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LOAN REPAYMENT RATE AS A DETERMINANT OF FINANCIAL STABILITY IN CREDIT UNIONS: EMPIRICAL EVIDENCE FROM INDONESIA

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ABSTRACT

This study aims to examine the determinant role of loan repayment rate in influencing financial stability among credit unions in Indonesia. Loan repayment performance represents an important indicator of credit quality and institutional financial health, as it reflects members' ability to fulfill credit obligations and contributes to maintaining liquidity, solvency, and profitability. This study provides empirical evidence regarding the extent to which repayment performance affects the financial stability of credit union institutions. This study employed a quantitative approach with a descriptive research design. The research data were obtained from the annual financial reports and loan repayment records of Credit Union Hatirongga in Pematangsiantar City during the 2020 – 2023 period. Data analysis was conducted using simple linear regression with the assistance of SPSS version 26. Classical assumption tests were performed to ensure the validity of the regression model. The empirical results indicate that the loan repayment rate has a positive and significant effect on financial stability. The partial t-test results show a significance value of 0.002 (<0.05) with a calculated t-value of 4.388, confirming that improvements in loan repayment performance significantly strengthen financial stability. Furthermore, the coefficient of determination (R^2) value of 0.859 indicates that the loan repayment rate explains 85.9% of the variation in financial stability, while the remaining 14.1% is influenced by other factors outside the research model. This study highlights that loan repayment performance serves as an important determinant of financial stability in credit unions. Strengthening repayment discipline and improving credit management practices can support institutional resilience by maintaining stable cash flows, reducing credit risk exposure, and enhancing long-term financial sustainability.

Keywords: Loan Repayment Rate, Financial Stability, Credit Union, Microfinance Institution, Credit Risk Management

ABSTRAK

Penelitian ini bertujuan untuk menganalisis peran tingkat pengembalian pinjaman sebagai determinan yang memengaruhi stabilitas keuangan pada lembaga credit union di Indonesia. Tingkat pengembalian pinjaman merupakan salah satu indikator penting dalam menilai kualitas kredit dan kesehatan keuangan lembaga, karena mencerminkan kemampuan anggota dalam memenuhi kewajiban pinjaman serta berkontribusi terhadap keberlangsungan likuiditas, solvabilitas, dan rentabilitas. Penelitian ini memberikan bukti empiris mengenai sejauh mana kinerja pengembalian pinjaman berpengaruh terhadap stabilitas keuangan lembaga credit union. Penelitian ini menggunakan pendekatan kuantitatif dengan desain penelitian deskriptif. Data penelitian diperoleh dari laporan keuangan tahunan dan laporan pengembalian pinjaman Credit Union Hatirongga di Kota Pematangsiantar selama periode 2020–2023. Analisis data dilakukan menggunakan regresi linear sederhana dengan bantuan perangkat lunak SPSS versi 26. Uji asumsi klasik dilakukan untuk memastikan kelayakan dan validitas model regresi yang digunakan. Hasil penelitian menunjukkan bahwa tingkat pengembalian pinjaman berpengaruh positif dan signifikan terhadap stabilitas keuangan. Hasil uji parsial (t-test) menunjukkan nilai signifikansi sebesar 0,002 (<0,05) dengan nilai t hitung sebesar 4,388, yang menunjukkan bahwa peningkatan tingkat pengembalian pinjaman secara signifikan mampu memperkuat stabilitas keuangan lembaga. Selain itu, nilai koefisien determinasi (R^2) sebesar 0,859 menunjukkan bahwa tingkat pengembalian pinjaman mampu menjelaskan 85,9% variasi stabilitas keuangan, sedangkan 14,1% sisanya dipengaruhi oleh

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faktor lain di luar model penelitian. Penelitian ini menunjukkan bahwa tingkat pengembalian pinjaman merupakan determinan penting dalam menjaga stabilitas keuangan credit union. Peningkatan disiplin pembayaran anggota dan penguatan praktik pengelolaan kredit dapat mendukung keberlanjutan operasional lembaga melalui pengelolaan arus kas yang lebih stabil, pengurangan risiko kredit, serta peningkatan ketahanan keuangan jangka panjang.

Kata Kunci: Tingkat Pengembalian Pinjaman, Stabilitas Keuangan, Credit Union, Lembaga Keuangan Mikro, Manajemen Risiko Kredit

I. INTRODUCTION

Cooperatives are non-bank financial institutions that play a vital role in promoting inclusive and community-based economic empowerment through savings and loan services to their members. They function as alternative financial intermediaries, particularly for micro and small business actors who face structural barriers in accessing formal banking services. In accordance with Article 4 of Law No. 25 of 1992, cooperatives are mandated to support national economic development as a collective effort rooted in kinship and economic democracy. Within this framework, credit unions as cooperative-based financial entities are crucial in expanding financial inclusion, strengthening member welfare, and enhancing local economic resilience.

Despite their significant role, cooperatives and credit unions are inherently exposed to credit risk arising from lending activities. The loan repayment rate is a key indicator of portfolio quality and institutional soundness, reflecting both the effectiveness of credit risk management and the financial discipline of members. A high repayment rate improves liquidity, solvency, and profitability, while a low repayment rate increases non-performing loans (NPLs), threatening institutional stability. Empirical evidence underscores this linkage. Adusei (2022) found that credit risk management is a major determinant of cooperative sustainability, where poor loan recovery mechanisms create liquidity stress. Nguyen et al. (2023) similarly showed that repayment performance is significantly influenced by borrower discipline and institutional governance.

The determinants of loan repayment performance have been widely explored. Obeng and Adu (2021) highlighted that external shocks especially pandemic-related disruptions—adversely affect members' repayment capacity in developing economies. (Behera & Mohini, 2025) established that service quality and borrower–institution relationships influence repayment behavior, while Hossain et al. (2023) demonstrated that internal governance inefficiencies elevate portfolio risk. Moreover, Gutiérrez-Nieto and Serrano-Cinca (2019) provided a twenty-year bibliometric review of microfinance research, confirming that risk management, portfolio quality, and funding structure remain central to sustainability. Nisa et al. (2022) revealed that growing competition in microfinance increases credit exposure and liquidity pressure. Sommeno (2025) examined debt composition and found that international vs. local funding sources influence microfinance stability. Studies by Kiran and Mayya (2024) and (Lee et al., 2015) reinforced that social, behavioral and macroeconomic factors significantly affect repayment behavior. Koffi et al. (2024) further reported that cultural and social dimensions shape delinquency patterns in African microfinance institutions.

Financial stability, in this context, represents the ability of a cooperative or credit union to sustain operations, absorb shocks, and fulfill both short- and long-term financial commitments without systemic distress. (Schinasi, 2021) conceptualized financial system stability as the system's ability to allocate resources efficiently and withstand shocks without disrupting the real economy. For credit unions, stability is typically measured through liquidity, solvency, and profitability ratios that signal institutional health. The loan repayment rate thus serves not only as a micro-level indicator of member performance but also as a strategic determinant of macro-level institutional resilience.

While international studies affirm the importance of repayment performance and credit risk control, the direct relationship between the loan repayment rate and financial stability in Indonesian credit unions remains underexplored. Most existing research centers on general microfinance institutions in Africa or South Asia and focuses on repayment determinants rather than the quantitative linkage between repayment and institutional stability. Furthermore, few studies consider the post-

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pandemic recovery period, during which repayment dynamics and liquidity management faced unprecedented stress.

Consequently, this study seeks to fill these research gaps by empirically examining the determinant role of the loan repayment rate in influencing financial stability at Credit Union Hatirongga, Pematangsiantar City, during the 2020–2023 period. By integrating institution-specific financial-ratio analysis within a quantitative framework, this research contributes by (1) providing empirical evidence from Indonesia's cooperative sector, (2) quantifying the extent to which repayment performance explains financial stability, and (3) generating practical insights for strengthening cooperative financial governance and risk management in the post-pandemic era.

II. THEORITICAL REVIEW

Cooperative

A cooperative is a membership-based economic institution that aims to improve the welfare of its members through the principles of solidarity, mutual cooperation, and economic democracy. From the perspective of Indonesian law and economics, cooperatives are founded on Law No. 25 of 1992, which states that cooperatives function to realize a national economy based on collective efforts and the principle of kinship. This concept positions cooperatives not merely as business entities but also as social enterprises that emphasize participatory values and economic inclusion (Susanto & Suyanto, 2020). From an institutional theory standpoint, cooperatives can be explained through the Collective Action Theory (Olson, 1965) and the Mutual Benefit Organization Theory, where each member holds a dual role as both the owner and the user of the cooperative's services (McKillop et al., 2020). This model fosters a collective sense of responsibility toward institutional sustainability. An international study by (McKillop et al., 2020) further emphasized that member-based cooperative structures strengthen financial stability, as risks are distributed among members through a mechanism of social trust

Cooperatives serve as non-bank financial intermediary institutions that bridge the capital needs of their members, particularly micro and small business actors (Rahardjo, 2021). As financial intermediaries, cooperatives mobilize funds in the form of member savings and redistribute them as loans with competitive interest rates, differing from profit-oriented banking institutions (Adusei, 2022). The study by (Martos-Pedrero et al., 2025) emphasizes that cooperatives exhibit high resilience during periods of economic crisis due to their organizational structure, which is based on solidarity and risk-sharing mechanisms. Empirically, a national study by Dewi and Lestari (2023) also found that cooperatives were able to maintain their economic function during the COVID-19 pandemic by leveraging digitalization in their savings and loan services.

The financial performance of cooperatives reflects the effectiveness of fund management, operational efficiency, and the institution's ability to meet both short-term and long-term obligations (Sukmana & Kartika, 2021). Theoretically, financial performance is measured using three main ratios: Liquidity – indicating the cooperative's ability to meet short-term liabilities ((Asia et al., 2023); Solvency – measuring the institution's capacity to fulfill all its obligations with the total assets owned (Gula & Yuneti, 2023); and Profitability (Rentability) – demonstrating the effectiveness of capital utilization in generating income (Bani & Adindarena, 2022). At the international level, (Polo Garrido & Vargas-Ulloa, 2024) concluded that the efficiency and profitability of financial cooperatives can be comparable to those of formal financial institutions when risk management and capital structure are properly managed. Similarly, Nguyen et al. (2023) found that borrower discipline and institutional governance significantly influence the financial stability of community-based cooperatives in Vietnam.

In the context of cooperative financial institutions, credit risk represents one of the most significant challenges (Adusei, 2022). The loan repayment rate serves as a key indicator reflecting the quality of the loan portfolio. Serrano-Cinca and Gutiérrez-Nieto (2019) state that a high loan repayment rate strengthens liquidity and reduces the risk of non-performing loans. Conversely, a decline in the repayment rate increases the potential for default, weakens cash flow, and diminishes solvency. A national study by Wulandari (2022) revealed that the effectiveness of the collection system and member guidance has a direct impact on the loan repayment rate in savings and loan cooperatives. Meanwhile,

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(Behera & Mohini, 2025) emphasized the importance of service quality and social relationships in enhancing borrowers' compliance with loan repayment obligations.

Theoretically, the factors influencing the financial stability of cooperatives can be classified into two main categories. Internal factors include operational efficiency, capital structure, governance systems, and risk control mechanisms (Hossain et al., 2023). Meanwhile, external factors encompass macroeconomic fluctuations, inflation, global crises, and pandemics that affect members' ability to repay their loans (Obeng & Adu, 2021). According to (Schinasi, 2021), financial stability can be achieved when an institution possesses sufficient shock absorption capacity to withstand disturbances without disrupting real-sector activities. Furthermore, Nisa et al. (2022) emphasize that increasing competition among microfinance institutions heightens credit risk, compelling cooperatives to adjust their liquidity strategies to sustain long-term performance.

In the era of digital transformation, cooperatives are increasingly required to adopt technology to accelerate service delivery, reduce operational costs, and enhance transparency. A study by Sari and Nugroho (2023) revealed that the digitalization of cooperatives through an online loan management system significantly improves service efficiency and reduces the level of non-performing loans. Meanwhile, Sommeno (2025) found that the diversification of funding sources and the digitalization of financial processes enhance operational efficiency and strengthen the financial stability of cooperatives across Europe.

Based on the review of theoretical frameworks and previous studies, a significant research gap has been identified. Most national studies have focused on measuring the financial performance of cooperatives using financial ratios, without directly linking these measures to indicators of financial stability such as liquidity, solvency, and profitability. International research, on the other hand, has predominantly discussed loan behavior and credit risk management but has rarely examined how the loan repayment rate functions as a key determinant of cooperative financial stability within the local Indonesian context. Furthermore, the post–COVID-19 period has not been extensively explored, despite the fact that this era introduced new pressures on cash flows, member behavior, and the capital structures of cooperatives. There also remains a lack of empirical quantitative research that integrates regression-based models to measure the magnitude of the influence of the loan repayment rate on the financial stability of cooperative institutions.

Loan Repayment Rate

The loan repayment rate represents a measure of how effectively a financial institution recovers the funds it has disbursed to borrowers in accordance with agreed schedules and conditions. In the microfinance literature, the loan repayment rate is regarded as one of the most critical indicators of financial performance, as it reflects both the success of credit risk management and the borrowers' compliance with their financial obligations (Serrano-Cinca & Gutiérrez-Nieto, 2019). According to (D'Espallier et al., 2011), the loan repayment rate serves not only as a measure of credit portfolio efficiency but also as an indicator of the stability and sustainability of microfinance institutions across countries. Their study demonstrated that institutions with higher repayment discipline tend to exhibit lower liquidity risk and greater lending capacity. Therefore, the loan repayment rate plays a strategic role in maintaining the balance between profitability and institutional sustainability in financial organizations.

Several theories underpin the relationship between the loan repayment rate, borrower behavior, and the financial stability of lending institutions. First, the Moral Hazard and Adverse Selection Theories explain that information asymmetry between lenders and borrowers may lead to opportunistic behavior that reduces the loan repayment rate (Lee et al., 2015). Borrowers may conceal risks or use funds for purposes other than those agreed upon, thereby increasing the likelihood of default. Second, the Social Collateral Theory posits that social ties among borrowing groups serve as informal mechanisms that reinforce repayment discipline. A study by (Rafay et al., 2020) demonstrated that social norms and interpersonal relationships among members significantly affect the loan repayment rate in Islamic microfinance institutions. Third, the Credit Risk Management Theory emphasizes the importance of

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effective credit screening, monitoring, and collection systems. (Endris, 2022) confirmed that robust credit assessment mechanisms improve loan recovery and reduce portfolio risk.

The internal factors influencing the loan repayment rate include several key dimensions. Loan size and repayment tenor are critical—larger loan amounts and longer repayment periods are associated with higher default risk (Endris, 2022). Management quality and monitoring systems also play a decisive role; institutions with strong governance structures, digital loan information systems, and regular supervision tend to achieve higher repayment rates (Behera & Mohini, 2025). Additionally, borrowers' socio-economic characteristics influence repayment behavior. Saparila (2019) found that education level, business experience, and frequency of interaction with the institution significantly affect repayment discipline among borrowers in Indonesia. (Behera & Mohini, 2025) reinforced this finding, showing that the quality of service provided by microfinance institutions and the strength of social relationships between loan officers and members substantially influence repayment performance. Similarly, (Endris, 2022) confirmed that proximity to the lending institution, business experience, and the frequency of staff monitoring are significantly associated with loan repayment ratios in Ethiopia

In addition to internal factors, external conditions also have a substantial impact on borrowers' ability to meet their repayment obligations. Mikir and Milkessa (2020) demonstrated that inflation, exchange rate fluctuations, and economic growth significantly affect the quality of loan portfolios. When macroeconomic conditions deteriorate, borrowers' repayment capacity declines, directly influencing the loan repayment ratio. Furthermore, Koffi, Mensah, and Obeng (2024) identified that social and cultural factors such as community norms, social proximity among members, and informal social collateral arrangements can influence repayment delays in West African microfinance institutions. Meanwhile, Nisa, Rahman, and Islam (2022) found that increasing competition within the microfinance industry tends to weaken institutional control over loan portfolio quality, ultimately reducing loan repayment performance.

Theoretically and empirically, the loan repayment rate is directly related to the stability and performance of financial institutions. A high repayment rate reflects a healthy loan portfolio, stable cash flow, and low credit risk, thereby improving the institution's liquidity and solvency (Polo Garrido & Vargas-Ulloa, 2024). Conversely, a decline in repayment performance may deteriorate liquidity conditions and trigger a credit crunch, reducing the institution's capacity to extend new loans. (Behera & Mohini, 2025) further emphasized that efficient loan management has a direct and positive impact on profitability and the long-term sustainability of microfinance institutions.

Financial Stability

Financial stability is one of the fundamental concepts in economics and finance, describing the ability of the financial system—both at the micro and macro levels—to perform intermediation functions, allocate resources efficiently, and absorb shocks without causing disruptions to real economic activity (Schinasi, 2021). In the context of microfinance and cooperative financial institutions, financial stability reflects the institution's capacity to maintain liquidity, solvency, and profitability amid changing economic conditions and member credit risks. According to Minsky (1982), financial stability is inherently dynamic, as a system that appears stable can become fragile when excessive credit expansion occurs without adequate risk control. This concept later evolved within the financial fragility framework, which emphasizes the balance between institutional stability and resilience in the face of financial crises (Borio, 2014).

In the modern empirical literature, financial stability is defined as a condition in which financial institutions are able to sustain operational performance, meet both short-term and long-term obligations, and avoid systemic risks that could trigger bankruptcy or market failure (Dhal et al., 2023). (Schinasi, 2021) describes a stable institution as one that maintains a balanced management of liquidity and solvency risks, thereby ensuring the continuous functioning of financial intermediation. Furthermore, financial stability does not solely depend on the internal health of the institution but is also influenced by the interconnectedness between financial institutions, the real sector, and the broader macroeconomic environment (Adusei, 2022).

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Conceptually, the measurement of financial stability can be approached through several frameworks. At the macro level, financial system stability is often assessed using composite stability indices such as the Financial Soundness Indicators (FSI) or the Z-score ratio. At the micro level—particularly within cooperatives or credit unions—financial stability is typically evaluated through financial ratios that reflect the institution's ability to maintain liquidity, solvency, and profitability (Polo Garrido & Vargas-Ulloa, 2024). The study by Al-Homaidi et al. (2020) emphasized that a high liquidity ratio enhances both investor and member confidence, while strong solvency strengthens the institution's capacity to meet long-term obligations. Consistent profitability, on the other hand, serves as a key buffer to absorb potential losses arising from economic fluctuations.

Recent studies have highlighted various factors influencing the financial stability of microfinance institutions and cooperatives. Nguyen et al. (2023) found that institutional governance, member discipline, and managerial efficiency are dominant factors in maintaining the financial stability of member-based institutions in Vietnam. Similar results were reported by Obeng and Adu (2021), who emphasized that external shocks—such as the COVID-19 pandemic—significantly reduced the financial stability of cooperatives in Sub-Saharan Africa, particularly through increased credit risk and declining liquidity. Meanwhile, Adusei (2022), in the International Journal of Finance & Economics, demonstrated that credit risk management and capital structure have a direct impact on the sustainability of microfinance institutions in Ghana. These findings collectively affirm that financial stability depends on maintaining a balance between internal risk control and adaptation to external conditions.

Globally, recent research by Yao et al. (2024) in the Journal of Financial Stability found that financial stability can be maintained when institutions possess a high shock-absorbing capacity, such as strong capital reserves and diversified assets. Similarly, a study by Irawan and Rahman (2023) in Indonesia highlighted that cooperatives with greater diversification of financial products exhibit higher levels of stability, particularly in responding to post-pandemic economic fluctuations. Furthermore, Sommeno (2025) in the International Review of Economics & Finance emphasized that the funding structure and proportion of long-term debt play a crucial role in determining the financial resilience of microfinance institutions. Institutions that rely predominantly on local funding sources were found to have lower risk exposure compared to those heavily dependent on large external loans.

Beyond financial factors, social dimensions and governance structures also play a crucial role in maintaining the stability of cooperative institutions. Serrano-Cinca and Gutiérrez-Nieto (2019) argue that social discipline and shared values among members serve as a form of social capital that strengthens the financial structure of cooperatives. Active member participation in financial oversight fosters a trust-based governance system, which reduces the potential for moral hazard and enhances institutional resilience against internal crises. (Behera & Mohini, 2025) further adds that service quality, information transparency, and effective communication between management and members significantly enhance member loyalty and reinforce the institution's long-term stabilit.

Nevertheless, the international literature also highlights emerging challenges to financial stability arising from technological disruption and financial digitalization. (Arner et al., 2023) found that the penetration of fintech and digital lending can enhance intermediation efficiency but simultaneously increase liquidity risk and dependence on technologies that remain immature, particularly among smaller financial institutions. In the context of cooperatives in developing countries, this poses a unique challenge, as limited managerial capacity and inadequate digital infrastructure may weaken institutional resilience to systemic risks. Therefore, strengthening digital financial literacy and diversifying funding sources are essential prerequisites for maintaining the financial stability of cooperatives in the digital economy era (Nisa et al., 2022).

Based on the empirical review, it can be concluded that financial stability is the outcome of a complex interaction between internal factors—such as liquidity, solvency, profitability, and institutional governance—and external factors, including macroeconomic conditions, technological developments, and social dynamics. In the context of Indonesian cooperatives, financial stability is not measured solely through financial ratios but also through the institution's ability to maintain member trust, sustain positive cash flows, and adapt to global economic changes. Therefore, research on cooperative financial

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stability must integrate economic, social, and technological dimensions to provide a more comprehensive understanding of the sustainability of member-based financial institutions in the future.

Financial Statements

Financial statements serve as the primary medium of communication between a business entity and its stakeholders, containing quantitative information about the entity's financial position, performance, and cash flows over a specific period. Conceptually, financial statements are prepared based on the principle of fair presentation, providing a true and fair view of the company's economic condition and serving as a foundation for economic decision-making (IASB, 2021). Within the framework of decision-usefulness theory, financial statements function to assist users—investors, creditors, and management alike—in making rational economic decisions (Barth, 2018). High-quality financial statements enhance transparency and reduce information asymmetry between internal and external parties, thereby strengthening public trust in financial institutions or business entities (DeFond & Zhang, 2014). According to the International Accounting Standards Board (IASB, 2021), financial statements comprise four main components: the statement of financial position, the statement of profit or loss and other comprehensive income, the statement of changes in equity, and the statement of cash flows. In addition, the notes to the financial statements serve to explain accounting policies and key assumptions applied in their preparation. Collectively, these elements are designed to provide a comprehensive depiction of an entity's financial position, performance, and cash flows that are relevant, reliable, and comparable across reporting periods.

The quality of financial statements has become the focus of extensive international empirical research due to its direct relationship with market efficiency, corporate governance, and the stability of the financial system. Dechow, Ge, and Schrand (2010) assert that financial reporting quality is determined by the extent to which financial statements faithfully represent the underlying economic reality of an entity. Earlier, Francis, LaFond, Olsson, and Schipper (2004) classified financial reporting quality into several dimensions, including earnings persistence, predictability, accounting conservatism, and accrual quality. In the context of financial institutions and cooperatives, financial statements also serve as instruments of public accountability, demonstrating the efficiency of member fund management and the financial health of the institution (Rahman et al., 2023). Adusei (2022) found that the reliability of financial reporting is a key determinant of the stability and sustainability of microfinance institutions in Ghana. This finding is reinforced by Nguyen et al. (2023), who reported that high-quality financial reporting enhances members' financial discipline and strengthens institutional governance in cooperative financial organizations in Vietnam.

Recent studies have also highlighted the influence of technology and regulatory frameworks on the quality of financial reporting. Chen et al. (2023), in the Journal of International Accounting Research, found that the adoption of digital reporting and blockchain-based accounting enhances the reliability and timeliness of financial statements while reducing the risk of data manipulation. Meanwhile, Al-Homaidi et al. (2020) asserted that information transparency and the accuracy of financial ratios disclosed in financial reports are essential in strengthening investor confidence and improving the effectiveness of risk management oversight in the banking sector. In a related study, Kamarudin and Ismail (2021), published in the Accounting Research Journal, revealed that accounting complexity and earnings management practices remain major challenges to maintaining the quality of financial reporting, particularly in developing countries. Similarly, Bozzolan, Trombetta, and Beretta (2019), in the European Accounting Review, emphasized that transparent financial reporting contributes to greater capital market efficiency and reduces firms' cost of capital. Furthermore, Bonsón and Bednárová (2020), in Technological Forecasting & Social Change, highlighted that digital transparency and ESG-based non-financial reporting (Environmental, Social, and Governance) have emerged as new dimensions that strengthen the credibility of financial statements in the era of sustainable finance..

Furthermore, Rahim and Kamal (2024), in the Journal of Accounting and Organizational Change, identified that the integration between financial reporting and sustainability reporting—commonly referred to as integrated reporting—creates added value for stakeholders by combining financial and non-financial dimensions in assessing an organization's long-term performance. This

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aligns with the findings of Tahat et al. (2022), who demonstrated that companies practicing transparent financial reporting exhibit lower bankruptcy risk compared to those with inconsistent reporting practices. From these perspectives, it can be concluded that financial statements serve not merely as instruments for recording economic transactions but also as governance tools that play a vital role in fostering accountability, transparency, and financial system stability. High-quality financial reporting strengthens investor confidence, facilitates more accurate decision-making, and supports the sustainability of financial institutions amid global economic dynamics. In the context of cooperatives and credit unions, financial statements prepared in accordance with recognized accounting standards—such as SAK EMKM in Indonesia or IFRS for SMEs internationally—serve as a primary indicator for assessing institutional health, operational efficiency, and the effectiveness of member fund management.

Analysis Of Financial Statements

Financial statement analysis is a systematic process used to evaluate an entity's financial condition, performance, and prospects based on the information contained in its financial reports. The primary objective of this analysis is to assess the company's ability to generate profit, meet its obligations, manage assets efficiently, and maintain financial stability over the long term (White, Sondhi, & Fried, 2003). Within the decision-usefulness theory framework, financial statement analysis assists stakeholders such as management, investors, creditors, and regulators in making more informed economic decisions based on information that is relevant, reliable, and comparable (Barth, 2018). Conceptually, financial statement analysis can be conducted through various approaches, including financial ratio analysis, trend analysis, and comparative analysis across reporting periods. According to (Penman, 2010), financial ratios are the primary tools used to evaluate an entity's liquidity, profitability, solvency, and operational efficiency. Through ratio indicators such as the current ratio, debt-to-equity ratio, return on assets (ROA), and net profit margin (NPM), analysts can identify a company's strengths and weaknesses from a financial perspective. Al-Homaidi et al. (2020) further emphasized that healthy liquidity and solvency ratios contribute positively to the financial performance of the Indian banking sector, illustrating that financial statement analysis has direct implications for investment decisions and managerial policy formulation.

In the context of microfinance institutions and cooperatives, financial statement analysis is also employed to measure the efficiency of fund management, institutional soundness, and the organization's capacity to maintain business sustainability (Adusei, 2022). Nguyen et al. (2023) further stated that the outcomes of financial statement analysis can strengthen institutional governance by providing a basis for developing risk mitigation strategies and improving the quality of loan management. Garrido (2024), in the International Review of Economics & Finance, found that the financial efficiency of cooperatives largely depends on their ability to analyze performance ratios accurately and align them with dynamic market conditions. From an empirical standpoint, financial statement analysis is closely related to transparency and corporate governance. Bozzolan, Trombetta, and Beretta (2019) discovered that financial reporting accompanied by in-depth performance analysis reduces the cost of capital and enhances investor credibility. Meanwhile, Kamarudin and Ismail (2021) highlighted that earnings management and audit quality significantly influence the results of financial statement analysis—where high-quality audited reports provide more accurate assessments of a company's actual financial condition.

Financial statement analysis also plays a strategic role in detecting bankruptcy risk and financial distress. Altman (2020) updated his classic Z-score model and reaffirmed that solvency and profitability indicators remain the strongest predictors of potential corporate financial failure. In a subsequent study, Tahat, Dunne, and Ruddock (2022) demonstrated that high financial reporting transparency can reduce bankruptcy risk by improving the predictive accuracy of financial distress models. In line with advances in information technology, new approaches to financial statement analysis have increasingly been adopted, including the use of artificial intelligence (AI) and machine learning to detect complex financial patterns. Chen, Li, and Song (2023) found that the implementation of blockchain technology and AI-based analytics enhances the accuracy and reliability of financial statement analysis in international markets. Similarly, Bonsón and Bednárová (2020) emphasized that digital financial reporting and ESG

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transparency (Environmental, Social, and Governance) introduce new dimensions to modern financial analysis, broadening its scope beyond traditional accounting metrics toward sustainable and technology-driven evaluation.

Furthermore, Rahim and Kamal (2024) demonstrated that integrating traditional financial analysis with integrated reporting provides a more comprehensive understanding of an organization's long-term performance, as it combines both financial and non-financial dimensions within a unified analytical framework. Meanwhile, Irawan and Rahman (2023), in their study conducted in Indonesia, found that cooperatives that regularly perform ratio based financial statement analysis exhibit stronger financial performance and capital resilience compared to institutions that merely prepare reports without in-depth quantitative evaluation. Thus, financial statement analysis functions not only as a tool for assessing past financial positions but also as a strategic instrument for planning financial policies, identifying risks, and enhancing the accountability of financial institutions and corporations. When conducted comprehensively, such analysis enables organizations to gain a holistic understanding of their financial dynamics, supports data-driven decision-making, and fosters more transparent and sustainable governance in today's digital economy.

Framework

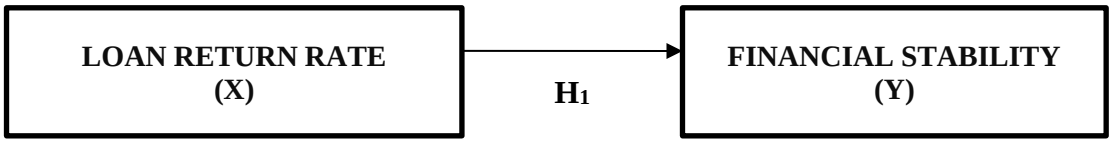


Figure 1. Framework of Thought

III. RESEARCH METHODS

Population and Sample

The population in this study consists of all financial statements of the Credit Union (CU) Hatirongga in Pematangsiantar City from 2004 to 2023. The sample was selected using a purposive sampling method, which involves determining data that meet specific predetermined criteria. Based on these criteria, a total of four (4) financial statements and loan repayment summary reports of CU Hatirongga in Pematangsiantar City were selected, covering the period from 2020 to 2023.

Operational Variables

Table 1. Operational Definitions and Measurement Scales of Research Variables

No.	Research Variables	Operational Definition	Parameter	Scale
1.	Loan Repayment Rate (Independent Variable)	The loan repayment rate refers to the total amount of credit that has been repaid.	$\text{TPP} = \frac{\text{Loans Are Given}}{\text{Loan Repayment}} x100\%$	Ratio
2.	Financial Stability (Dependent Variable)	Financial stability refers to a condition in which a company's financial system functions normally and efficiently, demonstrating the ability to manage various risks and absorb economic shocks without causing significant disruptions to the overall financial activities of the organization.	Liquidity: $\text{CR} = \frac{\text{Current assets}}{\text{Current Liabilities}} \times 100\%$ Solvency: $DAR = \frac{\text{Total Debt}}{\text{Total Assets}} \times 100\%$ Rentabilitas: $ROE = \frac{\text{SHU}}{\text{Owner's equity}} \times 100\%$	Ratio

Source: From various references

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Research Methods and Design

Research methods

The method used in this research is a quantitative method, which according to Wiratna Sujarweni (2014) in Tambunan (2020) states that, "Quantitative research is a type of research that produces discoveries that can be achieved (obtained) by using statistical procedures or other methods of quantification (measurement)".

Research design

This research uses a descriptive research design, which according to Sugiyono (2020) in Hunowu (2019) descriptive research is research conducted to ensure the presence or absence of independent variables, either one or more (stand-alone variables), without comparing these variables and looking for relationships with other factors.

IV. RESULTS AND DISCUSSION

Data Analysis Results

In collecting data on loan repayment rates and financial stability, data collection techniques used included interviews and documentation. The data on loan repayment rates and financial stability were obtained from the Annual Members Meeting (RAT) report at Hatirongga Credit Union (CU) in Pematangsiantar City for the 2020-2023 period.

Table 2
Loan Provision, Loan Repayment, Liquidity, Solvency, and Profitability of Hatirongga Credit Union (CU) 2020 - 2023

Year	Loan Disbursement (IDR)	Loan Repayment (IDR)	Liquidity (%)	Solvency (%)	Rentabilitas (%)
2020	24.407.736.498	10.454.847.387	411%	23,1%	0,1%
2021	26.102.874.068	12.034.312.410	401%	23,7%	0,3%
2022	28.724.419.995	13.490.254.093	359%	26,7%	0,1%
2023	31.230.103.136	16.511.106.859	346%	27,5%	0,3%

Source: KSP CU. Heart of Cavity (2025)

Based on the table above, it can be explained that in 2020, CU Hatirongga disbursed loans amounting to IDR 24,407,736,498 with a loan repayment total of IDR 10,454,847,387, and recorded financial ratios of liquidity (411%), solvency (23.1%), and profitability (0.1%). In 2021, the amount of loans disbursed was IDR 26,102,874,068, with loan repayments reaching IDR 12,034,312,410, while the liquidity, solvency, and profitability ratios were 401%, 23.7%, and 0.3%, respectively. In 2022, loan disbursements increased to IDR 28,724,419,995 with repayments of IDR 13,490,254,093, and corresponding ratios of liquidity (359%), solvency (26.7%), and profitability (0.1%). Finally, in 2023, CU Hatirongga disbursed IDR 31,230,103,136 in loans, with loan repayments totaling IDR 16,511,106,859, achieving ratios of liquidity (346%), solvency (27.5%), and profitability (0.3%).

Classical Assumption Test

Data Normality Test

The normality test aims to determine whether, in the regression model, both the independent and dependent variables are normally distributed. In this study, the normality test was conducted using the Kolmogorov–Smirnov (K–S) test. If the Asymp. Sig (2-tailed) value is greater than the predetermined alpha level of 5% (0.05), the data are considered to be normally distributed. Conversely, if the Asymp. Sig (2-tailed) value is less than the alpha level of 5% (0.05), the data are considered to be not normally distributed.

Table 3. Data Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		4
Normal Parameters[a,b]	Mean	,0000000

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	Std. Deviation	,00817284
Most Extreme Differences	Absolute	,281
	Positive	,281
	Negative	-,196
Test Statistic		,281
Asymp. Sig. (2-tailed)		.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. Significance can not be computed because sum of case weights is less than 5.		

Source: SPSS data processing results, 2025

Based on Table 3, it can be seen that the Asymp. Sig. (2-tailed) value is 0.200 > 0.05, meaning that the variables in this study are normally distributed. Based on the classical assumption, it can be concluded that this study violates the classical assumption, so this regression model is suitable for use as a hypothesis testing tool.

Hypothesis Testing

Partial Test (t-test)

The t-test is a test conducted to determine whether the independent variable, the loan repayment rate, partially (individually) influences the variation of the dependent variable, namely financial stability.

Table 4. t-Test Results

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1650,284	44,692		5,020	,015
	Loan Repayment	,003	,017	,927	4,388	,002
a. Dependent Variable: Y						

Source: SPSS data processing results, 2025

Based on the SPSS data analysis results above, the t-test shows a calculated t value of 4.388 with a significance level of 0.002. Since the significance value is smaller than 0.05, it can be concluded that H_0 is rejected and H_a is accepted, meaning that the loan repayment rate variable has a significant effect on financial stability.

Coefficient of Determination Test

The coefficient of determination (R^2) ranges between zero and one. If the coefficient of determination is $R^2 = 0$, it means that the variation in the dependent variable (Y) cannot be explained at all by the independent variable (X). Conversely, if $R^2 = 1$, it indicates that the variation in Y can be completely explained by the independent variable X.

Table 5. Results of the Determination Coefficient (R2) Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,927[a]	,859	,788	,01001
a. Predictors: (Constant), X				

Source: SPSS data processing results, 2025

Based on the data analysis presented in the table above, the R Square value is 0.859, indicating that financial stability is influenced by the loan repayment rate variable by 85.9%, while the remaining 14.1% is influenced by other variables not examined in this study.

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Simple Linear Regression Test

Simple linear regression is a statistical method used to analyze the relationship between a single dependent variable and an independent variable. In this study, the dependent variable is the loan repayment rate, while the independent variable is financial stability.

Table 6. Simple Linear Regression

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1650,284	44,692		5,020	,015
	Loan Repayment	,003	,017	,927	4,388	,002
a. Dependent Variable: Y						

Source: SPSS data processing results, 2025

From the table data above, a simple linear regression equation can be obtained as follows:

$$Y = a + bX$$

$$\mathbf{Y = 1650{,}284 + 0{,}003X}$$

The explanation of this equation is as follows:

a. The constant value is 1650.284, meaning that if the installment return is 0, then the remaining operating results (SHU) are positive, namely 1650.284.
b. The regression coefficient value of the loan repayment rate variable is positive at 0.003. This means that for every Rp 1 increase in installment repayments, the Operating Result (SHU) will also increase by 0.003 units.

Discussion

The Effect of Loan Repayment Rate (X) on Financial Stability (Y)

Based on the results of the hypothesis test (t-test), the obtained significance value was 0.002, which is smaller than the threshold of 0.05, with a calculated t value of 4.388 exceeding the t-table value of 4.303. These results indicate that the loan repayment rate variable has a positive and statistically significant effect on the financial stability of KSP CU Hatirongga in Pematangsiantar City during the 2020 – 2023 period. Consequently, H_0 is rejected, and H_a is accepted, confirming the existence of a direct and significant relationship between repayment performance and institutional financial stability.

This empirical finding aligns with previous national studies by Tambunan (2020), Renova Inriani Situmeang (2022), Hilman Lubis (2020), and Indrahayu et al. (2020), all of which revealed that improved repayment performance enhances liquidity, reduces default risk, and strengthens cooperative resilience. Moreover, this study's results are supported by several international empirical studies published. For instance, Adusei (2022) found that repayment discipline and credit risk management are key determinants of cooperative financial sustainability in Ghana. Similarly, Nguyen et al. (2023) reported that borrower compliance and institutional governance significantly influence the financial stability of member-based financial institutions in Vietnam.

Furthermore, (Behera & Mohini, 2025) emphasized that effective credit monitoring and borrower–lender social relationships strengthen repayment performance, indirectly enhancing institutional solvency and liquidity. In a broader perspective, Serrano-Cinca and Gutiérrez-Nieto (2019) demonstrated that strong loan repayment rates serve as a proxy for sound risk management practices, directly correlating with sustainable cooperative performance. Likewise, Obeng and Adu (2021) found that the ability of cooperatives to maintain repayment consistency during economic disruptions such as the COVID-19 pandemic was crucial to preserving their financial stability.

Overall, the findings of this study reinforce the theoretical proposition that loan repayment rate is a critical determinant of financial stability, as it reflects both the efficiency of internal management systems and the level of financial discipline among members. This result contributes to the growing body of literature emphasizing that repayment performance is not only a measure of credit portfolio

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quality but also a fundamental indicator of the resilience and sustainability of cooperative financial institutions in emerging economies..

CONCLUSION

Based on the results of the analysis and hypothesis testing, this study concludes that the loan repayment rate has a positive and significant effect on the financial stability of KSP CU Hatirongga in Pematangsiantar City. This finding implies that the higher the members' loan repayment rate, the better the cooperative's financial condition, as reflected in the improvement of liquidity, solvency, and profitability ratios. An increase in loan repayments directly contributes to the growth of the cooperative's net surplus (Sisa Hasil Usaha or SHU), since stable cash flows enable more efficient working capital management and expansion of business activities. Conversely, a low loan repayment rate reduces the cooperative's ability to maintain financial stability and profitability performance.

Furthermore, the results of the coefficient of determination analysis show that the loan repayment rate variable contributes 85.9% to the variation in financial stability, while the remaining 14.1% is influenced by other factors outside the research model, such as macroeconomic conditions, risk management policies, and members' financial discipline in fulfilling their obligations. Thus, this study affirms that effective credit management and repayment discipline are the primary determinants of maintaining the financial performance and long-term resilience of cooperatives.

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