Contents lists available at Science-Gate

International Journal of Advanced and Applied Sciences

Journal homepage: http://www.science-gate.com/IJAAS.html

The impact of digital technology on the performance of small and medium-sized enterprises

Nga Nguyen Thi Hang [1], Nam Nguyen Kim [2, *]

[1]Faculty of Accounting and Auditing, Ho Chi Minh University of Banking, Ho Chi Minh, Vietnam
[2]Faculty of Business Administration, Ho Chi Minh University of Banking, Ho Chi Minh, Vietnam

ARTICLE INFO

Article history:
Received 10 October 2024
Received in revised form
12 February 2025
Accepted 15 February 2025

Keywords:
Digital technology
Accounting information systems
SME performance
Structural equation modeling
System quality

ABSTRACT

The rapid development of digital technology has significantly influenced organizations, particularly small and medium-sized enterprises (SMEs). This study examines the impact of digital technology on accounting information systems (AIS) and SME performance. Data were collected from SMEs in the private sector of a developing country, such as Vietnam, and analyzed using structural equation modeling (SEM). The findings indicate that digital technology positively affects both SME performance and AIS quality, measured through information quality, service quality, and system quality. Moreover, digital technology not only directly enhances SME performance but also has an indirect effect through AIS. The results highlight that adopting digital technology leads to the greatest improvement in information quality, followed by system quality and service quality, while system quality plays a crucial role in driving SME performance. This study contributes to the theoretical understanding of the relationship between digital technology and AIS while providing practical insights for managers in strategic decision-making.

1. Introduction

With the rapid development of digital technology, businesses must find ways to adapt and integrate it into their operations to create competitive advantages. The development of digital technology impacts various aspects of a business organization. It not only affects internal operations but also influences multiple stakeholders. Digital technology manifests in various modern technological platforms, such as cloud computing, big data analytics, and IoT, facilitating automation and interconnectivity (Ardolino et al., 2018; Nassani et al., 2023). These new technologies assist organizations in collecting data, information, and transforming them into knowledge (Ardolino et al., 2018). As a result, digital technology plays a crucial role in enhancing an organization's information systems, including the accounting information system (AIS). AIS is considered a component of an organization's information system, used to collect, process, store, retrieve, manage, and report financial data (Nassani et al., 2023). Its outcomes are utilized by various stakeholders for different purposes. For business organizations, a successful AIS significantly improves organizational performance (Al-Okaily, 2024).

Accounting information plays a crucial role in supporting investment decisions, evaluating performance, and considering relevant alternatives. AIS provides reliable data for stakeholders to facilitate planning, management control, and decision-making processes. It is essential for managing short-term complexities by offering information to support control and monitoring functions such as cash flow, expenditure, and cost management. Moreover, AIS enables strategic long-term planning in competitive and dynamic organizational environments (Idris and Mohamad, 2017; Lutfi, 2020; Lutfi et al., 2020; Saad et al., 2022; Alrfai et al., 2023; Nassani et al., 2023). The adoption of digital technology is vital for enhancing AIS effectiveness. Digital technologies, including services, platforms, and devices that collect, process, and utilize data, often connect to applications, the Internet, and other devices. These technologies improve organizational performance and enable more efficient resource allocation, unlocking potential for environmental sustainability (Nassani et al., 2023; Shah et al., 2024).

* Corresponding Author.
Email Address: namnk@hub.edu.vn (N. N. Kim)
https://doi.org/10.21833/ijaas.2025.03.005
Corresponding author's ORCID profile:
https://orcid.org/0009-0002-6760-1292

The relationship between digital technology, AIS, and organizational performance has been discussed in several studies in both developed and developing countries (Al-Hattami et al., 2021). However, in developing countries, the adoption of AIS by SMEs remains unclear (Al-Hattami et al., 2021), and this relationship varies depending on the size of the organization, particularly for SMEs. The full utilization of AIS in emerging countries to support business analysis and decision-making is still inadequate (Lutfi, 2020). Although digital technology plays a critical role, SMEs often face delays in adopting it (Lutfi et al., 2022). In the context of a developing country like Vietnam, with the rapid explosion of digital technology, businesses are struggling to overcome the challenges posed by technological development to integrate it into their organizations. In Vietnam, SMEs account for approximately 98% of the total number of businesses, contribute around 40% of the gross domestic product, and generate about 50% of employment (Le et al., 2023). Unlike large enterprises, SMEs lack the human resources, expertise, and financial capital to adopt new technologies into their organizational information systems, such as AIS, to enhance organizational performance. The lack of research on the relationship between digital technology and the success of AIS in improving the performance of SMEs in Vietnam is the reason for conducting this study.

With the advancement of digital technology, it can greatly influence organizational performance. At the same time, it supports the development of AIS, making them more complete and effective, which in turn enhances organizational performance (Al-Hattami et al., 2021). SMEs, instead of relying on traditional methods, are encouraged to adopt and integrate digital technology into AIS to interact with stakeholders while also enhancing their capacity for data collection, information processing, and increasing transparency. AIS plays a crucial role in helping managers make decisions not only in the short term but also in the long term. Supported by digital technology, AIS enables stakeholders to comprehensively collect and report on the organization's financial and accounting activities (Lutfi, 2023). This study is grounded in Information Processing Theory (IPT) and the DeLone and McLean (2003) Information Systems Success Model to examine the relationship between digital technology, AIS, and the performance of SMEs in the context of a developing country like Vietnam. To fill the aforementioned gaps, this study seeks to answer the following questions:

Question 1: What role does digital technology play in enhancing AIS and the performance of SMEs?
Question 2: Does the successful implementation of AIS promote the performance of SMEs?

The findings of this study contribute significantly to the theoretical and practical foundations regarding the adoption of digital technology and AIS for SMEs in the context of a developing country like Vietnam, enriching and deepening the understanding of the impact of digital technology on AIS and organizational performance. Specifically, by integrating the Information Processing Theory and the DeLone and McLean (2003) Information Systems Success Model, the research provides further evidence of the positive relationship between digital technology and AIS in the context of SMEs. SMEs that successfully adopt digital technology will enhance AIS development through components such as system quality, information quality, and service quality. In turn, AIS promotes organizational performance.

2. Literature review

2.1. Theoretical background

The Information Processing Theory (IPT) posits that optimizing organizational performance requires a match between information processing needs and information processing capabilities (Premkumar et al., 2005; Li et al., 2020). To make effective decisions that improve performance, managers must collect and select high-quality information and enhance their information processing capabilities to support decision-making (Li et al., 2020). Technology is considered a crucial factor in increasing information processing capabilities within an organization. Therefore, IPT is applied to the field of information systems and technology integration (Wong et al., 2015; Stock and Tatikonda, 2008; Li et al., 2020). IPT indicates that the application of new technologies, such as digital technology, can enhance organizational performance by improving AIS and organizational data quality (Hann et al., 2007; Nassani et al., 2023). Consequently, the adoption of digital technology helps increase an organization's information processing capabilities, thereby supporting decision-making and enhancing organizational performance.

The DeLone and McLean (2003) model is used to measure the success of Information Systems (IS). In this context, AIS is recognized as a component of IS and is viewed as a computer system designed to collect, process, store, retrieve, manage, control, and report accounting information used for various purposes by stakeholders (Dagiliene and Šutiene, 2019; Nassani et al., 2023; Al-Okaily, 2024). The AIS plays a crucial role in accurately processing both financial and non-financial transactions to produce high-quality, reliable information for managing business operations, planning, controlling, monitoring, coordinating, and evaluating performance to achieve competitive advantage and organizational sustainability (Khassawneh, 2014; Idris and Mohamad, 2017; Ibrahim et al., 2020; Lutfi, 2023). The DeLone and McLean (2003) model is widely used by researchers to examine AIS success through the organizational performance aspect, representing net benefits. However, Al-Okaily (2024) acknowledged that most empirical studies based on

the DeLone and McLean (2003) model primarily address the effectiveness of AIS at the individual level with limited consideration at the organizational level. Therefore, this study integrates IPT and the DeLone and McLean (2003) model to examine the relationship between digital technology, AIS, and the performance of SMEs.

2.2. Hypotheses development

2.2.1. Digital technology, accounting information systems, and organizational performance

Digital technology refers to a set of various intelligent technologies such as cloud computing, the Internet of Things (IoT), and machine learning (ML) that facilitate automation, information transmission, and connectivity (Ardolino et al., 2018; Zhen and Zhen, 2024). Meanwhile, Khan et al. (2021) argued that digital technology includes platforms and devices designed to collect and process data and connect with applications via the Internet or other devices to enhance strategic performance and support better resource allocation and sustainability (Zhen and Zhen, 2024). Therefore, businesses with advanced technological infrastructure will be better equipped to adapt to dynamic environments and address challenges in their respective fields to achieve organizational performance.

Evidence from IPT indicates that the adoption of digital technology enhances the effectiveness of AIS and improves data quality, thereby driving organizational performance (Nassani et al., 2023; Muduli and Choudhury, 2024; Shah et al., 2024). Digital technology not only increases data processing capabilities but also enables AIS to collect, retrieve, and manage data quickly, accurately, and reliably. Previous studies have demonstrated that the adoption of digital technology boosts organizational performance (Tsou and Chen, 2023). Digital technology encompasses infrastructure and digital platforms such as big data, IoT, and cloud computing (Nassani et al., 2023). Current trends show that organizations are focusing on digital transformation, emphasizing the application of the latest digital technologies to enhance organizational effectiveness (Wang et al., 2020; Nassani et al., 2023; Zhao et al., 2024; Muduli and Choudhury, 2024; Shah et al., 2024). The use of digital technology can generate value by providing customers with innovative solutions, meeting their needs, co-creating value, reducing costs, continuously creating new value for customers, and helping organizations understand customer needs and seize new opportunities (Wang et al., 2020). Bughin et al. (2021) also argued that the adoption of digital technology facilitates the development of new business models, leading to fundamental changes across various dimensions to enhance strategic performance. Overall, numerous studies highlight the importance of digital transformation, which involves applying the latest digital technologies to change business models, processes, reduce costs, and improve customer reach, thereby boosting organizational performance (DiRomualdo et al., 2018; Nasiri et al., 2020; Bughin et al., 2021; Abudaqa et al., 2022; Napoli, 2023). Based on this argument, the study proposes the following hypothesis:

H1: Digital technology positively impacts the performance of SMEs.

Digital technology is increasingly being applied across various areas of organizations. For AIS, digital technology has yielded significant results in large organizations. Digital technology is considered a crucial mechanism for supporting the design of AIS within organizations. AIS, as part of an Information System, is a software tool used to collect, process, retrieve, manage, and store financial data to serve a variety of stakeholders, including managers, business analysts, consultants, CFOs, accountants, auditors, regulatory bodies, and tax authorities (Zhen and Zhen, 2024). The application of AIS remains limited in SMEs. However, with the rapid development of digital technology, there is potential for better adoption of AIS. Nassani et al. (2023) confirm that digital technology is increasingly being used in AIS and that the adoption of new technologies, such as digital technology, can enhance AIS capabilities for SMEs.

With the advancement of digital technology, organizations have been encouraged to conduct business, enhancing their ability to connect with customers and other stakeholders, which has the potential to drive customer value creation (Bresciani et al., 2018; Scuotto et al., 2020; Matarazzo et al., 2021; Pham and Vu, 2022). Digital technology has the potential to improve AIS, making it more adaptable, flexible, and easier to adjust through the restructuring of processes (Pham and Vu, 2022). The adoption of digital technology in AIS can bring convenience and efficiency while reducing costs, increasing sustainability, and providing more balanced values. This helps SMEs achieve resource and energy conservation while improving productivity. Pham and Vu (2022) also argued that most businesses are encouraged to expand their use of digital technologies by embedding them into organizational processes to achieve sustainable benefits, particularly in AIS. At this stage, AIS is considered more effective in supporting organizations by improving work quality, strengthening connections between organizations, customers, and stakeholders, addressing complex problems, facilitating integration across departments, and enhancing competitiveness in the market (Pham and Vu, 2022).

DeLone and McLean (2003) identified three dimensions in AIS: information quality (InQ), service quality (SrQ), and system quality (SyQ). Specifically, InQ includes completeness, timeliness, accuracy, and relevance; SrQ encompasses speed, responsiveness, security, and understanding; and SyQ covers accessibility, reliability, flexibility, and ease of use (Al-Hattami and Kabra, 2024). The application of

digital technology will improve an organization's AIS through these three dimensions: information quality, service quality, and system quality. Based on this argument, the study proposes the following hypothesis:

H2: Digital technology positively impacts AIS through (a) InQ, (b) SrQ, and (c) SyQ of SMEs.

2.2.2. Accounting information systems and organizational performance

AIS is regarded as a computer system designed to collect, input, and process accounting data, as well as to store, manage, control, and report accounting information to serve various stakeholders for purposes such as planning and decision-making (Dagiliene and Šutiene, 2019; Al-Okaily, 2024). Al-Hattami and Kabra (2024) also argued that AIS functions as a computer system for processing financial information and enhancing decision-making capabilities, thus serving as a critical conduit for both internal and external stakeholders to streamline decision-making. AIS is essential for organizations as it provides valuable data to decision-makers (Nias Ahmad et al., 2016). Many researchers also acknowledge that AIS plays a crucial role in processing both financial and non-financial transactions, relating to planning, monitoring, coordinating, and evaluating performance (Ibrahim et al., 2020; Al-Okaily, 2024). When an AIS is effective, it generates timely, complete, relevant, and reliable financial information and reports, thereby improving organizational performance (Khassawneh, 2014), helping to reduce costs, increase profits, boost productivity, and maintain a competitive edge (Al-Okaily, 2024).

For SMEs, Al-Hattami et al. (2021) emphasized that the existence and success of a business depend on the effectiveness of its AIS, as these businesses require accounting data and must have a suitable AIS to address the challenges they face. Managers or owners of SMEs can utilize information from AIS to monitor, control, and quickly retrieve data for both short-term and long-term decision-making (Al-Hattami et al., 2021). Previous studies have found that AIS positively impacts operational efficiency and performance in SMEs (Ali et al., 2016; Al-Hattami et al., 2021; Nassani et al., 2023). However, in developing countries, the application of AIS in SMEs remains unclear, and the effectiveness of AIS is still a subject of debate (Al-Hattami et al., 2021; Al-Okaily, 2024). In their study, Ali et al. (2016) found that the three components of AIS—information quality (InQ), service quality (SrQ), and system quality (SyQ)—positively affect organizational performance. They confirmed that at the organizational level, the relationship between information quality and net benefits is mixed, depending on how net benefits are measured. However, further research is needed to reach definitive conclusions. For SMEs, Kharuddin et al. (2010) found that businesses using AIS significantly improved organizational performance. Similarly, Nassani et al. (2023) also identified a positive relationship between AIS and the strategic performance of SMEs. Ali et al. (2016) strongly supported the relationship between information quality and organizational performance. Service quality is a success factor in business that leads to customer loyalty, increased profits, and reduced costs (Ali et al., 2016). Previous studies have also identified a positive relationship between service quality and financial effectiveness, business profitability, and organizational performance (Duncan and Elliott, 2002; Khan and Fasih, 2014; Ali et al., 2016). System quality can affect usage, individual performance, and, consequently, organizational performance (DeLone and McLean, 1992). Several prior studies have reported a positive association between system quality and organizational benefits and performance, such as Wixom and Todd (2005), Hsieh and Wang (2007), Gorla et al. (2010), Ali et al. (2016), and Nassani et al. (2023). Based on this argument, the study proposes the following hypotheses:

H3: (a) Information quality, (b) service quality, and (c) system quality positively impact the performance of SMEs.

3. Methodology

3.1. Sample and data collection

The data were collected from surveys distributed to accountants and managers working in the accounting field at SMEs in the southern region of Vietnam. The southern region of Vietnam is a dynamic and rapidly developing area with a high concentration of SMEs. Previous studies suggest that the minimum sample size for analysis should be at least ten times the number of paths in the model. To enhance reliability, the sample size was increased through a non-probability random sampling method. A total of 286 questionnaires were distributed, with 253 returned, achieving a response rate of 88.5%. After filtering out incomplete or invalid responses, 229 questionnaires were deemed valid for official analysis. AMOS 20 software was employed to analyze both the measurement model and the structural model. The sample consisted of 38.5% male and 61.5% female respondents. In terms of age distribution, 57.6% were between 25-30 years old, 24.5% were between 31-40 years old, and 17.9% were over 40 years old. Regarding educational background, 76% held a bachelor's degree, while 24% had a master's degree. The companies were categorized into trade and services (64.7%) and manufacturing (35.3%). The detailed results are presented in Table 1.

3.2. Instrument measurement

This study collected data through a survey questionnaire. The measurement items were

adapted from previous studies. Since the original questions were designed in English, the questionnaire was translated into Vietnamese. To ensure clarity, comprehensibility, and accuracy, the items were reviewed by experts well-versed in the field of AIS. A pilot survey was then conducted with accountants and managers in the AIS field to confirm that the final questions met the required standards of clarity, coherence, and comprehensibility.

Table 1: Descriptive statistics

Variable	Option	Frequency	Percentage
Gender	Male	88	38.5
	Female	141	61.5
Age	25 – 30 years	132	57.6
	31 – 40 years	56	24.5
	Over 40 years	41	17.9
Education	Bachelor's degree	174	76
	Master's degree	55	24

The "Digital Technology" scale consisted of four observed variables, inherited from the study by Nassani et al. (2023). The "Information Quality" scale consisted of four observed variables, the "Service Quality" scale consisted of four observed variables, and the "System Quality" scale consisted of four observed variables, all adopted from the study by Al-Hattami and Kabra (2024). Finally, the "Organizational Performance" scale, comprising four observed variables, was adapted and modified from the study by Kareem et al. (2021). All items in the scales were evaluated using a 5-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The reliability of the scales in the research model was confirmed, with Cronbach's alpha values ranging from 0.877 to 0.904, as shown in Table 2. The study examined common method variance through exploratory factor analysis (EFA) with a single extracted factor, which accounted for 39.06% of the variance, lower than the 50% threshold (Podsakoff et al., 2003). Additionally, all VIF values in this study were below 5. According to Hair et al. (2017), a VIF value greater than 5 is considered an indication of multicollinearity issues. Therefore, common method bias did not occur in this study. Correlation analysis was also conducted between the constructs in the model. The results showed that Digital Technology had a positive correlation with Information Quality, Service Quality, System Quality, and Organizational Performance at a 1% significance level. Similarly, InQ, SrQ, and SyQ also had positive correlations with OP at a 1% significance level.

Table 2: Results of reliability and convergent validity

Variables	Items	Source	Factor loadings	CA	CR	AVE
Digital technology	DT1	Nassani et al. (2023)	0.768	0.893	0.896	0.684
	DT2		0.825			
	DT3		0.763			
	DT4		0.921			
Information quality	InQ1	Al-Hattami and Kabra (2024)	0.789	0.899	0.898	0.691
	InQ2		0.920			
	InQ3		0.873			
	InQ4		0.786			
Service quality	SrQ1	Al-Hattami and Kabra (2024)	0.815	0.904	0.909	0.715
	SrQ2		0.743			
	SrQ3		0.916			
	SrQ4		0.912			
System quality	SyQ1	Al-Hattami and Kabra (2024)	0.770	0.886	0.890	0.669
	SyQ2		0.780			
	SyQ3		0.892			
	SyQ4		0.820			
Organizational performance	OP1	Kareem et al. (2021)	0.705	0.877	0.879	0.646
	OP2		0.686			
	OP3		0.952			
	OP4		0.704			

The reliability of the scales was assessed using Cronbach's alpha coefficient. The results indicated that all scales achieved acceptable reliability, as recommended by Hair et al. (2017). EFA and CFA were conducted to evaluate the measurement model. The analysis results showed that the measurement model fit the data well. Specifically, the Cronbach's alpha reliability coefficients were all greater than 0.7. The KMO value from the EFA was 0.881 (Sig. = 0.000), RMSEA = 0.064, CMIN/df = 1.944, P-value = 0.000, IFI = 0.953, CFI = 0.952, and TLI = 0.943. Further analysis revealed that all AVE values were greater than 0.6, with the lowest being 0.646, and all CR values exceeded 0.8, with the lowest being 0.879. The findings in Table 3 indicate that the diagonal elements of the AVE matrix exceed the off-diagonal elements in the corresponding rows and columns, confirming sufficient discriminant validity according to Fornell and Larcker (1981). Based on the criteria proposed by Fornell and Larcker (1981), the scales in the research model demonstrated reliability, convergent validity, and discriminant validity.

Table 3: Discriminant validity test

	CR	AVE	SyQ	SrQ	DT	InQ	OP
SyQ	0.890	0.669	**0.818**				
SrQ	0.909	0.715	0.345	**0.846**			
DT	0.896	0.684	0.376	0.344	**0.827**		
InQ	0.898	0.691	0.431	0.357	0.396	**0.831**	
OP	0.879	0.646	0.591	0.480	0.616	0.503	**0.803**

4. Results

The structural equation modeling analysis was further conducted to test the research hypotheses. The analysis results showed that the structural model achieved the following fit indices: CMIN = 350.172; Df = 163; P = 0.000; IFI = 0.941; TLI = 0.931; CFI = 0.941; and RMSEA = 0.071. Thus, the IFI, TLI, and CFI indices were all greater than 0.9, and RMSEA was less than 0.8. Based on the criteria proposed by Hair et al. (2017), these results indicate that the structural model fits the data well. Table 4 presents the hypothesis testing results with standardized beta coefficients. Specifically, the test result for Hypothesis H1 shows an unstandardized beta coefficient of β1 = 0.270 (Sig.= 0.000), indicating that Hypothesis H1 is supported. This result demonstrates a positive relationship between Digital Technology and Organizational Performance. In other words, digital technology positively influences the performance of SMEs.

The hypothesis testing for the H2 group shows that Hypothesis H2a, with an unstandardized beta coefficient of β = 0.355 (Sig.= 0.000), is supported. This indicates that Digital Technology positively impacts Information Quality. Hypothesis H2b, which proposes a positive relationship between DT and Service Quality, is also supported by an unstandardized beta coefficient of β = 0.376 (Sig.=0.000). This means DT positively influences SrQ. Similarly, the study found a relationship between DT and System Quality with an unstandardized beta coefficient of β = 0.347 (Sig.= 0.000), supporting Hypothesis H2c. These results show that DT has a positive impact on SyQ. Therefore, the findings suggest that DT positively affects AIS through its components: InQ, SrQ, and SyQ. Among these, DT has the strongest influence on InQ, followed by SyQ, and lastly, SrQ. Thus, the research findings align with previous studies, suggesting that digital technology not only directly impacts organizational performance but also significantly influences accounting information systems through factors such as service quality, information quality, and system quality. Fig. 1 illustrates the validation results of the research hypotheses.

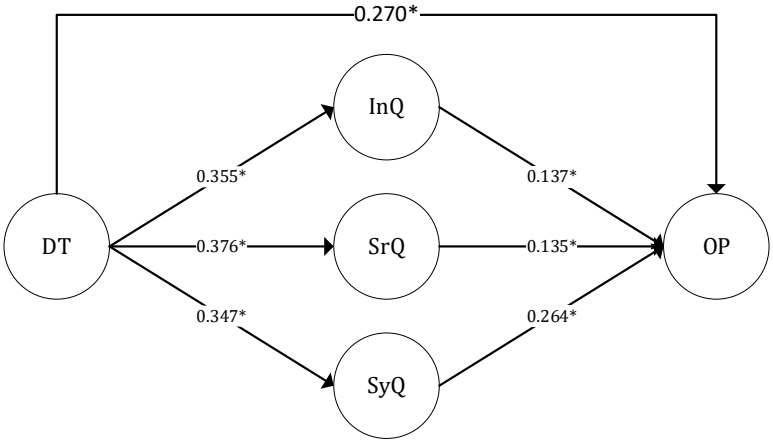

Fig. 1: Result of hypotheses testing

For the H3 group, which proposed a positive relationship between InQ, SrQ, SyQ, and Organizational Performance, the results indicate that Hypothesis H3a is supported, with a beta coefficient of β = 0.137 (Sig.= 0.006), showing that InQ positively affects OP. Hypothesis H3b is also accepted with a beta coefficient of β = 0.135 (Sig.= 0.000), indicating that SrQ positively impacts OP. Similarly, the positive relationship between SyQ and OP is supported, with a beta coefficient of β = 0.264 (Sig.=0.000), showing that SyQ has the strongest effect on OP. Finally, the study examined the indirect effect of DT on OP through the mediating variables InQ, SrQ, and SyQ. The bootstrapping test with 5,000 iterations revealed that DT indirectly affects OP through AIS, with a standardized beta coefficient of β = 0.267 (Sig.= 0.000). The total effect of DT on OP is a standardized beta coefficient of β = 0.645 (Sig.= 0.000). These results further indicate that digital technology indirectly affects organizational performance via the components of the accounting information system. Table 4 provides detailed results of the hypothesis testing.

Table 4: Results of the hypothesis test with standardized coefficients

Direct effect	$\beta_{standardized}$	P-value	Decision
DT -> OP	0.377	0.000	(H1) Accepted
DT -> InQ	0.412	0.000	(H2a) Accepted
DT -> SrQ	0.360	0.000	(H2b) Accepted
DT -> SyQ	0.394	0.000	(H2c) Accepted
InQ-> OP	0.166	0.006	(H3a) Accepted
SrQ ->OP	0.197	0.000	(H3b) Accepted
SyQ -> OP	0.325	0.000	(H3c) Accepted
Indirect effect			
DT ->AIS-> OP	0.267	0.000	Accepted
Total effect			
DT ->AIS-> OP	0.645	0.000	Accepted

5. Discussion

This study proposes a model with seven hypotheses, all of which were supported by the analysis results. The research focuses on examining the impact of Digital Technology on Accounting

Information Systems and the performance of SMEs in the context of a developing country like Vietnam. The findings of this study further expand the theoretical framework in the AIS field. Specifically, the study found a positive impact of digital technology on the performance of SMEs. This result aligns with prior research conducted in similar developing country contexts, such as the study by Nassani et al. (2023). It highlights the importance of digital technology in improving the performance of SMEs. The digital technology boom influences all aspects of organizational business operations. SMEs, which typically face greater challenges in accessing and adapting to digital technology, must recognize this inevitable trend. As Spremic (2017) emphasized, every business needs to be digitized in the era of the digital economy, and all industries must confront the challenge of upgrading their IT systems. Wang et al. (2020) suggested that the adoption of digital technology can transform internal operations, reshape social networks with suppliers and customers, and thus enable organizations to improve multiple aspects of their activities, ultimately enhancing performance (Wang et al., 2020).

The relationship between digital technology and AIS has also been confirmed in prior research. For instance, Nassani et al. (2023) found a positive relationship between digital technology and AIS in SMEs. Pham and Vu (2022) also acknowledged that digitization in AIS is a crucial solution for sustainable development in SMEs. The application of digital technology can enhance AIS capabilities by modernizing management, fostering engagement with stakeholders, and restructuring processes, making AIS more adaptable, responsive, and flexible (Pham and Vu, 2022). Nassani et al. (2023) examined the relationship between digital technology and AIS, though AIS was approached as a unidimensional construct. In this study, AIS is reflected through three aspects: Information Quality, Service Quality, and System Quality. The results confirm that digital technology positively impacts all three dimensions: InQ, SrQ, and SyQ.

The relationship between AIS and organizational performance has also been found in previous studies, such as Daoud and Triki (2013), Susanto and Meiryani (2019), Kareem et al. (2021), and Nassani et al. (2023). The findings of Nassani et al. (2023), showed that AIS positively influences OP. This study specifically examines each component of AIS and confirms that InQ, SrQ, and SyQ all positively affect OP. The research by Al-Hattami et al. (2021) also found that AIS components positively influence the operational performance of SMEs. Specifically, Al-Hattami et al. (2021) demonstrated that both InQ and SyQ positively affect the operational performance of SMEs. Similarly, Onaolapo and Odetayo's (2012) research in developing countries confirmed a positive relationship between AIS and the performance of SMEs.

In the success factors of AIS, information quality plays a critical role in driving organizational performance. When information quality is high, meaning that the information is accurate and comprehensive for decision-making, it can positively support markets, including customer-related decisions and internal organizational decisions, and help reduce costs, thereby improving performance (Ali et al., 2016). Service quality is also found to influence SMEs' performance, though to a higher extent than information quality in this study. When SMEs provide high service quality, it can enhance customer satisfaction. Additionally, service quality serves as a channel through which managers within the organization can better understand the current state of affairs, providing a basis for developing appropriate solutions to improve and increase organizational performance. DeLone and McLean (1992) suggested that system quality plays a critical role in enhancing organizational performance. When systems are well-designed and implemented, they enhance the organization's operational capacity, reduce costs, increase revenue, streamline processes, and boost performance (Ali et al., 2016).

Finally, this study examines the indirect impact of digital transformation on organizational performance through AIS, and the results indicate that AIS mediates this relationship. Specifically, the aspects of InQ, SrQ, and SyQ mediate the relationship between DT and OP. This suggests that DT not only directly influences OP but also indirectly affects OP through these aspects of AIS. This finding aligns with previous studies that identified the mediating role of AIS in the relationship between DT and OP. Organizations implementing DT can improve the quality of information, service, and systems within AIS, leading to the success of AIS and driving organizational performance. Nassani et al. (2023) emphasize that digital technology is considered a crucial mechanism in SMEs for supporting and designing AIS to enhance management efficiency and decision-making.

The impact of Digital Technology on Accounting Information Systems and Organizational Performance demonstrates that digital technology can process information quickly and efficiently, improving the effectiveness and quality of accounting information, enhancing traditional accounting functions, detecting anomalies, and automatically correcting errors. It also increases traceability and visibility through real-time data collection, enabling SMEs to make faster decisions, thereby improving organizational performance (Kogan et al., 2014; Pham and Vu, 2022). Overall, these findings are consistent with previous studies that found a positive relationship between information quality, service quality, system quality, and organizational performance. For SMEs aiming to enhance organizational performance, it is crucial to prioritize the development of digital technology. On one hand, it can directly improve organizational performance; on the other, it fosters the development of accounting information systems by enhancing service quality, system quality, and information quality. When the quality components of the accounting information system are well-

developed, they can further contribute to improving organizational performance.

6. Implications for research

This study focuses on examining the impact of digital technology on the performance of SMEs in the context of a developing country like Vietnam, through the mediating role of AIS. AIS is measured by three components from the DeLone and McLean (2003) model, including information quality, service quality, and system quality. The study employs a convenience sampling method, using a survey targeting employees and managers in the accounting field within private enterprises. The structural equation modeling method is applied to test the research hypotheses. The results indicate that all hypotheses in the research model are supported. Specifically, digital technology positively affects the performance of SMEs and has a positive impact on AIS through information quality, service quality, and system quality. In turn, information quality, service quality, and system quality positively influence SMEs' performance. Additionally, the examination of the indirect effect of digital technology on SMEs' performance reveals that AIS serves as a partial mediator in the relationship between digital technology and SMEs' performance. The findings of this study provide important implications both theoretically and practically.

Theoretically, this study investigates the relationship between digital technology, AIS, and the performance of SMEs. The results indicate that digital technology enhances AIS through information quality, service quality, and system quality. Therefore, the study contributes to the theory of the relationship between digital technology and AIS within the context of SMEs. It highlights that not only large enterprises but also SMEs can advance AIS through the development of digital technology. Furthermore, digital technology also drives the performance of SMEs. This relationship is reaffirmed within the SME context. Additionally, the use of digital technology not only directly boosts SMEs' performance but also indirectly impacts it through AIS. These findings support the relevance of information processing theory and the success model of information systems.

The findings of this study indicate that the use of digital technology has the strongest impact on information quality, followed by system quality, and finally, service quality. This discovery underscores the significance of digital technology for SMEs. When SMEs adopt digital technology within their organizations, it can enhance the quality of their accounting information systems, particularly by improving the quality of information. Clearly, digital technology enhances the flow of information both within and outside the enterprise. This study contributes to the theoretical understanding of the relationship between digital technology, AIS, and SME performance, a topic that has been relatively underexplored in the context of developing countries like Vietnam.

Practically, this study assists managers in understanding the crucial role of digital technology. Although SMEs may face challenges in implementing digital technology within their organizations, in the long run, digital technology enhances the development of AIS by improving information quality, service quality, and system quality. AIS thus becomes the lifeblood of the organization (Al-Hattami and Kabra, 2024), and in turn, drives organizational performance. Therefore, adopting digital technology in business is an inevitable trend for increasing organizational performance. SMEs can benefit from investing in digital technology to enhance organizational performance. Digital technology not only directly improves organizational efficiency but also fosters AIS by enhancing system quality, information quality, and service quality, thereby indirectly boosting organizational performance.

This study supports the perspective of Al-Okaily (2024), who asserted that information quality has a strong impact on organizational performance. Specifically, information plays a crucial role in designing systems that enhance the performance of SMEs. It provides managers with relevant and reliable information to support decision-making processes. Ultimately, sound decisions contribute to improving organizational performance. This implies that management should place greater emphasis on information quality when establishing and operating their information systems. Additionally, upgrading accounting system programs and integrating new technologies into these systems should be prioritized to enhance organizational performance. SMEs need to ensure the authenticity of information to improve content quality and enhance continuous and timely information updates, automating the process of data collection, storage, and diagnosis (Jiang et al., 2021; Wamba et al., 2017), which contributes to improved organizational performance.

7. Limitations and future research

This study also has certain limitations. Firstly, the research employed a convenience sampling method, which may affect the reliability of the findings. Additionally, the study focuses solely on organizational performance without addressing individual performance. Future research could incorporate individual performance into the model to provide more comprehensive and generalized results. Additionally, the study only surveyed businesses in one region of Vietnam, with the majority of the sample comprising trade and service enterprises. Therefore, to generalize the findings, future research is needed to compare differences between trade and service enterprises and manufacturing enterprises, providing a more comprehensive understanding.

List of abbreviations

AIS	Accounting information system
SMEs	Small and medium-sized enterprises
SEM	Structural equation modeling
IPT	Information processing theory
IS	Information systems
InQ	Information quality
SrQ	Service quality
SyQ	System quality
DT	Digital technology
OP	Organizational performance
EFA	Exploratory factor analysis
CFA	Confirmatory factor analysis
CA	Cronbach's alpha
CR	Composite reliability
AVE	Average variance extracted
KMO	Kaiser-Meyer-Olkin measure
RMSEA	Root mean square error of approximation
CMIN/df	Chi-square/degrees of freedom ratio
IFI	Incremental fit index
CFI	Comparative fit index
TLI	Tucker-Lewis index
VIF	Variance inflation factor
ERP	Enterprise resource planning
IoT	Internet of things
ML	Machine learning

Compliance with ethical standards

Ethical considerations

This study was conducted in accordance with ethical standards involving human participants. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and anonymity and confidentiality were guaranteed.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

Abudaqa A, Alzahmi RA, Almujaini H, and Ahmed G (2022). Does innovation moderate the relationship between digital facilitators, digital transformation strategies and overall performance of SMEs of UAE? International Journal of Entrepreneurial Venturing, 14(3): 330-350. https://doi.org/10.1504/IJEV.2022.124964

Al-Hattami HM and Kabra JD (2024). The influence of accounting information system on management control effectiveness: The perspective of SMEs in Yemen. Information Development, 40(1): 75-93. https://doi.org/10.1177/02666669221087184

Al-Hattami HM, Hashed AA, and Kabra JD (2021). Effect of AIS success on performance measures of SMEs: Evidence from Yemen. International Journal of Business Information Systems, 36(1): 144-164. https://doi.org/10.1504/IJBIS.2021.112399

Ali BJ, Omar WAW, and Bakar R (2016). Accounting information system (AIS) and organizational performance: Moderating effect of organizational culture. International Journal of Economics, Commerce and Management, 4(4): 138-158.

Al-Okaily M (2024). Assessing the effectiveness of accounting information systems in the era of COVID-19 pandemic. VINE Journal of Information and Knowledge Management Systems, 54(1): 157-175. https://doi.org/10.1108/VJIKMS-08-2021-0148

Alrfai MM, Alqudah H, Lutfi A, Al-Kofahi M, Alrawad M, and Almaiah MA (2023). The influence of artificial intelligence on the AISs efficiency: Moderating effect of the cyber security. Cogent Social Sciences, 9(2): 2243719. https://doi.org/10.1080/23311886.2023.2243719

Ardolino M, Rapaccini M, Saccani N, Gaiardelli P, Crespi G, and Ruggeri C (2018). The role of digital technologies for the service transformation of industrial companies. International Journal of Production Research, 56(6): 2116-2132. https://doi.org/10.1080/00207543.2017.1324224

Bresciani S, Ferraris A, and Del Giudice M (2018). The management of organizational ambidexterity through alliances in a new context of analysis: Internet of Things (IoT) smart city projects. Technological Forecasting and Social Change, 136: 331-338. https://doi.org/10.1016/j.techfore.2017.03.002

Bughin J, Kretschmer T, and van Zeebroeck N (2021). Digital technology adoption drives strategic renewal for successful digital transformation. IEEE Engineering Management Review, 49(3): 103-108. https://doi.org/10.1109/EMR.2021.3098663

Dagiliene L and Šutiene K (2019). Corporate sustainability accounting information systems: A contingency-based approach. Sustainability Accounting, Management and Policy Journal, 10(2): 260-289. https://doi.org/10.1108/SAMPJ-07-2018-0200

Daoud H and Triki M (2013). Accounting information systems in an ERP environment and Tunisian firm performance. The International Journal of Digital Accounting Research, 13(1): 1-35. https://doi.org/10.4192/1577-8517-v13_1

DeLone WH and McLean ER (1992). Information systems success: The quest for the dependent variable. Information Systems Research, 3(1): 60-95. https://doi.org/10.1287/isre.3.1.60

DeLone WH and McLean ER (2003). The DeLone and McLean model of information systems success: A ten-year update. Journal of Management Information Systems, 19(4): 9-30. https://doi.org/10.1080/07421222.2003.11045748

DiRomualdo A, El-Khoury D, and Girimonte F (2018). HR in the digital age: How digital technology will change HR's organization structure, processes and roles. Strategic HR Review, 17(5): 234-242. https://doi.org/10.1108/SHR-08-2018-0074

Duncan E and Elliott G (2002). Customer service quality and financial performance among Australian retail financial institutions. Journal of Financial Services Marketing, 7(1): 25-41. https://doi.org/10.1057/palgrave.fsm.4770070

Fornell C and Larcker DF (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. Journal of Marketing Research, 18(3): 382-388. https://doi.org/10.1177/002224378101800313

Gorla N, Somers TM, and Wong B (2010). Organizational impact of system quality, information quality, and service quality. The Journal of Strategic Information Systems, 19(3): 207-228. https://doi.org/10.1016/j.jsis.2010.05.001

Hair JF, Hult GT, Ringle C, and Sarstedt M (2017). A primer on partial least squares structural equation modeling (PLS-SEM). 2nd Edition, SAGE, Thousand Oaks, USA.

Hann IH, Hui KL, Lee SY, and Png IP (2007). Overcoming online information privacy concerns: An information-processing theory approach. Journal of Management Information Systems, 24(2): 13-42. https://doi.org/10.2753/MIS0742-1222240202

Hsieh JPA and Wang W (2007). Explaining employees' extended use of complex information systems. European Journal of Information Systems, 16(3): 216–227. https://doi.org/10.1057/palgrave.ejis.3000663

Ibrahim F, Ali DNH, and Besar NSA (2020). Accounting information systems (AIS) in SMEs: Towards an integrated framework. International Journal of Asian Business and Information Management (IJABIM), 11(2): 51-67. https://doi.org/10.4018/IJABIM.2020040104

Idris KM and Mohamad R (2017). AIS usage factors and impact among Jordanian SMEs: The moderating effect of environmental uncertainty. Journal of Advanced Research in Business and Management Studies, 6(1): 24–38.

Jiang G, Liu F, Liu W, Liu S, Chen Y, and Xu D (2021). Effects of information quality on information adoption on social media review platforms: Moderating role of perceived risk. Data Science and Management, 1(1): 13-22. https://doi.org/10.1016/j.dsm.2021.02.004

Kareem H, Dauwed M, Meri A, Jarrar M, Al-Bsheish M, and Aldujaili AA (2021). The role of accounting information system and knowledge management to enhancing organizational performance in Iraqi SMEs. Sustainability 13: 12706. https://doi.org/10.3390/su132212706

Khan MM and Fasih M (2014). Impact of service quality on customer satisfaction and customer loyalty: Evidence from banking sector. Pakistan Journal of Commerce and Social Sciences, 8(2): 331–354.

Khan SAR, Zia-ul-haq HM, Umar M, and Yu Z (2021). Digital technology and circular economy practices: An strategy to improve organizational performance. Business Strategy and Development, 4(4): 482-490. https://doi.org/10.1002/bsd2.176

Kharuddin S, Ashhari ZM, and Nassir AM (2010). Information system and firms' performance: The case of Malaysian small medium enterprises. International Business Research, 3(4): 28-35. https://doi.org/10.5539/ibr.v3n4p28

Khassawneh AAL (2014). The influence of organizational factors on accounting information systems (AIS) effectiveness: A study of Jordanian SMEs. International Journal of Marketing and Technology, 4(10): 36–46.

Kogan A, Alles MG, Vasarhelyi MA, and Wu J (2014). Design and evaluation of a continuous data level auditing system. Auditing: A Journal of Practice and Theory, 33(4): 221-245. https://doi.org/10.2308/ajpt-50844

Le DV, Le HTT, Pham TT, and Van Vo L (2023). Innovation and SMEs performance: evidence from Vietnam. Applied Economic Analysis, 31(92): 90-108. https://doi.org/10.1108/AEA-04-2022-0121

Li Y, Dai J, and Cui L (2020). The impact of digital technologies on economic and environmental performance in the context of Industry 4.0: A moderated mediation model. International Journal of Production Economics, 229: 107777. https://doi.org/10.1016/j.ijpe.2020.107777

Lutfi A (2020). Investigating the moderating effect of environment uncertainty on the relationship between institutional factors and ERP adoption among Jordanian SMEs. Journal of Open Innovation: Technology, Market, and Complexity, 6(3): 91. https://doi.org/10.3390/joitmc6030091

Lutfi A (2023). Factors affecting the success of accounting information system from the lens of DeLone and McLean IS model. International Journal of Information Management Data Insights, 3(2): 100202. https://doi.org/10.1016/j.jjimei.2023.100202

Lutfi A, Alkelani SN, Al-Khasawneh MA, Alshira'h AF, Alshirah MH, Almaiah MA, Alrawad M, Alsyouf A, Saad M, and Ibrahim N (2022). Influence of digital accounting system usage on SMEs performance: The moderating effect of COVID-19. Sustainability, 14(22): 15048. https://doi.org/10.3390/su142215048

Lutfi A, Al-Okaily M, Alsyouf A, Alsaad A, and Taamneh A (2020). The impact of AIS usage on AIS effectiveness among Jordanian SMEs: A multi-group analysis of the role of firm size. Global Business Review, 20(3): 627–639. https://doi.org/10.1177/0972150920965079

Matarazzo M, Penco L, Profumo G, and Quaglia R (2021). Digital transformation and customer value creation in made in Italy SMEs: A dynamic capabilities perspective. Journal of Business Research, 123: 642-656. https://doi.org/10.1016/j.jbusres.2020.10.033

Muduli A and Choudhury A (2024). Digital technology adoption, workforce agility and digital technology outcomes in the context of the banking industry of India. Journal of Science and Technology Policy Management. https://doi.org/10.1108/JSTPM-01-2024-0018

Napoli F (2023). Corporate digital responsibility: A board of directors may encourage the environmentally responsible use of digital technology and data: Empirical evidence from Italian publicly listed companies. Sustainability, 15(3): 2539. https://doi.org/10.3390/su15032539

Nasiri M, Ukko J, Saunila M, Rantala T, and Rantanen H (2020). Digital-related capabilities and financial performance: The mediating effect of performance measurement systems. Technology Analysis and Strategic Management, 32(12): 1393-1406. https://doi.org/10.1080/09537325.2020.1772966

Nassani AA, Yousaf Z, Grigorescu A, Oprisan O, and Haffar M (2023). Accounting information systems as mediator for digital technology and strategic performance interplay. Electronics, 12(8): 1866. https://doi.org/10.3390/electronics12081866

Nias Ahmad MA, Smith M, Ismail Z, Djajadikerta H, and Roni MSM (2016). Computerised accounting information systems and firm performance: The mediating role of transparency. In: Abdullah M, Yahya W, Ramli N, Mohamed S, and Ahmad B (Eds.), Regional Conference on Science, Technology and Social Sciences (RCSTSS 2014). Springer, Singapore, Singapore: 49-59. https://doi.org/10.1007/978-981-10-1458-1_5

Onaolapo AA and Odetayo TA (2012). Effect of accounting information system on organizational effectiveness: A case study of selected construction companies in Ibadan, Nigeria. American Journal of Business and Management, 1(4): 183-189. https://doi.org/10.11634/216796061706210

Pham QH and Vu KP (2022). Digitalization in small and medium enterprise: A parsimonious model of digitalization of accounting information for sustainable innovation ecosystem value generation. Asia Pacific Journal of Innovation and Entrepreneurship, 16(1): 2-37. https://doi.org/10.1108/APJIE-02-2022-0013

Podsakoff PM, MacKenzie SB, Lee JY, and Podsakoff NP (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5): 879-903. https://doi.org/10.1037/0021-9010.88.5.879 **PMid:14516251**

Premkumar G, Ramamurthy K, and Saunders CS (2005). Information processing view of organizations: An exploratory examination of fit in the context of interorganizational relationships. Journal of Management Information Systems, 22(1): 257-294. https://doi.org/10.1080/07421222.2003.11045841

Saad M, Lutfi A, Almaiah MA, Alshira'h AF, Alshirah MH, Alqudah H, and Abdelmaksoud O (2022). Assessing the intention to adopt cloud accounting during COVID-19. Electronics, 11(24): 4092. https://doi.org/10.3390/electronics11244092

Scuotto V, Arrigo E, Candelo E, and Nicotra M (2020). Ambidextrous innovation orientation effected by the digital transformation: A quantitative research on fashion SMEs. Business Process Management Journal, 26(5): 1121-1140. https://doi.org/10.1108/BPMJ-03-2019-0135

Shah N, Zehri AW, Saraih UN, Abdelwahed NAA, and Soomro BA (2024). The role of digital technology and digital innovation

towards firm performance in a digital economy. Kybernetes, 53(2): 620-644. https://doi.org/10.1108/K-01-2023-0124

Spremic M (2017). Governing digital technology–How mature IT governance can help in digital transformation? International Journal of Economics and Management Systems, 2: 214–223.

Stock GN and Tatikonda MV (2008). The joint influence of technology uncertainty and interorganizational interaction on external technology integration success. Journal of Operations Management, 26(1): 65-80. https://doi.org/10.1016/j.jom.2007.04.003

Susanto A and Meiryani M (2019). Antecedents of environmental management accounting and environmental performance: Evidence from Indonesian small and medium enterprises. International Journal of Energy Economics and Policy, 9(6): 401-407. https://doi.org/10.32479/ijeep.8366

Tsou HT and Chen JS (2023). How does digital technology usage benefit firm performance? Digital transformation strategy and organisational innovation as mediators. Technology Analysis and Strategic Management, 35(9): 1114-1127. https://doi.org/10.1080/09537325.2021.1991575

Wamba SF, Gunasekaran A, Akter S, Ren SJF, Dubey R, and Childe SJ (2017). Big data analytics and firm performance: Effects of dynamic capabilities. Journal of Business Research, 70: 356-365. https://doi.org/10.1016/j.jbusres.2016.08.009

Wang H, Feng J, Zhang H, and Li X (2020). The effect of digital transformation strategy on performance: The moderating role of cognitive conflict. International Journal of Conflict Management, 31(3): 441-462. https://doi.org/10.1108/IJCMA-09-2019-0166

Wixom BH and Todd PA (2005). A theoretical integration of user satisfaction and technology acceptance. Information Systems Research, 16(1): 85–102. https://doi.org/10.1287/isre.1050.0042

Wong CW, Lai KH, Cheng TA, and Lun YV (2015). The role of IT-enabled collaborative decision making in inter-organizational information integration to improve customer service performance. International Journal of Production Economics, 159: 56-65. https://doi.org/10.1016/j.ijpe.2014.02.019

Zhao S, Guan Y, Zhou H, and Hu F (2024). Making digital technology innovation happen: The role of the CEO's information technology backgrounds. Economic Modelling, 140: 106866. https://doi.org/10.1016/j.econmod.2024.106866

Zhen X and Zhen L (2024). Accounting information systems and strategic performance: The interplay of digital technology and edge computing devices. Journal of Grid Computing, 22(1): 5. https://doi.org/10.1007/s10723-023-09720-8