

Model Development of Business Succession for Small and Medium-Sized Enterprises(SMEs) of the Digital Era

TAWEESEK ROOPSING¹, WIT SUWANSRI², YUTTHAJAKR UTTAJARERN¹

¹Faculty of Business Administration,
King Mongkut's University of Technology
North Bangkok, 1518 Pracharat 1 Road, Wongsawang, Bangsue,
Bangkok 10800,
THAILAND

²Greentech Ventures Public Company Limited,
Rama 4 Road, Wangmai,
Pathumwan, Bangkok 10330,
THAILAND

Abstract: - The purpose of the study was to develop a business succession model of SMEs in the digital era. The sample group consisted of 500 SME executives. The research instrument used to collect data was a questionnaire. The statistics used were frequency, percentage, mean, standard deviation, and analyzed through multivariate statistical techniques to construct a Structural Equation Model (SEM). The findings revealed that the confirmatory factor model analysis was consistent with the empirical data with the consistency index as follows: CMIN/DF of 1.123, CFI of 0.993, SRMR of 0.029. and RMSEA of 0 .0 16. And the business succession model of SMEs in the digital era consisted of four main components based on the standardized regression weight at statistically significant level of 0.001 as follows: knowledge management of 0.96, business transfer of 0.93, technology and innovation of 0.88, and collaboration networks of 0.87. And each key component was equally composed of six subcomponents.

Key-Words: - Small and Medium-Sized Enterprises, Business Succession, Innovation, Knowledge Management, Collaboration Networks, Business Transfer, Digital Era, Model Development.

Received: July 19, 2025. Revised: November 11, 2025. Accepted: December 12, 2025. Published: June 1, 2026.

1 Introduction

Family members usually start their business with a small-sized enterprise with a single owner, and then they can develop their business, ranging in size from a small shop to a large corporation with a complex business structure. Some family businesses are even expanded into regional networks. This is consistent with a survey of the highest-grossing businesses in the world published in Fortune, a magazine stating that one-third of the companies are family businesses. In Thailand, they play an equally important role. The first 100 highest-grossing businesses of Thailand, ranked by sales, revealed that over one-third of Thailand's GDP stayed steady even through the 1997 financial crisis. It could be said that family businesses play an essential role in the country's social and economic system because they are highly valuable to boost the economy and create jobs. The success of family businesses can provide financial stability and strengthen family bonds, and then the

economic stability and growth create trust with their stakeholders.

Family businesses in Thailand play an important role in the economic system. The data shown at the end of June 2024 from the Stock Exchange of Thailand revealed that 67 of the listed companies are family businesses, representing 50% of the total market capitalization. Most of the businesses are in food and beverages, real estate, energy, and services, [1]. However, family business succession remains a highly challenging process with low success rates due to the complexity of both business strategies and internal family relationships, including emotional factors and governance issues among family members, [2].

Despite their importance, succession remains a major challenge. However, the research results of survival rates of family businesses reveal that only about one-third of family businesses can be passed down to the second generation, approximately 15% continued to the third generation, and fewer than

5% survived to the fourth generation, [3]. This is in accordance with a study on family_businesses of PricewaterhouseCoopers or PwC, a world-class leading consulting firm, stating that 30% of family businesses could be passed down to the second generation, 12% continued to the third, and only 3% to the fourth, [4].

In our modern world, everything is changing rapidly, and Thai family businesses have been facing some powerful megatrends that significantly influence their business operations. The megatrends range from artificial intelligence (AI), which is transforming work systems, to the problems based on climate change that challenge organizational stability. All the issues are linked with geopolitical uncertainties and demographic shifts. Therefore, family businesses must handle these changes to seize new opportunities among inevitable challenges. However, family businesses in Thailand still do not realize the influence of megatrends. This is reflected in recent survey findings that indicated a considerable gap in AI adoption as follows: 1) Only 3% of Thai family businesses revealed that implementation of AI/GenAI can be a good opportunity for business growth (below the global average of 61%), 2) Only 22% have invested in digital transformation and AI and implemented AI within their organizations (lower than the global average of 39%), 3) 36% stated that technological advancements are an essential component of family business growth (lower than the global average of 65%) and, 4) 61% plan to enhance digital transformation and implement new technologies in the family businesses in the next five years (lower than the global average of 78%), [5].

The empirical data derived from the database of the Department of Business Development and reports by Siam Commercial Bank and OSMEP reveal that the business closure rate of the small and medium-sized enterprises (SMEs) had been steadily rising between 2000 and 2023. [6] this is consistent with the annual reports of SMEs by The Office of Small and Medium Enterprise Promotion (OSMEP), Ministry of Industry, which reveal that the structured data shows a constant slowdown of business growth rate from 2018 to 2023, [7].

Family businesses are considerably important to the country and challenging in intense market competition, changing consumer behavior, and complex internal dynamics. Therefore, the business owners and the successors should realize and learn how to smoothly overcome challenges and create opportunities to make the businesses sustainable. Although the family business is an essential

foundation of the business structure of Thailand and many countries, there are several weaknesses or drawbacks of the typical Thai business, and it is so strongly attached to long-standing traditional values that they cannot be easily changed, even when circumstances outside the country change. These include slow decision-making processes; the need to take everyone's feelings into account, and the tendency for disagreements to have long-term negative consequences. [8] in addition, there are several major problems in family businesses, such as emotional factors, especially close relationships within a family, which can create a sense of familiarity. However, excessive familiarity may lead to a lack of respect or consideration for one another. In addition, there are several major problems in family businesses, such as emotional factors and close interpersonal relationships within a family that may generate conflicts, a lack of respect, and management challenges. Strong adherence to traditional values may also prevent necessary organizational change, [9].

It is clearly seen that the survival of a family business must be conducted in multiple dimensions: effective succession planning, preparation of future education and jobs regarding family business management.

In the digital era, technological advancements change almost everything rapidly. Measurement of success through financial indicators alone is insufficient. Family businesses must leverage digital capabilities while emphasizing sustainability, innovation, and stakeholder trust to remain competitive, [10]. Therefore, next-generation successors need to develop both traditional management skills and digital capacities

Due to the problems of family business survival, the study focuses on strategies to create the right successors in small and medium-sized enterprises (SMEs), aiming to enhance competitiveness, ensure long-term sustainability in the digital era, and increase the GDP of the country. Therefore, it is the background of the study titled "Model Development of Business Succession for Small and Medium-sized Enterprises (SMEs) of the Digital Era."

1.1 Research Objectives

The objectives of the study were 1) to explore the structure and management characteristics of SMEs, 2) to identify the key components and indicators of business succession models in a digital era, and 3) to develop a practical succession model for SMEs.

2 Review of Related Literature

The review of literature on small and medium-sized enterprises (SMEs) shows that these businesses face several challenges in their operations. A major concern is that many family businesses struggle to survive across generations, [11]. In addition, strong business competition and limited internal and external support have slowed down the growth of many SMEs, [7]. The absence of proper succession planning also causes disruptions and discontinuity in business operations, [8].

Considering these challenges and the findings from related studies, the researcher identified key factors that influence the success of SMEs. These factors serve as the basis for business succession model development that fits the needs of the digital age. Previous studies have identified four main factors related to business succession. **Technology and innovation** were highlighted in studies, [12], [13], and [14], while **collaboration networks** were discussed by [15] and [16]. **Knowledge management** was examined in [17], and **business transfer** was explored by [18] and [19]. Together, these four factors form the conceptual framework of this study, as shown in Figure 1.

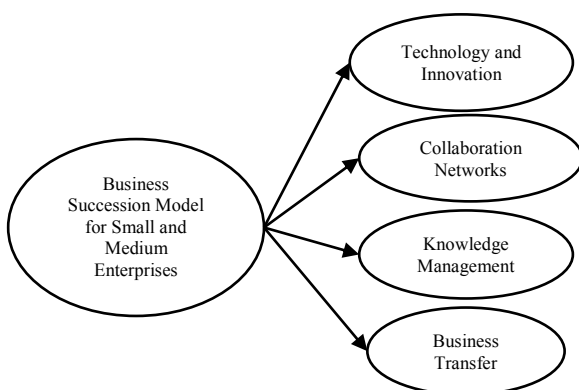


Fig. 1 : Conceptual framework of model development of business succession for small and medium-sized enterprises (SMEs)

Source: prepared by the authors

2.1 Technology and Innovation

Innovation is widely recognized as essential for business success and survival. [20] highlighted for small and medium-sized enterprises (SMEs) in the digital age that innovation drives value creation and is central to business processes. He described managing innovation as a two-step process: searching for opportunities and threats in the internal and external environment, and selecting innovations that fit the organization's strategic goals. [21] defined innovation as introducing new

methods through experimentation, from invention to refinement and practical application. [22] emphasized that continuous innovation is necessary for organizational survival and involves combining knowledge from different areas to produce outputs with both economic and social value. [23] described innovation management as a structured approach to creating and applying new ideas for commercial and societal benefits. [24] additionally explained that innovation means to improve the existing tools to be better, and to develop the potential of employees, agencies, and organizations. That means the improvement, embellishment, and development of systems. Therefore, innovation management is a science and a crucial tool in a knowledge-based economy. The improvement and development of technology influence the industry and organizations. [24] also said that there are four main types of innovation: 1) product innovation, 2) process innovation, 3) market innovation, and 4) management innovation.

Technology and innovation mean adoption and implementation of technology and innovation, and implementation of automation to enhance efficiency and economic growth, and meet the needs of employees, customers, and family members. It focuses on value-added activities and meets the business ecosystem in the current fast-changing world.

Technological innovation is basically a tool created through technology. Therefore, the improvement of technological innovation is necessary for businesses' competitiveness, and customer needs [25], and Studies [26], and [27] highlight that developing technological innovation is key to gaining a competitive edge and meeting customer needs. This type of innovation can take many forms, such as product, process, radical, or incremental, depending on how technology is applied to drive change [28], [29] and [30].

[31] explained that technological innovation is constantly improved for manufacturing and production, and the rate of situational change can help enhance technological efficiency to meet customer needs and business competitiveness. In addition, the implementation of technological innovation for business must be considered due to other factors, including new products or services, new organizational structures, management systems, new technological processes, and new plans related to employees within the organizations.

2.2 Collaboration Network

A collaboration network refers to a supporting factor of resources both inside and outside organizations in various dimensions, e.g., support from senior leaders, organizational culture, business competitiveness, and so on. All of these can make a business succession successfully pass from the founders to the next generation.

Government support through various channels is necessary to help the industrial sector create technological innovation. In terms of government support, it may include policies, funding, and so on from different ministries and agencies. Research indicates that SME innovation competency depends on both internal organizational facilitators and external knowledge sourcing strategies, including government support, industry collaboration, and market intelligence networks [32], [33] further demonstrated that the industrial sector and interfirm collaboration networks are key components of SME innovation competency, particularly through joint research and development activities that enhance product and process innovation.

Internally, organizational culture is also key to effective collaboration. Study [34] stated that human resource management functions as an essential connection between employees and the organization. This kind of culture builds trust and a sense of ownership, which are essential for long-term commitment and successful business succession.

2.3 Knowledge Management

Knowledge management refers to the process of implementing knowledge or information within the organization, and everyone can easily access the information. This helps everyone develop their skills and work more effectively. Besides, everyone can apply their knowledge in various dimensions, such as the application of knowledge passed down from their seniors, new knowledge, and the change management of their business.

According to the Office of the Civil Service Commission and the National Productivity Institute, knowledge management allows knowledge to flow in a continuous, spiral process that supports ongoing organizational growth. It is key to building a learning organization, where employees use knowledge not just to improve themselves, but also to help the organization develop.

The following is the process of knowledge management:

1) Knowledge Identification: This is the identification of core knowledge needed to achieve the organizational goals, and it is a key foundation of knowledge management.

2) Knowledge Creation and Acquisition: This is concerned with knowledge acquisition, knowledge improvement, knowledge creation, or new knowledge creation, external knowledge acquisition outside the organization, protection of previous information, and implementation of unused information.

3) Knowledge Organization: This is concerned with categorizing and storing knowledge in a central system and building networks with external partners for ongoing exchange. This also means exchanging information or knowledge with the networks to focus on the explicit and tacit knowledge equally, and constantly developing knowledge for the benefit of the organization.

4) Knowledge Codification and refinement: This process is about classifying reliable knowledge needed and implementing empirical evidence to systematically refine and manage knowledge for practical use.

5) Knowledge Access: This is how to make it easy for users to access knowledge, and information technology (IT) should be implemented.

6) Knowledge Sharing: This is how to share a knowledge database through documentation, cross-department teams, learning communities, mentoring, job rotations, knowledge-sharing platforms, and so on.

7) Learning: This is an implementation of the shared knowledge to improve performance, solve problems, and support organizational growth.

2.4 Business Transfer

Business transfer refers to the process of proper preparation for business succession that will be smoothly passed down to the next generation. Succession planning is a key tool for the long-term survival of family businesses, as most founders want to pass their legacy to capable and committed family members.

Moreover, there should be a well-structured succession plan because it is a proper plan to build a sustainable business for family members. Therefore, a proper business succession plan is a crucial tool for the founder's security and also a good preparation for the successor for future responsibilities. According to [35], it is a hard task to be a recognized and respected family business

leader, and sometimes it may cause a crucial issue as well. Once potential successors are identified, it is important to make sure that both the family and the business recognize the chosen leader.

This is supported by [36], who noted that becoming a recognized leader in a family business can be challenging and may lead to management issues if not carefully handled.

3 Research Methodology

This was a mixed-method approach of research, combining qualitative research with in-depth interviews and quantitative research with data collection. The qualitative research was conducted through in-depth interviews with nine experts: three entrepreneurs or executives from business organizations, three academics, and three executives from both government and private sectors. A structured interview guide was developed by the researcher, covering four areas: technology and innovation, collaborative networks, knowledge management, and business transfer.

The quantitative phase employed a structured questionnaire developed based on the literature review and the qualitative findings from expert interviews. The instrument comprised 100 items, evenly distributed across the four dimensions (25 per construct). A five-point Likert scale was used to measure the importance of each item. The scoring criteria were as follows: 1 indicated the least level of importance, 2 indicated a low level of importance, 3 indicated a medium level of importance, 4 indicated a high level of importance, and 5 indicated the highest level of importance. The interpretation criteria for the mean scores of the importance levels of factors were as follows [37]: 1.00–1.49 = the least importance level, 1.50–2.49 = low importance level, 2.50–3.49 = moderate importance level, 3.50–4.49 = high importance level, and 4.50–5.00 = the highest importance level. The questionnaire underwent a rigorous content validity assessment conducted by five academic and industry experts, ensuring alignment with research objectives. A pilot test with 30 participants was then conducted to evaluate the clarity, reliability, and appropriateness of the items. The Index of Item-Objective Congruence (IOC) values ranged from 0.80 to 1.00, indicating strong agreement among experts regarding the validity of each item. The instrument demonstrated an overall reliability coefficient (Cronbach's alpha) of 0.98, reflecting excellent internal consistency.

The target population consisted of SME executives in Thailand. According to official SME

statistics [38], the total number of registered SME operators was 3,070,177, comprising 40,652 medium-sized enterprise operators and 3,029,525 small enterprise operators, [38]. Using Taro Yamane's formula with a 95 percent confidence level, the recommended minimum sample size was 400 participants [37]. However, for factor analysis, [39] recommends a minimum of 500 participants for optimal reliability. Therefore, this study used a sample size of 500 participants, selected through multi-stage sampling, [40]. The procedure included cluster sampling based on enterprise size (medium and small enterprises) and probability sampling using the lottery method.

Data were analyzed using descriptive statistics, including percentages, means, and standard deviations, and inferential statistics, including confirmatory factor analysis. Model fit was evaluated using second-order confirmatory factor analysis, with the criteria for model fit shown in Table 1.

Table 1. Criteria for Evaluating Model Fit with Empirical Data

Test Statistic	Criterion [41]
1. CMIN/DF (Relative Chi-square)	Less than or equal to 3.00
2. CFI (Comparative Fit Index)	more than 0.95
3. SRMR (Standard Root Mean Square Residual)	Less than 0.08
4. RMSEA (Root Mean Square Error of Approximation)	Less than you 0.06

Source: prepared by the authors

4 Results

1) Structure and Operational Characteristics of Small and Medium Enterprises (SMEs)

The findings on the structure and operational features of SMEs are as follows:

- (1) Most of the SME operators are Thai citizens (46.00%).
- (2) The primary customer group comprises SMEs comprise large-scale product manufacturers (41.40%).
- (3) The businesses are currently managed primarily by first-generation heirs (49.40%).
- (4) Corporate governance is mostly conducted through family councils (47.60%).
- (5) The predominant organizational structure is manufacturing based (37.20%).
- (6) The key strength of the businesses is the reputation of their products or services (32.40%).
- (7) Business leaders prioritize the development of specific characteristics to support proactive operations (41.00%).

- (8) Successor selection is mostly based on expertise and work experience (36.80%).
 (9) The primary method for developing successors is through coaching (27.80%).
 (10) Most businesses operate as Original Brand Manufacturers (OBM), producing under their own format and brand (46.60%).
 (11) Among external factors, the bargaining power of buyers exerts the greatest influence on business operations (29.00%).
 (12) Organizational management is primarily guided by a strong sense of ownership (53.80%).

2) Analysis of Key Factors Leading to Success in the Digital Era

The analysis of factors influencing the success of small and medium-sized enterprises (SMEs) in the digital era is presented in Table 2.

Table 2. Mean and Standard Deviation of the Importance of Factors Affecting the Success of Small and Medium-Sized Enterprises (SMEs) in the Digital Era

Factors Affecting Success in Business Succession of Small and Medium Enterprises	$\bar{X}$	SD.	Level of importance
Technology and Innovation	4.14	0.50	High
Collaboration Network	4.13	0.58	High
Knowledge Management	4.12	0.58	High
Business Transfer	4.12	0.53	High
Overall	4.12	0.58	High

Source: prepared by the authors

From Table 2, the results of analyzing the importance of factors influencing the success of small and medium-sized enterprises (SMEs) in the digital era revealed that the mean and standard deviation were overall weighted at a high level. When considered in each aspect, it was found that the importance of all the components was at a high level, ranked from most to least importance as follows: (1) technology and innovation, (2) collaboration networks, (3) business transfer and (4) knowledge management.

The results of analyzing the importance of each factor influencing the success of small and medium-sized enterprises (SMEs) in the digital era were conducted to determine the top five highest-scoring items within each domain. The results are presented in Table 3, Table 4, Table 5 and Table 6.

Table 3. Top Five Technology and Innovation Factors Affecting SME Success

Item	$\bar{X}$	SD.	Level of importance
1. Allocate a technology budget to support the learning and performance of employees and successors in line with the business environment.	4.27	0.72	High
2. Establish an agency responsible for the organization's technology and innovation to develop and monitor concrete changes in innovation and technology.	4.24	0.82	High
3. Study and plan to use Blockchain technology for reliability, security, and the ability to trace back data.	4.23	0.80	High
4. Establish a high-speed information technology network to support the efficient learning and work of employees (e.g., 5G, Super Wi-Fi).	4.22	0.80	High
5. Support funding for projects that use technology and innovation as drivers of business development.	4.21	0.77	High

Source: prepared by the authors

Table 3 presents the mean and standard deviation of the items under the Technology and Innovation factor. All five items received high importance ratings ranging from 4.21 to 4.27. The item with the highest mean was the allocation of a technology budget to support employee and successor learning and performance ($\bar{X} = 4.27$, $SD = 0.72$), indicating respondents' strong emphasis on technology training for success in the digital era. The next highest ratings were for establishing an agency responsible for the development of technology and innovation ($\bar{X} = 4.24$, $SD = 0.82$) and implementation of Blockchain technology. ($\bar{X} = 4.23$, $SD = 0.80$), reflecting recognition of the need for both organizational structures and advanced digital tools. The remaining items: the development of a high-speed IT network ($\bar{X} = 4.22$, $SD = 0.80$) and funding innovation-driven projects ($\bar{X} = 4.21$, $SD = 0.77$) were also rated highly. Overall, the results revealed that SMEs prioritize both infrastructure and strategic investments to enhance their technological capabilities.

Table 4. Top Five Collaboration Factors That Affect SME Success

Item	$\bar{X}$	SD	Level of importance
1. Improve organizational regulations that limit business succession.	4.26	0.78	High
2. Establish a highly flexible organizational structure that can adapt to changing business environments.	4.21	0.83	High
3. Receive investment funding from the previous owner or financial institutions to support the successor's capabilities.	4.19	0.86	High
4. The existing business partners recognize the successor.	4.17	0.80	High
5. Foster a corporate culture that fosters loyalty and commitment to the organization, fostering dedication to the organization.	4.16	0.80	High

Source: prepared by the authors

Table 4 shows that collaboration network factors are viewed as highly important to SME success in the digital era. The highest-rated item was the need to revise regulations that limit succession ($X = 4.26$, $SD = 0.78$), followed by the development of more flexible organizational structures. These findings emphasize that effective readership transitions and sustained business performance depend on both internal flexibility and external support.

Table 5. Top Five Knowledge Management Factors Affecting SME Success

Item	$\bar{X}$	SD.	Level of importance
1. Establish a knowledge management unit to support becoming a data-driven organization.	4.26	0.75	High
2. Develop operational manuals and best practices in the organization's knowledge database, making them easily accessible.	4.20	0.80	High
3. Commit to applying knowledge to decision-making and operations.	4.20	0.84	High
4. Provide ongoing training on cutting-edge knowledge from external experts.	4.19	0.80	High
5. Focus on sharing and exchanging information, disclosing it equally to members, at the right time, and with accuracy.	4.17	0.84	High

Source: prepared by the authors

Table 5 shows that knowledge management is a key factor that helps SMEs succeed in the digital era. The highest-rated item was setting up a dedicated knowledge management unit. ($X = 4.26$, $SD = 0.75$), which indicates the value of a clear system for managing and sharing knowledge. Other important factors include database creation, which makes it easy to access knowledge and the reliability of information implementation when making business decisions. Together, these practices support stronger and more sustainable performance.

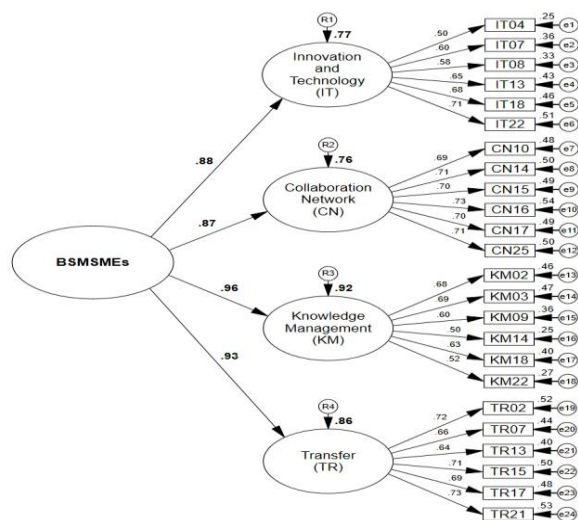
Table 6. Top Five Business Transfer Factors Affecting SME Success

Item	$\bar{X}$	SD.	Level of importance
1. Develop successors through various methods to ensure they are ready to take over business operations.	4.25	0.83	High
2. Maintain management and ownership among family members by transferring shares and management authority to family members appropriately.	4.24	0.80	High
3. Assess risks to manage the time required to develop a successor in accordance with the business strategy.	4.20	0.78	High
4. Develop a strategic plan that links current and future business operations to ensure business continuity during the transfer.	4.18	0.84	High
5. Clearly define the roles and responsibilities of the successor during and after the transfer process.	4.17	0.84	High

Source: prepared by the authors

Table 6 indicates that the key factors for effective business succession in SMEs emphasize successor preparedness and maintaining strategic directions. The highest rated-item was a good preparation of successors through various training and development approaches ($\bar{X} = 4.25$, $SD = 0.83$), followed closely by maintaining ownership and leadership within the family. Overall, these findings emphasize the need for structured planning and risk management to secure long-term business sustainability.

4) Analysis of the components and indicators of a business succession model for small and medium-sized enterprises (SMEs) in the digital era



CMIN/DF = 1.123 CFI = 0.993 SRMR = 0.029
RMSEA = 0.016

Fig. 2: Second-order confirmatory factor model (2nd order CFA) of succession patterns of small and medium-sized enterprises (SMEs) in the digital age (after model adjustment)

Source: prepared by the authors

From Figure 2, it was found that the second-order confirmatory factor model, after model adjustment, was found to be consistent with the empirical data, considering the fit index values as follows: CMIN/DF value equal to 1.123, CFI value equal to 0.993, SRMR value equal to 0.029, and RMSEA value equal to 0.016. (Complies with the criteria specified in Table 1).

The results of the data analysis found that the business succession model of small and medium-sized enterprises (SMEs) in the digital era consists of 4 main components, arranged in order of weight from highest to lowest, namely, the knowledge management component, with a weight of 0.96; the information transfer component, with a weight of 0.93; the technology and innovation component, with a weight of 0.88; and the collaboration network component, with a weight of 0.87. Details of the indicators for each component are provided in Table 7, Table 8, Table 9 and Table 10.

From Table 7, The technology and innovation component is measured by 6 indicators, arranged by standard weight from most to least, as follows: Study, plan, and consider switching costs when switching to new technologies (IT22), with a standard weight of 0.714; Analyze issues arising from past operations to design new approaches and methods to address these issues (IT18), with a standard weight of 0.678; Establish a unit responsible for the organization's technology and

innovation to systematically develop and monitor changes in technology and innovation.

Table 7. Component Analysis of Technology and Innovation in SME Succession Models in the Digital Era

Variables	Estimate		R^2	Variance	p
	Standard	Unstandardized			
1. Use innovative virtual reality (VR) technology to help design products or services to be consistent with current technological advancements. (IT04)	0.501	1.00	0.25	0.54	***
2. Design and select appropriate technologies to enhance the work efficiency of employees and successors. (IT07)	0.597	1.16	0.35	0.45	***
3. Allocate a technology budget to support the learning and performance of employees and successors in line with the business environment. (IT08)	0.577	0.98	0.33	0.35	***
4. Establish a unit responsible for the organization's technology and innovation to systematically develop and monitor changes in innovation and technology. (IT13)	0.653	1.25	0.43	0.38	***
5. Analyze issues arising from past operations to design new approaches and methods to address these issues. (IT18)	0.678	1.36	0.46	0.40	***
6. Study, plan, and consider switching costs when switching to new technologies. (IT22)	0.714	1.36	0.51	0.33	***

***Statistically significant at the 0.001 level

Source: prepared by the authors

Table 8. Statistical Values Obtained from the Analysis of the Components of the Business Succession Model of Small and Medium-Sized Enterprises (SMEs) in the Digital Era in Terms of Cooperation Networks

Variables	Estimate		R^2	Variance	p
	Standard	Unstandardized			
1. Build a marketing intelligence network with business groups. (CN10)	0.690	1.00	0.48	0.33	***
2. Study master plans, organizations, and example projects. Tools for encouraging and assisting networking related to effective networking. (CN14)	0.706	1.12	0.50	0.39	***
3. Send personnel to receive training to act as network brokers. (CN15)	0.697	1.03	0.48	0.35	***
4. Participate in training with businesspeople in the same group. (CN16)	0.733	1.15	0.54	0.35	***
5. Regularly attend network management training courses from the organization's or network leaders' core courses. (CN17)	0.701	1.02	0.49	0.33	***
6. Research, plan, and collaborate with networks to find sustainable business practices. (CN25)	0.708	1.14	0.50	0.40	***

***Statistically significant at the 0.001 level

Source: prepared by the authors

From Table 8, Cooperation Networks (CN) component is measured by 6 indicators, arranged by standardized weight from most to least, as follows: Participate in training with businesspeople in the same group (CN16), standardized weight is 0.733; Research, planning, and collaborating with networks to find ways to conduct sustainable business (CN25), standardized weight is 0.708; Study master plans, organizations, and example projects. Tools for encouraging and assisting networking related to effective networking (CN14), standardized weight is 0.706; Regularly attend network management training courses from the organization's or network leaders' core courses. (CN17), standardized weight is 0.701; Send personnel to receive training to act as network brokers. (CN15), standardized weight is 0.697; and build a marketing intelligence network with

business groups. (CN10), standardized weight is 0.693.

Table 9. Statistical Values Obtained from the Analysis of the Components of the Succession Model of Small and Medium-Sized Enterprises (SMEs) in the Digital Era in Terms of Knowledge Management

Variables	Estimate		R^2	Variance	p
	Standard	Unstandardized			
1. Develop operational manuals and best practices in the organization's knowledge database, making them easily accessible. (KM02)	0.680	1.00	0.46	0.34	***
2. Facilitate successors' access to and effective use of knowledge. (KM03)	0.685	1.06	0.46	0.38	***
3. Process social media data to analyze consumer behavior. (KM09)	0.601	0.92	0.36	0.44	***
4. Cultivate a learning organizational culture. (KM14)	0.496	0.78	0.24	0.56	***
5. Provide collaborative workspaces to foster knowledge exchange. (KM18)	0.630	0.92	0.40	0.38	***
6. Create a community of practitioners to share knowledge, skills, and in-depth experiences. (KM22)	0.519	0.74	0.27	0.43	***

***Statistically significant at the 0.001 level

Source: prepared by the authors

From Table 9, Knowledge management (KM) components are measured by 6 indicators, ranked by standard weight from most to least, as follows: Facilitate successors' access to and effective use of knowledge (KM03), standard weight equal to 0.685; Develop operational manuals and best practices in the organization's knowledge database, making them easily accessible (KM02), standard weight equal to 0.680; Provide collaborative workspaces to foster knowledge exchange (KM18), standard weight equal to 0.630; Process social media data to analyze consumer behavior (KM09), standard weight equal to 0.601; Create a community of practitioners to share knowledge, skills, and in-depth experiences (KM22), standard

weight equal to 0.519; and Cultivate a learning organizational culture (KM14), standard weight equal to 0.496.

Table 10. Statistical Values Obtained from the Analysis of the Components of the Business Succession Model of Small and Medium-Sized Enterprises (SMEs) in the Digital Era in Terms of Business Transfer

Variables	Estimate		R^2	Variance	p
	Standard	Unstandardized			
1. Plan for the succession of the business to the successor from an early age and continuously. (TR02)	0.719	1.00	0.52	0.38	***
2. Assess risks to manage the time required for successor development in line with the business strategy. (TR07)	0.662	0.81	0.43	0.34	***
3. Manage the business transfer process in accordance with the clear direction and objectives of successor development. (TR13)	0.636	0.78	0.40	0.36	***
4. Adjust the mindset and align ideas to understand the differences between the successor and the founder. (TR15)	0.706	0.97	0.50	0.38	***
5. Be open-minded, avoid clinging to past successes, and support the successor in their transition planning. (TR17)	0.693	0.96	0.48	0.40	***
6. Recruit professional external executives to join the management team to fill gaps in	0.731	0.96	0.53	0.33	***

Variables	Estimate		R^2	Variance	p
	Standard	Unstandardized			
the succession management system and prepare for future business growth. (TR21)					

***Statistically significant at the 0.001 level

Source: prepared by the authors

From Table 10, The Transformation Component (TR) is measured by 6 indicators, arranged by standardized weight from most to least, as follows: Recruit professional external executives to join the management team to fill gaps in the succession management system and prepare for future business growth (TR21), standardized weight of 0.731; Plan for the succession of the business to the successor from an early age and continuously (TR02), standardized weight of 0.719; Adjust the mindset and align ideas to understand the differences between the successor and the founder (TR15), standardized weight of 0.706; Be open-minded, avoid clinging to past successes, and support the successor in their transition planning (TR17), standardized weight of 0.693; Assess risks to manage the time required for successor development in line with the business strategy (TR07), standardized weight of 0.662; and Manage the business transfer process in accordance with the clear direction and objectives of successor development (TR13), standardized weight of 0.636.

5) Results of the Development of a Business Succession Model for Small and Medium Enterprises (SMEs) in the Digital Era

Based on the analysis of the components of the business succession model for SMEs in the digital era, a comprehensive model can be developed, consisting of four main components and 24 sub-components:

1) Technology and Innovation. This component includes six sub-components:

(1) Studying, planning, and considering switching costs when adopting new technology. (IT22)

(2) Analyze issues arising from past operations to design new approaches and methods to address these issues. (IT18)

(3) Establish a unit responsible for the organization's technology and innovation to

systematically develop and monitor changes in innovation and technology. (IT13)

(4) Design and select appropriate technologies to enhance the work efficiency of employees and successors. (IT07)

(5) Allocating a technology budget to support the learning and performance of employees and successors in alignment with the business environment.(IT08)

(6) Use innovative virtual reality (VR) technology to help design products or services to be consistent with current technological advancements. (IT04).

2) Collaboration Network The collaboration network component comprises six sub-components:

(1) Participate in training with businesspeople in the same group. (CN16).

(2) Research, plan, and collaborate with networks to find sustainable business practices.(CN25)

(3) Study master plans, organizations, and example projects. Tools for encouraging and assisting networking related to effective networking. (CN14)

(4) Regularly attend network management training courses from the organization's or network leaders' core courses.(CN17)

(5) Send personnel to receive training to act as network brokers. (CN15).

(6) Build a marketing intelligence network with business groups. (CN10)

3) Knowledge Management

This component consists of six sub-components:

(1) Facilitate successors' access to and effective use of knowledge.(KM03)

(2) Develop operational manuals and best practices in the organization's knowledge database, making them easily accessible.(KM02)

(3) Provide collaborative workspaces to foster knowledge exchange.(KM18)

(4) Process social media data to analyze consumer behavior.(KM09).

(5) Create a community of practitioners to share knowledge, skills, and in-depth experiences.(KM22)

(6) Cultivate a learning organizational culture.(KM14).

4) Business Transfer

The business transfer component includes six sub-components:

(1) Recruit professional external executives to join the management team to fill gaps in the succession management system and prepare for future business growth.(TR21)

(2) Plan for the succession of the business to the successor from an early age and continuously.(TR02)

(3) Assess risks to manage the time required for successor development in line with the business strategy.(TR07)

(4) Be open-minded, avoid clinging to past successes, and support the successor in their transition planning.(TR17)

(5) Assess risks to manage the time required for successor development in line with the business strategy.(TR07)

(6) Manage the business transfer process in accordance with the clear direction and objectives of successor development. (TR13)

These main components and sub-components of the business succession model for SMEs in the digital era are visually represented in the model diagram shown in Figure 3.

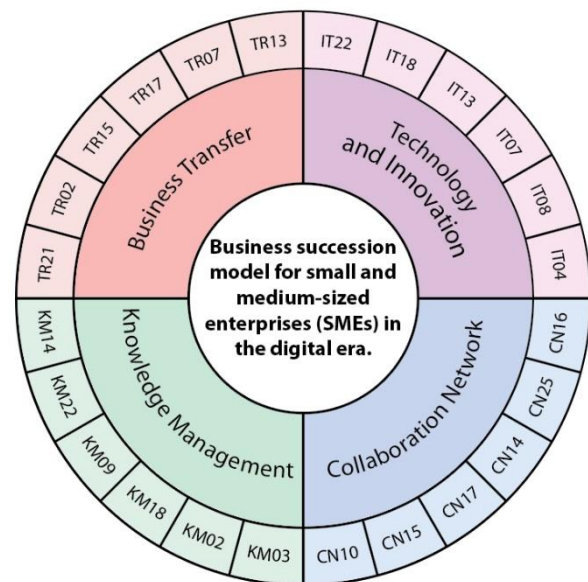


Fig. 3: Business Succession Models of Small and Medium Enterprises (SMEs) in the Digital Era
Source: prepared by the authors

5 Discussion and Conclusion

The key are as, such as technological innovation, knowledge management, network collaboration, and business transfer, were highlighted in the study on business succession (SMEs) in the digital era.

Technology and Innovation

The implementation of virtual reality (VR) to develop products and services that match modern technological trends emerged as the key element. The highest priority involved allocating a technology budget to support employee and

leadership development. VR technology helps businesses create virtual environments that copy real-life situations. This helps them see how products will look before production, fix mistakes early, and improve customer satisfaction. This supports Cavanaugh's [42] claim that digital media such as multimedia, audio, and virtual tools can reduce barriers of access, time, and cost, especially for those who cannot attend in person. These findings agree with [13], who found a strong positive link between information technology and sustainable competitive advantage. Similarly, [43] found that greater innovation significantly enhances a company's market position.

Technological innovation, especially in improving product quality and reducing internal costs, is key to maintaining competitiveness, [44]. The research results found that the assessment of technology and innovation that was consistent with the organization was a factor affecting the success of technology and innovation adoption. Moreover, [45] highlighted that SMEs play a vital role in the social economy, and their innovation activities make a significant contribution to building a national innovation system. The results indicated that the impact of technological innovation (TI) and business model design (BMD) can vary depending on the size of the SME. These findings highlight the need for SMEs to coordinate technological innovation and business model design to maximize innovation outcomes and offer practical guidance for the development of effective innovation strategies in SMEs.

Knowledge Management

The most important aspect of knowledge management was developing operational manuals and best practices stored in an easy-to-search organizational knowledge database. The top-rated item was creating a dedicated knowledge management unit to support data-driven decision-making. These findings suggest that effective knowledge management depends not only on clear procedures and manuals but also on a centralized database managed by a specific team.

This is consistent with [46], who found that systematic knowledge management greatly improved employee performance at Thai Airways International. Similarly, [47] demonstrated that systematic knowledge management strategies — encompassing knowledge gathering, storage, and sharing mechanisms — substantially enhance organizational performance, both in public institutions and corporate settings. [48] it was also observed that communication tools and processes

enhance knowledge management and promote a collaborative learning environment. Moreover, [17] emphasized that knowledge sharing and resolving intergenerational conflicts are essential for the long-term sustainability of family businesses. This is in accordance with a study by [49] claiming that fundamental digital skills are essential components of technological competency in the digital industry, and a study by [50] stating that knowledge of laws and regulations relevant to job functions is a vital component of the business management competencies required of international airport executives for business competitiveness in the aviation industry in the digital era.

Network Collaboration

Key aspects of network collaboration include supporting successors' work-life balance, gaining recognition from existing business partners, and updating organizational rules that may block success. Building collaboration networks is necessary for SMEs operating in competitive markets because both internal and external connections can make the business sustainable.

This is consistent with [51], who explained that entrepreneurship, business networks, and innovation boost competitive advantage. The business environment also influences how networks develop, which then affects overall performance. Moreover, [15] claimed that the participation of family members plays a vital role in the long-term survival of family businesses. Innovation capability serves as a partial mediator in this relationship, emphasizing how strong networks support both innovation and sustainability.

Business Transfer

Successful business transfer depends on strong governance to protect business secrets and start succession planning early. It is also important to encourage adaptability, avoid relying on past successes, and support the development of successors.

These practices are consistent with [52], who demonstrated that successful business transfer in family SMEs requires a systemic rather than individualistic approach — encompassing structured succession planning, clearly defined role transitions, and alignment of attitudes and social norms between founders and successors to prevent postponed or traumatic succession outcomes. This is consistent with research findings by [49] explaining that communication, problem-solving, and management skills are crucial components of technological competency in the digital industry

6 Suggestions

The proposed succession model for small and medium-sized enterprises (SMEs), especially family businesses, should take a comprehensive and systematic approach. This involves not only basic succession planning but also proper preparation of successors through education, hands-on experience, and direct participation in business operations. The study also emphasizes the importance of maintaining strong family relationships to support long-term business sustainability. Based on the findings, the following recommendations are proposed:

1) Adjusting the Succession Model with Business Objectives

Entrepreneurs should develop a clear understanding of the key components of the proposed succession model and analyze how these align with their business goals, mission, and available resources. Achieving this alignment helps ensure that the model can be implemented effectively and tailored to the specific circumstances of each enterprise, increasing its practical value.

2) Investing in Technology to Support Successor Development

To remain competitive in a digital economy, SMEs should invest in technology and innovation. Establishing a specialized unit to manage technological development and support the learning and performance of employees and successors is strongly recommended, as it enables the organization to effectively manage ongoing technological changes and stay aligned with the evolving business environment.

3) Strengthening Collaborative Business Networks

The results indicate that collaborative networks play an important role in the succession process. Family businesses should develop marketing intelligence networks and build partnerships with other organizations and key stakeholders. Successors should also be encouraged to take part in strategic planning, understand the organization's structure, and engage in practical projects. In addition, enterprises should adopt tools and strategies that support both internal and external collaboration for long-term sustainability.

4) Enhancing Knowledge Management Systems

A key element of succession is the effective transfer of organizational knowledge, including both historical information and plans. SMEs should create a knowledge management unit to support data-driven decision-making. This unit should organize operational guidelines, manuals

and best practices into an accessible, well-organized database. It is also important to create a culture that encourages timely and fair knowledge sharing among members of the organization.

5) Early and Continuous Successor Development

The planning of business succession should start early and be maintained as an ongoing process. SME businesses are encouraged to build awareness and interest in the enterprise among the next generation from a young age and provide an environment that supports their growth. Founders should stay flexible and avoid relying on past practices. Successors should be given opportunities to evaluate risks, engage in strategic planning, and develop competencies that align with the enterprise's long-term goals.

References:

- [1] (in Thai) Stock Exchange of Thailand. (2023). *Family Businesses in the Thai Stock Market: Role and Growth*. Stock Exchange of Thailand. (ธุรกิจครอบครัว (family business) ในตลาดหุ้นไทย: บทบาทและการเติบโต), [Online]. <https://www.set.or.th/th/about/mediacenter/insights/article/305-familybusiness> (Accessed Date: September 24, 2025).
- [2] Sribunrueng, P., Pngnirund, B., Techarattanased, N., Sin-Akorn, P., & Sawasdiruk, J. (2022). The model for the success of family business succession in Bangkok and its metropolitan. *International Journal of Health Sciences*, 6(S6), 257–271. <https://doi.org/10.53730/ijhs.v6nS6.9498>.
- [3] Chirapanda, S. (2020). Identification of success factors for sustainability in family businesses: Case study method and exploratory research in Japan. *Journal of Family Business Management*, 10(1), 58–75. <https://doi.org/10.1108/JFBM-05-2019-0030>.
- [4] PricewaterhouseCoopers. (2024). *Global entertainment and media outlook 2019–2023*, [Online]. <https://www.pwc.in/industries/entertainment-and-media/global-entertainment-and-media-outlook-2019-2023.html> (Accessed Date: November 28, 2025).
- [5] (in Thai) PwC Thailand. (2025). *12th Global Family Business Survey, Thailand Edition*, [Online]. <https://www.pwc.com/th/en/services/epb/family-business-survey-2025-th.html> (Accessed Date: November 28, 2025).

- [6] Siam Commercial Bank. (2024). *Digital Bank with Human Touch: Annual report 2023*, [Online]. <https://www.scb.co.th/content/media/investor-relations/documents/financial-information/en/2023/annual-report/2023-annual-report-en.pdf> (Accessed Date: November 28, 2025).
- [7] Office of Small and Medium Enterprises Promotion (OSMEP). (2024). *Situation Report of MSMEs in 2023*. Office of Small and Medium Enterprises Promotion. https://www.sme.go.th/uploads/file/20240520095833_Situation_ReportofMSMEs_in_2023.pdf?utm_source=chatgpt.com (Accessed Date: November 28, 2025).
- [8] Sribunrueng, P., Pngnirund, B., Techarattanased, N., Sin-Akorn, P., & Sawasdiruk, J. (2022). The model for the success of family business succession in Bangkok and its metropolitan. *International Journal of Health Sciences*, 6(S6), 257–271. <https://doi.org/10.53730/ijhs.v6nS6.9498>.
- [9] Qiu, H., & Freel, M. (2020). Managing family-related conflicts in family businesses: A review and research agenda. *Family Business Review*, 33(1), 90–113. <https://doi.org/10.1177/0894486519893223>.
- [10] Soluk, J., Miroshnychenko, I., Kammerlander, N., & De Massis, A. (2021). Family influence and digital business model innovation: the enabling role of dynamic capabilities. *Entrepreneurship Theory and Practice*, 45(4), 867–905. <https://doi.org/10.1177/1042258721998946>.
- [11] PricewaterhouseCoopers. (2019). *Global entertainment and media outlook 2019–2023*, [Online]. https://www.pwc.in/industries/entertainment-and-media/global-entertainment-and-media-outlook-2020-19-23.html?utm_source=chatgpt.com
- [12] Fernandes, A. A. R. (2018). The mediation effect of customer satisfaction in the relationship between service quality, service orientation, and marketing mix strategy on customer loyalty. *Journal of Management Development*, 37(1), 76–87. <https://doi.org/10.1108/JMD-12-2016-0315>.
- [13] Bazrkar, A. (2020). The investigation of the role of information technology in creating and developing a sustainable competitive advantage for organizations through the implementation of knowledge management. *Journal of Spatial and Organizational Dynamics*, 8(4), 287–299, [Online]. https://journals.cinturs.pt/index.php/jtsw/article/view/249?utm_source=chatgpt.com.
- [14] Rafi M, JianMing Z, Ahmad K (2020), Digital resources integration under the knowledge management model: an analysis based on the structural equation model. *Information Discovery and Delivery*, 48(4), 237–253. <https://doi.org/10.1108/IDD-12-2019-0087>.
- [15] Ahmad, S., Omar, R., & Quoquab, F. (2019). Family firms' sustainable longevity: The role of family involvement in business and innovation capability. *Journal of Family Business Management*, 11(1), 86–106. <https://doi.org/10.1108/JFBM-12-2019-0081>.
- [16] Nawangsari, L. C., & Sutawidjaya, A. H. (2019). Does organizational culture and digital technology influence behavioral innovation in the millennial generation? *B-SPACE*. <https://doi.org/10.4108/eai.26-11-2019.2295156>.
- [17] Dewi, L., & Ardyana, E. (2020). The critical role of knowledge sharing activity and intergenerational conflict solution to create family business sustainability: Intergeneration relationship quality as a moderating. *International Journal of Accounting, Finance and Business*, 5(30), 80–89, [Online]. <https://academicinspired.com/ijafb/article/view/266>.
- [18] Hasan, M. (2021). Positive psychological capital, market orientation, and business performance of family business in the culinary sector: A research study. *Economics and Sociology*, 13(3), 97–112. <https://doi.org/10.14254/2071-789X.2020/13-3/7>.
- [19] Hillebrand, S. (2018). Innovation in family firms – A generational perspective. *Journal of Family Business Management*, 9(2), 126–148. <https://doi.org/10.1108/JFBM-04-2018-0011>.
- [20] Chesbrough, H. (2003). *Open innovation: Researching a new paradigm*. Oxford University Press. <https://doi.org/10.1093/oso/9780199290727.001.0001>.
- [21] Hughes, R. L., Ginnett, R. C., & Curphy, G. J. (2015). *Leadership: Enhancing the lessons of experience* (8th ed.). McGraw-Hill Education. ISBN-13: 9780077862404.

- [22] Trott, P. (2012). *Innovation management and new product development* (5th ed.). Pearson Education. ISBN-13 (5th ed.): 9780273736561.
- [23] Kuczmarski, T. D. (1996). *Innovation: Leadership strategies for the competitive edge*. NTC Publishing. ISBN-10: 0844233242.
- [24] Ashton C, Morton L (2005). Managing talent for competitive advantage: Taking a systemic approach to talent management. *Strategic HR Review*, 4(5), 28–31. <https://doi.org/10.1108/14754390580000819>.
- [25] Fagerberg, J., Mowery, D. C., & Nelson, R. R. (Eds.). (2005). *The Oxford handbook of innovation*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199286805.001.0001>.
- [26] Utterback, J. M., & Suarez, F. F. (1993). Innovation, competition, and industry structure. *Research Policy*, 22(1), 1–21. [https://doi.org/10.1016/0048-7333\(93\)90030-L](https://doi.org/10.1016/0048-7333(93)90030-L).
- [27] Schilling, M. A. (2008). *Strategic management of technological innovation* (2nd ed.). McGraw-Hill Education. ISBN-13: 978-0071259422.
- [28] Evan, W. M. (1966). *Organization theory and organization effectiveness: An exploratory analysis*. In S. L. Spray (Ed.), *Organization effectiveness: Theory, research and utilization*. Kent State University. ISBN: 0-87338-183-1.
- [29] Damanpour, F. (1987). The adoption of technological, administrative, and ancillary innovations: Impact of organizational factors. *Journal of Management*, 13(4), 675–688. <https://doi.org/10.1177/014920638701300408>.
- [30] Kimberly, J. R., & Evanisko, M. J. (1981). Organizational innovation: The influence of individual, organizational, and contextual factors on hospital adoption of technological and administrative innovations. *Academy of Management Journal*, 24(4), 689–713. DOI: 10.2307/256170.
- [31] Damanpour, F. (1996). Organizational complexity and innovation: Developing and testing multiple contingency models. *Management Science*, 42(5), 693–716. <https://doi.org/10.1287/mnsc.42.5.693>.
- [32] Brunswicker, S., & Vanhaverbeke, W. (2015). Open innovation in small and medium-sized enterprises (SMEs): External knowledge sourcing strategies and internal organizational facilitators. *Journal of Small Business Management*, 53(4), 1241–1263. <https://doi.org/10.1111/jsbm.12120>.
- [33] Ramdani, B., Raja, S., & Kayumova, M. (2022). Digital innovation in SMEs: A systematic review, synthesis and research agenda. *Information Technology for Development*, 28(1), 56–80. <https://doi.org/10.1080/02681102.2021.1893148>.
- [34] Ratchathip Uppathampracha. (2016). Competencies of Human Resources Professional. *WMS Journal of Management Walailak University*, 8(2), 122–135, [Online]. <https://so06.tci-thaijo.org/index.php/wms/article/view/184381> (Accessed Date: November 30, 2025).
- [35] Thitiphan Prasomsap. (2015). *Family business succession strategies for sea fish traders in Klaeng District, Rayong Province* [Master's thesis, Silpakorn University]. <https://sure.su.ac.th/xmlui/handle/123456789/19776>.
- [36] Longenecker, J. G., & Schoen, J. (1978). Innovation and Small Business. *American Journal of Small Business*, 3(2), 1-2. <https://doi.org/10.1177/104225877800300201>.
- [37] Hair, J. F., Babin, B. J., Anderson, R. E., & Black, W. C. (2019). *Multivariate data analysis (8th ed.)*. Cengage Learning. ISBN: 9781473756540.
- [38] Office of Small and Medium Enterprises Promotion. (2024). *Situation report of MSMEs in 2023*. Office of Small and Medium Enterprises Promotion, [Online]. https://www.sme.go.th/uploads/file/20240520-095833_Situation_ReportofMSMEs_in_2023.pdf (Accessed Date: November 30, 2025).
- [39] Comrey, A. L., & Lee, H. B. (2013). *A first course in factor analysis, 2th Edition*. Psychology Press. ISBN-10: 1317844068.
- [40] Babbie, E. R. (2005). *The basics of social research, 3th Edition*. Thomson Wadsworth. ISBN-10: 0534630367.
- [41] Hair, J. F., et al. (2019). *Multivariate data analysis (8th ed.)*. Cengage.
- [42] Cavanaugh, J. C. (2006). *How to make an object-based museum more interactive*, [Online]. <http://www.rtsd.mi.th/section/book/> (Accessed Date: November 30, 2025).
- [43] Oliveira, P. H., & Fernandes Terence, A. C. (2017). Innovation practices in small technology-based companies during

- incubation and post-incubation periods. *Innovation & Management Review*, 15(2), 174–188. <https://doi.org/10.1108/INMR-02-2018-007>.
- [44] Taweesak Roopsing, Naranchala Khumlaitong and Ammara Dokmai. (2025). A Model for Replacing Human Labor with Industrial Robots in the Industrial Production Sector to Promote Sustainable Growth. *Decision Science Letters*. <https://doi.org/10.5267/j.dsl.2025.10.009>.
- [45] Qu, S., Shi, H., Zhao, H., Yu, L., & Yu, Y. (2021). Research on enterprise business models and technology innovation based on artificial intelligence. *EURASIP Journal on Wireless Communications and Networking*, 2021(145), 1–13. <https://doi.org/10.1186/s13638-021-02025-y>.
- [46] Lapha Ongtaweekiat, & Kritsada Muhammad. (2017). *Knowledge management factors affecting the performance of personnel at Thai Airways International Public Company Limited*. 12th Graduate Research Presentation Conference, Rangsit University, 320–332, [Online]. <https://rsujournals.rsu.ac.th/index.php/rgrc/article/view/657> (Accessed Date: November 30, 2025).
- [47] Asiedu, N. K., Abah, M., & Dei, D. G. J. (2022). Understanding knowledge management strategies in institutions of higher learning and the corporate world: A systematic review. *Cogent Business & Management*, 9(1), Article 2108218. <https://doi.org/10.1080/23311975.2022.2108218>.
- [48] Abban, R., & Nyarko, D. A. (2022). Understanding knowledge management strategies in institutions of higher learning and the corporate world: A systematic review. *Cogent Business & Management*, 9(1), <https://doi.org/10.1080/23311975.2022.2108218>.
- [49] Inrun, B., Wisuthiphat, S., Boonyasopon, T., & Boonyasopon, T. (2024). Developing Model of Digital Technicians Competencies in Digital Industries. *Journal of Educational and Industrial Innovation*, 36(129), 24–34. <https://so09.tci-thaijo.org/index.php/jted/article/view/3945>
- [50] Suchadee Thamrongsuk. (2020). *Development of competency model of international airport administrators for competition in the digital age aviation industry [Doctoral dissertation]*. King Mongkut's University of Technology North Bangkok, [Online]. https://ph01.tci-thaijo.org/index.php/kmutnb-journal/article/view/251287?utm_source=chatgpt.com (Accessed Date: November 30, 2025).
- [51] Montip Bamrunakit, & Noppadol Phanphanit. (2021). A study of the business environment, entrepreneurship, and determinants affecting the competitive advantage of enterprise networks in the Lampang ceramics industry. *Journal of Buddhist Social Sciences and Anthropology*, 6(2), 375–393. <https://so04.tci-thaijo.org/index.php/JSBA/article/view/247468>
- [52] Ferrari, F. (2023). The postponed succession: An investigation of the obstacles hindering business transmission planning in family firms. *Journal of Family Business Management*, 13(2), 412–431. <https://doi.org/10.1108/JFBM-09-2020-0088>

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The authors equally contributed to the present research, at all stages from the formulation of the problem to the final findings and solution.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received for conducting this study.

Conflict of Interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.

Creative Commons Attribution License 4.0 (Attribution 4.0 International, CC BY)

This article is published under the terms of the Creative Commons Attribution License 4.0 https://creativecommons.org/licenses/by/4.0/deed.en_US