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SIKMAKU: Designing a Digital Tool for Management Performance Assessment in Islamic Microfinance Institutions

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Abstract

This research aims to develop a digital-based information system as a tool for assessing the performance of Islamic financial institution management, particularly in BMTs (Baitul Maal wat Tamwil). The developed application is named SIKMAKU (Sistem Penilaian Kinerja Manajemen Lembaga Keuangan Syariah), built on an Android platform with webservice integration. The Research and Development (R&D) method was used in this study, consisting of several stages: preliminary study, problem and needs identification, initial model design, expert validation, field testing, product revision, and dissemination. SIKMAKU is designed to address issues in the traditional manual assessment system, such as slow processing time, low data accuracy, and difficulties in storing and accessing evaluation results. Its main features include user registration, instrument input, progress dashboard, automatic PDF reporting, and tutorial access. These functions help improve efficiency, transparency, and objectivity in evaluating BMT management performance. Field testing showed that SIKMAKU is user-friendly, fast in data processing, and accessible in real-time by all relevant parties. The final product has been revised based on feedback from media experts, content experts, and language validators, and is now ready for broader implementation across Islamic microfinance institutions. This application supports concepts such as smart education and technology adoption, contributing to the digital transformation of Islamic financial institutions.

Keywords: Performance Evaluation, Islamic Microfinance Institutions, Information System, Mobile Application, R&D

1. Introduction

Performance assessment in financial institutions cannot rely solely on financial outcomes. Asset quality, profitability, and financing quality provide important information about institutional conditions, but they do not fully explain how an organization is managed. Assessment also needs to consider the effectiveness of internal

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processes, human resource management, service delivery, and the achievement of organizational objectives. For Baitul Maal wat Tamwil (BMT), these requirements extend further because institutional management must also align with Sharia principles and provide benefits to members and the wider community.

Approaches incorporating financial and non-financial dimensions have been developed in BMT research. Sah et al. (2021), for example, applied Maslahah Performa to assess performance across worship, internal processes, talent, learning, customers, and wealth orientations. Their approach illustrates the importance of examining both management processes and achieved outcomes. Accordingly, evaluation should extend beyond generating scores to providing information that helps managers identify weaknesses and establish improvement priorities.

These assessment-needs coexist with institutional capacity constraints. In a study of three BMTs in North Sumatra, Yusman et al. (2024) identified weak governance, limited access to digital technologies, and inadequate managerial professionalism among the barriers to performance. Their findings suggest that strengthening BMTs requires attention to institutional management alongside product development and financing expansion. Structured management assessment is therefore relevant to helping managers examine internal conditions more systematically.

Developments in information technology create opportunities to address these needs. Ascarya & Sakti (2022) designed micro-fintech models for Islamic microfinance institutions, particularly BMTs, covering digital banking, payments, financing, social fundraising, and e-commerce. Their study provides an important foundation for developing BMT digital ecosystems. Its focus, however, is on digital financial services and ecosystem design rather than a dedicated application for assessing internal management performance.

Performance assessment information systems for BMTs are not entirely new. Yaya & Putra (2019)developed a maqasid Sharia-based performance information system at BMT UMY, including an online system and field testing, to support individual and work-unit evaluation. Their work establishes a foundation for using technology in BMT evaluation. Subsequent application development therefore needs to specify its assessment focus, user workflow, information outputs, and testing procedures to establish how it differs from earlier systems. When assessment relies on paper instruments or separate computer files, instrument completion, data compilation, calculation, and report preparation require additional work to connect these activities. This arrangement can introduce data transfer errors and delay the availability of results. The issue therefore extends beyond replacing paper forms with electronic forms to ensuring that assessment stages operate within a consistent and usable workflow.

Against this background, the studies reviewed leave room for further development in connecting BMT management assessment instruments with their implementation through a digital application. Research on performance dimensions establishes what

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should be assessed, while micro-fintech research addresses the development of digital services. Maqasid Sharia-based performance information systems have also been developed. This study focuses on designing a management assessment workflow that connects instrument completion, score processing, completion-progress monitoring, and reporting within a single application. The suitability of this design requires examination of both the assessment content and application use.

To address this need, this study aims to design and develop SIKMAKU (Sistem Penilaian Kinerja Manajemen Lembaga Keuangan Syariah), an Android application with webservice integration that supports BMT management performance assessment. Its features include user registration, assessment instrument completion, a progress dashboard, automatic PDF reporting, and tutorial access. Using a research and development approach, the application design is examined through expert validation, field testing, and revisions informed by the feedback obtained. The study is expected to contribute an operational design for BMT management assessment that connects evaluation instruments with digital processing and presentation of assessment results.

2. Literature Review

2.1. BMT Management Performance Assessment

Management performance assessment examines how an organization plans its activities, manages resources, operates internal processes, and evaluates progress toward its objectives. In Baitul Maal wat Tamwil (BMT), assessment needs to reflect the characteristics of institutions providing financial services according to Sharia principles. Financial outcomes remain important, but management quality also requires attention to task implementation, managerial competence, internal control, and accountability to stakeholders.

Management issues are relevant because BMT sustainability faces institutional capacity constraints. Through a study of three BMTs in North Sumatra, Yusman et al. (2024) identified weak governance, limited technological access, and inadequate managerial professionalism as performance barriers. Their findings provide empirical support for evaluation that helps managers identify internal weaknesses. However, the study has a local scope, and its findings should be interpreted within the institutional contexts examined.

Assessment systems also need to match the capacity of the organizations using them. In a study of 336 small and medium-sized enterprises in Slovakia, Papulová et al., (2021) demonstrated the importance of organizational characteristics in performance measurement system implementation. Although this context differs from BMTs, the study suggests that appropriate instruments require implementation processes aligned with

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user readiness. For SIKMAKU, this consideration concerns item clarity, ease of completion, and the readability of assessment results.

2.2. Multidimensional Performance Assessment and Benefit Orientation

The Balanced Scorecard combines financial, customer, internal process, and learning and growth perspectives (Kaplan & Norton, 1992). This framework connects organizational outcomes with the processes supporting their achievement. In SIKMAKU development, these perspectives inform management assessment conceptually rather than being implemented directly as four Balanced Scorecard scoring categories.

In Islamic financial institutions, assessment breadth also requires attention to benefits generated. Sah et al. (2021) applied Maslahah Performa at BMT Umat Mandiri through six orientations: worship, internal processes, talent, learning, customers, and wealth. Their study distinguishes process performance from outcome performance. This distinction is relevant to SIKMAKU because the existence of documents or procedures needs to be examined alongside implementation. Nevertheless, Maslahah Performa is a distinct framework and should not be treated as equivalent to the Maqasid Sharia Index.

Together, these approaches suggest that BMT management assessment requires indicators broad enough to capture organizational conditions while maintaining clear boundaries. SIKMAKU operationalizes this requirement through ten components: strategy and planning, organizational structure, operational systems and procedures, human resources, leadership, work culture, risk management, operational risk, legal risk, and management risk. These components constitute the study's operational design and require expert review of their relevance, clarity, and potential indicator overlap.

2.3. Islamic Values and Work Culture in Management Assessment

Management quality in Islamic institutions also concerns the values underlying workplace behavior. Celestial Management offers a spiritually grounded approach through Worship, Wealth, and Warfare, elaborated as ZIKR, PIKR, and MIKR. In Islamic insurance companies, Kurniartha et al. (2026) operationalized these values to examine spiritual management practices. Their study illustrates how spiritual values can become assessment dimensions, although insurance institutions differ from BMTs.

For SIKMAKU, this approach enriches the leadership, human resources, and work culture components. Integrity, consistency, knowledge sharing, and capability development can be expressed through observable practices. For example, commitment to human resource development can be examined through training implementation and subsequent follow-up. Assessment therefore focuses on documented organizational practices, providing assessors with a clearer basis for assigning scores.

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2.4. Digitalization of Performance Assessment in BMTs

Verhoef et al. (2021) distinguish digitization, digitalization, and digital transformation. This distinction clarifies how technology use can involve changing information formats, improving work processes, or enabling broader organizational change. SIKMAKU is positioned primarily as the digitalization of management assessment. Instrument completion, score processing, and reporting are connected through an application; its contribution to institution-wide transformation requires further investigation.

Within BMT research, Ascarya & Sakti (2022) developed micro-fintech models covering digital banking, payments, financing, social fundraising, and e-commerce. Their study emphasizes technological models suited to Islamic microfinance institutions. Its relevance to SIKMAKU concerns the need for context-sensitive technology development. However, the micro-fintech focus on financial services and ecosystems differs from SIKMAKU's function as an internal management assessment tool.

A study more directly related to evaluation was conducted by Yaya & Putra (2019b). They developed a maqasid Sharia-based performance information system at BMT UMY, including an online system and field testing to support individual and work-unit evaluation. Their work establishes the existence of digital evaluation systems preceding SIKMAKU. Consequently, SIKMAKU's position needs to be explained through its management assessment focus, indicator structure, user workflow, and reporting outputs.

2.5. Information System Quality and Application Evaluation

Assessment application development requires attention to system quality and the information produced. DeLone & McLean (2003) developed an information systems success model encompassing system quality, information quality, service quality, use, user satisfaction, and net benefits. Their framework indicates that application success involves several interrelated dimensions. In SIKMAKU, it serves as a conceptual reference for examining the application rather than a model of relationships tested statistically.

SIKMAKU evaluation therefore needs to distinguish assessment content adequacy from application use quality. Content review concerns indicator relevance, language clarity, and the suitability of assessment guidelines. Application evaluation concerns navigation, feature functionality, calculation correctness, and report readability. Automated calculation can support consistent score processing, but assessment accuracy still depends on instrument quality and the information entered by users.

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3. Research Method

This research uses a Research and Development (R&D) approach, a research method aimed at producing a specific product that is valid and useful in practice. This method is particularly well-suited for developing technology-based information systems such as mobile applications, as it focuses not only on data collection but also on creating concrete solutions to identified problems. The R&D model used refers to the steps proposed by Borg and Gall method

This is carried out through five stages: a preliminary study, identification of input for the management performance evaluation model, design of the management performance evaluation model, evaluation of the model, implementation of the model, and evaluation of management performance in the application system.

3.1. Preliminary Study

Many methods have been developed to measure company performance. In traditional management, the most commonly used performance measure is financial because it is easy to measure. Other performance measures, such as increasing customer trust in the company's services, improving personal competence and commitment, strengthening the company's partnerships with suppliers, and increasing the cost-effectiveness of business processes used to serve customers, are ignored by management because they are difficult to measure. Consequently, many thinking errors occur in traditional management.

Traditional performance assessments based on financial performance, or what is commonly referred to as traditional performance measurement, emphasize measuring company performance through the calculation of financial ratios (James & John, 2013). This is also emphasized by Anthony and Govindarajan (2003), who argue that relying solely on financial aspects is insufficient and may even be useless. Furthermore, Kaplan et al. (2001) point out several weaknesses of traditional performance assessment, namely: (a) the inability to measure a company's intangible assets and intellectual property (HR); (b) performance measurements that focus solely on financial aspects only tell a story about the company's past and cannot fully guide the company towards improvement. However, non-financial information can provide a different benchmark.

Non-financial information can increase confidence in the quality control management process. A comprehensive performance measurement technique that has been developed by various organizations is the Balanced Scorecard. It includes four aspects: financial perspective, customer satisfaction, internal process efficiency, and learning and growth (Antonio et al., 2012).

The Balanced Scorecard was created to address the problem of the weaknesses of the executive performance measurement system that only focuses on the financial

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perspective and tends to ignore the non-financial perspective. Kaplan and Norton (2000); Lee et al. (2010); Danaei and Amer (2013), and Yi-Hui (2013), explain that to measure executive performance in the future, a comprehensive measure is needed that includes four perspectives, including: First, Financial Perspective. The measurement of the financial perspective in this study is measured through financial ratios that have been determined by the Regulation of the Minister of Cooperatives and Small and Medium Enterprises No. 35.3 / Per / M.KUKM / X / 2007 concerning guidelines for assessing the Health of Sharia Financial Services Cooperatives and Sharia Financial Services Units. The financial ratios (Ayvaz and Pehlivanl, 2011) in question include: (a) equity to total capital ratio; (b) efficiency ratio; (c) liquidity ratio; (d) asset profitability ratio; (e) equity profitability ratio; and (f) gross participation ratio. Furthermore, Regulation of the Minister of Cooperatives and Small and Medium Enterprises No. 35.3/Per/M.KUKM/X/2007 also emphasizes that a cooperative is considered financially healthy if: (a) equity ratio (>15%); (b) efficiency ratio (1%–84%); (c) liquidity ratio (26%–34%); (d) asset profitability (>10%); (e) equity profitability (>10%); and (f) gross participation ratio (>75%).

Second, the Customer Perspective. The company identifies the customers and market segments it will enter. Market segments are sources that will become components of the company's financial objectives. From this perspective, Chow et al. (1997) and Hasan & Chyi (2017) explain that measurement is carried out using five main aspects, namely: (a) Measurement of market share. Measuring a company's market share reflects the proportion of business in a particular business area, expressed in terms of money, number of customers, or volume of product units sold; (b) Customer retention.

This measurement can be done by determining the percentage of business growth compared to the number of customers the company currently has; (c) Customer acquisition. Measurement can be done through the percentage of new customers added, comparing total sales to the number of existing new customers; (d) Customer satisfaction. This level of customer satisfaction can be measured using various techniques, including postal surveys, telephone interviews, or personal interviews (Gupta et al., 2020).

Third, the Internal Business Process Perspective (Suprihati, 2019). Within this internal business process perspective, there are three stages that must be completed: (a) Innovation Stage. The innovation process is a critical process, where efficiency, effectiveness, and timeliness of this process will drive cost efficiency in the process of creating added value for customers; (b) Operation Stage. This stage reflects the activities carried out by the company, starting from receiving orders from customers, through creating products/services, to delivering those products/services to customers. At this stage, performance can be measured in three ways: quality, cost, and time; (c) After-Sales Stage. At this stage, the company strives to provide additional benefits to customers who have used its products/services. This is done to foster customer loyalty to the company (Kime, 2015).

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Fourth, the Growth and Learning Perspective. This perspective measures aspects related to human resources. Three dimensions must be considered within this perspective: (a) Employee Capability. Measurements are made on three main points: employee satisfaction, employee turnover within the company, and employee productivity; (b) Information System Capability. Company performance can be measured by measuring the percentage of information available to employees regarding their customers, the percentage of information available regarding production costs, and other information; (c) Employee Motivation, Delegation of Authority, and Restrictions. Measurements can be conducted across several dimensions: (1) Measuring suggestions given to the company and their implementation; (2) Measuring employee performance improvement and enhancement; (3) Measuring individual limitations within the organization (Kaplan et al., 2001; Murphy, 2020; Gupta et al., 2020; Rangkuti, 2011).

These four perspectives are interconnected, and their elaboration forms a comprehensive and interconnected strategic objective. Based on the results of the first phase of the preliminary study, management performance components and indicators were developed. These management performance measurement components and indicators are based on the following Key Focus Areas:

a). Strategic Direction: Clear long/short-term planning and market responsiveness.
b). Sound Structure & Systems: Defined roles, procedures, documentation, accounting, IT, and internal control.
c). Competent & Ethical People: Objective HR practices, capable leadership, a strong work ethic, and loyalty.
d). Comprehensive Risk Management: Proactive identification and mitigation of financial, operational, legal, and governance risks.
e). Strong Governance: Board/Management competence, independence, integrity, and commitment.

These key focus areas will be elaborated into components that will be used to measure the management performance of Islamic Financial Institutions.

3.2. Identification of Management Performance Assessment and Evaluation Indicators

a. Strategy & Planning

This component measures the extent to which the BMT has a clear vision and mission and a structured strategy to achieve organizational goals. The assessment includes the development of short- and long-term business plans, the establishment of performance targets, and the strategy's alignment with Sharia principles. The availability of strategic planning documents and their implementation are key indicators in the performance assessment.

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b. Organizational Structure

The organizational structure demonstrates how tasks and responsibilities are managed within the BMT. The assessment is based on a clear hierarchy of positions, a proportional division of tasks, and the existence of effective internal control mechanisms. BMTs with a sound organizational structure will facilitate coordination and increase operational efficiency.

c. Sharia Financial Institution (LKS) Operational Systems & Procedures

This component assesses the existence of written work systems and procedures that comply with Sharia principles. These include SOPs for fund management, financing disbursement, financial reporting, and internal control systems. A sound operational system can prevent procedural errors and support transparency and accountability.

d. Human Resources (HR)

Assessment of the HR aspect covers the quality and capacity of the BMT's human resources, including the level of education, training provided, and technical and sharia competencies of staff and managers. Furthermore, the existence of a career development program and regular individual performance evaluations are also assessed.

e. Leadership

Effective leadership is crucial to the running of a BMT organization. This component assesses the leadership style of BMT managers or leaders, their decision-making abilities, and team empowerment. Good leaders will be able to create a positive work environment and drive the institution's performance.

f. Work Culture

Work culture reflects the values embraced and practiced by all BMT members. Aspects assessed include discipline, work ethic, integrity, and commitment to sharia principles. BMTs with a strong work culture tend to be more stable, productive, and able to create a positive image in the community.

g. Risk Management

Risk management is a BMT's proactive effort to identify, assess, and manage various risks that may occur in its operations. The assessment includes the existence of a risk unit, mitigation guidelines, and the implementation of comprehensive risk management policies.

h. Operational Risk

Operational risk refers to the potential for disruption or loss resulting from failures in internal processes, information systems, or human factors. The assessment assesses

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whether the BMT has an adequate internal control system and procedures for handling operational risks such as data input errors, information leaks, or technological failures.

i. Legal Risk

This aspect assesses the extent to which the BMT complies with applicable legal regulations, both from financial authorities and Sharia regulations. This assessment includes business legality, operational permits, and compliance with taxation and consumer protection provisions.

j. Management Risk

Management risk refers to the potential for conflicts of interest, corruption, or unprofessional conduct by management that could jeopardize the BMT's existence. The assessment assesses the existence of accountability mechanisms, transparency of reporting, and the independence of oversight by the Sharia Supervisory Board and external auditors.

3.3. Designing a Management Performance Evaluation Model

a. Strategy & Planning

Assessment Indicators:

- Clear vision and mission that align with Sharia principles
- Long-term and medium-term strategic plan documents (renstra) are in place
- Written and measurable performance targets
- Regular monitoring and evaluation of target achievement

Example Instrument Question:
"*Does the BMT have a clear vision and mission that align with Sharia principles?*"

b. Organizational Structure

Assessment Indicators:

- Clear division of tasks and responsibilities
- Easy-to-understand hierarchical relationships
- Effective internal control mechanisms
- Availability of SOPs for managing the organizational structure

Example Instrument Question:
"*Is the division of tasks and responsibilities between work units clear and aligned with operational needs?*"

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c. LKS Operational Systems & Procedures
Assessment Indicators:
- Customer service SOPs are available and implemented
- Financing and fundraising SOPs are available
- Sharia-based financial report management
- Internal control and audit systems are in place

Example Instrumental Question:
"Are all the institution's operational processes standardized in SOPs that are accessible to all staff?"

d. Human Resources
Assessment Indicators:
- Programmed staff education and training
- Staff technical and sharia competencies are adequate
- Individual performance evaluations are conducted regularly
- Career development programs are available

Example Instrumental Question:
"Does the BMT provide regular training for staff in technical and sharia areas?"

e. Leadership
Assessment Indicators:
- Participatory and transformative leadership style
- Ability to make accurate and rapid decisions
- Encourage innovation and continuous improvement
- Optimally empower the team

Example Instrumental Question:
"Does the BMT leadership encourage team participation in strategic decision-making?"

f. Work Culture
Assessment Indicators:
- Time discipline and strong work ethic
- Integrity and good work ethics
- Collaboration and teamwork
- Awareness of Sharia values at work

Example Instrument Question:
"Does the work culture at the BMT support productivity and Sharia compliance?"

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g. Risk Management
Assessment Indicators:
- Risk unit available and active
- Risk identification conducted regularly
- Documented risk mitigation
- Risk management training for staff

Example Instrument Question:
"Does the BMT have a mechanism for periodic risk identification and mitigation?"

h. Operational Risk
Assessment Indicators:
- Secure and controlled information systems
- Documented data access controls
- Accurate and automated data input processes
- Availability of data backup and a disaster recovery plan

Example Instrument Question:
"Are the BMT's information systems protected by access controls and data encryption?"

i. Legal Risk
Assessment Indicators:
- Complete and up-to-date business legality
- Compliance with OJK and BI regulations
- Legal protection for customers and staff
- Tax compliance and operational permits

Example Instrument Question:
"Has the BMT met all legal and licensing requirements set by the relevant authorities?"

j. Management Risk
Assessment Indicators:
- Transparency of financial reports and accountability
- Independence of supervision by the Sharia Supervisory Board
- Conflicts of interest are prevented
- Minutes of meetings and decisions are properly recorded

Example Instrument Question:
"Does the Sharia Supervisory Board actively carry out its control and supervisory functions?"

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Assessment Method: Weighted Scoring
Each indicator is scored on a scale of 1-10:

a). 1-3 = Unsatisfactory (Very poor/no implementation)
b). 4-5 = Adequate (Minimal/inconsistent implementation)
c). 6-7 = Good (Met with adequate documentation)
d). 8-10 = Very Good (Optimal & innovative implementation)

4. Result

4.1. Identified User Needs and Design Requirements

Preliminary observations and interviews with BMT administrators, managers, and leaders indicated that management performance assessment was still conducted through a semi-manual process. The existing procedure was considered time-consuming and difficult to summarize, while assessment instruments were not readily available through an integrated online system. The process also limited the timely distribution and accessibility of assessment information among relevant parties.

These findings informed the design requirements for SIKMAKU. The application was intended to make assessment instruments accessible through smartphones, support structured data entry, process assessment scores automatically, display assessment progress, and provide downloadable reports. The development therefore focused on connecting instrument completion, score processing, progress monitoring, and reporting within one application workflow.

4.2. Management Performance Assessment Model

The identified needs were translated into a management performance assessment model that could be accessed through a web-based application on mobile devices. The model was designed to organize the assessment of management practices in BMTs and to provide a structured basis for recording and presenting assessment results.

The sequence of the model development and its implementation in the application system is presented in Figure 1. The process connects the preliminary identification of user needs with the development of assessment components, application design, product review, field implementation, and evaluation.

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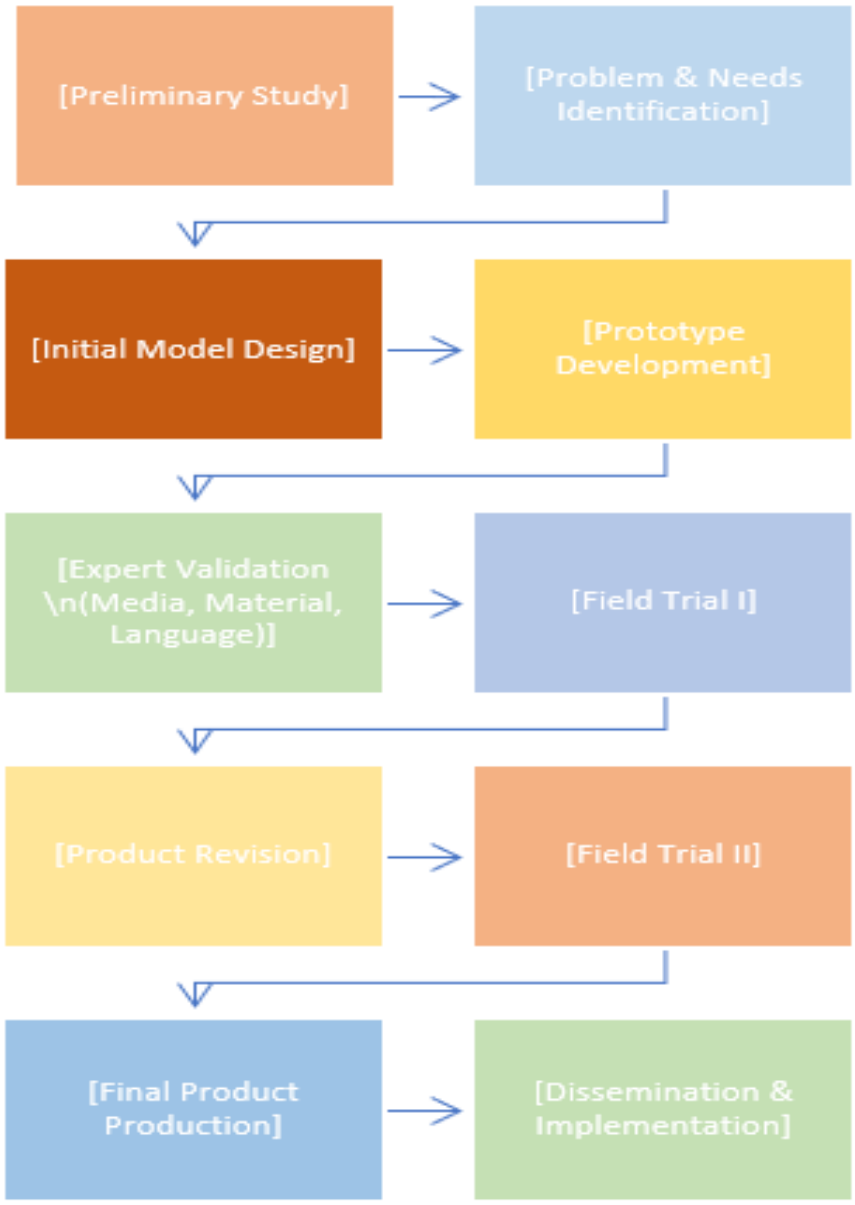


Figure 1. Process Implementation of a Management Performance Evaluation Model in an Application System

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The initial SIKMAKU interface provides the entry point for users to access the assessment system. Figure 2 presents the application's user interface, including the login screen.



Figure 2. User Interface (UI) SIKMAKU

The assessment instrument comprises ten main components: Strategy and Planning; Organizational Structure; Sharia Financial Institution Operational Systems and Procedures; Human Resources; Leadership; Work Culture; Risk Management; Operational Risk; Legal Risk; and Management Risk. Each component is represented by assessment indicators informed by the literature discussed in the manuscript, including the Balanced Scorecard, Celestial Management, and the Maqashid Sharia perspective. The indicators were organized to reflect management practices that can be examined and documented during the assessment.

The ten-component model was subsequently presented for review by subject-matter, media, and language experts. Figure 3 presents the structure of the management performance assessment model used as the basis for the SIKMAKU instrument.

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Figure 3. Management Performance Evaluation Model

4.3. Selection of a Development Model

The development model used was a Data-Based Management System (DBMS), an electronic data storage system on a server that aims to improve the efficiency and effectiveness of work processes. This system allows for the storage of large amounts of data and easy retrieval. Furthermore, the selection of this model was supported by the availability of technological infrastructure among BMT administrators and managers, who commonly use Android-based smartphones. The Android platform was also chosen due to its open-source nature, facilitating further development by anyone.

4.4. Initial Application Design

Based on the requirements data and model design, the initial design of the SIKMAKU application was created. The system flowchart shows that users must first register, then log in to access features such as viewing assessment categories, completing instruments, viewing progress, and printing results. The application's interface is designed to be simple and responsive for ease of use by all groups. This initial design process was then piloted with potential users to obtain initial feedback before further development.

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4.5. Validation and Revision of the Initial Model

The initial application model was evaluated through discussions with potential users, namely BMT managers and administrators. Validation results indicated that the initial model was good, but still needed revision, particularly in terms of reporting assessment results. Based on this feedback, an additional menu was added to download a summary of assessment results in PDF format, so it could be printed and used as formal reporting material. The system flowchart was also updated to reflect the new features.

4.6. Field Trial

After the product design was revised, the SIKMAKU application was implemented in a real-world setting. Users were asked to install the application through the provided link. The installation steps were designed to be easy to understand, including account registration, logging in, filling out the instrument, and printing the results. The trial was conducted at a partner BMT, BMT ARMINA. The trial results showed that the application ran smoothly and assisted managers in the digital performance assessment process.

4.7. User Training

To ensure optimal use of the application, user training was conducted at the trial location. This training included explanations of how to install the application, register an account, fill out the instrument, and retrieve the assessment report. Training was conducted both in-person and virtually, with tutorial guides available in video and PDF formats. The goal of the training was to ensure users understood the system flow and could operate the application independently without external assistance.

4.8. Application Program Facility Evaluation

After the application was implemented and users were trained, a program feasibility evaluation was conducted based on several aspects, namely ease of use, completeness of features, suitability of materials, accuracy of results, and timeliness. The evaluation results showed that SIKMAKU had a high level of ease of use due to its simple and intuitive interface. Assessment data was also accurate because it was processed automatically by the system, thus avoiding manual calculation errors. Furthermore, assessment results could be directly accessed and downloaded in PDF format, meeting the need for fast and transparent reporting.

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4.9. Final Product Revision

Based on the results of the trial and evaluation, final revisions were made to the product. Revisions included the addition of a shortcut menu for faster navigation, spelling corrections in accordance with EYD (Indonesian New Indonesian Dictionary), and adjustments to the color and layout of the interface to make it more attractive. A tutorial book on how to use the application was also prepared in PDF format, which can be accessed offline or printed as a guide for new users. This book includes a complete guide, from installation and account registration to printing assessment results.

4.10. Evaluation Results Analysis

The implementation evaluation results show that SIKMAKU has successfully improved the efficiency and accuracy of the BMT management performance assessment process. What previously required days of manual data processing now takes only a few hours. Furthermore, assessment data is securely stored in an online database and accessible to all relevant parties. The PDF printing feature is also very helpful in the BMT reporting and accreditation process. Overall, the SIKMAKU application is considered relevant and suitable for use as a tool for supervision and capacity building for BMT management.



Figure 4. Management Performance Assessment Dashboard in SIKMAKU

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5. Discussion

SIKMAKU development illustrates how BMT management performance assessment can be translated into an application connecting instrument completion, score processing, completion-progress monitoring, and reporting. During needs identification, interviews with BMT administrators, managers, and leaders indicated that assessment remained semi-manual, time-consuming, and difficult to summarize and access. These findings informed application development. Feature selection therefore addressed assessment activities previously performed through several separate stages.

This change can be understood as the digitalization of work processes. Verhoef et al. (2021) distinguish process digitalization from digital transformation involving broader organizational change. In this study, SIKMAKU provides a means of organizing management evaluation digitally. The application alone does not establish institution-wide transformation, but it may contribute to strengthening the internal processes supporting it.

Alignment between technology and institutional needs also features in the micro-fintech models developed by Ascarya and Sakti (2022). Although their study focuses on digital financial services and ecosystems, its emphasis on technologies suited to BMT characteristics is relevant to SIKMAKU. Using devices familiar to users, simplifying instrument completion, and providing guidance represent attempts to support application use in everyday organizational activities.

SIKMAKU includes ten components covering strategy, structure, operational systems, human resources, leadership, work culture, and risk-related management practices. This coverage places organizational management at the center of assessment. It is consistent with multidimensional measurement connecting organizational outcomes with internal processes and development capabilities (Kaplan & Norton, 1992). Nevertheless, SIKMAKU's components constitute the instrument designed in this study and are not identical to the four Balanced Scorecard perspectives.

In BMTs, process assessment also needs to consider Sharia objectives and values. Sah et al. (2021) distinguish process and outcome performance through Maslahah Performa. This distinction helps explain why management assessment should examine implementation alongside the existence of policies or documents. In SIKMAKU, indicators concerning procedures, training, supervision, and work culture can provide more useful information when assessors consider evidence of actual practice.

Broad coverage, however, requires clear assessment boundaries. Risk management, operational risk, legal risk, and management risk may assess overlapping practices if their definitions and scoring guidelines are insufficiently differentiated. Expert review therefore has a substantive role in establishing whether each component assesses its intended domain. The application can standardize score processing, whereas consistent

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assessment meaning requires shared understanding of indicators, rubrics, and supporting evidence.

5.1. Application Refinement through User Feedback

One reported modification was the addition of a facility for downloading assessment results as PDF files. This feedback indicates that user needs extend beyond instrument completion to using evaluation results for reporting and internal discussion. The reporting feature connects application-based assessment with organizational administrative requirements.

Changes to navigation, language, colors, and layout also demonstrate the importance of refinement following feedback. Papulová et al. (2021) emphasize organizational characteristics in performance measurement system implementation. Although their research concerns small and medium-sized enterprises, it supports the consideration that instrument implementation requires user readiness and appropriate process support. In SIKMAKU, training and video and PDF guidance form part of this support.

Nevertheless, application use following training does not establish that all users can operate it independently. Further evaluation should examine tasks requiring assistance, errors during instrument completion, and users' ability to interpret reports. Such evidence would help determine whether subsequent improvements should prioritize the interface, guidance materials, or instrument simplification.

The trial at BMT ARMINA reportedly showed that the application could operate and support assessment activities. Automated score processing and directly available reports provide a basis for identifying potential reductions in compilation work. However, faster processing should be interpreted as a preliminary finding because the article does not present measured comparisons between the semi-manual procedure and SIKMAKU.

The same distinction applies to accuracy. Automation can reduce calculation errors when formulas and programming are correct. Assessment scores nevertheless depend on accurate inputs, assessor understanding, and the quality of supporting evidence. Calculation correctness therefore needs to be distinguished from the accuracy with which assessment represents BMT conditions.

This distinction is consistent with DeLone and McLean's (2003) view that information systems success involves system quality, information quality, use, user satisfaction, and resulting benefits. In this study, application functionality and report availability provide initial operational evidence. Effects on decision quality or subsequent management performance cannot be established from the reported trial.

SIKMAKU builds on an existing body of work on digital BMT evaluation. Yaya and Putra (2019) previously developed a maqasid Sharia-based performance information system supporting individual and work-unit evaluation at BMT UMY. Accordingly, SIKMAKU's contribution concerns its operational design for management assessment

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through ten components, its application workflow, and the reporting outputs developed in this study. Establishing this contribution does not require a claim that SIKMAKU is the first digital evaluation system for BMTs.

For BMT managers, the application may support more structured assessment results for internal discussion. Its practical value would be strengthened if results informed improvement priorities, assigned responsibilities, and follow-up schedules. Connecting assessment with action is relevant to the managerial capacity and governance issues identified by Yusman et al. (2025), although the SIKMAKU study has not tested whether application use addresses those issues.

5.2. Limitations and Further Development

The findings are limited by testing at one BMT and descriptive reporting of evaluation outcomes. The article does not provide sufficient detail on user numbers, validator characteristics, feasibility assessment scores, or comparisons of processing time and errors before and after application use. These limitations restrict conclusions about benefit magnitude and readiness for implementation elsewhere.

Further development should examine agreement between assessors, consistency between application calculations and independently calculated results, and users' ability to complete tasks without assistance. Testing across BMTs with different resource and infrastructure capacities is also needed. Online data storage additionally requires evaluation of access permissions, backup arrangements, and data recovery. Such evidence would provide a stronger basis for assessing SIKMAKU's suitability for wider implementation.

6. Conclusion

This study developed SIKMAKU, a BMT management performance assessment application integrating ten assessment components into instrument completion, score processing, completion-progress monitoring, and PDF reporting. Development was informed by user needs identification, expert review, and an initial trial at BMT ARMINA. Feedback obtained throughout the process guided improvements to reporting features, navigation, language, and interface design.

The initial trial indicated that SIKMAKU could be operated to support digital management assessment. The study contributes by translating an assessment instrument into an integrated evaluation workflow, enabling results to be presented more systematically for internal discussion and the identification of improvement priorities. Nevertheless, testing at a single BMT and descriptive evaluation findings are insufficient to establish the magnitude of efficiency gains, assessment accuracy, or readiness for wider implementation. Further research should involve BMTs with different

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characteristics and measure task completion time, calculation correctness, agreement between assessors, and usability. Such testing is necessary to strengthen the basis for developing SIKMAKU as a supporting tool for BMT management evaluation.

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