

Sustainability of Islamic Microfinance in Indonesia: Exploring the Role of Computerised Accounting Information Systems

Provita Wijayanti¹, Intan Salwani Mohamed², Dalila Daud²

¹Accounting Research Institute, Universiti Teknologi MARA, Shah Alam Selangor, Malaysia and Department of Accounting, Faculty of Economics, Universitas Islam Sultan Agung (UNISSULA), Indonesia, ²Accounting Research Institute, Universiti Teknologi MARA, Shah Alam Selangor, Malaysia.

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v13-i8/17437> DOI:10.6007/IJARBSS/v13-i8/17437

Published Date: 11 August 2023

Abstract

The COVID-19 pandemic, which hit all business sectors, drives organisations and business units to conduct various sustainable strategies to survive. Entering post-pandemic, financial and non-financial sectors keep adapting to technology, including Islamic Microfinance. Strategic role of Islamic Microfinance encourages the government to issue various policies to help Islamic Microfinance remain sustainable. One of the recommendations to maintain sustainability is empowering Islamic Microfinance infrastructure based on digitalised Accounting Information Systems or Computerized Accounting Information Systems (CAIS). CAIS's effectiveness in some research findings makes Islamic Microfinance independent and financially sustainable, encouraging reducing transaction costs and driving service quality toward target customers. Therefore, CAIS effectiveness in the digital and globalisation era requires information technology based on company characteristics to lead, govern, and judge CAIS operation, which consists of digital-based information quality, system quality, and service quality to achieve Islamic Microfinance sustainability.

Keywords: Computerised Accounting Information Systems, Islamic Microfinance, Digital-based Information Quality, System Quality, Service Quality

Introduction

To improve society's access to information, Islamic finance must evolve and thrive via technology-based service platforms (Iswanaji, 2019). Islamic microfinance leverages information technology to give manager-requested data for decision-making and member monitoring (Wibowo, 2020). Digital service and operational systems will speed up Islamic microfinance institutions (KNEKS, 2019). By 2025, 89% of Indonesians are predicted to use digital technologies like the Internet. Islamic Microfinance Institutions can improve technology-based services and operations as digital technology grows. The Integrated Micro

Banking System (IMBX) helps over 2,000 Islamic Microfinance Institutions (BMT) operate. The application digitises customer service, tellers, financing deposits, accounting, and financial reporting. Mobile-BMT, the subsequent digitisation, lets BMT members view balances, savings, and transaction histories without visiting BMT. Organisations' IT development drives AIS use (Teru et al., 2017).

The Accounting Information System (AIS), part of the MIS, collects, records, saves, and processes data for decision-makers (Puasa et al., 2019; Romney et al., 2013). The AIS affects controlling, budget planning, transaction, and management reporting (Kouser et al., 2011). It helps manage and evaluate performance (Ahmad & Al-Shbiel, 2019). Islamic microfinance relies on sustainability to become financially independent, reduce transaction costs, and improve service to target clients, especially low-income people. According to Zeller & Meyer, (2002), a sustainable microfinance institution must overcome poverty in quantity and quality, be financially sustainable in the short and long term, and improve customer life.

Transformation of Computerised Accounting Information System

The primary goals of AIS are to assist with organisational management and administration, facilitate informed decision-making, and provide practical tools for day-to-day business. There are six components of AIS based on (Romney et al., 2018), namely

- i. **People:** It includes the individuals in charge of operating, maintaining, and carrying out the system. A technically knowledgeable and skilled person is needed to carry out accounting activities, though, given the characteristics of AIS and its complexity, it engages in specific system functions. It is significant because most data the system uses comes from other organisational departments or divisions. However, the people from the external accounting department who used AIS must understand the ability and functional role played by AIS in the organisation.
- ii. **Procedure and instruction:** To ensure the system produces a report and the associated data and instructions are followed, the procedures and user instructions, such as data collection, reporting, and data archive, are important. These guidelines and procedures are crucial to maintaining the organisation's data quality and integrity.
- iii. **Data:** Related to the collected data as an input from the organisational area and other external parties, the data consists of transactions and possible or unprocessed information depending on the system logic and user requirements.
- iv. **Software:** Software applications aid in the processing and collecting of data and the decision-making process by taking instructions based on logic and using criteria or other methods. For instance, the software's instructions will lead the system to perform a specific function or complete several daily, weekly, or monthly duties. The three (3) groups of accounting software, which have been created over many years, can be classified in Table 1 (Podsakoff et al., 2012).
- v. **Information technology infrastructure:** Mobile phones, networks, Internet-of-Things (IoT), printing, scanning, and other devices can be a part of the infrastructure that supports the application, software, and other systems. The infrastructure supporting these devices and platforms facilitates collecting and distributing data to the user. The device and infrastructure are a fundamental part of integrating and supporting AIS in giving data punctually, quickly, and accurately and reporting to internal and external stakeholders.
- vi. **Internal control:** For AIS to maintain its integrity, security, and exposure to fraudulent

activities, a system-based control, either manually or automatically, is crucial. The information must be safeguarded. User access, such as task separation, should be applied to allow the user to access specific system functions conducted by delegation or authority (Hayale & Khadra, 2008).

Table 1

Evolution of Accounting Software Generation

No	Period	Purpose
1	1990s	It is commonly associated with the "Window Age," this era was renowned as the period in which accounting information system utilisations grew popular. Characteristics were observed by their solidity but centred surrounding everyday accounting activities.
2	2000s	The system was initially filled with complex accounting information system activities and functions, including the capability to incorporate other utilisations (i.e., SaaS) and manage vast amounts of data together by examining other documents and utilisation.
3	2010 onwards	This was observed as the initiation of handheld mobile computing systems and other gadgets connected to the Internet and other telecommunication platforms. This era, which is still developing, has allowed the capability to run financial transactions and reporting simultaneously with an interface dashboard instrument (such as GUI).

Sources: (Phillips, 2012)

Preserving information quality is the most crucial thing (Jawabreh & Alrabei, 2012). Therefore, the quality and integrity of information are essential. It is especially relevant in a doubtful situation, in which interpreting the information correctly can produce the right decision. Gordon & Miller (1976) argue that AIS usage depends on the system's ability to give information to fulfil user requirements. Meanwhile, Shim (2000) mentions that the AIS role repeatedly automates actions or activities, including posting transactions. The electronic format of information allows quick and easy access to produce financial reports such as financial and transaction reports, system queries, and others immediately to the frontline management and staff in the organisation.

Accounting has become the agent of change to repair Islamic Microfinance management. A study by Muhammad & Kusuma (2014) reveals that AIS can ease the information system framework arrangement for Islamic Microfinance to support the system's operation and development, which is technically cheaper, more efficient, and easily implemented. Iswanaji (2019) investigates AIS in the banking sector of Islamic Microfinance, in which AIS implementation in Indonesian can positively impact the increasing service of Islamic Microfinance either individually by an accountant or by an organisation.

Amran et al (2014) state that implementing Mobile Banking to facilitate AIS based on its ability can broaden the financial service access in Islamic Microfinance because AIS is a device to give information the manager requires to make decisions. In addition, AIS can be used to increase the information quality allowing effective decision-making. It ensures that the information can be reliable, proper, accurate, and suitable to make a rational decision to contribute to the organisation's goal and target achievement (Ghasemi et al., 2011).

Information users include management, employees, government institutions, customers, suppliers, and creditors (Cardinaels & van Veen-Dirks, 2010).

The information's quality is an inherent property that it possesses (Brynjolfsson & McElheran, 2016). If the data is relevant and valuable for making decisions, it can be displayed and become of high quality (Haag & Cummings, 2009). High-quality information can be considered the outcome of information with a trait, attribute, or quality that increases its value (O'Brien & Marakas, 2010). Aligned with that, Stair & Reynolds (2010) express that qualified information should be accurate, reliable, updated, complete, and has a proper format. For instance, AIS produces financial reports based on the information to be used by various stakeholders for decision-making (Susanto, 2015). The primary purpose of information systems in this context is contributing to organisations to operate effectively and efficiently (Bagranoff, 2010). In other words, evaluating how the organisation is conducted in the past can help managers make the right decision and alter the potential operation. The information in use can determine a prospective pattern helpful in projecting the company's potential financial performance from historical financial analytical information. Internal and external consumers might benefit from gathering and examining different types of historical financial data. According to Cardinaels & Van Veen-Dirks (2010), the organisation should comprehend the financial and non-financial elements in decision-making.

AIS can give the correct information needed to make decisions to ensure the effectiveness and efficiency of the organisation. The above literature explains AIS's significant role in supporting decision-making, specifically in Islamic Microfinance. AIS aids managerial decision-making by utilising the data produced by the system. Therefore, the primary purpose of AIS is to fulfil the requirement of managers and decision-makers in the Islamic Microfinance Institute.

Computerised Accounting Information System (CAIS)

CAIS is an AIS transformation used to record the company's economic transactions. CAIS was created due to various advantages to increase the company's capacity in achieving the business objective and strategy of the company, namely: the speed in processing accounting information, the timeliness required, the quick data analysis, the accuracy of financial reporting, and the effective and efficient processing of accounting information (Abdulle et al., 2019). AIS, which uses a computer software system, functions to process the duty of an accounting information system developed to ease decision-making (Abdulle et al., 2019)

Technological advancement has replaced the manual accounting information system with the computerised one. Early in the 1950s, when the first commercial computer was made accessible, a revolution in accounting information systems began (Nash, 1989). The computerised accounting information system enables the company to collect data, process, and generate reports quickly. Besides, the possibility of an error is smaller when the data is processed by computer. According to Dalci & Tanis (2013), the stages of a computerised accounting information system consists of

- i. Input data function: In the manual accounting information system, the data can be captured by source document, processed directly in the journal, and moved to the account ledger. On the other hand, in a computerised accounting information system, after the data is taken, that data should be changed into a readable form by the machine. Besides the data scanned into the computer, there is a database containing data stored for future processing. A database includes information about an entity. The

- entity stored information. For instance, the current customer information is stored in the database. In this regard, the customer represents the entity. The customer information, such as account numbers, credit limits, and current balances, can be stored in the database.
- ii. Data processing: Data processing occurs after data collection and computer inclusion. Data maintenance is the most widespread data processing activity. Data maintenance is a transaction that is used to update the data that has been stored. For instance, the data is stored in the computer when a sales transaction occurs. In response, the computer immediately updates the files for sales and receivables.
 - iii. Information output: The data is inputted, processed, and information output is generated to satisfy customer needs. Three formats are available for the information: documents, reports, and responses to inquiries. The document is the transaction record or business information, such as an invoice. These documents are printable. Additionally, they can be kept in the computer database as digital images. By entering the required orders into the computer, the financial report generated by the computerised accounting information system can be prepared each time.

The previous literature emphasises that many SMEs experience growing difficulties in financial reporting which can cause failure and bookkeeping problems (Abdulle et al., 2019). In this regard, a financial management requirement is emphasised by Gorton (1999). Abdulle et al (2019) analysed the accounting information system in Australian wine SME organisations and concluded that accounting information is crucial for the management of SMEs. As a result of the ongoing information revolution, small businesses must use technology. In addition, Grande et al (2011) also looked at the effect of accounting information systems on Spain's SMEs and discovered that the use of CAIS, which they defined as AIS in their study, is crucial for growing markets, improving sales cost management, and enhancing the management relationship between a company and its clients and suppliers.

In other research, Saira et al (2010) investigated "information systems and Malaysia's SME performances using panel data." They gathered financial statement data for five years commencing in 2004 and ending in 2008, using 205 enterprises as samples. According to the results of their regression analysis, SMEs that implemented AIS performed much better than those that did not.

The primary goal of an Accounting Information System is to provide information for internal and external parties to formulate the organisational strategic decision (Romney et al., 2018). AIS is a system to process economic transactions from journaling, posting, and financial reporting processes, which can be optimised by the digitalised system (Romney et al., 2018). A Management Information System (MIS) part that uses financial data is an accounting information system. Information from AIS is a type of fundamental knowledge for effective management systems. Most large organisations integrate MIS and AIS functions to achieve efficiency.

Alnajjar (2017) considers AIS necessary to ensure performance and achieve organisational goals. The system is an integrated entity and is directed to achieve the entity's goals (Kouser et al., 2011). Chill (2010) defines AIS as a subsystem group connected or related to each other and integrated to obtain organisational goals. Makhadmeh (2007) describes AIS as a group of elements consisting of individual and financial information to produce a financial report to stakeholders and can be merged with a management controlling system. It is a very

beneficial feature to adopt AIS to formulate the company's long-term strategy (Fitriyani, 2019). AIS consists of three main subsystems as follows (Romney et al., 2018)

- i. Transaction Processing System (TPS): Computerised information systems produce financial information after routinely processing enormous amounts of business transaction data.
- ii. General Ledger/Financial Reporting System (GL/FRS): General ledger system (GLS) as a centre connects to other systems in the company through information flow. The transaction cycle processes individual events recorded in a specific journal and a subsidiary ledger account. The transaction summary flows into GLS and becomes an input source for the management reporting system (MRS) and financial reporting system (FRS).
- iii. Management Reporting System (MRS): The Management Reporting System (MRS) offers the data management needs to plan and monitor business activities. Management Reporting System obtains financial and non-financial data from operational activities and traditional general ledger data. Therefore, MRS can be an individual system or integrated with other AIS applications such as order entry or procurement systems. MRS application is free or discretionary; either the application or the content, time, or information format produced is not specified or required by the authority board.

The year 1970s was the early history of accounting information system development designed for payroll function, an in-house development, as a legacy and expensive system that was difficult to develop and maintain. As a result, many professionals prefer manual methods over computer-based methods. The current development of accounting information systems is often sold as a software package builder from prominent vendors such as Microsoft, Sage Group, SAP AG/SAP and Oracle Corporation/Oracle, configured and adapted to suit organisational business processes. Small-Medium Enterprises (SMEs) often utilise a lower-cost accounting software package such as MYOB and QuickBooks. Huge organisations will often prefer an enterprise resource planning (ERP) system. As connectivity and consolidation requirements among other business systems keep increasing, the accounting information system is merged with a more extensive, more systematic system known as ERP. Previously, using a separate application to manage various business functions, the organisation should develop a complex interface for the system to communicate with each other.

Through ERP, an accounting information system is established as an integrated module into a chain of applications covering manufacturing, supply chain, and human resources. This integrated module can access similar data and conduct a complex business process for Small-Medium Enterprises and large organisations at a lower cost. By accounting information system implementation, many companies have eliminated lower expertise, transactional role, and accounting operation.

Hall (2016) defines AIS as an automated computerised system that can quickly process financial and non-financial transactions. Contrarily, a financial transaction can be considered a situation in which organisational equity and asset influence the economy. A financial transaction is an activity which has an economic influence on the company, for example, trading transaction and covers missing asset because the disaster or other events is measured by money. The financial transaction covers a chronological, systematic, and manageable

recording causing property, debt, and capital change. Financial transaction obligates the company to conduct financial transaction recording responsibility to the stakeholder parties. Meanwhile, non-financial transactions do not influence organisational equity or asset and do not correlate legally to process or report, for example, upgrading the vendors' list to include new suppliers.

AIS implementation in the organisation is significant in producing beneficial information for decision-making. Various decisions created based on AIS produce organisational and economic advantages, which influence human resources management (El-Dalabeeh & Al-Zeaud, 2012). AIS integration with other systems in the entire organisation also assists in fulfilling the goals and other targets implemented by various parties, simplifying and rationalising the decision-making; consequently, it can increase overall organisational performance. Therefore, it can be concluded that AIS is a significant factor contributing to the decision-making related to organisational efficiency in order to keep sustained (Soudani, 2012).

AIS Success and Challenges

Most of the literature related to the accounting domains argues that effectivity and efficiency of AIS represent its success (Susanto & Meiryani, 2019). For instance, one study in this area examines the system characteristics under distinct strategic and tactical priorities to learn about the role played by AIS in strategic management (Mancini et al., 2013). The design of AIS can influence organisational performance (Hosain, 2019). It is significant because AIS combines technic, control, and method to allow internal and external reporting, financial reporting, and preparing the analysis, all of which impact organisational performance in several ways or forms (Grande et al., 2011). Meanwhile, other elements of AIS have been revealed by Alnajjar (2017) using a model to measure AIS based on the point of view of management performance and organisational performance. Based on the point of view of technology advancement, Paredes & Wheatley (2018) express that AIS helps influence business processes positively, which afterwards influences business performance. The introduction to technological advancement has resulted in a high speedy capacity and reliable information. As a result, AIS gives highly relevant and reliable information which will contribute to the business performance effectively and efficiently.

However, Grande et al. (2011) contend that AIS can boost organisational productivity when viewed as a cutting-edge technology innovation. It helps increase the relationship between user and supplier, process tax revenue, and increase overall financial administration management and accounting. Therefore, Munaf et al (2019) express that AIS's ability to leverage the technology adoption will increase the company's financial or non-financially productivity. Based on the research result on the significant relationship between AIS usage and a company's productivity. According to Diamond & Khemani (2006), AIS can be helpful when the accounting system and the budget it supports are reliable and well-managed. Based on Chang & King (2005), in introducing AIS its usage, its efficiency can positively impact the organisation, decrease product and service costs, and eventually increase overall organisational productivity.

Romney et al (2018) mention in their study that successful AIS implementation can help motivate and chase business operational maintenance and benefit the decision-making process at the company's level. From a different perspective, another study (Susanto, 2015) claims that the success of AIS implementation is an increase in the quality and speed of the

information utilised in decision-making and an improvement in the quality of relationships among employees because this relationship can set overall business performance. Consequently, if the success is more prominent, the business's financial performance will also be more extensive toward the margin profit and return on asset (Agung, 2015).

Information systems' primary function is to support decision-making by users which can increase AIS usage effectively. As a result, it is possible to say that AIS is a method or tool for distributing financial data that impacts financial performance through several factors, such as system usage and efficiency, benefitting employees and ensuring qualified decision-making (Awosejo et al., 2013). Qudah (2011) expresses that there is a beneficial influence related to AIS usage in Jordanian banks, in which the system's generated data aids in operational and strategic decision-making processes. Table 2 gives a summary review related to the influence of information systems on decision-making.

Table 2

Previous Study of Computerised Accounting Information System

No.	Author	Title	Result
1	Puasa et al (2019)	Perceptions of Accounting Information System Effectiveness: Preliminary Findings from the Malaysian Federal Government	The efficiency of AIS as perceived by its users is clarified by this study.
2	Zuriati et al (2017)	A Survey on the Impact of Accounting Information Systems on Task Efficiency: Evidence from Malaysian Public Sector Agencies	The current AIS in use considerably impacts how well these employees do their duties concerning the agencies' standard procedures for budgeting, financial reporting, auditing, and controlling.
3	Susanto & Meiryani (2019)	The Impact of Environmental Accounting Information Systems on Firm Performance and Environmental Performance: A Case of Small and Medium Enterprises in Indonesia	Aligning environmental accounting information systems considerably impacts business success and environmental performance in Indonesia's Small and Medium Enterprises.
4	Shagari et al (2017)	Accounting Information Systems Effectiveness: Evidence from the Nigerian Banking Sector	The study found that in the context of Nigerian banks, the effectiveness of accounting information systems is significantly influenced by information and system quality.
5	Hosain (2019)	The Impact of Accounting Information	The accounting information system substantially influences the

No.	Author	Title	Result
6	Ernawatiningsih & Kepramareni (2019)	Systems on Organizational Performance: Evidence from Bangladeshi Small & Medium Enterprises Effectiveness of Accounting Information Systems and Affecting Factors	profitability of SMEs in Bangladesh when measured by accounting knowledge, record-keeping performance, and managerial support. The effectiveness of accounting information systems at PT. Incentives, education degrees, experience, and abilities positively impact Angkasa Pura Logistics Indonesia.
7	Ganyam & Ivungu (2019)	Effect of Accounting Information Systems on Financial Performance of Firms: A Review of Literature	One of the most noticeable effects of accounting information systems on businesses is the information technology (IT) component, making it easier to manage, record, and publish financial and accounting data.
8	Shuhidan (2020)	Accounting Information System as Determinant of Cost Management Efficiency among Managers in Malaysian Higher Education Institutions	Accounting information system plays a significant role in assisting decision-making with the presence of working experience and perceived usefulness in Malaysian Higher Education Institutions.
9	Al-Okaily et al (2020)	Accounting Information System Effectiveness from an Organisational Perspective	In the context of listed Jordanian enterprises, information quality, service quality, and training quality contributed significantly to organisational advantage. However, system quality had no significant influence on organisational benefit.
10	Ologhodo et al (2020)	Impact of Accounting Information Systems on Operational Performance of Nigeria Small Scale Business Enterprises	The effectiveness of small firms in Nigerian small-scale commercial enterprises is greatly influenced by their operational performance, making a proper accounting system of record keeping essential.
11	Mukred & Yusof (2018)	The DeLone-McLean Information System Success Model for Electronic Records Management System Adoption in Higher	The results demonstrate a substantial association between system, information, and service quality and the intention to adopt an electronic records management system in Yemen's higher professional education institutions.

No.	Author	Title	Result
12	Pirayesh et al (2018)	Professional Education Institutions of Yemen Examining the Effect of Computerised Accounting Information Systems on Managers' Decision-Making Process	Computerised accounting information systems improve the accuracy of the data, which in turn, simplifies managerial decision-making.

Proposed Indicators of Computerised Accounting Information System in Islamic Microfinance

Several indicators can be considered when assessing the performance and effectiveness of a computerised accounting information system (CAIS) in the context of Islamic microfinance. These indicators should align with the principles of Islamic finance while also focusing on the efficiency and reliability of the system. Based on prior studies (Ali & Money, 2005; Nelson et al., 2005; Shuhidan, 2020; Tam & Oliveira, 2016) which were modified for Islamic Microfinance, here are some proposed indicators:

1. Computerised Information Quality

Computerised information quality refers to the characteristics and attributes of the information processed, stored, and disseminated through computerised systems. It encompasses the accuracy, format, completeness, and timeliness of information.

i. Accuracy

- a) CAIS implementation in Islamic Microfinance Institutions (BMT) generates accurate information.
- b) The information obtained by CAIS users contains a few mistakes.
- c) The data offered by CAIS is correct.
- d) CAIS in Islamic Microfinance Institution (BMT) produces information that can be traced to the transaction receipt and verified.

ii. Format

- a) CAIS's information is structured correctly.
- b) CAIS's information is properly set out.
- c) CAIS's information is displayed on the screen.

iii. Completeness

- a) CAIS in Islamic Microfinance Institution (BMT) provides users with complete data.
- b) CAIS provides comprehensive data.
- c) CAIS supplies users with all the required data.

iv. Timeliness

- a) CAIS gives users access to the most current data.
- b) CAIS generates the most recent data.
- c) CAIS consistently provides up-to-date information.

- d) Overall, the user would award excellent grades for the CAIS information.
- e) The user would rate the quality of the information provided by CAIS as excellent.
- f) CAIS gives users access to high-quality information.

2. *Computerised System Quality*

Computerised system quality refers to the characteristics and attributes of a computerised system that determine its overall performance, reliability and effectiveness. It encompasses various aspects of the system, including its design, functionality, usability, security, and maintainability. Evaluating and ensuring high-quality computerised systems is essential for organisations to achieve their goals and meet user needs. Here are some critical aspects of computerised system quality

i. Flexibility

- a) CAIS can be modified to accommodate several needs.
- b) CAIS can quickly adapt to changing requirements or circumstances.
- c) CAIS is adaptable in meeting needs as they develop.

ii. Accessibility

- a) Users can easily obtain information.
- b) CAIS facilitates access to information.
- c) Information is made accessible through CAIS.

iii. Response Time

- a) CAIS's response time to the user's request is too long.
- b) CAIS delivers information promptly.
- c) CAIS responds to user inquiries rapidly.

iv. Easiness in usag

- a) Using CAIS is simple.
- b) Learning CAIS is simple.
- c) CAIS is user-friendly.
- d) Interacting with CAIS does not require much mental effort.
- e) It is easy to get CAIS to do what the user wants.

v. Integration

- a) CAIS successfully integrates data from several Islamic Microfinance sectors.
- b) CAIS compiles data that came from several Islamic Microfinance sources.
- c) CAIS successfully combines data from many Islamic Microfinance sectors.
- d) The user would give CAIS a high rating for system quality.
- e) CAIS is excellent.

vi. Reliability

- a) CAIS operates reliably.
- b) CAIS performs consistently.
- c) CAIS operates dependably.

3. Computerised Service Quality

Computerised service quality refers to the level of excellence and satisfaction experienced by users or customers when interacting with computerised or technology-driven services. It evaluates the performance, reliability, responsiveness, and overall user experience of computerised systems or platforms delivering services. Listed below are critical aspects of computerised service quality.

- i. Responsiveness:
 - a) Responsible service professionals are willing to assist whenever a user wants assistance with CAIS.
 - b) The responsible service providers give individual attention when the user experiences a problem with CAIS.
 - c) The responsible service professionals deliver CAIS-related services on time.
 - d) The responsible service workers are knowledgeable enough to respond to an inquiry about CAIS.

- ii. Assurance
 - a) To help the Islamic Microfinance task, CAIS makes the user feel safe with the transaction.
 - b) To help the task in Islamic Microfinance, service personnel of CAIS are consistently polite with users.
 - c) Service Personnel of CAIS have the knowledge to do their job.

- iii. Empathy
 - a) CAIS services give users individual attention.
 - b) CAIS services have convenient operating hours.
 - c) CAIS services have the users' best interests at heart.

Conclusions

The COVID-19 pandemic encourages technology integration and accounting information system in all business sectors. It accelerates automation, business operation integration, efficiency, competitive advantage, and sustainability. This review focuses on implementing Computerized Accounting Information System (CAIS) in Indonesian Islamic Microfinance. The CAIS is a comprehensive system created to provide valuable decision-making data. One of the major benefits of a Computerised Accounting Information System (CAIS) for businesses is the information technology (IT) component, which makes it easier for businesses to track, record, and produce financial and accounting reports. Computer systems that swiftly present individual transactions into financial reports have replaced paper ledgers, manual spreadsheets, and handwritten financial statements. This study proposes AIS measurement by adopting computerisation in information, system, and service quality. Computerised information quality indicators include accuracy, format, completeness, and currency. Computerised system quality indicators include flexibility, accessibility, response time, usage ease, integration, and reliability. Moreover, computerised service quality indicators include responsiveness, assurance, and empathy. Future research can further analyse CAIS's impact on cost efficiency and sustainability performance.

Theoretical Contribution

Contribution of this study provided literature contribution in four aspects. The first contribution was related to CAIS's influence toward organizational changes, namely implementing Islamic Microfinance's digital reform strategy from a TTF perspective. CAIS should support resources and service plans by providing information for decision-making. Implementing a high-quality CAIS will rapidly strengthen the capacities of Islamic Microfinance's management and board of committees in their decision-making responsibilities towards Islamic sustainable performance. CAIS will benefit Islamic Microfinance by improving business, social, environmental, and Sharia compliance performances. Various studies explored CAIS's influence on organizational changes (Dagiliene & Štutienė, 2019; Jouti, 2019; Shagari et al., 2017). However, this study extended the work by analyzing how CAIS could help preserve the sustainability process of Islamic Microfinance from a TTF perspective. The focus of this study centred on how CAIS information and system qualities became the antecedent factors that positively influenced TTF and supported the digital reform strategy of Islamic Microfinance. Furthermore, this study provided a unique analytical strategy which theoretically adds literature related to CAIS and organizational sustainability.

References

- Abdulle, A. S. S., Zainol, Z., & Ahmad Mutalib, H. (2019). Impact of computerized accounting information system on small and medium enterprises in Mogadishu, Somalia: The balanced scorecard perspectives. *International Journal of Engineering and Advanced Technology*, 8(5), 159–165. <https://doi.org/10.35940/ijeat.E1023.0585C19>
- Agung, M. (2015). Accounting Information System and improvement of financial reporting. *International Journal of Recent Advances in Multidisciplinary Research*, 2(11), 950–957.
- Ahmad, M. A., & Al-Shbiel, S. O. (2019). The Effect of Accounting Information System on Organizational Performance in Jordanian Industrial SMEs: The Mediating Role of Knowledge Management. *International Journal of Business and Social Science*, 10(3), 99–104. <https://doi.org/10.30845/ijbss.v10n3p9>
- Al-Okaily, A., Al-Okaily, M., Shiyyab, F., & Masadah, W. (2020). Accounting information system effectiveness from an organizational perspective. *Management Science Letters*, 10(16), 3991–4000. <https://doi.org/10.5267/j.msl.2020.7.010>
- Ali, A. S. B., & Money, W. H. (2005). A study of project management system acceptance. *Proceedings of the Annual Hawaii International Conference on System Sciences*, 00(C), 234. <https://doi.org/10.1109/hicss.2005.53>
- Alnajjar, M. I. M. (2017). Impact of Accounting Information System on Organizational Performance: A Study of SMEs in the UAE. *Global Review of Accounting and Finance*, 8, 20–38. <https://doi.org/10.21102/graf.2017.09.82.02>
- Amran, A. M., Rahman, R. A., Yusof, S. N. S., & Mohamed, I. S. (2014). The Current Practice of Islamic Microfinance Institutions' Accounting Information System via the Implementation of Mobile Banking. *Procedia - Social and Behavioral Sciences*, 145, 81–87. <https://doi.org/10.1016/j.sbspro.2014.06.013>
- Awosejo, O. J., Kekwaletswe, R. M., Pretorius, P., & Zuva, T. (2013). The Effect of Accounting Information Systems in Accounting. *International Journal of Advanced Computer Research*, 1(2), 21–31.
- Bagranoff, N. A. (2010). *Core concepts of accounting information systems / Nancy A. Bagranoff, Mark G. Simkin, Carolyn Strand Norman*. Hoboken, NJ : John Wiley and Sons,

- c2010.
- Brynjolfsson, E., & McElheran, K. (2016). The rapid adoption of data-driven decision-making. *American Economic Review*, 106(5), 133–139. <https://doi.org/10.1257/aer.p20161016>
- Cardinaels, E., & van Veen-Dirks, P. M. G. (2010). Financial versus non-financial information: The impact of information organization and presentation in a Balanced Scorecard. *Accounting, Organizations and Society*, 35(6), 565–578. <https://doi.org/10.1016/j.aos.2010.05.003>
- Chang, J. C. J., & King, W. R. (2005). Measuring the performance of information systems: A functional scorecard. *Journal of Management Information Systems*, 22(1), 85–115. <https://doi.org/10.1080/07421222.2003.11045833>
- Chill, E. (2010). *The effectiveness of accounting information system in Iraqi private commercial banks from the management perspective*. Middle East University.
- Dagilienne, L., & Šutiene, K. (2019). Corporate sustainability accounting information systems: a contingency-based approach. *Sustainability Accounting, Management and Policy Journal*, 10(2), 260–289. <https://doi.org/10.1108/SAMPJ-07-2018-0200>
- Dalci, I., & Tanis, N. V. (2013). Benefits Of Computerized Accounting Information Systems On The JIT Production Systems. *Cukurova Universitesi Sosyal Bilimler Enstitüsü Dergisi*, 13(1), 45–62.
- Diamond, J., & Khemani, P. (2006). Introducing Financial Management Information Systems in Developing Countries. *OECD Journal on Budgeting*, 5(3), 97–132. <https://doi.org/10.1787/budget-v5-art20-en>
- El-Dalabeeh, A. R. K., & Al-Zeaud, H. (2012). Accounting Information Systems and Their Role in the Measurement and Cost Thrifiting in Public Shareholding Industrial Companies in Jordan. *International Journal of Business and Management*, 7(12). <https://doi.org/10.5539/ijbm.v7n12p97>
- Ernawatiningsih, N. P. L., & Kepramareni, P. (2019). Effectiveness of Accounting Information Systems and the Affecting Factors. *International Journal of Applied Business and International Management*, 4(2), 33–40. <https://doi.org/10.32535/ijabim.v4i2.564>
- Fitriyani, F. Y. (2019). Concept of Accounting Information System and Management Control System to Improve Company Performance. *Journal of Accounting and Strategic Finance*, 2(1), 82–92. <https://doi.org/10.33005/jasf.v2i1.37>
- Ganyam, A. I., & Ivungu, J. A. (2019). Effect of accounting information System on financial performance of firms: A review of literature. *Journal of Business and Management*, 21(5), 39–49. <https://doi.org/10.9790/487X-2105073949>
- Ghasemi, M., Shafeiepour, V., Aslani, M., & Barvayeh, E. (2011). The impact of information technology (it) on modern accounting systems. *Procedia - Social and Behavioral Sciences*, 28, 112–116. <https://doi.org/10.1016/j.sbspro.2011.11.023>
- Gordon, L. A., & Miller, D. (1976). A contingency framework for the design of accounting information systems. *Accounting, Organizations and Society*, 1(1), 59–69. [https://doi.org/10.1016/0361-3682\(76\)90007-6](https://doi.org/10.1016/0361-3682(76)90007-6)
- Gorton, M. (1999). *Use of financial management techniques in the u.k.-based small and medium sized enterprises : empirical reseach findings*.
- Grande, E. U., Estébanez, R. P., & Colomina, C. M. (2011). The impact of accounting information systems (AIS) on performance measures: Empirical evidence in spanish SMEs. *International Journal of Digital Accounting Research*, 11(February), 25–43. https://doi.org/10.4192/1577-8517-v11_2

- Haag, S., & Cummings, M. (2009). *Management Information Systems for the Information Age Eighth (8th)*. 8th Edition.
- Hall, J. A. (2016). *Accounting Information Systems* (9th ed). Boston: Cengage Learning.
- Hayale, T. H., & Khadra, H. A. A. (2008). Investigating Perceived Security Threats of Computerized Accounting Information Systems An Empirical Research applied on Jordanian banking sector. *Journal of Economic and Administrative Science*, 24(1), 41–67. <https://doi.org/https://doi.org/10.1108/10264116200800003>
- Hosain, M. S. (2019). The Impact of Accounting Information System on Organizational Performance: Evidence from Bangladeshi Small & Medium Enterprises. *Journal of Asian Business Strategy*, 9(2), 133–147. <https://doi.org/10.18488/journal.1006.2019.92.133.147>
- Iswanaji, C. (2019). Analysis of Accounting Information System Using Hot Fit Model Method in Indonesia Islamic Micro Financial Institutions. *Applied Finance and Accounting*, 5(2), 1–9. <https://doi.org/10.11114/afa.v5i2.4172>
- Jawabreh, O. A., & Alrabei, A. M. (2012). The Impact of Accounting Information System in Planning, Controlling and Decision-Making Processes in Jodhpur Hotels. *Asian Journal of Finance & Accounting*, 4(1). <https://doi.org/10.5296/ajfa.v4i1.1435>
- Jouti, A. T. (2019). An integrated approach for building sustainable Islamic social finance ecosystems. *ISRA International Journal of Islamic Finance*, 11(2), 246–266. <https://doi.org/10.1108/IJIF-10-2018-0118>
- KNEKS. (2019). *Sharing Platform Keuangan Mikro Syariah Berbasis Baitul Maal Wat Tamwil (BMT)*. Kneks. <https://kneks.go.id/isuutama/8/sharing-platform-keuangan-mikro-syariah-berbasis-baitul-maal-wat-tamwil-bmt>
- Kouser, R., Rana, G. e, & Shahzad, F. A. (2011). Determinants of AIS Effectiveness: Assessment thereof in Pakistan. *International Journal of Contemporary Business Studies*, 2(12), 6–21.
- Makhadmeh, A. (2007). impact of accounting information systems on investment decisions of manufacturing organizations in Jordan, Applied Study on Jordanian Companies. *Al-Manarah Journa*, 13(2).
- Mancini, D., Vaassen, E. H. J., & Dameri, R. P. (2013). *Accounting Information Systems for Decision Making*. Lecture Notes in Information Systems and Organisation, 3, 1–11.
- Muhammad, R., & Kusuma, H. (2014). The Need for Accounting Information System to Facilitate Partnership Contracts in Islamic Microfinance Institutions: The Case of Baitul Maal wa Tamwil (BMT) in Indonesia. *International Journal of Academic Research in Business and Social Sciences*, 4(7), 592–604. <https://doi.org/10.6007/ijarbss/v4-i7/1053>
- Mukred, M., & Yusof, Z. M. (2018). The delone–McLean information system success model for electronic records management system adoption in higher professional education institutions of Yemen. *Lecture Notes on Data Engineering and Communications Technologies*, 5, 812–823. https://doi.org/10.1007/978-3-319-59427-9_84
- Munaf, M. B., Faris, M. F., & Akbay, C. (2019). Factors Affecting of Using Accounting Information System (AIS) on the Firm’s Productivity: A Case Study Erbil, Iraq. *International Journal of Business and Social Science*, 10(11), 25–29. <https://doi.org/10.30845/ijbss.v10n11a4>
- Nash, J. F. (1989). *Accounting Information Systems* (2nd ed.). PWS-Kent Pub. Co; 2nd edition (January 1, 1989).
- Nelson, D. I., Nelson, R. Y., Concha-Barrientos, M., & Fingerhut, M. (2005). The global burden

- of occupational noise-induced hearing loss. *American Journal of Industrial Medicine*, 48(6), 446–458. <https://doi.org/10.1002/ajim.20223>
- O'Brien, J. A., & Marakas, G. M. (2010). *Management System Information*.
- Ologhodo, C., Oleghe, O., Ugbaje, O., Odianosen, R.-R., & Jos, O. L. (2020). Impact of Accounting Information Systems on Operational Performance of Nigeria Small Scale Business Enterprises. *International Journal of Creative Research Thoughts (IJCRT)*, June.
- Oz, E. (2009). *Management Information Systems*, (Sixth). Thomson Course Technology.
- Paredes, A. A. P., & Wheatley, C. M. (2018). Do Enterprise Resource Planning Systems (ERPs) Constrain Real Earnings Management? *Journal of Information Systems*, 32(3), 65–89. <https://doi.org/10.2308/isys-51760>
- Phillips, B. A. (2012). How the Cloud Will Change Accounting Forever. In *Docplayer.net* (pp. 1–39).
- Pirayesh, R., Forouzandeh, M., & Louie, S. I. (2018). Examining the effect of computerized accounting information system on managers' decision making process. *Revista Publicando*, 3(2), 68–82.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Puasa, S., Smith, J. A., & Amirul, S. M. (2019). Perceptions of Accounting Information System Effectiveness: Preliminary Findings from the Malaysian Federal Government. *Labuan E-Journal of Muamalat and Society Perceptions*, 1, 48–59.
- Qudah, A. (2011). The Impact of Accounting Information System on Effectiveness of Internal Control in Jordan. *Interdisciplinary Journal of Research in Contemporary Business*, 2, 365–377.
- Romney, M. B., Steinbart, P. J., Mula, J. M., McNamara, R., & Tonkin, T. (2013). *Accounting information systems* (J. Bamber, B. Chang, K. Pittard, & C. Layt (eds.); First Adap). Pearson Australia.
- Romney, M. B., Steinbart, P. J., Mula, J. M., McNamara, R., & Tonkin, T. (2018). *Accounting Information System (14th ed)*. Pearson Education.
- Saira, K., Zariyawati, M. A., & Annuar, M. N. (2010). Information System and Firms' Performance: The Case of Malaysian Small Medium Enterprises. *International Business Research*, 3(4). <https://doi.org/10.5539/ibr.v3n4p28>
- Shagari, S. L., Abdullah, A., & Saat, R. M. (2017). Accounting information systems effectiveness: Evidence from the Nigerian banking sector. *Interdisciplinary Journal of Information, Knowledge, and Management*, 12(December), 309–335. <https://doi.org/10.28945/3891>
- Shim, J. K. (2000). *Shim, J. K. (2000). Information systems and technology for the noninformation systems executive: an integrated resource management guide for the 21st century*. CRC Press. Taylor & Francis Inc.
- Shuhidan, S. M. (2020). Accounting Information System as Determinant of Cost Management Efficiency Among Managers in Malaysian Higher Education Institution. *Thesis*.
- Soudani, S. N. (2012). The Usefulness of an Accounting Information System for Effective Organizational Performance. *International Journal of Economics and Finance*, 4(5). <https://doi.org/10.5539/ijef.v4n5p136>
- Susanto, A. (2015). What factors influence the quality of accounting information? *International Journal of Applied Business and Economic Research*, 13(6), 3995–4014.

- Susanto, A., & Meiryani. (2019). The impact of environmental accounting information system alignment on firm performance and environmental performance: a case of small and medium enterprises of Indonesia. *International Journal of Energy Economics and Policy*, 9(2), 229–236. <https://doi.org/10.32479/ijeep.7511>
- Tam, C., & Oliveira, T. (2016). Understanding the impact of m-banking on individual performance: DeLone & McLean and TTF perspective. *Computers in Human Behavior*, 61, 233–244. <https://doi.org/10.1016/j.chb.2016.03.016>
- Teru, S. P., Idoku, I., & Ndeyati, J. T. (2017). A Review of the Impact of Accounting Information System for Effective Internal Control on Firm Performance. *Indian Journal of Finance and Banking*, 1(2), 52–59. <https://doi.org/10.46281/ijfb.v1i2.89>
- Wan Zakaria, W. Z., Ilias, N., & Wahab, N. (2017). International Review of Management and Marketing A Survey on the Impact of Accounting Information System on Tasks Efficiency: Evidence from Malaysian Public Sector Agencies. *International Review of Management and Marketing*, 7(1), 183–190.
- Wibowo, K. A. (2020). Analisis Perilaku Penerimaan Teknologi Para Pengelola BMT Anggota Perhimpunan BMT Indonesia. In *Orphanet Journal of Rare Diseases* (Vol. 21, Issue 1). Universitas Islam Indonesia.
- Zeller, M., & Meyer, R. L. (2002). *The Triangle of Microfinance: Financial Sustainability, Outreach, and Impact*. The Johns Hopkins University Press.