



**THE EFFECTS OF RELATIVE ADVANTAGE, TOP MANAGEMENT
SUPPORT, AND SUPPLIER COMPUTING SUPPORT ON THE INTENTION
TO USE CLOUD-BASED AIS AMONG MSMEs IN TAMBAKSARI
DISTRICT, SURABAYA CITY**

Revalina Ping Dam Tung¹

Universitas Negeri Surabaya, Surabaya, Indonesia

revalina.22108@mhs.unesa.ac.id

Merlyana Dwindi Yanthi²

Universitas Negeri Surabaya, Surabaya, Indonesia

merlyanayanthi@unesa.ac.id

Abstract

This study analyzed the effects of relative advantage, top management support, and supplier computing support on the intention to use cloud-based accounting information systems (CB-AIS) among MSMEs in Tambaksari District, Surabaya City, Indonesia, using the Technology-Organization-Environment (TOE) framework. A quantitative approach was employed, with primary data collected through a five-point Likert scale questionnaire. The study population comprised all MSMEs in the Tambaksari district, from which a sample of 100 respondents currently using CB-AIS was selected via non-probability sampling. Data analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicated that relative advantage and supplier computing support significantly affected the intention to use CB-AIS, while top management support was found to have no significant effect.

Keywords: Cloud-Based Accounting Information Systems, Intention to Use, TOE Framework, MSMEs, Indonesia



INTRODUCTION

Global economic growth, particularly in developing countries, is heavily influenced by micro, small, and medium-sized enterprises (MSMEs) (Ndiaye et al., 2018). Data from the Coordinating Ministry for Economic Affairs of the Republic of Indonesia shows that the number of MSMEs reached 30.178.617 by the end of 2024. MSMEs contribute more than 60 percent to the national Gross Domestic Product (GDP) and employ nearly 97 percent of the workforce, making this sector the backbone of the Indonesian economy (Coordinating Ministry for Economic Affairs of the Republic of Indonesia, 2025). Data from the East Java Provincial Cooperative, Small, and Medium Enterprises Agency shows that the city of Surabaya had the highest Gross Value Added (GVA) at current prices for KUKM in East Java Province in 2024, amounting to 366.672 billion rupiah. Tambaksari District has the highest number of MSMEs in Surabaya with 7.862 business units, followed by Sawahan District with 7.154 business units, and Wonokromo District with 5.621 business units (Surabaya City Department of Cooperatives Small and Medium Enterprises and Trade, 2025).

A study by Alrababah (2023) found that MSMEs still face various challenges in innovating and leveraging information technology (IT) to enhance competitiveness and operational efficiency. Advances in information and communication technology (ICT) open new opportunities for MSMEs in business management, where the implementation of an accounting information system (AIS) is a critical strategy for MSMEs as it can improve financial management, reduce operational costs, and enhance service quality and the accuracy of reporting (Skafi et al., 2020). However, the implementation of AIS often faces various obstacles, such as high software licensing and installation costs, which have a significant impact on MSMEs (Ma et al., 2021). A study by (Le & Cao, 2020) also argues that AIS are difficult to implement due to limitations in IT infrastructure, a shortage of experts, and limited technology budgets. Therefore, an alternative solution is needed that is more efficient and better suited to the accounting needs of MSMEs.

The implementation of cloud-based accounting information systems (CB-AIS) can be an effective solution for MSMEs (Khayer et al., 2020). This system enables access to digital services via the internet with low initial investment costs, lower maintenance costs, and the use of energy-efficient infrastructure, such as solid-state drive (SSD)-based storage, which is more efficient than conventional hard disk drives (HDDs) (OECD, 2021). A study by (Asatiani et al., 2019) argues that CB-AIS offer ease of access, faster data processing, real-time collaboration,



and broader accessibility. These various advantages make CB-AIS considered a more efficient and affordable solution for MSMEs to implement. Although they offer many benefits, the implementation of CB-AIS also faces various challenges, such as technical constraints, data security risks, and uncertainties in service contracts that can affect the reliability and sustainability of the system for MSMEs (Al-Jabri & Alabdulhadi, 2016). A study by (Chauhan & Jaiswal, 2015) emphasizes that the process of migrating to cloud services requires financial readiness, human resource management, and adjustments to security policies. These factors are also influenced by strategic relationships with service providers and stakeholders' responses to the adoption of new technologies.

Lutfi et al. (2016) define the relative advantage of an innovation as the extent to which decision-makers believe that the use of a particular technology can improve a company's performance. Companies generally prefer to adopt innovations that provide tangible benefits for their operational success and business strategies (Almaiah et al., 2022). In the context of MSMEs, the implementation of CB-AIS offers various advantages, such as time efficiency, cost reduction, and increased productivity (Alshirah et al., 2021). Additionally, this system provides further benefits in the form of high flexibility and scalability, a pay-as-you-use payment model, and ease of installation and system updates. Consistent with this, studies by (Rawashdeh et al., 2023; Saad et al., 2022) indicate that relative advantage has a positive effect on the intention to use CB-AIS among MSMEs. However, differing findings were reported by (Skafi et al., 2020), who stated that relative advantage does not affect the intention to use CB-AIS among MSMEs in Lebanon.

A study by (Lutfi et al., 2022) defines top management support as the commitment and involvement of the company's senior leadership in accepting and promoting the implementation of innovative technologies to achieve business objectives. This factor is one of the key determinants of the successful adoption of IS and IT in companies (Khayer et al., 2020). Various studies on innovation adoption also indicate that top management support has a positive effect on a company's decision to adopt innovations. This view aligns with the findings of (Mousa et al., 2024; Mujalli et al., 2024), who found that top management support has a positive effect on the intention to use CB-AIS among MSMEs in Saudi Arabia and Palestine. However, (Aligarh et al., 2023) reported different findings, stating that top management support does not affect the intention to use CB-AIS among MSMEs in Surakarta and Yogyakarta, Indonesia.

The success of implementing a CB-AIS depends heavily on supplier computing support, as relationships with business partners are a key factor in the



system's acceptance and adoption within a company (Khayer et al., 2020). Furthermore, suppliers in a dominant position can leverage IS and IT approaches to encourage business partners to accept and adopt new innovations. Support from cloud providers covers various aspects, such as training, marketing, technical support, customer service, and assistance with problem-solving (Hsu et al., 2014). In line with this, (Lutfi, 2022; Saad et al., 2022) suggests that supplier computing support significantly affects the intention to use CB-AIS among MSMEs in Jordan. However, (Skafi et al., 2020) present a different finding, stating that supplier computing support does not affect the intention to use CB-AIS among MSMEs in Lebanon.

To analyze these three factors, this study employs the Technology-Organization-Environment (TOE) framework. The TOE framework is a highly effective approach for explaining the adoption of highly complex technologies (Lutfi et al., 2022). The TOE framework is considered relevant because it can explain how technological, organizational, and environmental factors influence the adoption of innovation within a company (Al-Jabri & Alabdulhadi, 2016). In addition to having a strong theoretical foundation, this framework is also supported by empirical evidence and has been widely used in research on the implementation and adoption of technological innovations (Oliveira et al., 2019).

Previous research by (Aligarh et al., 2023) examined the antecedent factors affecting the intention to use CB-AIS among MSMEs in Surakarta and Yogyakarta, Indonesia, using the TOE framework; however, the regional context and business characteristics studied differ from those in this study. That study highlighted that Surakarta and Yogyakarta are hubs for the creative industries, whereas this study focuses on MSMEs in Tambaksari District, Surabaya City, which are predominantly in the food and beverage (F&B) sector—a sector that prioritizes operational efficiency, service speed, and accurate, real-time financial management. These differing characteristics have the potential to influence MSMEs' perceptions of relative advantage, top management support, and supplier computing support. Therefore, this study is crucial to test the application of the TOE framework within a more specific and relevant context in Surabaya City.



LITERATURE REVIEW

Technology-Organization-Environment (TOE) Framework

The Technology-Organization-Environment (TOE) framework was first introduced by Tomatzky and Fleischer in 1990. The TOE framework explains that the state of technological, organizational, and environmental influence the acceptability of an information system (IS) and information technology (IT) (Lutfi, 2022). Lutfi et al. (2022) assert that the TOE framework is a highly effective approach for explaining the adoption of technologies with high levels of complexity. Furthermore, TOE is the only theoretical framework that accounts for all the driving forces that can influence initiatives to adopt IS and IT (Owusu, 2020). In short, TOE is a broad theoretical framework that identifies various elements driving the adoption of IS and IT within an organization (Hiran & Henten, 2020). The research model adopted for this study, based on the TOE framework, is illustrated in Figure 1 below:

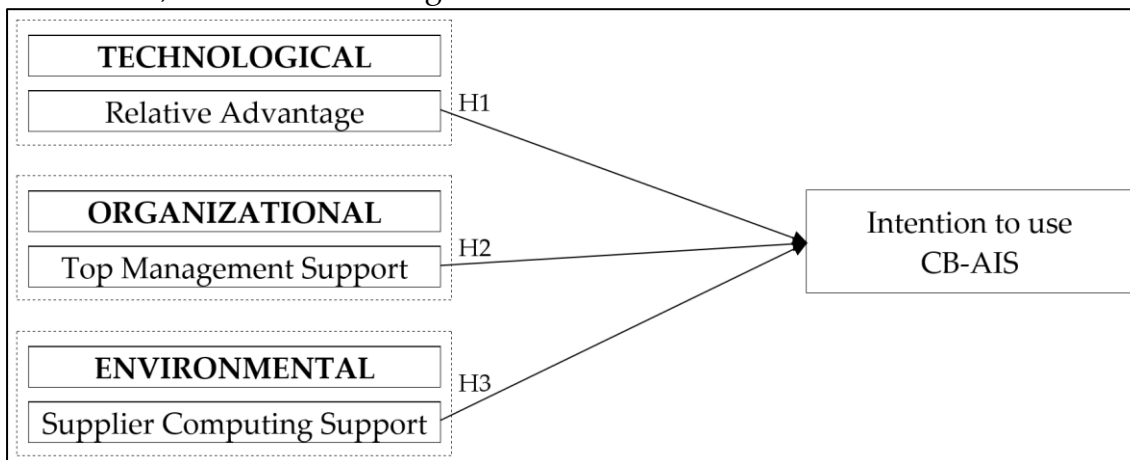


Figure 1.
Proposed Research Model

Relative Advantage

Relative advantage is defined as the extent to which an individual believes a new technology provides superior benefits compared to existing ones (Rogers, 2003). The rate of technology adoption in the workplace is heavily influenced by the added value that the technology offers to the company. In this regard, CB-AIS possess significant comparative advantages over traditional AIS. These advantages include better cost efficiency, high scalability, flexibility in system management, ease of access and mobility, and the ability to effectively share resources (Alshirah et al., 2021). Various studies and experts emphasize that these relative advantages are crucial in assessing the impact and effectiveness of tech-



nological innovation implementation, particularly in decision-making processes related to technology adoption within a company (Tawfik et al., 2022). Thus, the greater the perceived benefits of new technology, the higher the likelihood that a company will adopt it. In this vein, the following hypothesis is developed:

H1. Relative advantage significantly affects the intention to use CB-AIS.

Top Management Support

Full support from top management or senior leadership within a company is a critical factor in driving the adoption of new technologies (Adjei et al., 2021). Such support is essential for creating a competitive environment and enabling the company to dominate the market. Additionally, top management support plays a role in helping the company overcome internal challenges and resistance to change. Salwani et al. (2009) in (Mujalli et al., 2024) reveal that senior executives' views and behaviors regarding the effectiveness of technical advancements play a significant role in creating value for the company. This includes establishing a long-term vision, reinforcing corporate values, effectively allocating and managing resources, creating a conducive work environment, boosting individual confidence, and providing support in overcoming obstacles and resistance to change. All these aspects contribute to the successful implementation of technology and the achievement of organizational goals. As such, the following hypothesis is developed:

H2. Top management support significantly affects the intention to use CB-AIS.

Supplier Computing Support

Partnerships between client companies and service providers are a key factor in the successful adoption of CB-AIS (Gangwar, 2017). Companies tend to be more proactive in adopting technology when collaborating with expert and trusted service providers. Support from cloud service providers covers various aspects such as user training, marketing strategies, technical support services, customer service, and problem resolution (Hsu et al., 2014). To mitigate risks perceived by potential customers, service providers typically engage in intensive communication. Service providers can also offer support agreements that guarantee consistent system maintenance, periodic testing, and the preservation of data integrity to prevent data loss, including by providing round-the-clock (24-hour) support services. This comprehensive approach enhances user confidence in adopting the technology and can drive the successful implementation of cloud technology within a company (Saad et al., 2022). Hence, the following hypothesis is developed:

H3. Supplier computing support significantly affects the intention to use CB-AIS.



RESEARCH METHOD

Measurement and Data Collection

This study employed a quantitative approach to investigate the effects of relative advantage, top management support, and supplier computing support on the intention to use CB-AIS among MSMEs in Tambaksari District, Surabaya City. A non-probability, purposive sampling technique was utilized, selecting respondents based on specific criteria—namely, MSMEs that had implemented CB-AIS into their business operations. The theoretical constructs of this study were assessed using a questionnaire survey distributed to MSMEs in Tambaksari District. Specifically, Relative Advantage, Top Management Support, and Supplier Computing Support were measured on a five-point Likert scale, ranging from 1 (“strongly disagree”) to 5 (“strongly agree”), to ensure consistency with the study constructs. A digital survey was employed due to its accessibility and to ensure an optimal rate of data collection.

Prior to the main data collection, a pilot study was conducted to establish the validity and reliability of the measurement scale and to ensure the consistency of the back-translation (Brislin, 1970). The instrument was distributed to 30 volunteer MSMEs, whose responses were excluded from the final study sample to avoid bias. The results of the pilot test indicated that all items were clear.

The survey was conducted over a one-month period, from March 4 to April 1, 2026. A total of 103 responses were collected and subsequently processed using SPSS software. During the data cleaning process, three responses were identified as straight-lining and were consequently removed to ensure data quality. Following this filtering, 100 valid records remained for further evaluation. The demographic characteristics are summarized in Table 1 below:

Table 1.
Demographic Characteristics

Characteristic		Number	Percentage
Sector	Food and beverage	70	70%
	Service	13	13%
	Fashion	9	9%
	Retail	8%	8%
Sub-district	Pacar Kembang	28	28%
	Gading	22	22%
	Ploso	17	17%
	Tambaksari	16	16%
	Pacar Keling	14	14%



	Rangkah	3	3%
Type of CB-AIS application	Moka	22	22%
	Majoo	21	21%
	Olsera	14	14%

Table 1.
(Continued)

Characteristic	Number	Percentage
Pawoon	13	13%
ESB POS LITE	9	9%
Loyverse	7	7%
POSe	6	6%
Youtap POS	4	4%
Laris POS	3	3%
Nutapos	1	1%

Data Analysis

Data analysis was conducted using inferential statistics through Partial Least Squares Structural Equation Modeling (PLS-SEM). A study by (Hair et al., 2022) recommends PLS-SEM for its robustness with small sample sizes and its capability to test complex models. Following the approach by (Henseler & Chin, 2010), a two-stage analysis was performed: the evaluation of the measurement model and the structural model. This analysis was performed using SmartPLS software.

RESULTS AND INTERPRETATION

Measurement Model

The measurement model assessment involved examining convergent validity, discriminant validity, and construct reliability (Hair et al., 2022). Convergent validity was affirmed by evaluating outer loadings and the average variance extracted (AVE). Following the recommendations of Hair et al. (2022), standardized outer loadings should be 0.70 or higher; however, indicators with loadings below 0.40 must be eliminated (Hair et al., 2011). An AVE value of 0.50 or higher is required, indicating that the construct explains more than half of the variance of its indicators. Discriminant validity was assessed using the Fornell-Larcker criterion and heterotrait-monotrait ratio (HTMT). The Fornell-Larcker criterion compares the square root of the AVE ($\sqrt{\text{AVE}}$) with latent variable correlations, where the $\sqrt{\text{AVE}}$ of each construct should exceed its highest correlation with any other construct. Furthermore, (Henseler et al., 2015)



proposed the HTMT ratio to estimate the true correlation between constructs; an HTMT value below 0.90 is suggested to ensure distinctness. Finally, construct reliability was measured through Cronbach's alpha, rho_A, and composite reliability (CR), all of which should exceed the threshold of 0.70 (Hair et al., 2022).

The results of the measurement model, Fornell-Larcker criterion, and HTMT ratio are respectively presented in Table 2, Table 3, and Table 4, demonstrating that all constructs met the required thresholds for validity and reliability.

Table 2.
Measurement Model

Constructs	Items	Loadings	Cronbach's Alpha	rho_A	CR	AVE
Relative advantage	RA1	0.786	0.926	0.931	0.939	0.657
	RA2	0.811				
	RA3	0.818				
	RA4	0.849				
	RA5	0.778				
	RA6	0.823				
	RA7	0.794				
	RA8	0.825				
Top management support	TMS1	0.884	0.940	0.944	0.951	0.735
	TMS2	0.871				
	TMS3	0.856				
	TMS4	0.871				
	TMS5	0.821				
	TMS6	0.851				
	TMS7	0.845				
Supplier computing support	SCS1	0.865	0.944	0.947	0.954	0.721
	SCS2	0.858				
	SCS3	0.869				
	SCS4	0.796				
	SCS5	0.854				
	SCS6	0.860				
	SCS7	0.814				
	SCS8	0.873				
Intention to use CB-AIS	IU1	0.830	0.923	0.925	0.940	0.722
	IU2	0.833				
	IU3	0.862				



IU4	0.839
IU5	0.870
IU6	0.863

Table 3.
Fornell-Larcker Criterion

	SCS	TMS	RA	IU
SCS	0.849			
TMS	0.452	0.857		
RA	0.513	0.407	0.811	
IU	0.425	0.318	0.436	0.850

Table 4.
HTMT Ratio

	SCS	TMS	RA	IU
SCS	-			
TMS	0.478	-		
RA	0.544	0.432	-	
IU	0.450	0.338	0.465	-

Structural Model

The structural model assessment in this study was conducted in two stages: assessing the significance of path coefficients (β) and evaluating the coefficient of determination (R^2). The significance test was performed using a bootstrapping process to determine the t -statistics and p -values for hypothesis testing. Following the criteria for a two-tailed test at a 5% significance level, a relationship is considered significant if the t -statistic exceeds 1.96 and the p -value is below 0.05 (Hair et al., 2022).

Table 5 presents a summary of the hypotheses' outcomes. Hypothesis H1 was supported, with RA demonstrating a significant effect on IU ($\beta = 0.273$, $t = 2.226$, $p = 0.013$). Similarly, H3 was strongly supported, as SCS exhibited a significant effect on IU ($\beta = 0.241$, $t = 2.828$, $p = 0.002$). In contrast, H2 was not supported, as TMS did not have a significant effect on IU ($\beta = 0.098$, $t = 0.907$, $p = 0.182$).

Table 5.
Hypotheses Testing of Structural Model

	Path	β	t	p	R^2	Q^2	Status
H1	RA->IU	0.273	2.226	0.013	0.229	0.203	Supported
H2	TMS->IU	0.098	0.907	0.182			Not Supported



H3	SCS->IU	0.241	2.828	0.002	Supported
----	---------	-------	-------	-------	-----------

The model's predictive power was assessed by R^2 , indicating the amount of variance explained by the predictors in the outcome variable. Based on (Chin, 1998), R^2 values are categorized as 0.19 (weak), 0.33 (moderate), and 0.67 (substantial). Together, RA, TMS, and SCS explained 22.9% of the variance in IU ($R^2 = 0.229$), indicating a weak explanatory power. Additionally, the Q^2 index was used to assess predictive relevance, with thresholds of 0 (small), 0.25 (medium), and 0.50 (large) (Hair et al., 2019). As shown in Table 5, the Q^2 value exceeds the minimum threshold of zero ($Q^2 = 0.203$) and is categorized as having a small predictive relevance; therefore, the model in this study is deemed to have adequate predictive power.

The Effect of Relative Advantage on the Intention to Use CB-AIS

Based on the study findings, relative advantage had a significant effect on the intention to use CB-AIS among MSMEs in Tambaksari District, Surabaya City. This outcome aligns with findings from studies such as (Saad et al., 2022), (Aligarh et al., 2023), and (Mujalli et al., 2024), which indicate that the higher the MSMEs' perception of the relative advantages offered by CB-AIS, the greater their intention to use the system.

Within the TOE framework, these findings provide empirical support for the importance of the technological context in driving innovation adoption among MSMEs. MSMEs in Tambaksari District no longer view CB-AIS as merely administrative tools, but rather as solutions that offer tangible comparative advantages over traditional AIS. These research results align with the views of (Alshirah et al., 2021), who demonstrated that MSMEs significantly prioritize cost efficiency, real-time data accessibility, and collaboration flexibility as the primary advantages of CB-AIS.

These findings indicate that in the context of MSMEs, technological aspects are not merely evaluated based on complexity or ease of use; instead, there is a greater emphasis on the direct benefits perceived in daily operational activities. Thus, the significant influence of relative advantage in this study reinforces that the technological context within the TOE model serves as a relevant predictor in explaining the intention to use CB-AIS.

The Effect of Top Management Support on the Intention to Use CB-AIS

According to the study findings, top management support has an insignificant effect on the intention to use CB-AIS among MSMEs in Tambaksari District. This occurs because funding for the implementation of CB-AIS remains



a major challenge and is not yet a top priority for these businesses. Such financial constraints imply that managerial support has not been able to fully stimulate adoption interest, as commitment in the form of tangible financial resources remains relatively low compared to other, less resource-intensive forms of support.

These findings are consistent with research by Aligarh et al. (2023), which found that top management support lacks a significant effect on MSMEs in Surakarta and Yogyakarta. Aligarh et al. (2023) argued that this lack of significance is due to the structural characteristics of Indonesian MSMEs, which often lack complex organizational hierarchies; in these firms, business owners simultaneously serve as managers and operational decision-makers. Consequently, the concept of 'top management support' becomes functionally less distinct and difficult to measure as an isolated independent variable.

Although the TOE framework posits that top management support is crucial for ensuring successful implementation through strategic commitment and resource allocation, the results of this study offer a different perspective. While these non-significant findings differ from the results of Skafi et al. (2020) and Lutfi (2022), they do not necessarily undermine the validity of the TOE model. Instead, these results indicate that the influence of organizational factors—particularly top management support—on the intention to use CB-AIS is highly contingent upon the organization's financial capacity to allocate a budget for such technology.

The Effect of Supplier Computing Support on the Intention to Use CB-AIS

This study provides empirical evidence regarding the essential role of supplier computing support in providing technical and operational assistance for the intention to use CB-AIS. This finding aligns with studies such as Saad et al. (2022) and Lutfi (2022).

Within the TOE framework, supplier computing support is situated within the environmental context, which encompasses external factors capable of influencing innovation adoption decisions. These findings indicate that in the context of MSMEs with limited internal resources, reliance on third-party providers becomes an indispensable factor. Consequently, trust in the competence of service providers is a key element driving the intention to use CB-AIS. Thus, this study provides empirical support that the environmental context within the TOE model, particularly through the variable of supplier computing support, is a relevant factor in explaining the intention to use CB-AIS among MSMEs in Tambaksari District.

**Research Implications****Theoretical Implications**

This study demonstrates that not all elements within the TOE framework have a uniform impact on technology adoption in MSMEs. Technological factors—specifically relative advantage—and environmental factors—specifically supplier computing support—emerge as the primary determinants. In contrast, organizational factors, represented by top management support, are not significant due to the simplified organizational structures of MSMEs in Tambaksari District, Surabaya City. These findings imply a need to adapt the TOE model to be more contextually relevant for small-scale organizations, where traditional managerial hierarchies are often less distinct.

Practical Implications

Based on the findings, this study offers several practical recommendations. First, MSME owners should base their adoption decisions on the tangible benefits of CB-AIS, such as cost efficiency and real-time data accessibility, while ensuring they select providers that offer comprehensive technical assistance. Second, service providers must move beyond merely promoting features; they should prioritize strengthening their support ecosystem—including intensive training, responsive technical support, and user guidance—to effectively foster adoption interest among small-scale enterprises.

CONCLUSION

Relative advantage has a positive and significant effect on the intention to use CB-AIS, indicating that MSMEs perceive cloud-based systems as significantly more valuable than traditional AIS. In contrast, top management support does not have a significant effect on the intention to use CB-AIS, suggesting that this factor is not a primary driver within the simplified organizational structures of MSMEs. Lastly, supplier computing support exerts a positive and significant effect on the intention to use CB-AIS, confirming the critical role of external service providers in fostering adoption interest. Overall, these findings highlight that technological benefits and environmental support outweigh internal organizational factors in the digital transformation of small-scale enterprises.

Despite its contributions, this study has several limitations that should be acknowledged. First, the sampling technique did not account for the proportion of business sectors or the geographical distribution across neighborhoods, leading to an uneven distribution of respondents. Future research should expand the coverage area beyond a single subdistrict and employ stratified random sampling to ensure a more proportional and representative distribution of



business sectors and geographic areas. Second, the questionnaire did not collect information regarding the respondents' specific positions or job titles, which limited the analysis of their decision-making roles and the nuances of top management support. It is recommended that future studies include such demographic data to enable a more in-depth evaluation of management dynamics. Finally, this study did not explore the specific motivations behind selecting particular CB-AIS applications; thus, it remains unclear whether these decisions were primarily driven by technical advantages or provider support. Future researchers are encouraged to adopt qualitative or mixed-methods approaches to gain a more comprehensive understanding of the underlying reasons for CB-AIS selection, particularly in distinguishing the specific influences of technical superiority and external support.

REFERENCES

- Adjei, J. K., Adams, S., & Mamattah, L. (2021). Cloud computing adoption in Ghana; accounting for institutional factors. *Technology in Society*, 65, 101583. <https://doi.org/https://doi.org/10.1016/j.techsoc.2021.101583>
- Al-Jabri, I. M., & Alabdulhadi, M. H. (2016). Factors affecting cloud computing adoption: perspectives of IT professionals. *International Journal of Business Information Systems*, 23(4), 389–405. <https://doi.org/10.1504/IJBIS.2016.080215>
- Aligarh, F., Sutopo, B., & Widarjo, W. (2023). The antecedents of cloud computing adoption and its consequences for MSMEs' performance: A model based on the Technology-Organization-Environment (TOE) framework. *Cogent Business & Management*, 10(2). <https://doi.org/10.1080/23311975.2023.2220190>
- Almaiah, M. A., Al-Rahmi, A. M., Alturise, F., Alrawad, M., Alkhalaf, S., Lutfi, A., Al-Rahmi, W. M., & Awad, A. B. (2022). Factors influencing the adoption of internet banking: An integration of ISSM and UTAUT with price value and perceived risk. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.919198>
- Alshirah, M. H., Lutfi, A., Alshira'h, A. F., Saad, M., Ibrahim, N. M. E. S., & Mohammed, F. M. (2021). Influences of the environmental factors on the intention to adopt cloud based accounting information system among SMEs in Jordan. *Accounting*, 7(3), 645–654. <https://doi.org/10.5267/j.ac.2020.12.013>
- Asatiani, A., Apte, U., Penttinen, E., Rönkkö, M., & Saarinen, T. (2019). Impact of accounting process characteristics on accounting outsourcing - Comparison of users and non-users of cloud-based accounting information systems.



- International Journal of Accounting Information Systems*, 34, 100419.
<https://doi.org/https://doi.org/10.1016/j.accinf.2019.06.002>
- Brislin, Richard W. (1970). Back-Translation for Cross-Cultural Research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216.
<https://doi.org/10.1177/135910457000100301>
- Chauhan, S., & Jaiswal, M. (2015). Exploring factors affecting service quality of ERP on cloud: A revelatory case study. *International Journal of Business Information Systems*, 19(1), 87–102. <https://doi.org/10.1504/IJBIS.2015.069066>
- Chin, W. W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (1st ed., pp. 295–336).
- Coordinating Ministry for Economic Affairs of the Republic of Indonesia. (2025). *The Government Encourages MSMEs to Upgrade to Increase Their Contribution to Indonesian Exports*. Coordinating Ministry for Economic Affairs of the Republic of Indonesia.
<https://www.ekon.go.id/publikasi/detail/6152/pemerintah-dorong-umkm-naik-kelas-tingkatkan-kontribusi-terhadap-ekspor-indonesia>
- Gangwar, H. (2017). Cloud computing usage and its effect on organizational performance. *Human Systems Management*, 36(1), 13–26.
<https://doi.org/10.3233/HSM-171625>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (L. Fargotstein (ed.); 3rd ed.). SAGE Publications, Inc.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
<https://doi.org/10.2753/MTP1069-6679190202>
- Hair, J. F., Risher, J. J., & Ringle, C. M. (2019). *When to use and how to report the results of PLS-SEM*. <https://doi.org/10.1108/EBR-11-2018-0203>
- Henseler, J., & Chin, W. W. (2010). A Comparison of Approaches for the Analysis of Interaction Effects Between Latent Variables Using Partial Least Squares Path Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 17(1), 82–109. <https://doi.org/10.1080/10705510903439003>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). *A new criterion for assessing discriminant validity in variance-based structural equation modeling*. 115–135.
<https://doi.org/10.1007/s11747-014-0403-8>
- Hiran, K. K., & Henten, A. (2020). An integrated TOE – DoI framework for cloud computing adoption in the higher education sector: case study of Sub-Saharan Africa, Ethiopia. *International Journal of System Assurance*



- Engineering and Management*, 11(2), 441–449. <https://doi.org/10.1007/s13198-019-00872-z>
- Hsu, P.-F., Ray, S., & Li-Hsieh, Y.-Y. (2014). Examining cloud computing adoption intention, pricing mechanism, and deployment model. *International Journal of Information Management*, 34(4), 474–488. <https://doi.org/https://doi.org/10.1016/j.ijinfomgt.2014.04.006>
- Khayer, A., Talukder, M. S., Bao, Y., & Hossain, M. N. (2020). Cloud computing adoption and its impact on SMEs' performance for cloud supported operations: A dual-stage analytical approach. *Technology in Society*, 60, 101225. <https://doi.org/https://doi.org/10.1016/j.techsoc.2019.101225>
- Le, O. T. T., & Cao, Q. M. (2020). Examining the technology acceptance model using cloud-based accounting software of Vietnamese enterprises. *Management Science Letters*, 10(12), 2781–2788. <https://doi.org/10.5267/j.msl.2020.4.032>
- Lutfi, A. (2022). Understanding the Intention to Adopt Cloud-based Accounting Information System in Jordanian SMEs. *International Journal of Digital Accounting Research*, 22(October 2021), 47–70. https://doi.org/10.4192/1577-8517-v22_2
- Lutfi, A., Alkelani, S. N., Al-Khasawneh, M. A., Alshira'h, A. F., Alshirah, M. H., Almaiah, M. A., Alrawad, M., Alsyouf, A., Saad, M., & Ibrahim, N. (2022). Influence of Digital Accounting System Usage on SMEs Performance: The Moderating Effect of COVID-19. *Sustainability (Switzerland)*, 14(22), 1–23. <https://doi.org/10.3390/su142215048>
- Ma, D., Fisher, R., & Nesbit, T. (2021). Cloud-based client accounting and small and medium accounting practices: Adoption and impact. *International Journal of Accounting Information Systems*, 41, 100513. <https://doi.org/https://doi.org/10.1016/j.accinf.2021.100513>
- Mousa, K., Zhang, Z., Sumarliah, E., & Hamdan, I. K. A. (2024). The Impact of Cloud Computing Adoption on Firm Performance Among SMEs in Palestine: A Machine Learning Approach. *International Journal of Intelligent Information Technologies*, 20(1). <https://doi.org/10.4018/IJIIIT.338715>
- Mujalli, A., Wani, M. J. G., Almgrashi, A., Khormi, T., & Qahtani, M. (2024). Investigating the factors affecting the adoption of cloud accounting in Saudi Arabia's small and medium-sized enterprises (SMEs). *Journal of Open Innovation: Technology, Market, and Complexity*, 10(2). <https://doi.org/10.1016/j.joitmc.2024.100314>
- Ndiaye, N., Abdul Razak, L., Nagayev, R., & Ng, A. (2018). Demystifying small



- and medium enterprises' (SMEs) performance in emerging and developing economies. *Borsa Istanbul Review*, 18(4), 269–281. <https://doi.org/10.1016/j.bir.2018.04.003>
- OECD. (2021). OECD SME and Entrepreneurship Outlook 2021. In *OECD Publishing*. <https://doi.org/10.1787/97a5bbfe-en>
- Oliveira, T., Martins, R., Sarker, S., Thomas, M., & Popovič, A. (2019). Understanding SaaS adoption: The moderating impact of the environment context. *International Journal of Information Management*, 49, 1–12. <https://doi.org/https://doi.org/10.1016/j.ijinfomgt.2019.02.009>
- Owusu, A. (2020). Determinants of Cloud Business Intelligence Adoption Among Ghanaian SMEs. *International Journal of Cloud Applications and Computing (IJCAC)*, 10(4), 48–69. <https://doi.org/https://doi.org/10.4018/IJCAC.2020100104>
- Rawashdeh, A., Rawashdeh, B. S., & Shehadeh, E. (2023). The Determinants of Cloud Computing Vision and Its Impact on Cloud Accounting Adoption in SMBs. *Human Behavior and Emerging Technologies*, 2023. <https://doi.org/10.1155/2023/8571227>
- Rogers, E. M. (2003). *Diffusion of Innovations, 5th Edition*. Free Press. <https://books.google.co.id/books?id=9U1K5LjUOwEC>
- Saad, M., Lutfi, A., Almaiah, M. A., Alshira'h, A. F., Alshirah, M. H., Alqudah, H., Alkassawneh, A. L., Alsyounf, A., Alrawad, M., & Abdelmaksoud, O. (2022). Assessing the Intention to Adopt Cloud Accounting during COVID-19. *Electronics (Switzerland)*, 11(24), 1–19. <https://doi.org/10.3390/electronics11244092>
- Skafi, M., Yunis, M. M., & Zekri, A. (2020). Factors influencing SMEs' adoption of cloud computing services in Lebanon: An empirical analysis using TOE and contextual theory. *IEEE Access*, 8, 79169–79181. <https://doi.org/10.1109/ACCESS.2020.2987331>
- Surabaya City Department of Cooperatives Small and Medium Enterprises and Trade. (2025). *Microenterprises in Surabaya City*. Surabaya City Government. <https://sipumkm.surabaya.go.id/>
- Tawfik, O. I., Durrah, O., Hussainey, K., & Elmaasrawy, H. E. (2022). Factors influencing the implementation of cloud accounting: evidence from small and medium enterprises in Oman. *Journal of Science and Technology Policy Management*, 14(5), 859–884. <https://doi.org/10.1108/JSTPM-08-2021-0114>