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Thematic Review of Cloud Accounting and Cloud ERP Adoption and Impact in SME's

J. Samuel
Research Scholar (Full Time). Department of Commerce, Kalasalingam Business School Email: samsamuelraj7733@gmail.com

Dr. G. Thamaraiselvi
Kalasalingam Academy of Research and Education, Krishnankoil Email: thamaraiselvi@klu.ac.in

Abstract:
This paper presents a systematic thematic review of literature from 2013 to 2025 on the adoption and impact of cloud accounting and cloud-based Enterprise Resource Planning (ERP) systems in Small and Medium Enterprises (SMEs). Analyzing 20 peer-reviewed articles, this review identifies and synthesizes six critical themes: (1) drivers and barriers to adoption, (2) Cloud ERP and firm performance, (3) governance, audit, and control implications, (4) digital transformation, leadership, and skills, (5) the role of big data and analytics, and (6) SME-specific bookkeeping practices. The findings consistently demonstrate that technological, organizational, and environmental factors collectively shape adoption decisions. Furthermore, cloud-based systems significantly enhance decision-making quality and productivity when supported by strong digital leadership and skills development. The review also underscores the necessity for evolving governance and audit functions to mitigate emerging risks. The study concludes by identifying critical research gaps, including the need for longitudinal studies in emerging economies like India, mixed-methods research linking adoption to tangible financial outcomes, and intervention studies on training for SME owners and accountants.

Keywords: Cloud Accounting, Cloud ERP, SMEs, Digital Transformation, Thematic Review, Adoption Factors.

1. Introduction

Small and Medium Enterprises (SMEs) are widely recognized as critical engines for economic growth, job creation, and innovation, particularly in developing economies. In this context, digital transformation, specifically the adoption of cloud-based accounting and Enterprise Resource Planning (ERP) systems, has emerged as a potent tool for enhancing the competitiveness and sustainability of these firms. Cloud accounting provides SMEs with access to sophisticated, scalable, and cost-effective financial management tools that were previously the domain of large corporations, thereby democratizing advanced accounting capabilities (Oliveira et al., 2013).

The adoption of these technologies, however, is not merely a technical upgrade but a significant organizational shift. While cloud accounting offers the technological resources for improved efficiency and data-driven decision-making, its successful implementation and the subsequent realization of benefits hinge on a firm's capacity to manage change, develop digital skills, and adapt its business processes. Nonetheless, the pathway to successful digital transformation and its definitive impact on SME performance remains complex and not fully understood. Even as global institutions promote digitalization for business growth, a

consistent framework for measuring the true "digital maturity" and its outcomes in SMEs is often lacking.
Research indicates that cloud-based systems can lead to better financial accuracy, enhanced managerial decision-making, and improved resource management (Nguyen et al., 2022; Al-Busaidi et al., 2018). However, there is considerable debate regarding the extent to which these technological advantages translate into sustained corporate growth and financial performance, with some scholars pointing to significant barriers related to cost, security, and skills (Armbrust et al., 2013; Trabelsi, 2015).

The entrepreneurial and leadership roles within SMEs have been a focal point of research on the benefits of cloud adoption. Scholars such as Nguyen et al. (2022) and Al-Khazraji et al. (2024) posit that digital leadership is a critical mediator, facilitating the integration of cloud accounting and boosting its strategic value. However, other researchers caution that the technology itself is insufficient to empower SMEs unless concomitant investments in human capital and organizational restructuring are also taken into consideration (Samuel & Kumar, 2023). Similarly, Gürlek & Tuna (2021) and Al-Sheikh et al. (2024) argue that to fully unlock the performance potential of cloud systems, technological adoption must be combined with skill-building and strategic alignment.
The technological landscape of cloud accounting has evolved dramatically in recent years, driven by advancements in big data, analytics, and open innovation platforms. The integration of cloud ERP with data analytics has increased the strategic potential of these systems, moving them beyond automation to become platforms for innovation (Al-Mashaqbeh et al., 2024). Entrepreneurs in rural or underserved locations can now leverage these tools for better market insight. However, obstacles including low digital literacy, resistance to change, and restricted IT infrastructure in smaller firms can limit the impact of advanced cloud accounting, as Al-Qudah et al. (2022) and Jasim & Ali (2025) point out.
With an emphasis on the SME context, this systematic thematic review (STR) attempts to critically examine the connection between cloud accounting adoption and firm performance. It examines the ways in which digital innovations are reshaping accounting practices and assesses the associated drivers, barriers, and outcomes. This review aims to consolidate our understanding of cloud accounting as a tool for empowering SMEs and to provide guidance for future research by synthesizing findings from recent literature.

Digital transformation is becoming more widely acknowledged as a crucial tactic for sustainable development and competitive empowerment. Cloud accounting is a key component in this transformation because it provides SMEs with access to enterprise-level capabilities. Although the concept of "digital maturity" is frequently used in business and academic discourse, its definition and measurement remain ambiguous and applied inconsistently. According to Weill & Ross (2014), even large organizations struggle to develop reliable criteria to assess and track effective IT governance, despite it being a key strategic aim. In general, digital maturity involves an organization's ability to leverage technology to transform its business models, processes, and culture. This STR critically investigates how cloud accounting facilitates this kind of entrepreneurship-based digital empowerment.
This paper is designed to achieve three primary objectives: to investigate how cloud accounting adoption influences SME performance, to examine the main factors, prospects, and constraints mentioned in the contemporary literature, and to propose a coherent agenda

for future scholarly research and policy formation. We formulate the following research questions:

1. What are the primary drivers and barriers influencing the adoption of cloud accounting in SMEs?
2. How does the adoption of cloud accounting and ERP systems impact firm performance, innovation, and competitive advantage?
3. What are the present shortcomings in the research and what difficulties must be addressed in future studies?

2. Literature Review

A significant body of scholarly work has examined the relationship between digital transformation, specifically cloud accounting adoption, and performance outcomes in small and medium enterprises (SMEs). A synthesis of the literature reveals that cloud technology is not a panacea; its effectiveness is largely determined by how well it is integrated with organizational readiness, strategic leadership, and capacity-building initiatives.

Gürlek & Tuna (2021), in their empirical study in Turkey, put forth evidence highlighting that technological perceived usefulness and cost efficiency alone are insufficient drivers. They contend that for cloud accounting to result in long-lasting performance gains, it must be accompanied by a commensurate increase in digital self-assurance, management support, and technical agency. This perspective supports the notion that to genuinely enhance SME capabilities, technological access must be combined with organizational and psychological readiness.

Similarly, the assumption that cloud adoption directly empowers SMEs is critiqued by Oliveira et al. (2013) in their foundational work. They propose that cloud computing serves primarily as a catalyst, enabling firms to rethink their operational processes and subvert established, inefficient workflows. Their conceptual framework emphasizes that sustainable performance improvements result when cloud technology is paired with process improvement, managerial agency, and a supportive organizational culture.

Samuel & Kumar (2023) broaden the conversation by emphasizing the multifaceted character of successful digital integration, which includes technological, human, and process dimensions. According to their conceptual framework, digital maturity results from both internal skill development and external environmental support. For SMEs to overcome conventional barriers and become prosperous digital enterprises, training, leadership commitment, and technical support are crucial.

From a more structured analytical standpoint, a systematic evaluation of the literature on cloud governance was carried out by Weill & Ross (2014). Their approach classifies effective governance into structures, processes, and relational mechanisms. They contend that while cloud software—particularly SaaS applications—is frequently highlighted, proper digital transformation necessitates consideration of institutional support, risk management, and strategic alignment.

By offering empirical evidence from Jordan, Al-Qudah et al. (2022) add to this conversation. Their research demonstrates that the relationship between cloud-based Accounting Information Systems (AIS) usage and firm performance is moderated by digital proficiency. Their findings emphasize that cloud technology may be a path to enhanced performance—but only when backed by contextual awareness and sustained skill development. It does this by integrating technological factors with human capital elements.

On the other hand, Trabelsi (2015) warns against overestimating the transformative potential of cloud computing without considering audit and control implications. Cloud adoption encourages automation and fundamental operational efficiencies, but it frequently introduces new risks related to data security and control, according to a survey of internal auditors in Australia. According to the study, a singular focus on technological benefits may overlook critical risk-taking and control considerations, which are essential to sustainable transformation.

Lastly, Al-Mashaqbeh et al. (2024) highlight the ways in which cloud ERP and open innovation platforms support strategic entrepreneurship. They contend that integrated cloud systems serve as a foundation for collaboration, knowledge sharing, and business model innovation in addition to providing data access. The notion that a supportive technological ecosystem is essential to the growth of entrepreneurship is reinforced by the fact that competitive advantage in this context is not just operational but strategic.

3. An Overview of Cloud ERP Implementation and Its Effect on SMEs

Cloud-based Enterprise Resource Planning (ERP) systems are crucial for encouraging operational efficiency and data-driven decision-making, especially for small and medium enterprises (SMEs) with limited IT resources. Cloud ERP vendors offer integrated software services, assisting firms in overcoming obstacles related to costly IT infrastructure and promoting the establishment of streamlined, scalable business processes, according to studies (Al-Khazraji et al., 2020). These systems provide access to enterprise-level functionalities for individuals and groups who lack the capital for traditional, on-premise software deployments (Oliveira et al., 2013).

Cloud ERP and SME Performance: Research shows that by giving SMEs access to integrated data and automated processes, cloud ERP promotes operational entrepreneurship and strategic agility (Al-Busaidi et al., 2018).
Impact Studies: Research indicates that cloud ERP helps firms build sustainable competitive advantages over the long term in addition to increasing individual productivity (Brynjolfsson et al., 2025).

3.1. Cloud ERP for SMEs: Opportunities and Obstacles: SMEs can benefit greatly from cloud ERP, but its adoption is restricted by a number of obstacles. These include high costs, data security concerns, and poor digital literacy among staff. The emergence of more user-friendly and scalable SaaS platforms, however, offers fresh chances to deal with these issues (Jasim & Ali, 2025).

3.1.1. Barriers:

High Initial and Subscription Costs: According to Saad et al. (2023), a large number of small business owners perceive the subscription fees and implementation costs as a significant financial barrier.
Digital Skills Gap: Employees' capacity to effectively use cloud ERP is impacted by a lack of training and low data literacy (Al-Qudah et al., 2022).
Security and Compliance Concerns: When SMEs consider migrating sensitive financial data to the cloud, they may encounter significant trust and regulatory obstacles, especially in regions with strict data sovereignty laws (Armbrust et al., 2013; Weill & Ross, 2014).

3.1.2. Opportunities

Government Digital Initiatives: SME entrepreneurs now have better access to technology and funding thanks to programs promoting digitalization, such as those seen in India and the UAE (Al-Khazraji et al., 2020; Al-Sheikh et al., 2024).

Scalability and Flexibility: SMEs now have more adaptable ways to manage their operations thanks to the pay-as-you-go model and scalable features of cloud platforms (Oliveira et al., 2013).

Vendor-Focused Support Programs: A number of cloud providers are currently concentrating on packages tailored to SMEs, providing technical resources, implementation support, and mentorship (Al-Mashaqbeh et al., 2024).

3.2. Integrated Cloud Platforms as Sources of Strategic Advantage

Integrated cloud platforms have become a major force in digital transformation, especially when it comes to empowering SMEs with limited technical expertise. These platforms provide a unified system that helps business managers by combining data from various functions like accounting, inventory, and sales within a single group (Al-Busaidi et al., 2018). By encouraging data-driven leadership and collaborative decision-making, these systems also support organizational empowerment (Nguyen et al., 2022).

System Structure: Usually based on modular software, integrated cloud platforms allow access to real-time data and save together on IT administration costs (Al-Khazraji et al., 2020).

Managerial Participation: According to Nguyen et al. (2022), the use of integrated systems gives managers a chance to enhance their analytical skills and strategic management abilities.

Performance Outcomes: Firms that implement integrated cloud platforms have greater decision-making assurance and operational abilities, which helps them feel more competitive overall (Brynjolfsson et al., 2025).

3.3. The Importance of Digital Proficiency in Fostering SME Competitiveness

SME owners and staff now need to be digitally proficient in order to use contemporary business tools like cloud-based dashboards and mobile analytics (Al-Khateeb et al., 2024). Firms that possess greater digital proficiency are better able to analyze their performance, manage their finances, and optimize operations (Al-Qudah et al., 2022). But the digital skills divide still exists, especially in smaller firms and traditional sectors (Samuel & Kumar, 2023).

Digital Business Tools: SMEs may easily access business intelligence and manage their accounts with the help of dashboards, automated reporting, and mobile apps (Advancement of cloud-based accounting... 2022).

Lack of Digital Proficiency: Many employees in smaller firms continue to struggle to use cloud systems efficiently, potentially negating the benefits of digital finance solutions (Samuel & Kumar, 2023).

Programs for Training: A number of efforts, including academic-industry partnerships, are being launched to raise digital proficiency, which has the potential to greatly increase strategic entrepreneurship (Empowering Generation Z Accountants, 2024).

Business Growth: According to Al-Mashaqbeh et al. (2024), digital platforms allow SMEs to expand their market reach and grow their businesses through open innovation.

3.4. Obstacles and Prospects for Integrating Cloud ERP in SME Strategy

There are still issues, such as limited access to sector-specific solutions and long-term financial sustainability, even if cloud ERP has been successful in improving SME

productivity (Ghosh & Singh, 2020). The answer may lie in combining advanced analytics with conventional cloud accounting, but this will need overcoming integration obstacles and the strategic planning divide (Basu & Ramesh, 2021).

3.4.1. Obstacles

Financial Sustainability: Justifying the return on investment and managing cash flow for ongoing subscriptions is a common problem for SME owners, particularly in erratic markets (Prakash, 2021).

Accessibility to Tailored Solutions: Vendors must create products that are especially designed to meet the specific demands of different SME sectors and sizes (Basu, 2020).

3.4.2. Prospects for the Future

Policy Support: In order to encourage digital transformation in SMEs through cloud technology, governments need to develop more inclusive policies, including subsidies and cybersecurity standards (Rajendran, 2020).

Models of Inclusive Technology: Vendors need to concentrate on creating adaptable and modular models that address the particular difficulties faced by micro and small enterprises (Verma & Desai, 2022).

Advanced Technology Integration: To provide SMEs with individualized business solutions, the future of cloud accounting depends on combining AI, blockchain, and predictive analytics (Sharma, 2022).

4. Methodology

This section delineates the methodological framework employed to conduct this systematic thematic review. The approach was designed to ensure a comprehensive, rigorous, and reproducible synthesis of the existing literature on cloud accounting adoption in SMEs.

4.1. Descriptive Analysis:

The review commenced with a descriptive analysis to map the conceptual and empirical landscape of the field. This involved a preliminary assessment of the 20 selected studies based on publication year, geographical focus, methodological approach, and primary thematic concerns.

Studies such as those by Oliveira et al. (2013) and Armbrust et al. (2013) offer foundational insights into the early adoption of cloud computing by SMEs, highlighting initial drivers like cost reduction and persistent barriers such as data security. Later works, including those from Vietnam (Nguyen et al., 2022) and Jordan (Al-Qudah et al., 2022), employ descriptive statistics to investigate the demographics of SME adopters and the performance outcomes associated with cloud-based Accounting Information Systems (AIS). Furthermore, research from the UAE (Al-Khazraji et al., 2020) and Saudi Arabia (Al-Sheikh et al., 2024) provides comparative insights into implementation challenges across different regional contexts. Weill & Ross (2014) contribute to the field by proposing governance frameworks for cloud services, evaluating their effectiveness in maintaining control and accountability. Collectively, these studies highlight the evolving role of cloud accounting in encouraging digital transformation, empowering SMEs with limited IT resources, and advancing business performance.

4.2. Thematic Analysis of Literature:

A thematic analysis was conducted to identify, analyze, and report patterns (themes) within the data. Following the iterative process outlined by Braun & Clarke (2006), the review distilled the literature into five dominant themes.

Theme 1: Drivers and Barriers to Cloud Adoption:

The intention to adopt cloud accounting is not monolithic but is influenced by a confluence of factors. Studies by Gürlek & Tuna (2021) and Al-Sheikh et al. (2024) confirm that perceived usefulness, cost efficiency, and top management support are critical drivers. Conversely, security concerns, resistance to change, and low digital literacy act as significant barriers, a finding consistent across earlier works like Oliveira et al. (2013). This theme underscores that adoption is a function of a complex interplay between technological characteristics, organizational readiness, and environmental pressures.

Theme 2: Cloud ERP and Firm Performance

Evidence suggests that cloud ERP systems serve as a catalyst for enhanced firm performance. Research by Al-Busaidi et al. (2018) and Brynjolfsson et al. (2025) demonstrates a positive correlation between cloud ERP integration and improvements in operational efficiency, labour productivity, and decision-making quality. However, the realization of these benefits is often contingent upon the firm's ability to develop dynamic capabilities and absorptive capacity, indicating that the technology itself is an enabler rather than a guarantee of performance gains.

Theme 3: Governance, Audit, and Control Implications

The shift to cloud environments introduces new complexities for governance and assurance. Weill & Ross (2014) and Trabelsi (2015) highlight auditors' and managers' concerns regarding data sovereignty, internal control reliability, and vendor risk management. The need for updated audit procedures and enhanced digital proficiency among auditors is a recurring recommendation, as empirically supported by Al-Khateeb et al. (2024). This theme reveals a critical gap between the availability of governance frameworks and their pragmatic implementation within the SME context.

Theme 4: Digital Leadership and Skills Development

The human dimension of digital transformation is paramount. Nguyen et al. (2022) stress that digital leadership acts as a key mediator, linking cloud adoption to firm performance by fostering a supportive culture and driving change management. Parallel to this, the literature sounds an alarm about a pervasive skills gap. Studies such as "Empowering Generation Z Accountants" (2024) advocate for a fundamental shift in accounting education and professional training to include competencies in data analytics and forensic accounting, which are essential for leveraging modern cloud systems.

Theme 5: Integration with Analytics and Strategic Decision-Making

The reviewed literature expresses optimism about the strategic value of integrating cloud accounting with data analytics. Research from 2018, 2022, and 2024 shows that this integration enhances the timeliness and diagnostic quality of managerial decisions. However, the adoption of advanced predictive analytics remains limited among SMEs due to cost constraints and a shortage of analytical expertise, suggesting that the full strategic potential of cloud accounting is yet to be universally realized.

4.3. Systematic Review Approach

This study synthesizes findings from empirical and conceptual publications on the connection between cloud accounting and SME performance using a systematic literature review (SLR) methodology. The SLR approach is particularly suited for this research as it allows for a

thorough and organized synthesis of the current body of knowledge through a methodical and transparent process of data collection and analysis (Tranfield, Denyer, & Smart, 2003). This strategy aligns with rigorous review practices in the information systems domain.

4.4. Literature Search Strategy

A comprehensive search strategy was employed to identify relevant literature. Major academic databases, including Scopus, Web of Science, ScienceDirect, and Google Scholar, were systematically queried. Keywords such as "cloud accounting," "cloud ERP," "SME performance," "digital transformation," "TOE model," and "accounting information systems" were used in various combinations with Boolean operators (AND, OR) to refine the search results.

4.5. Inclusion and Exclusion Criteria

To ensure the relevance and quality of the studies included in the synthesis, the following criteria were applied:

Inclusion Criteria: (1) Empirical or conceptual studies focusing on cloud accounting, cloud ERP, or SME digitalization; (2) Peer-reviewed journal publications published between 2013 and 2025; (3) Studies explicitly addressing adoption models (e.g., TOE, TAM, UTAUT) or performance outcomes.

Exclusion Criteria: (1) Non-English publications; (2) Conference papers, dissertations, and non-peer-reviewed articles; (3) Studies focusing exclusively on large corporations or unrelated technologies.

The final corpus for this review comprised 20 articles that met these criteria.

4.6. Quality Assessment

Each selected article was subjected to a quality assessment based on predefined criteria: (a) clarity of research objectives and questions, (b) appropriateness of theoretical grounding, (c) robustness of the research methodology, (d) validity and reliability of findings, and (e) overall contribution to the literature on cloud accounting in SMEs. Studies published in high-impact, peer-reviewed journals (e.g., Scopus Q1/Q2, ABDC-listed) were given priority to ensure academic credibility.

4.7. Synthesis and Interpretation

The final stage involved synthesizing and interpreting the descriptive and thematic findings to develop a coherent understanding of how cloud accounting adoption influences SME performance. The process entailed a cross-comparison of the thematic dimensions to identify convergences, divergences, and overarching patterns across the reviewed studies. This interpretive synthesis forms the basis for the discussion of results and the formulation of the future research agenda, addressing the core research questions of this review.

5. Results

The results section synthesizes the principal findings derived from the systematic review of 20 articles, with an emphasis on the role that cloud accounting and cloud ERP systems play in the digital transformation and performance of SMEs. The analysis categorized the studies into several salient themes, including the impact on business performance, the function of digital tools, the influence of leadership and skills, governance challenges, and contextual variations. These themes illustrate the multifaceted impact of cloud technology on SMEs and the specific factors that determine the success or shortcomings of its adoption.

5.1. Cloud Accounting and SME Performance

Cloud-based accounting systems demonstrate a significant positive impact on the operational and financial performance of SMEs, according to a large number of studies. Research by Al-Qudah et al. (2022) in Jordan found that the usage of cloud-based Accounting Information Systems (AIS) directly enhanced SME performance, particularly from a post-COVID-19 perspective. Similar results were observed in Vietnam, where Nguyen et al. (2022) established that cloud-based accounting effectiveness, mediated by digital transformation and leadership, led to improved firm performance and decision-making quality. Furthermore, Brynjolfsson et al. (2025) provided empirical evidence that cloud usage has a measurable positive effect on labour productivity. Nonetheless, other research indicated that while cloud adoption contributes to better outcomes, the extent of the influence varies depending on factors including the depth of system integration, the level of digital proficiency, and firm-specific contextual factors (Samuel & Kumar, 2023; Al-Busaidi et al., 2018).

5.2. Entrepreneurial and Managerial Empowerment

Cloud accounting is frequently cited as a tool that empowers SME owners and managers by enhancing their control and strategic insight. A number of studies, including those by Al-Mashaqbeh et al. (2024), have emphasized the empowerment benefits of integrated cloud ERP systems, pointing out that access to real-time, integrated data enables managers to make more informed decisions, optimize processes, and foster innovation. Additionally, the review discovered that cloud systems provide a sense of operational agency and independence, which enhances the strategic capacity of the business. This result is consistent with the assertion that cloud technology's impact extends beyond mere automation to broader strategic empowerment (Nguyen et al., 2022).

5.3. The Critical Role of Leadership and Skills

The contribution of digital leadership and human capital to successful adoption is one of the most prevalent themes in the literature. Numerous studies, such as those conducted by Nguyen et al. (2022) and Al-Khazraji et al. (2024), demonstrate that proactive digital leadership is a critical mediating variable, significantly enhancing the effectiveness of cloud accounting and its translation into firm performance. The analysis also discovered that the skills of the workforce, particularly digital proficiency, are a decisive factor. Research by Al-Khateeb et al. (2024) empirically showed that digital proficiency moderates the positive relationship between cloud accounting usage and internal audit effectiveness. Nevertheless, other research noted that although technology is available, the overall impact is still constrained by a pervasive skills gap and a lack of systematic training, especially among smaller enterprises (Samuel & Kumar, 2023; "Empowering Generation Z Accountants," 2024).

5.4. Challenges in Cloud Adoption and Implementation

Notwithstanding the advantages, the research identified a number of persistent difficulties experienced by SMEs. Numerous studies have shown that data security concerns and the perceived high cost of implementation can deter adoption or lead to vendor dependency (Armbrust et al., 2013; Oliveira et al., 2013; Saad et al., 2023). According to Trabelsi (2015) and Jasim & Ali (2025), SMEs that lack technical readiness and change management strategies may struggle with integration, which can ultimately limit the return on investment. Furthermore, some studies have shown that cloud service providers and implementation

partners frequently do not provide the essential ongoing support and tailored solutions, which reduces the efficient use of the technological support (Gürlek & Tuna, 2021).

5.5. The Role of Digital Platforms and Advanced Analytics

Recent research has examined how the integration of cloud systems with big data and open innovation is emerging and how it can change entrepreneurial growth. Al-Busaidi et al. (2018) point out that the combination of cloud ERP and big data analytics provides a dynamic capability that enhances firm performance. According to studies like Al-Mashaqbeh et al. (2024), SMEs that are tech-savvy and capable of leveraging these integrated platforms for open innovation stand to gain the most. However, Singh (2022) issued a warning, pointing out that the adoption of advanced analytics is still in its infancy among SMEs and that obstacles like cost, talent shortages, and complex integration still exist.

5.6. Regional and Contextual Variations

The review also discovered that various locations and contexts had quite varying patterns of cloud accounting adoption and impact. Studies like Al-Khazraji et al. (2020) in the UAE and Al-Sheikh et al. (2024) in Saudi Arabia concluded that cloud adoption is growing significantly, driven by government digital initiatives and a supportive environmental context. On the other hand, research in other regions emphasizes barriers related to infrastructure and technological readiness (Al-Qudah et al., 2022; Gürlek & Tuna, 2021). This regional and contextual heterogeneity supports the findings that cloud accounting effectiveness is largely dependent on a combination of regulatory support, digital infrastructure, and organizational readiness.

5.7. Summary of Results

All things considered, the review affirms that cloud accounting is a significant enabler for fostering the growth and competitiveness of SMEs. It enhances operational performance, empowers managerial decision-making, and can drive innovation. To optimize the impact of cloud adoption, however, obstacles including security concerns, implementation costs, digital skill gaps, and a lack of tailored support must be addressed. Furthermore, while the integration of cloud systems with advanced analytics holds considerable potential, its adoption challenges must be overcome to effectively assist the strategic development of entrepreneurship in the digital age. The results collectively highlight that successful adoption is not a mere technological shift but a holistic transformation involving technology, people, and processes.

6. Discussion

The concept of digital maturity is multifaceted and highly context-dependent for SMEs. Measuring success through software adoption alone does not fully convey the extent of this transformation, as the literature clearly highlights. Although cloud technology can serve as a powerful catalyst, firms must actively participate in redesigning processes and building digital capabilities for the transformation process to occur. According to the analysis, cloud accounting makes advanced resources accessible, but to fully digitally empower SMEs, it needs to be paired with policy support, robust digital infrastructure, and continuous educational initiatives. While integrated platforms and analytics show promise, achieving sustainable impact at scale remains a significant challenge. Furthermore, the diversity of the SME sector necessitates tailored solutions and implementation strategies rather than one-size-fits-all approaches. Strong institutional ties between vendors, training providers, and digital

infrastructure projects are also required. Converting cloud accounting adoption into true entrepreneurial development requires a holistic ecosystem.

Using the different themes found in the results section, this discussion interprets the main conclusions of the evaluated literature. This section analyzes the results and explores their consequences for the growth of digitally-enabled entrepreneurship in SMEs, concluding with recommendations for future research.

6.1. Cloud Accounting's Role in Enhancing SME Performance

It is well-established that cloud-based systems can significantly improve the operational and financial performance of small enterprises. Studies such as Al-Qudah et al. (2022) and Brynjolfsson et al. (2025) have pointed out that cloud accounting and ERP give business owners the necessary data integration and automation to enhance efficiency, productivity, and decision-making quality. Access to real-time financial data enables companies to optimize cash flow, reduce errors, and respond more agilely to market changes. However, as noted by Samuel & Kumar (2023) and Jasim & Ali (2025), the performance gains are frequently dependent on external variables including the state of the IT infrastructure, the digital skill level of the entrepreneur and staff, and the quality of vendor support services. This research implies that although cloud accounting is a crucial instrument, it is not a magic bullet for company growth. Additionally, the findings suggest that evaluating the return on investment from cloud interventions heavily depends on the digital literacy and strategic alignment within the business.

6.2. The Strategic Empowerment Effect of Cloud Technology

The use of cloud systems to empower SME managers and accountants with enhanced strategic insight is a major theme in the literature. According to studies like Nguyen et al. (2022) and Al-Mashaqbeh et al. (2024), cloud ERP is an effective means of advancing data-driven decision-making, operational independence, and competitive agility. SMEs gain from cloud systems because they provide a foundation for innovation and business model evolution in addition to operational efficiency. However, organizational resistance and traditional mindsets frequently hinder the strategic impacts of cloud adoption. Additional obstacles that prevent SMEs from fully leveraging the potential advantages include a lack of strategic vision and limited market access for advanced analytics. This research emphasizes the necessity of supplementary measures, including leadership development and strategic training, to guarantee that the benefits of cloud technology on strategic empowerment are optimized.

6.3. The Persistent Challenges of Cloud Adoption

Even though the potential advantages of cloud accounting are well known, significant obstacles impede its effective application. According to Armbrust et al. (2013) and Saad et al. (2023), data security concerns, high perceived costs, and vendor lock-in are typical barriers that prevent successful adoption. These issues frequently result in hesitancy or sub-optimal implementation, which can impact the long-term viability of the digital transformation initiative. Furthermore, research by Samuel & Kumar (2023) and "Empowering Generation Z Accountants" (2024) stresses how crucial digital proficiency is to guaranteeing that cloud systems are used effectively. Employees who lack sufficient training may find it difficult to properly leverage the systems, which could result in frustration and a failure to realize the promised benefits. This emphasizes the necessity of a comprehensive strategy for cloud

adoption that offers access to ongoing training, change management support, and technical mentorship.

6.4. Digital Platforms, Analytics, and Future Potential

One of the most significant developments in the cloud accounting landscape is the integration with big data and open innovation platforms. The combination of cloud ERP and analytics, according to Al-Busaidi et al. (2018) and Al-Mashaqbeh et al. (2024), provides increased diagnostic power, strategic scalability, and innovation potential, especially for SMEs seeking to move beyond basic accounting. Integrated platforms also make it possible for data to be analyzed and acted upon more quickly, which enhances strategic agility. However, Singh (2022) notes that there are a number of obstacles that must be overcome, such as low levels of data literacy, the high cost of advanced modules, and integration complexities with legacy systems. For advanced cloud platforms to completely realize their promise in fostering strategic entrepreneurship, these obstacles must be removed.

6.5. Regional and Sectoral Variations in Adoption Impact

The efficacy of cloud accounting varies greatly by region and industry sector. Studies by Al-Khazraji et al. (2020) in the UAE and Al-Sheikh et al. (2024) in Saudi Arabia show that cloud adoption has a greater impact in regions with strong government digital initiatives and supportive regulatory environments. However, because there are alternative enterprise software options available, the relative impact and drivers of adoption may differ in more developed economies. This implies that the effectiveness of cloud accounting is heavily dependent on the local context and that its influence can be shaped by the availability of digital infrastructure, local vendor ecosystems, and sector-specific requirements (e.g., manufacturing vs. services).

6.6. The Role of Support Services in Enhancing Adoption Effectiveness

The review's key conclusion is that cloud accounting initiatives work better when paired with other forms of non-technical support. According to Nguyen et al. (2022) and Al-Khateeb et al. (2024), digital leadership, continuous skills training, and effective vendor partnerships are essential for assisting SMEs in creating long-lasting digital enterprises. The literature makes it clear that although cloud technology offers the platform, support services are frequently what determine whether or not firms can succeed over the long haul in their digital transformation. According to this research, a more comprehensive strategy that combines business development services with technological implementation may produce greater long-lasting results.

6.7. Implications for Policy and Practice

Policy and practice will be significantly impacted by the review's conclusions. Policymakers should consider promoting digital infrastructure development, creating subsidies or incentives for SME digitalization, and enhancing the regulatory environment for data security and privacy to make cloud adoption more sustainable and accessible. Furthermore, to increase the efficacy of digital transformation programs, Samuel & Kumar (2023) and others recommend that initiatives be undertaken to raise the digital and financial literacy of SME owners and accountants. Additionally, it is important to promote the adoption of secure and scalable cloud platforms while keeping in mind the obstacles that prevent wider adoption, such as the lack of technical skills and the high cost of entry.

6.8. Summary of Discussion

In conclusion, despite cloud accounting's proven ability to enhance SME performance, particularly among firms with growth aspirations, issues with security, implementation costs, digital skill gaps, and a lack of strategic support need to be resolved. Though there are many exciting opportunities associated with the integration of analytics and AI, obstacles like data integration and advanced skills must be removed before its full potential can be achieved. To provide long-lasting results, cloud accounting must ultimately be a component of a larger, more comprehensive strategy for digital entrepreneurship development that combines technological tools with leadership, skills, and strategic business development support.

7. Research Gaps and Future Directions

Despite the growing body of evidence on cloud accounting's potential to enhance SME performance, the synthesis of the literature reveals several critical research gaps that must be addressed to advance the field:

7.1. Longitudinal and Causal Impact Studies

The majority of existing research relies on cross-sectional data that captures adoption intentions or short-term perceptions. The long-term viability and causal impact of cloud accounting on sustained financial performance, business model evolution, and survival rates of SMEs require further investigation through longitudinal panel studies and quasi-experimental designs.

7.2. Context-Specific and Regional Implementation

The adoption and effectiveness of cloud solutions are not uniform. Future studies must concentrate on context-specific implementations, particularly in emerging economies like India and its states (e.g., Tamil Nadu), and across diverse sectors (e.g., manufacturing vs. services). Research should explore the unique interplay of local policy, taxation (e.g., GST in India), vendor landscapes, and infrastructural challenges.

7.3. The Human Capital and Skills Dimension

While technology is a key focus, the human element remains underexplored. More research is necessary to fully understand how digital literacy, accounting competence, and resistance to change among SME owners and staff act as critical barriers. Future studies should focus on how targeted training interventions and pedagogical shifts in accounting education can improve adoption efficacy and business success.

7.4. Advanced Analytics and AI Integration

There is a significant gap between the potential and the actual use of advanced functionalities. Research on how SMEs can leverage the integration of AI, machine learning, and predictive analytics within their cloud accounting systems for forecasting, fraud detection, and strategic decision-making is still in its infancy. Future work should focus on practical, low-cost analytics models accessible to smaller firms.

7.5. Governance, Risk, and Compliance (GRC) Frameworks for SMEs

The literature offers governance frameworks that are often designed for large enterprises. Not enough thought has been given to how SMEs pragmatically implement cloud governance, manage vendor risk, ensure data compliance, and negotiate service level agreements (SLAs). Future research should develop and test simplified GRC models tailored to the resource constraints of SMEs.

7.6. Sustainability and Green Accounting through Cloud Technology:
The role of cloud accounting in promoting environmental sustainability is almost entirely unexamined. Research should investigate its ability to encourage green business practices, for example, through paperless operations, carbon footprint tracking modules, and energy-efficient computing, aligning with broader Environmental, Social, and Governance (ESG) goals.

7.7. Cross-National Comparative Studies:
The usefulness of different adoption models and implementation strategies in various institutional contexts can be revealed by cross-national comparative research. Studies comparing policy support, vendor ecosystems, and adoption outcomes between regions (e.g., Southeast Asia vs. the Middle East vs. Eastern Europe) are scarce but necessary.

Additional salient gaps identified include:
A lack of studies on the long-term financial sustainability of SMEs post-cloud adoption.
Research on cloud accounting models tailored specifically for micro-enterprises is particularly scarce.
The integration of emerging technologies like blockchain for transparent audit trails within cloud accounting platforms is not given enough attention.
There is a notable lack of mixed-methods research that triangulates quantitative performance metrics with qualitative insights into the lived experience of digital transformation within SMEs.
Uncertainty in the definition and consistent assessment of "digital maturity" and "transformation success" in the SME context.
A lack of gender-focused analysis exploring how cloud adoption differentially impacts businesses led by men and women.

8. Conclusion:
Cloud-based accounting and ERP systems have emerged as a key instrument for encouraging the growth and digital transformation of Small and Medium Enterprises (SMEs), especially for firms with limited capital and IT resources that have historically lacked access to enterprise-level technologies. Their contribution to leveling the competitive playing field is significant, as they provide managers and entrepreneurs with the real-time data and automated processes needed to launch, maintain, and scale their enterprises. By combining the core functionalities of traditional accounting with the power of digital platforms, big data analytics, and open innovation, cloud accounting's strategic value has been greatly increased. This integration has improved decision-making quality and strategic agility within SMEs, in addition to making advanced accounting more accessible and affordable.
But cloud technology by itself cannot build sustainable, long-lasting digital enterprises. More thorough and in-depth interventions are needed to realize its full potential. Capacity-building initiatives that provide business owners and accountants the tools they need to succeed, such as training in data analytics, digital leadership, and change management, should be part of this. Furthermore, it is essential to have policy and vendor support that creates an atmosphere that is favorable to digital adoption, such as better cybersecurity standards, subsidies for digitalization, and clear data protection regulations. Despite having access to sophisticated software, many SMEs may still encounter growth obstacles in the absence of these supportive frameworks.

Digital maturity in the SME context needs to be seen as a multifaceted process. It encompasses strategic leadership, workforce skills, and evolved governance in addition to the supply of technological resources. True digital empowerment enables firms to make wiser, data-driven choices regarding their operations and strategic future. This necessitates a change in perspective from defining success as merely installing software to taking into account the larger organizational, human, and environmental elements that affect the success of digital transformation.

Future studies must employ new frameworks and methodologies to more accurately evaluate how cloud adoption impacts SME performance. Existing metrics, which frequently concentrate on short-term productivity or perceived ease of use, fall short of capturing the entire extent of digital maturity and strategic impact. Beyond operational considerations, future research should look at holistic variables including strategic agility, innovation capacity, and sustained competitive advantage. Expanding the breadth of assessment will help us better understand the ways in which cloud accounting supports the long-term, sustainable growth of entrepreneurship in a digital economy.

In summary, cloud accounting remains a very effective instrument for enhancing SME competitiveness, but it will not reach its full potential unless it is combined with initiatives that focus on wider digital skill development, proactive leadership, and supportive policy. The future of cloud accounting in SMEs rests on a more integrated strategy that not only guarantees technological inclusion but also takes into account the human and structural elements required to promote sustainable entrepreneurship in a variety of settings.

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