

The Impact of Digital Transformation on Financial Performance: A Quantitative Study of Accounting Practices in UAE-Based SMEs

Dr. Lohrasp Sadri
University of Birmingham Dubai

Abstract

The digital transformation of business processes has gained significant momentum, especially within the accounting sector of Small and Medium-sized Enterprises (SMEs). This research examines the effect of digital transformation on the UAE-based SMEs' financial performance based on quantitative data to develop some relationships between financial measures and technology use. Through a systematic survey of 75 UAE SMEs in major emirates, and pre and post-digital adoption financial data, this study demystifies the extent to which digital accounting software boosts performance, simplifies procedures and aids decision-making at a strategic level. Findings indicate statistically significant relationship between digital accounting utilization and increased profitability, cost-effectiveness and transparency.

Introduction

1.1. Background

Globally, digital transformation has redefined operational standards in virtually every industry as well as accounting. In the UAE, which is rapidly progressing forward with digital-ization initiatives such as the UAE Digital Government Strategy 2025, SMEs are highly adopting digital means in their operations. Accounting procedures have moved away from old-fashioned ledger-based book-keeping to cloud-based and real-time finance information systems, transforming the way financial decisions are being made (Liu et al, 2023). This study fills the gap of scarce empirical evidence of UAE-based SMEs by quantifying the financial benefits of digital transformation within SME accounting practices.

1.2. Research Objectives

- Quantitatively evaluate the financial performance of UAE-based SMEs before and after adopting digital accounting tools.
- Examine the relationship between the level of digital integration and key financial indicators including profit margin and return on assets
- Identify the major digital accounting tools used and their operational impact.

2. Literature Review

Technological Advancements Driving Accounting Development

Accounting digitalization has progressed faster with the development of technologies like cloud computing, AI analytics, blockchain, and robotic process automation (RPA). These technologies streamline repetitive tasks, improve financial statement accuracy, and offer real-time access to finance, thus enabling informed decision-making. Deloitte (2021) posits that Deloitte hosted over 100 leaders of UAE-based enterprises at an event held in Abu Dhabi to address the most pressing topics facing businesses in the UAE. Additionally, the Association of Chartered Certified Accountants (ACCA) (2020) also noted that greater digital maturity correlates with enhanced cash flow forecasting and financial control, both of which are vital for SME survival. In the UAE context, Al-Khouri (2018) posits that efforts at the national level toward being digitally ready, especially for SMEs, are aligned

with the overall UAE Digital Government Strategy 2025. Furthermore, according to the UAE Ministry of Economy (2022), it is important to note that SMEs contribute over 94% of the UAE business sector. Therefore, these businesses have seamless operations since they embrace digital accounting tools.

Challenges to Adoption and Long-Term Benefits

One of the challenges with digitalization is the gap in skills. Computer skills to operate mainstream accounting software are lacking in most employees in SMEs. In addition, cybersecurity risk, data privacy risk, and upfront costs are also hindrances to adoption. These hindrances are mostly experienced by SMEs with lean financial and human resources. Therefore, according to Liu et al. (2023), organizations that can overcome these hurdles successfully have long-term financial benefits. Such companies also experience lower operating costs and greater transparency of finances and competitiveness.

3. Methodology

3.1. Theoretical Background

This study adopts the Technology-Organization-Environment (TOE) framework, developed by Tornatzky and Fleischer (1990), as the guiding theoretical model to examine the adoption of digital accounting tools in UAE-based SMEs. The TOE framework considers the three most significant dimensions in a company's adoption of technological innovations: the technological, organizational, and environmental contexts (Prakash, 2025). The technological context involves the availability and appropriateness of emerging technologies like cloud-based accounting software, AI, and automated tools. On the contrary, the organizational context deals with the internal nature of the SME, including the firm size, source of finance, skill levels of employees, and top management commitment. These elements indicate the willingness and ability of the firm to meaningfully execute digital transformation. Competition, government requirements, customer requirements, and nationwide digital plans are drivers from the external environment that are part of the environmental context. Digital policies promoted by the government and economic diversification strategies in the UAE act as powerful environmental facilitators (Liu et al., 2023). Through the addition of all three dimensions, the TOE framework provides an integrated picture of how and why UAE SMEs embrace digital accounting practices. This framework also explains digital maturity and financial performance variances among firms and is hence an ideal model to use when explaining the relationship between digital transformation and financial performance.

3.1. Ethics

Ethical approval was secured from the UAE university research ethics committee. All participants provided informed consent and data anonymity, and confidentiality were strictly maintained in accordance with GDPR standards.

3.2. Participants

A total of 75 SMEs were selected using stratified random sampling from key emirates (Dubai, Abu Dhabi, Sharjah, and Ajman). The sectors represented include retail, logistics, professional services and manufacturing.

Emirate	Number of SMEs Surveyed
Dubai	30
Abu Dhabi	20

Sharjah	15
Ajman	10

Company size varied from 10 to 150 employees, and all had implemented digital accounting between 2018 and 2023.

3.3. Materials and Procedure

To gather relevant quantitative data for this study, a structured questionnaire was developed and distributed electronically to accounting and finance managers within selected SMEs across the UAE. The questionnaire was meant to capture broad information regarding the experience of digital transformation within the firms and their long-term financial performance (Ghanad, 2023). The questionnaire included closed-ended and scaled-response questions to enable statistical processing and respondent reliability. The questionnaire had four main sections, including demographic questions, digital adoption timeline, adopted accounting software types, and accounting performance data.

Demographic items included the survey collecting information on SME size, industry sector, geographic location, and the number of years in business. Based on the digital adoption timeline, respondents were requested to indicate when digital accounting technologies were implemented, the duration of implementation, and whether the implementation was partial or full (Ghanad, 2023). This information enabled the classification of SMEs by the level of digital adoption. In addition, with regard to the nature of accounting software used, the respondents were required to choose among online accounting packages such as QuickBooks, Zoho Books, Xero, and SAP Business One and specify the features used, including automated invoicing, cloud-based payroll, and financial forecasting. Further, respondents were requested to input significant financial indicators like profit margin, return on assets (ROA), and operating expenses for the last five years. Other than survey information, voluntarily submitted balance sheets and income statements of 78 SMEs allowed a stronger comparative analysis of financial ratios before as well as after digital transformation. Therefore, this two-source data collection guaranteed reliability of the study and in-depth quantitative analysis.

3.4. Strategy of Analysis

To evaluate the impact of digital transformation on financial performance, a quantitative analytical approach was adopted using statistical methods suitable for comparing financial metrics and assessing relationships between variables. The key financial metrics, including profit margins, return on assets (ROA), as well as operating expenditures, were compared prior to and after the adoption of digital accounting tools through paired sample t-tests (Rajgopal et al., 2023). This test was appropriate as it measured the same variables within the same SMEs at two different times, enabling the study to ascertain whether or not changes in performance were statistically significant. Additionally, Pearson correlation was utilized to determine the direction and magnitude of the relationship between digital accounting adoption level and financial performance. This approach assisted in determining if higher levels of digital adoption were linked with better financial performance (Ghanad, 2023). Furthermore, multiple regression analysis was used to ascertain the determinants of financial performance. Independent factors were digital maturity level, firm size, training investment, and sector type. Therefore, this model explained how different internal and external variables, and digital adoption, influenced SME financial performance in the UAE.

4. Quantitative Analysis

4.1. Findings

a. Adoption Trends

- 88% of participants had adopted digital accounting systems post-2018.
- Top-used platforms: QuickBooks (40%), Zoho Books (22%), Xero (18%), SAP Business One (10%).

b. Profitability

Table 1: Mean Profit Margin (%) Comparison Pre- and Post-Adoption

Time Period	Mean Profit Margin (%)
Pre-Adoption	8.2
Post-Adoption	13.4

Paired sample t-test results:

$t(149) = 5.61, p < 0.001$ – Significant increase in profitability post-digital adoption.

c. Return on Assets (ROA)

Figure 1: ROA (%) by Year

2018	4.1%
2019	4.6%
2020	6.3%
2021	6.8%
2022	7.9%
2023	8.2%

A clear upward trend following digital system implementation.

d. Cost Efficiency

Table 2: Average Annual Accounting Operational Costs (AED)

Time Period	Average Cost
Pre-Adoption	120,000
Post-Adoption	96,000

A 20% reduction in accounting-related operational costs, attributed to automation and reduced human error.

e. Financial Reporting Speed

Time taken to close monthly books reduced from an average of 10.6 days to 4.3 days post-adoption.

f. Regression Analysis Results

A multivariate regression model using digital integration level, firm size and training investment found out that digital integration level was the strongest predictor of financial performance ($\beta = 0.61, p < 0.001$).

Therefore, the study revealed that 88% of UAE SMEs implemented accounting systems digitally post-2018, and QuickBooks and Zoho Books were the platforms most utilized. The profit margins rose exponentially from 8.2% to 13.4%, and Return on Assets (ROA) rose consistently from 4.1% in 2018

to 8.2% in 2023. The operational expenses fell by 20%, and days to close monthly books fell from 10.6 to 4.3 days. Regression analysis further established that the extent of digital integration was highly predictive of financial performance, indicating the essential influence of digital transformation on the profitability and efficiency of SMEs in the UAE (Rajgopal et al., 2023). This sharp rise in major financial metrics is not only due to the implementation of digital solutions but also a reflection of strong internal financial controls, better quality of data and efficient decision-making abilities due to automation. Cloud-based solutions like QuickBooks and Zoho Books provide auto-invoicing, real-time dashboards and cloud-based payroll systems, which enable finance teams to automate processes, minimize manual intervention and remove redundancy. These efficiencies correspond directly to measurable financial savings.

Further, the steady increase in ROA over the five-year period suggests that the firms are utilizing their resources more effectively using knowledge based on technology. Web-based systems facilitate better monitoring of receivables, inventory turnover and spending patterns, which help firms minimize wastage and maximize production with available resources (Rajgopal et al., 2023). The enhanced profitability is not merely due to increased revenue, but also due to better utilization of resources. The 20% cost savings in operational accounting account for the massive cost savings accrued from the substitution of manual and paper-based systems with automation-based systems. These cost savings were massive among SMEs that implemented full-scale integration with other business processes like sales, inventory and procurement. Such cost-saving enabled the majority of SMEs to invest resources in expansion activities like staff development and market expansion.

Additionally, the drastic decline in the closing of monthly books from 10.6 days to as low as 4.3 days is an important measure of operational timeliness. By gaining quicker access to correct financial reports, management teams could more easily react to market dynamics and make changes to financial strategy on a real-time basis (Prakash, 2025). This reporting frequency also improved external audit compliance and regulatory filings. It is also important to note that regression analysis emphasized how much digital integration level impacted the most in financial performance ($\beta = 0.61$, $p < 0.001$) relative to firm size. This result highlights that it is not sufficient to adopt digital technology, SMEs embracing advanced features, inter-modules integration and the effective training of employees attained maximum benefits. This move serves to validate the Technology-Organization-Environment (TOE) model utilized in the research, highlighting that organizational internal readiness and environmental drivers externally should be accompanied by technological capability for effective transformation.

5. Discussion

The findings of this study clearly indicate that digital transformation in accounting leads to notable improvements in financial performance among UAE-based SMEs. The consistent increase in profit margins and return on assets (ROA) due to digital adoption results in improved efficiency in operations, optimal utilization of resources, and better decision-making (Rajgopal et al., 2023). Such financial impact depicts the capability of digital accounting technology to minimize human errors, enhance transparency, and provide timely financial information. PwC (2020) highlights that digital tools facilitate more precise financial tracking, future-oriented forecasting, and enhanced compliance. The 20% drop in accounting-related operating expenses is supported by KPMG (2021) reports on cost savings through automation in streamlined workflows, minimizing labor-intensive processes, and accelerated financial closings. Technology is, therefore, not the sole determinant of success. SMEs that invested in employee education and computer literacy schemes received better returns in financial as well as process efficiency. This information supports the organizational aspect of the TOE framework, emphasizing that a firm's internal preparedness, such as management support as well as workers' ability,

is essential to successful technology adoption. Additionally, a few SMEs were initially reluctant to go digital considering the perceived high costs and complexity of rollout. However, those companies that were able to overcome such hurdles experienced high levels of productivity. Therefore, digital transformation may be challenging, but it has fiscal and strategic advantages.

6. Conclusion and Recommendation

Digital transformation has emerged as a strategic move, not just a technological upgrade. For UAE-based SMEs with aspirations of sustainable growth and competitiveness in an increasingly changing market, digital accounting solutions offer such businesses a competitive advantage (Liu et al., 2023). This research provides quantitative proof that these solutions result in greater profit margins, improved financial visibility, and cost efficiency.

Policy intervention, including national schemes, advertising campaigns, and roadwork development, is recommended to lead SMEs down the digital path. Additionally, technology grants and financial incentives would ensure that the entry barrier is low, especially for SMEs. Further, training programs ensure that human capital remains aligned with technology, leading to a meaningful return on investment (Rajgopal et al., 2023). Also, cybersecurity features need to be enhanced to guard digital payment systems from growing attacks and establish the durability of digital uptake in the SME segment.

7. Future Research

Future research should aim to provide an in-depth understanding of digital transformation in SMEs by expanding the scope and methodology. Also, studies in the future should uncover whether initial organizational gains accelerate as a result of digital transformation. Further, quantitative analysis has to be industry-specific because industries vary in their influence depending on their regulatory environment, transaction complexity, and data requirements. Additionally, the use of qualitative interviews with SME owners and finance specialists can meaningfully identify practical drawbacks, worker resistance, and organizational culture issues that cannot be uncovered through the use of quantitative data alone (Ghanad, 2023). Conversely, future studies should also provide reasons for considering the use of key technologies like artificial intelligence (AI) and block chain. These technologies also promise to further simplify accounting procedures through fraud identification and improving data integrity.

References

1. Association of Chartered Certified Accountants. (2020). Future ready: Accountancy careers in the 2020s [PDF]. https://www.accaglobal.com/content/dam/ACCA_Global/professional-insights/FutureReady2020s/JamieLyon.FutureCareersAccountancy2020s.fullreport.pdf
2. Al-Khouri, A. M. (2018). The e-government development approach in the UAE: Service dimension, e-readiness, and ICT environment [PDF]. In Arab Digital Economy (pp. –).https://arab-digital-economy.org/wp-content/uploads/2021/05/2018_01.pdf
3. Deloitte. (2021). Middle East impact report 2021. Deloitte Middle East. https://www.deloitte.com/middle-east/en/about/press-room/deloitte-explores-future-challenges-opportunities-facing-family-enterprises-in-uae.html?icid=top_deloitte-explores-future-challenges-opportunities-facing-family-enterprises-in-uae
4. Ghanad, A. (2023). An overview of quantitative research methods. International Journal of Multidisciplinary Research and Analysis, 6(08), 3794-3803.

5. Ministry of Economy, United Arab Emirates. (2022). Prices and inflation rates in the UAE and globally 2022. <https://www.moec.gov.ae/en/economic-report>
6. PricewaterhouseCoopers (PwC). (2020). Predictive analytics – The future of finance. <https://www.pwc.ch/en/insights/finance-transformation/predictive-analytics.html>
7. KPMG International & Forbes Insights. (2021). Future-proofed: How technology is driving change in finance and audit. <https://kpmg.com/kpmg-us/content/dam/kpmg/pdf/2021/kpmg-future-proofed.pdf>
8. Liu, J., Zhou, K., Zhang, Y., & Tang, F. (2023). The effect of financial digital transformation on financial performance: the intermediary effect of information symmetry and operating costs. *Sustainability*, 15(6), 5059.
9. Prakash, C. (2025). Evaluating the TOE framework for technology adoption: A systematic review of its strengths and limitations. *International Journal on Recent and Innovation Trends in Computing and Communication*, 13(1), 1-10.
10. Rajgopal, S., Srivastava, A., & Zhao, R. (2023). Do digital technology firms earn excess profits? Alternative perspectives. *The Accounting Review*, 98(4), 321-344.