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The Impact of Technological Factors on Small and Medium Enterprise Performance: The Mediating Role of the Activity-Based Costing (ABC) System

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Abstract: The Thai government is unable to independently generate economic growth and provide employment opportunities for the entire population. The creation of employment opportunities for citizens by businesses founded by private individuals and companies not only aids the government, but also contributes to the growth and progress of a nation's economy. The majority of the nations around the world have demonstrated that Small and Medium-sized Enterprises (SMEs) have become a pivotal factor in creating employment chances in local communities, as well as contributing to the economic expansion of countries. This research aims to analyse the factors influencing the performance of Small and Medium-sized Enterprises in Thailand. The analysis uncovered that technological factor had a significant, positive effect on the functioning of SMEs. This research makes a significant contribution to the existing body of literature by providing a valuable theoretical framework. This research provides both theoretical and practical contributions to Small and Medium Enterprises, governments, and policy-makers. Going forward, this research will contribute to the existing corpus of literature. The further analysis of the outcomes of the research demonstrated that the hypotheses H1, H2, H3, and H4 were all statistically significant and had positive findings. A survey instrument was utilized to obtain information for the research from a multitude of small to medium-sized businesses in Thailand. The data have been subjected to analysis, and a SPSS AMOS 26 based measurement model has been constructed, used AMOS 26 to test the results of the hypotheses. The research results indicate that the model assessment is in accordance with the features of the information and the inquiry variables. Thai SMEs can benefit through a detailed exploration of the risks, cost control, and the resultant competitive advantages, so as to ameliorate the exposure to such risks and take advantage of the available opportunities.

Key words: Technological factor, Small and Medium-Sized Enterprises (SMEs), Business performance. Sustainable organization.

INTRODUCTION

The efficacy of small and medium-sized enterprises (SMEs) has been the focus of much recent scholarly work. (Lutfi, 2022; Smerecnik & Andersen, 2011). It is viewed as a means of stimulating economic growth, as a driver for maintaining economic progress, and as a major provider of employment, thus making it a fundamental factor for the economy. (Kareem et al., 2021; Petzold et al., 2019). It is impossible for government alone to be responsible for economic development and the creation of employment opportunities for the entire population of every nation. (Andarwati et al.,

2020). The government is assisted by both individual and corporate entrepreneurs in creating employment opportunities for the citizens and in promoting economic advancement and growth of the nation. (Jeong & Chung, 2022; Sin et al., 2016). The significance of small and medium-sized enterprises (SMEs) in contributing to economic development through supplementing governmental initiatives is undeniable, and it is particularly noteworthy in cases when the performance of SMEs is praiseworthy (Sin et al., 2016). (Albassami et al., 2019; Udriyah et al., 2019). Due to the lack of a widely accepted definition, the concept of SME is one that has been variously interpreted by scholars. (Al Badi, 2018; Khalili & Asmawi, 2012). The definitions of a country typically center on its economic, social, and cultural features and are commonly based on the turnover, capital resources, size, labor abilities, ownership, or legitimate position of the enterprise. (Al Badi, 2018; Chege & Wang, 2020). The general criteria used to ascertain whether an entity is considered to be a Small and Medium-sized Enterprise (SME) include the number of employees, the volume of sales, and the level of investment. The European Commission characterizes Small and Medium-sized Enterprises (SMEs) as businesses with 10-49 employees, and Medium-sized Enterprises (MSEs) as businesses with 50-250 employees. (Ju et al., 2013; Purwanto, 2022). Small and medium-sized enterprises (SMEs) have a major role to play in the worldwide economy, particularly in the case of developing nations. (Lo et al., 2016; Petzold et al., 2019). Within Thailand, the delineation of small and medium enterprises (SMEs) is based on Cabinet Resolution No. 22 of 2016, which categorizes these businesses according to their number of employees, total assets, and annual revenue. (Alshirah et al., 2021; Nuseir, 2018). It can be stated that in Thailand, small enterprises are those that have a yearly turnover of below two million dirhams and a maximum of fifty full-time personnel, while medium-scale businesses refer to those that garner a revenue between two million and two hundred million dirhams, with a workforce comprising of fifty to two hundred full-time employees. (Gupta & Mirchandani, 2018; Muhammad Siddique, 2015). Nevertheless, the classification of small and medium-sized enterprises in and Abu Dhabi differs. (SMEs). In 2013, an edict published on June 30th established the definition of a Small and Medium-sized Enterprise (SME) in Abu Dhabi. Employee size is utilized as a criterion for defining micro, small, medium and large enterprises (M/SMEs): a firm with less than five employees is classified as micro, five to nineteen employees is classified as small, twenty to forty-nine employees is classified as medium, and more than fifty employees is categorized as large. (Bin & Hui, 2021; Yaseen & Marwan, 2016). It is estimated that approximately 350,000 small- and medium-sized businesses are operating within the national economy. (Basri & Siam, 2019; Thaha et al., 2021). It has been observed internationally that Small and Medium Enterprises (SMEs) constitute over 95% of businesses, and they are responsible for approximately 60% of private sector employment. (Ng & Hamilton, 2021). Lythreatis et al. (2019) asserted that almost all of the business population globally comprised of SMEs, amounting to 99.9%. According to research, small enterprises make up almost 95% of all private businesses in Thailand, with the SME sector employing a significant 86% of the labour force in the country. (Hamad & Leslie, 2013; Temouri et al., 2022). comprises approximately 45% of all Small and Medium-sized Enterprises (SMEs) in Thailand, Abu Dhabi accounts for approximately 32%, and Sharjah for approximately 16%. (Farouk Abdel Al et al., 2017; Kashmoola & Ahamat, 2021). SMEs play an integral role in stimulating economic growth and promoting job creation. (Almtiri & Miah, 2019; AlSharji et al., 2018). SMEs play a pivotal role in the majority of nations globally, and their contribution towards the creation of employment opportunities in their local communities and the advancement of their respective economies is considerable. (Al Matroushi et al., 2018; Alshehhi & Kasim, 2020; Polas et al., 2021). Many countries have restructured their economic expansion and improvement tactics to concentrate on small and medium-sized businesses (SMEs) in an effort to lessen their dependency on foreign direct investment. (Alzaabi & Omar, 2021; Ghandour, 2018; Zacca et al., 2017). Despite this, the notion of Small and Medium-sized Enterprises (SMEs) is

relative and ever-changing; therefore, there is no global standard for SMEs. Each nation generally formulates definitions that are reflective of the demands of public policy, the stage of economic advancement, the part SMEs are assumed to take in the economic progression of that nation, and the aid program designed to attain the desired outcome. (Bhatti, 2017; Sherif et al., 2019; Shrivastava & Riaz, 2022). It has been suggested in scholarly work that small- and medium-sized enterprises are the major driving force behind the production of new products and technologies. (AlMujaini et al., 2021; Alsharji et al., 2017). The continued difficulty of identifying and promoting the elements that will enthuse and incentivize SMEs for the advancement of economic expansion and growth in the present competitive business atmosphere is a challenge for all those involved, including business stakeholders, the government and other stakeholders. It is thus imperative to boost the performance of Small and Medium Enterprises in order to encourage their growth. (Alkaabi, 2021; Bakhouche et al., 2020; Elbeltagi et al., 2013; Siddique, 2014). Approximately 86% of Thailand's workforce is employed in the Small and Medium-sized Enterprises (SMEs) sector, with this sector additionally accounting for nearly 50% of the country's industrial output. (Abudaqa et al., 2020; Ajmal et al., 2021; Ghak & Zarrouk, 2022; GHANEM & Hamid, 2020). It can be said with conviction that the promotion of small and medium-sized enterprises (SMEs) in Thailand is seen as a way of cultivating a dynamic and multifaceted economic landscape. (Caiazza, 2016; Kumar, 2014; Zaidan, 2017; Zarrouk et al., 2020). The primary aim of this research is to explore the determinants of SMEs' performance in Thailand. This research aims to explore the correlation between technological components and the performance of Small and Medium Enterprises in Thailand. This research seeks to explore the connection between technological components and the performance of Small and Medium-Sized Enterprises (SMEs) in Thailand. This study seeks to explicate the correlation between the implementation of ABC systems and the performance of SMEs in Thailand. This research seeks to discern whether the implementation of the ABC system serves as a mediator in the connection between technological elements and Small and Medium Enterprise performance in Thailand. The aim of this investigation is to analyze whether the implementation of an ABC system serves as a mediator for the connection between Small and Medium Enterprises (SMEs) and their performance in Thailand. This study offers a unique contribution to the existing body of knowledge with respect to the theoretical, contextual, practical, and methodological considerations addressed in its background and problem statement. The primary objective of this research is to supplement the existing literature on the performance of small and medium-sized enterprises (SMEs) in Thailand, particularly in and Abu Dhabi, by expanding it. This study furthered scientific understanding by utilizing ABC adoption as a mediator to add to the existing corpus of knowledge. This concept has not frequently been utilized in the realm of SME research and management research, thereby addressing a current research lacuna in this field.

Literature Review and Theoretical Background

Technological Factor and SME Performance

The contextual factors that are present can have a bearing on both the enabling and constraining effects in the operational domains of the organization. (Jeong & Chung, 2022; Petzold et al., 2019; Smerecnik & Andersen, 2011). The milieu of an organization is comprised of the interplay between the physical and social elements that affect the decision-making process of the organization. (Andarwati et al., 2020; Lutfi, 2022). The external environment in which an organization functions can either facilitate or impede its progress, depending on the fluctuations in the business ecology. (Jeong & Chung, 2022; Lo et al., 2016; Zarrouk et al., 2020). Hence, the business environment provides a vantage point to recognize potential market risks and chances to be taken into consideration and acted upon by SMEs and other corporations. (Ju et al., 2013; Muhammad Siddique, 2015; Tirupathi et al., 2020). In the modern age, businesses have to contend with one of the most varied milieus, making it a notable challenge for organizations. (Ju et al., 2013; Kareem et al., 2021).

Organizations are attempting to reduce the negative effects of price wars and cost efficiency drives, while simultaneously seeking to capitalize on new opportunities in the market, in order to augment their performance. (Ghak & Zarrouk, 2022; Kareem et al., 2021; Tirupathi et al., 2020). In the literature, the business environment and the associated factors are articulated in various ways. According to Nuseir (2018), the business environment is subject to rapid changes in market and technology, which pose a risk to product or service processes.It is argued that the ever-evolving technological landscape, coupled with intense competition and the need to meet market demands, have a direct effect on a business' performance. (Murad et al., 2022). Tirupathi et al. (2020) identify three different perspectives in terms of analyzing the business environment. External interruptions to the organization's operations, such as government regulations, suppliers, competitors, and clientele, can affect the performance of individuals within the organization. (Chege & Wang, 2020; Tirupathi et al., 2020). The second viewpoint emphasizes external factors such as complexity, generosity, and sluggishness. The third perspective pertains to the delicacy of making decisions pertaining to various facets. Ju et al. (2013) conducted studies that examined the business environment in terms of the level of competition and the extent of government assistance.Subsequently, competitive forces and governmental aid are deemed to be factors that contribute to the implementation of management accounting innovations and the overall performance of small and medium-sized enterprises. (Chege & Wang, 2020; Nuseir, 2018). The literature has traditionally relied on other factors to explain the power of corporate governance structures, such as economic and social values, stakeholders' collaborations, consumers' and partners' readiness, and external pressure. However, research has demonstrated that competitive pressure and government regulation are far more influential than these other factors. (Alshirah et al., 2021; Caiazza, 2016; Purwanto, 2022).

Activity-Based Costing (ABC) System Adoption and SME Performance

The adoption of the ABC system has been explored in several studies to understand its correlation with the performance of SMEs, particularly in developed countries (Andarwati et al., 2020; Kareem et al., 2021; Lutfi, 2022; Petzold et al., 2019). The scholarly consensus is that SMEs are vital for the growth of a nation and the implementation of ABC can reduce allocation errors and optimize organizational performance (Lutfi, 2022; Nuseir, 2018). This current research endeavors to analyze the effect of ABC adoption on the performance of Small and Medium-sized Enterprises (SMEs) as evidenced by the literature review conducted. Ju et al. (2013) conducted a study in Thailand to evaluate the influence of Activity-Based Costing on organizational performance. : The utilization of ABC's study for cost analysis, cost evaluation and cost strategy in the business realm had a significant influence on both financial and non-financial performance. Mohammed (2019) demonstrated in their investigation that there is a strong correlation between ABC implementation and performance. Jeong and Chung (2022) conducted an investigation into the impact of the ABC implementation on the performance of small and medium-sized enterprises (SMEs). : The model for the investigation was formulated based on the distinctive characteristics of the collaborative culture of SMEs. The results of the inquiry revealed indications that ABC had an impact on the operations of small and medium-sized enterprises in Italy. The research conducted by Bakhouche et al. (2020) demonstrated that the utilization of ABC has a positive effect on the performance of SMEs. The study further concluded that modern cost management techniques, such as Activity-Based Costing (ABC) , play a significant role in impacting the performance of Small and Medium-sized Enterprises (SMEs). Chege and Wang (2020) conducted an evaluation of how the utilization of the ABC application can improve the efficiency of the Chinese manufacturing industry. Their analysis revealed that the implementation of application ABC resulted in an improved organizational performance and an increase in quality production. The work of Bakhouche et al. (2020) demonstrated the use of regression path-analysis to explore the role of management accounts system information in mediating the relationship between

decentralized structure and organizational performance in African countries in the process of development. The results of their research demonstrated the mediatory impact of MAS (e.g. ABC) in improving the direct correlation between decentralized structure and organizational performance. The study conducted by Abudaqa et al. (2020) exploring the effects of ABC adoption on organizational performance within Moroccan firms has confirmed that ABC adoption positively influences organizational performance. Elbeltagi et al. (2013) corroborated the notion that the implementation of ABC had a favorable effect on organizational financial performance. Temouri et al. (2022) built upon previous research and incorporated ABC when examining the relationship between IT and organizational performance in the Iraq context. The results of their empirical analysis demonstrated a positive correlation between Information Technology and organizational effectiveness. The relationship between ABC implementation and the phenomenon under study is partially mediated. Abudaqa et al. (2020) conducted a study in which they examined the mediating role of management accounting system (MAS) in the connection between competition intensity, innovation, and technological factor to organizational performance within the Malaysian context. It was discovered that MAS plays a mediating role between the organizational factors and its performance. The conceptual underpinning of the study is illustrated in Figure 1.

H1. Technological factors have an impact on SME performance.

H2. Technological factors have an impact on ABC system Adoption.

H3. ABC system adoption has an impact on SME performance.

H4. ABC System Adoption mediates the relationship between technological factors and SME performance.

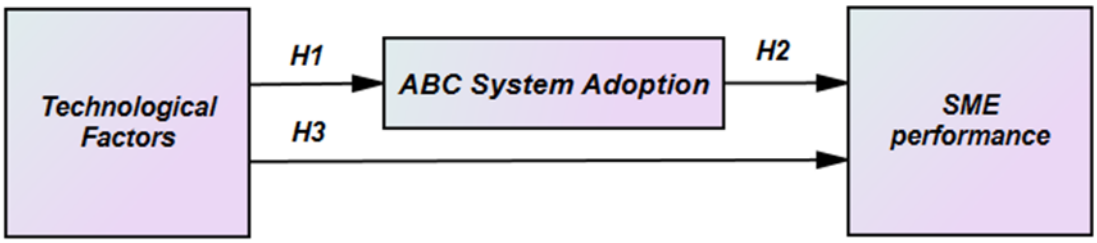

Figure 1. Conceptual Framework

Research Methodology

This study takes a descriptive cross-sectional survey approach. The research utilized a self-administered questionnaire as the data collection tool, thereby accounting for the study's design. This research design was adopted once more in order to assess the respondents' opinions regarding the correlation factors. Furthermore, this research framework enables the collection and analysis of quantitative data using descriptive and inferential statistical techniques. In order to collect data primarily from the proprietors and administrators of small and medium enterprises (SMEs), a cross-sectional research design and survey approach were utilized in this study. This study has deemed it to be an apt approach as it is able to illustrate the correlations between the variables. The use of a cross-sectional design aids in attaining the aims of this investigation and providing a response to the research questions by facilitating the evaluation of the relationship between the independent variable of the research (technology), the mediating variable (adoption of the ABC system), and the dependent variable. (SMEs performance). The population for this study consisted of all Small and Medium-sized

Enterprises (SMEs) in Thailand, and 367 questionnaires were distributed. Eventually, 213 of them were found to be suitable for analysis. Adaptations made from preexisting questionnaires were employed. (Attakora et al., 2014; Kuo, 2016; Sadikoglu & Olcay, 2014; Rahul, Kothari, Dighe, J. Kaconco et al. & Patel, 2019). The measurement items employed were based on the queries formulated by Hosseinifard & Abbasi (2018) and Mansur et al. (2019). Questionnaire items were generated through the utilization of a systematic methodology. An initial data analysis was undertaken with SPSS to evaluate the issues of missing values, outliers, and non-normality of the data. The primary analysis was conducted using SPSS AMOS 26. The measurement model was evaluated by assessing reliability and validity values, and the hypotheses were tested using bootstrapping techniques to determine the significance of the proposed associations.

Results and Findings

The SPSS AMOS 26 software was utilized in order to validate the hypotheses' outcomes. The initial stage in Structural Equation Modelling is to assess the measurement model. The measurement model is depicted in Figure 2, accompanied by the item loadings.

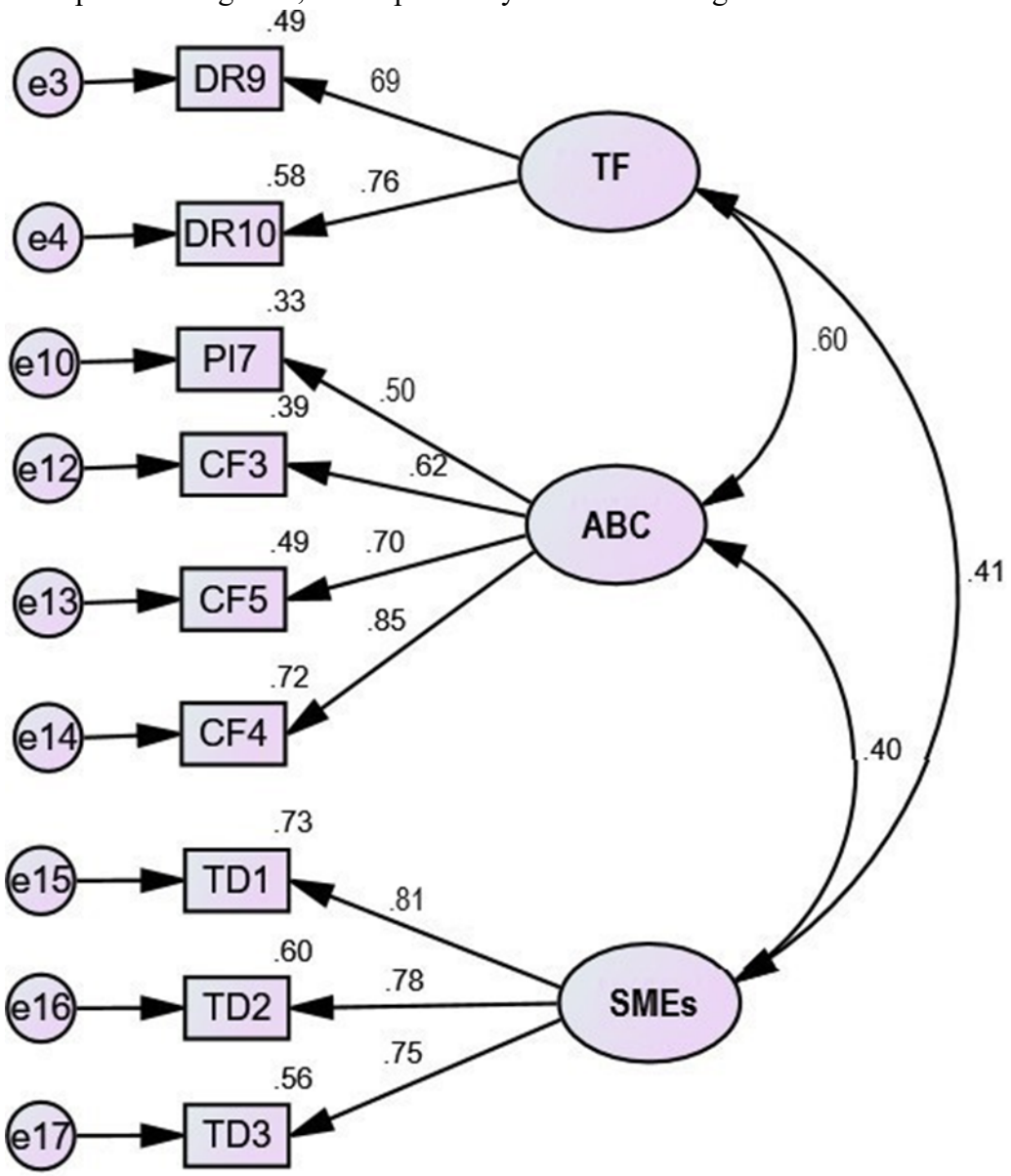

Figure. 2. ABS Mediation Measurement Model Analysis (Factor loadings)

Measurement Model Assessment

To assess the accuracy of the constructs, an analysis using Structural Equation Modelling was performed. The findings demonstrate the existence of two forms of validity: convergent and discriminant. The findings of both validity tests are presented below.

Confirmatory Factor Analysis

The factor loadings were assessed with the application of Cronbach's alpha, composite reliability, and average variance extracted. As suggested by Hair et al. (2014), in order to establish convergent validity, the standardized factor loading for each item needs to surpass 0.5, as it reflects the measurement items' considerable definition of the latent variables. According to the 5% level of significance, the composite reliability needs to exceed 0.7, and the alpha value should be above 0.7, suggesting a high level of internal consistency among the measurement variables. It is permissible to accept AVE scores of 0.4 or higher (Fornell & Larcker, 1981) when the CR is greater than 0.6. The initial criteria were met by all of the values, thereby ensuring convergent validity (as shown in Table 1). The model fit indices indicated that the CMIN/DF was 2.341, the GFI was 0.945, the CFI was 0.951, the TLI was 0.927, the RMSEA was 0.080, and the SRMR was 0.061. The model fit verification was found to be highly satisfactory on at least three measures, which is a commendable result for the analysis. (Hair, et al, 2010). In Figure 2, a diagrammatic representation of the CFA output is presented.

Table 1

Loadings, Cronbach alpha, reliability and convergent validity-TQM mediation measurement model

Items	Loadings	Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Technological factor (TF)		0.690	0.693	0.530
DR 9	0.696			
DR 10	0.761			
Small and Medium-sized Enterprises (SMEs)		0.775	0.782	0.483
TD1	0.854			
TD2	0.776			
TD3	0.748			
System adoption (ABC)		0.830	0.834	0.632
CF3	0.620			
CF4	0.849			
CF5	0.700			
PI7	0.572			

Discriminant Validity

The validity of discrimination was evaluated through the calculation of the heterotrait-monotrait ratio and the corresponding correlation coefficients. In accordance with Henseler et al. (2015), discriminant validity can be attained when the ratios are less than 0.85, as evidenced by Table 2. Accordingly, the discriminant validity of the construct is confirmed.

Table 2

Heterotrait Monotrait Ratio

	BTS	TQM	MPS
SMEs			

ABC	0.763	
TF	0.7764	0.792

A further issue associated with the estimation of models is multicollinearity, which entails a high degree of correlation between two predictive variables. Coefficients with a magnitude of 0.8 are generally regarded as significantly high, which can lead to a confounding effect during the process of model estimation. The highest coefficient score of 0.62 suggests that multicollinearity did not have an adverse effect on the reliability of the estimated model. Consequently, the data was suitable for modelling and estimation.

Structure Equation Modelling

After conducting checks to ensure reliability and validity, the primary model was estimated utilizing Structural Equation Modeling (SEM) in Amos. The results of the model estimation are displayed in Tables 3, 4 and Figure 3. The estimation was based on a Bootstrap Bias-Corrected confidence interval at 95% with a set of bootstrap samples. The results demonstrate both direct (as seen in Table 3) and indirect impacts. (Table 4). The direct effects were employed to assess the direct hypotheses, while the indirect effect was deployed to evaluate the mediation hypothesis. (Hair, Black, Babin, 2010).

Path Model - Bootstrapping Results

Table 3

Direct effect (Hypotheses 1 to 3)

Hypothesis	Relationship	Std β	S. E	CR	P value	Remark
H1	TF →ABC	0.614	0.146	6.032	0.000	Supported
H2	TF → SMEs	0.270	0.175	2.200	0.027	Supported
H3	ABC → SMEs	0.227	0.112	2.038	0.040	Supported

The findings in Table 3 illustrate a statistically significant and positive correlation between TF and ABC ($\beta = 0.614$, $p < 0.001$), thus validating H02. The results of the study showed that the correlation between TF and small- and medium-sized enterprises (SMEs) was positive and statistically significant ($\beta = 0.270$, $p = 0.027$), thus confirming H1; likewise, the relationship between ABC and SMEs was positive and statistically significant ($\beta = 0.229$, $p = 0.040$), thus affirming H1. Therefore, hypotheses H1, H2, and H3 are verified. Figure 3 illustrates the path coefficients.

Table 4

Indirect effect/mediation (Hypothesis H4)

Hypothesis	Relationship	Std β	SE	CR	Confidence Interval		p Value	Conclusion
					Lower Bound	Upper Bound		
H4	MPS →0.271 TQM→ BTS		0.175	1.075	-0.027	0.324	0.085	H04,No Mediation

The mediation analysis reveals that TF has an insignificantly small indirect effect on SMEs as mediated by ABC. Consequently, the analysis determined that ABC was not a mediating factor between TF and SMEs, with a beta value of 0.141 and a p-value of 0.082. Consequently, H4 lacked support. The impact of MPS on BTS is direct and statistically significant ($\beta = 0.270$, $p = 0.027$); this suggests that mediation is not present. Consequently, ABC does not act as a mediator in the association between TF and SMEs.

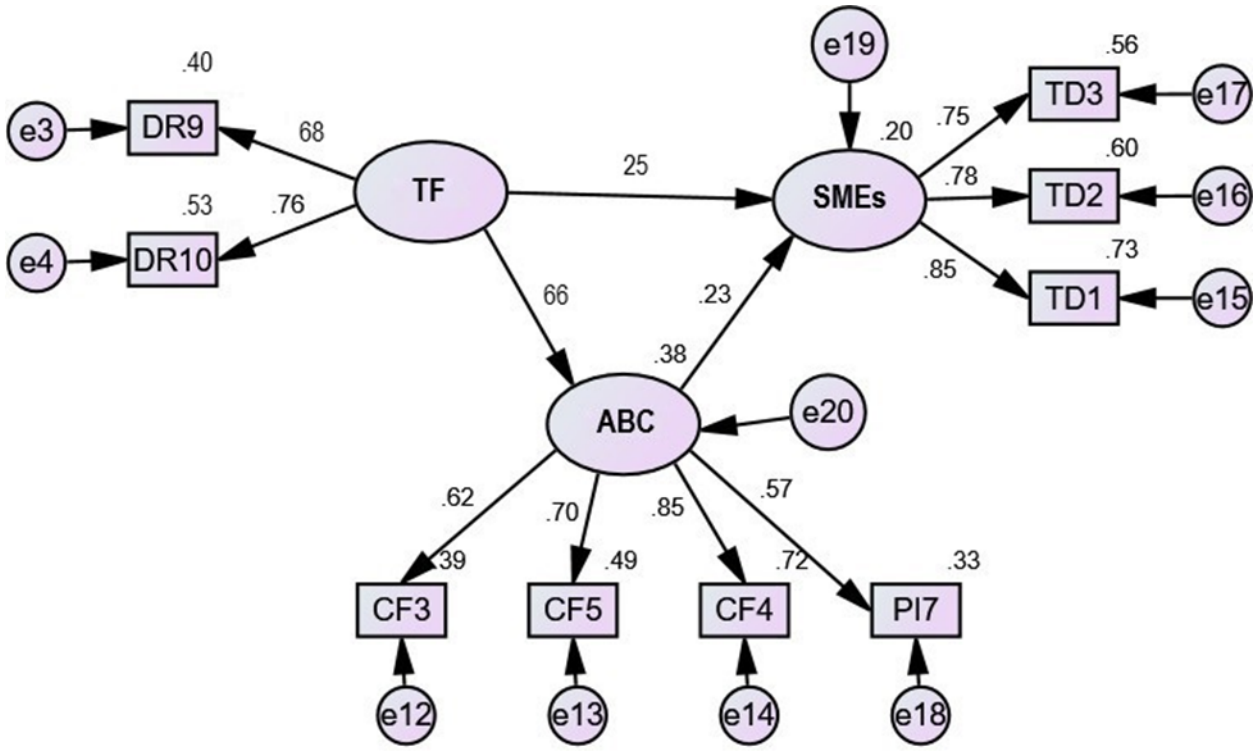

Figure. 3. Path model (Coefficients and model fit values) Structure Equation Model analysis

Finding and Discussion

The findings support the first hypothesis (H1), which proposed a positive effect of the Technological Factor (TF) and Small and Medium-Sized Enterprises (SMEs). It has not yet been proven beyond a reasonable doubt how directly technological factors (TF) and small and medium-sized enterprises (SMES) are related. In an effort to close this gap, the current research has given empirical data on the relationship between the technological factor (TF) and small and medium-sized enterprises (SMES). As a result, the first hypothesis (H1) of this investigation is strongly supported by earlier research.

The second hypothesis (H2) proposed that the technological factor (TF) has a favorable impact on system adoption (ABC) . The results of the data analysis show that the technological factor (TF) significantly influenced system adoption (ABC) in a favorable way. According to Phan et al. (2019), system adoption (ABC) practices in a dynamic manufacturing setting improved performance for businesses offering a wide variety of products. As a result, the second hypothesis (H2) of this investigation is strongly supported by earlier research.

The research has shown a positive and significant relationship between the two variables, supporting the third hypothesis' (H3) claim that system adoption (ABC) has a positive impact on small and medium-sized enterprises (SMES). However, system adoption (ABC) practices are found to promote corporate sustainability in unrelated studies (Nivasini, 2020), and system adoption (ABC) is discovered to be favorably related to manufacturing performance in a different study (Sahoo & Yadav, 2018). H3 therefore agrees with the body of current research.

The fourth hypothesis (H4) proposed the mediating function of system adoption (ABC) , and results show that, at a 95% confidence interval, system adoption (ABC) does not mediate the relationship between the technological factor (TF) and small and medium-sized enterprises (SMES). The hypothesis that system adoption (ABC) partially mediates the relationship between strategy and performance improvement for manufacturing companies was founded on unrelated studies. (Prajogo & Sohal, 2006; Simani et al., 2017). The current research has experimentally shown that system

adoption (ABC) has no mediating influence on the relationship between the technological factor (TF) and small and medium-sized enterprises (SMES) and that there is a direct correlation between the two variables.

The analysis revealed that technological factors had a statistically significant and positive effect on the performance of small and medium-sized enterprises. Prior studies have also indicated that technological elements are pivotal in augmenting a corporation's overall economic efficacy. (Khalili & Asmawi, 2012; Nuseir & Aljumah, 2020; Petzold et al., 2019). This result adds to the already established body of literature. (Andarwati et al., 2020; Gupta & Mirchandani, 2018; Lutfi, 2022; Smerecnik & Andersen, 2011). The present findings corroborate the extant literature on the link between beneficial technological factors and the performance of Small and Medium-sized Enterprises. The framework's supposition is reinforced, that technological factor significantly contributes to the entirety of an organization's competitive advantage, resulting in improved objectives, tasks, and performance (AlMujaini et al., 2021; Caiazza, 2016; Gupta & Mirchandani, 2018; Sidek & Abdulraqeeb, 2022). Technological resources remain the foundation for organizations to gain a competitive edge in the modern epoch. (Al Matroushi et al., 2018; Zacca et al., 2017). The use of technology can be utilized as a means of optimizing organizational capabilities, with human resources forming the primary source of these capabilities (AlMujaini et al., 2021; Smerecnik & Andersen, 2011). The implementation of the Resource-Based View theory of value, which considers rareness, inimitability, and substitutability, would not be possible without the technological capabilities of the organization playing a formative role. (AlMujaini et al., 2021; Zaidan, 2017). Analysis of these discoveries demonstrated that businesses ought to be cognizant of the fact that the implementation and deployment of technology can provide remedies for already-existing organizational issues and introduce new possibilities for increased output, ultimately promoting its effectiveness. (Sherif et al., 2019). This finding suggested that increased organizational performance and achievement are dependent upon the organization's access to technology. (Alkaabi, 2021; Andarwati et al., 2020; Caiazza, 2016). It can thus be concluded that technology has the potential to facilitate information exchange within and beyond organisations, by reducing communication barriers and connecting corporate networks, as a result of which creativity is encouraged and organisational performance is improved (Alshirah et al., 2021; Kareem et al., 2021; Sin et al., 2016). The analysis reveals that environmental factors do not significantly and positively affect the performance of SMEs in the United Arab Emirates. The present conclusion is at odds with the conclusions drawn from some previous literature, e.g. Gupta & Mirchandani (2018), which indicated a significant correlation between environmental factors and organizational performance. This finding is in line with the results of Al Badi (2018) and Ghak and Zarrouk (2022).

Conclusions

The study was founded on four main objectives. The study first investigated the direct relationship between technological factor (TF) and small and medium-sized enterprises (SMEs).the study also looked at the relationship between technological factor (TF) and system adoption (ABC) .third, it examined the connection between system adoption (ABC) and small and medium-sized enterprises (SMEs).finally, the study looked at the role of system adoption (ABC) in mediating the relationship between technological factor (TF) and small and medium-sized enterprises (SMEs).the study concluded that technological factor (TF) had a positive but insignificant effect on small and medium-sized enterprises (SMEs), with higher levels of technological factor (TF) demand requirement resulting in higher small and medium-sized enterprises (SMEs).further, it was concluded that the effect of the technological factor (TF) on small and medium-sized enterprises (SMEs) was not mediated by system adoption (ABC) . finally, the study concluded that the effect of technological factor (TF) on system adoption (ABC) was positive and significant, as was the effect of system adoption (ABC) on

small and medium-sized enterprises (SMEs). as with other studies, the present study has added both theory and practice to what is already known. The study has provided a new conceptual framework for investigating the mediating effect of system adoption (ABC) on the relationship between technological factor (TF) and small and medium-sized enterprises (SMEs). this effect has been demonstrated by the present study, and thus it can serve as an incentive for more research to be conducted in this regard in different developing countries. it was recommended that companies seeking to achieve small and medium-sized enterprises (SMEs) must invest in the technological factor (TF) and system adoption (ABC) programs. this includes the requirement for technological factor (TF) demand and system adoption (ABC) customer focus, people involvement, and continuous improvement. Furthermore, the findings of this study may be useful in helping companies, business owners, practitioners, and decision-makers ensure good organizational performance. simply put, technological factor (TF) and system adoption (ABC) can assist a company in becoming a small and medium-sized enterprise (SMEs). finally, the various national units of the supply chain must coordinate and collaborate to enhance smooth transfusion services. company performance measures such as timely delivery are very critical for saving the lives of patients in need of blood. the company must also invest in process and system management, supplier relationships, and top management to help them achieve the safety levels and full range of products needed for transfusion.

Implications

Theoretical Implications

This research has contributed to the accumulation of knowledge concerning the SMEs' performance in Thailand with regards to the direct correlation between ABC adoption, technological factors, and their impact on SMEs performance, using consistent terminology throughout. These variables have been selected due to the advantage of the platform, which enables the acquisition of useful data and expertise from customers; this aids in the evolution of products or services and has an indirect effect on the overall performance of SMEs in Thailand. This study further contributes to the literature by analyzing the role of ABC adoption as a mediator between the independent variables (the technological factor) and the dependent variable (SME performance). Studies have empirically examined the correlation between technological factors and the adoption of ABC and its effect on the performance of small and medium enterprises in Thailand. Unfortunately, there is limited data pertaining to ABC's role as a mediator. Consequently, this research aims to further explore the mediatory role of ABC adoption in the association between independent variables and dependent variables in the context of SMEs. The results suggest that ABC adoption functions as a facilitator in enhancing the association between the technological factor and the performance of small and medium-sized enterprises (SMEs).

Practical implications

This study has not only made a theoretical contribution but also has practical implications for small and medium enterprises, the government, and policymakers. In this study, it was found that some of the variables have a statistically significant relationship with the performance of small and medium enterprises. It was observed that one of the variables had no significant effect on the performance of small and medium enterprises. Consequently, small and medium enterprises, government bodies, and policymakers should take cognizance of the key factors underlying the success of SMEs in Thailand. The results of the research can provide SME proprietors and executives with a framework to comprehend the components required for enhanced SME performance that will guarantee the long-term success of their business. The research findings demonstrated that technological aspects are the principal determinants of SMEs' performance in Thailand. Organizational elements can ensure productive and facilitative learning for personnel, allowing them to develop knowledge and abilities via training, which consequently affects their performance. If a small to medium enterprise is

technology-oriented, it is more likely to create a workplace environment that is conducive to supporting its employees, encouraging them to explore new possibilities, and granting them with resources that aid in fostering innovation, thus maximising the organization's operations and increasing its success. Consequently, for SME owners and managers to leverage the performance of their SMEs, an integration of the aforementioned elements into their strategic planning is imperative in order to stay competitive within the competitive environment.

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