
**MADURA BATIK MSMES IN DIGITAL BUSINESS
ACCOUNTING, RISK AUDIT, AND TRANSPARENCY**
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Received: April 2025; Accepted: April 2025; Published: June 2025

Permalink/DOI:

ABSTRACT

This study aims to examine the implementation of risk audit control in Micro, Small, and Medium Enterprises (MSMEs) in the batik sector. MSMEs in this sector make a significant contribution to the national economy through job creation and economic equity. However, they also face various challenges, such as potential fraud, operational risks, and difficulty complying with regulations. Using a descriptive qualitative approach, this study utilizes interviews, direct observations, and document analysis to evaluate the effectiveness of the internal controls applied. The results of the study show that measures such as equipment maintenance, employee training, standardization of procedures, and adoption of modern technology have contributed to improved product quality and consumer confidence. In addition, regulatory compliance and the implementation of structured internal audits play an important role in risk mitigation. This research highlights the need for adaptive regulatory support from the government to improve the sustainability of MSMEs. With more effective risk control, batik MSMEs have the potential to optimize their contribution to the national economy while significantly minimizing business risks.

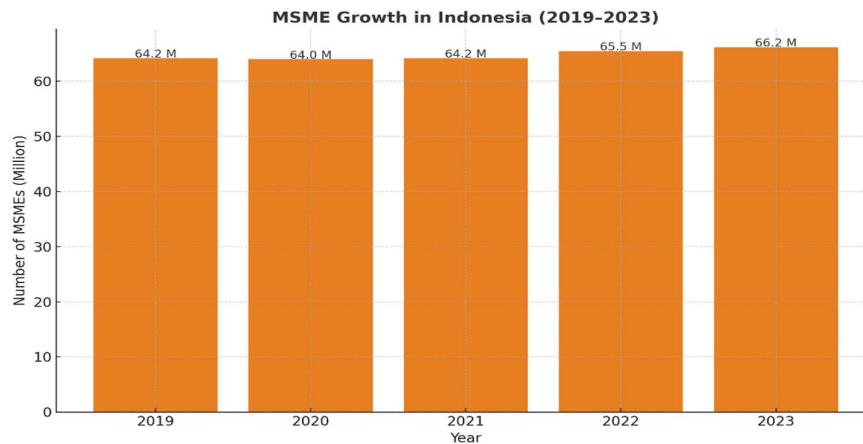
Keywords: Batik, Digital Business Accounting, Audit, Transparency, Risk Management

INTRODUCTION

Background

Micro, Small and Medium Enterprises (MSMEs) are business activities that can expand the growth sector in business and the economy by increasing the provision of wide employment opportunities for the community. MSMEs refer to business units that have small to medium scale in terms of capital, labor, and production capacity. In Indonesia, MSMEs are regulated in Law Number 20 of 2008 concerning MSMEs play an important role in the Indonesian economy, making a significant contribution to job creation and economic growth. One of the MSME sectors that is growing rapidly is the refillable drinking water business. Ease of access, affordable prices, and increasing public awareness of the importance of hydration make this sector even more relevant in meeting people's needs.

Table 1. MSME Growth in Indonesia (2019-2022)
Source: Kamar Dagang dan Industri Indonesia (Kadin)



MSMEs, with all their potential, still need continuous support from various parties, including the government, financial institutions, academics, and the community, to overcome challenges and continue to grow. However, in carrying out their business operations, MSMEs often face various risks that can hinder business sustainability. These risks include financial, operational, regulatory compliance, and product quality aspects. To ensure business sustainability, it is necessary to implement effective risk audit control, which is able to identify, evaluate, and mitigate these risks.

The implementation of audit risk control in MSMEs is a process to identify, evaluate, and mitigate risks that can affect the operations and sustainability of MSME businesses. This approach aims to ensure that MSMEs can run their businesses efficiently, comply with regulations, and maintain the quality of products and services. Transparency and risk control in MSMEs, especially in the batik sector, still face various challenges. Many MSMEs do not have a deep understanding of the importance of risk management, limited resources, and lack of an integrated audit system are the main obstacles. However, the benefits that can be felt in the implementation of audit risk control include reducing losses, increasing efficiency, compliance with regulations or in accordance with good drinking water filling SOP standards, and can create business sustainability.

The implementation of audit risk control in MSMEs helps increase customer confidence, maintain business sustainability, and mitigate risks that can hinder business growth. Support from external parties, such as consultants or governments, is also important for the success of this implementation.

This study aims to explore how batik MSMEs can effectively implement risk audit and transparency control, as well as analyze their impact on sustainability and business quality. This research is important to provide insight and guidance for MSME actors in dealing with risks that arise in the midst of market dynamics and

competition. In addition, the results of this study are expected to contribute to the development of a more structured and applicable risk control strategy in the MSME sector.

METHODOLOGY

This study uses a qualitative approach with phenomenological methods to deeply understand the experience of Batik Madura MSME actors in implementing digital business accounting and efforts to realize transparency. The phenomenological approach was chosen because it is able to explore the subjective meanings experienced directly by informants in their social and cultural contexts (Creswell, 2013). This research focuses on the perceptions, meanings, and personal experiences of business actors, especially in facing the challenges of digital transformation and accountability in financial reporting. Data collection was carried out through semi-structured in-depth interviews with Batik MSME owners in the Madura region who have adopted digital technology in business activities and financial recording. The data were analyzed using an interpretative phenomenological analysis (IPA) approach as developed by Smith et al. (2009), to interpret the unique experiences of each informant holistically. The validity of the data is maintained through triangulation of sources and techniques, as well as member-checks to informants to ensure the accuracy of the researcher's interpretation. This study refers to previous research by Santana et al. (2022) which examined the implementation of digital accounting technology in MSMEs using the phenomenological method and by Rahayu and Day (2015) which explored the application of technology-based accounting systems in Indonesian SMEs. At the national level, the research of Sari & Pujiono (2021) and Yuniarti (2023) is also an important reference in the development of methodological frameworks, especially in the context of MSMEs and the digitization of internal control systems.

RESULTS AND DISCUSSION

Digital Business Accounting

Digital transformation in business accounting has had a significant impact on the efficiency and transparency of financial management in MSMEs, including the batik sector. The implementation of a digital accounting system allows for more accurate, real-time, and easily accessible transaction recording by business actors, thereby improving the quality of decision-making. Ali et al. (2022), Irda (2023), Adiati (2024) stated that the integration of digital systems in MSMEs in developing countries drives operational efficiency and global competitiveness, while Chong et al. (2021) emphasized the importance of digitizing accounting to improve compliance and accountability in financial reporting. In Indonesia, Mulyani and Sari (2021) showed that cloud-based accounting software is able to support systematic recording of batik MSMEs, especially in cash flow and inventory management. In addition, Wahyuni and Kurniawan (2022) added that digital accounting information systems help strengthen the transparency and accessibility of financial data in the business decision-making process and tax reporting. Thus,

digital business accounting is a strategic instrument in supporting the sustainability of batik MSMEs in the industrial era 4.0.

Transparency Accounting

Transparansi akuntansi merupakan elemen penting dalam membangun kepercayaan stakeholder dan meningkatkan akuntabilitas UMKM, termasuk pada sektor batik. *Nguyen et al.* (2021) menegaskan bahwa transparansi laporan keuangan pada UMKM memperkuat akses pembiayaan dan kolaborasi bisnis di pasar global, sementara *Kwarteng et al.* (2020) menyatakan bahwa keterbukaan informasi akuntansi mendorong pertumbuhan berkelanjutan UMKM melalui efisiensi manajerial dan pengawasan internal. Di Indonesia, *Lestari dan Haryanto* (2021) menemukan bahwa transparansi akuntansi pada UMKM batik berkorelasi positif terhadap kelancaran pelaporan pajak dan kemitraan usaha. Selain itu, *Rahmawati dan Fitria* (2022), *Adiati* (2023) menekankan bahwa digitalisasi pencatatan keuangan turut mendorong transparansi dalam pelaporan keuangan UMKM sehingga pelaku usaha dapat lebih dipercaya oleh perbankan maupun investor.

Risk Management

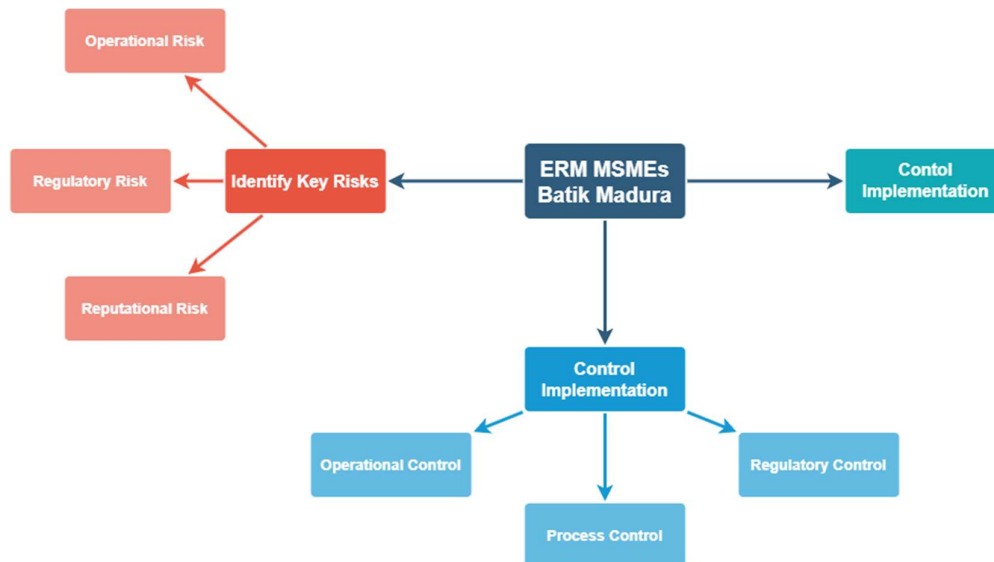
Risk management is a systematic process that includes identifying, assessing, responding to and monitoring risks to minimize negative impacts on the organization. This approach is important in a variety of sectors, including the public and private sectors, to ensure sustainability and operational stability. In this context, the Enterprise Risk Management (ERM) approach has been widely adopted to manage risk holistically. According to research by *Sitanggang* (2022), the implementation of SNI ISO 31000:2018-based risk management in small and medium-sized enterprises shows an increase in awareness of the importance of proactively identifying and mitigating risks. In addition, a study by *Elly* (2024) highlights the application of operational risk management to salted fish MSMEs in Medan, which shows that an ISO 31000:2018-based approach can improve the effectiveness of risk management in the sector. Internationally, the journal "Risk Management" published by Springer emphasizes the importance of linking theory and practice in risk management procedures, covering financial, corporate, institutional, and regulatory aspects. This shows that risk management is not only relevant at the national level but also has global implications in various organizational contexts.

Enterprise Risk Management (ERM)

ERM has emerged as a strategic framework that enables organizations to identify, assess, and manage risks comprehensively, thereby enhancing corporate value. A study by *Utami et al.* (2021) on manufacturing companies listed on the Indonesia Stock Exchange from 2012 to 2020 found a significant positive correlation between ERM implementation and firm value, suggesting that ERM contributes substantially to organizational performance and stakeholder confidence. Similarly, research by *Halimah and Maharani* (2024) indicated that ERM, along with factors

like firm size and profitability, collectively influences firm value, highlighting the multifaceted impact of risk management practices on corporate outcomes. Additionally, Ganishti et al. (2025) demonstrated that risk disclosure, as a component of ERM, positively affects firm value, with corporate governance serving as a moderating variable that reinforces this relationship, emphasizing the importance of transparency and governance in risk management. These findings underscore the critical role of ERM in fostering organizational resilience and value creation in the contemporary business environment.

Discussion



Picture 1. Conceptual Model

Source: Data Processed

The image above is a mind map that describes the risk management structure in a concise and systematic manner. This mind map is divided into three main elements: identification of key risks, implementation of controls, and evaluation of controls. Risk identification includes operational, regulatory, and reputational risks. The implementation of control is divided into operational, process, and regulatory control. Finally, the control evaluation serves to assess the effectiveness of the measures that have been implemented. Striking colors are used to differentiate each element to clarify the flow and interconnectedness between the components.

1. Identify Key Risks

a. Operational Risk

Operational risk is one of the significant challenges in the management of batik MSME businesses. The main factors affecting this risk are dependence on equipment, human resources, and quality of raw materials. Technical glitches in equipment such as equipment malfunctions can hinder production and potentially degrade quality. For example, errors in production, budget, and certain production times increase the negative impact of risk events. In

addition, the lack of employee training in maintaining equipment quality and understanding standard operating procedures (SOPs) is also a source of risk. Human error, such as neglect of fabric washing procedures or quality control, can contribute to increased operational risk. As a mitigation effort, MSMEs are advised to improve routine maintenance of equipment, conduct regular employee training, and use more modern quality monitoring tools such as automatic sensors to reduce the possibility of human error and maintain quality standards. To strengthen mitigation measures, business actors also need to implement a consistent documentation and evaluation system for operational processes. This strategy will not only improve efficiency, but also provide historical data for further analysis to identify and refine potential risks before they have a widespread impact.

b. Regulation Risk

Regulatory risks are a significant challenge for MSMEs engaged in the batik business. Changes in government policies, such as regulations regarding quality standards and business license requirements, can affect their business operations and sustainability. For example, the implementation of strict quality standards requires business actors to ensure that the process of processing and storing batik meets the criteria set by regulatory authorities. Failure to comply with these regulations may result in sanctions, business closures, or loss of consumer trust. In addition, the existence of new regulations related to product labeling and the use of certain packaging materials can also increase the cost and administrative burden for MSMEs. Therefore, it is important for businesses to continue to monitor regulatory developments and ensure compliance with all applicable requirements to mitigate these risks.

c. Reputation Risk

Reputation risk is one of the main challenges faced by batik MSMEs, especially because this sector relies heavily on customer trust in product quality. Based on the results of interviews with business owners and customers, it was found that complaints related to batik quality and employee service are the main sources that can damage the business reputation. As many as 70% of customers stated that quality is the most important factor in choosing a batik fabric service provider. Some customers also expressed dissatisfaction with the less friendly service, which had an impact on their decreased loyalty. Dissatisfied customers have the potential to leave negative reviews on social media or online platforms, thus expanding the impact of reputational damage.

To overcome this risk, MSMEs have implemented several controls, although they are not optimal. Customer service training is provided to employees to improve interaction with consumers. Active monitoring of customer feedback through surveys has also begun to be carried out, although it is not routine. With more consistent controls in place and investments in modern equipment, MSMEs can significantly reduce reputational risks and maintain customer trust.

2. Implementations of Control

a. Operational Control

Work process. Based on the results of observations, it was found that many business actors have established regular maintenance schedules for the main equipment. This step aims to reduce the risk of technical breakdowns that can disrupt daily operations. Most MSMEs have consistently adhered to these maintenance schedules by using documented standard procedures for the process, with the expectation that the quality produced has met consumer-worthy standards.

Businesses also try to improve operational control through employee training on management and procedures that cover all aspects needed to reduce risk. To improve the effectiveness of operational control, the use of more reliable modern equipment and the development of detailed operational manuals are highly recommended for optimal quality. With more systematic operational control, baby MSMEs can increase efficiency, reduce technical risks, and maintain consistent product quality.

b. Process Control

Process control is an important element in maintaining the quality and consistency of batik MSME operations. Based on data obtained through interviews and observations, many MSMEs have implemented control measures such as standardization of procedures. Almost all business actors have written documentation related to these procedures, so that they can control quality to the maximum. The existence of written documentation is also used as an effort to prevent things that have the potential to cause risks that can be detrimental both in terms of consumer health and business sustainability.

In addition, MSMEs have used automated sensor tools to monitor even though most of them still carry out manual process monitoring, even though the tool is only effective in certain aspects. The use of automatic sensors can reduce the high risk of human error, such as negligence in the sanitation or filling process. As a mitigation effort, business actors have implemented the use of daily checklists that are used to ensure that each stage of the process is carried out according to standards. MSMEs that consistently implement process control have a lower level of customer complaints than those that do not carry out process control. Thus, the implementation of more structured process control can increase efficiency and maintain customer trust in the products produced.

c. Regulation Control

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in supporting the Indonesian economy. With a significant contribution to job creation, economic equity, and additional state foreign exchange, MSMEs have become an irreplaceable sector in national development. However, the rapid development of MSMEs also poses major challenges, especially in terms of regulation and fraud risk. Ineffective regulations have the potential to create instability in business systems and open up opportunities for manipulation, policy violations, and misuse of organizational assets.

To overcome these challenges, the implementation of strong internal controls is the main solution. Internal control includes the preparation of clear operational policies, the implementation of periodic audits, the use of technology to increase transparency, and training for business actors on good governance. On the other hand, the government needs to support with flexible but firm regulations, incentives for compliance, and increased supervisory capacity. Thus, effective regulatory control not only minimizes the risk of fraud, but also ensures the sustainability and competitiveness of MSMEs in the domestic and global markets.

3. Evaluations of Cotrol

Micro, Small, and Medium Enterprises (MSMEs) in Indonesia play a strategic role in supporting national economic growth through job creation, economic equity, and increasing the country's foreign exchange. However, behind these large contributions, MSMEs face serious challenges, especially related to fraud risks. The rapid development of MSMEs often opens up opportunities for manipulation, policy violations, and asset abuse. This gap is exacerbated by weak oversight, lack of effective regulation, and inadequate internal systems. To maintain business stability and sustainability, stricter controls are needed to reduce the potential risk of fraud. Internal control is the main solution to overcome the risk of fraud faced by MSMEs.

The implementation of good control involves strategic steps, such as the creation of clear operational policies, the implementation of regular internal audits, and the use of digital technology to increase transparency and prevent manipulation. Training and education for MSME actors are also important to build awareness of the importance of good governance. On the other hand, the role of the government is needed to strengthen regulations, provide incentives to compliant business actors, and increase supervisory capacity to support the creation of a more integrated business system.

With the implementation of optimal internal controls, MSMEs can significantly mitigate the risk of fraud while increasing competitiveness in the market. Effective control not only protects the assets and reputation of MSMEs but also increases consumer confidence in the products and services they offer. These measures will ensure the sustainability of MSMEs' businesses in the future and support their contribution to national economic growth.

Implications

Based on the research, several thematic policy directions can be derived to enhance the implementation of digitalization and transparency in MSMEs. These include:

1. Digital Literacy Development

Policies should focus on improving digital competencies among batik MSME owners and workers through targeted training and education programs in digital accounting systems and e-commerce platforms.

2. Standardization of Digital Accounting Practices

Establishing standardized and simplified digital accounting frameworks suitable for MSMEs can improve financial transparency and ease regulatory compliance.

3. Incentives for Digital Transformation

Governments and institutions should offer tax breaks, grants, or soft loans to MSMEs that adopt digital business tools, especially those that promote transparency and accountability.

4. Integrated Support Systems

Development of digital ecosystems that connect MSMEs with financial institutions, marketplaces, and government portals, enabling seamless transactions and reporting.

5. Community-Based Digital Hubs

Formation of regional digital resource centers in Madura to facilitate shared learning, access to technology, and mentorship, fostering inclusive and sustainable digital adoption.

6. Transparency Regulations and Monitoring

Creation of policies that require minimum transparency standards, accompanied by monitoring mechanisms, to protect consumers and build trust in local MSME products.

Research Contribution

This study contributes significantly to the growing body of literature on digital transformation in traditional micro, small, and medium enterprises (MSMEs), particularly within the context of Indonesia's cultural industries. By focusing on Madura Batik MSMEs, the research provides a nuanced understanding of how local entrepreneurs perceive and experience the implementation of digital business accounting systems. The phenomenological approach reveals not only technical challenges but also cultural, educational, and behavioral dimensions that influence the adoption of digital tools—an area often overlooked in quantitative studies.

In addition, the study offers practical contributions for policymakers and stakeholders aiming to enhance financial transparency among MSMEs. It highlights the urgent need for capacity-building initiatives tailored to the unique context of traditional industries and underscores the importance of integrating local values into digital training programs. Furthermore, the findings support the formulation of

inclusive digitalization strategies that address both technological and socio-cultural gaps, contributing to more equitable economic development in rural and semi-urban areas like Madura.

Future *Research* Directions

Future studies could delve deeper into the role of individual digital competencies among Madura Batik MSME owners and their correlation with the effectiveness of digital accounting systems. By exploring variations in digital adoption across different levels of education, age groups, and business maturity, researchers can identify specific barriers and enablers in the digital transformation process. Moreover, further phenomenological inquiries could be conducted to understand the lived experiences of MSMEs in rural versus urban areas of Madura, revealing contextual challenges and opportunities for targeted policy interventions.

Another promising avenue for future research is the development of a localized digital transparency index tailored to traditional industries like batik. Such a tool could help measure the impact of transparency practices on financial performance, stakeholder trust, and long-term business sustainability. Additionally, comparative studies involving MSMEs in other traditional crafts across Indonesia could offer broader insights into the cultural and economic factors influencing digital business adoption, contributing to a more inclusive and resilient national MSME strategy.

Conclusion

Based on research on transparency and control in batik MSMEs, effective internal control plays a crucial role in minimizing operational, regulatory, and reputational risks. MSMEs in this sector make a significant contribution to the national economy, but face challenges such as potential fraud, operational negligence, and difficulties in complying with applicable regulations. Various control efforts, such as equipment maintenance, employee training, standardization of operational procedures, and the use of modern technology, have been proven to help improve product quality and consumer confidence. In addition, structured internal audits and regulatory compliance are strategic steps in mitigating existing risks. With more consistent control and government support through adaptive policies, batik MSMEs have the opportunity to increase competitiveness and maintain business sustainability. These measures can also strengthen the sector's role in contributing more to national economic growth.

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