ACCOUNTING INFORMATION SYSTEMS GOVERNANCE IN A DIGITAL LANDSCAPE: A COMPREHENSIVE ANALYSIS OF KEY FACTORS AND SECTORAL DYNAMICS

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Abstract

This study delves into the efficiency of accounting information systems (AIS) amidst Vietnam's evolving digital landscape, with a keen focus on seven pivotal factors: managerial commitment (MC), accounting staff proficiency (AP), digital technology application (DT), relative advantage (RA), data quality (DQ), organizational readiness (RD), and accounting software (AS). Employing robust methodologies including exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), our research underscores the significant influence of these factors on AIS effectiveness. Drawing from the theoretical framework of the diffusion of innovation (DOI) theory, originally proposed by Everett Rogers, we examine how the active adoption of AIS within enterprises offers RA over non-adoption, shaping their operational efficiencies. Notably, the non-significant relationship identified between RA and AIS effectiveness warrants attention. Furthermore, our multi-group structural analysis unveils substantial sectoral disparities, highlighting the imperative for tailored strategies to optimize AIS effectiveness across diverse industry sectors. Our study offers practical insights essential for businesses navigating the intricacies of AIS optimization in Vietnam's unique technological and socio-economic milieu. We advocate for future research endeavors aimed at deepening our comprehension of these dynamics within varied organizational contexts, thereby facilitating informed decision-making and fostering organizational resilience in the face of evolving technological landscapes.

Keywords: Accounting Information Systems, AIS Efficiency, Digital Technology, Vietnam, Managerial Commitment, Sectoral Differences

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1. INTRODUCTION

business environment, accounting information serves as a fundamental asset for organizations spanning various sectors, extending its significance beyond traditional commercial entities to include nonprofit organizations (Zimmerman, 2015). This vital resource plays a pivotal role for diverse stakeholders, ranging from internal management to external entities such as investors, regulatory agencies, government bodies, and financial institutions (Filatotchev & Nakajima, 2010). Accurate accounting information forms the bedrock for managerial decision-making, guides routine operations, ensures effective organizational management, and establishes robust internal controls (Hansen et al., 2007). Amidst the current era of IT 4.0, characterized by the pervasive influence of digital technology, the fourth industrial revolution is driving a transformative shift towards automation and data exchange in manufacturing technologies and daily life (Hermann et al., 2016). The ubiquity of the Internet's interconnectedness has permeated every facet of business operations, making information technology an indispensable tool for enhancing task execution, cost-effectiveness, operational efficiency (Bibri, 2020). and The seamless integration of technology into business processes has become imperative for maintaining competitiveness and achieving optimal performance.

Against the backdrop of Vietnam's dynamic technological integration in the environment, a comprehensive study on the efficiency of accounting information systems (AIS) becomes imperative. The nation's proactive adoption of advanced technologies, such as enterprise resource planning (ERP) systems and cloud computing, coupled with the rising prevalence of accounting software and electronic invoicing among small and medium enterprises (SMEs), reflects a significant shift toward digital transformation (Thuan et al., 2022). Despite these advancements, the utilization of AIS within Vietnamese firms remains comparatively low, underscoring the need for in-depth research to understand the factors influencing its efficiency (Kim & Bá, 2023; Nguyễn & Huỳnh, 2019). The evolving digital economy, coupled with the emergence of new business forms and the diversification of economic transactions, necessitates a closer examination of how AIS aligns with and contributes to the evolving needs of businesses in Vietnam (Thuan et al., 2022). The study on AIS efficiency in this unique context is crucial for uncovering insights that can inform strategic decision-making, foster greater technology adoption, and contribute to the ongoing development of robust accounting practices in the Vietnamese business landscape.

Our study employs a robust methodological framework, comprising exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), supplemented by structural equation modeling (SEM), to identify and validate key factors influencing AIS efficiency. This combined approach allows for a comprehensive examination of the underlying structure of the data and facilitates the assessment of relationships between observed and latent variables. Additionally, multi-group

structural analysis is utilized to discern sectoral differences, providing nuanced insights into the varying dynamics across industry sectors.

Through our analyses, we confirm the substantial impact of several factors on AIS effectiveness, including managerial commitment (MC), accounting staff proficiency (AP), digital technology application (DT), data quality (DQ), organizational readiness (RD), and accounting software (AS). However, the non-significant relationship between relative advantage (RA) and AIS effectiveness is a noteworthy finding, warranting further investigation.

This study contributes to the existing literature by offering a nuanced understanding of AIS efficiency within the Vietnamese business context. By elucidating the interplay of key factors and identifying sectoral differences, our research provides actionable insights for businesses, policymakers, and stakeholders. Practical implications include tailored strategies for enhancing AIS effectiveness, fostering greater technology adoption, and promoting the development of robust accounting practices in Vietnam.

The remainder of this paper is structured as follows: Section 2 provides a comprehensive review of existing literature on AIS efficiency, contextualizing our study within the broader research landscape; Section 3 outlines the methodological approach employed, detailing the steps taken to analyze the data and derive key insights; Section 4 presents the findings of our study, including discussions on the significance of each factor and sectoral dynamics, and offers a thorough examination of the contributions and practical implications of our research. Finally, Section 5 concludes the paper by summarizing key findings, highlighting limitations, and suggesting avenues for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Our study is grounded in the diffusion of innovation (DOI) theory proposed by Everett Rogers in 1962. This theoretical framework explains how new ideas, innovations, or technologies spread and become adopted within a society or specific group over time (Rogers, 1962). Within the domain of AIS, the prevalent consensus supports the view that active utilization of AIS within enterprises is distinctly more advantageous than non-adoption (Lutfi et al., 2020; Thuan et al., 2022). Building upon these foundational insights, the study formulated hypotheses grounded in the articulated motivations and rationales.

2.1. Managerial commitment (MC)

Lutfi et al. (2020) argue that the support of senior management involves the active participation of top-level leaders in the planning and control of the AIS. The participation of managers in the implementation of the AIS plays a crucial role in deploying the AIS in enterprises (Marabelli et al., 2023; Thong & Yap, 1995; Zhen & Zhen, 2023). Managers involved in implementing the AIS, such as through project participation, can align the AIS with the company's goals and strategies. Their involvement is likely to

foster a positive attitude towards the AIS project, leading to an effective AIS (Kocsis, 2019; Kopel et al., 2020). Importantly, empowered managers ensure adequate resource allocation for an AIS project, thereby influencing the company's AIS through widespread managerial involvement in the AIS. Thus, our first hypothesis is expressed as follows:

H1: The management commitment positively influences the effectiveness of AIS.

2.2. Accounting staff proficiency (AP)

Accounting staff directly engage in the operation of the AIS. They are responsible for tasks such as data collection, storage, processing, and the preparation of accounting reports (Phan et al., 2020). Therefore, to perform these tasks effectively, these accounting staff members need to possess skills and knowledge in accounting. When accounting staff have a high level of professional competence, it helps minimize errors in recording and processing accounting information, as well as contributes to the smooth operation of the AIS (Pilipczuk, 2020).

Alshbiel and Al-Awaqleh (2011) point out a positive relationship between the quality of human resources and the effectiveness of implementing the AIS. Enhancing the skills of staff in using AIS is crucial for the successful implementation of information accounting systems. Accounting staff are a key component of the AIS as they participate in data input, processing, and output of accounting information (Jackson & Allen, 2023). Training to enhance the skills of staff in using AIS is crucial for the successful implementation of the AIS (Banta et al., 2022). Moreover, numerous studies have indicated the importance of the quality of individual accountants in the deployment of the AIS (Jackson & Allen, 2023). Therefore, our second hypothesis is as follows:

H2: Accountant staff skills positively influence the effectiveness of AIS.

2.3. Digital technology application (DT)

technology plays a crucial role the construction and development of AIS. Emerging technologies such as artificial intelligence, machine learning, blockchain, and cloud computing can provide advanced solutions for managing and processing accounting information (Haddad, 2021; Samarghandi et al., 2023; Tan & Low, 2019). Information technology enhances the efficiency of AIS (AE) by automating processes and data handling (Abdelraheem et al., 2021). The use of AS, financial management systems, and cloud computing technology improves the speed and accuracy of input, processing, and reporting of accounting information (Alrabei, 2023). Digital technology ensures the accuracy of accounting information by automating processes and minimizing errors caused by human factors (Kokina & Blanchette, 2019).

AIS automatically calculates and records financial transactions, ensuring the accuracy and consistency of accounting data. Digital technology provides powerful data analysis tools and the ability to generate accounting reports quickly and in detail (Jayesh et al., 2022). The use of data analysis software and visualization tools helps businesses

gain a better understanding of their financial situation and make decisions based on accounting information (Huerta & Jensen, 2017; Yoshikuni et al., 2023). Information technology enhances transparency and control in the AIS (Al Shanti & Elessa, 2023; Mancini & Lamboglia, 2017). Using financial management systems and AS helps track and control financial transactions, creating detailed records and reports to ensure transparency and legal compliance (Iyoha & Oyerinde, 2010; Thakker & Japee, 2023). Information technology allows the integration of AIS with other systems such as customer relationship management (CRM) and ERP (Ruivo et al., 2017). This integration provides continuous and accurate accounting information to support business decisions. Thus, we hypothesize:

H3: DT positively influences the effectiveness of AIS.

2.4. Relative advantage (RA)

The DOI theory, originally proposed by Rogers (1962), is a theoretical framework that explains how new ideas, innovations, or technologies spread and become adopted within a society or a specific group over time. The theory identifies several key elements and stages involved in the adoption process, including the innovation itself, communication channels, social systems, time, and the adopter categories. Within the specific domain of AIS, the prevalent consensus supports the view that the active utilization of AIS within enterprises is distinctly more advantageous than non-adoption (Lutfi et al., 2020; Thuan et al., 2022). It is imperative to underscore that the primary impetus for enterprises embracing novel technologies stems from the anticipation of tangible benefits accruing to the organization (Allioui & Mourdi, 2023). Building upon these foundational insights, the formulated hypotheses that are grounded in the articulated motivations and rationales:

H4: RA positively influences the effectiveness of AIS.

2.5. Data quality (DQ)

data extraction processes (e.g., collection, data storage, and data utilization) must operate correctly to achieve high-quality data. Research trends investigating factors influencing DQ reveal that input controls and employees are crucial for the DO of the AIS (Al-Hattami & Kabra, 2024; Neely & Cook, 2011). Inaccurate and incomplete data can diminish competitiveness, and the output of the AIS relies on the quality of the data (Al-Hattami et al., 2024; Xu, 2015). According to Ball (2006), a financial statement is not just a dead-end product. It is a process that includes components such as the company's transactions and events, the selection of accounting policies, the application of accounting policies, related estimations, and evaluations, disclosure of transactions, events, estimates, and judgments (Brown et al., 2024; Wang & Welker, 2023; Wang et al., 2023). Therefore, the quality of accounting information in the financial statements of the company ultimately depends on the quality of each part of this process. In other words, DQ is important for the AIS. Therefore, our next hypothesis is:

H5: DQ positively influences the effectiveness of AIS.

2.6. Organizational readiness (RD)

to the technology-organizationenvironment model theory (Lutfi et al., 2020; Maryeni et al., 2012), organizational factors wield a substantial influence on the assimilation of technology. Consequently, the willingness of firms to adeptly utilize new technology emerges as a pivotal organizational determinant (Lutfi et al., 2020; Thuan et al., 2022). The hesitancy of firms in embracing AIS is often rooted in a multifaceted apprehension related to the potential risks entailed in its implementation (Lutfi et al., 2020; Matringe & Power, 2024). This apprehension encompasses concerns about the financial investment required, potential disruptions to existing workflows data security issues, and the learning curve associated with adopting a new technological infrastructure. Moreover, the pivotal role of employees' attitudes in shaping the reception of AIS is accentuated during the pre-implementation phase (Ali et al., 2012). Positive attitudes among employees are crucial not only for fostering a smoother transition but also for optimizing the utilization of the new system. This positivity can be contingent on communication, training programs, and a supportive organizational culture that emphasizes the benefits of AIS adoption. Consequently, the subsequent formulated hypothesis is based multifaceted considerations:

H6: RD positively influences the effectiveness of AIS.

2.7. Accounting software (AS)

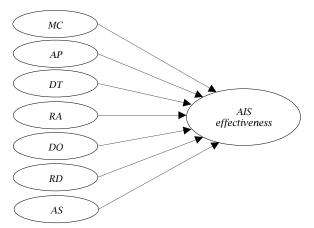
The AS plays a crucial role in optimizing accounting processes, managing data, improving analysis and reporting capabilities, enhancing accuracy and compliance, as well as strengthening information security. Software designed to handle data in the AIS must meet the following requirements: identify the system's output information; find hardware and software solutions; manage complexity effectively; and ensure confidentiality (Jadhay. Companies need to choose and use suitable AIS software to ensure that accounting operations are carried out efficiently and accurately (Hamad et al., 2023).

Good AS helps businesses save time and effort while minimizing errors in the accounting process (Perdana et al., 2023; Youssef, 2013). It allows for storage, retrieval, organization, classification of accounting information based on various criteria (Duan et al., 2023; Murthy & Groomer, 2004). It facilitates easy access to information when needed, generating accurate and timely accounting reports (Al Shanti & Elessa, 2023; Dai & Vasarhelyi, 2017). It aids in error checking and provides warnings in case of inaccuracies during the accounting process while helping the company comply with current accounting regulations and standards (Perdana et al., 2023). The software also offers security features such as user management, access rights, data encryption, and activity logging (Faccia & Petratos, 2021). As a result, companies can analyze financial performance, assess business efficiency, and make informed decisions based on accounting information. Thus, our final hypothesis is:

H7: Quality of AIS software positively influences the effectiveness of AIS.

Therefore, the research model of the study may be presented as follows:

Figure 1. Research model



3. METHODOLOGY

3.1. Participants

A survey was conducted to collect primary data from managers and accountants in Vietnamese companies. We enlisted respondents via an online tool, the Google survey. Participants were urged to provide accurate and truthful responses, with the assurance that their involvement would remain confidential, anonymous, and solely utilized for academic research purposes. Out of the 350 surveys disseminated, 92% were satisfactorily completed and returned, resulting in 322 cases in the final sample. The participants' ages spanned from 21 to 55 years old, with an average age of 33.26 years old (standard deviation (SD) = 7.24). Their mean work experience stood at 11.32 years (SD = 5.57), while the average organizational tenure was 7.46 years (SD = 4.33).

3.2. Measurement

To gauge the constructs outlined in the research model, questionnaire items were borrowed from prior studies, and each was assessed using a fivepoint Likert scale (1 = strongly disagree to 5 = strongly agree). The validity and reliability of the items used to measure the constructs have been scrutinized extensively in various The constructs underpinning *MC* (five items) and AIS effectiveness (four items) were sourced from Thuan et al. (2022). For the exploration of AP, we adapted and refined five items from Walker and Fleischman (2012), RA (three items) and RD (three items) were adopted from Ali et al. (2012). The measurement of DO (four items) and AS (four items) was referenced from Truong (2023). Lastly, four items gauging DT were derived from Nassani et al. (2023).

3.3. Analysis

The study employed a quantitative methodology to investigate the proposed connections. The relationships and group comparisons were examined using SEM analysis by Hair et al. (2011) conducted with SPSS and Amos 21 software.

4. RESULTS

4.1. Testing the reliability of the scales

This study explores the impact of seven factors on the AE. These factors include *MC*, *AP*, *DT*, *RA*, *DQ*, *RD*, and *AS*.

To assess the dependability of the valid variables within these scales, Cronbach's alpha analysis is utilized in this study. The findings reveal that all Cronbach's alpha coefficients surpass 0.70, and the factor loadings exceed 0.70, signifying the fulfillment of reliability criteria. Variables not

meeting the suitability criteria, such as *AP4*, *AP5*, and *AS1*, have been excluded from the model.

To elaborate, the effectiveness of AIS (AE) is evaluated through four observable variables (AE1-AE4). MC is assessed using four observable variables (MC1-MC4), AP with four observable variables (AP1, AP2, AP3, and AP6), DT with three observable variables (DT1-DT3), RA with three observable variables (DT1-DT3), DQ with four observable variables (DQ1, DQ2, DQ4, and DQ5), DQ40 with three observable variables (DQ1, DQ2, DQ4, and DQ5), DQ50, and DQ51, and DQ52 is gauged with three observable variables (DQ1, DQ3), DQ40 with three observable variables (DQ1), and DQ51 with three observable variables (D1).

Table 1. Results of the reliability test

Factors	Cronbach's alpha	Items	Factor loading
Managerial commitment (<i>MC</i>)	0.936	MC1	0.722
		MC2	0.718
		MC3	0.716
		MC4	0.704
Accounting staff proficiency (AP)	0.866	AP1	0.749
		AP2	0.745
		AP3	0.736
		AP6	0.703
Digital technology application (DT)		DT1	0.735
	0.812	DT2	0.705
		DT3	0.713
Relative advantage (RA)	0.891	RA1	0.731
		RA2	0.742
		RA3	0.706
Data quality (<i>DQ</i>)	0.837	DQ1	0.803
		DQ2	0.771
		DQ4	0.763
		DQ5	0.778
Organizational readiness (RD)	0.911	RD1	0.828
		RD4	0.873
		RD5	0.840
Accounting software (AS)	0.731	AS2	0.819
		AS3	0.728
		AS4	0.756
Effectiveness of AIS (<i>AE</i>)	0.923	AE1	0.798
		AE2	0.769
		AE3	0.867
		AE4	0.862

4.2. Confirmatory factor analysis

Following the implementation of EFA, an evaluation of the scales was conducted using CFA. The results indicate a Chi-squared-to-degrees-of-freedom ratio (χ^2/df) of 3.847, a root mean square error of approximation (RMSEA) of 0.078, a goodness of fit index (GFI) of 0.910, a Tucker-Lewis coefficient (TFI) of 0.913, and a comparative fit index (CFI) of 0.942. These indicators confirm the appropriateness of the measurement model.

4.3. Structural model evaluation

The next stage of the research will include evaluating the overall explanatory capability of the structural model and ascertaining the degree of variation clarified by the independent variables. Following this, we will examine the significance and strength of the pathways within the model, with each hypothesis corresponding to a specific structural route.

Table 2. Results of regression analysis

Relationships	Coefficients	Std. error	p-value
AE ← RA	0.012	0.042	0.768
AE ← MC	0.105	0.095	0.034
AE ← AS	0.015	0.022	0.013
AE ← RD	0.296	0.047	0.004
$AE \leftarrow AP$	0.123	0.235	0.009
AE ← DQ	0.167	0.210	0.021
AE ← DT	0.325	0.109	0.000

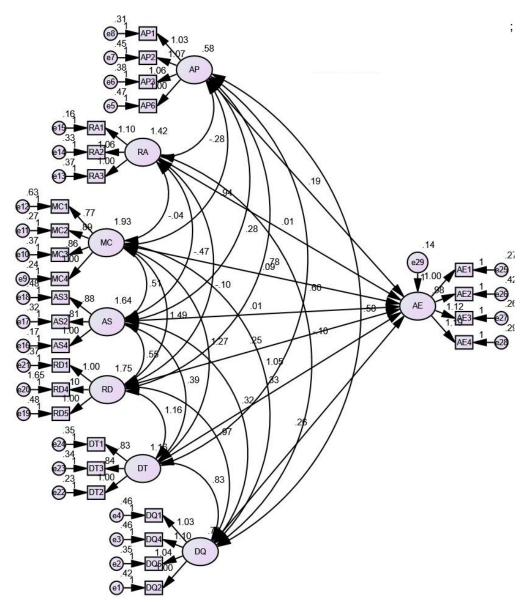


Figure 2. SEM results

 $Note: Chi-square = 1566.078; \ df = 608; \ p = 0.000; \ Chi-square \ / \ df = 2.576; \ GFI = 0.903; \ TLI = 0.917; \ CFI = 0.931; \ RMSEA = 0.064.$

Figure 2 and Table 2 illustrate the results of the SEM model. The results indicate that the effects of MC, AS, RD, AP, DQ, and DT were significantly related to the effectiveness of AIS (AE). Thus, our data support hypotheses H1, H2, H3, H5, H6, and H7. However, the effect of RA on the effectiveness of AIS is not significant $\beta = 0.10$, p = 0.768), indicating that hypothesis H4 is not supported by study data.

4.4. Multi-group structural analysis

A multi-group structural analysis has been conducted to assess and compare the structural model's impact on the effectiveness of AIS in firm communities across the three sectors including industry, agriculture, and service. The analysis aims to determine whether there are varied impacts in these study sectors. Employing both the variability method (where parameters in each model are considered independent) and the partial invariability method (assuming equal regression weights between

groups). The results show that the Chi-square value for the variable model is 1004.735, whereas the Chi-square for the invariable model amounts to 978.203, resulting in a p-value <0.001 (99.9% confidence level). Therefore, the test results show a significant difference in Chi-square between the variable model and the invariant model. In other words, there is a difference in the influence of variables within the model among the enterprises of three sectors (refer to Table 3).

Table 3. Results of multi-group analysis

Statistics	Chi-square	df
Invariability model	978.203	279
Variability model	1004.735	289
Difference	26.532	10
p-value	0.001	

To compare the differences in the influence of various factors on the effectiveness of AIS among three business groups, the authors utilized

standardized regression coefficients. The results indicate that factors such as DT, DQ, MC, and RD, play a significant role in the quality of information systems for accounting in industry and service enterprises. Meanwhile, employee expertise and AS significantly contribute to the effectiveness of AIS of agricultural enterprises (refer to Appendix). In particular, the findings revealed that factors such as digital technology, DQ, MC, and RD emerged as significant contributors to the quality of AIS in industry and service enterprises. This suggests that in sectors with more established and complex operational frameworks, the integration of advanced digital technologies, coupled with robust data management practices and strong leadership commitment, plays a pivotal role in optimizing AIS effectiveness. Additionally, RD, encompassing factors such as preparedness for technological adoption and a supportive organizational culture, emerged as crucial determinants of AIS quality in these sectors. Conversely, the analysis highlighted the distinctive influence of employee expertise and AS on AIS effectiveness in SMEs. In SMEs, where resources and expertise may be more limited compared to larger organizations, the proficiency of accounting staff and the suitability of AS play a critical role in driving AIS performance. This underscores the importance of investing in employee training and selecting appropriate software solutions tailored to the specific needs and capabilities of SMEs to enhance AIS effectiveness.

Overall, these findings underscore the necessity of considering sector-specific contexts when devising strategies to optimize AIS effectiveness. By recognizing the unique requirements and challenges faced by different industry sectors and tailoring interventions accordingly, organizations can enhance the quality and performance of their AIS. Such sector-specific approaches not only ensure better alignment with organizational objectives but also facilitate more efficient utilization of resources, ultimately contributing to improved decision-making and organizational outcomes.

5. CONCLUSION

In conclusion, this study has delved into the intricate dynamics surrounding the AE within diverse organizational contexts. The exploration began by identifying the overarching problem: Understanding the multifaceted factors influencing AIS effectiveness in the digital landscape. Through a rigorous methodological approach, including EFA and CFA, the study ensured the reliability and validity of measurement scales, paving the way for a comprehensive examination of AIS efficiency.

subsequent SEM analysis unveiled significant insights, confirming the substantial impact of MC, AP, DT, DQ, RD, and AS on AIS effectiveness. However, the non-significant relationship discovered between RA and AIS effectiveness underscores the complexity of the AIS environment, suggesting avenues for further exploration and refinement. An important extension of this research was the multi-group structural analysis, which shed light on significant sectoral differences. These findings highlight the need for tailored strategies to address AIS effectiveness across diverse industry sectors, recognizing the unique challenges and opportunities each sector

Despite the valuable insights garnered from this study, it is crucial to acknowledge its limitations. The cross-sectional nature of the data restricts our ability to establish causal relationships between variables, pointing to the need for longitudinal studies (Schwab, 2004). Additionally, the generalizability of our findings may be limited by the sample size and representativeness of the firms within each sector. Looking ahead, future research endeavors should aim to address these limitations by adopting longitudinal study designs and exploring the interplay between internal and external factors influencing AIS effectiveness. Moreover, delving deeper into the nuanced dynamics uncovered in this study holds promise for further enhancing AIS optimization organizational settings.

In essence, this research provides a comprehensive understanding of the factors influencing AIS efficiency, offering practical implications for businesses in diverse sectors. The nuanced insights gained from the multi-group analysis underscore the need for tailored strategies in addressing AIS effectiveness based on the specific characteristics of different industry sectors. Future research may delve deeper into understanding the nuanced dynamics uncovered in this study, contributing further to the optimization of AIS in diverse organizational settings.

REFERENCES

Abdelraheem, A. A. E., Hussaien, A. M., Mohammed, M. A. A., & Elbokhari, Y. A. E. (2021). The effect of information technology on the quality of accounting information. *Accounting*, 7, 191–196. https://doi.org/10.5267/j.ac.2020.9.017

Al Shanti, A. M., & Elessa, M. S. (2023). The impact of digital transformation towards blockchain technology application in banks to improve accounting information quality and corporate governance effectiveness. *Cogent Economics & Finance, 11*(1), Article 2161773. https://doi.org/10.1080/23322039.2022.2161773

Al-Hattami, H. M., & Kabra, J. D. (2024). The influence of accounting information system on management control effectiveness: The perspective of SMEs in Yemen. *Information Development*, 40(1), 75–93. https://doi.org/10.1177/02666669221087184

Al-Hattami, H. M., Senan, N. A. M., Al-Hakimi, M. A., & Azharuddin, S. (2024). An empirical examination of AIS success at the organizational level in the era of COVID-19 pandemic. *Global Knowledge, Memory and Communication, 73*(3), 312–330. https://doi.org/10.1108/GKMC-04-2022-0094

Ali, A., Rahman, M. S. A., & Ismail, W. N. S. W. (2012). Predicting continuance intention to use accounting information systems among SMEs in Terengganu, Malaysia. *International Journal of Economics and Management, 6*(2), 295–320. http://www.ijem.upm.edu.my/vol6no2/bab05.pdf

- Allioui, H., & Mourdi, Y. (2023). Exploring the full potentials of IoT for better financial growth and stability: A comprehensive survey. *Sensors*, *23*(19), Article 8015. https://doi.org/10.3390/s23198015
- Alrabei, A. M. (2023). Green electronic auditing and accounting information reliability in the Jordanian social security corporation: The mediating role of cloud computing. *International Journal of Financial Studies,* 11(3), Article 114. https://www.mdpi.com/2227-7072/11/3/114
- Alshbiel, S. O., & Al-Awaqleh, Q. A. (2011). Factors affecting the applicability of the computerized accounting system. *International Research Journal of Finance and Economics*, *64*, 36–53.
- Ball, R. (2006). International financial reporting standards (IFRS): Pros and cons for investors. *Accounting and Business Research*, *36*(1, special issue), 5–27. https://doi.org/10.1080/00014788.2006.9730040
- Banta, V.-C., Ríndasu, S.-M., Tanasie, A., & Cojocaru, D. (2022). Artificial intelligence in the accounting of international businesses: A perception-based approach. Sustainability, 14(11), Article 6632. https://doi.org/10.3390/su14116632
- Bibri, S. E. (2020). The IoT and big data analytics for smart sustainable cities: Enabling technologies and practical applications. In *Advances in the leading paradigms of urbanism and their amalgamation: Compact cities, eco-cities, and data-driven smart cities* (pp. 191–226). Springer. https://doi.org/10.1007/978-3-030-41746-8_8
- Brown, S. V., Hinson, L. A., & Tucker, J. W. (2024). Financial statement adequacy and firms' MD&A disclosures. *Contemporary Accounting Research*, 41(1), 126–162. https://doi.org/10.1111/1911-3846.12919
- Dai, J., & Vasarhelyi, M. A. (2017). Toward blockchain-based accounting and assurance. *Journal of Information Systems*, 31(3), 5–21. https://doi.org/10.2308/isys-51804
- Duan, H. K., Vasarhelyi, M. A., Codesso, M., & Alzamil, Z. (2023). Enhancing the government accounting information systems using social media information: An application of text mining and machine learning. *International Journal of Accounting information Systems*, 48, Article 100600. https://doi.org/10.1016/j.accinf.2022.100600
- Faccia, A., & Petratos, P. (2021). Blockchain, enterprise resource planning (ERP) and accounting information systems (AIS): Research on e-procurement and system integration. *Applied Sciences*, 11(15), Article 6792. https://www.mdpi.com/2076-3417/11/15/6792
- Filatotchev, I., & Nakajima, C. (2010). Internal and external corporate governance: An interface between an organization and its environment. *British Journal of Management, 21*(3, special issue), 591–606. https://doi.org/10.1111/j.1467-8551.2010.00712.x
- Haddad, H. (2021). The effect of artificial intelligence on the AIS excellence in Jordanian banks. *Montenegrin Journal of Economics*, *17*(4), 155–166. https://doi.org/10.14254/1800-5845/2021.17-4.14
- 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
- Hamad, H. A., Ibrahim, H. K., Hamza, P. A., Othman, R. N., Qader, K. S., Kareem, B. J. & Anwer, S. A. (2023). The effect of accounting information system on organizational effectiveness: Kurdistan region is a case of the study. *Polytechnic Journal of Humanities and Social Sciences*, 4(1), 53–61. https://journals.epu.edu.iq/index.php/ptjhss/article/view/1053/343
- Hansen, D. R., Mowen, M. M., & Guan, L. (2007). *Cost management: Accounting & control* (6th ed.). South-Western College Pub.
- Hermann, M., Pentek, T., & Otto, B. (2016). Design principles for industrie 4.0 scenarios. In *Proceedings of the 2016 49th Hawaii International Conference on System Sciences* (pp. 3928–3937). IEEE. https://doi.org/10.1109/HICSS.2016.488
- Huerta, E., & Jensen, S. (2017). An accounting information systems perspective on data analytics and big data. *Journal of Information Systems*, 31(3), 101-114. https://doi.org/10.2308/isys-51799
- Xu, H. (2015). What are the most important factors for accounting information quality and their impact on AIS data quality outcomes? *Journal Data and Information Quality, 5*(4), Article 14. https://doi.org/10.1145/2700833
- Iyoha, F. O., & Oyerinde, D. (2010). Accounting infrastructure and accountability in the management of public expenditure in developing countries: A focus on Nigeria. *Critical Perspectives on Accounting, 21*(5), 361–373. https://doi.org/10.1016/j.cpa.2009.06.002
- Jackson, D., & Allen, C. (2023). Technology adoption in accounting: The role of staff perceptions and organisational context. *Journal of Accounting & Organizational Change*, 20(2), 205–227. https://doi.org/10.1108/jaoc-01-2023-0007
- Jadhav, A. D. (2024). Standardization in the transformation of civic systems using safe and secure Internet of Things systems. In N. Gupta & S. Mishra (Eds.), *Internet of everything for smart city and smart healthcare applications* (pp. 3-15). Springer. https://doi.org/10.1007/978-3-031-34601-9_1
- Jayesh, G. S., Novaliendry, D., Gupta, S. K., Sharma, A. K., & Hazela, B. (2022). A comprehensive analysis of technologies for accounting and finance in manufacturing firms. ECS Transactions, 107(1), Article 2715. https://doi.org/10.1149/10701.2715ecst
- Kim, N. N. T., & Bá, T. T. (2023). Mức độ vận dụng kế toán quản trị của các doanh nghiệp dệt may ở Việt Nam [The level of management accounting application of textile and garment enterprises in Vietnam]. *Tạp Chí Kinh Tế Và Phát Triển, 309*(2), 96-105. https://doi.org/10.33301/JED.VI.1156
- Kocsis, D. (2019). A conceptual foundation of design and implementation research in accounting information systems. *International Journal of Accounting Information Systems*, 34, Article 100420. https://doi.org/10.1016/j.accinf.2019.06.003
- Kokina, J., & Blanchette, S. (2019). Early evidence of digital labor in accounting: Innovation with robotic process automation. *International Journal of Accounting Information Systems, 35*, Article 100431. https://doi.org/10.1016/j.accinf.2019.100431
- Kopel, M., Riegler, C., & Schneider, G. (2020). Providing managerial accounting information in the presence of a supplier. *European Accounting Review*, 29(4), 803–823. https://doi.org/10.1080/09638180.2019.1694955
- Lutfi, A., Al-Okaily, M., Alsyouf, A., Alsaad, A., & Taamneh, A. (2020). The impact of AIS usage on AIS effectiveness among Jordanian SMEs: A multi-group analysis of the role of firm size. *Global Business Review*. https://doi.org/10.1177/0972150920965079

- Mancini, D., & Lamboglia, R. (2017). Accounting information system and transparency: A theoretical framework. In K. Corsi, N. G. Castellano, R. Lamboglia, & D. Mancini (Eds.), *Reshaping accounting and management control systems* (Vol. 20: Lecture notes in information systems and organisation, pp. 249–261). Springer. https://doi.org/10.1007/978-3-319-49538-5_16
- Marabelli, M., Zaza, S., Masiero, S., Li, J., & Chudoba, K. (2023). Diversity, equity and inclusion in the AIS: Challenges and opportunities of remote conferences. *Information Systems Journal*, 33(6), 1370–1395. https://doi.org/10.1111/isj.12458
- Maryeni, Y. Y., Govindaraju, R., Prihartono, B., & Sudirman, I. (2012). Technological and organizational factors influencing the e-commerce adoption by Indonesian SMEs. In *Proceedings of the 2012 IEEE International Conference on Management of Innovation & Technology* (pp. 436–441). IEEE. https://doi.org/10.1109/ICMIT.2012.6225845
- Matringe, N., & Power, M. (2024). Memories lost: A history of accounting records as forms of projection. *Accounting, Organizations and Society, 112*, Article 101514. https://doi.org/10.1016/j.aos.2023.101514
- Murthy, U. S., & Groomer, S. M. (2004). A continuous auditing web services model for XML-based accounting systems. *International Journal of Accounting Information Systems*, *5*(2), 139–163. https://doi.org/10.1016/j.accinf.2004.01.007
- Nassani, A. A., Yousaf, Z., Grigorescu, A., Oprisan, O., & Haffar, M. (2023). Accounting information systems as mediator for digital technology and strategic performance interplay. *Electronics*, *12*(8), Article 1866. https://www.mdpi.com/2079-9292/12/8/1866
- Neely, M. P., & Cook, J. S. (2011). Fifteen years of data and information quality literature: Developing a research agenda for accounting. *Journal of Information Systems*, 25(1), 79–108. https://doi.org/10.2308/jis.2011.25.1.79
- Nguyễn, T. K. N., & Huỳnh, T. K. H. (2019). *Bàn luận về việc vận dụng kế toán quản trị trong doanh nghiệp* [Discuss the application of management accounting in businesses]. https://elib.vku.udn.vn/bitstream/123456789/1001/1/B47.2019-383-391.pdf
- Perdana, A., Lee, W. E., & Mui Kim, C. (2023). Prototyping and implementing robotic process automation in accounting firms: Benefits, challenges and opportunities to audit automation. *International Journal of Accounting Information Systems*, *51*, Article 100641. https://doi.org/10.1016/j.accinf.2023.100641
- Phan, D., Yapa, P., & Nguyen, H. T. (2020). Accounting graduate readiness for work: A case study of South East Asia. *Education + Training*, 63(3), 392-416. https://doi.org/10.1108/et-02-2019-0036
- Pilipczuk, O. (2020). Toward cognitive management accounting. *Sustainability*, 12(12), Article 5108. https://doi.org/10.3390/su12125108
- Rogers, E. M. (1962). Diffusion of innovations (1st ed.). Free Press.
- Ruivo, P., Oliveira, T., & Mestre, A. (2017). Enterprise resource planning and customer relationship management value. Industrial Management & Data Systems, 117(8), 1612–1631. https://doi.org/10.1108/IMDS-08-2016-0340
- Samarghandi, H., Askarany, D., & Dehkordi, B. B. (2023). A hybrid method to predict human action actors in accounting information system. *Journal of Risk and Financial Management, 16*(1), Article 37. https://doi.org/10.3390/jrfm16010037
- Schwab, D. P. (2004). Research methods for organizational studies (2nd ed.). Psychology Press https://doi.org/10.4324/9781410611284
- Tan, B. S., & Low, K. Y. (2019). Blockchain as the database engine in the accounting system. *Australian Accounting Review*, 29(2), 312–318. https://doi.org/10.1111/auar.12278
- Thakker, P., & Japee, G. (2023). Emerging technologies in accountancy and finance: A comprehensive review. *European Economic Letters*, 13(3), 993–1011. https://www.eelet.org.uk/index.php/journal/article/view/394
- Thong, J. Y. L., & Yap, C. S. (1995). CEO characteristics, organizational characteristics and information technology adoption in small businesses. *Omega*, *23*(4), 429–442. https://doi.org/10.1016/0305-0483(95)00017-I
- Thuan, P. Q., Khuong, N. V., Anh, N. D. C., Hanh, N. T. X., Thi, V. H. A., Tram, T. N. B., & Han, C. G. (2022). The determinants of the usage of accounting information systems toward operational efficiency in industrial revolution 4.0: Evidence from an emerging economy. *Economies*, 10(4), Article 83. https://www.mdpi.com/2227-7099/10/4/83
- Truong, V.-T. (2023). Ånh hưởng của hệ thống thông tin kế toán đến hiệu quả hoạt động của các doanh nghiệp nhỏ và vừa Việt Nam [The effect of accounting information systems on the operational efficiency of small and medium-sized enterprises in Vietnam] [Doctoral dissertation, National Economics University]. https://sdh.neu.edu.vn/xem-tai-lieu/nghien-cuu-sinh-truong-van-tu-bao-ve-luan-an-tien-si_21374.html
- Walker, K. B., Fleischman, G. M., & Johnson, E. N. (2012). Measuring management accounting service quality. *Management Accounting Quarterly, 13*(3), 15–27. https://www.researchgate.net/publication/270889901_Measuring_Management_Accounting_Service_Quality
- Wang, J., & Welker, M. (2023). The effect of retrospective versus modified retrospective application of accounting changes on financial statement usefulness. *Review of Accounting Studies*. https://doi.org/10.1007/s11142-023-09788-3
- Wang, Y., Ashton, J. K., & Jaafar, A. (2023). Financial statement fraud, recidivism and punishment. *Emerging Markets Review*, 56, Article 101033. https://doi.org/10.1016/j.ememar.2023.101033
- Yoshikuni, A. C., Dwivedi, R., Dultra-de-Lima, R. G., Parisi, C., & Oyadomari, J. C. T. (2023). Role of emerging technologies in accounting information systems for achieving strategic flexibility through decision-making performance: An exploratory study based on North American and South American firms. *Global Journal of Flexible Systems Management*, 24, 199–218. https://doi.org/10.1007/s40171-022-00334-9
- Youssef, M. A. (2013). Management accounting change in an Egyptian organization: An institutional analysis. *Journal of Accounting & Organizational Change*, *9*(1), 50–73. https://doi.org/10.1108/18325911311307203
- Zhen, X., & Zhen, L. (2023). Accounting information systems and strategic performance: The interplay of digital technology and edge computing devices. *Journal of Grid Computing*, 22, Article 5. https://doi.org/10.1007/s10723-023-09720-8
- Zimmerman, J. L. (2015). The role of accounting in the twenty-first century firm. Accounting and Business Research, 45(4), 485-509. https://doi.org/10.1080/00014788.2015.1035549

APPENDIX

Figure A.1. A sectoral structural model for the effectiveness of AIS: Industry

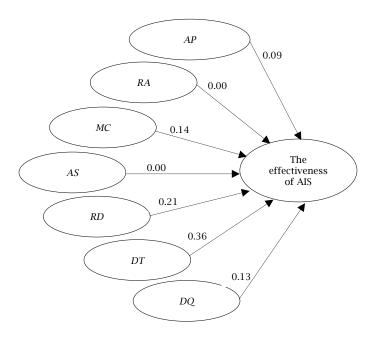
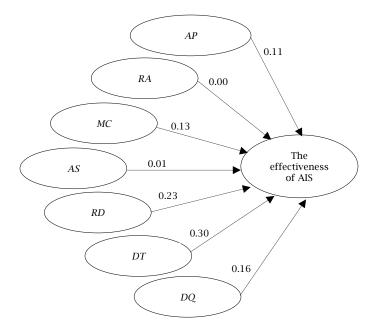


Figure A.2. A sectoral structural model for the effectiveness of AIS: Service



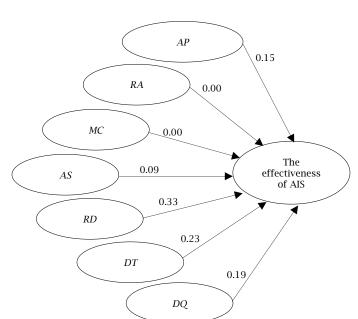


Figure A.3. A sectoral structural model for the effectiveness of AIS: Agriculture