



Exploring MSME Interest in Artificial Intelligence for Financial Reporting: Surabaya-Bojonegoro Case Study

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Abstract: This study aims to explore the interest of Micro, Small, and Medium Enterprises (MSMEs) in Surabaya and Bojonegoro towards adopting Artificial Intelligence (AI) technology for financial reporting, and to understand the influencing factors. AI holds significant potential for enhancing efficiency and accuracy in financial processes. This study utilizes a qualitative, explorative approach, with data collected through semi-structured interviews with 53 culinary MSMEs (23 in Surabaya, 30 in Bojonegoro). Analysis was conducted using the Technology, Organization, and Environment (TOE) Framework. Preliminary results indicate Surabaya MSMEs show higher AI interest for financial reporting than those in Bojonegoro. This difference stems from variations in digital infrastructure and literacy (Technology), organizational understanding and motivation (Organization), and environmental support (Environment). Despite existing interest, many lacks technical capacity. This study provides insights for local governments, universities, and business mentors to design effective digital literacy and AI training programs, fostering improved financial management and local economic transformation.

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are crucial to Indonesia's economy, contributing over 60% of the Gross Domestic Product (GDP) and absorbing 97% of the national workforce (Sawitri et al., 2024). The rapid development of information technology has significantly impacted various sectors, including financial management for MSMEs. In East Java, the MSME sector shows progressive economic growth, with its contribution to the regional Gross Regional Domestic Product (GRDP) reaching 59.18% by 2024. DetikJatim.com (2024) reports approximately 1.5 million MSME actors in East Java, predominantly micro (93.37%), followed by small (5.92%), and medium (0.70%) businesses. The East Java Provincial Government actively supports these MSMEs through initiatives like low-interest loans (since 2022), mentorship, product quality development, digital marketing efforts, and bookkeeping assistance, underscoring the ongoing need for improved financial reporting support.

Despite their economic significance, only about 19.5% of Indonesian MSMEs are digitized, and a mere 8.2% utilize accounting software for financial reporting

(Kementerian Koperasi dan UKM, 2023). This widespread reliance on manual records or simple spreadsheets makes them prone to errors and limits strategic insights (Al-ayubi and Oktavia 2024). A Bank Indonesia (2022) survey indicated that only about 35% of MSMEs regularly compile financial reports, largely due to insufficient capacity, knowledge, and low financial literacy.

Artificial Intelligence (AI) presents a highly relevant solution for MSME financial reporting. Studies suggest that AI adoption in accounting can boost efficiency by 40-60% and reduce operational errors by up to 80% (Arief et al., 2024; Setio & Suharto, 2025). Tools like ChatGPT, QuickBooks, Xero, Canva, and ClickUp can assist with automating journal entries, generating reports, providing data-driven financial recommendations, and optimizing cash flow and budgeting. However, AI adoption remains low among MSMEs, with only 15.7% familiar and 6.3% actively implementing it (ASIA, 2023). Key barriers include limited awareness and understanding (Wijaya et al., 2023; Borges et al., 2021; Choi et al., 2019), inadequate technology and data readiness (Gresse et al., 2022; Peng & Eichmann, 2021), poor digital infrastructure (Nainggolan, 2024; Juniardi, 2024), a lack of specific practical mentoring programs, and the perception that AI is exclusively for large corporations (Amaliah et al., 2024).

AI promises faster, more accurate, and systematic financial reporting, providing strategic insights for decision-making (Yusuf et al., 2023). It enhances efficiency, accuracy, and transparency through data entry automation, real-time analysis, and financial trend prediction (Resalia et al., 2024). NLP tools like ChatGPT can simplify accounting terms (Al-ayubi and Oktavia 2024), while cloud platforms like ClickUp and Xero can automate monthly budget and financial report templates (Dialysa et al., 2024). However, challenges persist due to MSMEs' lack of awareness, digital literacy, and access to these technologies.

This study focuses on Surabaya and Bojonegoro, representing an urban-rural dynamic. Surabaya, as East Java's economic hub, boasts an advanced MSME ecosystem with modern infrastructure and a high urbanization rate, reflected in its highest city minimum wage in 2025 (Rp4,961,753). SWK Tunjungan, exemplifies this, serving as both a sales point and a training/mentoring hub. Conversely, Bojonegoro, a more rural area with limited infrastructure, has received "Smart Economy" awards (Bojonegorokab.go.id, 2022) for its successful MSMEs development during the pandemic (0.40% economic contraction). Bojonegoro also actively fosters MSMEs through programs like forming new entrepreneur groups with university, making it an ideal comparison to Surabaya for understanding urban-rural MSME dynamics.

THEORETICAL FRAMEWORK AND EMPIRICAL STUDIES

Research on the interest of MSMEs in utilizing artificial intelligence (AI) technology in financial reporting can be analyzed through the Technology, Organization and Environment (TOE) Framework developed by Tornatzky and Fleischer (1990). TOE emphasizes that innovation adoption is influenced by three main dimensions, namely technological, organizational, and environmental factors. Technological factors include

the availability of digital infrastructure and system compatibility, organizational factors include human resource capacity, internal motivation, and accounting literacy levels, while environmental factors highlight government support, market pressures, and the business ecosystem. This framework is relevant for explaining differences in interest among SMEs in urban areas such as Surabaya, which are relatively more prepared, compared to rural areas such as Bojonegoro.

Various empirical studies show that the use of Artificial Intelligence (AI) technology has a positive impact on MSMEs, although the level of adoption is still limited. Amaliah et al. (2024) found that assistance in the use of AI can improve product quality, market visibility, and the understanding of technology among MSMEs under guidance. Prasetyo and Andrilla (2025) emphasize that the main obstacles to AI adoption in Balikpapan are limited digital literacy, costs, and a lack of external support, requiring training and more proactive government policies. Wicaksono's (2024) research in Semarang shows that although AI adoption is still low, its use in omnichannel strategies improves service efficiency and content personalization. With the competency and credibility of AI (chatbot) management proven to have a positive effect on consumer trust, which then increases purchasing intentions on the Lazada platform (Mutyara et al., 2024). Meanwhile, Girfita (2024) proves that AI can strengthen local branding and the sustainability of village MSMEs through digitalization. Overall, these findings underscore that AI adoption has the potential to increase competitiveness, but requires literacy, external support, and a conducive digital ecosystem.

RESEARCH METHODS

This study employs a qualitative and explorative research methodology to investigate MSME interest in AI technology for financial reporting. Data collection involves semi-structured interviews with all identified MSME participants: 23 in Surabaya and 30 in Bojonegoro. This saturated sampling approach ensures comprehensive data from the selected units. Interviews are planned in April until May, 2025. The collected qualitative data will be analysed thematically, guided by the Technology, Organization, and Environment (TOE) Framework. This method aims to provide an in-depth understanding of MSMEs' perceptions, motivations, and challenges concerning AI adoption in financial management within these two distinct urban and rural contexts.

RESULTS AND DISCUSSIONS

Technology Factor: Digital Infrastructure and Literacy

The availability of digital infrastructure and technological literacy significantly influences MSMEs' interest in utilizing AI for financial reporting (Nainggolan, 2024; Girfita et al., 2024). In Surabaya, interviewed MSMEs reported stable internet access and adequate digital devices. A notable 87% of MSME owners at Surabaya are familiar with business digitalization, and all culinary stalls there use QRIS, crediting BRI's coaching since 2021 for improving their business performance. However, only 22% of these stalls perform daily or monthly bookkeeping using their QRIS transaction history. Regarding AI

literacy, approximately 65% of Surabaya MSMEs have heard of or tried AI tools like ChatGPT and Canva.

In contrast, at Bojonegoro, about 70% of MSME actors have reliable internet access, with most still relying on manual methods or simple Excel spreadsheets for daily transactions. Studies by Syahrenny et al., (2021) and Untarini et al., (2024) confirm this, noting that only about 7% are familiar with AI, and none have attempted to use it in their business operations. While 80% of Bojonegoro MSMEs utilize QRIS or other e-wallets, only about 3% record financial transactions in simple Excel. This aligns with Bank Indonesia's (2022) finding that only 35% of national MSMEs regularly compile financial reports due to limited capacity or knowledge. Low digital literacy is a primary cause for MSMEs' inability to manage and report funds professionally (Resalia et al., 2024; Al-ayubi & Oktavia, 2024).

Organizational Factor: Level of Accounting Understanding and Internal Motivation

MSME owners' internal motivation and understanding of accounting principles are crucial for AI adoption. Interviews revealed that Surabaya MSMEs (87%) are more aware of the importance of financial reporting, partly due to their involvement in BRI mentorship and local government programs. They acknowledge that digital access facilitates easier access to bank financing based on automated transaction records. This awareness fosters high motivation (87%) among MSME actors at Surabaya to adopt technology, particularly for accounting reporting.

Conversely, in Bojonegoro, only 10% of MSMEs prepare simple, regular financial reports. The majority (90%) are motivated to do so only if required by institutions providing capital assistance or soft loans from the local government. This supports Kumalasari & Asandimitra (2019) finding that motivation and self-efficacy significantly impact systematic financial management. Furthermore, differences in formal education levels are evident, with Surabaya MSME owners generally having high school or higher education, whereas many in Bojonegoro have only elementary or junior high school education, or no formal schooling.

Environmental Factor: External Support and Mentoring Programs

External support, including local government initiatives, training programs, and the local business ecosystem, also influences MSMEs' interest in AI adoption (Amaliah et al., 2024; Arief et al., 2024). In Surabaya, MSME actors at SWK Tunjungan reported participating in local government digitalization training, which included e-commerce platforms, QRIS, and basic accounting software like Ms. Excel. This has increased their enthusiasm for technology, with 87% expressing a desire to learn AI-based financial reporting, even though they currently do not use AI for that purpose. Nearly 70% are aware of what AI is, and almost all (90%) unknowingly use AI-based digital technologies like ChatGPT and Canva.

Meanwhile, in Bojonegoro, only about 50% of MSMEs have participated in digital financial reporting training, despite local government programs running since 2022 (Bojonegorokab.go.id, 2022). However, these programs primarily focus on product

marketing and branding, rather than fundamental bookkeeping or accounting. Only 10% of Bojonegoro MSME owners know what AI is, and approximately 50% have used AI-based tools (like Canva and ChatGPT) without realizing their AI nature. This finding is consistent with Girfita et al., (2024) research, which indicates that local government technology training can significantly boost operational efficiency and product visibility. Likewise, according to Maulatuzulfa and Rokhmania (2022) that social capital has a significant positive effect on the performance of MSMEs in Sidoarjo in maintaining their reputation. Therefore, integrating AI application education for financial reporting into local government strategies is essential.

Constraints and Opportunities in AI for MSME Financial Reporting

The analysis identifies several key constraints for MSMEs adopting AI in financial reporting: a lack of fundamental accounting knowledge, limited internet infrastructure, concerns about access costs and technological dependence, and a scarcity of specific accounting-focused training. Despite these challenges, significant opportunities exist. AI offers automation solutions, with tools like ChatGPT simplifying accounting terms (Al-ayubi and Oktavia 2024) and platforms such as ClickUp and Xero automating financial templates (Dialysa, 2024).

AI adoption can also elevate MSME professionalism, enhancing transparency and accountability essential for accessing formal capital (Arief et al., 2024; (Widyaningrum & Purwanto, 2022). This, in turn, boosts competitiveness for tenders and partnerships (Amaliah et al., 2024; Setio & Suharto, 2025). Furthermore, embracing AI supports local economic digital transformation, positioning regions like Bojonegoro (a "Smart Economy" award recipient) and Surabaya as potential role models for AI integration in MSME financial management (Bojonegorokab.go.id, 2022; Girfita et al., 2024).

Table 1. TOE Framework Analysis for MSME's in Surabaya and Bojonegoro

Factor	MSMEs in Surabaya	MSMEs in Bojonegoro	Interpretation
Technology	• More stable and faster internet access (86% good) • 86% familiar with business digitalization • 100% use QRIS • 65% have heard of AI ChatGPT, Canva, QuickBook • 22% use QRIS history for financial reports	• 50% feel that internet access is stable • 10% have heard of AI and digital business • 30% have QRIS • 7% have heard of AI ChatGPT, Canva, • 3% use Ms. Excel for simple transaction recording	SMEs in Surabaya have more advanced digital literacy than SMEs in Bojonegoro

Organization	• 86% feel motivated by the availability of training programs • 86% recognize the benefits of financial reports • Average educational background is high school or above	• 90% are motivated when there are training or mentoring programs • 10% recognize the benefits of financial reports • Average educational background is elementary/junior high school graduate or no formal education	External factors are more dominant for MSMEs in Bojonegoro, unlike Surabaya, which is more aware and proactive in administration
Environment	• There are regular training and mentoring programs (digitalization, QRIS, and e-commerce) • MSMEs are mentored by banks and local governments • 86% want to learn more about AI in financial reporting	• Mentoring programs are not focused on financial reporting or digital payments • 50% of MSMEs have participated in mentoring/training • 7% show initial interest in AI	MSMEs in Surabaya are often involved in mentoring and training programs by the local government and are more dynamic and responsive to technological innovations.

Source: Authors, 2025 (processed)

CONCLUSION, SUGGESTION, AND LIMITATION

This study concludes that MSME interest in adopting AI technology for financial reporting varies considerably between Surabaya and Bojonegoro, fundamentally shaped by distinct technological, organizational, and environmental factors. The findings contribute significantly to understanding the readiness and specific challenges faced by Indonesian MSMEs in embracing AI, particularly in a crucial area like financial management. Theoretically, this research reinforces the applicability of the Technology, Organization, and Environment (TOE) Framework in diverse economic contexts, highlighting its utility in dissecting technology adoption dynamics among small businesses. Practically, the results provide critical insights for policymakers, universities, and business mentors: immediate action is needed to design localized digital literacy and practical AI training programs. These initiatives should focus on building foundational accounting skills and explicitly demonstrating AI's tangible benefits, especially for rural MSMEs where basic digital infrastructure and awareness remain key hurdles.

As an exploratory study, this research has several limitations, namely limited geographical coverage with relatively short interview durations, a focus on qualitative data,

and the lack of actual AI application in financial reporting. Therefore, further studies are recommended with a broader sample of objects and more diverse geographical coverage, such as at the national or provincial level. There is a need for continuous assistance with multi-stakeholder collaboration for at least one month to evaluate the development of participants' understanding and interest, as well as the use of mixed-methods to provide more comprehensive evidence. There is a need for specific and user-friendly training modules for financial reporting, including real-life case studies and step-by-step guides, as well as follow-up programs that are expected to include direct assistance in using AI technology to create simple income statements, balance sheets, and cash flow statements for MSMEs.

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