Research Article

Accountants' Perspectives on Essential Skills for Digital Accountants that Enhance the Operational Performance of Small and Medium-sized Enterprises in Bangkok and Vicinity

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Article History

Received: August 1, 2024
Revised: June 22, 2025
Accepted: June 25, 2025

Abstract

This study examined accountants' perspectives on essential digital skills that enhance the operational performance of small and medium-sized enterprises (SMEs) in Bangkok and its surroundings. Data was collected from 330 full-time accountants using stratified random sampling. Multiple regression analysis revealed that digital communication (β = 0.582), data analytics (β = 0.300), and technological proficiency (β = 0.220) had significant positive relationships with perceived operational performance, while accounting knowledge showed a negative relationship (β = -0.137). The application of an ethical framework was statistically insignificant. These findings suggest that sole reliance on traditional skills is inadequate for accountants operating in the contemporary business environment. Therefore, developing digital expertise alongside traditional accounting competencies is critical for enhancing SME performance in the digital environment. This study contributes to accounting literature by providing empirical evidence of the perceived hierarchy of digital skills needed in contemporary accounting practice and offers practical insights for accounting education and professional development.

Keywords: *Digital Accountant, Digital Skill, Operational Performance, Small and Medium-Sized Enterprise*

Introduction

Small and medium-sized enterprises (SMEs) are vital to the global economy and drive economic expansion. They contribute significantly to employment creation, local and international trade, poverty reduction, and economic development in developed and developing countries. In Thailand, SMEs are the backbone of the economy, generating growth for entrepreneurs and

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promoting employment. Micro, small, and medium-sized enterprises (MSMEs) span diverse industries from services to manufacturing, catering to local and international markets, and account for over 99.00% of all enterprises in the country. Some 3.2 million MSMEs were registered in 2022, and the Thai GDP demonstrated ongoing growth throughout 2023 (Ciba, 2024; Organization for Economic Co-operation and Development [OECD], 2024). These figures suggest that SMEs play a crucial role in Thailand's economy.

As the global economy transforms through exponential digital advancement, SMEs in Thailand must digitalize their operations holistically to survive and meet the demands of digitally savvy customers. Digital advancement provides opportunities for Thai SMEs to strengthen their business competitiveness. SMEs often encounter challenges in adopting digital transformation due to insufficient technical expertise, inadequate infrastructure, and limited financial resources; however, successful digital integration is necessary for businesses to survive and thrive (Lokuge & Duan, 2021). SMEs must adopt digital integration to automate key processes, improving performance and competitiveness (Yuen & Baskaran, 2023).

Accounting is a crucial area for SMEs and benefits from digital advancements. Digital accountants need skills beyond traditional reporting, including technological adaptability, data analysis, and strategic decision-making (Zhang et al., 2020). Accountants provide essential services to SMEs, offering timely, relevant, and high-quality advice. They are a key source of external professional guidance, valued for their technical expertise in financial reporting and management. Accurate accounting is crucial for SME survival in the digital age. This research examined the essential skills for digital accountants, including accounting knowledge, technological proficiency, ethical framework application, digital communication, and data analytics and management to enhance the operational performance of SME among Thai accountants.

This study focused on SMEs in Bangkok and the surrounding metropolitan area. This region is Thailand's economic hub, hosting many businesses and commercial activities. Around 100,000 SMEs are registered in Bangkok and the surrounding provinces, making it an ideal setting for studying the impact of digital accounting skills (The Office of SMEs Promotion [OSMEP], 2023). Bangkok-based SMEs operate in a highly competitive environment, where digital transformation is crucial for sustaining business growth. The region has a strong infrastructure with access to digital tools and a high concentration of professional accountants, providing a suitable site for examining the role of digital skills in SME performance. This research will benefit accountants, SME owners, policymakers, educational institutions, and professional accounting bodies by providing insights into the critical digital skills needed to enhance operational performance. Accountants can use this knowledge to upskill and align with evolving industry demands, while SME owners can improve financial management and strategic decision-making. Policymakers and professional accounting bodies can develop targeted training programs and regulatory frameworks to support digital transformation in accounting. At the same time, educational institutions can refine curricula to equip future accountants with relevant digital skills.

Objectives

To study the essential skills required for accountants in the digital era, including accounting knowledge and competency, technological proficiency, application of an accounting ethical framework, digital communication, and data analytics and management that impact the operational performance of SMEs in Bangkok and the surrounding metropolitan area.

Literature review

Digital transformation in SMEs and accounting operations

Digitalization has reshaped business operations and personal interactions by integrating technology across all areas, transforming processes and value delivery (Ritter & Pedersen, 2020). Coreynen et al. (2017) noted the rising use of digital technologies to connect products and services with customers. Digital tools streamline operations, enhance customer experiences, and add value. Kádárová et al. (2023) found that digitalization boosted performance in European SMEs, facilitating financial inclusion and improving SME financial transactions.

Digitalization has transformed how businesses, including SMEs, operate by impacting accounting functions and accountants (Knudsen, 2020; Murthy, 2016). Accounting involves recording, analyzing, classifying, summarizing, and reporting quantitative and qualitative information for internal and external users and is fundamental to SME operations. Accountants must embrace and incorporate digital technologies by shifting from traditional methods to automated systems that use technology to streamline accounting processes. This will enhance the speed, accuracy, and accessibility of financial information and improve decision-making processes (Klynveld Peat Marwick Goerdeler [KPMG], 2024).

Digitalization impacts various aspects of financial reporting, from recording business events and transactions to preparing financial statements and their disclosure (Phornlaphatrachakorn & Na-Kalasindhu (2021). It also impacts the scope of accounting and aids accounting professionals in achieving company financial goals. Accountants must possess the necessary essential skills to operate effectively in the rapid transformation brought about by digitalization.

Skills of digital accountants

Accountants must be able to incorporate technologies into accounting tasks while enhancing SMEs' operational performance. Ritter and Pedersen (2020) defined capabilities as qualifications or skills necessary to perform to achieve a specific activity while Murthy (2016) emphasized that accountants need to acquire specific knowledge and skills to cope with the challenges presented by new digital trends such as Big Data, extensible Business Reporting, Language (XBRL), Cloud Computing, Blockchain, and Artificial Intelligence (AI).

Accountants have traditionally played roles beyond record-keeping, but digitalization has expanded their skill sets. A key trend is the need for data analytics skills, which involve analyzing large datasets to find patterns and insights. With the rise of big data, accountants face new challenges and opportunities, requiring them to extract valuable financial information from complex datasets.

They must ensure data accuracy and reliability, as data integrity is crucial for businesses. With their deep understanding of business and finance, accountants provide essential data-driven insights for informed decision-making (Goh et al., 2021).

Effective communication is crucial for accountants to convey financial information to stakeholders and minimize misunderstandings (Siriwardane & Durden, 2014). Clear communication ensures that decision-makers understand the financial impact of their choices, leading to better-informed decisions (Hamdy et al., 2025). Digital communication involves using technology-based tools and platforms to facilitate the exchange of financial information among accountants, business managers, clients, and other stakeholders. This includes emails, cloud-based collaboration tools, accounting software, video conferencing, and data visualization dashboards to efficiently present and discuss financial data. Effective digital communication is essential for accountants in the digital era, enhancing clarity in financial reporting by ensuring that complex financial data is conveyed easily, allowing stakeholders to make informed decisions (Hamdy et al., 2025). This fosters transparency and trust, as the ability to present financial information clearly and accurately strengthens stakeholder confidence and credibility in financial statements (Bhimani & Willcocks, 2014).

Applying an accounting ethical framework is essential, especially in the digital era, where financial data can be manipulated. Carnegie et al. (2020) highlighted the challenges for accountants in developing ethical standards that guide their operations while maintaining public trust. The International Accounting Standards Board (IASB) emphasizes making financial information applicable and accessible to users (International Financial Reporting Standards [IFRS], 2024). Therefore, accountants must ensure their practices align with ethical and professional standards. In the digital age, accountants must combine expertise, technological skills, and ethical integrity to succeed.

Operational performance of SMEs

The operational performance of SMEs refers to how effectively and productively they utilize resources, including labor, capital, and technology, to produce goods or services by maximizing output while minimizing input. The factors and measurements contributing to SME operational performance were examined by drawing insights from previous studies.

The first key indicator of SME operational performance is financial performance, which hinges significantly on the accuracy and reliability of financial information to achieve a positive outcome (Anggadwita & Mustafid, 2014). Another critical determinant of SME operational performance is the application of information technology. Studies have shown that implementing informational technology can significantly improve SME operational performance by enhancing competitiveness and sustainability.

Quality of work for SMEs encompasses consistently delivering outputs that meet or exceed established standards while minimizing operational errors. This builds customer trust, encouraging repeat business (Yahaya & Nadarajah, 2023). Quality of work involves detailed precision in the tasks performed or products manufactured. Efficiency is a cornerstone that ensures SMEs' high-quality

work. Processes and workflow must be optimized to achieve the desired outputs in a timely and cost-effective manner.

The quantity of work, or the output volume produced within a specific timeframe, is a key factor in SME success. Balancing work quantity with quality is crucial for sustainable growth. SME operational performance is typically measured by productivity, cost efficiency, time management, output quantity and quality, and adaptability to industry changes (Cicea et al., 2019). Adapting to industry shifts is essential for SMEs to improve performance and competitiveness in local and global markets.

The Resource-Based View Theory (RBV) explains that a firm's internal resources are crucial to achieving sustainable competitive advantage (Barney, 1991). An organization's success is primarily driven by its ability to leverage unique, valuable, and inimitable resources, which can be tangible and intangible. RBV categorizes a firm's resources into valuable, rare, inimitable, and non-substitutable attributes (Wernerfelt, 1984). A firm that effectively utilizes these resources can enhance its operational performance and maintain a competitive advantage in the market. In accounting and SMEs, digital skills serve as a strategic resource that can contribute to superior financial management and decision-making. Organizations that cultivate digital expertise among their accountants can gain a competitive advantage by improving efficiency, accuracy, and strategic decision-making.

Conceptual framework

Digital skills are essential for enhancing SME operational efficiency and performance. As RBV explained, digital accounting skills serve as strategic internal intangible resources that contribute to competitive advantage by optimizing financial management and decision-making. Accounting knowledge and competency ensure accurate financial reporting, regulatory compliance, and operational transparency, thereby leading to financial accuracy and reliability (Stancheva-Todorova, 2020). Technological proficiency empowers accountants to leverage accounting software, automation, and AI-driven analytics to enhance work quality and quantity by reducing errors and increasing efficiency (Yuen & Baskaran, 2023). Applying an ethical framework for accounting helps maintain compliance, mitigate fraud risks, and boost stakeholder trust, further ensuring financial accuracy (Lokuge & Duan, 2021). Digital communication facilitates real-time collaboration and timely financial reporting, thereby enhancing decision-making speed and responsiveness. Data analytics and management enable accountants to analyze trends, improve cost management, and refine financial forecasting, leading to improved work quality and risk management. Collectively, these digital skills optimize SME operational performance by enhancing financial accuracy, efficiency, timeliness, and strategic agility in a competitive business environment (Bhimani & Willcocks, 2014). Based on a comprehensive review of the literature, including relevant concepts, theories, and existing research, a conceptual framework was developed as follows:

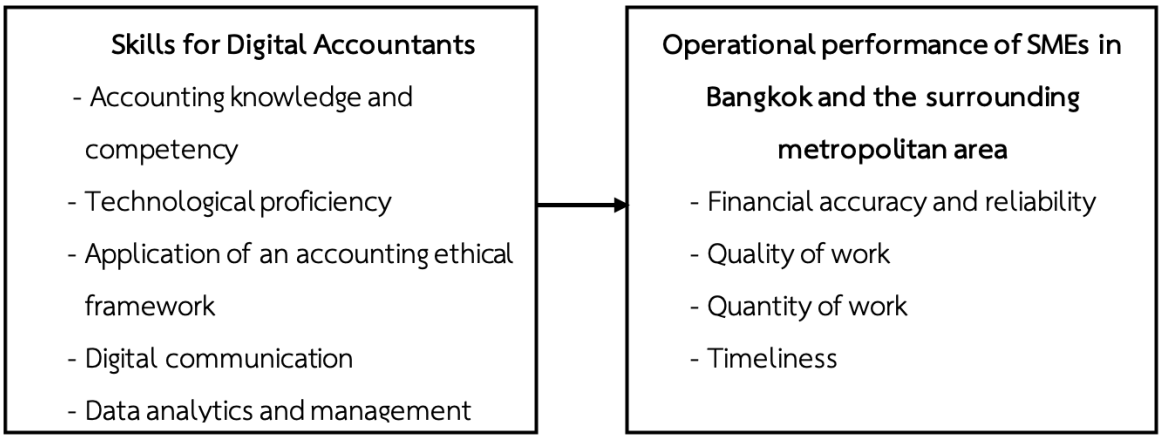

Figure 1 The conceptual framework of the study

Hypothesis

The conceptual framework of the study (Figure 1) was utilized to present the main hypothesis as follows:

Hypothesis: Digital accountants' skills, encompassing professional accounting knowledge and competency, technological proficiency, applying an accounting ethical framework, digital communication, and data analytics and management, influence the operational performance of SMEs registered in Bangkok and the surrounding metropolitan area.

Research methodology

This research applied a quantitative approach, collecting data through surveys from full-time accountants working in registered SMEs in Bangkok and its vicinity. The questionnaire was based on theoretical frameworks and literature reviews. Data was analyzed using descriptive and inferential statistics via statistical software.

Population and sample

This study focused on full-time accountants from registered SMEs in Bangkok and the surrounding areas, including Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Prakan, and Samut Sakhon Provinces. Surveying accountants is crucial because they significantly contribute to SMEs' financial and operational success, aligning with the research objective of examining accountants' perspectives on essential digital skills and their impact on SME performance. The researcher officially requested data from the Office of Small and Medium Enterprise Promotion (OSMEP), which provided information on 1,000 registered SMEs across the region: Bangkok (200), Nonthaburi (200), Samut Prakan (150), Samut Sakhon (150), Nakhon Pathom (150), and Pathum Thani (150). The data represent SMEs registrations for the year 2023. The sample size was determined using Taro Yamane's formula with a 0.05 margin of error, resulting in a required sample of 286 accountants. A proportional stratified random sampling technique was employed to ensure adequate representation from each

geographical area. This method involved dividing the population into strata based on geographical location and selecting samples from each stratum in proportion to the stratum's size within the overall population.

The proportional allocation was calculated as follows: Bangkok (20.00%), Nonthaburi (20.00%), Samut Prakan (15.00%), Samut Sakhon (15.00%), Nakhon Pathom (15.00%), and Pathum Thani (15.00%). Within each stratum, simple random sampling was used to select specific SMEs, and one full-time accountant from each selected SMEs was invited to participate in the survey. To account for potential non-responses and incomplete questionnaires, the researcher distributed 350 questionnaires. Of these, 330 valid responses (94.29%) were received and used for the final analysis, exceeding the minimum required sample size of 286. This response rate indicates strong participation from the target population and enhances the reliability of the research findings.

Instrument

The survey was conducted between January and April 2024. The questionnaire consisted of three sections:

1. Demographics: Collecting respondent information regarding gender, age, education, and accounting experience.
2. Digital accounting skills: Evaluating five key skills using a 5-point Likert scale (1 = lowest importance, 5 = highest importance):
   - Accounting knowledge and competency (3 items)
   - Technological proficiency (3 items)
   - Application of accounting ethical framework (3 items)
   - Digital communication (3 items)
   - Data analytics and management (3 items)
3. SMEs operational performance: Assessing four dimensions using a 5-point Likert scale (1 = lowest impact, 5 = highest impact):
   - Financial accuracy and reliability
   - Quality of work
   - Quantity of work
   - Timeliness

Three accounting experts validated the questionnaire using the Index of Item-Objective Congruence, ensuring content validity. Reliability was assessed using Cronbach's alpha, with all variables surpassing the 0.70 threshold (see Table 1).

Table 1 Cronbach's alpha values of the five skills necessary in the digital era (Independent variables).

Construct	Number of items	Cronbach's alpha
Accounting knowledge and competency	3	0.981
Technological proficiency	3	0.990
Application of an accounting ethical framework	3	0.985
Digital communication	3	0.994
Data analytics and management	3	0.991

As shown in Table 1, the Cronbach's alpha values for the five independent variables exceed 0.70. This indicates that the items within each variable are highly related and effectively measure the same concept, ensuring reliability. Consequently, the questionnaire used in this study consistently captures the intended information. Furthermore, this aligns with the reliability and validity recommendations of Fornell and Larcker (1981).

Analytical process

This study asked respondents specific questions about each skill dimension to measure digital accounting skills. For example, for accounting knowledge and competency, respondents were asked to rate the importance of "understanding Thai Financial Reporting Standards for SMEs," "ability to interpret financial ratios," and "knowledge of current tax regulations." For technological proficiency, questions included the importance of "proficiency in using accounting software," "ability to adapt to new technologies," and "understanding system integration." Each item was rated on a 5-point Likert scale where 1 = very low importance, 2 = low importance, 3 = moderate importance, 4 = high importance, and 5 = very high importance. Each skill variable was calculated as the mean score of its three measurement items, resulting in a composite score ranging from 1 to 5.

For operational performance, it is important to note that this study did not collect actual quantitative performance indicators such as financial ratios from SMEs. Instead, the research captured accountants' perceptions of how digital skills impact various performance dimensions. Respondents evaluated this impact using a 5-point Likert scale (1 = very low impact, 2 = low impact, 3 = moderate impact, 4 = high impact, 5 = very high impact). To ensure respondents understood each performance dimension consistently, clear definitions were provided:

1. Financial accuracy and reliability are defined as precision in financial recording, consistency of financial information, and compliance with accounting standards.

2. Quality of work is defined as thoroughness of financial analysis, correctness of accounting outputs, and usefulness of information for decision-making.

3. Quantity of work is defined as the volume of transactions processed, efficiency in handling routine tasks, and the capacity to manage increased workloads.

4. Timeliness is defined as meeting reporting deadlines, speed of response to information requests, and promptness in addressing financial issues.

The dependent variable (perceived operational performance) is calculated as the mean score across all four performance dimensions. To examine the relationship between digital accounting skills and their perceived impact on SME operational performance, multiple regression analysis is employed using the following model:

$$PERF = \beta_0 + \beta_1 KNOW + \beta_2 TECH + \beta_3 ETHI + \beta_4 COMM + \beta_5 DATA + \varepsilon$$

Where:

PERF = Perceived operational performance of SMEs (mean score, scale 1-5)
KNOW = Accounting knowledge and competency (mean score, scale 1-5)
TECH = Technological proficiency (mean score, scale 1-5)
ETHI = Application of accounting ethical framework (mean score, scale 1-5)
COMM = Digital communication (mean score, scale 1-5)
DATA = Data analytics and management (mean score, scale 1-5)
β_0 = Constant
$\beta_1 ... \beta_5$ = Regression coefficients
ε = Error term

Before conducting regression analysis, correlation coefficients were evaluated to detect potential multicollinearity, with all values remaining below the concern threshold (0.8). Moreover, variance inflation factors were computed, with all values under 5, confirming the lack of severe multicollinearity issues. The significance level was established at 0.05 for hypothesis testing.

Results

The demographic data of the respondents indicated that most of those who participated in the survey were female, totaling 204 (61.82%). Male participants accounted for 126 (38.18%). Most SMEs surveyed were limited companies, numbering 290 (87.88%), while the remaining 40 (12.12%) were categorized as limited partnerships. Service-oriented businesses made up 134 (40.60%), closely followed by wholesale/retail with 100 (30.30%), and manufacturing at 96 (29.10%). Among accountants, 197 (59.70%) had experience working with SMEs for 6-10 years, while 96 (29.09%) had 1-5 years, and 37 (11.21%) had over 10 years of accounting experience. All accountants were registered with the Thailand Federation of Accountant Professions (TFAC).

Table 2 Demographic data of the respondents.

Category	Number of respondents	Percentage
Gender		
Female	204	61.82
Male	126	38.18
Total	330	100.00
Type of SMEs		
Limited companies	290	87.88
Limited partnership	40	12.12
Total	330	100.00
Business type		
Service	134	40.60
Wholesale/Retail	100	30.30
Manufacturing	96	29.10
Total	330	100.00
Work experience of surveyed accountants		
1-5 years	96	29.09
6-10 years	197	59.70
More than 10 years	37	11.21
Total	330	100.00

Before conducting regression analysis, correlation analysis was performed to examine the relationships among variables and identify potential multicollinearity. The correlation coefficients among independent variables ranged from 0.289 to 0.764, all below the threshold of 0.8, indicating that multicollinearity was not a significant concern. Additionally, variance inflation factors (VIF) were calculated for each independent variable, with values ranging from 1.437 to 3.826, all below 5, further confirming the lack of severe multicollinearity issues.

A model was developed utilizing multiple regression analysis to evaluate the primary research hypothesis asserting that the competencies requisite for digital accountants including professional accounting knowledge and expertise, technological proficiency, the application of an ethical accounting framework, digital communication skills, and data analytics and management capabilities impact the operational performance of small and medium-sized enterprises (SMEs) registered in Bangkok and its surrounding areas (Table 3).

Table 3 A multiple regression analysis of the skills required for accountants in the digital era and their impact on the operational performance of SMEs in Bangkok and the surrounding metropolitan area.

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.
	B	Std. Error	Beta		
Constant	0.044	0.025		1.766	0.078
Accounting knowledge and competency	-0.130	0.020	-0.137	-6.481	0.000
Technological proficiency	0.219	0.029	0.220	7.668	0.000
Application of an accounting ethical framework	0.029	0.032	0.031	0.921	0.358
Digital communication	0.578	0.043	0.582	13.416	0.000
Data analytics and management	0.294	0.034	0.300	8.583	0.000
$R = 0.994^a$, $R^2 = 0.988$, Adjusted $R^2 = 0.988$, Standard error = 0.080, Sig. of F = 0.000					

Results presented in Table 3 indicate that the multiple regression model possesses strong explanatory power, with an Adjusted R^2 of 0.988. This means the five independent variables accounted for 98.80% of the variation in SME operational performance, leaving just 1.20% attributable to other external factors. The standard error was 0.080, which reflects high precision in the model's predictions. The F-test showed a significance value of 0.000, far below the 0.05 threshold, affirming the statistical significance of the regression model. Thus, at least one independent variable significantly influenced SME operational performance.

When examining individual variables, digital communication emerged as the most influential factor, boasting the highest standardized regression coefficient ($\beta = 0.582$, $p = 0.000$). Data analytics and management ranked second ($\beta = 0.300$, $p = 0.000$), followed by technological proficiency ($\beta = 0.220$, $p = 0.000$). Interestingly, accounting knowledge and competency revealed a negative relationship with operational performance ($\beta = -0.137$, $p = 0.000$), suggesting that reliance on traditional accounting skills without digital integration may hinder operational efficiency. Applying an accounting ethical framework was the only variable that did not demonstrate statistical significance ($\beta = 0.031$, $p = 0.358$).

The central hypothesis suggested that digital skills for accountants impact the operational performance of SMEs. The regression results corroborated this, confirming a significant relationship between digital skills and SME operational performance. Table 4 summarizes the results of hypothesis testing for each digital skill dimension.

Table 4 Summary of hypothesis testing results

Hypothesis	Statement	β Value	p-Value	Decision
H_1	Skills for digital accountants influence the operational performance of SMEs	-	0.000	Accepted
$H_{1.1}$	Accounting knowledge and competency influence the operational performance of SMEs	-0.137	0.000	Accepted*
$H_{1.2}$	Technological proficiency influences the operational performance of SMEs	0.220	0.000	Accepted
$H_{1.3}$	The application of an accounting ethical framework influences the operational performance of SMEs	0.031	0.358	Rejected
$H_{1.4}$	Digital communication influences the operational performance of SMEs	0.582	0.000	Accepted
$H_{1.5}$	Data analytics and management affect the operational performance of SMEs	0.300	0.000	Accepted

Note: *While $H_{1.1}$ is statistically accepted, the negative relationship indicates that traditional accounting knowledge alone may have an inverse relationship with operational performance in the digital context.

These findings emphasize the essential role of digital skills in improving SME operational performance, with digital communication, data analytics, and technological proficiency identified as the most significant factors. The results indicate that while traditional accounting knowledge remains crucial, it needs to be supplemented by digital capabilities to enhance SME performance in the modern business landscape.

Discussion

This study examined accountants' perspectives on essential digital skills that may enhance SME operational performance in Bangkok and its surrounding areas. It is important to note that this research concentrated on accountants' perceptions rather than objective skill measurements and their direct impact on quantifiable performance metrics. The findings offer valuable insights into how accountants view various digital skills as contributing to operational effectiveness in the evolving business environment.

According to accountants, digital communication is perceived to have the most significant relationship with operational performance (β = 0.582, p = 0.000). This view aligns with findings from Jackson et al. (2022) and Lau and Höyng (2023), which indicate that effective digital communication enhances processes, fosters collaboration, and boosts decision-making efficiency. In this study, accountants emphasized the importance of clearly communicating complex financial information through digital platforms to support informed decision-making by stakeholders. The strong perceived

influence of digital communication implies that accountants who use digital tools can enhance SME performance by ensuring that financial information is delivered accurately and promptly to the appropriate parties.

From the respondents' perspective, data analytics and management were viewed as the second most influential factor (β = 0.300, p = 0.000). This perception supports previous research by Efosa and Eromonsele (2023), who highlighted the crucial role of data analytics in advancing the accounting profession and enhancing business information for decision-making. As businesses generate increasingly large volumes of data, the ability to analyze and derive meaningful insights from this data becomes a critical skill for accountants. The accountants surveyed believe that analyzing and interpreting financial data improves forecasting, risk assessment, and strategic planning for SMEs.

The surveyed accountants also perceived technological proficiency as having a positive relationship with operational performance (β = 0.220, p = 0.000). This perception is consistent with findings from Coman et al. (2022), who emphasized that technological proficiency is essential for accountants adapting to the digital transformation of accounting practices. The positive relationship between perceived technological proficiency and operational performance indicates that accountants believe effectively utilizing digital tools and software may enhance financial reporting efficiency and optimize workflow processes, potentially contributing to overall SME performance.

Interestingly, accountants perceive traditional accounting knowledge and competency as having a negative relationship with operational performance (β = -0.137, p = 0.000). This counterintuitive perception suggests that accountants believe relying solely on traditional skills without integrating digital expertise may be less effective in today's digital business environment. Arkhipova et al. (2024) noted that accountants focusing exclusively on traditional skills might experience inefficiencies and miss opportunities to engage in more strategic tasks. This result does not diminish the importance of foundational accounting knowledge but highlights the perceived necessity of complementing traditional expertise with digital capabilities. However, this finding reflects perceptions rather than objective measurements and should be interpreted cautiously.

According to accountants, using an accounting ethical framework showed no significant correlation with operational performance (β = 0.031, p = 0.358). This view is consistent with findings by Sakthachak and Sukwattanasinitt (2019), who determined that professional ethics did not notably enhance the efficiency of digital accountants in Thai Government Offices. Likewise, Upradit (2018) observed that general ethics and accountability towards stakeholders did not directly influence work performance. Nevertheless, ethical practices are still essential for upholding professional integrity and fostering stakeholder trust. They guarantee transparency, accuracy, and integrity in financial reporting, crucial for building stakeholder confidence and creating a foundation for sustainable growth.

These findings are broadly consistent with previous research emphasizing the growing importance of digital skills in accounting. Stancheva-Todorova (2020) highlighted that employees' knowledge and competencies are crucial for companies adapting to Industry 4.0, particularly as

digital technologies become increasingly integrated into business processes. The current study extends this understanding by specifying which digital skills accountants perceive as having the most significant impact on operational performance. The perceived negative relationship between traditional accounting knowledge and operational performance contrasts with previous studies that emphasize the continued importance of core accounting competencies. However, this finding may reflect the rapidly changing nature of accounting work in the digital era, where traditional skills alone may be perceived as insufficient without complementary digital capabilities. As Jackson et al. (2022) noted, accounting roles are shifting from transaction-focused tasks to utilizing technology-generated data to guide stakeholder strategies, necessitating an evolution in skill requirements. It is essential to emphasize that these findings represent accountants' opinions rather than direct measurements of skills and their impact on actual firm performance metrics such as net margin, return on assets, or other quantifiable indicators. The study did not objectively assess accountants' digital skills through examinations or performance tests, nor did it directly measure SMEs' financial or operational outcomes. Therefore, the results should be interpreted as reflections of professional perceptions rather than established causal relationships.

The perceptions documented in this study suggest that accountants believe developing digital skills alongside traditional accounting knowledge is important, particularly in digital communication, data analytics, and technological proficiency. Educational institutions and professional organizations might consider these perceptions when designing curricula and development programs. However, further research using objective skill assessments and direct performance measurements would be necessary to establish causal relationships between specific digital skills and SME performance outcomes.

In summary, while this study offers valuable insights into accountants' perspectives on digital skills, the findings should be regarded as preliminary evidence of perceived relationships rather than definitive proof of direct impact on operational performance. Future research could expand on these findings by including objective skill assessments and direct performance measurements to establish more concrete relationships between accountants' digital skills and SME operational outcomes.

Conclusions

This study examined accountants' perspectives on essential digital skills that may enhance SME operational performance in Bangkok and the surrounding areas. Through a survey of 330 accountants, the research identified which digital skills accountants view as most critical in today's rapidly evolving business environment. Based on these perceptions, digital communication emerged as the most influential factor, followed by data analytics and technological proficiency. Interestingly, traditional accounting knowledge alone was perceived to negatively impact operational performance unless complemented by digital capabilities. These findings suggest that accountants recognize the shift in their profession from transaction-focused roles to more strategic, technology-enabled advisory positions. The study contributes to accounting literature and practice in several ways. First, it provides empirical evidence of the perceived hierarchy of digital skills needed in contemporary

accounting practices, offering guidance for prioritizing skill development. Second, it highlights the evolving nature of the accounting profession, where technical accounting knowledge must be enhanced by digital capabilities to remain relevant. Third, it offers practical insights for accounting education, suggesting curriculum adjustments that emphasize digital communication, data analytics, and technological proficiency alongside traditional accounting concepts. For accounting practitioners, the findings underscore the importance of continuous upskilling in digital technologies to improve service delivery to SMEs. For accounting educators, the results suggest a need to integrate digital skill development throughout the accounting curriculum. For professional accounting bodies, the study provides direction for continuing professional development programs that address the digital transformation of accounting practice. While this study focused on perceptions rather than objective skill measurements, it offers valuable preliminary evidence of the changing skill requirements in accounting. Future research could build on these findings by including objective skill assessments and direct performance measurements to establish stronger links between specific digital skills and business outcomes.

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