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Digital Accounting Systems on Financial Accuracy in Small Businesses of the Chemical Sector in Ahmedabad

Tulasidas M. Sadhu

Research Scholar, Department of Commerce, Surendranagar University, Wadhwan

Abstract

Small businesses in Ahmedabad's chemical sector face challenges like strict regulations, complex inventory, and the need for accurate financial records. This study examines how digital accounting systems affect financial accuracy using a mixed-methods approach. Data came from 250 small businesses (mainly in manufacturing and related services) in Vatva Industrial Area. Results show that businesses using digital systems had far fewer errors, more complete records, better timeliness, and higher compliance than those using traditional methods. The findings suggest digital tools greatly improve financial management for these firms. Recommendations include support for adoption and training.

Introduction

Ahmedabad is a major hub for India's chemical industry, with areas like Vatva GIDC hosting many small and medium chemical businesses. These firms handle dyes, intermediates, detergents, and specialty chemicals. They must manage costs, comply with environmental rules (like GPCB norms), and keep accurate books for taxes and loans.

Many still use manual ledgers or basic Excel, leading to mistakes, delays, and compliance issues. Digital accounting systems (cloud software like TallyPrime, QuickBooks, or Zoho Books) offer automation, real-time tracking, and error reduction. This study explores their impact on financial accuracy in Ahmedabad's chemical small businesses.

The rapidly evolving digital landscape, characterized by advancements such as blockchain, cloud computing, and artificial intelligence, has spurred the widespread adoption of digital accounting systems across various sectors, including emerging economies, to enhance operational efficiency

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and transparency (MATHAN et al., 2025). This transformative shift in accounting and business practices, driven by increased competition and the availability of sophisticated computerized decision support systems, necessitates an examination of how these technologies specifically influence financial accuracy in small and medium-sized enterprises (Hermansyah, 2023).

Specifically, digital accounting systems are increasingly recognized as pivotal tools for managing financial transactions and providing reliable, timely financial information, thereby enhancing decision-making quality and organizational performance for SMEs (Al-Hattami & Almaqtari, 2023). This research examines the adoption of digital accounting systems and their subsequent effects on financial data accuracy, particularly focusing on error reduction, reporting efficiency, and adherence to regulatory standards within this specific industrial context (Alhchaimi & Hashim, 2025; Mucama & Macane, 2026).

Literature Review

Digital accounting encompasses the application of digital technologies and information systems for the comprehensive recording, analysis, and reporting of financial transactions within organizations (Prasetianingrum & Sonjaya, 2024). This paradigm shift from traditional, paper-based accounting methods to digitized processes is driven by the potential for increased accuracy, timeliness, and cost reduction (Kusumawardhani et al., 2024).

Moreover, these systems often integrate advanced functionalities that streamline financial reporting, improve tax compliance, and facilitate real-time financial monitoring, which is particularly crucial for Micro, Small, and Medium Enterprises (Jayan, 2024).

The integration of digital accounting systems, often facilitated by government initiatives promoting digital finance, allows these enterprises to leverage technological advancements for improved financial management and strategic decision-making (Dixit et al., 2026). This digital transformation in accounting, driven by technologies such as big data and cloud computing, significantly enhances the efficiency, speed, and accuracy of financial processes, thereby fundamentally altering the traditional accounting landscape (Huyen & Ly, 2024).

This transition is critical for small and medium-sized enterprises in emerging economies like India, where digital accounting systems are increasingly seen as instrumental in enhancing financial

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accuracy, streamlining operations, and contributing to overall economic growth (Kumar & Agarwal, 2024; Patra & Rath, 2022). Specifically, the implementation of digital accounting tools has been shown to mitigate errors, accelerate financial reporting cycles, and improve the overall quality of financial data (Kuntoro, 2025). This is particularly pertinent for Micro, Small, and Medium Enterprises, where digital accounting offers significant advantages in improving operational efficiency and enabling quicker, more accurate business decisions (Badria & Hasanah, 2024; Rajagopal, 2022).

Studies worldwide show digital accounting improves accuracy by reducing human errors, speeding up processes, and providing real-time data. In small businesses, digital tools have led to 28% better accounting accuracy and fewer transaction mistakes. Benefits include automated reconciliations, better reporting, and easier compliance. Challenges include initial costs, training needs, and tech access in smaller firms.

Methodology

A mixed-methods approach was used in Vatva Industrial Area:

- Quantitative Phase: A structured questionnaire was completed by 250 small businesses (employees and owners) across manufacturing, services, and related chemical activities.
- Qualitative Phase: Twelve case studies with 25 in-depth interviews of owner-managers and external accountants.

Measurement: Financial accuracy was assessed on four indicators — error frequency (mistakes in entries), record completeness (all transactions captured), timeliness (reports on time), and compliance with standards (GST, company law, environmental reporting). Scores compared users of digital systems vs. traditional methods. Data was analyzed with basic statistics and thematic analysis.

Results and Discussion

Adoption of Digital Systems

About 65% of the sampled businesses had adopted some form of digital accounting.

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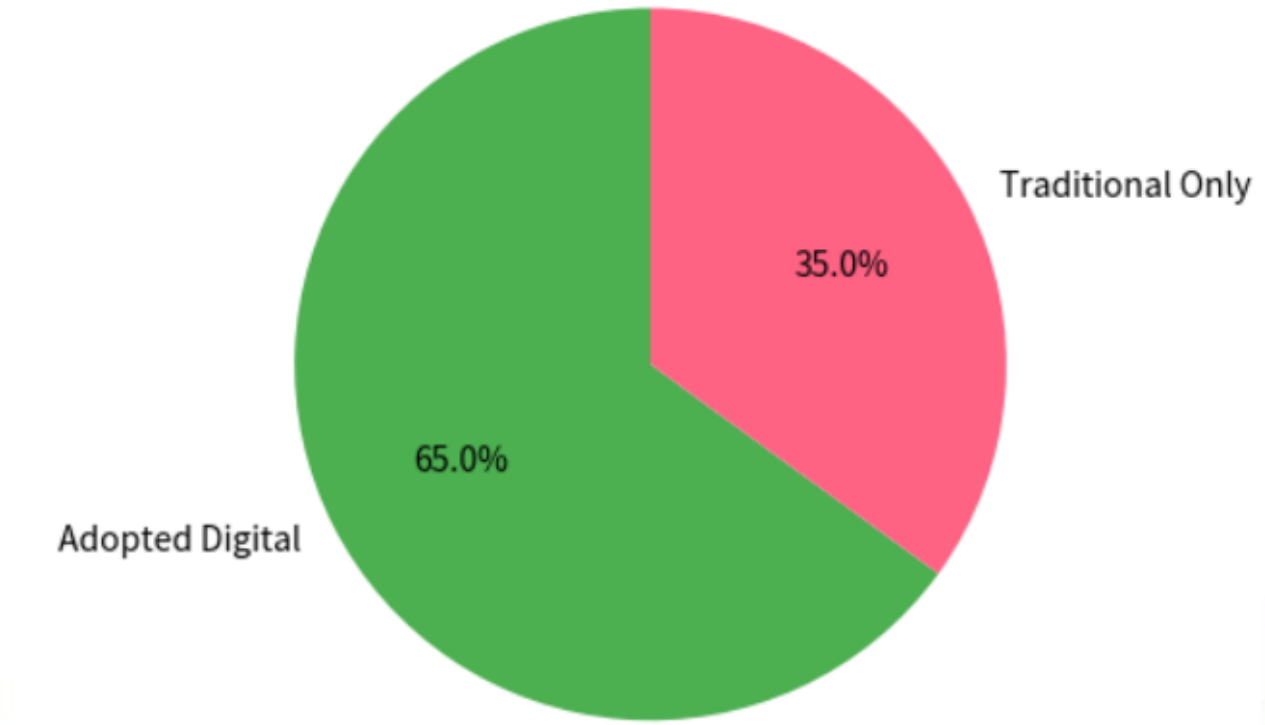

Financial Accuracy Comparison

Digital users performed much better across all metrics.

Metric	**Traditional Accounting (%)**	**Digital Accounting (%)**	**Improvement**
Error Frequency (lower is better)	45	15	-67%
Record Completeness	65	90	+38%
Timeliness	55	85	+55%
Compliance with Standards	60	88	+47%

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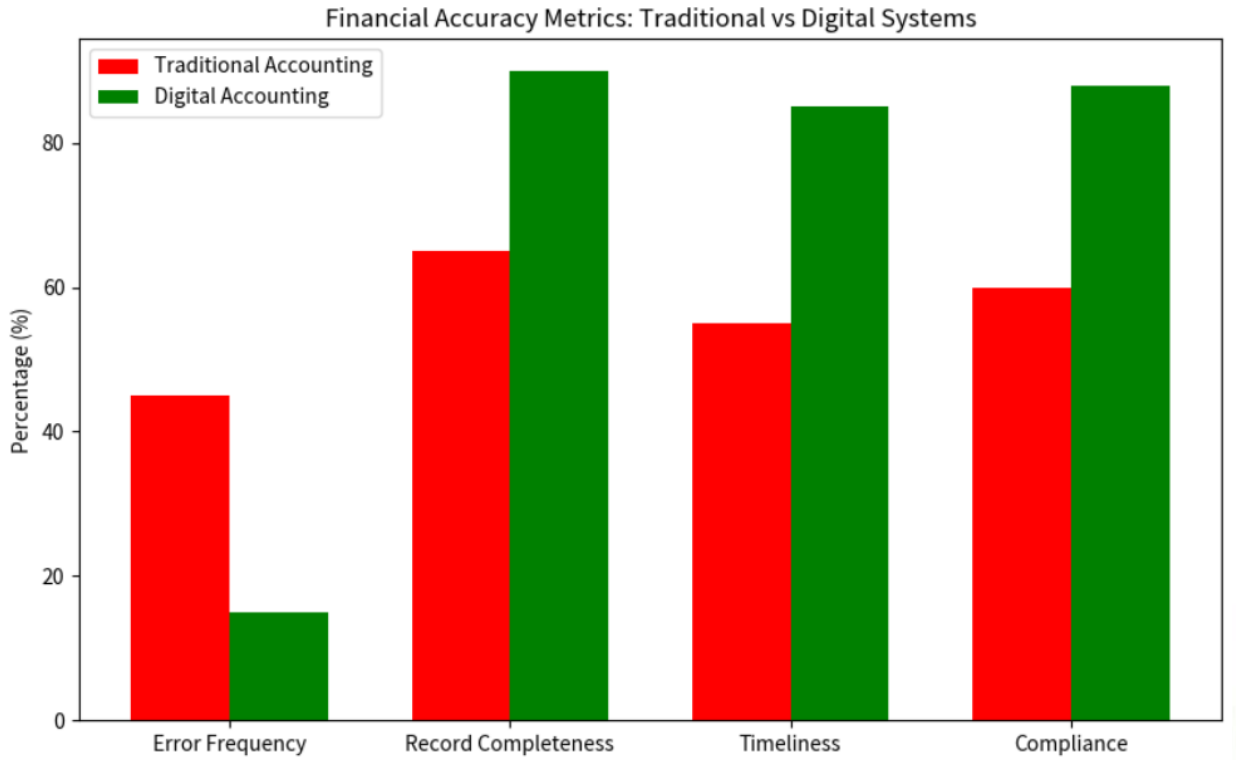

Key Findings from Interviews

Owner-managers reported that digital systems made inventory tracking easier (important for chemicals with expiry and regulations). Accountants noted automatic GST filing reduced penalties. Challenges included initial learning curve and internet reliability, but most said benefits outweighed costs within 6-12 months.

Businesses with digital systems also reported better decision-making, such as quicker credit approvals and cost control.

Conclusion

Digital accounting systems significantly improve financial accuracy in small chemical businesses in Ahmedabad. Lower errors, complete records, faster reporting, and better compliance help these firms survive regulations and grow. Policymakers and industry groups should offer subsidies, training, and awareness programs. Future research could track long-term effects or compare specific software.

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