

First Stage Evaluation of ISSuFiRs: Partners' Financial Report Monitoring System by Islamic Financial Cooperatives (BMT) in Indonesia

Andri Martiana^{1,2*}, Ani Yunita³, Sobar M. Jauhari⁴, Salina Kassim⁵, Wing-Keung Wong⁶

¹PhD candidate in Institute of Islamic Banking and Finance, International Islamic University Malaysia

²Lecturer in Department of Sharia Economics Universitas Muhammadiyah Yogyakarta

³Lecturer in Department of Law Universitas Muhammadiyah Yogyakarta

⁴Lecturer in Department of Sharia Economics Universitas Muhammadiyah Yogyakarta

⁵Professor and Lecturer in Institute of Islamic Banking and Finance, International Islamic University Malaysia

⁶Leader of Research Team in Department of Finance, Fintech & Block chain, Big Data Research Center, Asian University, Taiwan

Abstract

Most MSMEs, especially micro-enterprises, do not have good business accounting records, making it difficult for owners/managers to measure the profitability of their companies. Internal control management has a significant influence in reducing fraud in Micro Enterprises. The more principles-based accounting rules, the shorter the delay in annual reporting disclosures. It is important to have a good financial reporting system that can be utilized by Micro Enterprises and its cooperation partners who provide and distribute funds. ISSuFiRs is a web-based application that enables Islamic Financial Cooperatives to track the business progress of their financing partners. With this application, micro businesses can disclose their business activities in these financial records in accordance with the SAK-ETAP national accounting standards. Reporting on this system includes balance sheet, profit and loss, cash flow, sources, use of ZIS funds, and comments on financial reports. This study presents a prototyping framework that enables user value perception, evaluation, and continuous improvement of ISSuFiR design quality through co-creation methods. It is hoped that a simple and effective financial reporting system, ISSuFiRs, will be useful for Micro Enterprises and Islamic Financial Cooperatives to monitor business developments. This study proposes a prototyping framework that enables the user's perception of value. The framework is expected to be implemented in industrial product service systems, evaluated and then concluded. This research is ongoing, with a new prototype being rebuilt based on the evaluation results. **Keywords:** *monitoring financial statement, micro-enterprise financing, ISLAMIC FINANCIAL COOPERATIVES, co-creation, design improvement*

*Corresponding author: andri.martiana@umy.ac.id

1 Introduction

The goal of smart society 5.0 is to create a digitally connected, knowledge-based society that places a high priority on social, environmental, and economic sustainability. It does this by merging AI with standardised procedures[1]. According to Sessa, the rapid transition into a smart society has facilitated the growth of smart facility ideas, making any endeavor viable within the news society through integration, inclusion, governance, and people[2]. Several major issues with financial reporting in SMEs were discovered based on the findings of the previous research's existing literature study [3]. Most SMEs do not keep adequate business accounting records, making it difficult for owner-managers to assess their company's success. Internal control management has a substantial impact on fraud reduction in SMEs. The lesser the delay in yearly reporting disclosure, the more principles-based accounting rules there are.

The use of technology by SMEs can increase the quantity of cross-border investment, alternative sources of funding, and loan costs. Organizations can do better reporting analysis based on massive volumes of data thanks to the development of information technology. The most important benefits, according to the manager, are greater staff productivity and asset management. A simple and effective financial reporting system that SMEs and the party directing money, particularly Islamic Financial Cooperatives, may use is required. This system is used for financial reporting by SMEs, and it is used by Islamic Financial Cooperatives to track the business progress of SME partners through financial reports. On the other hand, the system should adhere to the principles followed by Islamic Financial Cooperatives, which are founded on Islamic sharia norms.

As a response to this problem, ISSuFiRs is a web-based application to help Islamic Financial Cooperatives monitor the business development of its financing partners from Micro, Small and Medium Enterprises players through financial reports of the businesses they run. In this financial record, micro-enterprises report their business activities in accordance with the national accounting standard SAK-ETAP, which includes reports on balance sheets, profit and loss, cash flows, changes in capital or retained earnings, sources and uses of ZIS funds, and notes to financial statements [3].

ISSuFiRs is an innovative system idea. Solving obstacles and meeting the hurdles of adopting new technologies can improve the industry's adoption of ISSuFiRs. Increasing user perception of the value of ISSuFiRs (i.e., perceived value) through value visualization, minimizing risk in generating ISSuFiRs through review, and enhancing ISSuFiRs design quality through testing and refining are all significant solutions. Using a co-creation approach, this study proposes a prototyping framework that may concurrently enable user value perception, assessment, and design quality improvement of ISSuFiRs.

This study dedicated to demonstrating the existing prototype to the user, evaluating the existing system, and providing a new prototyping framework that may enable user value perception, assessment, and design quality improvement of ISSuFiRs utilizing a co-creation method. We want to create a better prototype framework since the activities of value visualization, assessment, and design improvement are all directly tied to prototyping in the ISSuFiRs design process. The term "value" refers to what consumers or users gain from ISSuFiRs that assist them satisfy their needs. The rest of this work will be structured as follows: Section 2 reviews related work in the field, Section 3 analyzes the theoretical problem and proposes our prototype framework, Section 4 introduces an example to demonstrate how the framework can be implemented in the real case of an industrial product service system in the relevant environment, and Section 5 presents the conclusion of the research.

2 Literature review

2.1 Micro-enterprise financing at Islamic Microfinance Institutions.

According to Pudjihardjo [4], Micro-enterprises are one of the key financial sectors in the economy. The micro-enterprise sector is challenging to expand since micro-entrepreneurs are often from lower socioeconomic levels. Furthermore, Pudjihardjo [4] explained that due to the limited access to finance that Micro, Small, and Medium Enterprises (MSMEs) must bank, Micro Finance Institutions (MFIs) have become a source of capital for their micro companies. These institutions are financial institutions that provide savings, credit, and other financial services to the poorer segments of society who do not have access to commercial banks. Microfinance institutions are also unique financial organizations designed to provide company development services and community empowerment, according to MFI Law No. 1 of 2013. Several research on MFIs have focused on evaluating their performance and long-term viability.

On the other study, Herianingrum, Shofawati, & Ratnasari [5] assert that micro-enterprises represent the vast majority of economic activity in Indonesia. Among the different issues encountered are capital, marketing, raw materials, energy, and transportation, as well as a range of other issues. However, the most significant issue encountered is a lack of micro capital if this assistance is provided by banks to very small micro-entrepreneurs. Herianingrum et al., [5] also explain that based on the findings, the establishment of Islamic microfinance institutions (IMI) is predicted to be the solution to the problem of a lack of capital in microenterprises. With a large-results system, microentrepreneurs' installments to IMI are not necessarily set, but can drive down suitable microenterprise profit growth. Ideally, IMI may also collect the Social Support, which is then distributed to micro-enterprises to fund capital injection. The Social Fund, which includes zakat, infaq, sadaqah, and waqaf, is more flexible in its distribution. However, in its execution, the feature of IMI performs both social and economic functions.

2.2 Micro-enterprise financial report

According to Afiah & Samsinar [6], financial reports are used to give details about a company's financial condition, cash flow, and financial performance to interested users. MSMEs must present financial records to apply for a bank loan. Financial reports are also utilized for company actors' yearly tax reporting. MSMEs have deficiencies in financial report preparation because generating financial reports to specified criteria is perceived as onerous and complicated by MSME players. Financial statements are reports that provide financial status, income, and equity changes, as well as notes on financial statements. They are created when a research adopts historical accounting policies or when financial statement items are restated. The Indonesian Institute of Accountants (2018: PSAK 1) defines a company's financial position as a collection of many factors, including its assets and liabilities [6]. Based on empirical study, Afiah & Samsinar [6] report that the majority of MSMEs in Makassar have not applied SAK EMKM in financial statement management. Only those in the medium group prepare financial statements, while there are still those that are not in conformity with SAKEMKM. The necessity for the Office of Cooperatives and UMKM to engage with associated organizations to assist the sustainability of MSMEs grows every year, as the number of these firms grows. This might be advantageous for the future continuance of their firm because it is quite useful in filing the taxation report.

The questionnaire also was delivered to 200 micro-enterprises in Pahang, Malaysia in Ahmad & Jamil [7] research. Based on the result of study show that nonfinancial performance

of micro-enterprises outperforms financial performance. Nonfinancial performance is measured using employee conditions, valued customers, and product development, whereas financial performance is based on predicted earnings, sales, and cash flow. On the other study, Suparti, Sunaryanto, Achadiyah, & Dudung Ma'rif Nuris [8], conduct a research on SMEs readiness in implementing financial accounting standard micro small and medium enterprises in Malang city, Indonesia. According to the study's conclusions, adequate human resources are the most significant component. SMEs are not yet aware of the significance of financial statements. SMEs continue to struggle with using the accrual basis in their accounting implementation.

2.3 Financing partner/member monitoring system at Islamic Financial Cooperatives

The potential that an MFI would not receive money from borrowers is a regular and often major vulnerability. The MFI wants a monitoring system that clearly and quickly reveals the problem of repayments so that staff and their managers can focus on delinquency before it worsens [9]. The incapacity to handle debts from inside is the root cause of loan repayment failure. Technology is critical in assisting Islamic Financial Cooperatives in managing its operations and minimizing business risk. The majority of Islamic Financial Cooperatives conducted on Bin Mat Isa et al., [10] research used IT to monitor customer payments, whereas Islamic Financial Cooperatives 5 still used traditional collecting methods. Islamic Financial Cooperatives 1 has created its own mobile application, which can be downloaded from the "Google Play store," and the App can regulate the movement of clients' accounts. Nur Yahya [11] develop online applications to allow users to take advantage of Islamic Financial Cooperatives. From the study, it results Application-Tech SMEs which is online-based integrated apps that provide an integrated system that connects the Islamic Financial Cooperatives and borrowers from pre-financing through funding completion or repayment. The primary goal will be to reduce the challenges associated with unfavorable selection of borrowers by reducing administrative expenses associated with the present screening procedure, to create economies of scale in the long term. This application is intended to aid in the promotion of Islamic Financial Cooperatives development by funding and recruiting members using a peer-to-peer lending method that is technology-based.

2.4 Research gap and purpose of this work

Users are expected to receive ISSuFiRs as part of efforts to improve their services, especially those related to financing cooperation with MSMEs, especially micro businesses. This user acceptance is highly dependent on the researcher's ability to: i) describe values to optimize user perception; ii) assess whether the offer satisfies users; and iii) continuously improve design quality. Based on the existing literature, it is hoped that a framework that includes all three characteristics at once can be useful for adding to the body of knowledge and in the future, it can also be used by industry as part of their work system.

3 Method

3.1 Position of the proposed prototyping framework in ISSuFiRs development process

Figure 1 is a figure based on the findings of our previous study. The picture shows the process of using the ISSuFiRs application. Our proposal in this research is to improve the existing

prototype through a process of demonstration, evaluation, and optimization of prototype development in the relevant environmental domain.

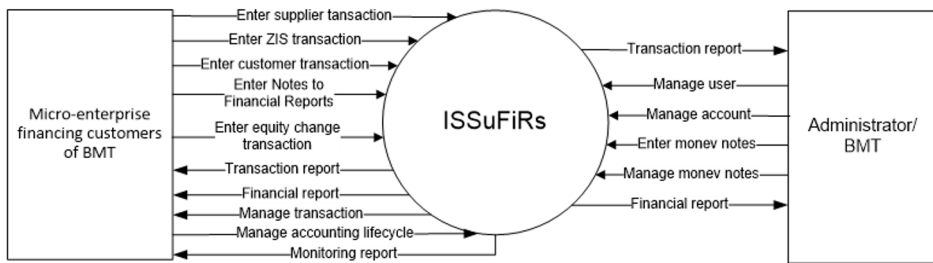


Fig 1. DFD Level 0 of ISSuFiRs

3.2 Our approach to prototyping ISSuFiRs

Since ISSuFiRs is a new system, to represent it as a prototype, the following elements need to be considered.

- Information service: Intangible services provided as part of ISSuFiRs.
- Working process: The sequence of activities that occur when ISSuFiRs are launched.
- Parameters: Metrics that represent the magnitude or level of product and service features.
- Layout
- Instruction guide
- Menu structure
- Font type and size
- The combination or composition of colors
- Used icon
- Overall user interface
- Additional suggestions

Participatory simulation, virtual reality, and other approaches are available for depicting a prototype as a complex system. In this study, the collection of all elements is referred to as the “ISSuFiRs configuration.” The right approach will be chosen based on the unique application.

3.4 The proposed framework and its supporting elements

The proposed framework’s operational mechanism is as follows. The researcher begins with an initial prototype that is produced based on the outcomes of the first design phase and should be displayed, assessed, and modified after the prototyping process. The following actions are taken by researchers:

- Step 1 – Demonstration: A researcher creates an initial prototype in ISSuFiRs that comprises all features such as design, service, process, environment, and parameters. Depending on the nature and qualities of ISSuFiRs, these prototypes can be presented as functioning prototypes such as storyboards, simulations, or other media-based drawings.
- Step 2 – Participation: Users are permitted to offer their own “ISSuFiRs configuration” in the suggested framework, which implies they may tweak the design to their own tastes. Web forms, spreadsheets, and live participation may all be used for user involvement activities. Co-creation can take the shape of open innovation or “extended team” engagement from customers/close partners in relevant contexts, or it can take the form of crowdsourcing in relevant environments.

- Step 3 – Analyze and find temporary conclusions to proceed to the next stage.

4 Findings

4.1 Settings

This study was conducted in three stages, namely 1) demonstration of the ISsuFiRs prototype, 2) Simulation of the ISsuFiRs prototype, and 3) Evaluation of the ISsuFiRs prototype through filling out a qualitative survey. At the beginning of the research data collection was carried out offline to two participants who came from the KSPPS BMT Bina Ummat Sejahtera Yogyakarta Regional Branch Office. Data collection for the other seven participants was carried out online. This right is due to the considerable distance for offline data collection considering the head of the research team was in Kuala Lumpur, Malaysia when the data collection took place. On the other hand, there is a target time limit for completing this research. Online data retrieval is supported by online research instruments in the form of ISsuFiRs explanatory videos, ISsuFiRs prototype access links, and online surveys using the Google online survey form. The online data collection process takes 30-45 minutes.

4.2 Demographics

Participant demographic data can be seen in table 1. Four participants were female while most participants were male. The participant's last education was master's and bachelor's degree with the percentage of each being 50% of the total participants. The locations where the participants worked came from three provinces, namely West Nusa Tenggara, one person, Yogyakarta 5 people, and Jakarta three people. Most participants were managers at BMT which included financing managers, operational managers, and managers in general, namely five participants, while the rest were lecturers at colleges or universities.

Table 1. Demographics of Participants (Percentages in Parenthesis)

Characteristic	Participants (%) N=9
Gender	
Female	4 (44)
Male	5 (56)
Highest Educational Level Obtained	
Bachelor's degree	4 (50)
Master's degree	4 (50)
The institutional location of the participants	
Nusa Tenggara Barat	1 (11)
Yogyakarta	5 (56)
Jakarta	3 (33)
Position of employment/Occupation	
Manager	5 (56)
Lecturer	4 (44)

Regarding the self-identification of each individual participant, not all participants filled it out completely. Based on the data of the participants who filled in their personal data, the participant's work experience is 7-20 years with different areas of expertise for everyone including financing, financing and remedial, management, economy, accounting, and sharia

economy. Several participants also had other experiences, namely insurance, student division, sharia bank practitioner, and internal auditor.

Table 2. Self-Reported Individualized Demographics

Participant's ID	Institution	Work experience (years)	Areas of expertise	Another experience
P1	KSPPS BMT Al Hidayah Lombok TIMUR NUSA Tenggara Barat	8	Financing	Insurance
P2	KSPPS BMT Bina Ummat Sejahtera	-	-	-
P3	KSPPS BMT Bina Ummat Sejahtera	10	Financing and Remedial	-
P4	KSPPS BMT Bina Ihsanul Fikri	20	Management	-
P5	KSPPS BMT Bina Ihsanul Fikri	18	Economy	
P6	Institute of Technology and Business Ahmad Dahlan Jakarta	10	Accounting	
P7	Institute of Technology and Business Ahmad Dahlan Jakarta	8	Accounting	Student division
P8	Universitas Muhammadiyah Yogyakarta	7	Sharia Economy	Sharia bank practitioner
P9	Universitas Negeri Jakarta	20	Accounting	Internal auditor secretary 2 periods

Based on the evaluation results of the nine participants, it was found that most participants were enthusiastic about the ISsuFiRs user interface. Evaluation of the prototype is seen from nine aspects, namely services, how it works, layout, instruction guide, menu structure, font type and size, the combination or composition of colors, icons used, the user interface, as well as additional suggestions from participants. Most of the participants answered that the service in the application was good and sufficient with existing features to make it easier for members to supervise. Even so, there are several suggestions for improving the ISsuFiRs system which are described in detail in table 3.

Table 3. Suggestions on ISsuFiRs Evaluation Results

Statements	
Information service	<ul style="list-style-type: none"> – There needs to be an evaluation regarding the ease of filling in data/forms according to market standings/segments.
Working process	<ul style="list-style-type: none"> – The language in the application can be simplified – There needs to be socialization/understanding to members who are still not familiar with the program. – Work processes adapted to market segments: <ul style="list-style-type: none"> • Bottom: folder/icon made easy/customized • Medium: added as needed • Top: complete
Layout	The layout of the application is appropriate and comfortable, but there is a suggestion that the layout is too crowded for its initial appearance
Instruction guide	<ul style="list-style-type: none"> – There needs to be adjustments to the display on the cellphone. – The guide is made simpler and friendly for ordinary users
Menu structure	<ul style="list-style-type: none"> – The menu can be simplified, and it is necessary to separate assets from liabilities. – Can be made easier/simple
Font type and size	The font size can be made larger so that HP users can see it comfortably
The combination or composition of colors	<p>There is input on the color combination used, namely:</p> <ul style="list-style-type: none"> • Colors are made brighter and stand out. • Colors look a bit faded
Icons used	<ul style="list-style-type: none"> – There are inputs in the use of icons, namely: <ul style="list-style-type: none"> • Icons are more marketable. • Icons are made more related/related to the menu display inside
Overall user interface	There needs to be innovation and made more familiar in the User Interface
Additional suggestions	<ul style="list-style-type: none"> – The voice of the audio guide has been improved in quality. – Applications need to be developed and facilitated for micro businesses. – Can be operated via cell phone. – Made more attractive, familiar, and easy to operate. – Created a menu to be able to view tutorials. – Layout can be made simpler. – Some additional features are required

Table 3 shows evaluation suggestions for improving ISsuFiRs which require improvement on the appearance of the prototype so that it is more attractive and simpler to be adopted and used by Islamic Financial Cooperatives and their members, the majority of whom are micro and ultra micro entrepreneurs. This research is ongoing research where for the next stage a new prototype will be rebuilt based on the evaluation results to then proceed with an advanced evaluation stage from two sides, namely the user and the developer. This second stage of

evaluation is carried out to obtain evaluation results and find which prototype is the best prototype based on the assessment of users and developers.

5 Conclusion

ISSuFiRs is an innovative system concept. The industry's adoption of ISSuFiRs may be improved by removing barriers and overcoming adoption challenges. Significant solutions include increasing user perception of the value of ISSuFiRs (i.e., perceived value), reducing risk in ISSuFiR generation via review, and improving ISSuFiR design quality through testing and refinement. The ISSuFiRs user interface received positive feedback from nine participants, who found it satisfactory in nine aspects. The application's services, layout, instruction guide, menu structure, font type, size, color combination, icons, and user interface were praised. However, there are suggestions for improvement, including enhancing the prototype's appearance to make it more attractive and user-friendly for Islamic Financial Cooperatives and their members, primarily micro and ultra micro entrepreneurs. The research is ongoing, with a new prototype being rebuilt based on the evaluation results. The advanced evaluation stage will assess the best prototype based on user and developer assessments.

References

1. R. Foresti, S. Rossi, M. Magnani, C. Guarino Lo Bianco, and N. Delmonte, "Smart Society and Artificial Intelligence: Big Data Scheduling and the Global Standard Method Applied to Smart Maintenance," *Engineering*, vol. 6, no. 7, pp. 835–846, 2020.
2. R. Iannone, R. Gurashi, I. Iannuzzi, G. de Ghantuz Cubbe, and M. Sessa, "Smart society: A sociological perspective on smart living," *Smart Soc. A Sociol. Perspect. Smart Living*, pp. 1–100, 2019.
3. A. Martiana, A. Yunita, S. M. Jauhari, S. Kassim, and W. Wong, "Proposing Software Application for Financial Report of Microfinance Customers ' Business on Baitul Maal wa Tamwil (BMT) in Indonesia," 2022.
4. M. Pudjihadjo, "2021 Analysis of the effect of external and internal factors on bmt sustainability in malang raya," vol. 25, no. 1, pp. 172–180, 2021.
5. S. Herianingrum, A. Shofawati, and R. T. Ratnasari, "Integration of Social and Economic Functions of Sharia Microfinance Institutions in Empowerment of Micro-enterprises," *KnE Soc. Sci.*, vol. 3, no. 10, pp. 1132–1140, 2018.
6. N. Afiah and S. Samsinar, "Understanding of SAK EMKM for Micro, Small and Medium Enterprises in Makassar," *Int. Conf. Sci. Adv. Technol.*, vol. 0, no. 0, pp. 299–307, 2020.
7. N. N. Ahmad and N. N. Jamil, "Measuring the Financial and Nonfinancial Performance of Micro-Enterprise in Pahang, Malaysia," *Int. J. Acad. Res. Bus. Soc. Sci.*, vol. 10, no. 10, pp. 706–717, 2020.
8. Suparti, Sunaryanto, B. N. Achadiyah, and Dudung Ma'ruf Nuris, "Analysis Of SMEs Readiness in Implementing Financial Accounting Standard Micro Small and Medium Enterprises," *Int. J. Business, Econ. Law*, vol. 20, no. 5, pp. 148–155, 2019.
9. P. Silviana, E. M. Yunies, N. F. Eko, A. H. Ardian, and W. -, "Perceptions of Factors Affecting Performance of Financing Returns on Baitulmaalwatamwil," vol. 287, no. Icesre 2018, pp. 101–105, 2019.
10. M. P. Bin Mat Isa *et al.*, "Innovation of Risk Mitigation Model for Islamic Equity-Based Financing in Islamic Microfinance Institutions in Indonesia," in *SHS Web of Conferences*, 2021, vol. 124, p. 10004.
11. E. Nur Yahya, "SMEs-Fintech: Support Increase of BMT through financing and recruitment member based of technology," *Rev. Islam. Econ. Financ.*, vol. 1, no. 1, p. 43, 2018.