FACTORS AFFECTING THE INTENTION OF ADOPTING CLOUD-BASED ACCOUNTING STRATEGY: THE CASE OF MICRO, SMALL, AND MEDIUM-SIZED ENTERPRISES

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Abstract

Cloud accounting is a specialized form of cloud computing designed for financial data processing (Yau-Yeung et al., 2020). By enabling firms to manage financial information more efficiently, it provides significant strategic and operational benefits (Tawfik et al., 2022). These advantages have attracted growing interest in Vietnam, particularly among micro, small, and medium-sized enterprises (MSMEs). To explore this trend, the present study investigates the factors influencing MSMEs' intention to adopt cloud-based accounting. Nine factors impacting the adoption intention were investigated: relative advantage, perceived compatibility, top management support, financial readiness, technological competency, competitor, regulatory environment, vendor support, and vendor scarcity. Based on the technology-organization-environment (TOE) framework, these factors were classified into three main categories: technological context, organizational context, and environmental context. Data was collected from 200 Vietnamese MSME respondents between February 2024 and March 2024 through both qualitative and quantitative methods. Statistical analyses, including descriptive analysis, Cronbach's alpha reliability analysis, exploratory factor analysis (EFA), correlation analysis, and regression analysis, were conducted using Statistical Package for the Social Sciences (SPSS) 25.0. The findings indicate that five factors — relative advantage, top management support, financial readiness, competitor, and regulatory environment — positively influence adoption intention. These insights contribute to the understanding of cloud accounting adoption in Vietnam and provide recommendations for MSMEs, vendors, and government policymakers to promote digital transformation.

Keywords: Cloud-Based Accounting, MSMEs, Vietnam

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1. INTRODUCTION

Globalization, big data, and web-based applications favor cloud accounting, which enables remote financial access and saves resources, and drives a shift to cloud solutions (Alsulami, 2025; Hamad et al., 2022; Moolngearn & Kraiwanit, 2024). Cloud computing has emerged as a defining innovation in the evolution of the internet, capturing global attention, with the global cloud accounting software market projected to reach USD 7.97 billion by 2031 (Sharma, 2024). Aligned with this global trend, the Vietnamese government launched the National Digital Transformation Program in 2020, actively promoting digital technology like cloud accounting through supportive policies and skill development initiatives. This has resulted in Vietnam having the fastest digital economy growth in Southeast Asia in 2023, alongside a thriving data center and cloud computing market.

Cloud accounting offers cost and efficiency benefits, especially for micro, small, and medium-sized enterprises (MSMEs) competing with larger firms, which makes its adoption crucial for Vietnamese digital transformation. Despite its importance and supporting regulations, many Vietnamese MSMEs still use manual systems or outsourcing. While global research on cloud adoption in small and medium-sized enterprises (SMEs)/MSMEs commonly uses the technology-organization-environment (TOE) framework with varied factors (Alshamaila et al., 2013; Hamundu et al., 2020; Hamzah et al., 2023; Sastararuji et al., 2022; Tawfik et al., 2022), Vietnamese studies have mainly focused on technological (Abu et al., 2022; Le & Cao, 2020; Luong, 2022) and organizational factors. Given the impact of the political landscape on firm performance (Boamah et al., 2023), further research is needed on specific factors, particularly the regulatory environment, influencing cloud accounting adoption by Vietnamese MSMEs.

This research aims to investigate the factors influencing the intention to adopt cloud-based accounting among MSMEs in Vietnam. Specifically, it seeks to determine the relationship between technological-context factors (relative advantage, perceived compatibility) and adoption intention, examine the influence of organizational-context factors (top management support, financial readiness, technological readiness) on adoption intention, and, more importantly, explore the impact of environmental-context factors (competitor, regulatory environment, vendor support, vendor scarcity) on the adoption intention of cloud accounting within Vietnamese MSMEs. The study addresses these objectives through three research questions focusing on the influence of each contextual factor on the intention to adopt cloud-based accounting in Vietnamese MSMEs.

Employing a mixed-methods approach, this research analyzes both secondary data from official sources and scholarly databases and primary data from interviews and surveys of Hanoi-based MSMEs. Qualitative data informs the theoretical framework and interpretation, while quantitative data, analyzed via Statistical Package for the Social Sciences (SPSS), objectively assesses factors influencing cloud accounting adoption intentions, providing a comprehensive understanding.

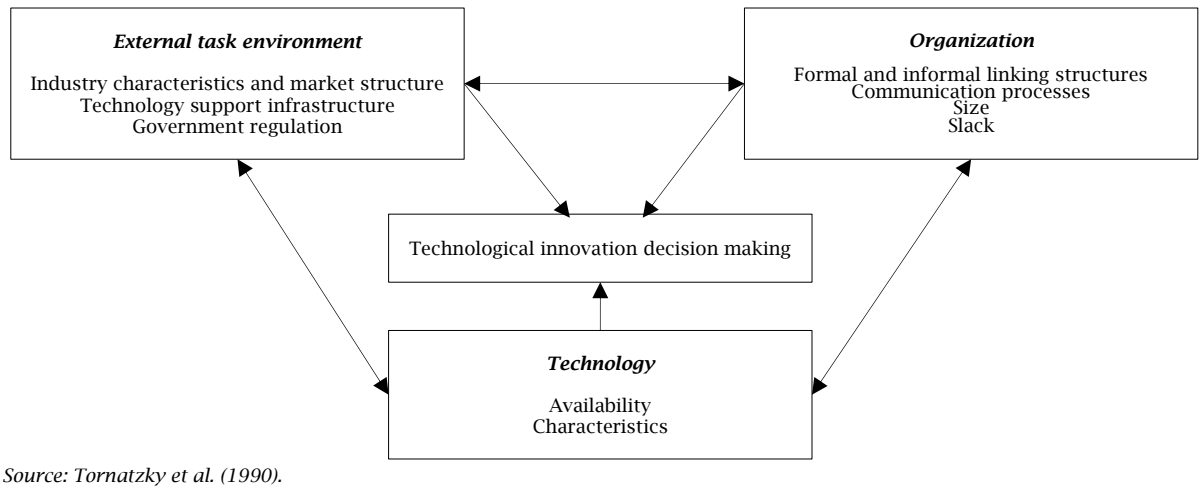
Based on the aforementioned research gaps, the research team decided to conduct a study on the factors affecting the intention of adopting cloud-based accounting in MSMEs; therefore, proposing implications for enterprises, vendors, government, and regulatory agencies in Vietnam.

The rest of the paper is as follows. Section 2 reviews relevant academic literature and formulates the research hypotheses. Section 3 outlines the methodology employed for the empirical investigation, encompassing the study population, research design, unit of analysis, sampling procedures, validity and reliability of the data collection instrument, and the data analysis strategy. Section 4 presents the results, and Section 5 discusses the findings of the study. Finally, Section 6 concludes the paper and offers recommendations based on the research outcomes.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The TOE framework, an established information system (IS) theory, reveals how IS adoption decisions are being considered by businesses in terms of technological conditions, organizational structure, and industrial environment (Tornatzky et al., 1990). In addition, TOE is the sole theoretical framework that takes into account all the driving forces that can impact information system adoption decisions (Owusu, 2020). The TOE framework is shown in Figure 1 below:

Figure 1. Technology organization and environment framework



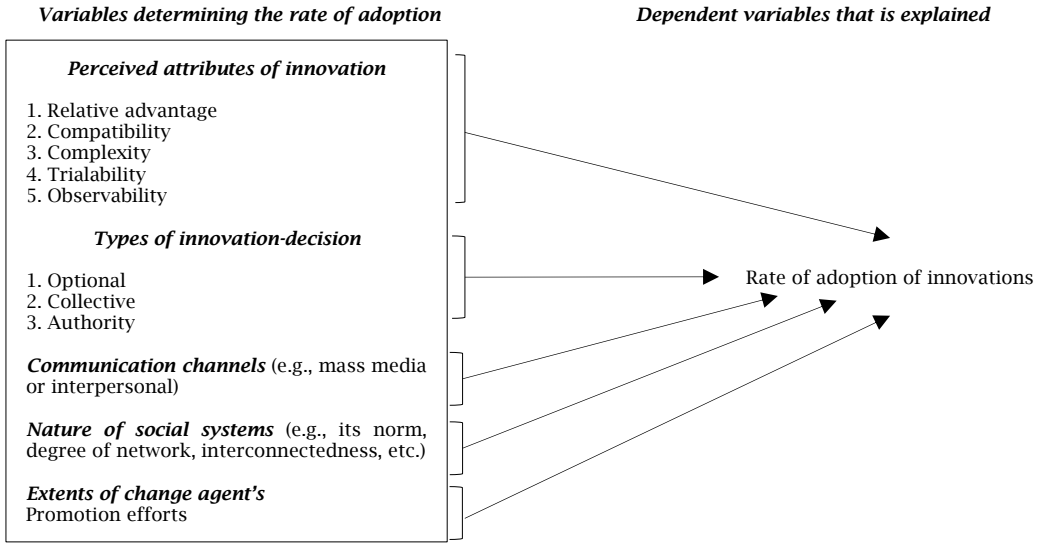
Source: Tornatzky et al. (1990).

The term "technological context" refers to technologies relevant to the firm. This covers recent practices and equipment internal to the business, as well as the course of available technologies external to the business, including relative advantage, compatibility, technological readiness, reliability, and complexity (Nguyen et al., 2021). Organizational context relates to features and resources of the organization, such as top management support, innovation, and capability (Malik et al., 2021). Environmental context is the field in which a firm operates its business: industry characteristics, competitors, and dealings with the regulatory (Tornatzky et al., 1990).

Diffusion of innovation (DOI) model, which was first developed by Everett M. Rogers in 1962, investigates the different stages in the adoption process and the factors that affect the rate of adoption. Thus, DOI is the key theory to understand how new ideas, technologies, products, or innovations spread across society. Rogers's models about factors influencing adoption were a basis for this study (Figure 2).

By and large, DOI is the main theory to explain how society adopts or rejects new things, such as ideas, technologies, products, or innovations. It helps organizations and researchers understand the dynamics of how and why innovations are adopted or rejected, allowing for more effective strategies to promote and facilitate adoption.

Figure 2. Adapted from the diffusion of innovations



Source: Rogers (2003).

Based on the theoretical frameworks presented above, a literature review was conducted to investigate the critical determinants influencing MSMEs' propensity to adopt cloud-based solutions. Through a comprehensive analysis of existing research, we aim to identify both the enabling factors and impediments that shape MSMEs' decision-making processes regarding cloud adoption.

The first factor we considered is the perceived relative advantage of cloud computing for MSMEs. Extensive empirical research has explored the correlation between perceived relative advantage and MSMEs' propensity to adopt cloud accounting solutions (Hamzah et al., 2023; Rawashdeh, Rawashdeh, et al., 2023; Mujalli et al., 2024; Dhammika et al., 2025). However, it is crucial for enterprises to acknowledge the associated costs of implementing a new accounting system (Dimitriu & Matei, 2014). Notably, pricing is one area where cloud accounting can offer a distinct advantage over traditional methods (Khanom, 2017). Cloud-based systems eliminate the need for upfront software purchases or server setup and maintenance, potentially leading to cost savings for MSMEs.

Alshirah et al. (2021) found that MSMEs are more likely to adopt cloud-based accounting systems when they perceive them to offer significant relative advantages over conventional accounting methods. Lutfi (2022) and Sastararuji et al. (2022) also concluded that relative advantage positively influences MSMEs' intention to adopt cloud accounting solutions.

Moreover, research conducted by Luong (2022) in Vietnam corroborated these findings, demonstrating that relative advantage is considered the strongest determinant influencing the adoption of cloud accounting among MSMEs in the region. Specifically, the study revealed that MSMEs in Vietnam are motivated to adopt cloud accounting due to its perceived superiority in terms of cost-effectiveness, accessibility, and data transparency.

Therefore, this paper puts forward the following hypothesis:

H1a: Perceived relative advantage positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

Another factor influencing cloud adoption intention is perceived compatibility. The successful adoption of information technology (IT) by MSMEs presents a complex challenge in many countries, as evidenced by research from Awa and Ojiabo (2016) and Gangwar et al. (2015). A key factor influencing this adoption is compatibility (Sastararuji et al., 2022; Hamzah et al., 2023; Rawashdeh, Rawashdeh, et al., 2023; Mujalli et al., 2024; Dhammika et al., 2025). New technologies can necessitate significant alterations to existing company work practices, and as Premkumar and Roberts (1999) point out,

resistance to change is a frequent organizational response. As a result, it is critical, particularly for small organizations, that the changes are compatible with their infrastructure, values, and beliefs. The more compatible cloud-based accounting is regarded to be with current infrastructure, values, and beliefs, the more likely they will be adopted by MSMEs. A recent study by Mujalli et al. (2024) examining cloud accounting adoption among Saudi Arabian MSMEs highlights the critical role of perceived compatibility as a determinant alongside factors such as perceived ease of use and usefulness.

For the above-mentioned reasons, this hypothesis is proposed:

H1b: Perceived compatibility with current infrastructure, values, and beliefs positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

The first factor to consider in the organizational context is the level of support from top management. A substantial body of existing research underscores the positive influence of top management support on technology adoption within organizations (Ghobakhloo et al., 2012; Eldalabeeh et al., 2021; Mujalli et al., 2024; Dhammika et al., 2025). This positive influence stems from the active role top management plays in promoting and advocating for technology adoption. Such leadership fosters positive employee attitudes towards the new technology, minimizes resistance, and ultimately streamlines the adoption process. Senior management's awareness and support of a technology could influence its adoption by SMEs by means of providing resources, embracing change, and guiding the implementation process (Hamzah et al., 2023). It is expected that top management will create an environment that encourages the exchange of information, demonstrates strong leadership, and actively participates in the technology adoption process (Rawashdeh, Bakhit, et al., 2023; Awa & Ojiabo, 2016). Yeboah-Boateng and Essandoh (2014), in their study about factors influencing the adoption of cloud computing by SMEs in developing economies, found that top management is the most significant factor towards the successful adoption of cloud computing. The same statement was concluded by Qian et al. (2016) as the researchers found out that the top management factor predicts 60.3% of the intention to adopt enterprise resource planning on cloud in manufacturing SMEs in Malaysia.

Therefore, this study proposes the following hypothesis:

H2a: Top management support positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

Financial readiness has been proposed as a factor affecting cloud-based accounting adoption intention (Rawashdeh, Rawashdeh, et al., 2023; Cho et al., 2021). Financial resource limitations and budgetary constraints pose a more significant impediment to cloud accounting adoption for MSMEs compared to larger organizations (Peltier et al., 2012). In the background of Africa (Cote d'Ivoire), where MSMEs also contribute significantly to the economy, it was stated that many SMEs face difficulties when seeking financial support from outsourcing (Ardjouman, 2014). As a result, these enterprises may consider the new technologies too expensive to adopt and use. Furthermore, the high initial costs and inherent investment risks associated with cloud accounting adoption may deter MSMEs to a greater extent compared to large enterprises with more substantial financial resources to absorb such costs (Oliveira et al., 2014). The reason is that SMEs may be more risk-averse compared to larger enterprises, as the potential impact of technology adoption failures can be more significant for smaller businesses (Ghobakhloo et al., 2012). Consequently, SMEs may exhibit a propensity for risk aversion regarding technological investments absent readily apparent and immediate benefits. In the Vietnamese context, these factors, coupled with financial constraints commonly faced by MSMEs, can act as significant barriers to the application of innovative technologies.

H2b: Financial readiness positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

Building on Govindaraju et al. (2018) research, a positive correlation exists between an organization's IT capabilities and its propensity to adopt new technologies. Regarding infrastructure, organizations with an inherent well-developed IT infrastructure, such as network technologies and enterprise systems, were more willing to adopt new technologies successfully (Oliveira et al., 2014; Rawashdeh, Rawashdeh, et al., 2023; Cho et al., 2021; Rawashdeh & Bakhit, 2023) since this is the foundation to integrate and construct new technologies in the companies' system. In terms of human capital, organizations with employees who possess the necessary technological skills and digital literacy are more likely to adopt and effectively utilize new technologies, while firms with staff lacking these skills may face a considerable obstacle to the adoption and utilization process (Nikou et al., 2022).

Therefore, this paper puts forward the following hypothesis:

H2c: Technological readiness positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

Among the environmental factors shaping cloud adoption intention, competitor behavior will be the first point of analysis. The degree of competition has a considerable impact on the adoption of IT. A growing level of market competition may force organizations to look for a competitive edge through innovations (Saad et al., 2022; Kamal et al., 2023). The level of the firm's exposure to market competition is revealed by competitive pressure. In addition to the efficient use of resources, intense competition plays a crucial role in the acceptance of innovations. The technology industry is renowned for its rapid development, which puts pressure on businesses to compete and raises their awareness of new developments from their rivals. Furthermore, SMEs face competition not only from the same level but also from larger corporations as well as multinationals. To survive in a competitive environment, SMEs must adapt to new technology and fulfill the needs of global consumers (Zhang et al., 2021). Saad et al. (2022) proposed that by implementing IS, businesses could be able to change the relative competitive positions, have an impact on the industry structure, and use novel strategies to surpass competitors, changing the competitive environment. Previous research shows that competitor factor has a positive impact on the intention to adopt cloud-based accounting (Gangwar et al., 2015; Kumar et al., 2017; Lutfi et al., 2020; Saad et al., 2022; Rawashdeh,

Rawashdeh, et al., 2023; Rawashdeh & Bakhit, 2023; Dhammika et al., 2025).

H3a: Competitor factor positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

Another key environmental factor to consider is the regulatory environment. Regulatory environment refers to the support from the government and from the regulations or rules implemented by related parties, such as financial institutions. This is considered an important factor that affects the intention of adopting cloud computing (Jianwen & Wakil, 2019; Tian et al., 2024), while government support is stated to significantly influence the intention of adopting cloud accounting in SMEs (Hamzah et al., 2023).

H3b: Regulatory environment positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

Prior studies have proven the importance of vendors in MSMEs' adoption of cloud computing (Rawashdeh, Rawashdeh, et al., 2023; Rawashdeh & Bakhit, 2023; Sastararuji et al., 2022). Cloud vendors provide access to software applications, data storage, and other IT services through the internet, eliminating the need for local servers. As cloud computing is a relatively new technology, vendor support plays a crucial role in fostering positive adoption intentions among MSMEs (Kumar et al., 2017; Aduamoah, 2017; Rawashdeh & Rawashdeh, 2023). Key factors for MSMEs when selecting a cloud vendor include reputation, reliability, service availability, pricing, and the vendor's commitment to staff training in client support.

However, the emerging nature of cloud services can present challenges. A limited pool of vendors can negatively impact adoption due to potentially lower service standards. Conversely, a sufficient number of reputable vendors increases trust in cloud services and fosters a more positive attitude towards cloud adoption among MSMEs (Li et al., 2015). Therefore, vendor scarcity can have a detrimental effect on companies' trust in cloud services.

H3c: Vendor support positively affects Vietnamese MSMEs' intention of adopting cloud-based accounting.

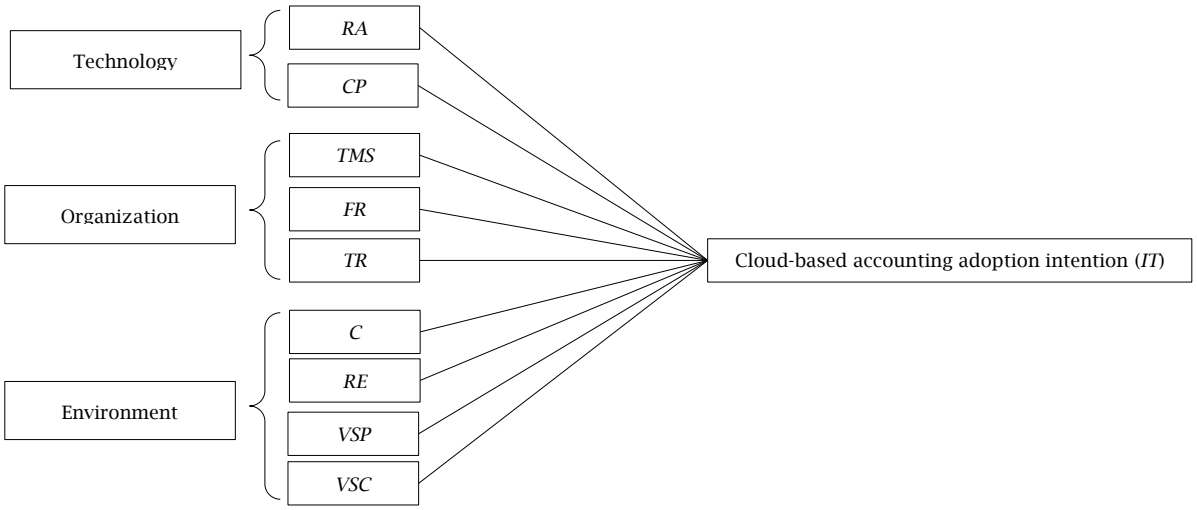
H3d: Vendor scarcity negatively affects Vietnamese MSMEs' intention to adopt cloud-based accounting.

3. RESEARCH METHODOLOGY

3.1. Research model

Based on the results of a comprehensive review of previous researches on the factors influencing the intention to adopt cloud accounting and the actual research situation, the authors propose nine factors that influence the intention to adopt: technological context includes relative advantage (*RA*) and perceived compatibility (*CP*); organizational context includes top management support (*TMS*), financial readiness (*FR*) and technological readiness (*TR*); environmental context includes competitor (*C*), regulatory environment (*RE*), vendor support (*VSP*) and vendor scarcity (*VSC*). To be more specific, the main model follows the TOE framework issued by Tornatzky et al. (1990); each context is encouraged by the cross of the TOE framework, DOI framework (Rogers, 2003). The specific research model is presented in Figure 3 as follows:

Figure 3. Proposed research model



Source: Authors' elaboration.

3.2. Research process

The research followed a six-step process. Initially, a comprehensive literature review informed the development of a preliminary model and items. This was then refined through qualitative in-depth interviews and group discussions. Subsequently, quantitative data were collected from Hanoi enterprises via structured surveys and analyzed using SPSS, multiple linear regression, Cronbach's alpha, exploratory factor analysis (EFA), and regression analysis. Finally, the research culminated in proposed solutions and a comprehensive final report.

3.3. Qualitative research

3.3.1. Research method

Various research methods, including focus group discussions (FGDs) and case studies, were considered for this study; however, both have

notable limitations. FGDs may inhibit participants from sharing sensitive financial or operational information due to group dynamics, potentially limiting the depth of data gathered. Case studies, on the other hand, depend on the availability of documented cases, which may be limited for MSMEs in Vietnam. As a result, semi-structured interviews (SSI) were chosen as they provide a confidential and flexible setting that allows for in-depth, individualized insights and context-specific probing. This study employed a qualitative research design utilizing SSI to assess the contextual relevance of predetermined factors and observations, which will inform the development of a subsequent survey instrument.

Ten participants, including experts, experienced accountants, auditors, and managers from MSMEs in Hanoi, Son La, and Thai Binh, were recruited for the in-depth interviews. The interviews were conducted online via Google Meetings to ensure participant convenience and minimize scheduling conflicts. The interview content underwent a meticulous process of recording, transcription, and thematic analysis to identify and understand the factors relevant to the research model within the Vietnamese context. The duration of the in-depth interviews ranged from 36 minutes to 52 minutes, with an average duration of 43 minutes and 6 seconds.

The authors have summarized the key opinions and considerations for cloud accounting adoption among Vietnamese MSMEs. The findings reveal a clear understanding of the benefits compared to traditional methods, including improved accessibility, real-time data, enhanced collaboration, and cost savings. Cloud solutions with easy integration capabilities and minimal disruption to current accounting practices are suggested. A participant acknowledged concerns surrounding data security and compliance with regulations. Cloud providers should ensure robust security measures and clear data privacy policies to address these concerns. MSMEs' technological infrastructure should be evaluated to determine their readiness for cloud-based solutions. Reliable internet connectivity and employee comfort with technology are critical factors.

3.3.2. Establish the items for these variables

Based on the literature review and expert opinions on the research topic, the authors developed the following scale with nine observable variables, which are represented in Table 1:

Table 1. Items for independent and dependent variables

Factors	*Code*	*Items*	*References*
RA	*RA1*	Cloud accounting reduces capital expenditures	Mohanty and Mishra's (2017), Dimitriu and Matei (2014)
	RA2	Cloud accounting optimizes human resources	
	RA3	Cloud accounting gives greater control over work	
	RA4	Cloud accounting increases productivity	
CP	*CP1*	Using cloud computing services is compatible with all aspects of our work	Syah et al. (2023), Segars and Grover (1993)
	CP2	Using cloud computing services fits into our work style	
	CP3	Using cloud computing services is comparable to using traditional accounting software	
TMS	*TMS1*	The top management has an encouraging attitude towards the adoption	Rajan and Baral (2015), Hasani et al. (2023)
	TMS2	The top management offers most of the essential assistance and resources to enable the adoption	
	TMS3	The top management is aware of the benefits achievable through the adoption of cloud accounting	
	TMS4	The top management is willing to take the risks involved in adopting cloud accounting	
FR	*FR1*	We allocate a percentage of total revenue for cloud computing implementation in the company	Gangwar et al. (2015), Alzubi et al. (2015)
	FR2	We have enough money that is necessary for the adoption of cloud accounting	
	FR3	We have the financial resources for the purchase of the equipment that is necessary for the application of cloud accounting	
	FR4	We have the necessary financial resources for the maintenance of cloud accounting	
	FR5	We have the necessary financial resources to train workers on the use of cloud accounting	
	FR6	We have the necessary financial resources for the purchase of the systems needed to protect the information on the cloud accounting	
TR	*TR1*	We have an inherently well-developed IT infrastructure: complete computer access	Gangwar et al. (2015)
	TR2	We have an inherently well-developed IT infrastructure: high bandwidth connectivity to the internet	
	TR3	We have an inherent staff who are skilled and knowledgeable in cloud accounting	
	TR4	We hire highly specialized or knowledgeable personnel for cloud computing	
C	*C1*	The pressure when competitors who have adopted cloud accounting encourages my company to adopt cloud accounting	Malik et al. (2021)
	C2	The fear of losing a competitive advantage as a result of not adopting cloud accounting encourages my company to adopt cloud accounting	
	C3	Seeing competitors benefit from adopting cloud accounting encourages my company to adopt cloud accounting	
RE	*RE1*	The laws and regulations of the government support cloud-based accounting implementation	Ahn and Ahn (2020)
	RE2	The government encourages the use of cloud-based accounting through incentive programs	
	RE3	Government regulations that hinder the use of cloud-based accounting are being relaxed	
VSP	*VSP1*	Having sufficient technical assistance is a crucial consideration once cloud accounting services are adopted	Kinuthia (2014)
	VSP2	Free training sessions for staff are offered to promote the adoption of technology by vendors	
VSC	*VSC1*	There are differences in the level of service provided by various cloud vendors	Ahn and Ahn (2020)
IT	*IT1*	The company has the intention of using cloud-based accounting software as soon as possible	Ahn and Ahn (2020)
	IT2	The company supports the idea of using cloud-based accounting software	
	IT3	The company is thoroughly discussing the adoption of cloud-based accounting software	
	IT4	The company is preparing for the adoption of cloud-based accounting software	

Source: Authors' elaboration.

3.4. Quantitative research

After using SSI to develop the survey instrument, the insights gained played a key role in shaping the structure and content of the subsequent questionnaire. The decision to use a questionnaire for collecting primary data was driven by several factors. Firstly, a questionnaire allows for the efficient collection of data from a large and geographically dispersed sample, which is essential for ensuring representativeness in a study focusing on MSMEs across various regions. Secondly, questionnaires enable the collection of standardized data, facilitating easier analysis and comparison across respondents. This method also offers greater anonymity and privacy, encouraging more candid responses, particularly when dealing with sensitive financial and operational information. Lastly, compared to other methods, such as FGDs or additional interviews, questionnaires are more cost-effective and time-efficient, making them an ideal choice for this study's large sample size.

3.4.1. Questionnaire design

The research team selected and inherited items to measure these variables: *RA*, *CP*, *TMS*, *FR*, *TR*, *C, RE, VSP*, and *VSC*. The items measuring those variables above were translated forward and back to ensure language conversion is completely accurate and does not change the meaning of the scales (Table 1). The research team converted items of observable variables into the questionnaire in the form of a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree).

The draft questionnaire was sent to 10 specific survey subjects, including employees and managers from 3 micro, 3 small, and 4 medium enterprises, to ensure the content of the questions was not misinterpreted or misunderstood, causing distortions in the investigation results. The questionnaire was completed after adjusting according to the comments from the 10 respondents mentioned above.

3.4.2. Sample size and sampling methods

The research targets all MSMEs operating in Hanoi. The sample size was determined based on the guidelines of Tabachnick and Fidell (2012), which recommend a minimum of $N > 50 + 8m$, where m represents the number of independent variables. With nine independent variables, the required sample size was at least 122 participants.

Additionally, Hair et al. (2006) suggested a minimum sample size of five times the number of items for factor analysis. Given 30 items in the study, the minimum sample size was 150 participants. Thus, the combined minimum sample size was set at 150 participants.

A non-probability sampling method was employed. The survey, distributed via Google Forms, targeted 185 enterprises across diverse industries in Hanoi, with a consent statement explaining the research purpose. A total of 226 responses were received, and after data cleaning, 200 valid responses remained for analysis.

4. RESULTS ANALYSIS

4.1. Demographic information of respondents

Table 2 presents the demographic information of respondents, including their business size, their business's age, education, business industry, and position. This information provides an overview of the characteristics of the sample to draw accurate conclusions.

Table 2. Demographic information of respondents

Criteria		*Number of respondents*	*%*
Business size	Micro-sized	54	27.0
	Small	80	40.0
	Medium-sized	66	33.0
Age of business	Less than 5 years	79	39.5
	More than 10 years	53	26.5
	5 to 10 years	68	34.0
Education	Advanced diploma	7	3.5
	Bachelor's degree	169	84.5
	Master's degree	20	10.0
	Doctorate's degree	4	2.0
Industry group of the company	Retail	42	21.0
	Sales of specialized ophthalmic medical equipment	1	0.5
	Technology	17	8.5
	Services	88	44.0
	Education	2	1.0
	Cosmetics	1	0.5
	Manufacturing	43	21.5
	Trade	2	1.0
	Telecommunications	2	1.0
	Construction	2	1.0
Respondent's position in the company	Chairman of the members council	2	1.0
	Chief finance officer	10	5.0
	Chief accounting officer	35	75.0
	Accountant	104	52.0
	IT staff	30	15.0
	Internal auditor	8	4.0
	Auditor	2	1.0
	Salesman	2	1.0
	Marketing staff	4	2.0
	Staff	3	1.5.0

Source: Authors' elaboration using SPSS.

4.2. Reliability analysis: Cronbach's alpha reliability coefficient

Cronbach's alpha is a coefficient of internal consistency used in psychometrics to estimate the reliability of a test or scale. In other words, it assesses the extent to which the items in a test measure a single, underlying construct. The valuation of the scale using Cronbach's alpha reliability coefficient is represented in Table 3, which shows good reliability for the variable groups in the research model. The reliability analysis signifies that the factors having high reliability with Cronbach's alpha above 0.8 are *RA*, *FR*, *C*, *TR*, *VSP*, and *IT*. Meanwhile, *TMS* and *RE* are considered factors with good reliability, with Cronbach's alpha above 0.7. The remaining factor, *C*, has a Cronbach's alpha of 0.677, which is considered an acceptable level of reliability. In most factors, the variables have similar means, variances, and positive correlations, further supporting their internal consistency. Removing any variables from these factors would decrease the overall reliability. Overall, it can be asserted that the research model has reliable scales for the variable groups.

Table 3. Cronbach's alpha test results

Observative variables	*Mean of the scale if the variable is deleted*	*Variance of the scale if the variable is deleted*	*Total variable correlation*	*Cronbach's alpha if this variable is deleted*
RA; Cronbach's alpha = 0.863				
RA1	11.77	4.902	0.697	0.831
RA2	11.67	4.705	0.721	0.821
RA3	11.66	4.609	0.690	0.835
RA4	11.83	4.678	0.738	0.815
TMS; Cronbach's alpha = 0.848				
TMS1	8.07	4.674	0.723	0.790
TMS2	7.92	5.103	0.712	0.797
TMS3	7.98	4.778	0.691	0.805
TMS4	8.00	5.231	0.623	0.832
RE; Cronbach's alpha = 0.784				
RE1	6.26	1.922	0.600	0.732
RE2	6.34	1.743	0.635	0.694
RE3	6.25	1.716	0.636	0.693
C; Cronbach's alpha = 0.677				
C1	8.09	1.445	0.477	0.604
C2	7.76	1.734	0.454	0.631
C3	7.99	1.347	0.551	0.499
FR; Cronbach's alpha = 0.899				
FR1	19.98	9.381	0.700	0.886
FR2	20.04	8.883	0.750	0.878
FR3	20.02	9.281	0.664	0.891
FR4	19.91	8.921	0.734	0.880
FR5	19.93	8.532	0.809	0.868
FR6	19.97	9.059	0.703	0.885
CP; Cronbach's alpha = 0.865				
CP1	6.69	3.996	0.764	0.790
CP2	6.60	4.141	0.785	0.777
CP3	6.71	3.817	0.691	0.866
TR; Cronbach's alpha = 0.844				
TR1	10.44	6.408	0.588	0.839
TR2	10.48	5.477	0.797	0.753
TR3	10.84	5.231	0.692	0.798
TR4	10.79	5.433	0.662	0.811
VSP; Cronbach's alpha = 0.830				
VSP1	3.83	0.487	0.717	0.829
VSP2	3.87	0.650	0.717	0.621
IT; Cronbach's alpha = 0.866				
IT1	10.24	4.163	0.754	0.812
IT2	10.05	4.455	0.707	0.832
IT3	10.28	4.452	0.707	0.832
IT4	10.11	4.406	0.694	0.837

Source: Authors' elaboration using SPSS.

Despite analysis indicating that deleting item *CP3* ("Using cloud computing services is comparable to using traditional accounting software") would slightly raise Cronbach's alpha by a mere 0.001 (to 0.866), the researchers decided to retain it for several substantive reasons. This decision was made by prioritizing its theoretical contribution to content validity, the already high internal consistency of the three-item scale, the practical insignificance of the potential alpha increase upon its deletion, and its acceptable item-level statistical performance. In addition, the removal of *CP3* would result in the disruption of the rotated component matrix.

4.3. Exploratory factor analysis

Table 4 below displays the EFA test results of the independent variables, indicating their level of suitability for further analysis.

Table 4. Summary of research results

Variables	*Components*								
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
FR5	0.842								
FR2	0.837								
FR1	0.801								
FR4	0.763								
FR6	0.761								
FR3	0.757								
TMS2		0.836							
TMS3		0.830							
TMS1		0.796							
TMS4		0.735							
RA2			0.854						
RA4			0.818						
RA1			0.789						
RA3			0.778						
TR4				0.822					
TR2				0.821					
TR3				0.807					
TR1				0.683					
CP1					0.845				
CP2					0.799				
CP3					0.743				
RE3						0.782			
RE2						0.775			
RE1						0.759			
VSP2							0.857		
VSP1							0.839		
C1								0.789	
C3								0.741	
C2								0.649	
VSC1									0.886
Kaiser-Meyer-Olkin (KMO)	0.764								
Eigenvalue	1.003								
Sig. Bartlett	0.000								
Total extracted variance	74.331								

Source: Authors' elaboration using SPSS.

The factor loading values (ranging from 0.649 to 0.842) indicate the strength of each item's association with its respective factor, while the KMO coefficient (0.764) confirms the data's suitability for factor analysis. Bartlett's test (p-value < 0.05) confirms a strong correlation between the variables within each factor, and the cumulative variance explained by the extracted factors is 74.331%, suggesting they effectively capture a significant portion of the information from the original items. Overall, the factor analysis results validate the suitability of the data and the extracted factors for further analysis. The original proposed model with nine extracted factors will be used to assess their impact on cloud accounting adoption intention.

Table 5 below displays the EFA test results of the dependent variables, measuring the factor loadings, KMO, Bartlett's test, eigenvalues, and total variance extracted.

Table 5. Summary of statistical results of coefficients in exploratory factor analysis for dependent variables

No.	*Statistic*	*Value*	*Condition*	*Remark*
1	KMO	0.807	≥ 0.5	Meets requirement
2	Sig. of Bartlett's test	0.000	≤ 0.05	Meets requirement
3	Eigenvalues	2.851	> 1	Meets requirement
4	Total variance extracted	71.284%	≥ 50%	Meets requirement
Component		***Factor loading***		
IT1		0.871		
IT2		0.839		
IT3		0.838		
IT4		0.829		

Source: Authors' elaboration using SPSS.

All four items have factor loadings exceeding 0.5, while the cumulative variance indicates that the extracted factors can explain 71.284% of the variation in the four original items, with one new extracted item representing the four original items included. The KMO measure being 0.807 (between 0.5 and 1) and Bartlett's test being 0.000 (less than 0.05), respectively, further validate the data's suitability and the presence of a significant correlation between the variables within the factor. Consequently, the original items will be retained for the regression analysis, as confirmed by the principal component analysis analysis.

4.4. Correlation analysis

The correlation matrix shows the correlations between all the variables in the study. The correlations are all positive, indicating that all the variables are positively related to each other (Table 6).

Table 6. Correlation matrix

Variables	*Statistical measures*	*IT*	*RA*	*TMS*	*RE*	*C*	*FR*	*CP*	*TR*	*VSP*	*VSC*
IT	Pearson correlation	1	0.462**	0.434**	0.628**	0.421**	0.545**	0.033	0.029	0.071	0.054
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000	0.638	0.687	0.320	0.446
	N	200	200	200	200	200	200	200	200	200	200
RA	Pearson correlation	0.462**	1	0.283**	0.347**	0.340**	0.255**	0.005	0.014	0.068	-0.069
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000	0.948	0.840	0.337	0.332
	N	200	200	200	200	200	200	200	200	200	200
TMS	Pearson correlation	0.434**	0.283**	1	0.323**	0.171*	0.190**	0.269**	0.103	0.172*	0.074
	Sig. (2-tailed)	0.000	0.000		0.000	0.016	0.007	0.000	0.148	0.015	0.299
	N	200	200	200	200	200	200	200	200	200	200
RE	Pearson correlation	0.628**	0.347**	0.323**	1	0.319**	0.362**	0.039	0.018	0.052	-0.031
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.579	0.804	0.468	0.665
	N	200	200	200	200	200	200	200	200	200	200
C	Pearson correlation	0.421**	0.340**	0.171*	0.319**	1	0.332**	-0.042	-0.125	-0.030	0.024
	Sig. (2-tailed)	0.000	0.000	0.016	0.000		0.000	0.558	0.078	0.672	0.737
	N	200	200	200	200	200	200	200	200	200	200
FR	Pearson correlation	0.545**	0.255**	0.190**	0.362**	0.332**	1	-0.067	-0.078	-0.023	0.034
	Sig. (2-tailed)	0.000	0.000	0.007	0.000	0.000		0.348	0.273	0.742	0.634
	N	200	200	200	200	200	200	200	200	200	200
CP	Pearson correlation	0.033	0.005	0.269**	0.039	-0.042	-0.067	1	0.504**	0.477**	0.276**
	Sig. (2-tailed)	0.638	0.948	0.000	0.579	0.558	0.348		0.000	0.000	0.000
	N	200	200	200	200	200	200	200	200	200	200
TR	Pearson correlation	0.029	0.014	0.103	0.018	-0.125	-0.078	0.504**	1	0.383**	0.279**
	Sig. (2-tailed)	0.687	0.840	0.148	0.804	0.078	0.273	0.000		0.000	0.000
	N	200	200	200	200	200	200	200	200	200	200
VSP	Pearson correlation	0.071	0.068	0.172*	0.052	-0.030	-0.023	0.477**	0.383**	1	0.692**
	Sig. (2-tailed)	0.320	0.337	0.015	0.468	0.672	0.742	0.000	0.000		0.000
	N	200	200	200	200	200	200	200	200	200	200
VSC	Pearson correlation	0.054	-0.069	0.074	-0.031	0.024	0.034	0.276**	0.279**	0.692**	1
	Sig. (2-tailed)	0.446	0.332	0.299	0.665	0.737	0.634	0.000	0.000	0.000	
	N	200	200	200	200	200	200	200	200	200	200

*Note: **: Correlation is significant at the 0.01 level (2-tailed). *: Correlation is significant at the 0.05 level (2-tailed).*
Source: Authors' elaboration using SPSS.

The analysis reveals strong correlations between cloud accounting *IT* and several factors: *RA*, *TMS*, *RE*, *C*, and *FR*, as these factors have high correlations ranging from 0.421 to 0.628. In contrast, factors like *CP*, *TR*, *VSP*, and *VSC* show weak or negligible correlations with *IT*, suggesting minimal impact on cloud accounting adoption intention. Thus, in the next regression analysis, these variables were removed from the model.

4.5. Regression analysis

In this study, the ordinary least squares regression technique was applied to assess the impact of the independent variables on the dependent variable, or their level of influence. The regression results are presented in Table 7. With the adjusted R^2 of 0.585, the regression model with nine independent variables explained 58.5% of the variation in the dependent variable adoption intention. This is a fairly high level of explanation, indicating that the regression model is capable of dealing with a large portion of the variation in the dependent variable. The F-test has a sig. value of 0.000, which is lower than the significance level of 0.05, indicating that the regression model is statistically significant. This implies that at least one of the independent variables has an impact on the dependent variable adoption intention.

Table 7. Regression results

Model		*Unstandardized coefficient*		*Standardized coefficient*	*t*	*Sig.*	*Collinearity statistics*	
		Beta	*Std. error*	*Beta*			*Tolerance*	*VIF*
R^2: 0.604	Constant	-1.022	0.346		-2.952	0.004		
	RA	0.164	0.051	0.171	3.252	0.001	0.756	1.322
Adj R^2: 0.585	*TMS*	0.187	0.049	0.199	3.860	0.000	0.787	1.270
	RE	0.392	0.057	0.366	6.865	0.000	0.734	1.362
F (9,190): 0.000	*C*	0.141	0.062	0.118	2.272	0.024	0.773	1.294
	FR	0.332	0.059	0.290	5.640	0.000	0.791	1.264
	CP	-0.028	0.041	-0.040	-0.682	0.496	0.605	1.652
	TR	0.044	0.048	0.050	0.910	0.364	0.701	1.426
	VSP	-0.031	0.070	-0.032	-0.441	0.660	0.408	2.452
	VSC	0.054	0.052	0.069	1.051	0.295	0.484	2.066

Note: VIF is variance inflation factor.
Source: Author's elaboration using SPSS.

The regression analysis finds that *RA*, *TMS*, *FR*, *RE*, and *C* all have positive relationships with the cloud accounting adoption. The significance (sig. < 0.05) implies these effects hold true even after considering other variables. On the contrary, *CP*, *TR*, *VSP*, and *VSC* do not have a statistically significant impact on the cloud accounting adoption of Vietnamese MSMEs (sig. > 0.05).

The regression analysis reveals the following regression function:

$$IT = 0.171(RA) + 0.199(TMS) + 0.366(RE) + 0.118(C) + 0.290(FR) \quad (1)$$

Among the independent variables verified by the regression model, the *RE* had the most significant impact on adoption intention with $\beta = 0.366$. Additionally, the descriptive statistical results showed that the mean value of the responses for the observed variables in the *RE* group was 3.14. This indicates that the *RE* in Vietnam appears to be somewhat supportive of cloud-based accounting adoption for MSMEs in Hanoi. The current legal framework is obviously not a major barrier to cloud accounting adoption (*RE1*); however, there might not be widespread awareness or significant incentive programs in place (*RE2*). The laws were not prohibitive, but there might not be a lot of proactive encouragement from the government either (*RE3*).

The second most influential factor was *FR* with $\beta = 0.290$. The results of the responses for the observed variables in the *FR* group had a mean of 3.99, which suggests a moderately high level of agreement about the *FR* among the surveyed MSMEs. The sampled companies are deemed to be well-prepared in terms of financial resources (which are budget allocation (*FR1*) and funds (*FR2*)) to handle most aspects of cloud accounting adoption (regarding equipment costs, maintenance costs, training costs, and security costs).

With the regression coefficient $\beta = 0.199$, *TMS* was the third most influential factor among the factors impacting cloud accounting adoption intention. With average responses for observable variables of 2.66, this was the factor with the smallest mean value when conducting descriptive analysis. Thus, while having a fairly strong impact on adoption intention, the current *TMS* at the surveyed MSMEs is less optimistic than other factors. The level of agreement among the survey respondents was below the median of 3, indicating that, on average, top managers in the surveyed MSMEs generally have a neutral, or even slightly negative, attitude towards cloud accounting adoption. There might not be a strong objection or unawareness of the benefits from the firms' leaders, but still some hesitation towards the cloud accounting adoption. Nevertheless, the standard deviations of the observable variables were around 0.8–0.9, which was quite high in comparison with the other factors. This signifies that the respondents had diverse opinions regarding the support from the company leaders.

Quantitative analysis results indicate that the independent variable, *RA*, has a positive effect ($\beta = 0.171$) on the dependent variable, *IT*. Descriptive analysis suggests that, with an average response value of 3.91, the survey results denoted that generally, respondents agree with the view of the observed variables on the advantages of cloud accounting. Overall, people who answered the survey perceived cloud accounting as cost-effective (*RA1*), optimizing human resources (*RA2*), improving control over work (*RA3*), and increasing productivity (*RA4*).

The remaining independent variable found to have a relationship with the adoption intention is *C* ($\beta = 0.171$). Through descriptive analysis, it was revealed that with the mean value of responses from Competitor's observable variables being 3.97, respondents generally agree with the view that pressure from rival companies (*C1*), the fear of losing competitive advantage (*C2*) and the awareness of the benefits from cloud accounting that the rival company has gained (*C3*) motivate their business to adopt cloud accounting. Among these, the observable variable "the fear of losing a competitive advantage as a result of not adopting cloud accounting" (*C2*) received the highest average response of 4.16 and the smallest standard deviation of 0.645 among the competitor group. This indicates that respondents generally agree that competitive advantages do affect the businesses' adoption intention, and this is consistent between responses.

The observable variables measuring the dependent variable *IT* have an average response of 3.39. A mean of 3.39 in the Likert scale was a neutral opinion, indicating that there was neither a strong advocacy nor a strong opposition towards the intention to adopt cloud accounting in the surveyed MSMEs.

5. DISCUSSION

Firstly, the research underscores the technology's perceived superiority over traditional methods, corroborating earlier works by Lutfi (2022) and Sastararuji et al. (2022). Cost efficiencies, enhanced accessibility, and improved operational efficacy were identified as the primary drivers for adoption. Interestingly, the impact of compatibility on adoption propensity was found to be negligible, which contradicts findings by Gangwar et al. (2015) and De Castro et al. (2020). The explanation could be either the burgeoning user-friendliness and adaptability of cloud accounting solutions or a shift in businesses prioritising the relative advantages of the technology, such as cost savings and accessibility, over concerns regarding integration with existing software ecosystems.

Secondly, the research demonstrates that two factors of the organisational context positively influence cloud accounting acceptance. This signifies that an enterprise's subjective attributes significantly impact its decision to embrace this technology. The support of top management emerged as a critical factor influencing adoption, aligning with numerous researchers investigating this domain (Alshamaila et al., 2013; Gangwar et al., 2015; Prause, 2019; Bolonne & Wijewardene, 2020; Rawashdeh & Bakhit, 2023). Financial readiness also surfaced as a factor impacting Vietnamese MSMEs' adoption of cloud accounting. This aligns with the inherent constraints faced by MSMEs, which often lack essential resources, struggle with limited market influence, and operate in potentially challenging environments (Peltier et al., 2012; Agbanyo et al., 2023). Interestingly, the analysis suggests that technological readiness does not influence the acceptance of cloud accounting by Vietnamese MSMEs. This can be attributed to the inherent design of cloud-based solutions, intended to be intuitive and necessitate minimal IT infrastructure on the customer's side. This finding suggests that

technological readiness is not a determinant aligns with previous research by Low et al. (2011), Tawfik et al. (2022), and Al-Sharafi et al. (2023).

Thirdly, regarding environmental context factors, a key finding is the significant positive impact of competitive pressure on MSMEs' adoption of cloud accounting. This aligns with prior research by Hamundu et al. (2020), Lutfi (2022), and Hamzah et al. (2023), which consistently demonstrate a positive correlation between competition and technology adoption within businesses. Similarly, research by Low et al. (2011) and Gangwar et al. (2015) highlights the strong influence of competitive intensity on innovation adoption, with cloud accounting being a prime illustration. This adoption fosters competitiveness and business performance, creating a virtuous cycle for MSMEs. In essence, cloud accounting can reshape the competitive landscape, granting early adopters a significant advantage and empowering them to surpass rivals. In addition, this research confirms a positive relationship between a supportive regulatory environment and the inclination of Vietnamese MSMEs to adopt cloud accounting. This finding aligns with studies by Hamzah et al. (2023) and Jianwen and Wakil (2019), which highlight the crucial role of governmental support in encouraging technology adoption within the MSME sector. By fostering a favourable regulatory environment, the government can act as a key driver for innovation and long-term growth among Vietnamese MSMEs, further supporting their adoption of cloud accounting. Furthermore, while previous research by Kumar et al. (2017), Aduamoah (2017), and Rawashdeh and Rawashdeh (2023) found a positive link between vendor support and cloud accounting adoption, this study contradicts those findings. This suggests that other factors, such as competitive pressure and regulatory environment, hold greater sway in Vietnamese MSMEs' decision-making process regarding cloud accounting adoption. Similarly, the lack of correlation with vendor scarcity indicates that Vietnamese MSMEs prioritise other factors like perceived benefits and relative.

Lastly, as the adoption of cloud accounting introduces certain security exposures, such as data breaches, unauthorized system entry, data corruption, and information leaks due to the characteristics of cloud platforms and third-party management (Atadoga et al., 2024), proactive measures are essential. Maintaining regulatory compliance and ensuring the confidentiality of sensitive financial data remain concerns (Alouffi et al., 2021). To address these risks, Alouffi et al. (2021) advocate for the implementation of powerful encryption and authentication systems, alongside routine security patching. Furthermore, the incorporation of advanced technologies like blockchain holds potential for significantly improving data integrity and overall security posture.

6. CONCLUSION

The research demonstrates a clear correlation between strong backing from top management and a company's ability to effectively implement cloud accounting solutions. Businesses that prioritise educating their leaders on the technology's potential — such as cost reduction, increased efficiency, and improved data accessibility — are more likely to see a smooth transition. Initiatives like workshops, sharing real-world success stories of other businesses, and actively involving leadership in the selection and implementation process can all foster a supportive environment for cloud accounting adoption.

Financial readiness, particularly for SMEs constrained by limited market leverage, emerges as a significant impediment to cloud accounting adoption. Addressing this necessitates proactive financial planning, dedicated budgetary allocations, and the strategic exploration of governmental support initiatives.

Cloud accounting vendors should strategically emphasize the transformative impact of their solutions on financial governance, articulating quantifiable economic advantages and the facilitative role of real-time data access in fostering data-driven strategic decision-making and overall performance optimization. The cultivation of enduring client relationships necessitates a sustained commitment to user-centric design principles, continuous innovation informed by user feedback, and the provision of tailored solutions addressing industry-specific exigencies.

Governmental support mechanisms, encompassing targeted financial incentives, comprehensive training programs, and strategic partnerships with technology providers, are identified as pivotal drivers for the widespread adoption of cloud accounting among SMEs, effectively mitigating financial barriers and fostering sector-wide innovation. Tailored support programs are particularly salient for micro-enterprises characterized by resource constraints. The broader regulatory landscape, including governmental policies and financial institution requirements, also exerts a discernible influence on adoption decisions.

However, this research, while insightful, acknowledges limitations. The sample's location, which is Hanoi, Vietnam, restricts generalizability, and the non-probability sampling method might introduce bias. Additionally, the study recognizes that factors beyond the nine explored likely influence cloud accounting adoption. Therefore, this study calls for future research with an increased sample size and alternative theories to achieve a more comprehensive understanding of cloud accounting adoption across diverse contexts. Besides, exploring uninvestigated factors and employing mixed-method approaches holds promise for further insights.

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