

# ACCOUNTING INFORMATION SYSTEM IMPLEMENTATION IN BATIK SMALL AND MEDIUM-SIZED ENTERPRISES

Dewi Susilowati \*, Eko Suyono \*\*, Oman Rusmana \*, Adi Wiratno \*,  
Christina Tri Setyorini \*

\* Faculty of Economics and Business, Jenderal Soedirman University, Purwokerto, Indonesia

\*\* Corresponding author, Faculty of Economics and Business, Jenderal Soedirman University, Purwokerto, Indonesia

Contact details: Faculty of Economics and Business, Jenderal Soedirman University, Jl. HR Boenyamin No. 708, Purwokerto, Central Java, Indonesia



## Abstract

**How to cite this paper:** Susilowati, D., Suyono, E., Rusmana, O., Wiratno, A., & Setyorini, C. T. (2023). Accounting information system implementation in batik small and medium-sized enterprises [Special issue]. *Corporate & Business Strategy Review*, 4(2), 326–334.  
<https://doi.org/10.22495/cbsrv4i2siart12>

Copyright © 2023 The Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).  
<https://creativecommons.org/licenses/by/4.0/>

**ISSN Online:** 2708-4965

**ISSN Print:** 2708-9924

**Received:** 18.12.2022

**Accepted:** 12.06.2023

**JEL Classification:** M41, M49, P13

**DOI:** 10.22495/cbsrv4i2siart12

One of the obstacles faced by batik small and medium-sized enterprises (SMEs), compared to large batik manufacturers, is limited financial and infrastructure resources. In the meantime, large batik manufacturers are supported by vast resources, modern infrastructure, skilled human resources, and a vast network on both the national and international levels. In order to obtain a competitive advantage, batik SMEs must be able to manage its resources effectively and efficiently and establish a hierarchy for resource allocation. On the other side, it is also necessary for the government to play a role, particularly in the form of policy and assistance, in order to ensure the survival of batik SMEs. This study seeks to maximize the potential of batik SMEs by implementing both manual and computerized accounting information systems (AIS) and the outcomes provide solutions to the problems posed by the lack of managerial professionalism in batik SMEs in Indonesia. Observation, in-depth interviews, and focus group discussions are used to collect data for the years 2020 and 2021. The data is then analyzed using an interaction method that emphasizes the connection between data reduction, data presentation, verification, and conclusion drawing. Therefore, this study produces both manual and computer-based accounting information systems for batik SMEs in Indonesia.

**Keywords:** Accounting Information System, Batik, SMEs, Observation, In-Depth Interview, Focus Group Discussions

**Authors' individual contribution:** Conceptualization — D.S. and E.S.; Methodology — A.W. and C.T.S.; Writing — Original Draft — D.S. and E.S.; Writing — Review & Editing — O.R. and C.T.S.; Supervision — D.S. and C.T.S.; Project Administration — O.R. and C.T.S.; Funding Acquisition — D.S. and E.S.

**Declaration of conflicting interests:** The Authors declare that there is no conflict of interest.

**Acknowledgements:** The Authors thank the Research Center of Jenderal Soedirman University, Indonesia, for funding this project.

## 1. INTRODUCTION

Poverty is one of Indonesia's most fundamental problems, and its resolution is a top priority. Government efforts to alleviate poverty may include

encouraging and re-mobilizing a populist economy by encouraging and supporting the productive efforts of the community. Batik small and medium-sized enterprises (hereafter, SMEs) are a type of traditional Indonesian business that has been

practiced for centuries in Indonesia, including in the Banyumas and Purbalingga regions. The broader Indonesian community considers this type of business to be extremely beneficial, as it provides employment and drives the economy of the country.

Compared to modern batik producers, who have superior resources in terms of funds, infrastructure, and human resources, traditional businesses, such as batik SMEs are, of course, lagging significantly (Suyono, Al Farooque, et al., 2016). Therefore, if SMEs in the batik industry are permitted to compete freely without the protection of government policies, they will not be able to survive. However, despite the weakness of the batik SMEs, this business has a number of product quality advantages and regionally distinct products. In the Banyumas region, there is the "Banyumasan" batik model, and in the Purbalingga region, there is the "Purbalinggaan" batik model, each of which is distinctive. This potential must be maximized so that the efforts of these indigenous people to maintain this particular business may continue.

To maximize the potential of batik SMEs in the Banyumas and Purbalingga regions, a special strategy involving entrepreneurs, government financial institutions, and regional and central governments is necessary. This effort will be able to form a social network that will socialize people's economies voluntarily, thereby benefiting the community. This network must involve all stakeholders so that the optimal potential of batik SMEs in supporting the populist economic system can be realized and they can contribute to the eradication of poverty by providing employment opportunities, especially for the uneducated people.

One strategy for maximizing the potential of batik SMEs is to structure the accounting system as a component of business governance. Incorporating an accounting information system (hereafter, AIS) into the management of the business is one of the means by which a business can achieve its objective (Alqaraleh et al., 2022; Lawal et al., 2022). There are numerous factors why businesses decide to adopt and integrate AIS into their routine operations. In contrast, an AIS is an electronic system that collects, archives, and analyzes financial records in order to provide management with pertinent insights (Prasad & Green, 2015). Some businesses use AIS to streamline accounting processes (Huerta & Jensen, 2017), whereas others use it to enhance strategy and operations (Hla & Teru, 2015). Lawal et al. (2022) indicated that AIS is utilized in automated process administration.

An AIS is an essential resource for SMEs in the 21st century because it facilitates effective decision-making, planning, and supervision of a company's activities. SMEs must effectively manage their accounting and finances in order to continue operations and enhance their business. Therefore, competent and high-quality accounting information systems are essential for attaining this goal. Lack of information access and precise accounting records may contribute to the failure of SMEs. In addition, prior research has demonstrated that poor information quality can negatively affect decision-making (Deaconu & Buiga, 2015; Kunttu & Torkkeli, 2018; Berk, 2017; Ibrahim et al., 2020).

An AIS assists enterprises and governments in maximizing limited resources. As was previously discussed (Deaconu & Buiga, 2015; Kunttu & Torkkeli,

2018; Berk, 2017), the monitoring and control mechanism of AIS can assist businesses, particularly SMEs, in addressing transitory issues with financing, expenditures, and cash flows. Accounting information can help SMEs incorporate operational features into long-term strategic planning in a highly dynamic and competitive market (Burch, 2018; Whah & Shiang, 2018; Kunttu & Torkkeli, 2018; Putri & Maghfiroh, 2022).

With a well-structured accounting system, batik SMEs will be able to conduct business management with ease, as the system will be able to provide the owners/managers with the accurate data they need to support the decision-making process. By utilizing the accounting system, batik SMEs will be able to organize their business transactions and generate financial reports in accordance with the applicable financial accounting standards. Therefore, batik SMEs will be able to present their business information in a manner that is timely, relevant, and accurate, thereby facilitating the decision-making processes of interested parties.

If these ideal conditions can be met, batik SME owners will be able to administer their businesses more professionally, including in terms of financial reporting. As a result, when this business applies for financing, creditors will view it as a more reliable applicant. In other words, previously unbankable batik SMEs are now bankable so that when sufficient funding is available, batik SMEs will develop and be able to expand their market share for both domestic and international interests. On the other hand, adequate financing will also allow batik SMEs to expand their business network in terms of sourcing raw materials and marketing their products. This is advantageous not only for batik business owners but also for the community as it creates jobs that absorb more employees. This condition will be advantageous for the government in terms of reducing unemployment and alleviating poverty, which is very supportive of the national program.

Considering the preceding arguments, this study is significant for a number of reasons:

1. The absence of research that examines the implementation of accounting information systems, both manual and computer-based, through the organization of forms, documents, records, and financial reports and computerization of batik SMEs in the Banyumas and Purbalingga regions of Indonesia.

2. The potential of batik SMEs to contribute to creating employment opportunities for the community so that it can participate in poverty alleviation and contribute to economic growth through the creation of employment opportunities. Implementing both manual and computerized accounting information systems in the management of batik SME is one strategy for achieving this objective.

In light of the aforementioned arguments, this study's research gap is that no prior research has evaluated the influence of computer-based AIS implementation on the professionalism of batik SMEs financial reporting management. Using batik SMEs from the Banyumas and Purbalingga regions as samples, this study attempts to bridge the gap by implementing computer-based AIS to enhance the professionalism of financial reporting among batik SMEs in Indonesia. In this study, it is

hypothesized that the implementation of computer-based AIS in batik SMEs will enhance the professionalism of financial reporting.

Based on the preceding arguments, this study's research questions are as follows:

*RQ1: What information is required by batik SMEs' managers for the manual and computer-based accounting systems that will be developed?*

*RQ2: What obstacles may exist in the implementation of accounting information systems at batik SMEs in the Banyumas and Purbalingga regions?*

The remainder of this paper is structured as follows. Section 2 highlights the literature review relating to the theory and previous studies on similar topics. Section 3 focuses on research methodology. Section 4 presents data analysis and discusses the findings and Section 5 draws the conclusion of the paper.

## 2. LITERATURE REVIEW

According to the resources-based view developed by Wernerfelt (1984) and utilized by Suyono, Al Farooque, et al. (2016), a business entity, including SMEs, must be able to manage its resources effectively and efficiently in order to gain a competitive advantage. When faced with resource constraints, a business must be able to establish a hierarchy for allocating its available resources. To be able to reach this objective, a business must have an information system that can accurately record every resource used in the business process. Incorporating an accounting information system into the management of the business is one of the means by which the company can achieve its objective.

An information system is crucial for businesses to collect, enter, process, store, manage, and control data so that it can be transformed into useful information to assist managers in achieving business objectives (Bodnar & Hopwood, 2013; Suyono et al., 2019). Accounting is a service function that aims to provide quantitative information to users, whereas an AIS is an information system designed to transform data and transactions into useful information for users to plan, control, and operate their businesses (Dalci & Tanis, 2009). Moreover, AIS is a recording system that integrates accounting principles and concepts with information systems, typically on a computer, for the purpose of analyzing and recording business transactions. For the user, AIS generates outputs such as financial statements and accounting data. Because such systems are mandated by law, both for-profit and non-profit organizations require accounting information. According to Dasewicz et al. (2020), an organization system is a system designed to perform the activities and operations of the organization, as well as provide the user with information about the organization or its stakeholders. Gou and Huang (2019), Xu et al. (2019), and Dasewicz et al. (2020) concur that the most effective answers to organizational challenges are found when humans and machines collaborate.

An AIS may be managed manually or automatically. In manual systems, data processing is sluggish and prone to error; therefore, it is necessary to implement computer-based AIS, where the advancement of information technology enables

businesses to quickly collect, retrieve, and process data. In addition, the computer process permits the use of a sensor system that can minimize data processing errors (Grabski & Marsh, 1994).

In most instances, AIS with technological progress improves the lives of individuals. Businesses rely heavily on a variety of diverse systems, including AIS, to carry out their daily operations (Mandala & Astika, 2019). If the AIS is of high quality, users such as bookkeepers, managers, and auditors (both internal and external) are more likely to be delighted and even ecstatic with the results of their efforts. The satisfaction of employees with AIS has a direct impact on their productivity, which in turn increases the firm's efficiency and effectiveness (Fatima et al., 2021; Sariwulan, 2020; Hla & Teru, 2015). All businesses should invest in AIS because it is a crucial instrument for increasing worker productivity. In addition, with the aid of AIS, accountants and users of accounting systems are able to rapidly process vast quantities of financial data (Hla & Teru, 2015; Nasution et al., 2021). With the implementation of AIS, accounting data is more accurate and trustworthy, and user productivity is increased.

Based on an Internet media search, no paper that discusses the implementation of AIS for batik SMEs has been found. However, we found Breen et al. (2003), Sarapaivanich (2003), Pulakanam and Suraweera (2010), Florin et al. (2011), Okoli (2011), Grande et al. (2011), Fong (2011), Damirchi and Rahimi (2011), Cristauskas and Miseviciene (2012), Sam et al. (2012), Suyono, Al Farooque, et al. (2016), Suyono, Rokhayati, et al. (2016), Riswan et al. (2017), Suyono et al. (2019), Sariwulan (2020), Fatima et al. (2021), Nasution et al. (2021), Lawal et al. (2022), Putri and Maghfiroh (2022), etc., that are relevant for this topic.

Breen et al. (2003) investigated whether the use of computer-based information systems in small businesses did not result in data migration issues. The survey was conducted with two groups of small businesses: those that have used computerized accounting systems and those that have not. It was discovered that understanding the limitations of a good system could increase the efficiency of computerized accounting.

Sarapaivanich (2003) investigated the use of financial information to support financial decisions and long-term investments in Thailand's SMEs. The findings demonstrate that inadequate accounting records, inadequate use of accounting information, and ineffective capital budgeting techniques make it difficult for SMEs to achieve their business objectives.

Pulakanam and Suraweera (2010) investigated the use of small business accounting (SBA) shelf software by SMEs in New Zealand. The results indicate that user confusion, a lack of guidance and support from external parties, and a lack of accounting expertise are the primary obstacles for SMEs attempting to implement the software.

Florin et al. (2011) attempted to implement an accounting reporting system based on web technology. Web accounting is software based on eXtensible markup language (XML) technology for recording and processing inventory in SMEs. This method has been shown to reduce expenses and increase productivity, allowing employees and external users (suppliers, customers, and investors) timely access to accounting data.

Okoli (2011) examined the application of accounting systems to SMEs in Enugu Province, Nigeria. The results indicate that the majority of SMEs in Enugu use the method of recording with a single entry, and the use of adequate accounting records has been shown to promote business management efficiency.

Grande et al. (2011) conducted a survey of Spanish SMEs. The results concluded that the proper and consistent use of accounting information systems was able to improve the performance and productivity indicators of Spanish SMEs.

Fong (2011) discovered that only about forty percent of SMEs in China used computer-based information systems to support their operations. Due to a lack of specialists in the field, there are high costs associated with the use of these technologies, which contributes to reluctance.

Damirchi and Rahimi (2011) investigated the feasibility of implementing enterprise resource planning (ERP) software in Iran's SMEs. They proposed a model for implementing and developing ERP software that enables SMEs to integrate all of their business operations via various company functions. This will promote improved resource planning, cost reduction, and customer service. Cristauskas and Miseviciene (2012) examined the use of computerized AIS in Lithuania. Even though the opportunity to utilize the technology is high, only a small number of SMEs in Lithuania have utilized the technology to support business operations.

Sam et al. (2012) discovered that the use of a computerized accounting system (CAS) for the management of SMEs in Malacca was beneficial. The perceived usefulness of CAS among chief executive officers of SMEs in Melaka is the driving force behind its adoption. Suyono, Al Farooque, et al. (2016) discovered that the empowerment of traditional retailers and sellers in Banyumas was hindered by a lack of capital, difficulties in accessing capital sources, the intense competition brought on by the emergence of modern minimarkets, and inadequate business networks for traditional business people. This research produced a draft policy that local governments could use to address these issues, including the implementation of AIS in managing traditional retail businesses.

In addition, Suyono, Rokhayati, et al. (2016) implemented computer-based AIS in managing the financial transactions of this particular business as part of a study conducted in small Islamic microfinance known as "*Baitul Maal wa Tamwil*". The findings indicate that after the implementation of computer-based AIS, the *Baitul Maal wa Tamwil* becomes more effective and efficient in transaction processing, allowing it to provide relevant, dependable, and accurate financial information to all users on time. Similarly, Suyono et al. (2019) conclude that the implementation of an AIS can result in more effective and efficient cooperative operations in the Banyumas region of Indonesia.

Sariwulan (2020) found that the need for management AIS is necessitated by the inaccuracies inherent in establishing and evaluating causal relationships as a result of product customization, which entails ongoing modifications to product design and process.

Fatima et al. (2021) investigated the relationship between AIS and corporate governance in Pakistan's textile industry. The data was gathered from the finance administrators of 300 firms from the All Pakistan Textile Mills Association using self-delivery and collection. This study's findings demonstrated that AIS has a significant effect on corporate governance.

Lawal et al. (2022) investigated the effect of AIS on firm performance during the COVID-19 pandemic, as well as how AIS enhances employee performance and the external auditing process. The empirical findings of this paper indicate that AIS has a positive impact on the performance of a company's employees and a greater impact on employee performance and auditing costs.

Alqaraleh et al. (2022) collected information from 153 internal auditors in public companies in Jordan and found that the use of information technology and assistance from the organization's culture is crucial for improving the efficiency of internal audits. According to the findings, there is a significant correlation between information technology and the effectiveness of internal audits.

Using survey questionnaires, Putri and Maghfiroh (2022) constructed a map of the SME sector in the Banyumas region of Indonesia. The sample research comprised 25 sectors of exporting or export-capable SMEs in the region. The results indicate that the SME sector in the region does not effectively utilize the AIS; some SMEs have not even implemented the appropriate financial reporting standards, which require the development of a comprehensive financial information system.

### 3. RESEARCH METHODOLOGY

This study employs a qualitative approach designed in the format of multi-year research and development, with plans to produce targeted products in two years. In a systematic series of studies, this research involves a series of activity cycles beginning with a needs assessment (mapping) — action, reflection, evaluation, and innovation. The stages of the research include a needs assessment to determine what AIS are required to improve the professionalism of managing batik SMEs in the Banyumas and Purbalingga regions, as well as the identification of various obstacles faced by batik SMEs in implementing both manual and computer-based accounting information systems.

This study's population consists of all managers or owners of batik SMEs in the Banyumas and Purbalingga regions, as well as the local governments of Banyumas and Purbalingga through the relevant agencies. This study compiled a total of 100 batik SME owners from the Banyumas and Purbalingga regions through the use of convenience sampling.

Individual in-depth interviews were conducted with the sample of 100 batik SME owners/managers who participated in this study, after which they were invited to attend the focus group discussion (FGD) along with the government agencies and all other stakeholders. The results of accumulating qualitative data through in-depth interviews are supported by transcripts of interviews with participants, and the results of the FGD are then qualitatively analyzed by reducing redundant data to streamline

<sup>1</sup> *Baitul Maal wa Tamwil* is a microfinance institution that operates according to the Islamic principle of profit sharing.

and focus the data collected. One of the examples of a transcript from an in-depth interview with a participant is with Aminudin, one of the owners of Batik Banyumasan. In response to a question about the challenges he encountered in the financial reporting process, Aminudin stated:

*"The AIS we are currently using is still very basic, so we cannot accommodate information needs that require fast access and are constantly updated. We also have issues with the existing system's limited storage capacity. Occasionally, the existing system experiences an error that disrupts the present financial reporting procedure. We hope that the system that will be designed for this project will allow our company to surmount the system limitations that have arisen thus far".*

The results of the interview transcript are presented in greater detail in the discussion section. In addition, the condensed and summarized data is presented in a qualitative data presentation format as final data. As the final stage of this qualitative methodology, conclusions are drawn to test the proposed hypothesis for this study.

Moreover, the system development life cycle (SDLC) approach is used to develop both manual and computer-based systems through the planning, analyzing, designing, implementing, monitoring, and evaluation stages, which was completed in a couple of years (i.e., 2020 and 2021), with the planning, analyzing, and designing stages having been completed between July and October 2020. In addition, the computerized accounting system utilizes open-source software with Microsoft Excel PivotTable.

The research methodology focuses on efforts to identify the need for AIS among batik SMEs in the Banyumas and Purbalingga regions. It is accomplished by examining data from various data sources, including informants from business people in this field, locations and events, and documentation/records from the local governments of Banyumas and Purbalingga. In addition, open and honest in-depth interviews were conducted with a focus on the study's issues. Voice recorders were used to record interviews for the purpose of reducing errors throughout the data collection process. In addition, field observations and photographers are utilized for data collection. In the meantime, to avoid data mistrust, triangulation of data source techniques is utilized by comparing data from multiple sources regarding the same problem. In order to obtain accurate information, a recheck of the interview will be conducted to determine the data's reliability.

Interactive techniques are used to analyze data (Miles, 1979; Miles & Huberman, 1994), which include:

- 1) data collection;
- 2) data reduction;
- 3) data presentation;
- 4) conclusion drawing (verification).

From the start of data collection through the verification procedure, the analysis is conducted continuously (conclusion).

To develop this topic in future research, it is highly recommended to use a combination of quantitative and qualitative approaches by attempting to link several independent and dependent variables in order to address the limitations of research.

#### 4. RESULTS AND DISCUSSION

This research aimed to implement an AIS at batik SMEs in the Banyumas and Purbalingga regions of Indonesia over the course of two years, namely 2020 and 2021. In 2020, firstly, the researchers conducted system development utilizing the SDLC methodology, which includes the phases of system planning, analysing, designing, implementing, testing, and maintaining.

In the planning stage, we identified the system needs of all users' of batik SMEs through in-depth interviews with 100 batik SMEs owners to determine their expectations regarding the system that could be designed for the financial management of batik SMEs in Banyumas and Purbalingga. Below, we present the results of some interviews as the sample.

For example, during an interview in his store, Mr. Dino, one of the owners of Banyumasan Batik, stated:

*"We are still manually managing the business's finances. The computer is present, but it is used primarily for simple recording and is therefore underutilized. Due to the inherent fallibility of manual processes, situations such as these can also weaken our financial reporting. In the future, perhaps, our financial transactions will be simpler to manage if these issues can be resolved".*

Similarly, in an in-depth interview, Mrs. Yanti, one of the proprietors of Batik "Pringmas", stated:

*"As long as we manage our business in a traditional manner, we are not supported by a modern information system... In fact, we sometimes record manually, and other times we simply remember and document it a few days later. We hope to be assisted by a decent, easy-to-use financial information system and be given assistance to operate it so that our business's financial management will become more professional in the future".*

Mrs. Sri Resmi, a Banyumas Batik craftswoman, explained to the researchers regarding her system condition in managing her business:

*"Because the documentation is still manual, it is sometimes highly influenced by employee discipline. Sometimes it is documented immediately after the transaction, and sometimes it is slightly delayed, resulting in frequent recording errors. We sincerely trust that there is a transaction management information system capable of preventing recording errors, as these can lead to inaccurate financial reporting. We hoped to be assisted to obtain a more reliable information system in the future".*

Mr. Wardi, one of the owners of "Purbalingaan Batik", during the in-depth interview stated:

*"Because our financial administration is not in accordance with applicable accounting standards, we frequently encounter issues when applying for a bank loan. This is because our financial statements do not meet the bank's requirements. We anticipate being assisted by a transaction management information system capable of resolving this issue".*

Then, we interviewed Mr. Anto, whose batik business is quite large and has around 30 employees. This business has also been supported by an adequate computer but still uses a relatively simple system. Mr. Anto stated:

*“So far our business has been going quite well. We also have employees with an educational background in bachelor of accounting. However, we hope that the current financial management system can increase its capacity in the future due to increasingly complex transactions”.*

In general, 100 batik business owners interviewed shared the same complaints. On average, they are dissatisfied with the current state of the manual system and anticipate future enhancements to the financial transaction management system. During the FGD, we also invited Mr. Ahmad, the director of the SME service of Banyumas Local Government, who stated:

*“In order to surmount the existing system limitations, the research team should be able to assist the batik SME owners in further streamlining the transaction management system, including recording and reporting in accordance with the current financial accounting standards for SMEs. Additionally, the manual system requires more structured recording. Those whose enterprises are still small have a significant need for a structured manual system. Those whose batik businesses are large enough can be directly assisted in developing a computerized information system capable of overcoming the limitations of the existing system, which they complained about in both interviews and focus group discussions”.*

Based on the interviews and FGD results as described above, this study revealed that some of these business owners desired an easy-to-use system, as almost all of the respondents lacked accounting and financial education. In addition, they reasoned that their business was not particularly large, so they do not require a complex accounting system. However, there are also a few respondents whose businesses are large enough to be classified as medium businesses based on their annual revenue, and who are seeking a system that can accommodate the needs of managing their increasingly complex daily business transactions. Some of these respondents already have adequate computer equipment, and their staff size is approximately thirty, so they are prepared to operate a computer-based system. This research compiles, on the basis of these conditions, the form of a system whose implementation could be tailored to the size of each batik SME respondent in this study.

Following the findings, we developed an AIS consisting of an organization of forms, documents, records, and financial reports applicable to batik SMEs as a manual system document. This activity is a design stage of the SDLC approach that is carried out after sufficient information has been gathered in the first stage, as described previously. This system is compiled based on the information obtained during the stage of identifying system requirements, where after the stages of in-depth interviews, all respondents participated in FGD to equalize their perceptions of the desired system requirements. This FDG has successfully equalized the perceptions of all respondents regarding the form of the system to be constructed so that it can be implemented for all batik SMEs, particularly in Banyumas and Purbalingga.

Then, we developed an industrial management software model based on open source to support

the automation and computer-based AIS of batik SMEs. After the manual accounting system can be compiled as described in the second stage, the researchers designed a computer-based system for ten batik SMEs' owners in Banyumas and Purbalingga who are able to manage their businesses with computer equipment. These ten batik SMEs already operate on a moderate scale, so they have sufficient resources to implement a computerized accounting information system. To accomplish this objective, researchers created financial reporting software based on the Microsoft Excel PivotTable feature. The researchers contend that PivotTable's capabilities are ideally suited for use in computer-based financial management in ten batik SMEs.

From the lengthy process of identifying the system requirements for batik SMEs in Banyumas and Purbalingga, this study develops, in the form of system documents, an accounting system suitable for managing batik SMEs. At this stage, the accounting process cannot be separated from the standard operating procedure (SOP) in each department, where the data/document flow of each SOP resides in the finance and accounting department as a function that records each transaction for financial reporting purposes. Descriptions of general information, accounting processes, accounting policies, systematic account codes, standard journals, and financial report formats are included in the system description.

The system we developed for this research was then implemented for all participants. After the system was implemented, we conducted additional interviews to determine whether the new system met the expectations of batik SME owners who participated in this study. We asked Mr. Aminudin, one of the owners of batik SMEs in Banyumas, if the system we had just implemented was able to surmount the problems of the old system. Mr. Aminuddin responded:

*“The current system is significantly superior to the old one... The previous system's frequent errors, lack of data updating, and frequently sluggish access can be resolved. We are now also able to present regular and accurate financial reports. This new system will enhance the professionalism of our business, particularly in terms of financial reporting, for which we are extremely grateful”.*

Mr. Dino, another owner of batik SME in Banyumas, commented on the newly implemented system by stating:

*“Thank God, now we can manage our business with a computer-based system, whereas before it was typically manual... The current system supports the presentation of data in a timely, accurate, and continually updated manner. We now feel more professional regarding financial reporting. We hope that this condition will propel our business forward. Thanks for your assistance with this new system. It is extremely beneficial to our business”.*

Mrs. Yanti, one of the proprietors of the Batik “Pringmas” in Banyumas, also conveyed the same message. During an interview about the newly implemented system, she stated:

*“Our business is now supported by a new, extremely useful system... The financial reporting process for our organization is no longer managed manually. Using a computer-based system, we can do it in a modern manner. Under the new system,*

*the procedure of financial reporting is simplified. The processing of data can be quick and always current. We feel the benefits of this new system very strongly”.*

In addition, other participants, such as Mrs. Sri Resmi, Mr. Wardi, Mr. Anto, and other batik SME owners in Banyumas and Purbalingga provided nearly identical responses when asked about the current state of their financial reporting under the new computer-based system. In general, batik SME proprietors report that the new system is extremely beneficial to their businesses. They acquire the ability to conduct business administration professionally, particularly in terms of financial reporting. Based on the responses to the second in-depth interview conducted to evaluate the condition of the new computer-based system, it is possible to conclude that the application of computer-based AIS can enhance the professionalism of financial reporting for batik SMEs in the Banyumas and Purbalingga regions of Indonesia. This demonstrates that the research hypothesis stating that the implementation of computer-based AIS will increase the professionalism of financial reporting among batik SMEs in Banyumas and Purbalingga is thoroughly supported.

Thus, it can be concluded that the owners of batik SMEs in the Banyumas and Purbalingga regions of Indonesia have benefited from the newly implemented system, particularly in terms of financial reporting. The outcomes of this study can serve as a model for deploying computer-based AIS to batik SMEs in Indonesian regions other than Banyumas and Purbalingga. This will be of great assistance to local governments in Indonesia in optimizing the administration of batik SMEs, which are cultural assets from Indonesia where nearly every region has its own distinctive batik style. The expansion of the batik industry will create employment opportunities and contribute to the success of government programs aimed at alleviating destitution.

## 5. CONCLUSION

This study attempts to design both manual and computerized AIS for the management of batik SMEs in Banyumas and Purbalingga, Central Java, Indonesia. Based on the findings of in-depth

interviews and FGDs, it was determined that the current manual system for managing the financial transactions of batik SMEs in Banyumas and Purbalingga has weaknesses, so we developed a new system that is more applicable. In addition, we have created a manual accounting system for relatively small batik businesses and a computerized AIS for those whose batik businesses are medium in terms of size.

This study is anticipated to produce a model AIS that can be applied to the management of Indonesian batik SMEs. Compilation of the manual accounting system includes explanations of general information, accounting procedures, accounting policies, systematic account codes, standard journals, and financial report formats. While computer-based AIS employs PivotTable functionality in Microsoft Excel to implement open-source technology, with this implementation, it is anticipated that batik SMEs in Banyumas and Purbalingga will become more professional in their business management, allowing them to compete in an increasingly competitive business environment.

The findings of this research support the concept of resource-based theory referred to in this study, which states that when a business optimizes its use of its resources, it maximizes its potential for business advancement. The results of the interviews with the participants in this study indicate that the implementation of computer-based AIS can increase the professionalism of financial management and reporting by enhancing the efficiency and effectiveness of the financial reports they generate. The practical implication of this study is that the AIS model developed for the financial management of batik SMEs in Banyumas and Purbalingga can serve as a role model for the financial management of batik SMEs throughout Indonesia.

The limitation of this study is due to the fully qualitative approach, the results cannot be generalized more broadly. Therefore, the newly constructed system in Banyumas and Purbalingga may not necessarily be implemented directly in other regions. As a result, it becomes a recommendation for future research on the same topic to combine qualitative and quantitative methods (mixed methods) for even better results.

## REFERENCES

1. Alqaraleh, M. H., Almari, M. O. S., Ali, B. J. A., & Oudat, M. S. (2022). The mediating role of organizational culture on the relationship between information technology and internal audit effectiveness. *Corporate Governance and Organizational Behavior Review*, 6(1), 8-18. <https://doi.org/10.22495/cgobrv6i1p1>
2. Berk, A. (2017). Small business social responsibility. *The Journal of Corporate Citizenship*, 67, 12-38. <https://www.jstor.org/stable/26629177>
3. Bodnar, G., & Hopwood, W. (2013). *Accounting information system* (11th ed.). Prentice Hall.
4. Breen, J., Sciulli, N., & Calvert, C. (2003). *The use of computerised system in small business* [Paper presentation]. 16th Annual Conference of Small Enterprise Association of Australia and New Zealand, Ballarat. <https://silo.tips/download/the-use-of-computerised-accounting-systems-in-small-business>
5. Burch, S. (2018). *Small businesses and sustainability innovation: Confronting the gap between motivation and capacity* (Policy Brief No.127). Centre for International Governance Innovation. [https://www.cigionline.org/sites/default/files/documents/PB no.127web.pdf](https://www.cigionline.org/sites/default/files/documents/PB%20no.127web.pdf)
6. Cristauskas, C., & Miseviciene, R. (2012). Cloud-computing based accounting for small to medium sized business. *Engineering Economics*, 23(1), 14-21. <https://doi.org/10.5755/j01.ee.23.1.1220>
7. Dalci, I., & Tanis, I. M. (2009). Benefit of computerized accounting system on the JIT production system. *Review of Social, Economics, and Business Studies*, 2, 21-36. <https://dergipark.org.tr/tr/download/article-file/50154>



8. Damirchi, Q. V., & Rahimi, G. (2011). Design a conceptual ERP model for small and medium enterprises of Iran. *Interdisciplinary Journal of Contemporary Research in Business*, 3(5), 850-860. <https://journal-archieves8.webs.com/850-860.pdf>
9. Dasewicz, A., Simon, J., & Ramanujam, S. R. (2020). *Financing small business is critical for a strong post-COVID recovery*. Center for Strategic and International Studies (CSIS). <https://www.jstor.org/stable/resrep26410>
10. Deaconu, A., & Buiga, A. (2015). Financial reporting and mimetic theory for small and medium enterprises. *Current Science*, 108(3), 334-340. <https://www.jstor.org/stable/24216560>
11. Fatima, S., Ishtiaq, M., & Javed, A. (2021). Impact of accounting information system on corporate governance: Evidence from Pakistani textile sector. *International Journal of Law and Management*, 63(4), 431-442. <https://doi.org/10.1108/IJLMA-07-2020-0212>
12. Florin, M., Groza, C., & Aldescu, E.-O. (2011). Using web technology to improve the accounting of small and medium enterprises: An academic approach to implementation of IFRS. *Annales Universitatis Apulensis Series Oeconomica*, 13(2), 280-289. <https://doi.org/10.29302/oeconomica.2011.13.2.11>
13. Fong, M. W. L. (2011). Chinese SMEs and information technology adoption. *Informing Science and Information Technology*, 8, 313-323. <https://doi.org/10.28945/1420>
14. Gou, Q., & Huang, Y. (2019). Financing support schemes for SMEs in China: Benefits, costs and selected policy issues. In L. Song, Y. Zhou, & L. Hurst (Eds.), *The Chinese economic transformation: Views from young economists* (Chapter 10, pp. 193-214). ANU Press. <https://doi.org/10.22459/CET.2019.10>
15. Grabski, S. V., & Marsh, R. J. (1994). Integrating accounting and manufacturing information systems: An ABC and REA-based approach. *Journal of Information Systems*, 2, 61-81.
16. Grande, E. U., Estebanez, R. P., & Colomina, C. M. (2011). The impacts of accounting information system (AIS) on performance measures: Empirical evidence in Spanish SMEs. *The International Journal of Digital Accounting Research*, 11, 25-43. [https://doi.org/10.4192/1577-8517-v11\\_2](https://doi.org/10.4192/1577-8517-v11_2)
17. Hla, D., & Teru, S. P. (2015). Efficiency of accounting information systems and performance measures — Literature review. *International Journal of Multidisciplinary and Current Research*, 3, 976-984. <http://ijmcr.com/wp-content/uploads/2015/09/Paper11976-984.pdf>
18. Huerta, E., & Jensen, S. (2017). An accounting information systems perspective on data analytics and big data. *Journal of Information Systems*, 31(3), 101-114. <https://doi.org/10.2308/isis-51799>
19. Ibrahim, F., Ali, D. N. H., & Besar, N. S. A. (2020). Accounting information systems (AIS) in SMEs: Towards an integrated framework. *International Journal of Asian Business and Information Management*, 11(2), 51-67. <https://doi.org/10.4018/IJABIM.2020040104>
20. Ikatan Akuntan Indonesia (IAI). (2018). *Standar akuntansi keuangan untuk entitas mikro kecil dan menengah* [Financial accounting standards for micro, small, and medium enterprises]. <https://web.iaiglobal.or.id/SAK-IAI/Tentang%20SAK%20EMKM>
21. Kunttu, A., & Torkkeli, L. (2018). Service innovation and internationalization in SMEs: Implications for growth and performance. *Management Revue*, 26(2), 83-100. <https://www.jstor.org/stable/24570252>
22. Lawal, A., Mohamed, R., Abdalla, H., ElKelish, W. W., & Lasyoud, A. A. (2022). The role of accounting information systems in firms' performance during the COVID-19 pandemic. *Journal of Governance & Regulation*, 11(1), 45-54. <https://doi.org/10.22495/jgrv11i1art5>
23. Mandala, I. G. N. A. K., & Astika, I. B. P. (2019). Effect of the work environment, quality of the system, and work culture on satisfaction of accounting information system users. *International Research Journal of Management, IT & Social Sciences*, 6(4), 37-43. <https://doi.org/10.21744/irjmis.v6n4.633>
24. Miles, M. B. (1979). Qualitative data as an attractive nuisance problem of analysis. *Administrative Science Quarterly*, 24(4), 590-601. <https://doi.org/10.2307/2392365>
25. Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. SAGE Publications.
26. Nasution, S. H. Z., Kamil, T. K. N., & Muda, I. (2021). Ethernet switched LaNs: The accounting information system perspective. *International Journal of Multidisciplinary Research and Growth Evaluation*, 2(1), 92-96. <https://www.allmultidisciplinaryjournal.com/archivesarticle/2021.v2.i1.88.pdf>
27. Okoli, B. E. (2011). Evaluation of the accounting systems used by small scale enterprises in Nigeria: The case of Enugu, South East Nigeria. *Asian Journal of Business and Management*, 3(4), 235-240. <https://www.airitilibrary.com/Publication/allDetailedMesh?docid=20418752-201111-201508130019-201508130019-235-240>
28. Prasad, A., & Green, P. (2015). Organizational competencies and dynamic accounting information system capability: Impact on AIS processes and firm performance. *Journal of Information Systems*, 29(3), 123-149. <https://doi.org/10.2308/isis-51127>
29. Pulakanam, V., & Suraweera, T. (2010). Implementing accounting software in small businesses in New Zealand: An exploratory investigation. *Accountancy Business and Public Interest*, 9, 98-124. [https://www.academia.edu/14396489/Implementing\\_Accounting\\_Software\\_In\\_Small\\_Businesses\\_In\\_New\\_Zealand\\_An\\_Exploratory\\_Investigation](https://www.academia.edu/14396489/Implementing_Accounting_Software_In_Small_Businesses_In_New_Zealand_An_Exploratory_Investigation)
30. Putri, N. K., & Maghfiroh, S. (2022). Implementation of accounting information systems by small and medium enterprises in Banyumas. *Jurnal Akuntansi Syariah*, 6(1), 83-92. <https://doi.org/10.46367/jas.v6i1.566>
31. Riswan, R., Suyono, E., & Mafudi, M. (2017). Revitalization model for Village Unit Cooperative in Indonesia. *European Research Studies Journal*, 20(4A), 102-123. <https://doi.org/10.35808/ersj/822>
32. Sam, M. F. M., Hoshino, Y., & Tahir, M. N. H. (2012). The adoption of computerized accounting system in SMEs in Melaka, Malaysia. *International Journal of Business and Management*, 7(18), 12-24. <https://doi.org/10.5539/ijbm.v7n18p12>
33. Sarapaivanich, N. (2003). The use of financial information in financial decisions of SMEs in Thailand. In *Proceedings of 16th Annual Conference of Small Enterprise Association of Australia and New Zealand*. University of Ballarat.
34. Sariwulan, T. (2020). Influence of customization strategy against company performance with management accounting information system as intervening variable. *International Journal of Contemporary Accounting*, 2(1), 19-42. <https://doi.org/10.25105/ijca.v2i1.6296>
35. Suyono, E., Al Farooque, O., & Riswan, R. (2016). Toward a model of traditional retailers and sellers empowerment in improving competitiveness to modern markets in Banyumas Region, Indonesia. *DLSU Business and Economic Review*, 25(2), 147-165. [https://www.researchgate.net/publication/293518460\\_Toward\\_a\\_Model\\_of\\_Traditional\\_Retailers\\_and\\_Sellers\\_Empowerment\\_in\\_Improving\\_Competitiveness\\_Against\\_Modern\\_Market\\_in\\_Banyumas\\_Region\\_Indonesia](https://www.researchgate.net/publication/293518460_Toward_a_Model_of_Traditional_Retailers_and_Sellers_Empowerment_in_Improving_Competitiveness_Against_Modern_Market_in_Banyumas_Region_Indonesia)



36. Suyono, E., Rokhayati, H., & Hasanah, U. (2016). Pengelolaan baitul mal wa tamwil berbasis komputer di Kabupaten Banyumas, Jawa Tengah. *Jurnal Visioner & Strategis*, 5(1), 23-34. <https://journal.unimal.ac.id/visi/article/view/227>
37. Suyono, E., Rusmana, O., & Riswan, R. (2019). Integrated information system to revitalize the cooperatives in Banyumas. *IOP Conference Series: Earth and Environmental Science*, 255, Article 012046. <https://doi.org/10.1088/1755-1315/255/1/012046>
38. Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180. <https://doi.org/10.1002/smj.4250050207>
39. Whah, C. Y., & Shiang, L. E. (2018). Policies and performance of SMEs in Malaysia. *Southeast Asian Economies*, 35(3), 470-487. <https://doi.org/10.1355/ae35-3i>
40. Xu, F., Zhao, S., & Yang, Y. (2019). Industry-finance integration for small and medium-sized enterprises in Southeast Coastal Areas of China. *Journal of Coastal Research*, 94(sp1), 803-807. <https://doi.org/10.2112/SI94-159.1>