

ACCOUNTING INFORMATION IN THE DIGITAL AGE: PREPARING FOR THE FUTURE

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Abstract

This paper examines the role of Accounting Information Systems (AIS) in the digital age, focusing on how these systems enhance organizational efficiency, transparency, and decision-making. The objective of the study is to synthesise and compare empirical evidence regarding the determinants of AIS effectiveness and their impact on organizational performance, with particular emphasis on Small and Medium-Sized Enterprises (SMEs). The research adopts a structured narrative literature review with a comparative analytical approach, drawing on empirical studies conducted in Asia, Europe, and North America. The reviewed studies are primarily based on survey data analyzed using advanced statistical techniques such as PLS-SEM, AMOS, and SPSS. The analysis highlights key determinants of AIS success, including system quality, information quality, and user satisfaction, as well as the growing contribution of emerging technologies such as artificial intelligence and blockchain in enhancing data integrity and reducing fraud risks. The findings indicate that effective AIS implementation significantly improves financial reporting accuracy, operational performance, and competitive advantage. The study concludes that sustained investment in digital skills and technological infrastructure is essential for organizations seeking to adapt successfully to the digital economy.

Keywords

Accounting Information Systems, digital transformation, information quality, SME performance, technology adoption

JEL Classification

M41, M15, O33, L86, G32

Introduction

In the context of accelerated digital transformation, Accounting Information Systems (AIS) play an increasingly important role in supporting organizational performance, transparency, and managerial decision-making. The digitalization of accounting

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processes has fundamentally transformed the way financial information is generated, processed, and used, positioning AIS as a critical component of modern organizational infrastructures.

Prior empirical research provides substantial evidence of a positive relationship between AIS effectiveness and organizational outcomes. However, existing findings remain fragmented across different economic, institutional, and regional contexts. While some studies emphasize the role of AIS as a driver of efficiency and competitiveness in emerging economies, others highlight its institutionalized function in governance, sustainability, and regulatory compliance within developed economies.

The objective of this study is to synthesize and compare empirical evidence on the role of AIS in organizational performance, with a particular focus on small and medium-sized enterprises (SMEs) operating in emerging and developed economies. By adopting a cross-regional comparative perspective, the paper seeks to identify common determinants of AIS success, as well as contextual differences in their mechanisms and outcomes.

Accordingly, the study addresses the following research questions:

RQ1: What are the main determinants of AIS effectiveness identified in empirical studies across regions?

RQ2: How does the role of AIS differ between emerging and developed economies?

RQ3: What contextual factors explain cross-regional differences in AIS-related performance outcomes?

1. Review of the scientific literature

The scientific literature on Accounting Information Systems (AIS) highlights their evolving role from basic transaction-processing tools to integrated systems that support strategic decision-making, innovation, and organizational sustainability (DeLone & McLean, 2003; Wang & Zhu, 2025). Contemporary studies increasingly examine AIS within broader digital ecosystems, incorporating technologies such as cloud computing, artificial intelligence, and data analytics (Bonsón, Bednárová, & Escobar, 2023; Vo, Van, & Nguyen, 2024). Recent studies also emphasize behavioral and qualitative aspects of AIS, such as trust and timeliness of information, and their influence on organizational commitment and employee attitudes (Khalaf, Abdulsahib, & Taha, 2023).

Empirical research conducted in emerging economies often focuses on AIS as a mechanism for improving efficiency, competitiveness, and survival in uncertain business environments (Lutfi, Alsyof, & Almaiah, 2022; Al-Okaily, 2024). These studies frequently emphasize the mediating roles of knowledge management capabilities, innovation, and organizational learning in translating AIS adoption into performance outcomes (Kareem, Mohammed, & Al-Hadrawi, 2021; Al-Matari, Al-Duais, & Al-Sharif, 2022).

In contrast, studies conducted in developed economies tend to frame AIS within institutional and regulatory contexts. Here, AIS is closely linked to governance structures, internal control systems, and sustainability reporting practices (Monteiro, Michalak, & Sousa, 2022; Schiavi, Beuren, & Monteiro, 2022). This stream of literature highlights AIS as an integral component of transparency, accountability, and long-term value creation (Wang & Zhu, 2025; Bonsón et al., 2023).

Despite the growing body of empirical evidence, the literature remains fragmented along regional and methodological lines (Monteiro et al., 2022; Kareem et al., 2024). This fragmentation underscores the need for comparative analyses that synthesize findings across different economic and institutional settings, thereby offering a more integrated understanding of AIS effectiveness.

2. Research methodology

This study adopts a structured narrative literature review with a comparative analytical approach, rather than a systematic review or meta-analysis. The objective is not to statistically aggregate effect sizes, but to synthesize and compare empirical evidence on the role of Accounting Information Systems in organizational performance across diverse economic and institutional contexts.

The methodology focuses on identifying recurring patterns, dominant determinants, and contextual differences reported in empirical studies. A qualitative–comparative interpretation of quantitative findings is employed, rather than primary data collection or statistical meta-aggregation.

The review includes peer-reviewed empirical studies published between 2021 and 2025 in international academic journals. Studies were selected based on three criteria: (1) an explicit focus on AIS, particularly within SMEs; (2) the use of quantitative empirical methods; and (3) the examination of performance-related outcomes. The final corpus of literature comprises studies conducted in Asia, Europe, and North America, enabling meaningful cross-regional comparison.

Most of the reviewed studies rely on survey-based quantitative research designs, using standardized questionnaires administered to managers, business owners, and accounting professionals with direct experience in AIS implementation. This methodological consistency enhances comparability across studies.

A central element of the methodological analysis concerns the statistical techniques employed in the literature. The majority of studies use advanced multivariate methods, particularly Partial Least Squares Structural Equation Modelling (PLS-SEM), implemented through software such as SmartPLS, AMOS, and SPSS. These techniques are used to examine causal relationships, as well as mediating and moderating effects among constructs such as AIS quality, information reliability, innovation, and organizational performance.

Sample sizes reported in the reviewed studies typically range from approximately 97 to 450 respondents and predominantly rely on non-probability sampling methods, especially purposive sampling. While this approach limits statistical generalization, it is widely accepted in AIS research and is commonly acknowledged as a methodological limitation. The analysis also considers the theoretical frameworks underpinning the reviewed studies, including the DeLone and McLean IS Success Model, the Technology–Organization–Environment (TOE) framework, and the Unified Theory of Acceptance and Use of Technology (UTAUT). These frameworks serve as analytical lenses for structuring and interpreting the comparative findings.

3. Results and discussion

This section presents the comparative results derived from the reviewed empirical studies. The findings are reported in a structured and descriptive manner, focusing on recurring empirical relationships identified across regions. The analysis does not involve statistical aggregation or meta-analytic techniques; instead, it relies on a systematic qualitative comparison of quantitative results to identify dominant mechanisms and cross-regional differences in AIS effectiveness.

Tables and figures are used as illustrative tools to organize and summarize comparative evidence, rather than to represent aggregated primary data.

Asia

Empirical studies conducted in Asia predominantly focus on small and medium-sized enterprises (SMEs) and emphasize AIS as a key driver of performance and competitiveness (Lutfi, Alsyouf, & Almaiah, 2022; Al-Okaily, 2024). Evidence from Iraq indicates that AIS improves SME performance indirectly through knowledge management capabilities and innovation, both acting as mediating variables (Kareem, Mohammed, & Al-Hadrawi, 2021; Kareem, Mohammed, & Al-Hadrawi, 2024). Similar findings are reported in Indonesia, where AIS alignment and partnership programs contribute to improved non-financial performance and organizational effectiveness (Budiarto, Prabowo, & Sari, 2022; Fitrius, Sari, & Syafr, 2024).

Research from Jordan highlights the mediating role of AIS between internal control systems and employee performance, particularly when users possess adequate IT knowledge and managerial awareness (Alawaqleh, 2021; Qatawneh, 2023). Studies from Vietnam, Malaysia, and Saudi Arabia further demonstrate the importance of cloud-based AIS, dynamic system capabilities, and behavioral factors influencing AIS adoption and effectiveness (Al-Matari, Al-Duais, & Al-Sharif, 2022; Vo, Van, & Nguyen, 2024; Alquhaif & Al-Mamary, 2025).

Overall, the reviewed Asian studies consistently associate AIS with knowledge management, innovation, and performance-related outcomes, particularly in SMEs operating in uncertain and resource-constrained environments (Kareem et al., 2021; Lutfi et al., 2022).

Europe

In Europe, AIS research is more closely linked to institutional frameworks, governance mechanisms, and regulatory compliance (Schiavi, Beuren, & Monteiro, 2022). Empirical evidence from Portugal and Poland shows that AIS quality and internal control systems explain a substantial proportion of non-financial performance variance, confirming the strategic role of accounting systems in organizational effectiveness (Monteiro, Michalak, & Sousa, 2022).

At the European Union level, studies indicate an increasing disclosure of AIS- and AI-related information in corporate reporting, although ethical and governance guidelines remain unevenly developed (Bonsón, Bednárová, & Escobar, 2023). Additional research highlights how AIS quality and user satisfaction influence corporate sustainability

performance, reinforcing the role of accounting systems in transparent and responsible reporting (Wang & Zhu, 2025).

Collectively, the reviewed European studies reveal a strong association between AIS implementation, governance structures, and sustainability-related reporting practices, reflecting a highly institutionalized accounting environment (Monteiro et al., 2022; Schiavi et al., 2022).

Canada

The Canadian literature does not directly examine AIS adoption in SMEs but provides relevant contextual insights into digital accounting, sustainability, and governance. Studies on green accounting indicate that environmental practices positively affect firm performance, with artificial intelligence infrastructure acting as a moderating factor in this relationship (Khan & Gupta, 2025).

Research on public sector auditing emphasizes issues of accountability, legitimacy, and public interest, highlighting the importance of robust information and control systems in public financial management (Hazgui, Lapsley, & Torres, 2022). At the macroeconomic level, analyses reveal structural productivity challenges linked to relatively weak investment in information and communication technologies (ICT), which may influence the pace of AIS adoption and digital transformation (Haun & Sargent, 2023).

The figures serve as comparative visual summaries of key empirical results reported in the reviewed literature. They reflect effect magnitudes and explained variances as documented in prior studies and are intended to support cross-regional comparison, without implying statistical aggregation or meta-analytic inference.

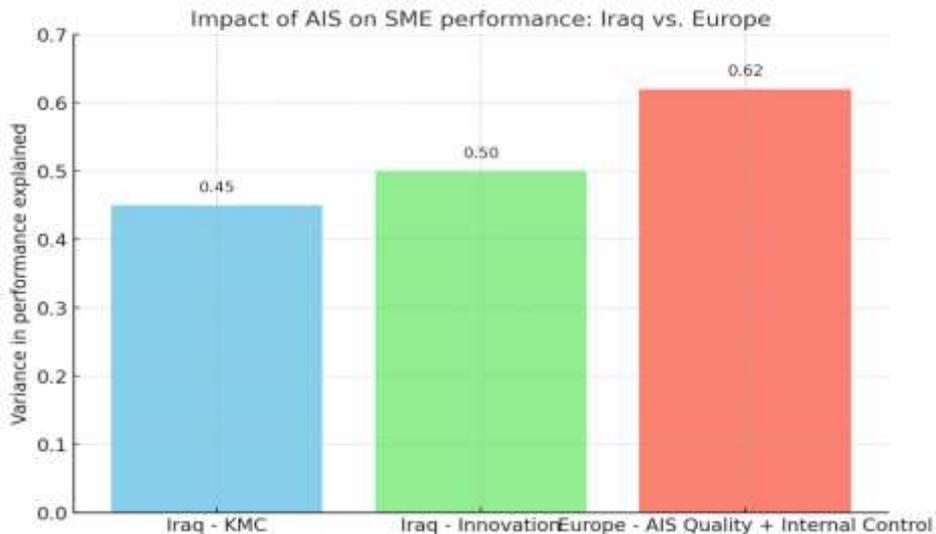


Figure no. 1. Bar Chart – Impact of AIS on SME Performance in Iraq and Europe

Source: Authors' elaboration based on Kareem et al. (2021, 2024) and Monteiro et al. (2022).

The bar chart illustrates the comparative impact of AIS on SMEs. In Iraq, AIS contributes to performance primarily through Knowledge Management Capabilities (KMC) and innovation, explaining about 40–50% of the variance. In Europe, the combined effect of AIS quality and internal control accounts for 62% of the variation in non-financial performance, reflecting structural differences between emerging and consolidated economies.

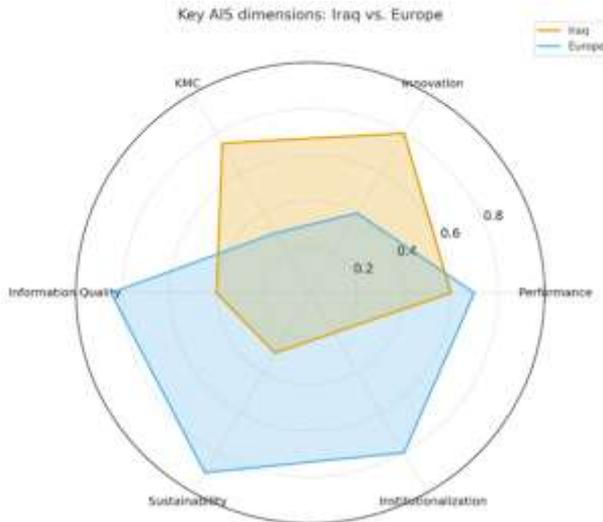


Figure no. 2. Radar Chart – Key Dimensions of AIS in Iraq and Europe

Source: Authors' elaboration based on Kareem et al. (2021, 2024), Monteiro et al. (2022), and Bonsón et al. (2023).

The radar chart highlights the dominant AIS dimensions in both regions. In Iraq, the highest scores are linked to KMC and innovation, showing AIS as a survival and competitiveness tool in an emerging economy. In Europe, information quality, sustainability, and institutionalization (IFRS/XBRL) score highest, underscoring the strategic and regulated integration of AIS into advanced management practices.

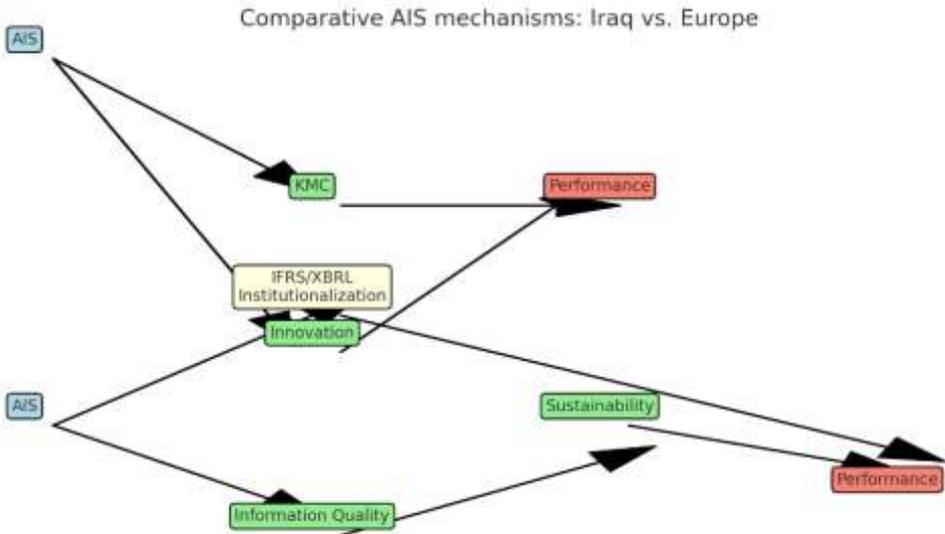


Figure no. 3. Flowchart – Mechanisms Linking AIS to Performance

Source: Authors' elaboration based on Kareem et al. (2021, 2024), Monteiro et al. (2022), Bonsón et al. (2023), and Schiavi et al. (2022).

The flowchart depicts the mechanisms through which AIS affects organisational outcomes. In Iraq, the pathway is AIS → KMC/Innovation → Performance, highlighting reliance on learning and innovation. In Europe, the pathway is AIS → Information Quality / IFRS–XBRL / Sustainability → Performance, emphasizing the institutional and quality-driven role of AIS in consolidated economies.

Conclusions

The findings of this study demonstrate that the role and impact of Accounting Information Systems vary significantly across regions, reflecting differences in economic development, institutional maturity, and technological readiness. In Europe, AIS is fully integrated into governance, transparency, and sustainability frameworks, whereas in emerging economies such as Iraq, AIS primarily supports performance through knowledge management and innovation.

Although AIS adoption in Canadian SMEs is not directly addressed in the literature, related research underscores the importance of digital infrastructure, artificial intelligence, and public accountability in shaping the broader accounting environment.

The conclusions of this study should be interpreted in light of the structured narrative review approach adopted. While the analysis identifies consistent patterns and meaningful cross-regional differences, it does not aim for statistical generalisation but provides a comparative, context-dependent understanding of AIS effectiveness.

Overall, the study highlights the strategic importance of AIS in the digital economy and underscores the need for continued investment in digital skills, technological infrastructure, and sustainability-oriented accounting practices.

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