has the highest significance within the technology latent variable (factor loading = 0.54, *t*=16.48). The second

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highest is "the organization has existing technologies that enable the transition to modern digital technologies" (TEC5) (factor loading = 0.51, *t*=19.39), followed by "the organization has standards for electronic data exchange" (TEC3) (factor loading = 0.49, *t*=17.28).

The factor loadings of the latent variable for digital transformation, it was found that the observed variable "the organization has implemented digital systems within its business processes" (DIG2) holds the highest significance within the digital transformation latent variable (B = 0.59, *t*=1.25). The second highest is "the organization collaborates with new partners to develop strategies for digital transformation" (DIG1) (B = 0.46, *t*=10.28), followed by "the organization has implemented digital systems in external business processes" (DIG3) (B = 0.27, *t*=7.20).

And when considering the factor loadings of the latent variable for business model transformation, it was found that the observed variable "new sales channels resulting from digital transformation" (BUS4) has the highest significance within the business model transformation latent variable (B = 0.60, *t*=24.60). The second highest is "the organization charges new fees as a result of digital transformation" (BUS5) (B = 0.59, *t*=21.41), followed by "the organization offers new services as a result of digital transformation" (BUS3) (B = 0.33, *t*=11.81).

When considering the AVE (Average Variance Extracted), which indicates the reliability of the measurements, it was found that all components met the minimum threshold of 0.50. The analysis results from Table 4.12 show the following AVE values for the latent variables: the latent variable related to the organization had an AVE of 0.65, the latent variable related to the business environment had an AVE of 0.74, the latent variable related to technology had an AVE of 0.81, the latent variable related to digital transformation had an AVE of 0.57, and the latent variable related to business model changes had an AVE of 0.71.

Regarding the CR (Composite Reliability), the threshold is set to be greater than 0.60. The analysis results revealed that the CR values for all measurement models exceeded the required threshold. Specifically, the CR values were as follows: the latent variable related to the organization had a CR of 0.77, the latent variable related to the business environment had a CR of 0.85, the latent variable related to technology had a CR of 0.93, the latent variable related to digital transformation had a CR of 0.60, and the latent variable related to business model changes had a CR of 0.85.

The results from the AVE and CR analyses indicate that the measurements have very high reliability and are effective in measuring their respective domains. Additionally, the measurements in each domain demonstrate a high level of consistency.

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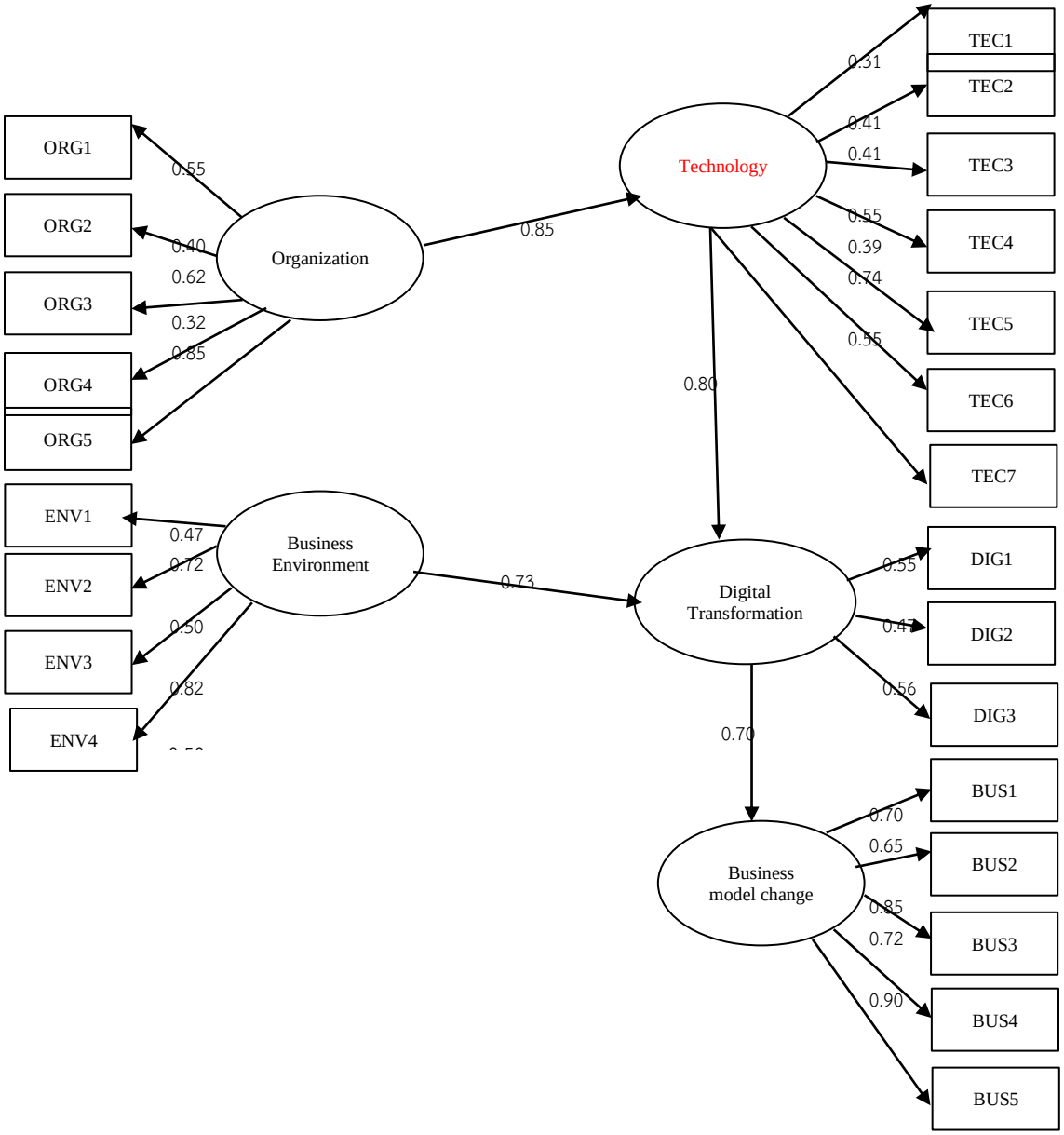

χ^2/df=0.295, GFI=1.00, NFI=0.98, CFI=1.00, RMSEA=0.0071

Figure 1 Hypothesized analysis model

Objective 2: To investigate the degree of interrelationship between the latent variables in the areas of technology, organization, business environment, digital transformation, and business model changes for small and medium-sized enterprises (SMEs) in Bangkok. The statistical method used in the research is Structural Equation Modeling (SEM).

Based on the results from Figure 1, it was found that the causal influence path from the external latent variable related to the organization to the internal latent variable related to technology had a coefficient of 0.85 and a t-statistic of 13.38 (B = 0.85, *t* = 13.38), which positively supports the research hypothesis. The causal influence path from the latent variable related to technology to the latent variable related to digital transformation had a coefficient of 0.80 and a t-statistic of 13.27 (B = 0.80, t = 13.27), which positively supports the research hypothesis. It was also found that the causal influence path from the latent variable

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related to the business environment to the latent variable related to digital transformation had a coefficient of 0.73 and a t-statistic of 10.27 (B = 0.73, *t* = 10.27), which provides positive support for the research hypothesis. And also found that the causal influence path from the latent variable related to digital transformation to the latent variable related to business model changes had a coefficient of 0.70 and a t-statistic of 10.15 (B = 0.70, *t* = 10.15), which provides positive support for the research hypothesis.

The fit index evaluation results show that the model meets the established criteria. Specifically, the χ^2/df. The ratio is 0.295, the goodness-of-fit index (GFI) is 1.00, the normed fit index (NFI) is 0.98, the comparative fit index (CFI) is 1.00, the relative fit index (RFI) is 0.97, and the root mean square error of approximation (RMSEA) is 0.0071.

Conclusion

Based on the first objective, the factor loading of the latent organizational variable model reveals that the observed variable "employees in the organization have opportunities to participate in the development or implementation of digital technologies (ORG5)" is of the highest significance. The business environment dimension, the most crucial factor, was the "pressure from business competition due to competitors' transition to digital technologies (ENV2)." This suggests that external competitive forces, particularly the digital transformation of rivals, play a pivotal role in driving organizational change. Within the technology dimension, the most influential latent variable was "the organization's financial capacity to invest in and integrate new digital technologies (TEC4)." This underscores the vital role that capital allocation plays in enabling digital transformation initiatives and highlights the need for organizations to secure sufficient resources for technology adoption. Turning to the digital transformation dimension, the most prominent variable identified was "the extent to which the organization has successfully integrated digital systems into its business processes (DIG2)." This emphasizes the fundamental nature of operationalizing digital technologies within core business functions to drive meaningful transformation. Lastly, within the business model change dimension, the key factor was the "introduction of new sales channels resulting from the digital transition (BUS4)." This indicates that one of the most significant outcomes of digital adoption is the creation of innovative business models, particularly through the expansion of digital sales avenues.

In addressing the second objective, the analysis revealed that the most significant causal influence pathway was from the external latent variable within the organizational dimension to the internal latent variable within the technology dimension. The most impactful path was the causal influence from the technology latent variable to the latent variable of digital transformation. Following this, the third most influential pathway was the causal relationship from the business environment latent variable to the digital transformation latent variable. Lastly, the causal influence from the digital transformation latent variable to the business model transformation latent variable was found to be the least significant. The overall fit index was: χ^2/df=0.295, GFI=1.00, NFI=0.98, CFI=1.00, RMSEA=0.0071

Discussions

From the first objective, it was found that the organizational dimension, when considering the factor loadings of the latent variable model, it was found that the observed variable "employees in the organization have opportunities to participate in the development or implementation of digital technologies (ORG5)" holds the highest significance. This aligns with Buntak K., et al. (2020). Regarding employees in the organization having opportunities to participate in digital development, the organization's existing knowledge management model needs to adapt to new conditions. Organizations must establish new methods to capture organizational knowledge. As highlighted by the researcher, digital transformation facilitates the integration of advanced technologies that enable organizations to disseminate knowledge across all organizational levels, including through automation systems frequently powered by artificial intelligence. Furthermore, in light of the escalating threat of cyberattacks, organizations must incorporate comprehensive risk identification and management frameworks into their knowledge management systems.

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This approach not only enhances operational security but also fortifies the organization's ability to safeguard sensitive data and maintain resilience in an increasingly digital landscape.

In the business environment dimension, the research findings indicate that the most significant observed variable was "the organization faces pressure from business competition due to the digital transformation of competitors (ENV2)." This is supported by studies from Rattarak, M., et. al. (2024), which state that external network pressures from partners and stakeholders impact business transformation by listening to feedback and needs. This is supported by the researcher's assertion that the factors within the business environment that underpin the development of a digital entrepreneurship ecosystem or accelerate digital transformation are multifaceted. These factors include financial support, robust government policies, public sector initiatives, specialized entrepreneurial education, knowledge transfer for research and development, professional services for enterprises, market accessibility, national infrastructure, and the promotion of social and cultural equity. Together, these elements form an integrated framework that not only facilitates the transition to a digital economy but also fosters an environment that encourages innovation. They empower businesses to embrace digital transformation, positioning them to thrive in an increasingly interconnected and technology-driven global landscape.

In the technology dimension, the observed variable "the organization has capital to adopt new digital technologies (TEC4)" was found to be the most significant latent variable within the technology dimension. This is supported by the study of Chen, C., et al. (2021), which highlights the importance of government funding to support digital transformation in small service businesses. The government needs to provide funding programs to support digital transitions. According to the researchers, successful digital transformation is contingent upon securing the necessary financial capital for development, acquiring cutting-edge technologies and tools that enable the transition, ensuring compliance with relevant standards, and implementing robust electronic security protocols. Furthermore, the ability to engage with customers via digital channels is paramount in gaining insights into consumer behavior. This engagement not only allows organizations to fine-tune their digital strategies but also enables them to craft enhanced customer experiences and deliver superior products tailored to evolving market demands.

In the digital transformation dimension, the observed variable "the organization has adopted digital systems within its business processes (DIG2)" was found to be the most significant. This is supported by the studies of Faragua, T., et al. (2024) and Ratnasari, A., et al. (2023), which highlight that the process of internal process improvement can link the organization's internal steps with the external world, knowledge management, and service quality. According to the researchers, implementing process improvements to incorporate digital systems requires collaboration both within and outside the organization, including with various partners. Additionally, widespread adoption of digital systems across the organization leads to increased use of digital tools, which impacts the business models of companies, enabling new forms of collaboration between companies and leading to the development of new products and services.

In the business model transformation dimension, the observed variable "new sales channels resulting from digital transformation (BUS4)" was found to be the most significant. This is supported by the study of SME One (2024), which highlights the adoption of new online sales channels as a key factor in promoting continuous growth. The researchers found that digital transformation drives innovation, creates new opportunities, and introduces new service and product models. Furthermore, the development of new sales channels, including online payment systems, has greatly enhanced the convenience and speed of creating sales channels and enables businesses to reach consumers 24/7 worldwide.

Based on the second objective, the most prominent causal influence pathway identified was the one linking the latent variable in the organizational dimension to the latent variable in the technology dimension. This aligns with the findings of Song, Q., et al. (2023), who established a significant relationship between organizational and technological variables, while also highlighting their interdependence with environmental factors. The researchers argue that organizations endowed with adequate resources, a clear vision, strong leadership motivation, and specialized skills, coupled with strategic investments in digital transformation, are better positioned to enhance their business operations. Moreover, the deliberate

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provision of knowledge to employees, ongoing training, fostering knowledge creation, and ensuring unfettered access to essential resources serve as key drivers for business growth. These elements collectively generate a competitive edge, promote teamwork, stimulate innovation, and support the development of new products and services. Ultimately, the integration of advanced technologies not only improves operational efficiency but also substantially augments the organization's capacity to adapt and excel in an increasingly dynamic business landscape.

The second significant causal influence is the causal influence path from the latent variable in the technology dimension to the latent variable of digital transformation. This is supported by the study of Begnini, S., et al. (2023), which found a relationship between technology and the digital transformation of SME businesses. Advancements in technologies such as cloud computing, the Internet of Things (IoT), and big data contribute to the digital transition. Cloud computing provides an open platform for artificial intelligence (AI), IoT, real-time data sharing, and big data, all of which promote digital transformation. The researchers assert that organizations that adopt stringent data security protocols, ensure seamless data connectivity, and establish standardized data practices will be more effectively positioned to navigate the digital transformation process. Furthermore, securing adequate funding to support the digital transition is vital for providing the necessary resources to implement these technological advancements. In addition to these foundational elements, integrating comprehensive risk management strategies and engaging IT specialists are paramount for safeguarding the transformation process and addressing any technical challenges that may arise. By incorporating these measures, organizations not only enhance their digital capabilities but also position themselves to gain a significant competitive edge, driving innovation and optimizing operational efficiency in an increasingly digital landscape.

The third significant causal influence path identified was the relationship between the latent variable in the business environment dimension and the latent variable of digital transformation. This finding is consistent with the study by Xu, J., et al. (2022), which found a connection between the business environment and digital transformation. The study highlights that the adoption of digital technologies within organizations contributes to greater success compared to operations without digital systems. Therefore, the implementation of these technologies must be environmentally friendly, promoting environmental sustainability. According to the research, business environments under pressure from partners, competitors, and regulatory compliance, as well as collaboration with research institutions and a responsibility toward society, directly influence the digital transformation process. The study emphasizes the role of technology adaptation in enhancing the efficiency, productivity, and profitability of both individuals and organizations. It also calls for additional funding to develop technologies that are not only more efficient but also more environmentally friendly and sustainable.

The final significant causal influence path is the one from the latent variable of digital transformation to the latent variable of business model change. This finding is supported by the study of Malewska, K., et al. (2024), which identifies the relationship between these two variables. The research emphasizes that the increased use of digital systems impacts the business models of companies, enabling the implementation of new collaborative frameworks between organizations. According to the researchers, digital transformation is crucial for organizational growth, as the adoption of online communication systems and various online technologies helps create value, provides new experiences, and enables broader consumer access. This ultimately leads to changes in business models, fostering the emergence of new operational approaches.

Recommendations

Organizational dimension: Organizations must ensure sufficient human resources to adopt new digital technologies, which involves continuous employee training and development in digital transformation. This transition significantly enhances organizational speed, modernity, and responsiveness to market trends, ultimately driving higher sales and the creation of new, innovative products that align with consumer demands.

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Therefore, entrepreneurs must develop strategies or design products and packaging that are suitable for transport, storage, and movement. This includes selecting the appropriate shipping methods to reduce inefficiencies, such as underutilized vehicles or empty trips. Efficient route planning and loading are essential to lower overall transportation costs while maintaining the freshness of perishable goods, especially food products.

Business environment dimension: Organizations must prioritize data security and social responsibility, as these factors influence the success of digital transformation. This involves developing new products and innovations to enhance business performance, including innovations in long-term preservation techniques and value-added products. Packaging design, product standards, and novel presentation methods that appeal to consumers are essential for driving consistent sales growth. Moreover, businesses must focus on increasing market share by introducing new products and entering new markets, ensuring that products meet national and international standards.

Technology dimension: Organizations need to implement comprehensive data security measures that are integrated across all systems, ensuring the protection of personal information. Data standardization and the secure electronic transfer of information are crucial for mitigating cybercrime risks, allowing organizations to use digital data effectively. Investments in digital technology are necessary to enhance competitive capabilities and create new business opportunities.

Digital transformation and business model change dimension: Digital systems should be integrated into both business processes and external operations to enhance organizational performance and competitive advantage. Collaborations and networks with external organizations should be established to maximize the benefits of digital technology. This includes generating new revenue streams through digital channels, enhancing digital marketing efforts, and creating new sales opportunities via online platforms. Digital transformation can help create a significant competitive advantage for organizations by adopting innovative business models.

Policy dimension: The government must actively support SMEs in Bangkok by providing funding, closely monitoring, and celebrating their efforts. This includes addressing non-standard production processes, developing safe and standardized transformation procedures, and mitigating societal impacts. The government should also encourage the improvement of product standards to meet international norms, provide knowledge and training, and enhance packaging design to achieve international standards. Additionally, there must be regulations and laws governing digital data use, preventing cybercrime, and ensuring the responsible use of digital information.

Furthermore, both public and private sectors should focus on reducing costs to increase competitiveness and improve data efficiency. Robust data security measures must be implemented to safeguard organizational and consumer information, ensuring a secure and effective digital transformation process.

Suggestions

1. Temporal variations in digital transformation: Future research should consider longitudinal studies that examine the dynamics of digital transformation across varying periods. This would enable the identification of temporal shifts in digital adoption, challenges, and outcomes, offering a more nuanced understanding of how digital strategies evolve and their long-term impact on organizational performance.

2. Exploration of additional influential factors: To deepen the comprehension of digital transformation processes, subsequent studies should broaden their scope by incorporating additional variables such as organizational culture, leadership styles, regulatory influences, and technological disruptions that may significantly influence the digital transition. This would allow for the development of a more comprehensive framework, capturing the multifaceted nature of digital transformation.

3. Cross-sectoral and nationwide investigations: Expanding the research to encompass a broader range of business sectors or conducting national-level studies would offer valuable insights into sector-specific challenges and opportunities in digital transformation. Such studies would also facilitate the validation and refinement of the conceptual framework developed, enhancing its applicability across

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diverse industries and geographic contexts, and providing a more holistic understanding of digital transformation's impact on businesses at various scales.

References

Adama, H. E., & Okeke, C. D. (2024). Digital transformation as a catalyst for business model innovation: A critical review of impact and implementation strategies. *Magna Scientia Advanced Research and Reviews, 10*(2), 256–264.

Bangkok Bank. (2024). *Digital transformation*. Retrieved January 25, 2024, from https://www.bangkokbank.com/en/About-Us/Sustainability/Digitalization-Innovation

Begnini, S., Oro, I. M., Tonial, G., & Dalbosco, I. B. (2023). The relationship between the use of technologies and digitalization strategies for digital transformation in family businesses. *Journal of Family Business Management, 14*(4), 710–726.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford Press.

Buntak, K., Kovačić, M., & Martinčević, I. (2020). Impact of digital transformation on knowledge management in an organization. *Advances in Business-Related Scientific Research Journal, 11*(1), 36–47.

Chanjira, L. (2022). Organizational readiness for digital transformation in SMEs: The role of leadership and resources. *Thai Business Journal, 10*(1), 56–68.

Chen, C. L., Lin, Y. C., Chen, W. H., Chao, C. F., & Pandia, H. (2021). Role of the government to enhance digital transformation in small service businesses. *Sustainability, 13*(3), 1028.

Cronbach, L. J. (1990). *Essentials of psychological testing* (5th ed.). UCL Press.

Díaz-Arancibia, J., Hochstetter-Diez, J., Bustamante-Mora, A., Sepúlveda-Cuevas, S., Albayay, I., & Arango-López, J. (2024). Navigating digital transformation and technology adoption: A literature review from small and medium-sized enterprises in developing countries. *Sustainability, 16*(14), 5946.

Electronic Transactions Development Agency. (2023). *How ready are Thai SMEs for digital transformation?* Retrieved April 3, 2025, from https://www.etda.or.th/th/Useful-Resource/etda_sme.aspx

Electronic Transactions Development Agency. (2025). *Digital transformation*. Retrieved January 19, 2025, from https://www.etda.or.th/th/Useful-Resource/etda_sme.aspx

Electronic Transactions Development Agency. (2025). *Digital transformation overview*. https://www.etda.or.th/th/Useful-Resource/etda_sme.aspx

Emeritus. (2024). *What is digital transformation, and why is it important?* Retrieved March 17, 2023, from https://emeritus.org/in/learn/what-is-digital-transformation-and-why-is-it-important/

Faragau, T., Matei, O., Bacali, L., & Erdei, R. (2024). The order of business process digitalization in Romanian small- and medium-sized enterprises. In *Management, innovation and entrepreneurship in challenging global times: Proceedings of the 16th International Symposium in Management (SIM 2021)* (pp. 577–599). Springer.

Global Digital Economy White Paper. (2022). *Global Digital Economy Development Index Report*. Global Digital Economy White Paper

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Prentice Hall.

Hancock, G. R., & Mueller, R. O. (2001). Rethinking construct reliability within latent variable systems. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural equation modeling: Present and future* (pp. 195–216). Scientific Software International.

Hendrawan, S., et al. (2024). Digital technologies in SMEs: A catalyst for competitive advantage and operational efficiency. *Journal of Business and Technology, 38*(2), 132–146.

International Trade Administration. (2024). *Thailand: Digital economy*. Retrieved March 17, 2023, from https://www.trade.gov/country-commercial-guides/thailand-digital-economy

Jović, M., Tijan, E., Vidmar, D., & Pucihar, A. (2022). Factors of digital transformation in the maritime transport sector. *Sustainability, 14*(15), 9776.

Kumar, M. (2023). Organizational factors influencing digital technology adoption in SMEs. *Journal of Digital Entrepreneurship, 14*(2), 47–61.

Leorach, C. (2022). A model for transformation to a digital organization. *Payap University Journal, 32*(2), 172–185.

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Liang, D., & Tian, J. (2024). The impact of digital transformation on the high-quality development of enterprises: An exploration based on meta-analysis. *Sustainability, 16*(8), 3188.

Malewska, K., et al. (2024). The missing link between digital transformation and business model innovation in energy SMEs: The role of digital organisational culture. *Energy Policy, 192*, 114254.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.

Office of Small and Medium Enterprises Promotion. (2024). *Statistics on SME entrepreneurs in each provincial area*. Retrieved February 15, 2025, from https://www.smebigdata.com/msme/dashboard-a

Ratnasari, A., & Marfu, A. (2023). Process business and external environment in mattering service quality: The moderator of knowledge management. *Journal of Service Management Studies, 9*(1), 72–89.

Rattarak, M., et al. (2024). The impact of external and internal business factors on the adoption of green concepts in medium and small-sized enterprises with high growth rates in Bangkok and its vicinity, Thailand. *Journal of Humanities and Social Sciences Research Promotion Network, 7*(3), 96–113.

Shahzad, A., bin Zakaria, M. S. A., Kotzab, H., Makki, M. A. M., Hussain, A., & Fischer, J. (2023). Adoption of the fourth industrial revolution 4.0 among Malaysian small and medium enterprises (SMEs). *Humanities and Social Sciences Communications, 10*(1), 1–14.

Sharabati, A.-A. A., Ali, A. A. A., Allahham, M. I., Hussein, A. A., Alheet, A. F., & Mohammad, A. S. (2024). The impact of digital marketing on the performance of SMEs: An analytical study in light of modern digital transformations. *Sustainability, 16*(19), 8667. https://doi.org/10.3390/su16198667

Siriwat, A., Lueathep, P., & Jensirisak, S. (2021). Structural equation model for road accident analysis: A case study of Phuket Province. *Journal of Engineering and Innovation, 14*(2), 38–51.

SME One. (2024). *Social media: New retail business model*. Retrieved January 25, 2025, from https://www.smeone.info/posts/view/4849

Sombunrattanachok, T., et al. (2021). Appropriate environment for digital age entrepreneurs. *Journal of Interdisciplinary Studies, Sripatum Chonburi, 10*(3), 62–75.

Song, Q., Chen, X., & Gu, H. (2023). How technological, organizational, and environmental factors drive enterprise digital innovation: Analysis based on the dynamic FsQCA approach. *Sustainability, 15*(16), 12248.

Stock Exchange of Thailand. (2023). *Stakeholder engagement and materiality analysis*. Retrieved January 25, 2025, from https://setsustainability.com/page/stakeholder-engagement

Teng, X., et al. (2022). Research on the relationship between digital transformation and business model innovation. *Sustainability, 14*(10), 6012.

Thai Print Association. (2025). *What is digital transformation, and why is it important?* Retrieved January 17, 2025, from https://www.thaiprint.org/2025/01/vol149/knowledge149-03/

The Economist. (2025). *Why digital transformation means success in the long run*. Retrieved March 17, 2023, from https://films.economist.com/winningedge/

Trakowska, K. (2019). Digital transformation: Theoretical backgrounds of digital change. *Nauki o Zarządzaniu, 24*(4), 32–37.

Van de Wetering, R., Doe, J., van den Heuvel, R., & Al Halbusi, H. (2023). How do SMEs shape business model innovation? A digital infrastructure, improvisational, and dynamic capability perspective. *Sustainability, 14*(15), 9776.

Xu, J., et al. (2022). Role of digitalization in environment, social, and governance, and sustainability: Review-based study for implications. *Frontiers in Psychology, 13*, 961057.

Zhang, J., & Chen, Z. (2024). Exploring human resource management digital transformation in the digital age. *Journal of the Knowledge Economy, 15*(1), 1482–1498.

Zhang, Q., Wu, P., Li, R., & Chen, A. (2024). Digital transformation and economic growth: Efficiency improvement in the digital media era—Digitalization of industry or digital industrialization? *International Review of Economics & Finance, 92*, 667–677.

Zhang, X., Xu, Y., & Ma, L. (2022). Research on successful factors and influencing mechanisms of the digital transformation in SMEs. *Sustainability, 14*(5), 2549.

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