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Optimizing the Implementation of Digital Financial Management to Enhance the Business Revenue of the Boneless Milkfish MSME "88 Marijo" in Pinrang Regency

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ABSTRACT

The rapid development of digital transformation has encouraged Micro, Small, and Medium Enterprises (MSMEs) to optimize financial management through the utilization of digital technology. UKM 88 Marijohas adopted digital payment transactions and technology-based marketing media; however, digitalization has not yet been fully integrated into transaction recording, financial reporting, and financial information management. This study aimed to analyze the implementation, optimization, and challenges of digital-based financial management in improving business income. The study employed a mixed methods approach by combining qualitative and quantitative methods. Data were collected through observation, interviews, documentation, and literature review. The research informants consisted of the business owner, finance staff, production staff, and marketing staff, selected using purposive sampling. Data were analyzed using descriptive qualitative and descriptive quantitative techniques. The findings indicate that digitalization has been utilized in payment transactions and marketing activities, providing greater transaction convenience, expanding market reach, and improving operational efficiency. However, its implementation has not been integrated into financial recording and reporting systems. The main challenges include simple financial management practices, limited use of digital financial applications, the absence of an integrated financial information system, and the need to improve human resource competencies in digital financial management. Therefore, integrating digital technology into all financial management processes is essential to enhance management effectiveness and support sustainable business income growth.

1. Introduction

Financial management is a fundamental aspect supporting business continuity and sustainability because it enables business actors to plan, allocate, and control financial resources effectively and efficiently. Sugianto (2025) emphasizes that financial management is a crucial aspect of business operations because the application of financial management principles allows business actors to manage financial resources in accordance with business needs. Along with current developments, digitalization has become increasingly relevant across business sectors, requiring financial management practices to adapt to the use of digital technology. Duha (2025) explains that financial digitalization involves the adoption of information technology in various financial functions, including planning, execution, recording, monitoring, and reporting. Thus, digitalization is not limited to transaction activities but also encompasses the broader financial management process.

This issue is particularly relevant to Micro, Small, and Medium Enterprises (MSMEs), which constitute an important part of the business sector. In practice, MSME actors have increasingly utilized various forms of digital-based financial management. Nevertheless, the implementation of digitalization remains uneven and has not been fully integrated into business management. Dewi and Sani (2025) explain that the suboptimal implementation of financial digitalization among

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some business actors is influenced by relatively low levels of digital literacy. Therefore, training and mentoring are required to strengthen the ability of business actors to utilize digital technology in their business activities. The need for digital transformation has also received policy attention in Indonesia. Law Number 1 of 2024, as the second amendment to Law Number 11 of 2008 concerning Electronic Information and Transactions, provides a regulatory context related to governance and security standards for electronic systems that support efficiency, sustainability, and user trust in digital activities. Furthermore, the Ministry of Cooperatives and MSMEs, through PATEN (National Economic Adaptation and Transformation Program), Third Edition, 2022, emphasizes that digitalization for MSMEs is no longer merely a necessity but can be regarded as an imperative for improving business performance.

Previous studies have demonstrated the potential contribution of digital transformation to MSME development. Wahyudi et al. (2025) indicate that digital transformation across various business activities, including transactions and financial record-keeping, can support MSMEs in improving competitiveness and facilitating business development. Similarly, Putri et al. (2025) demonstrate that digitalization can support improved business performance by facilitating business planning and more appropriate and efficient decision-making, allowing business finances to be organized according to business needs and expectations. The development of digital transformation among Indonesian MSMEs can also be observed empirically. LinkUMKM (2025) reported that the number of MSMEs undergoing digital transformation from 2019 to May 2024 reached 25.45 million out of approximately 64.2 million MSMEs recorded by the Ministry of Cooperatives and MSMEs, equivalent to approximately 39.64%. This represented an increase from approximately 11.82 million MSMEs in 2019.

However, the increasing number of MSMEs utilizing digital technology does not necessarily indicate that their financial management has undergone comprehensive digital transformation. Muhamad Febrianto et al. (2025) explain that the approximately 60.36% of MSME actors who were not categorized as having undergone digital transformation did not necessarily refrain from using digital media. Rather, digital technology was generally utilized only for particular business activities, indicating that digital transformation had not yet been optimized. This condition is consistent with Wahyudiono (2024), who defines Digital Management Transformation as a comprehensive and continuous process of changing the way organizations plan, organize, direct, and control resources through the utilization of digital technology to improve effectiveness, efficiency, transparency, and competitiveness. When applied specifically to financial management, digital-based financial management refers to financial planning, management, recording, reporting, and control conducted through digital technology and information systems to improve financial accuracy, efficiency, transparency, and accountability.

The existing literature therefore demonstrates the benefits of digitalization for MSMEs, but an important gap remains concerning the optimization of digital-based financial management at the individual-business level, particularly in MSMEs operating in specific local and sectoral contexts. Previous studies tend to discuss digital management and its relationship with MSME performance in general, whereas limited attention is given to how digital financial management is actually implemented by MSMEs whose business activities depend on specific supply-chain characteristics. This gap becomes particularly relevant in the processed fish-product sector, where the availability of raw materials may depend on the harvest produced by fishpond farmers and consequently requires appropriate and accurate financial management.

This condition can be identified in UKM 88 Marijo, an MSME engaged in processing boneless milkfish in Pinrang Regency. Based on preliminary observations and interviews with the business owner, the implementation of digitalization at UKM 88 Marijo remains at a basic level. Digital practices are currently applied primarily to sales and purchasing activities through interbank transfer systems and the ordering of goods, while financial record-keeping remains predominantly manual. Consequently, the digital management model implemented by UKM 88 Marijo has not yet been fully optimized, particularly in the financial recording process. This condition is consistent with Wati and Rahmah (2025), who state that problems

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encountered by several MSME actors in implementing digital transformation, particularly in business financial governance, remain influenced by financial behavior and routine record-keeping practices. Although basic digital practices have generally been adopted, their implementation has not yet been sufficiently oriented toward improving efficiency and subsequently increasing business income.

The limited implementation of digital-based financial recording may further affect the quality of business financial decision-making. Hasdiana et al. (2025) explain that relatively low levels of digital-based financial record-keeping among MSME actors can affect the business financial decision-making system because the absence of accurate records makes effective and efficient working-capital utilization difficult. In line with this, Andi AR and Nurwani (2024) state that digitalization within business financial governance can significantly support financial reporting and facilitate effective and efficient decision-making. Furthermore, Afifah et al. (2023) demonstrate that Digital-Based Management can contribute substantially to improved customer service, reduced operational costs, enhanced decision-making, and product innovation, while also enabling companies to reach global customers more easily.

Based on these conditions, the research problem addressed in this study is the suboptimal implementation of digital-based financial management at UKM 88 Marijo Pinrang, particularly in financial recording and its utilization to support effective and efficient business decision-making. Accordingly, this study aims to examine and describe the implementation of digital-based financial management at UKM 88 Marijo, particularly its application in financial recording and its role in supporting business management and decision-making.

Theoretically, this study contributes to the discussion of digital management transformation by providing a more specific understanding of its application in financial management within an MSME operating in the processed fish-product sector. The study also extends the discussion of digitalization beyond general business activities by focusing on the financial management dimension. Practically, the findings are expected to provide input for UKM 88 Marijo in optimizing digital-based financial recording and management, thereby supporting more effective and efficient decision-making. The findings may also provide practical insights for other MSME actors and relevant stakeholders seeking to encourage digital transformation in MSME financial management.

The novelty of this study lies in its specific examination of digital-based financial management in an MSME engaged in processing boneless milkfish in Pinrang Regency, while considering the characteristics of its supply chain. Milkfish availability differs from that of other fishery products because it is highly dependent on harvest production by fishpond farmers. Therefore, accurate financial management is important for business actors in responding to supply availability and supporting effective decision-making. By examining the actual digitalization practices of UKM 88 Marijo, particularly the gap between basic digital transactions and predominantly manual financial recording, this study provides a contextual understanding of the need to optimize digital-based financial management in MSMEs operating within the processed fish-product supply chain.

2. Literature Review

2.1 Conceptual and Theoretical Foundations

a. Digitalization of MSMEs

According to Heryana et al. (2023), digitalization has several meanings. Among them, digitalization can be defined as the process of converting analog data into digital data using computer or electronic technology. Digitalization can also be understood as the process of converting media from printed, audio, or video formats into digital formats. Meanwhile, in relation to business development, digitalization refers to the transformation of interactions, communication, functions, and business models into more digital forms.

Digitalization of MSMEs, can be defined as an effort to accelerate MSME development amid the rapid advancement of digital technology. One of the digitalization programs currently being widely promoted among MSMEs is **e-commerce**, which includes strengthening MSMEs' capacity for digital marketing through various social media platforms.

That digitalization in MSMEs represents a transformation from conventional systems toward digital-based practices as an effort to improve the

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effectiveness and efficiency of MSME business and operational processes. Through the concept of digitalization, MSME actors can transform their business management practices from conventional approaches into more modern ones. Meanwhile, MSME digitalization refers to the process of utilizing digital technology across various operational and managerial aspects of a business. This includes the use of the internet, as well as software, hardware, and various other digital platforms.

b. Digitalization Models in MSMEs

The digitalization models currently being widely promoted for business management, include the use of Digital Marketing and Digital Payment models. The explanations of both models can be described as follows:

c. Digital Marketing

Digital marketing, according to refers to all efforts undertaken by business actors in marketing activities through internet-connected devices, utilizing various digital strategies and media with the aim of communicating with potential consumers through online communication channels. Another perspective suggests that Digital Marketing can also be described as a marketing strategy that utilizes increasingly developing information technology.

d. Digital Payment

Digital Payment is a payment system developed to facilitate the electronic payment of goods through the internet. Digital Payment, also commonly referred to as Digital Payment, can also be understood as a form or type of payment that utilizes electronic media, such as SMS Banking, Internet Banking, Mobile Banking, and electronic wallets, whereby all transactions can be conducted using an electronic device, particularly a smartphone.

That Digital Payment is a form or model of payment that facilitates transactions and provides convenience to users when making payments. Through the Digital Payment model, users only need to conduct transactions online by utilizing the internet, without having to meet or visit the seller in person.

e. Optimization of Digital-Based Financial Management

1) Digital-Based Financial Management

Provide a broader explanation that financial management is a series of activities involving the planning, management, control, acquisition, and safekeeping of a company's funds and assets in an efficient manner. This includes managing cash inflows and outflows as well as investments to maximize company value and achieve business objectives. Comprehensively, financial management can be defined as a systematic process of financial planning, management, control, and decision-making aimed at ensuring that financial resources are utilized effectively, efficiently, and sustainably to achieve the objectives of an organization or business.

According to Putri et al. (2025), Digital-Based Financial Management can be defined as a process of financial planning, management, control, and decision-making that utilizes digital technology to improve the efficiency, accuracy, transparency, and timeliness of financial information within a business.

Meanwhile, from an accounting perspective, define Digital-Based Financial Management as an integration of financial management functions and digital technology-based information systems used to support financial recording, reporting, and analysis in a systematic and structured manner.

From the perspective of Business Financial Performance, describe Digital-Based Financial Management as a financial management approach that utilizes digital technology as a tool to improve business financial performance, including increased revenue, cost efficiency, and business sustainability.

In relation to Digital-Based Financial Management as applied to MSME actors, Wahyudi et al. (2025) define it as a form of business digital transformation that not only changes financial recording tools from manual to digital but also transforms the way business actors understand, control, and make financial decisions based on real-time data.

2) Optimization of the Implementation of Digital-Based Financial Management in MSMEs

That optimization can be understood as a strategy to maximize activities with the aim of achieving the desired benefits. This explanation

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indicates that optimization can only be achieved through effective and efficient approaches. In organizational management, objectives are generally directed toward achieving the desired results in an effective and efficient manner. Izzati et al. (2025) explain that optimization refers to a process, method, or action aimed at maximizing outcomes and achieving the best possible results effectively and efficiently. This process involves continuous improvement of systems or procedures to achieve maximum outcomes, such as increased profits or improved performance, or to minimize costs and risks without compromising quality.

Optimization of digital-based financial management in MSMEs is not merely reflected in the use of financial applications, but also in the ability of business actors to utilize such technology consistently for recording transactions, managing cash flows, preparing financial reports, and making business decisions more effectively and efficiently.

The forms of optimization that can be undertaken, in implementing digital-based financial management, particularly among MSMEs, include:

a. Optimization of digital financial record
   Optimization of digital financial record-keeping among MSMEs is reflected in the transformation of transaction-recording practices from manual and unstructured methods into digital application-based record-keeping that is carried out regularly and consistently.
b. Optimization of Cash Flow Management
   Optimization is reflected in the ability of MSMEs to monitor cash inflows and outflows more clearly and measurably. Through digital systems, business actors can monitor their business cash position in real time, thereby facilitating the control of expenditures and the planning of operational needs. Optimization in this aspect can be observed when MSMEs begin to separate personal finances from business finances and are able to anticipate cash shortages or surpluses that may affect business continuity.
c. Optimization of Financial Reporting Preparation
   Optimization in the preparation of digital-based financial reports is characterized by the ease with which MSMEs can generate basic financial reports, such as income statements and summaries of business transactions.
d. Optimization of Financial Decision-Making.
   Optimization of digital-based financial decision-making is reflected in a shift in the decision-making patterns of MSMEs from previously intuitive approaches toward decisions based on financial information.
e. Optimalisasi Efisiensi Biaya dan Waktu
   The use of digital systems is expected to help MSMEs reduce repetitive tasks and minimize administrative errors that may result in additional costs. This efficiency provides MSME actors with greater opportunities to focus on production and marketing activities, thereby supporting an overall improvement in business productivity.

3) Barriers and Challenges in Optimizing the Implementation of Digital-Based Financial Management in MSMEs

The general overview of the barriers and challenges that commonly arise in optimizing the implementation of digital-based management, particularly among MSMEs, based on the analysis and observations conducted by Muhamad Febrianto et al. (2025), includes:

a. Limited Financial and Digital Literacy makes it difficult for MSME actors to understand and consistently utilize digital financial systems.
b. Resistance to Digital Transformation Some MSME actors perceive digital technology as an additional administrative burden rather than a strategic tool for improving financial performance.
c. Limited Human Resources The absence of dedicated personnel limits the capacity of MSMEs to learn, manage, and consistently implement digital financial systems.
d. Limited Understanding of Long-Term Benefits of digital-based financial management reduces MSMEs' motivation to adopt digital technology sustainably.
e. Inconsistent Use of Digital Systems The irregular use of digital financial applications results in incomplete financial data and reduces the quality of financial information.
f. Limited Mentoring and External Support make it difficult for MSMEs to develop digital financial systems according to their business needs.

f. Business Income

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Business income, as defined by Wahyudi et al. (2025), refers to the amount of money received by a company from its primary business activities, such as the sale of goods or services, over a specific period. It serves as a key indicator of financial health and growth derived from normal business operations. This income provides the resources needed to finance operating expenses and generate profits.

Duha (2025) explains that, from a financial management perspective, business income refers to an increase in economic benefits during an accounting period arising from the normal activities of a business, resulting in an increase in equity and excluding contributions from owners. Meanwhile, business income, represents the returns generated from a business's primary operating activities, such as the sale of goods or services, which constitute the main source of revenue for the company in conducting its business operations.

From the perspective of MSMEs, business income, refers to the total monetary receipts or returns generated from the primary operational activities of a business, such as the sale of goods or services provided by a Micro, Small, and Medium Enterprise (MSME) over a specific period. In this context, income includes gross earnings or turnover, which can be measured on a daily, monthly, or annual basis

2.2 Review of Empirical Studies

Studies considered relevant to the Optimization of the Implementation of Digital-Based Financial Management in Increasing the Business Income of Boneless Milkfish at UKM 88 Marijo, Pinrang Regency are as follows:

Muhamad Febrianto et al. (2025)

Research Title: *Optimization of Digital-Based MSME Business Models to Improve Competitiveness in the Industry 4.0 Era*

The study found that the utilization of e-commerce, social media, digital payments, and other technologies can help MSMEs improve their competitiveness, expand their market reach, and achieve greater business growth. However, MSME actors need to continuously learn, adapt to new technologies, and develop innovative business strategies to remain relevant in an increasingly competitive market. MSMEs seeking to survive and grow in the Industry 4.0 era need to adopt technology, strengthen innovation, and develop digital strategies. With the appropriate approach, MSMEs can compete not only in local markets but also penetrate global markets.

Wahyudi et al. (2025)

Research Title: *Strategies for Improving MSME Financial Performance through Accounting Digitalization*

The study found that accounting digitalization plays a strategic role in improving MSME financial performance through more efficient financial management and increased transparency. However, the implementation of digitalization requires support in the form of digital literacy training and affordable access to technology. Through these strategic measures, MSMEs can strengthen their competitiveness in both local and global markets.

Putri et al. (2025)

Research Title: *The Role of Digital Financial Management in Financial Management among MSMEs in Surakarta*

The findings of the study include:

a. Digital financial management provides significant support for the sustainability of MSMEs.
b. The use of digital financial systems, financial literacy, and financial inclusion improves the effectiveness, transparency, and accuracy of financial management.
c. MSMEs can develop sustainable business strategies, monitor inventory, and optimize cash flow by utilizing technologies such as financial recording applications, digital payments, and financial analysis.
d. Financial digitalization can help MSMEs expand their market, improve competitiveness, and accelerate capital recovery.

Izzati et al. (2025)

Research Title: *The Effect of Digital-Based Financial Application Implementation on MSME Performance Optimization in Medan Johor District*

The study found that:

a. The implementation of digital-based financial applications has a positive and significant partial effect on MSME performance optimization. In other words, the higher the implementation of digital-based financial applications, the better the

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business performance in terms of efficiency, transaction recording, and decision-making.

b. Digitalization in financial management makes a significant contribution to improving MSME financial governance, which has traditionally relied on conventional practices.
c. Digital financial applications enable MSMEs to maintain more organized and accurate transaction records, thereby facilitating cash-flow monitoring and inventory management.

Zubaidah, T. R., Wadhah, A. N., & Muzakki (2024)

Research Title: *Optimizing MSME Financial Management Practices through an Accounting Approach*

The study found that:

a. Developing financial management practices is essential for improving the understanding and application of financial management among MSMEs. Through this approach, MSMEs can optimize financial management, improve operational efficiency, and strengthen business resilience in facing economic challenges.
b. The implementation of financial management principles, including budget planning, cash monitoring, and risk management, is a key factor in MSME success. Support from government institutions, financial institutions, and local communities is also important for improving financial management awareness and skills among MSME actors.

2.3 Identification of the Research Gap

The synthesis of the conceptual foundations and empirical studies indicates that digitalization has increasingly become an important instrument for MSME development. Existing studies consistently demonstrate that digital technology can support business competitiveness, financial management, efficiency, transparency, decision-making, and business performance. Muhamad Febrianto et al. (2025) emphasize the role of digital business models in improving competitiveness, while Wahyudi et al. (2025) and Putri et al. (2025) highlight the contribution of financial digitalization to financial management and MSME performance. Izzati et al. (2025) demonstrate the importance of digital financial applications for financial governance and performance optimization, the importance of strengthening MSME financial management practices.

Despite these findings, several gaps remain. First, previous studies tend to examine MSME digitalization or digital financial management at a general level, whereas limited attention is given to the actual level of optimization of Digital-Based Financial Management within an individual MSME. Second, existing studies predominantly emphasize the benefits or effects of digitalization, while less attention is given to the gap between the adoption of basic digital transactions and the comprehensive digitalization of financial management. Third, the contextual barriers and challenges faced by individual MSME actors in optimizing digital financial management remain insufficiently explored.

Fourth, there is a contextual gap concerning MSMEs operating in the processed fish-product sector. The specific characteristics of boneless milkfish businesses, particularly their dependence on milkfish availability from fishpond farmers, create financial management requirements that may differ from those of other MSMEs. Therefore, the optimization of digital financial management needs to be understood not only in terms of technology adoption but also in relation to financial recording, cash-flow management, financial reporting, decision-making, and cost and time efficiency.

Fifth, previous studies generally use quantitative approaches to examine the relationship or effect of digitalization on MSME performance. The present study differs by integrating quantitative descriptive analysis and qualitative analysis to obtain a more comprehensive understanding of the level of Digital-Based Financial Management implementation, changes in business income, and barriers encountered by business actors.

Based on these gaps, the present study focuses specifically on the Optimization of the Implementation of Digital-Based Financial Management in Increasing the Business Income of Boneless Milkfish at UKM 88 Marijo, Pinrang Regency, for the 2023–2025 Period. The study addresses the gap by integrating numerical evidence concerning the optimization level and business income with qualitative evidence concerning implementation practices and barriers.

2.4 Development of the Conceptual Framework

The Conceptual Framework for the Optimization of the Implementation of Digital-

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Based Financial Management in Increasing the Business Income of Boneless Milkfish at UKM 88 Marijo, Pinrang Regency, in this study, is presented in the following figure.

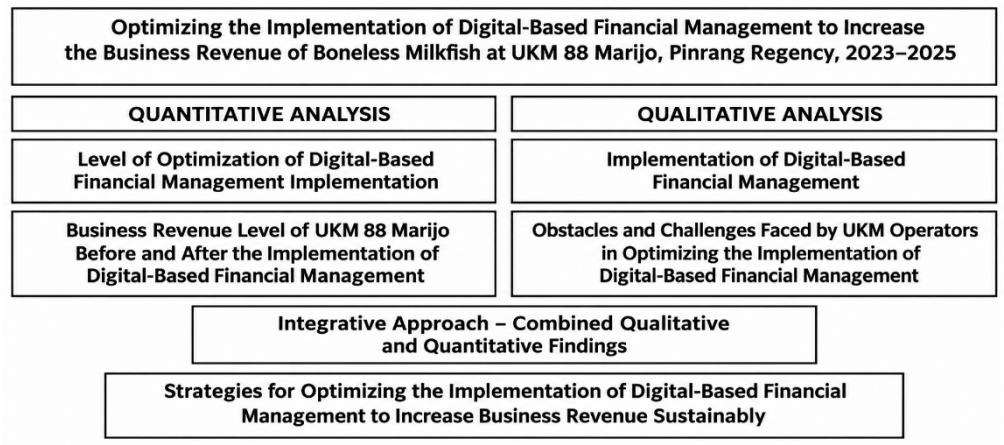


Fig. 1. Conceptual Framework

Stage 1: Research Focus Determination

The initial stage begins with determining the research focus, namely, *Optimization of the Implementation of Digital-Based Financial Management in Increasing the Business Income of Boneless Milkfish at UKM 88 Marijo, Pinrang Regency, for the 2023–2025 Period*. This stage serves as the basis for directing the research, which subsequently links the aspects of financial digitalization with business income performance.

Stage 2: Quantitative Analysis

At this stage, a quantitative analysis is conducted to measure and describe the conditions numerically, including:

a. The level of optimization in the implementation of digital-based financial management, reflecting the extent to which digital systems have been utilized in business financial management.
b. The level of business income before and after implementation, analyzed through comparative patterns to identify changes or trends in income growth.
c. This analysis employs a descriptive quantitative approach using numerical data, such as business turnover or income

Stage 3: Qualitative Analysis

The next stage involves qualitative analysis, which aims to gain a deeper understanding of the phenomenon, including:

a. Implementation of digital-based financial management, covering the practices, processes, and forms of implementation within business activities.
b. Barriers and challenges encountered, particularly those faced by MSME actors in optimizing the implementation of digital-based financial management systems.

This approach is used to explore contextual information based on the experiences and perceptions of business actors.

Stage 4: Integrated Approach (*Mixed Methods*)

At this stage, the results of the quantitative and qualitative analyses are combined. This integration aims to provide a more comprehensive and complementary understanding of the numerical data and field-based findings. The results of this integration serve as the basis for drawing more comprehensive conclusions.

Stage 5: Formulation of an Optimization Strategy

This stage focuses on formulating strategies for optimizing the implementation of digital-based financial management to sustainably increase business income.

The strategies are developed based on the results of the integrated data analysis and are expected to provide practical solutions for MSME actors in improving their overall business performance.

2.5 Hypotheses or Research Propositions

This study does not formulate statistical hypotheses because the research is not designed to test causal relationships between independent and dependent variables. Although the study contains a

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quantitative component, the quantitative analysis is descriptive and focuses on measuring the level of optimization of Digital-Based Financial Management and comparing business income before and after implementation. The qualitative component is used to explore the implementation process as well as barriers and challenges encountered by business actors.

Therefore, the study does not use hypotheses such as *H1, H2,* or other statistical hypothesis formulations. Instead, the conceptual framework serves as an analytical guide for integrating quantitative and qualitative findings and for formulating an optimization strategy. The analytical focus is directed toward answering the following substantive questions:

a. What is the level of optimization of the implementation of Digital-Based Financial Management at UKM 88 Marijo, Pinrang Regency?
b. How does business income compare before and after the implementation of Digital-Based Financial Management during the 2023–2025 period?
c. How is Digital-Based Financial Management implemented in the financial management activities of UKM 88 Marijo?
d. What barriers and challenges are encountered by UKM 88 Marijo in optimizing Digital-Based Financial Management?
e. What optimization strategy can be formulated based on the integration of quantitative and qualitative findings to support a sustainable increase in business income?

Thus, the absence of hypotheses is consistent with the descriptive and exploratory orientation of the study and does not diminish the role of the conceptual framework as the basis for conducting the quantitative and qualitative analyses and formulating the final optimization strategy.

3. Research Methods

3.1 Research Design

This study employs a mixed-method approach using an embedded design. As described by Sugiyono (2023), a mixed-method approach with an embedded design is a research approach that combines qualitative and quantitative methods within a single study, in which one method serves as the primary method while the other functions as a supporting method. In this study, the qualitative method is positioned as the primary method, as the research focuses on gaining an in-depth understanding of the optimization of digital-based financial management implementation in increasing business income.

The qualitative approach in this study, as described by Pettalongi et al. (2025), is used to identify the implementation of digital-based financial management, including its practices, processes, and forms of implementation in business activities, as well as the barriers and challenges encountered, particularly in optimizing the implementation of digital-based financial systems by MSME actors. Meanwhile, the quantitative method is employed as a supporting method to analyze the level of optimization in the implementation of digital-based financial management, reflecting the extent to which digital systems have been utilized in business financial management, as well as the level of business income before and after implementation. The latter is analyzed through comparative patterns to identify changes or trends in income growth.

The integrative approach, as a manifestation of the mixed-method research design, is reflected in the analytical process through the formulation of an optimization strategy for implementing digital-based financial management to sustainably increase business income. This strategy is developed based on the integration of the analyzed quantitative and qualitative data.

3.2 Research Context and Setting

The research focuses on the implementation and optimization of digital-based financial management in business activities, particularly in the context of MSME actors. The research context is relevant to the study because digital-based financial management is examined not only from the perspective of its implementation, practices, and processes but also in relation to the barriers and challenges encountered by MSME actors and its potential contribution to increasing business income.

The research setting involves the business environment in which digital-based financial management is implemented and where the relevant informants conduct their respective activities. The selection of this context enables the research to

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obtain an in-depth understanding of the actual implementation of digital-based financial management and its relationship with changes or trends in business income.

The specific geographical location or organizational name of the research setting is not explicitly specified in the research methodology provided. Therefore, no additional geographical or organizational information is introduced in order to maintain the original substance of the study.

3.3 Population and Sample / Research Participants

Research using a Mixed-Methods approach in this study is primarily descriptive in nature. Therefore, to obtain information relevant to the research needs, Nartin (2023) explains that research utilizing a social situation as a means of describing the existence of (1) actors, (2) place, and (3) activities refers to the individuals who provide information as informants.

Moniaga (2024) explains that informants in research are resource persons or individuals who possess the competence or ability to provide relevant information. Thus, in qualitative research, the researcher and informants can be regarded as sources of information. Their role is not merely to provide responses based on the information required but also to direct the researcher toward matters considered relevant to the needs of the study.

Referring to the elements designated as the subjects of this study, the informants considered relevant to providing the required information are presented in the following table:

Table 1. Research Informants

Type of Informant	Number	Description
Main Informant	1 person	Financial Management Section
	3 persons	Marketing and Sales Section
	1 person	Business Owner
Total Informants	5 persons	

Source: Authors

3.4 Data Sources and Data Collection

This study uses qualitative and quantitative data in accordance with its mixed-method embedded design. Qualitative data constitute the primary source of information, while quantitative data serve as supporting evidence in analyzing the level of optimization of digital-based financial management and changes in business income. Data collection refers to the process of gathering data at the research site through observation, interviews, and documentation. The process involves determining appropriate data collection strategies, establishing the research focus, and conducting in-depth data collection in subsequent stages. The qualitative data are obtained through observation, interviews, and documentation related to the implementation of digital-based financial management, including its practices, processes, forms of implementation, barriers, and challenges. Interview transcripts subsequently become an important component of the qualitative analysis. Quantitative data are processed as supporting data to identify the level of optimization in the implementation of digital-based financial management and the level of business income before and after implementation. The comparison of business income is used to identify changes or trends in income growth. The research methodology provided does not specify a particular survey instrument, questionnaire, or secondary-data database. Therefore, no additional data source or collection instrument is introduced beyond observation, interviews, documentation, and the quantitative data described in the original methodology.

3.5 Measurement of Variables and Research Instruments

The study employs an embedded mixed-method design in which the qualitative approach serves as the primary method and the quantitative approach functions as a supporting method. Accordingly, the main concepts examined are the implementation and optimization of digital-based financial management and business income. The qualitative component focuses on understanding

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the practices, processes, forms of implementation, barriers, and challenges associated with digital-based financial management among business actors. The quantitative component supports the analysis by examining the level of optimization of digital-based financial management and comparing business income before and after implementation. The research instruments reflected in the methodology consist of observation, interviews, and documentation for collecting qualitative information, while numerical data concerning the level of implementation and business income are used as supporting quantitative information. The methodology provided does not specify particular measurement indicators, Likert scales, questionnaire items, or previously validated quantitative measurement instruments. Therefore, no additional indicators or measurement scales are introduced in order to avoid changing the substance of the original research.

3.6 Data Analysis Techniques

Data analysis in this Mixed-Methods study, in which the qualitative approach serves as the primary method, is described by Sugiyono (2023) as a process of organizing and classifying data according to established categories to obtain findings that align with the objectives of the research. The data analysis techniques employed in this Mixed-Methods study include processing numerical data, which are subsequently reduced and used as supporting evidence to strengthen the qualitative analysis, as well as analyzing interview transcripts, interpreting data, and conducting triangulation before drawing conclusions.

Pettalongi et al. (2025) explains that data analysis in a Mixed-Methods study with a qualitative approach as the primary method generally follows the model developed by Matthew B. Miles and A. Michael Huberman. This model views data analysis as an interactive and continuous process that begins with data collection and continues throughout the research until its completion. Analysis is not conducted only after all data have been collected; rather, it takes place simultaneously with the data collection process. The model emphasizes three main stages: data reduction, data display, and conclusion drawing/verification.

An overview of the data analysis cycle developed by Matthew B. Miles and A. Michael Huberman, which can also be applied in Mixed-Methods research using an embedded design, as cited in the book by Moniaga (2024), is presented in the following figure.

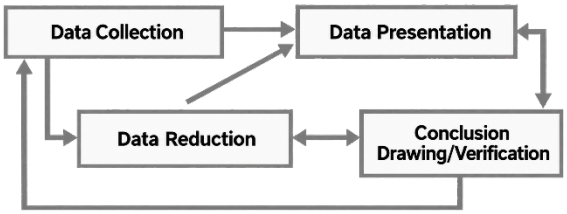


Fig. 2. Qualitative Data Analysis Techniques
Source: Matthew B. Miles and A. Michael Huberman Model

The series of qualitative research analysis cycles presented in Figure 2can be described as follows:

a. Data Collection
Data collection refers to the process of gathering data at the research site through observation, interviews, and documentation. This process involves determining appropriate data collection strategies, establishing the research focus, and conducting in-depth data collection in subsequent stages.

b. Data Reduction
Data reduction refers to the process of summarizing, selecting essential information, focusing on the most relevant aspects, and identifying themes and patterns in accordance with the research objectives.
In this qualitative study, data reduction involves the process of selecting, simplifying, abstracting, and transforming qualitative data obtained from the field. At this stage, the researcher may eliminate data considered irrelevant to the research focus. Consequently, the reduced data provide a clearer overview of the phenomenon being studied and facilitate the researcher in conducting subsequent data collection.

c. Data Display
The process of organizing and grouping the reduced data. The grouping can be conducted

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using labels, categories, or other appropriate forms of classification. After data reduction, the next step is to display the data, which may be presented in the form of brief descriptions, diagrams, relationships among categories, flowcharts, or other appropriate formats.

d. Conclusion Drawing (Verification)
Conclusion drawing is the process of interpreting the findings based on the data that have been analyzed. Conclusions initially formulated can be considered credible when they are supported by valid and consistent evidence. Therefore, when the researcher returns to the field to collect additional data and the previously identified findings remain supported by the evidence, the conclusions can be considered credible.

3.7 Validity, Reliability, and Trustworthiness

Because the qualitative approach serves as the primary method in this embedded mixed-method study, the quality of the findings is supported through the consistency of the data collection and analysis process. The analysis includes interpretation of interview transcripts and triangulation before conclusions are drawn. Triangulation is conducted as part of the analytical process to strengthen the credibility of the findings by comparing and integrating the information obtained through the available data collection processes. The interactive analysis process of data collection, data reduction, data display, and conclusion drawing/verification also provides a systematic basis for assessing the consistency of the findings. The methodology provided does not specify separate quantitative validity and reliability tests or particular statistical reliability coefficients. Therefore, no additional validity or reliability procedures are introduced beyond the qualitative credibility process and triangulation explicitly described in the original methodology.

3.8 Ethical Considerations

Ethical considerations are relevant to the collection and use of information obtained from research informants. In conducting interviews, observations, and documentation, the research involves individuals who provide information concerning the implementation of digital-based financial management and business activities. The methodology provided does not explicitly describe specific procedures concerning informed consent, confidentiality, anonymity, institutional ethical approval, or data-protection protocols. Therefore, these procedures are not added as if they had been implemented. Nevertheless, the use of information obtained from research informants should be conducted in accordance with applicable research ethics and academic integrity principles.

3.9 Research Procedure

The research procedure follows the embedded mixed-method design, with qualitative methods serving as the primary approach and quantitative methods functioning as supporting methods. The research stages can be organized as follows:

a. Research planning and focus determination. The researcher establishes the research focus on the optimization of digital-based financial management implementation in increasing business income.
b. Identification of research informants. Relevant informants are determined based on their roles and competence in providing information related to the research focus. The informants consist of one person from the financial management section, three persons from the marketing and sales section, and one business owner.
c. Data collection. Qualitative data are collected through observation, interviews, and documentation. Supporting quantitative data concerning the level of optimization of digital-based financial management and business income before and after implementation are also obtained.
d. Data analysis. Qualitative data are analyzed interactively through data reduction, data display, and conclusion drawing/verification. Quantitative data are processed and used as supporting evidence for the qualitative findings.
e. Triangulation and verification. The findings are interpreted and triangulated to assess the consistency and credibility of the information obtained.
f. Integration of findings. The qualitative and quantitative findings are integrated in accordance with the embedded mixed-method design.
g. Strategy formulation. The integrated findings are

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used to formulate an optimization strategy for implementing digital-based financial management to sustainably increase business income.

3.10 Methodological Limitations

The methodological limitations of this study are primarily related to its embedded mixed-method design, in which the qualitative approach serves as the primary method and the quantitative approach functions as supporting evidence. Consequently, the depth of the findings is primarily determined by the qualitative information obtained from the selected informants. The study involves five informants consisting of one person from the financial management section, three persons from the marketing and sales section, and one business owner. Therefore, the findings are intended to provide an in-depth understanding of the phenomenon within the research context rather than broad statistical generalization. In addition, the quantitative component is positioned as a supporting method and is used to analyze the level of optimization of digital-based financial management and comparative patterns of business income before and after implementation. The methodology provided does not specify a separate quantitative sampling procedure or statistical testing framework. Therefore, the quantitative findings should be interpreted as supporting evidence within the embedded design rather than as the primary basis for statistical generalization. Finally, the methodology provided does not explicitly describe specific ethical approval procedures, quantitative measurement instruments, or formal validity and reliability coefficients. These aspects represent methodological elements that are not elaborated in the original research methodology and therefore are not assumed or added beyond the available research information.

4. Results and Discussion

4.1 Research Results

4.1.1 Sample Description and Descriptive Statistics

The research was conducted at UKM 88 Marijo, a business that has been engaged in production activities for approximately 18 years. The main product of the business is boneless milkfish, while the business has gradually developed product diversification into Milkfish Amplang, Milkfish Floss, Milkfish Bone Stick Crackers, and Milkfish Meatballs.

The research involved five informants consisting of one person from the financial management section, three persons from the marketing and sales section, and one business owner. The empirical data were obtained through interviews, field observations, and supporting business documents. The research focused on the development of production, product diversification, raw material utilization, financial performance, transaction practices, financial recording, and the implementation of digital-based financial management.

During the 2023–2025 period, UKM 88 Marijo demonstrated continuity in its production activities, expansion of market reach, product diversification, and consistency in maintaining product quality through the implementation of Indonesian National Standards (SNI) and the availability of a BPOM license.

4.1.2 Data Quality and Preliminary Analysis

Because the study uses an embedded mixed-method design with the qualitative method positioned as the primary method, preliminary analysis does not involve statistical tests such as normality, multicollinearity, reliability coefficients, or model-fit testing. These tests are therefore not applicable to the primary qualitative analysis. The quality of the empirical findings was supported through interviews, field observations, supporting documents, interpretation of interview transcripts, and triangulation. Numerical data concerning production, raw material utilization, turnover, costs, and profit were used as supporting evidence for the qualitative findings. The 2023–2025 period was selected as the basis for the financial analysis because this represents the period for which the business data could still be identified comprehensively. The financial information was reviewed, organized, and confirmed with the financial staff of UKM 88 Marijo.

a. Production Development at UKM 88 Marijo

Production development is one of the indicators that can be used to describe the level of business development. An increase or stability in production indicates the ability of business actors to maintain business continuity, meet market demand,

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and manage available resources effectively. For UKM 88 Marijo, production development is influenced not only by production capacity but also by the availability of raw materials, the number of workers, consumer demand, and the implementation of established product quality standards.

Based on interviews with the business owner, field observations, and a review of supporting documents, UKM 88 Marijo has shown relatively stable business development throughout the 2023–2025 period. Although the business owner has not maintained detailed historical records of annual production volumes, the operational conditions indicate the continuity of production activities, product diversification, expansion of market reach, and consistency in maintaining product quality through the implementation of Indonesian National Standards (SNI). These conditions indicate that the production activities of UKM 88 Marijo have continued to meet market demand.

Table 2. Production and Business Development of UKM 88 Marijo, 2023–2025

Indicator	2023	2024	2025
Estimated raw material use (fish/year)	±46.286	±48.857	±51.429
Average raw material use (fish/month)	±3.857	±4.071	±4.286
Average raw material use (fish/day)	±148	±157	±165
Effective working days	±26 days/month	±26 days/month	±26 days/month
Number of employees	18 people	20 people	23 people
Number of product types	2 type	3 type	5 type
Main product	Boneless milkfish	Boneless milkfish	Boneless milkfish
Marketing areas	Restaurants, hotels, souvenir shops, and online sales	Restaurants, hotels, souvenir shops, and online sales	Restaurants, hotels, souvenir shops, online sales, and the **MBG Program**
SNI Certification	Available	Available	Available
BPOM License	Available	Available	Available

Source: Field Observation Results

Based on the data presented in Table 2, UKM 88 Marijo demonstrated very good development in its business operations during the 2023–2025 period. This development is reflected in improvements across nearly all segments, including business capacity, workforce, product diversification, and market expansion.

UKM 88 Marijo has been engaged in production activities for approximately 18 years. In its early development, the business focused primarily on boneless milkfish. As the business developed, the owner, Mrs. Mariyani, identified opportunities to diversify into other types of products. This is further confirmed by the following statement:

> "UKM 88 Marijo basically began diversifying its products in 2020. However, due to challenges in meeting certain standards, particularly health-related requirements, products such as *Amplang*, fish meatballs, and fish bone crackers were only produced starting in 2024. These products can certainly be considered one of the sources of business income."

Regarding the five types of products presented in Table 2, the results of interviews and field observations can be described as follows:

Table 3. Production and Business Development of UKM 88 Marijo, 2023–2025

No.	Product Type	Developed Since	Production Started	Product Characteristics
1	Boneless Milkfish	2008	2008	The main product of UKM 88 Marijo, processed hygienically, free of bones, and compliant with SNI quality standards.
2	Milkfish Amplang	2020	2024	A snack made from milkfish, characterized by a crispy texture and distinctive flavor.
3	Milkfish Floss	2020	2024	A processed milkfish product rich in protein and calcium, utilizing both the fish meat and processed fish-bone components.
4	Milkfish Bone Stick Crackers	2020	2024	An innovative product made from the central bones of milkfish, processed into a savory and value-added

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				snack.
5	Milkfish Meatballs	2020	2024	A frozen food product made from milkfish, offering convenience and ready-to-process preparation for consumers.

Source: Field Observation Results

These products have subsequently become part of the production activities of UKM 88 Marijo since 2024 and continue to be produced to the present.

b. Production Volume Development at UKM 88 Marijo

An indicator of the development of UKM 88 Marijo is the business's ability to diversify its products and establish different selling prices according to the characteristics of the products offered. The findings indicate that each product has distinct characteristics, packaging sizes, and selling prices.

Pricing is determined by considering product size, type of processed product, and the economic value generated. For boneless milkfish products, selling prices vary according to the size or weight of the fish, while processed products such as amplang, milkfish floss, and milkfish meatballs are marketed in several packaging sizes to accommodate consumer needs. These variations in products and prices represent one of the strategies implemented by UKM 88 Marijo to expand its market segments while improving business competitiveness.

An overview of the product types, packaging size variations, selling prices, and the contribution of each product to the development of UKM 88 Marijo is presented in the following table 4.

Table 4. Variations and Selling Prices of Products at UKM 88 Marijo, 2023–2025

Product Type	Estimated Production Share	Product/Packaging Variations	Selling Price (Rp)
Boneless Milkfish	65%	320–340 g	40,000
		460–480 g	45,000
		475–530 g	50,000
		560–620 g	55,000
		720–820 g	60,000
Milkfish Amplang	12%	100 g	20,000
		500 g	85,000
		1 kg	170,000
Milkfish Floss	8%	150 g	20,000
		500 g	75,000
		1 kg	150,000
Milkfish Meatballs	8%	500 g	45,000
Milkfish Bone Stick Crackers	7%	Packaging data not yet available	

Source: Observations at UKM 88 Marijo

The product types, estimated production proportions, packaging variations, and selling prices presented in Table 5 represent the pattern of raw material allocation based on the production experience of UKM 88 Marijo. These estimated proportions indicate the approximate amount of milkfish allocated to each type of product during each production cycle, with boneless milkfish receiving the largest proportion, while the other diversified products are allocated raw materials according to the production pattern implemented by the business.

Further support for the use of estimated production proportions was obtained from a statement by the Secretary of UKM 88 Marijo, accompanied by Mrs. Mariyani as the business owner, who explained:

> "The estimated production proportions allocated to each product are based on the experience and production patterns that have been implemented by UKM 88 Marijo. During each production cycle, the available milkfish are

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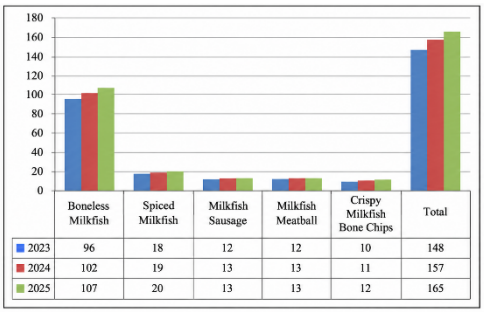
allocated to several types of products according to production needs. Boneless milkfish remains the product receiving the largest allocation, while the remainder is allocated to diversified products such as Amplang, milkfish floss, fish meatballs, and fish bone stick crackers. The allocation does not always remain the same in every production process; therefore, the figures presented in the table are estimates based on the production patterns that have been implemented over time."

Meanwhile, for the Milkfish Bone Stick Crackers, the product is still being introduced to consumers while market interest is being assessed. Therefore, the product has not yet been developed into a standardized packaged product. This was also emphasized by the business owner:

"The milkfish bone crackers are primarily intended to utilize what was previously considered waste. The development of these bone sticks was also originally inspired by a creative project carried out by KKN students. Therefore, the product has not yet been packaged and is currently being introduced to consumers as an innovative product. Whenever there are customers, they are offered the bone-stick crackers directly. Further development will be carried out if market interest is sufficiently strong, at which point the product will be produced in packaged form."

A comparison between the raw material requirements and the estimated production proportions for each product, calculated based on daily, monthly, and annual usage scales, is presented in the following graph

.



Product	Percentage Growth (%)	
	2024	2025
Boneless Milkfish	0.06	0.05
Spiced Milkfish	0.06	0.05
Milkfish Sausage	0.06	0.05
Milkfish Meatball	0.06	0.05
Crispy Milkfish Bone Chips	0.06	0.05
Total	0.10	0.25

Product	Production (kg)			Percentage Growth (%)	
	2023	2024	2025	2024	2025
Boneless Milkfish	2,537	2,649	2,736	0.03	0.05
Spiced Milkfish	483	489	514	0.03	0.05
Milkfish Sausage	509	526	543	0.03	0.05
Milkfish Meatball	509	526	543	0.03	0.05
Crispy Milkfish Bone Chips	270	285	300	0.03	0.05
Total	**3,857**	**4,071**	**4,286**	**0.28**	**0.25**

Product	Yield Rate			Percentage Growth (%)	
	2023	2024	2025	2024	2025
Boneless Milkfish	80.06%	81.42%	89.62%	0.06	0.05
Spiced Milkfish	15.14%	14.99%	6.12%	0.06	0.05
Milkfish Sausage	2.74%	2.90%	4.11%	0.05	0.05
Milkfish Meatball	2.74%	2.90%	4.11%	0.05	0.05
Crispy Milkfish Bone Chips	0.74%	0.79%	0.60%	0.08	0.05
Total	**45.38%**	**48.57%**	**51.43%**	**0.28**	**0.25**

Fig. 3. Raw Material Usage Cycle for Milkfish Products, 2023–2025

The average amount of raw materials required on a daily, monthly, and annual basis generally shows an increase. However, it is noteworthy that this increase differs from the growth rate of raw material utilization. Based on the daily calculation, the growth rate in 2025 decreased by 0.26 points, while based on the monthly and annual accumulation, the decline was 0.02 points. This decline in the growth of raw material utilization is also one of the factors contributing to the decrease in the growth rate of business turnover.

In addition to presenting the estimated allocation of raw materials in Table 5, the table also illustrates the variations in packaging produced for each product. Differences in packaging sizes are adjusted to the characteristics of each product and the marketing strategies implemented by UKM 88 Marijo. Boneless milkfish is available in several packaging sizes, while the other products are offered in various sizes according to consumer needs. Meanwhile, the Milkfish Bone Stick Crackers have not yet been packaged because the product is still being introduced to the market and consumer purchasing interest is still being assessed.

Further observations also revealed that the proportion of products produced by UKM 88 Marijo does not utilize all parts of each milkfish. Each type of product involves certain parts of the fish that are not utilized. The percentage of usable portions for each product is presented in the following table

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Table 5. Proportion of Milkfish Parts Utilized Based on an Estimated Average Weight of ±530 Grams

Milkfish Part	Weight Percentage	Weight in a ±530 g Fish
Meat	48–52%	255–276 g
Bones & Spines	14–16%	74–85 g
Head	15–18%	80–95 g
Skin	5–7%	27–37 g
Fins & Tail	2–3%	11–16 g
Internal Organs	10–12%	53–64 g
Total	—	±530 g

Source: Observations at UKM 88 Marijo

Based on the composition of the milkfish parts presented in Table 5. the utilization of fish parts for each product can be explained according to the portions used in the processing stage as follows:

c. Boneless Milkfish (±70–80%)

The portions utilized in the processing include meat at 48–52%, the head at 15–18%, fins and tail at 2–3%, and skin at 5–7%. Meanwhile, bones and spines at 14–16% and internal organs at 10–12% are not used as part of the product. Thus, the estimated usable portion of one milkfish accounts for approximately 70–80% of its total weight.

d. Milkfish Meatballs (±48–52%)

This product uses the meat, particularly filleted meat, as its main ingredient. The bones and spines, head, internal organs, and other parts are not used as ingredients.

e. Milkfish Amplang (±48–52%)

This product utilizes the available meat, including meat that is not used for other main products, according to the production process.

f. Milkfish Floss (±48–52%)

This product uses the fish meat as its main ingredient, which is subsequently processed into floss.

g. Milkfish Bone Stick Crackers (±14–16%)

This product utilizes the bones and spines as the main raw material, which are processed into bone-stick crackers.

The fish weight used as the reference in Table 5 is approximately 530 grams. This weight is based on information provided by the operational staff responsible for procuring raw materials, particularly milkfish. It was found that UKM 88 Marijo has established a minimum standard weight of 500 grams per fish for each purchase. In practice, however, the weight of the fish purchased varies, with an average range of approximately 500–600 grams per fish. Therefore, to facilitate the estimation of the usable portions of milkfish for each product, an average standard weight of 530 grams was used as the basis for calculation.

h. Financial Performance Analysis of UKM 88 Marijo

1) Development of the Financial Performance of UKM 88 Marijo

The financial performance of UKM 88 Marijo has shown a positive trend over the period under review. The estimated financial performance in this study was developed based on interviews with the financial staff and a review of the business's sales records. Based on this review, the 2023–2025 period represents the period for which the data can still be identified comprehensively and is therefore used as the basis for describing the development of UKM 88 Marijo's financial performance.

The data obtained were subsequently reviewed, organized, and confirmed with the financial staff of UKM 88 Marijo to provide an overview of the estimated business turnover, costs, and profit. Based on this process, an overview of the development of UKM 88 Marijo's financial performance was obtained, as presented in the following table.

Table 6. Development of the Financial Performance of UKM 88 Marijo, 2023–2025

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Indicator	2023	2024	2025
Annual Turnover	1.620.000.000	1.710.720.000	1.801.388.160
Turnover Growth	5,05%	5,60%	5,30%
Net Profit Margin	10%	10%	10%
Net Profit	162.000.000	171.072.000	180.138.816
Turnover per Employee	70.400.000	74.300.000	78.300.000
Net Profit per Employee	3.911.111	3.715.000	3.404.348

Source: Observations at UKM 88 Marijo

Based on Table 6, UKM 88 Marijo's turnover increased from 2023 to 2025. However, the turnover growth rate fluctuated, with growth in 2025 declining compared to 2024. This condition indicates that an increase in turnover value is not necessarily accompanied by an increase in the turnover growth rate.

To further examine the decline in turnover growth, particularly between 2024 and 2025, a more detailed analysis is needed to identify the components contributing to this decline, particularly in terms of revenue and the various costs incurred throughout the business process. Details regarding the development of turnover, production costs, labor costs, operating costs, and other expenses are presented in Table 7.

Table 7. Development of Revenue and Costs of UKM 88 Marijo, 2023–2025

Indicator	2023	2024	2025
Turnover	1,620,000,000	1,710,720,000	1,801,388,160
Production Costs	972,000,000	1,028,142,720	1,086,237,060
Labor Costs	243,000,000	254,897,280	264,804,060
Operating Costs	162,000,000	171,072,000	180,138,816
Other Costs	81,000,000	85,536,000	90,069,408
Total Costs	1,458,000,000	1,539,648,000	1,621,249,344
Net Profit	162,000,000	171,072,000	180,138,816

Source: Observations at UKM 88 Marijo

The issue observed regarding the slowdown in turnover growth in 2025 was not caused by a decline in turnover, but rather because the increase in turnover during that year was relatively similar to the previous year. Turnover in 2025 increased by 90,668,160 compared with 2024, while in 2024, turnover increased by 90,720,000 compared with 2023. Although the additional turnover was relatively similar in nominal terms, the growth rate declined from 5.60% in 2024 to 5.30% in 2025.

This condition also needs to be considered alongside the development of the various cost components, which also increased. This indicates that as turnover increased, the costs required to support production and business operations also increased. However, the annual overview presented in Table 7 does not yet fully illustrate how the turnover of UKM 88 Marijo was generated during each period throughout the year. Therefore, further analysis is needed based on monthly revenue development, as monthly changes in turnover can provide an overview of the patterns or revenue cycles occurring within the business.

The development of the monthly financial cycle of UKM 88 Marijo is presented in the following table.

Table 8. Development of Average Monthly Revenue and Costs of UKM 88 Marijo, 2023–2025

Indicator	2023	2024	2025
Turnover	135,000,000	142,560,000	150,115,680
Production Costs	81,000,000	85,678,560	90,519,755
Labor Costs	20,250,000	21,241,440	22,067,005
Operating Costs	13,500,000	14,256,000	15,011,568
Other Costs	6,750,000	7,128,000	7,505,784
Total Costs	121,500,000	128,304,000	135,104,112
Net Profit	13,500,000	14,256,000	15,011,568

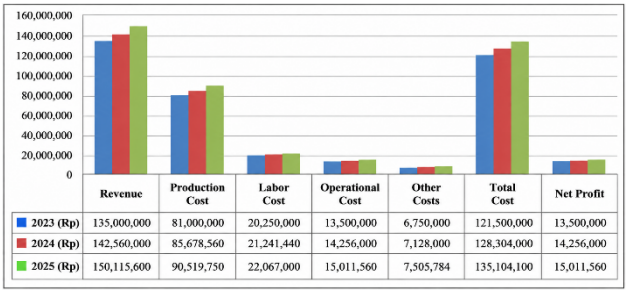
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Source: Observations at UKM 88 Marijo

The data presented in Table 8 show that the average monthly revenue and costs during the 2023–2025 period did not change substantially. This development is consistent with the increases in production costs, labor costs, operating costs, and other costs, all of which also increased each year.

The slowdown in turnover growth in 2025 can be observed from the amount of additional turnover generated compared with the previous year. Although business turnover continued to increase, the additional turnover in 2025 amounted to 90,668,160, which was slightly lower than the 90,720,000 increase recorded in 2024. Thus, there was a difference of 51,840 in the additional turnover, indicating a slowdown in turnover growth in 2025. This condition does not indicate a decline in turnover but rather shows that the increase in turnover was relatively smaller than the increase recorded in the previous year.

To measure the factors contributing to the decline in the turnover growth of UKM 88 Marijo, the financial cycle reflected in the balance sheet can be examined together with the growth rate of each component, as described below:



Indicator	Revenue Growth		Percentage Growth		
	2024	2025	2024	2025	Difference
Revenue	7,356,000	7,755,680	5.6%	5.8%	0.3%
Production Cost	4,378,560	4,841,195	5.6%	5.7%	0.1%
Labor Cost	991,440	825,565	4.9%	3.9%	1.0%
Operational Cost	756,000	795,568	5.6%	5.3%	0.3%
Other Costs	378,000	377,784	5.6%	5.3%	0.3%
Total Cost	6,894,000	6,800,112	5.6%	5.3%	0.3%
Net Profit	756,000	755,568	5.6%	5.3%	0.3%

Fig. 4. Cycle of Factors Contributing to the Slowdown in Turnover Growth at UKM 88 Marijo in 2025

When examining the issue of the 0.3-point slowdown in turnover growth, the underlying cause lies in the difference in the amount of turnover or business income generated in 2025. The increase in turnover in 2025 was lower than that recorded in 2024. The business growth cycle also shows that several cost components experienced a decline, including labor costs, which decreased by 1.0 point. Thus, based on the similar patterns observed in the monthly and annual growth cycles, the slowdown in turnover growth can be attributed to the fact that the increase in business income in 2025 was lower than the increase recorded in 2024.

2) Development of Milkfish Utilization as the Main Raw Material of UKM 88 Marijo, 2023–2025

Milkfish is the primary raw material used throughout the production processes of UKM 88 Marijo. The availability of raw materials is an important factor determining production capacity, business continuity, and the company's ability to meet market demand. During the 2023–2025 period, the use of milkfish as the primary raw material showed an increasing trend, in line with the growth in production volume and increasing market demand.

This condition reflects the development of UKM 88 Marijo's production capacity in meeting market needs while expanding the diversification of milkfish-based products. The development of the required quantity of milkfish as the primary raw material at UKM 88 Marijo can be described as follows:

Table 9. Estimated Average Raw Material Requirements for Milkfish at UKM 88 Marijo

Year	Estimated Raw Material Use (Fish/Year)	Average per Month (Fish)	Average per Day (26 Working Days)
2023	46,286	3,857	148
2024	48,857	4,071	157
2025	51,429	4,286	165

Source: Observations at UKM 88 Marijo

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To support the fulfillment of the main raw material for this business, namely milkfish, the expected source of supply is naturally from fishpond farmers in Pinrang Regency. Based on a review of several media sources, the milkfish production from this area is considered to be sufficiently adequate.

A comparison of the relevant data is presented in the following table:

Table 10. Comparison of Milkfish Pond Production in Pinrang Regency with the Average Raw Material Requirements of UKM 88 Marijo

Year	Milkfish Pond Production (Tons)	UKM Raw Material Requirements (Fish)
2023	19,714.70	46,286
2024	20,227.40	48,857
2025	20,236.00	51,429

Source: Observations at UKM 88 Marijo

i. Analysis of Digitalization in Financial Management at UKM 88 Marijo

1) Financial Transaction Model Implemented at UKM 88 Marijo

The transaction model implemented at UKM 88 Marijo still combines conventional transactions with the use of several digital media. In practice, business transactions involve several main activities, including the purchase of raw materials, payments to suppliers, sales of products to consumers, and receipt of payments from sales. The use of conventional methods and digital media is adjusted to the type of transaction and the parties involved in the business activities.

Interview with the financial staff of UKM 88 Marijo provided the following information:

> "The transaction model used by this business has basically adopted several methods. Although cash transactions remain dominant, several types of transactions are already conducted through non-cash payments and bank transfers."

Detailed overview of the transaction models, based on the explanation provided by the financial staff, can be described as follows:

2) Raw Material Purchase Transaction Model

Raw materials are purchased from fishpond farmers and suppliers located in Pinrang Regency and surrounding areas. The payment method is determined based on the agreement between the MSME and the supplier. For certain transactions, payment is made in cash, while suppliers with established business relationships are paid through bank transfers. Although banking services have been utilized, transaction administration is still conducted manually through cash-book records.

3) Consumer Sales Transaction Model

Products are sold directly to consumers, restaurants, hotels, cafés, and through marketing partners. To serve consumers, UKM 88 Marijo provides two payment methods: cash and bank transfer. The availability of bank transfers provides a more convenient payment alternative, particularly for consumers from outside the region.

In addition to direct sales, product promotion has utilized social media platforms such as Facebook and TikTok to introduce the products to the public. However, these digital media are still primarily used for promotional activities and have not yet been fully integrated into the transaction and financial recording systems.

4) Transaction Pattern with Regular Customers

Transactions with regular customers and business partners are conducted based on an ordering system. Payments can be made either in cash or through bank transfers, depending on the agreement. This transaction model provides flexibility for customers while supporting the continuity of business cash flow. Nevertheless, all transactions are still manually recapitulated in the cash book as the basis for preparing financial reports

5) Digitalization Patterns in the Financial Recording System of UKM 88 Marijo

The analysis of the research findings indicates that the digitalization of financial management at UKM 88 Marijo is still at an early stage. The utilization of digital technology has not yet been directed toward the financial recording system but is primarily used as a promotional medium and an alternative payment method for consumers. The

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social media platforms utilized in business activities are limited to Facebook and TikTok for introducing products to the public, while payments are made through bank transfers or cash.

Although bank transfers have been utilized as one of the payment methods, the financial transaction recording system does not yet employ accounting applications or software. All incoming and outgoing transactions are still recorded manually in a notebook. Records are maintained daily to ensure that all transactions are properly documented. In addition, the business management has separated business finances from personal finances and has prepared simple income statements and cash flow statements.

These conditions indicate that the utilization of digital technology at UKM 88 Marijo remains partial. Digitalization has only been implemented in marketing communication and certain payment transactions, while core financial management functions, such as transaction recording, financial reporting, and financial data management, are still carried out manually. Consequently, the financial administration process requires relatively more time and may be prone to recording errors as the volume of transactions increases.

6) Barriers and Challenges in Utilizing Digital Financial Management at UKM 88 Marijo.

The barriers and challenges encountered by UKM 88 Marijo in implementing financial digitalization, particularly in recording all transactions for the preparation of financial reports, were identified through interviews with the financial staff and the business owner. Several aspects related to the business financial management system were identified as follows:

1) Transaction Recording

The statement from the financial staff of UKM 88 Marijo regarding the transaction recording system provides the following overview:

> "The transaction recording process used so far is essentially still manual. Although several transaction activities are already conducted digitally, the bookkeeping process is still carried out through cash-book records using a computer."

Supporting this statement, the business owner, Mrs. Mariyani, added:

> "In terms of digital recording, if using a computer is considered digital, we have actually implemented it. However, it must be acknowledged that the process can still be considered manual because it is not application-based; transactions are simply recorded in the same manner as entries in a cash book."

> "Our current effort is to look for an application or an integrated payment system so that, in the future, the time spent processing transactions can be utilized for other activities."

2) Optimization of the Implementation of Digital-Based Financial Recording at UKM 88 Marijo

Optimization of the implementation of digital-based financial recording is an effort to improve the quality of financial management through the utilization of information technology capable of generating financial information quickly, accurately, and accessibly. Digitalization serves not only as a tool for recording transactions but also as a financial control instrument that can support business planning, decision-making, and continuous business performance evaluation.

The findings of this study indicate that UKM 88 Marijo already has a relatively sound foundation for financial management. All business transactions are recorded routinely on a daily basis, business finances have been separated from personal finances, and basic income statements and cash flow statements have been prepared. However, these activities are still carried out manually using record books, resulting in a relatively longer reporting process and the potential for recording errors.

The forms of optimization that can be implemented include:

a) Digitalization of Daily Transaction Recording

Optimization of financial recording at UKM 88 Marijo can be achieved by transforming the existing book-based recording system into a digital application-based recording system.

b) Integration of Payment Systems with Financial Recording

The use of bank transfers as a payment method needs to be further developed by integrating each transaction into a digital-based financial

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recording system. Each incoming payment to the business account can be directly recorded in the financial recording application, allowing transactions to be documented automatically. This mechanism not only simplifies financial administration but also helps the treasurer monitor cash flow, reduce the risk of recording errors, and accelerate the preparation of financial reports.

c) Automated Financial Reporting

The preparation of financial reports should be directed toward the use of digital applications capable of automatically processing transaction data into financial reports. Through such a system, income statements, cash flow statements, and revenue summaries can be generated based on previously recorded transaction data. This mechanism can accelerate financial reporting, improve the accuracy of the information generated, and facilitate management in evaluating business development.

d) Strengthening Human Resource Competence

Digital transformation is determined not only by the availability of applications but also by the capabilities of their users. Therefore, managers and treasurers need to receive training in the use of digital financial recording applications, financial data management, and the preparation of basic financial reports. Improving these competencies is expected to support the sustainable implementation of the digital system.

4.1.4 Hypothesis Testing / Key Findings

This study does not employ formal hypothesis testing because the research uses a mixed-method embedded design with a qualitative approach as the primary method. Therefore, statistical hypothesis testing is not applicable. The main empirical findings are instead organized according to the research focus:

a. UKM 88 Marijo demonstrated relatively stable business development during 2023–2025, accompanied by increases in estimated raw material use, number of employees, product types, and market reach.
b. Estimated raw material use increased from ±46.286 fish/year in 2023 to ±48.857 fish/year in 2024 and ±51.429 fish/year in 2025.
c. The number of employees increased from 18 people in 2023 to 20 people in 2024 and 23 people in 2025.
d. Product diversification increased from 2 type in 2023 to 3 type in 2024 and 5 type in 2025.
e. Annual turnover increased from 1.620.000.000 in 2023 to 1.710.720.000 in 2024 and 1.801.388.160 in 2025.
f. Turnover growth was 5,05% in 2023, 5,60% in 2024, and 5,30% in 2025.
g. Net profit increased from 162.000.000 in 2023 to 171.072.000 in 2024 and 180.138.816 in 2025.
h. Despite the increase in turnover, turnover growth slowed in 2025 because the additional turnover of 90,668,160 was slightly lower than the 90,720,000 increase recorded in 2024, resulting in a difference of 51,840.
i. Digitalization at UKM 88 Marijo remains partial. Digital media are used for marketing and certain payment transactions, whereas financial transaction recording, financial reporting, and financial data management remain predominantly manual.
j. The main barriers identified concern manual transaction recording and the absence of an integrated application-based financial recording system.
k. The identified optimization directions include digitalization of daily transaction recording, integration of payment systems with financial recording, automated financial reporting, and strengthening human resource competence.

4.1.5 Visual Presentation of Results

Overall, the tables and figures provide a structured visual representation of the empirical findings, covering production development, product diversification, raw material utilization, financial performance, revenue and cost development, and raw material requirements at UKM 88 Marijo. These visual elements support the presentation of the main research findings and provide the empirical basis for the subsequent discussion of the implementation, optimization, and barriers of digital-based financial management.

4.2 Research Discussion

4.2.1 Interpretation of Key Findings

a. Analysis of the Implementation of Digital-Based Financial Management at UKM 88

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The findings of the study indicate that the implementation of digital-based financial management at UKM 88 Marijo has begun, although it has not yet been comprehensively applied to all aspects of financial management. The digitalization that has been implemented is more evident in the use of digital media for payment transactions and product marketing. Some consumers have made payments through bank transfers, while other transactions are still conducted in cash. This condition indicates that the digitalization process has developed gradually according to the needs of the business and the characteristics of the consumers served.

This phenomenon illustrates that digital transformation in MSME financial management does not occur instantly but develops gradually according to resource readiness, organizational capabilities, and operational needs. Financial digitalization is essentially a process of adapting to technological developments aimed at improving transaction efficiency, accelerating the flow of financial information, and supporting more accurate decision-making.

The phenomenon identified in this study is consistent with the findings of Arodhiskara & Rosadi (2023), who explain that financial management digitalization in MSMEs generally begins with the utilization of technology as a medium for transactions and marketing, and subsequently develops toward digital financial recording and financial reporting. Rosadi et al. (2026) also emphasizes that the success of digital transformation is strongly influenced by the ability of business actors to adopt technology, improve digital literacy, and establish systematic financial recording practices. These characteristics can be observed at UKM 88 Marijo, which has utilized non-cash transactions as part of its business activities but still requires further strengthening in financial recording and reporting.

A different perspective is presented by Andi AR and Nurwani (2024), who emphasize the importance of accounting information systems in producing high-quality financial information. Although their study was conducted in a corporate context, its findings remain relevant to MSMEs because information technology can provide optimal benefits when supported by sound financial governance. At UKM 88 Marijo, the use of digital transactions has established an initial foundation for developing a more effective financial information system, although digital financial recording has not yet been implemented comprehensively.

The urgency of digitalization is also reflected in the study by Hasdiana et al. (2025), which emphasizes that accurate financial information serves as a basis for determining production costs and setting product selling prices. In this context, digitalization functions not only as a means of recording transactions but also as an instrument for providing production cost and revenue information quickly, accurately, and continuously, thereby enabling more rational business decision-making. This condition is relevant to UKM 88 Marijo, which has relatively stable production activities and requires a financial management system capable of generating continuous cost information.

The arguments presented in these findings are further supported by various previous studies on MSME digitalization. Wahyudi et al. (2025) explain that accounting digitalization can improve financial performance by providing faster and more accurate information. Furthermore, Izzati et al. (2025) demonstrate that the implementation of digital-based financial applications contributes to MSME performance optimization by improving the effectiveness of transaction management and financial reporting. Meanwhile, that the use of digital transactions can improve business performance by accelerating payment processes while providing greater convenience for customers in conducting transactions.

Based on the overall analysis, it can be understood that the implementation of digital-based financial management at UKM 88 Marijo remains at a developmental stage. Digitalization has provided tangible benefits in supporting transaction and marketing activities, but its implementation has not yet covered the entire financial management process, particularly in terms of financial recording, reporting, and financial information management.

Strengthening digital literacy, improving human resource capacity, and utilizing integrated financial applications are therefore important factors in ensuring that digital transformation can enhance operational effectiveness, the quality of financial information, and business growth.

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b. Analysis of the Optimization of Digital-Based Financial Management Implementation at UKM 88 Marijo

Optimization of the implementation of digital-based financial management at UKM 88 Marijo indicates that digital transformation has begun to develop as part of efforts to improve the effectiveness of business management. The findings show that digitalization has been utilized for payment transactions through bank transfers and for marketing through digital media. However, its implementation has not yet covered all aspects of financial management, particularly transaction recording, financial reporting, cash-flow control, and the provision of integrated financial information. This condition indicates that the digitalization implemented remains at an early stage and therefore requires further optimization so that the benefits of technology can be realized more comprehensively.

When examined from the perspective of digital-based financial management, optimization is not merely defined as the use of technology in payment processes but also as the integration of technology throughout the financial management cycle. An integrated system enables transactions to be recorded automatically, financial reports to be generated periodically, real-time cash-flow information to be provided, and more effective decision-making to be supported. Thus, digitalization no longer functions merely as an administrative tool but becomes a strategic instrument for improving operational efficiency and MSME competitiveness.

This characteristic is consistent with the study by Rosadi et al. (2026), which explains that digital transformation takes place gradually, beginning with the utilization of technology for transactions and marketing and subsequently progressing toward digital transaction recording, financial reporting, and decision-making based on financial information. It is further emphasized that the success of digitalization is strongly influenced by human resource readiness, digital literacy, and the commitment of business actors to establishing a more systematic financial management culture. This pattern can be observed at UKM 88 Marijo, which has utilized non-cash transactions as an initial step but still requires system integration so that all financial activities can be digitally documented.

The analysis of the condition at UKM 88 Marijo also shows that the use of technology has not been fully accompanied by the strengthening of the financial information system. This perspective is consistent with the study by Andi AR and Nurwani (2024), which identifies accounting information systems and internal controls as important factors in producing high-quality financial information. Although their study was conducted in the corporate sector, the principles presented remain relevant to MSMEs, namely that the utilization of technology can provide optimal benefits when supported by sound financial governance. Therefore, the development of a financial information system is one of the needs that must be addressed so that the digitalization process at UKM 88 Marijo does not stop at the use of digital transaction media alone.

Such optimization is also closely related to the ability of the business to generate accurate cost information. Hasdiana et al. (2025) explain that production cost information serves as a basis for accurately determining the cost of production and selling prices. In the context of UKM 88 Marijo, integrated digital financial recording will facilitate the classification of production costs, operating costs, and business income, thereby providing the business owner with a more objective basis for determining pricing strategies and evaluating business profitability.

This discussion is further supported by several previous studies highlighting the benefits of digitalization for MSME management. Wahyudi et al. (2025) demonstrate that accounting digitalization can improve operational efficiency by providing faster and more accurate financial information. Furthermore, Izzati et al. (2025) explain that the use of digital-based financial applications facilitates transaction recording, financial reporting, and business activity control. Meanwhile, that digital payment systems can improve the quality of customer service through faster, more convenient, and more secure transactions. These findings demonstrate that digitalization provides benefits that extend beyond administrative functions and also contributes to overall business efficiency.

Overall, the findings discussed in this section indicate that the implementation of digital-based financial management at UKM 88 Marijo has established a foundation for transforming the

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business management system toward a more modern approach. The utilization of technology in transaction and marketing activities demonstrates the business's ability to adapt to developments in the business environment. However, optimizing financial digitalization still requires integration with financial recording, reporting, and information management systems. Therefore, the level of financial digitalization implementation at UKM 88 Marijo can be categorized as an ongoing transformation process that has not yet reached a comprehensive stage of implementation..

c. Analysis of Barriers and Challenges in the Utilization of Digital Financial Management at UKM 88 Marijo

The findings of the study indicate that the utilization of financial digitalization at UKM 88 Marijo has not yet been fully optimized. Although the business has utilized digital technology for payment transactions and product marketing, the use of technology for transaction recording, financial reporting, and financial information management remains relatively simple. This condition indicates that the digital transformation process has begun, but its implementation is still limited to certain operational activities, meaning that the benefits of digitalization have not yet been fully realized across the business's financial management system.

From the perspective of digital transformation, the utilization of technology in financial management involves not only the use of digital devices as transaction tools but also changes in the way an organization manages financial data in an integrated manner. The fact that digitalization has not yet extended to recording, control, and financial reporting processes indicates that technology is still being used primarily as a supporting tool for business activities rather than as a system capable of generating financial information to support planning and decision-making. This suggests that the main challenge lies not in the availability of technology but in the organization's adaptation to changes in its financial management system.

A similar perspective is presented by Andi AR and Nurwani (2024), who explain that the quality of financial information is strongly influenced by the implementation of adequate accounting information systems and internal controls. Digital technology will not provide optimal benefits unless it is supported by a structured information management system. In the context of UKM 88 Marijo, the use of digital transactions has facilitated payment processes, but the resulting financial information still requires further management so that it can be used more effectively as a basis for business evaluation and decision-making.

This characteristic is similar to the findings of Rosadi et al. (2026), who explains that barriers to digital transformation among MSMEs are generally influenced by internal organizational readiness, particularly human resource capabilities in operating technology, levels of digital literacy, and the continued reliance of business actors on conventional recording systems. The study also emphasizes that digitalization does not occur instantly but requires changes in mindset, competency development, and commitment from business actors to establish a more modern financial management system. This situation can be observed at UKM 88 Marijo, where digital technology has been utilized in business activities, but its implementation continues to develop gradually according to the needs and capacity of the business.

This discussion is also related to the study by Hasdiana et al. (2025), which explains that accurately organized financial information supports the determination of production costs and product selling prices. The availability of complete financial data is one of the prerequisites for generating reliable cost information. Therefore, the utilization of financial digitalization is not merely intended to facilitate transactions but also to generate information capable of supporting operational efficiency and business sustainability.

Other previous studies also indicate that digitalization challenges remain a common issue faced by MSMEs. Izzati et al. (2025) explain that the limited utilization of digital financial applications is influenced by users' limited ability to operate such systems and the absence of established habits regarding digital financial recording. Wahyudi et al. (2025) further emphasize that accounting digitalization will provide maximum benefits when implemented comprehensively across the entire financial management process.

That the use of digital technology focused

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solely on payment systems is not sufficient to improve the effectiveness of business management comprehensively. Thus, findings from various previous studies reinforce the view that the success of digital transformation is determined not only by the use of technology but also by the organization's readiness to integrate technology into all aspects of financial management.

The synthesis of the research findings shows that digital transactions have become part of the operational activities of UKM 88 Marijo, while digitalization in financial recording, reporting, and financial information provision has not yet been fully integrated. This situation illustrates that digital transformation is taking place gradually in accordance with the readiness of resources and the characteristics of the business management system.

5. Conclusions

5.1 Summary of Key Findings

Based on the results and discussion concerning the Optimization of the Implementation of Digital-Based Financial Management in Increasing Business Income at UKM 88 Marijo, Pinrang Regency, the following conclusions can be drawn:

a. The implementation of digital-based financial management at UKM 88 Marijo has been carried out through the utilization of digital transactions and technology-based marketing media. However, digitalization in transaction recording, financial reporting, cash-flow control, and financial information provision has not yet been integrated. Therefore, its implementation remains at the development stage.
b. The optimization of digital-based financial management is achieved through the integration of technology throughout the financial management process. Digitalization has facilitated transactions, expanded marketing activities, and improved operational efficiency. However, its benefits have not yet been fully optimized because the financial information system has not been comprehensively implemented as a basis for business decision-making.
c. The barriers and challenges in utilizing financial digitalization at UKM 88 Marijo are primarily influenced by internal factors, including relatively simple financial management practices, limited utilization of digital financial applications, the lack of integration between financial recording and reporting systems, and limited human resource capabilities in managing digital-based finances. These conditions indicate that digital transformation still requires an adaptation process to support sustainable improvements in business performance and income

5.2 Theoretical Contributions

This study contributes to the understanding of digital-based financial management in MSMEs by demonstrating that financial digitalization is not limited to the adoption of digital payment or marketing technologies. Rather, effective digital financial management requires the integration of technology throughout the financial management process, including transaction recording, financial reporting, cash-flow management, and financial information provision.

The findings also contribute to the understanding of digital transformation as a gradual process. The experience of UKM 88 Marijo demonstrates that MSMEs may initially adopt digital technology for transactions and marketing before extending its use to more comprehensive financial management functions. This finding provides contextual evidence that the effectiveness of financial digitalization depends not only on technology availability but also on organizational readiness, human resource capabilities, and the ability to integrate technology into existing financial management practices.

In relation to the research gap, the study provides a more contextual understanding of the distinction between digital technology adoption and integrated digital financial management in MSMEs. The findings demonstrate that the existence of digital transactions does not necessarily indicate that an MSME has achieved comprehensive financial digitalization. This contributes to the broader academic understanding of how digital transformation develops within MSME financial management.

5.3 Practical and Policy Implications

For UKM 88 Marijo, the findings indicate the need to gradually strengthen digital-based financial management by not only utilizing technology for

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transactions and marketing but also integrating it into transaction recording, financial reporting, cash-flow management, and financial data storage. The implementation of digital financial applications suited to the needs of the business is expected to generate more accurate financial information, facilitate financial monitoring, and support more effective decision-making.

For local governments, MSME support institutions, and higher education institutions, the findings indicate the importance of expanding training, mentoring, and educational programs related to digital financial management. Such support should focus on improving digital literacy, the use of financial applications, and the preparation of digital-based financial reports so that digital transformation among MSMEs can be implemented more optimally and sustainably.

From a broader policy perspective, MSME digitalization programs should therefore not focus exclusively on digital payment systems and digital marketing. Support should also facilitate the development of integrated financial recording and reporting capabilities so that MSMEs can obtain greater benefits from digital transformation for financial management and business development.

5.4 Limitations of the Study

This study focuses on UKM 88 Marijo in Pinrang Regency; therefore, the findings primarily reflect the characteristics and conditions of this particular MSME. The findings should consequently be interpreted within the specific business context and should not be generalized directly to all MSMEs. Furthermore, the study examines the implementation and optimization of digital-based financial management but does not evaluate the long-term effects of implementing a specific digital financial application. Therefore, the findings describe the existing condition and the areas requiring optimization rather than measuring the long-term effectiveness of a fully implemented digital financial management system. The financial development data used in the study also reflect the financial information available from the business and the period examined. Consequently, the interpretation of financial development remains bounded by the availability and completeness of the business's financial information.

5.5 Directions for Future Research

Future researchers are encouraged to expand studies on digital-based financial management by involving a larger number of MSMEs from various business sectors and geographical contexts. Such studies could provide broader evidence regarding differences in the implementation and optimization of financial digitalization among MSMEs. Future research may also employ quantitative or mixed-method approaches to examine more systematically the effects of financial digitalization on financial performance, profitability, competitiveness, and business sustainability. In addition, longitudinal research could examine changes in business performance before and after the implementation of an integrated digital financial management system. Further studies may also investigate the role of human resource competence, digital literacy, organizational readiness, and financial information systems in determining the success of digital transformation among MSMEs. These directions would provide a more comprehensive understanding of the effectiveness and sustainability of digital-based financial management implementation.

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