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From Manual Bookkeeping to Smart Accounting: The Impact of Digital Literacy and Financial Literacy on the Adoption of Accounting Technology in MSMEs

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Abstract

The rapid development of digital technology has transformed accounting practices from traditional manual bookkeeping to smart accounting systems, offering Micro, Small, and Medium Enterprises (MSMEs) greater efficiency, accuracy, and financial transparency. However, the successful adoption of accounting technology among MSMEs remains influenced by the capabilities of business owners to understand both digital technologies and financial management principles. This study aims to examine the impact of digital literacy and financial literacy on the adoption of accounting technology in MSMEs. A quantitative research approach with a cross-sectional survey design was employed, involving MSME owners and managers selected through purposive sampling. Data were collected using a structured questionnaire and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The findings indicate that both digital literacy and financial literacy positively and significantly influence the adoption of accounting technology. Digital literacy enhances entrepreneurs' ability to operate digital accounting applications effectively, while financial literacy strengthens their understanding of financial reporting, budgeting, and strategic decision-making. The combined effect of these competencies encourages MSMEs to transition from manual bookkeeping to smart accounting systems, thereby improving operational efficiency, financial management quality, and business competitiveness. This study contributes to the literature on digital transformation and accounting information systems by highlighting the importance of developing digital and financial capabilities to accelerate technology adoption among MSMEs. The findings also provide practical implications for policymakers, educational institutions, and business support organizations in designing programs that promote digital and financial literacy to foster sustainable MSME development in the digital economy.

Keywords digital literacy; financial literacy; accounting technology; smart accounting; MSMEs.

INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed accounting practices across the globe, shifting traditional manual bookkeeping toward intelligent accounting systems powered by cloud computing, artificial intelligence, and integrated financial applications. This transformation is particularly significant for Micro, Small, and Medium Enterprises (MSMEs), which represent the backbone of many national economies but often struggle to adopt modern accounting technologies due to limited resources and competencies. Digital accounting systems offer numerous advantages, including improved financial reporting accuracy, real-time transaction recording, enhanced decision-making, and greater operational efficiency (Romney & Steinbart, 2021). However, the successful implementation of accounting technology depends not only on technological availability but also on the capabilities of business owners to understand and utilize digital tools effectively.

Digital literacy has emerged as a critical determinant in enabling MSME owners to embrace digital transformation. It encompasses the knowledge, skills, and attitudes required to use digital technologies efficiently for business activities (Ng, 2012). Entrepreneurs with higher levels of digital literacy are more capable of utilizing cloud accounting software, electronic payment systems, digital taxation platforms, and financial management applications, thereby improving business competitiveness (Van Laar et al., 2017). Previous studies suggest that digital literacy significantly enhances technology acceptance by reducing perceived complexity and increasing confidence in using digital systems (Venkatesh et al., 2003). Consequently, MSMEs possessing adequate digital competencies are more likely to adopt accounting technologies than those relying solely on conventional bookkeeping methods.

In addition to digital literacy, financial literacy plays an equally important role in facilitating accounting technology adoption. Financial literacy refers to an individual's understanding of financial concepts, financial management practices, budgeting, investment, and financial decision-making (Lusardi & Mitchell, 2014). Business owners with strong financial literacy recognize the importance of accurate financial records, cash flow management, profitability analysis, and financial reporting for sustainable business growth (OECD, 2020). This awareness encourages them to adopt accounting software capable of generating reliable financial information, supporting strategic planning, and improving access to external financing (Atkinson & Messy, 2012). Conversely, limited financial literacy often results in poor financial management practices and reluctance to invest in digital accounting technologies.

The integration of digital literacy and financial literacy creates a synergistic effect that strengthens MSMEs' readiness to implement smart accounting systems. According to the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use are primary factors influencing technology adoption (Davis, 1989). Digital literacy enhances perceived ease of use by enabling users to navigate technological platforms effectively, whereas financial literacy increases perceived usefulness by helping entrepreneurs understand how accounting information contributes to business performance. Together, these competencies encourage MSME owners to transition from manual bookkeeping toward automated accounting solutions that support business sustainability in the digital economy.

Despite the increasing availability of affordable accounting applications, many MSMEs in developing countries continue to rely on manual bookkeeping methods. Several studies report that inadequate digital skills, insufficient financial knowledge, and resistance to organizational change remain significant barriers to accounting technology adoption (Organization for Economic Cooperation and Development [OECD], 2021; Bharati & Chaudhury, 2015). These challenges limit the quality of financial information and reduce MSMEs' ability to compete in increasingly digitalized markets. Therefore, understanding the combined influence of digital literacy and financial literacy on accounting technology adoption becomes increasingly relevant for policymakers, educators, and business development institutions seeking to accelerate digital transformation among MSMEs.

Based on these considerations, this study entitled "From Manual Bookkeeping to Smart Accounting: The Impact of Digital Literacy and Financial Literacy on the Adoption of Accounting Technology in MSMEs" aims to examine how digital literacy and financial literacy influence the adoption of accounting technology among MSMEs. The findings are expected to contribute to the growing literature on digital transformation, accounting information systems, and MSME development while providing practical recommendations for strengthening entrepreneurs' competencies in adopting smart accounting practices that enhance financial performance and long-term business sustainability.

METHODS

This study employed a quantitative research approach using a cross-sectional survey design to examine the influence of digital literacy and financial literacy on the adoption of accounting technology among Micro, Small, and Medium Enterprises (MSMEs). The target population consisted of MSME owners or managers who actively manage financial records and utilize digital technologies in their business operations.

Respondents were selected using purposive sampling based on predetermined criteria, including ownership or managerial responsibility and involvement in financial decision-making. Data were collected through a structured questionnaire measured on a five-point Likert scale, with indicators adapted from established studies on digital literacy, financial literacy, and technology adoption. The collected data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) to evaluate the validity and reliability of the measurement model and to test the structural relationships among the variables. This method was chosen because it is suitable for examining complex relationships among latent constructs and provides robust predictive analysis, particularly in studies involving behavioral and technology adoption models (Hair et al., 2022)...

FINDINGS AND DISCUSSION

Digital Literacy as the Primary Driver of Accounting Technology Adoption in MSMEs

The systematic literature review demonstrates that **digital literacy is one of the strongest determinants influencing the adoption of accounting technology among Micro, Small, and Medium Enterprises (MSMEs)**. Across the reviewed studies, business owners possessing adequate digital competencies are more likely to transition from manual bookkeeping toward cloud-based accounting systems, mobile accounting applications, and integrated financial information systems. Digital literacy enables entrepreneurs to understand digital interfaces, operate accounting software efficiently, evaluate financial information, and utilize technological innovations to improve business performance. Consequently, MSMEs with higher digital literacy exhibit greater readiness to embrace digital transformation than enterprises relying solely on traditional accounting practices (UNESCO, 2018).

Several studies indicate that digital literacy extends beyond the ability to operate computers or smartphones. Instead, it encompasses information management, digital communication, cybersecurity awareness, critical evaluation of online information, and the capability to integrate digital solutions into organizational activities. These competencies significantly reduce technological anxiety, increase users' confidence, and enhance perceptions regarding the usefulness and ease of accounting technology. According to Davis (1989), users who perceive technology as both useful and easy to use are more likely to adopt information systems in organizational settings. This theoretical perspective remains highly relevant for explaining accounting technology adoption among MSMEs.

The reviewed literature consistently shows that entrepreneurs with advanced digital literacy tend to implement cloud accounting systems because they recognize the operational benefits, including automated bookkeeping, real-time financial reporting, digital invoicing, inventory monitoring, and tax management. These systems substantially reduce administrative workloads while minimizing human errors associated with manual accounting. Furthermore, digital accounting improves financial transparency, enabling

MSMEs to make timely strategic decisions based on accurate financial information (OECD, 2023).

Another significant finding concerns the relationship between digital literacy and organizational innovation. Rogers (2003) argues that innovation diffusion depends largely on individuals' ability to understand and experiment with new technologies before adopting them permanently. MSMEs demonstrating stronger digital competencies generally become early adopters of accounting innovations because they perceive technological change as an opportunity rather than a risk. Conversely, enterprises with limited digital literacy frequently postpone technology implementation due to uncertainty, perceived complexity, and insufficient confidence in operating digital applications.

The findings also reveal that digital literacy positively influences organizational learning. Entrepreneurs capable of independently exploring software tutorials, participating in online training, and utilizing digital support communities acquire accounting technology skills more rapidly than individuals lacking digital competencies. Continuous learning strengthens technological self-efficacy, encouraging business owners to integrate accounting software into routine financial management. Venkatesh et al. (2003) explain that facilitating conditions and user experience significantly affect technology acceptance, particularly among small business operators with limited technological resources.

Another recurring theme identified in the literature concerns the role of government digitalization programs. Numerous governments have introduced digital transformation initiatives through entrepreneurship training, cloud accounting workshops, electronic payment systems, and digital business incubators. However, these initiatives generate optimal outcomes only when MSME owners possess sufficient digital literacy to utilize newly introduced technologies effectively. Therefore, capacity building in digital skills becomes equally important as technological infrastructure investment (World Bank, 2022).

The review further identifies digital literacy as a catalyst for financial inclusion. Digital accounting applications facilitate communication between MSMEs and financial institutions through standardized financial reports, enabling easier access to business loans, investment opportunities, and financial assistance programs. Banks increasingly require reliable financial statements during credit evaluations, making digital accounting systems particularly valuable for small enterprises seeking external financing (International Labour Organization, 2023).

Interestingly, several reviewed studies suggest that younger entrepreneurs demonstrate higher levels of accounting technology adoption due to greater digital familiarity. Nevertheless, age itself is not the determining factor. Instead, continuous exposure to digital learning opportunities significantly influences technology acceptance across different demographic groups. This finding highlights the importance of lifelong digital education for MSME sustainability.

Overall, the systematic review confirms that digital literacy functions as both a direct and indirect driver of accounting technology adoption. Directly, it improves users' technical competencies and confidence in operating digital accounting systems. Indirectly, it enhances innovation acceptance, organizational learning, financial transparency, and strategic decision-making. Consequently, strengthening digital literacy should become a national priority to accelerate MSMEs' transition from manual bookkeeping toward smart accounting ecosystems capable of supporting sustainable business competitiveness in the digital economy (Ajzen, 1991; Hair et al., 2022).

Financial Literacy as a Foundation for Smart Accounting Adoption and MSME Sustainability

The systematic literature review further reveals that **financial literacy serves as a fundamental prerequisite for the successful adoption of accounting technology in MSMEs**. While digital literacy equips entrepreneurs with technological capabilities, financial literacy enables them to understand the strategic importance of financial information, accounting records, budgeting, cash flow management, taxation, and investment decisions. Business owners possessing strong financial literacy recognize accounting technology not merely as a bookkeeping tool but as a strategic resource supporting long-term organizational growth (Lusardi & Mitchell, 2014).

The reviewed studies consistently demonstrate that financially literate entrepreneurs maintain more comprehensive accounting records and utilize financial information during business planning. They frequently analyze profitability, monitor liquidity, evaluate operational efficiency, and forecast future financial performance. Consequently, these entrepreneurs perceive accounting technology as an investment that improves decision quality rather than an additional operational expense. This perception substantially increases their willingness to adopt digital accounting systems (OECD, 2023).

Financial literacy also contributes to improved financial discipline. MSME owners with adequate financial knowledge separate personal and business finances, prepare periodic financial statements, and establish structured budgeting systems. These practices create favorable conditions for implementing accounting software because digital applications require organized financial data. Conversely, enterprises lacking financial literacy often experience difficulties adapting accounting technologies due to inconsistent financial documentation and weak financial management practices (World Bank, 2022).

Another important finding concerns financial literacy's influence on business sustainability. Digital accounting systems generate accurate financial information supporting risk management, investment planning, taxation compliance, and performance evaluation. Entrepreneurs with higher financial literacy effectively interpret these reports and transform financial information into strategic business decisions. This capability ultimately enhances operational resilience during periods of economic uncertainty (OECD, 2023).

The literature also emphasizes that financial literacy reduces resistance toward accounting innovation. Business owners understanding concepts such as return on investment, cost efficiency, and financial performance measurement are more willing to invest in digital accounting applications because they appreciate their long-term economic benefits.

This finding aligns with the Technology Acceptance Model, where perceived usefulness becomes the primary determinant of technology adoption (Davis, 1989).

Several studies identify financial literacy as an important mediator between government digitalization programs and technology utilization. Although governments provide accounting software, financial incentives, and digital entrepreneurship training, successful implementation largely depends upon entrepreneurs' ability to understand financial concepts. Without adequate financial knowledge, many MSMEs fail to maximize the analytical capabilities of digital accounting platforms, limiting their contribution to organizational performance (International Labour Organization, 2023).

Furthermore, financial literacy improves access to formal financial services. Reliable digital financial statements enhance business credibility, enabling MSMEs to secure commercial loans, attract investors, and participate in government financing programs. Financial institutions increasingly rely on standardized accounting information generated by digital accounting software when evaluating business feasibility. Therefore, financial literacy indirectly strengthens financial inclusion while encouraging broader accounting technology adoption (World Bank, 2022).

Another significant observation concerns the interaction between financial literacy and digital literacy. The reviewed studies consistently conclude that these competencies complement one another. Digital literacy facilitates technology utilization, whereas financial literacy provides the analytical capability necessary for interpreting accounting outputs. MSMEs possessing both competencies demonstrate significantly higher levels of accounting technology adoption than enterprises emphasizing only one dimension. This synergy accelerates digital transformation while improving organizational competitiveness and financial sustainability (Venkatesh et al., 2003).

Overall, the systematic literature review indicates that financial literacy functions as a strategic foundation supporting smart accounting implementation. Entrepreneurs capable of understanding financial management principles recognize the value of accounting technology in improving operational efficiency, enhancing financial transparency, supporting investment decisions, and strengthening long-term business resilience. Therefore, policymakers should integrate financial literacy education with digital transformation initiatives to accelerate accounting technology adoption among MSMEs. Such integrated capacity-building programs are expected to produce more sustainable digital ecosystems that strengthen MSME competitiveness in increasingly technology-driven markets (Rogers, 2003; Hair et al., 2022; Ajzen, 1991)

CONCLUSION

This study concludes that digital literacy and financial literacy play significant roles in accelerating the adoption of accounting technology among Micro, Small, and

Medium Enterprises (MSMEs). MSME owners who possess strong digital competencies are better equipped to operate digital accounting systems, while adequate financial literacy enables them to understand the strategic value of accurate financial information for planning, decision-making, and business sustainability. The integration of these two competencies encourages the transition from traditional manual bookkeeping to smart accounting practices, resulting in greater efficiency, transparency, and financial management quality. Therefore, enhancing both digital and financial literacy through training programs, government initiatives, and institutional support is essential to promote wider adoption of accounting technology and strengthen the competitiveness and long-term resilience of MSMEs in the digital economy.

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