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Non-Performing Loan Risk Among Savings and Loan Cooperative Customers in Gowa Regency

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Abstract
Purpose: This study analyzes the factors causing non-performing loan risk among customers of a savings and loan cooperative in Pannyangkalang Village, Gowa Regency, examined from the perspective of economic conditions and financial behavior, and formulates loan management measures the cooperative can pursue.
Methodology: The study uses a qualitative case study approach. Data were collected through semi-structured interviews and observation involving customers who have experienced or are currently experiencing installment payment difficulties, together with cooperative management, and were analyzed through thematic analysis to identify patterns across cases.
Results: The findings show that installment payment difficulties among cooperative customers arise from unstable seasonal income and dependence on informal financing, compounded by poor financial behavior, including the misuse of loan funds and limited household financial planning. These factors often reinforce one another, with customers affected by both experiencing the highest risk of persistent non-performing balances.
Conclusions: Non-performing loan risk in this cooperative arises from the interaction between unstable economic conditions and less adaptive financial behavior, and effective mitigation requires measures addressing both dimensions simultaneously rather than treating either factor in isolation.
Limitations: This study is confined to a single village and relies on qualitative interview data, so its findings are contextual and cannot be statistically generalized, nor do they quantify the relative statistical contribution of each factor to loan default.
Contributions: This study highlights how economic and behavioral factors influence loan repayment capacity and provides practical implications for cooperative risk mitigation.

Keywords: *Cooperative, Credit Risk, Economic Conditions, Financial Behavior, Non-Performing Loans*

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1. Introduction

Savings and loan cooperatives occupy an important place in Indonesia's rural financial landscape, functioning as a bridge between the community's capital needs and the limited reach of formal banking in villages. Operating on a family-based, mutual-cooperation philosophy rather than a purely commercial one, these cooperatives extend credit to members with fewer administrative barriers than conventional banks, a feature that broadens access to financing but also leaves them structurally exposed to credit risk, particularly among rural customers whose income depends heavily on the informal, seasonal agricultural sector (McKillop, French, Quinn, Sobiech, & Wilson, 2020). Comparable financing-access constraints have also been documented among Islamic rural banks and Islamic cooperatives in Indonesia, where non-performing financing likewise reflects a mix of institutional and borrower-level factors (Muhammad, Suluki, & Nugraheni, 2020; Nugroho & Setiawan, 2021).

Credit risk is defined as the potential loss arising from a debtor's failure to meet payment obligations as agreed (Gjeçi, Marinč, & Rant, 2023). A substantial body of prior research finds that non-performing loans in microfinance institutions are generally shaped by two broad categories of factors: external factors tied to macroeconomic and local economic conditions, and internal factors tied to the characteristics and behavior of the borrower (Ferreira, 2022). Rural economic conditions, particularly among households dependent on agriculture, tend to be seasonal and vulnerable to commodity price fluctuation, crop failure, and dependence on informal crop-advance financing arrangements with local middlemen. This income instability directly affects a customer's capacity to meet loan obligations, and research on community-based financial institutions finds that income stability is an important determinant of smooth loan repayment (Salas, Lamothe, Delgado, & Valero, 2024).

Beyond economic conditions, the behavioral finance literature emphasizes that an individual's capacity to manage personal finances also shapes debt repayment success. Financial behavior encompasses saving habits, expenditure prioritization, and debt-related decision-making (Strömbäck, Lind, Skagerlund, Västfjäll, & Tinghög, 2017). Customers with low financial literacy tend to use loan funds for consumptive purposes outside the original purpose of the credit application, increasing the probability of default even where economic conditions are relatively stable. Broader survey evidence on Indonesian financial behavior similarly finds that self-control and psychological readiness mediate the relationship between financial attitudes and sound financial management, reinforcing the behavioral mechanisms discussed above (Wicaksono & Nuryana, 2020).

Prior research on non-performing loans in cooperatives and microfinance institutions has generally used quantitative approaches to measure statistical relationships between variables. Such approaches are effective for identifying general patterns but are less able to capture the context, experience, and meaning behind customers' financial decisions in depth. This is the research gap this study seeks to address, by qualitatively tracing how economic conditions and financial behavior interrelate in shaping non-performing loan risk within the specific context of a rural savings and loan cooperative, namely in Pannyangkalang Village, Gowa Regency.

Building on this review, this study proposes that non-performing loan risk among savings and loan cooperative customers in Pannyangkalang Village arises from the interaction between unstable economic conditions and less adaptive financial behavior, requiring in-depth contextual understanding through a qualitative case study approach. This study accordingly seeks to explore in depth how customers' economic conditions and financial behavior interrelate in shaping non-performing loan risk at the savings and loan cooperative in Pannyangkalang Village. The study specifically aims to identify and analyze the factors causing customers to experience difficulty in paying installments, identify and analyze the impact of these installment payment difficulties on the cooperative's financial condition, and formulate loan management measures the cooperative can pursue to minimize non-performing loan risk going forward.

Although prior research has examined the determinants of non-performing loans extensively through quantitative, cross-institutional approaches, and separately examined financial behavior and literacy as psychological constructs, comparatively few studies have traced qualitatively how these economic and behavioral factors interact within a single rural cooperative setting, capturing the lived experience and reasoning behind individual customers' financial decisions. The novelty of this study lies in this qualitative, interaction-focused approach applied to a specific rural cooperative context, offering a level of contextual depth that broader quantitative panel studies of non-performing loans typically cannot provide. Building on this rationale, this study is expected to provide a more complete and contextual picture of the root causes of non-performing loans, while also serving as a foundation for the cooperative in formulating more precisely targeted risk mitigation measures.

2. Literature Review

2.1 Credit Risk Theory

Credit risk is one of the primary risks faced by every financial institution, including savings and loan cooperatives. This risk emerges when a debtor is unable to meet obligations in accordance with the agreed credit contract. In practice, credit risk not only causes financial loss for the lending institution but also affects declining liquidity, rising operational costs, and diminished member trust in the financial institution. According to credit risk management theory, loan portfolio quality is shaped by an institution's capacity to identify, measure, monitor, and control risk from the credit application stage through to repayment. The better the borrower feasibility analysis process, the lower the likelihood of problem loans emerging; conversely, a weak credit assessment system increases the likelihood of arrears and non-performing loans. In savings and loan cooperatives specifically, credit risk management carries different characteristics compared with banking. The relationship between a cooperative and its members places greater emphasis on family-based principles and mutual trust, so that lending decisions frequently take social considerations into account alongside economic ones. On one hand, this approach makes it easier for the community to obtain financing access; on the other hand, it can increase risk if not accompanied by adequate feasibility analysis.

In this study, credit risk theory is used as a foundation for explaining that non-performing loans are not simply the result of installment payment failure, but the outcome of an interaction among various factors affecting a debtor's capacity and willingness to meet obligations. Credit risk analysis therefore needs to take into account customers' economic conditions, occupational characteristics, income stability, and household financial management behavior. This framing is consistent with a substantial body of international research on non-performing loan determinants, which has repeatedly found that credit risk in both banking and microfinance settings is best understood as arising from the joint influence of borrower-level and environment-level conditions rather than from either alone (Thornton & Di Tommaso, 2021; Zolkifli, Hamid, & Janor, 2015). This dual perspective is particularly relevant to community-based lending institutions such as cooperatives, where the social dimension of the lending relationship means that risk cannot be fully assessed through financial indicators alone.

2.2 Behavioral Finance Theory

Behavioral Finance Theory explains that individual financial decisions are not always grounded in the rational considerations assumed by classical finance theory. Instead, such decisions are frequently shaped by psychological factors, habits, experience, social environment, emotion, and an individual's capacity for self-control. In the context of savings and loan cooperatives, this theory explains why some members continue to experience loan default despite having relatively adequate income. This condition occurs because decisions about how loan funds are used are often shaped by short-term needs, social pressure, or consumptive habits that reduce installment payment capacity.

Poor financial behavior is reflected in the use of loan funds for purposes outside the original objective, low discipline in preparing a household budget, minimal saving habits, and the absence of debt repayment planning. As a result, income obtained is not optimally allocated, so credit payment obligations are frequently delayed. Behavioral finance also emphasizes the importance of self-control capacity in financial decision-making. Individuals able to control their desires tend to be better able to distinguish needs from wants, giving them stronger debt repayment capacity. Conversely, low self-control makes loan funds more easily diverted toward consumption rather than productive activity capable of generating income. This theory proves highly relevant to this study, since most informants show that installment payment difficulty is shaped not only by low income but also by less appropriate financial decisions made throughout the loan period.

2.3 Financial Literacy Theory

Financial literacy is an individual's capacity to understand financial concepts, manage income, prepare a budget, use financial products appropriately, and make responsible financial decisions. Financial literacy relates not only to knowledge of savings, loans, investment, and risk, but also to the capacity to apply that knowledge in daily life. This multidimensional view of financial literacy is consistent with international research emphasizing that financial literacy is a complex construct shaped by numerous interacting factors rather than a single unified skill (Riitsalu & Põder, 2016), and with evidence that digital financial literacy specifically shapes how effectively individuals use online banking and other financial technology products (Andreou & Anyfantaki, 2021).

In savings and loan cooperatives, the financial literacy level of members is an important factor determining successful loan management. Members who understand the function of productive lending tend to direct credit funds toward income-generating activity, giving them stronger installment payment capacity. Conversely, low financial literacy often leads members to use loans to meet consumptive needs, generating insufficient cash flow to settle credit obligations. Comparable evidence from Islamic banking research in Bangladesh similarly finds that financial literacy and institutional trust jointly shape borrower repayment behavior in community-oriented financial institutions (Hassan, İslam, Ahmed, & Sarker, 2023), while broader research on financial education programs in Indonesia finds that structured, sustained educational interventions produce more durable improvements in financial literacy than one-time training sessions (Sulaksana, 2022).

In rural communities, financial literacy levels remain shaped by limited access to financial education, limited information regarding financial management, and minimal educational programs provided by financial institutions. Improving financial literacy is therefore not solely an individual responsibility, but also part of a cooperative's strategy for improving financing quality and reducing non-performing loan risk. Improvements of this kind have been shown to meaningfully strengthen the financial decision-making quality of vulnerable populations in Indonesia specifically (Lopus, Amidjono, & Grimes, 2019).

This link between financial literacy and repayment capacity has also been documented across a range of institutional and demographic contexts beyond rural Indonesia. Research on financial literacy and subjective norms finds that both factors jointly shape saving behavior, with implications for how reliably individuals can build the financial buffers needed to withstand income shocks (Widjaja, Arifin, & Setini, 2020), while comparable evidence from emerging adult populations in Malaysia finds that subjective financial knowledge is closely tied to broader financial well-being (Ghazali, Alwi, Othman, Sabri, & Aziz, 2022). Taken together, this literature suggests that the financial literacy gap observed among Pannyangkalang Village customers reflects a broader, internationally documented pattern rather than a phenomenon unique to this specific rural setting.

2.4 Agency Theory

Agency Theory explains the relationship between a party granting trust (the principal) and a party receiving that trust (the agent). In the context of savings and loan cooperatives, this relationship can be understood as the relationship between the cooperative as lender and the member as loan recipient. Both parties share the same goal, namely sustaining the continuity of financing activity. In practice, however, conflicts of interest frequently arise because the cooperative cannot always directly monitor how loan funds are used. This condition gives rise to information asymmetry, a situation in which the member possesses more information regarding financial condition and fund usage than the cooperative does. This information asymmetry can give rise to moral hazard. A member may apply for a loan citing business capital as the purpose, for example, but once funds are disbursed, use them for consumption instead. As a result, the loan fails to generate additional income, and installment payment capacity declines. Cooperatives therefore need to strengthen monitoring, mentoring, and evaluation mechanisms for loan fund usage so that financing objectives continue to be met.

2.5 Economic Conditions

Economic condition describes an individual's or household's capacity to obtain income to meet living needs and financial obligations. In this study, economic condition encompasses income stability, occupation type, income source, household expenditure, business condition, and various external factors such as commodity prices, inflation, crop failure, and seasonal change. For the

Pannyangkalang Village community, most of whom work as farmers and small business operators, economic condition is heavily shaped by harvest success and agricultural product selling prices. When production declines or commodity prices fall, household income declines as well, reducing installment payment capacity. Conversely, when harvest yields improve, credit payment capacity also improves. This condition shows that credit risk at rural cooperatives carries different characteristics compared with financial institutions in urban areas. Financing policy therefore needs to take seasonal income characteristics into account in order to minimize credit risk, a pattern also documented in broader research on the macroeconomic determinants of non-performing loans (Anita, Tasnova, & Nawar, 2022; Ghosh, 2015).

2.6 Conceptual Framework

This study views non-performing loan risk as the outcome of an interaction between external and internal factors. External factors are embodied in economic conditions encompassing income stability, occupation type, commodity price fluctuation, and crop failure risk. Internal factors are embodied in member financial behavior encompassing loan fund usage, saving habits, household budget preparation, and installment payment discipline.

The interaction between these two factors determines a member's capacity to meet credit payment obligations. The more unstable the economic condition and the lower the quality of financial behavior, the greater the risk of loan default; conversely, sound financial behavior can reduce the impact of economic pressure on loan repayment capacity, a dynamic consistent with evidence that self-control and long-term financial planning shape financial behavior and well-being independently of income level alone (Rahman & Abdullah, 2023; Susanto & Siregar, 2024). This is further reinforced by comparative research on cooperative profitability in Indonesia, which finds that bad debt levels carry a direct and measurable effect on cooperative financial performance (Bay, Anggraini, & Saputra, 2021), as well as by legal and institutional research emphasizing that credit union operations in Indonesia require a regulatory foundation attentive to community welfare alongside financial soundness (Setyowati, Setyawanto, Lazarus, & Hafidz, 2022).

3. Research Methodology

This study uses a qualitative approach, aimed at understanding in depth the phenomenon of non-performing loans among savings and loan cooperative customers in Pannyangkalang Village, Gowa Regency, from the perspective of economic conditions and financial behavior (Busetto et al., 2020; Aspers & Corte, 2019). This approach was chosen because it allows the researcher to explore the context and meaning customers themselves attach to their financial decisions, an aspect that quantitative approaches used in most prior non-performing-loan research are less able to capture in depth (Busetto et al., 2020; Aspers & Corte, 2019). The research was conducted at customers' homes in Pannyangkalang Village, Gowa Regency. The research subjects consisted of customers who have experienced, or are currently experiencing, installment payment difficulty, together with cooperative management personnel who could speak to the institutional impact of these difficulties and the mitigation measures already considered (Braun & Clarke, 2021).

Data were collected through interviews. Interviews were conducted in a semi-structured format to give informants latitude in conveying their experiences and perceptions while remaining directed toward the study's research focus (Kallio et al., 2016; DeJonckheere & Vaughn, 2019). This semi-structured format allowed the researcher to probe emerging themes, such as the specific circumstances under which loan funds were redirected toward consumptive needs, in greater depth than a fully structured instrument would have permitted (DeJonckheere & Vaughn, 2019). Data analysis proceeded through thematic coding, grouping informant statements into the two broad categories of economic conditions and financial behavior identified in the literature review, before examining how these categories interacted across individual cases to identify the distinct patterns of customer experience reported in Section 4 (Braun & Clarke, 2021).

4. Results and Discussions

4.1 Result

4.1.1 Factors Causing Installment Payment Difficulty

Interview and observation results show that customer difficulty in paying installments at the Pannyangkalang Village savings and loan cooperative is shaped by two interrelated groups of factors, economic conditions and financial behavior. Findings show that economic condition is the primary factor causing customers to experience installment payment difficulty. Most informants stated that their income is not fixed, since it depends on agricultural yield or daily labor. When income declines due to crop failure, low agricultural prices, or reduced work opportunity, installment payment capacity declines as well. This finding shows that credit repayment capacity is heavily shaped by customers' income stability. Beyond this, financial behavior, such as using loan funds for consumptive needs and minimal financial planning, further amplifies non-performing loan risk. This finding is broadly consistent with research on rural bank lending in Indonesia, which finds that loan disbursement volume and repayment patterns are closely tied to the stability of the local rural economic base (Gading & Anindyntha, 2024), as well as with domestic Indonesian research specifically examining the causes of problem loans within savings and loan cooperatives (Khoir, 2024).

Non-performing loans affect not only the customer but also the cooperative's operational continuity. Delayed installment payment obstructs the cooperative's fund rotation, reducing its capacity to disburse loans to other members. This condition can also erode member trust in cooperative management if it occurs persistently. Controlling non-performing loan risk is therefore a critical aspect of maintaining the cooperative's financial health.

4.1.2 Economic Conditions

Seasonal income instability emerged as a dominant theme: customer income depends heavily on agricultural yield, which is seasonal in nature, so that outside the harvest period, installment payment capacity declines sharply. Crop failure and commodity price fluctuation likewise emerged as a key theme, with crop failure caused by weather or pests serving as a primary trigger of arrears during particular periods, compounded by fluctuation in agricultural commodity selling prices.

From the standpoint of economic condition, the majority of informants stated that their income source depends heavily on seasonal agricultural yield. Outside the harvest period, household income declines significantly, reducing installment payment capacity accordingly. This finding is consistent with the view of Zamore (2023), who states that debtor income fluctuation is an important determinant of credit risk at community-based financial institutions. Beyond this, dependence on informal crop-advance financing arrangements further worsens this condition, since customers tend to sell their harvest at a low price in advance to meet urgent needs, so that funds that should have been allocated for installment payment are instead used up beforehand.

4.1.3 Financial Behavior

Use of funds outside the credit's intended purpose emerged as a recurring theme, with some customers using loan funds for consumptive needs, such as family events or urgent household needs, outside the original purpose of the productive credit application. Minimal household financial planning likewise emerged clearly: the absence of household income-expenditure recording makes it difficult for customers to consistently allocate funds for timely installment payment. Low understanding of the consequences of arrears was a further theme, with a number of customers showing limited awareness of penalty implications and the impact of arrears on their reputation and future credit access.

From the standpoint of financial behavior, it was found that some customers use loan funds outside the original purpose of the credit application, for instance for household consumptive needs or family events. This reinforces the finding of Purwidianti and Tubastuvi (2019) regarding the importance of financial behavior in determining successful individual debt management. Minimal habit of recording household income and expenditure is a further factor amplifying payment delay risk, since customers lack a clear picture of their own financial capacity to consistently meet credit obligations.

This condition becomes more complex when traced further through informants' acknowledgment that decisions about loan fund usage are frequently not entirely free choices, but responses to pressure from urgent needs arising simultaneously with periods of low income. A number of informants acknowledged that loan funds originally intended for farming capital, such as purchasing seeds or fertilizer, were ultimately partly redirected to cover family health costs or children's school expenses falling due at the same time. This pattern shows that weak financial behavior among rural customers does not always stem from mere lack of knowledge, but also from limited choice arising from minimal alternative financing sources for non-productive needs, consistent with the finding of Rahardjo and Suwardi (2022) that strengthening financial literacy among Indonesian credit cooperative customers needs to be accompanied by the provision of more varied financing products so that the original purpose of borrowing does not easily shift.

4.1.4 Interaction Between Economic Conditions and Financial Behavior

A deeper analysis shows that economic conditions and financial behavior do not operate separately, but mutually reinforce one another in shaping non-performing loan risk. Seasonal income instability does not automatically cause arrears if a customer has adequate financial planning, for instance through reserve savings during the harvest season to cover installment obligations during leaner periods. Interview results show, however, that most customers lack the habit of setting aside such reserve funds, so that when income declines, they have no financial buffer to continue meeting their credit obligations. This pattern is consistent with the argument of Strömbäck, Lind, Skagerlund, Västfjäll, and Tinghög (2017) that self-control capacity and long-term financial planning are important determinants of individual financial well-being, regardless of the size of income obtained.

Beyond this, dependence on informal crop-advance financing further reinforces less adaptive financial behavior. Customers trapped in this arrangement tend to accept advance payment at a value far below the market price at harvest time, so that funds that should have been available for installment payment or savings are instead used up earlier for urgent consumptive needs. This interaction shows that external economic pressure can drive the emergence of short-term financial behavior (short-termism), a tendency to prioritize meeting present needs without considering the long-term consequences for credit obligations. This finding reinforces the proposition put forward in the literature review that non-performing loan risk among the Pannyangkalang Village cooperative's customers cannot be explained singularly, but arises from a dynamic interaction between external and internal factors, consistent with Ferreira (2022) in the broader context of microfinance institutions.

One of the informant explained: *"If the harvest is not enough, we choose household needs first. The installment will be paid later once we have money again."*

Based on interviews, most informants explain that when income declines due to crop failure or falling commodity prices, they are forced to change how available funds are prioritized. Income that should be allocated for installment payment is instead used first to meet food needs, children's education, health costs, and other household needs. This condition shows that the decision to delay installment payment is not caused solely by low member responsibility, but is more strongly shaped by limited economic resources available to the customer.

From the financial behavior side, it was found that economic pressure often worsens member behavior further. When income declines, some members choose to use loan funds for consumption rather than productive activity. This decision may resolve short-term needs, but simultaneously reduces the business's capacity to generate income in the future. In other words, economic pressure drives a shift in financial behavior that itself increases non-performing loan risk. Conversely, poor financial behavior also amplifies the impact of economic instability. Some members who obtained a fairly good harvest still experienced payment delay because they lacked the habit of setting aside part of their income as reserve funds. The entire harvest proceeds were used for consumption, other debt payment, or social expenditure, so that upon entering the next planting season, they again experienced fund shortage for cooperative installment payment.

These findings show that income size alone is not the sole determinant of credit repayment capacity. How members manage their income carries equally important influence. Members with more disciplined financial behavior tend to remain capable of meeting payment obligations even when income declines, whereas members with poor financial behavior remain at non-performing loan risk even when obtaining relatively higher income. From the perspective of Behavioral Finance Theory, this condition shows that financial decisions are shaped by the interaction between environmental pressure and individual psychological characteristics. When facing economic pressure, individuals with strong self-control capacity and sound financial planning tend to be better able to reduce the negative impact on credit payment, whereas individuals with low self-control are more likely to make decisions oriented toward short-term needs, increasing the likelihood of arrears.

4.1.5 Variation in Patterns Among Customers

Although the general pattern found shows a clear link between economic condition and financial behavior, further analysis of individual cases reveals variation in the characteristics of customers experiencing non-performing loans. Some informants fall into a group experiencing arrears purely due to external pressure, such as unpredictable crop failure, while their financial behavior remains relatively well-ordered and their arrears are temporary until economic conditions improve. This group generally succeeds in settling their arrears upon entering the next harvest season.

Conversely, another group of informants had economic conditions that were actually fairly stable, yet still experienced repeated arrears due to undisciplined financial behavior patterns, such as a habit of using loan funds for unplanned consumptive needs or prioritizing social expenditure over installment obligations. Within this group, arrears tend to recur from one installment period to the next even though economic conditions show no meaningful pressure. This variation in pattern confirms that a cooperative's approach to handling non-performing loans ideally should not be uniform, but should instead be tailored to the underlying root cause behind each customer's situation, consistent with the framework of Rajha (2016), which emphasizes that non-performing loan determinants are heterogeneous and contextual across units of analysis.

Beyond these two groups, further examination also identified a third group: informants experiencing external economic pressure simultaneously with undisciplined financial behavior patterns. Within this group, arrears tend to persist longer and prove more difficult to resolve even after economic conditions improve, since additional funds obtained during the harvest season are not prioritized for settling arrears but are instead redirected toward consumptive needs once again. This group receives particular attention from cooperative management because it contributes most heavily to the accumulation of difficult-to-collect non-performing receivables, consistent with the finding of Gjeçi, Marinč, and Rant (2023) that the simultaneous interaction between external pressure and weak debtor financial discipline tends to produce the most persistent credit risk at microfinance institutions.

4.1.6 Loan Management and Non-Performing Loan Risk Mitigation Efforts

Based on findings regarding the two groups of causal factors and the variation in patterns among customers, cooperative management interviewed proposed several measures, some already implemented and others requiring further optimization, to minimize non-performing loan risk going forward. First, in terms of mitigating fluctuating economic conditions, the cooperative is considering adjusting to a more flexible installment schedule aligned with the harvest cycle, such as a grace period during the planting season, so that payment burden is not concentrated during periods when customer income is low. This approach is consistent with the character of cooperatives as family-based financial institutions emphasizing flexibility and responsiveness to members' real conditions (McKillop, French, Quinn, Sobiech, & Wilson, 2020).

Second, in terms of mitigating less adaptive financial behavior, several informants emphasized the importance of routine financial literacy mentoring and education, conducted both before and during the loan period, rather than only at the point of credit application. This education is directed at helping customers understand the importance of household budgeting, separating productive loan funds from consumptive needs, and recognizing the long-term consequences of late payment for future credit access. This measure is consistent with the finding of Lopus, Amidjono, and Grimes (2019) that improving financial literacy among vulnerable populations can significantly improve the quality of their financial decision-making.

Third, cooperative management also highlighted the need to strengthen post-disbursement mentoring mechanisms, for instance through routine visits or periodic monitoring of loan fund usage, so that deviation from the fund's original purpose can be detected earlier, before developing into arrears that become difficult to manage. Overall, the findings in this section confirm that effective non-performing loan risk mitigation needs to be designed simultaneously along two dimensions: structural adjustment to customers' economic characteristics and strengthening of their financial behavior capacity.

Fourth, a number of management personnel also proposed strengthening feasibility analysis of prospective borrowers at the credit application stage, for instance by more carefully examining income sources, prior loan history, and prospective customers' financial reserve capacity before a loan is approved. This measure is considered important for detecting potential risk early, rather than only addressing arrears after they occur. This approach is consistent with the credit risk management principle emphasized by Akram and Rahman (2018), that adequate debtor selection and feasibility analysis at the early stage constitutes an effective first line of defense in curbing potential problem loans at financial institutions, including community-based microfinance institutions such as savings and loan cooperatives.

4.2 Discussion

Taken together, the findings reported above point to a consistent and mutually reinforcing picture in which non-performing loan risk at the Pannyangkalang Village cooperative cannot be attributed to either economic condition or financial behavior in isolation, but emerges from their ongoing interaction. This finding extends the broader quantitative literature on non-performing loan determinants, which has established that both macroeconomic and behavioral factors matter (Anita, Tasnova, & Nawar, 2022; Ferreira, 2022), by showing concretely, through customers' own accounts, how these two categories of factors interact in practice: a seasonal income shortfall becomes a genuine repayment crisis only when it coincides with the absence of a financial buffer, and an otherwise sound income stream becomes vulnerable to default only when undisciplined spending habits erode the reserves that would have absorbed a temporary shortfall.

The three-group typology identified in Section 4.1.5, distinguishing customers affected primarily by external pressure, primarily by behavioral factors, and by both simultaneously, offers a practically useful refinement of the general economic-behavioral interaction framework reviewed in Section 2. The heterogeneous and contextual nature of non-performing loan determinants across units of analysis, and it extends that insight by showing that heterogeneity exists not only across institutions or regions, as much of the quantitative literature examines, but across individual customers within a single, relatively homogeneous rural community. The finding that the third group, experiencing both external pressure and behavioral weakness simultaneously, contributes disproportionately to persistent arrears, the simultaneous interaction of external and internal risk factors produces the most persistent credit risk, and it suggests that cooperative risk management would benefit from a differentiated response strategy rather than a uniform one applied to all delinquent customers.

The dependence on informal crop-advance financing documented throughout the findings deserves particular attention as a mechanism that appears to convert what might otherwise be a manageable seasonal income gap into a more severe and self-perpetuating cash shortage. Because customers accept advance payment well below eventual market price to meet urgent needs, they effectively surrender a portion of the very income that would have funded loan repayment, a dynamic that compounds rather than merely coincides with the seasonal income instability already discussed. This finding suggests that cooperative interventions addressing dependence on informal crop-advance arrangements, whether through expanded access to formal short-term bridging credit or coordinated harvest-marketing arrangements, could meaningfully reduce non-performing loan risk by addressing a root cause that neither flexible repayment scheduling nor financial literacy education alone would fully resolve.

These findings also speak to the broader financial literacy and behavioral finance literature reviewed in Section 2. The finding that some financially disciplined customers successfully navigate seasonal income volatility while some economically stable customers nonetheless default is consistent with research emphasizing self-control as a determinant of financial behavior and well-being independent of income level (Strömbäck, Lind, Skagerlund, Västfjäll, & Tinghög, 2017; Rahman & Abdullah, 2023). At the same time, this study's qualitative approach reveals a nuance that purely quantitative behavioral-finance research is less able to capture: several informants' accounts suggest that fund diversion away from the loan's original productive purpose was not simply a matter of poor discipline, but a constrained response to simultaneous, competing urgent needs, such as a child's school fees falling due alongside a health expense, in a context offering few alternative financing sources for such non-productive needs. The strengthening financial literacy among Indonesian credit cooperative customers needs to be paired with more varied financing products, since literacy education alone cannot address a genuine absence of appropriate financing options for legitimate non-productive household needs.

The mitigation measures proposed by cooperative management in Section 4.1.6, spanning flexible repayment scheduling, financial literacy mentoring, post-disbursement monitoring, and strengthened upfront feasibility analysis, map closely onto the two-dimensional economic-behavioral framework this study identifies, and their consistency with established credit risk management principles (Akram & Rahman, 2018) suggests that cooperative management already possesses a reasonably accurate diagnostic understanding of the problem, even without having previously framed it in these explicit theoretical terms. The practical challenge going forward is less a matter of identifying appropriate measures and more a matter of implementation capacity, since mentoring, monitoring, and refined feasibility analysis all require staff time and expertise that a small, family-based rural cooperative may find difficult to sustain without external support, a consideration worth incorporating into any policy recommendations addressed to cooperative regulators or supporting agencies.

Finally, these findings carry an implication that extends beyond the specific cooperative examined here. Much of the international non-performing loan literature, drawing on cross-institutional panel data, is well suited to identifying which factors correlate with default at scale but is less able to explain why two customers facing similar economic pressure might experience very different repayment outcomes. This study's case-level, interaction-focused findings suggest that the missing piece is often the customer's capacity to convert temporary economic slack, such as a good harvest, into a durable financial buffer, a capacity shaped jointly by financial literacy, self-control, and the availability of appropriate financing alternatives for legitimate non-productive needs. Cooperative risk management strategies that treat buffer-building capacity as a distinct target for intervention, rather than treating income stability and financial behavior as separate problems to be addressed independently, may accordingly prove more effective than either economic support or financial education pursued in isolation.

5. Conclusions

5.1 Conclusion

Based on the analysis, it can be concluded that non-performing loans at this cooperative arise from the interaction of two main groups of factors. First, customers' economic conditions are seasonal in nature and vulnerable to fluctuation, particularly due to dependence on the agricultural sector, informal crop-advance financing arrangements, and crop failure risk. Second, customers' financial behavior is less adaptive, reflected in the use of loan funds outside their original purpose, minimal household financial planning, and low understanding of the consequences of arrears. Both factors together create pressure on the cooperative's liquidity and reduce member trust in the cooperative as a village-level financial intermediation institution. The study's aims, to identify causal factors, analyze their impact on the cooperative's financial condition, and formulate risk mitigation measures, have accordingly been achieved.

5.2 Research Limitations

This study is subject to several limitations that need to be considered in interpreting its findings. First, the study focuses on only a single village, so its findings are contextual and cannot be statistically generalized to other cooperatives with different socioeconomic characteristics. Second, the research data depends heavily on informants' perceptions and disclosures obtained through interviews, which may carry subjective bias even though source and technique triangulation was employed. Third, this study does not quantitatively measure the magnitude of each factor's contribution to non-performing loan levels, so it cannot statistically determine which factor is most dominant.

5.3 Suggestions and Directions for Future Study

For future research, it is recommended that the scope of research be expanded to several savings and loan cooperatives in different regions, and that qualitative approaches be combined with quantitative approaches to measure the relative contribution of each factor to non-performing loan levels in a more measurable way.

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Author Contributions

NHK conceived the research problem, collected and analyzed the interview and observation data, and drafted the manuscript. WOR supervised the research process, contributed to the literature review, and reviewed and edited the final manuscript.

References

Akram, H., & Rahman, K. ur. (2018). Credit risk management: A comparative study of Islamic banks and conventional banks in Pakistan. *ISRA International Journal of Islamic Finance*, *10*(2), 185-205. https://doi.org/10.1108/IJIF-09-2017-0030

Andreou, P. C., & Anyfantaki, S. (2021). Financial literacy and its influence on internet banking behavior. *European Management Journal*, *39*(5), 658-674. https://doi.org/10.1016/j.emj.2020.12.001

Anita, S., Tasnova, N., & Nawar, N. (2022). Are non-performing loans sensitive to macroeconomic determinants? An empirical evidence from banking sector of SAARC countries. *Future Business Journal, 8, 7*. https://doi.org/10.1186/s43093-022-00117-9

Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative Sociology*, *42*(2), 139-160. https://doi.org/10.1007/s11133-019-9413-7

Bay, M., Anggraini, R., & Saputra, D. (2021). The effect of bad debt on cooperative profitability in Indonesia. *Jurnal Ekonomi dan Bisnis*, *24*(2), 145-156.

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? Qualitative Research in Psychology, 18(3), 328–352. https://doi.org/10.1080/14780887.2020.1769238

Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, *2*(14). https://doi.org/10.1186/s42466-020-00059-z

DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health*, *7*(2). https://doi.org/10.1136/fmch-2018-000057

Ferreira, C. (2022). Determinants of non-performing loans: A panel data approach. *International Advances in Economic Research, 28, 133-153*. https://doi.org/10.1007/s11294-022-09846-3

Gading, R. L., & Anindyntha, F. A. (2024). Determinants of total loans disbursed by rural banks in Indonesia. *Jurnal Ekonomi*, *29*(2), 317-335. https://doi.org/10.24912/je.v29i2.2209

Ghazali, M. S., Alwi, S. F. S., Othman, I., Sabri, M. F., & Aziz, N. N. A. (2022). The relationship between subjective financial knowledge and financial well-being among emerging adults in Malaysia. *International Journal of Academic Research in Business & Social Sciences*, *12*(4), 1263-1284.

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. *Journal of Financial Stability, 20, 93-104*. https://doi.org/10.1016/j.jfs.2015.08.004

Gjeçi, A., Marinč, M., & Rant, V. (2023). Non-performing loans and bank lending behaviour. *Risk Management*, *25*(1), 7. https://doi.org/10.1057/s41283-023-00109-9

Hassan, M. K., İslam, M. T., Ahmed, Z., & Sarker, J. I. (2023). Islamic banking in Bangladesh: A literature review and future research agenda. *International Journal of Islamic and Middle Eastern Finance and Management*, *16*(5), 957-980. https://doi.org/10.1108/IMEFM-12-2021-0491

Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, *72*(12), 2954-2965. https://doi.org/10.1111/jan.13031

Khoir, A. (2024). Analisis faktor-faktor penyebab kredit bermasalah pada koperasi simpan pinjam. *Jurnal Akuntansi dan Keuangan Koperasi*, *6*(1), 33-47.

Lopus, J. S., Amidjono, D. S., & Grimes, P. W. (2019). Improving financial literacy of the poor and vulnerable in Indonesia: An empirical analysis. *International Review of Economics Education, 32, 100168*. https://doi.org/10.1016/j.iree.2019.100168

McKillop, D., French, D., Quinn, B., Sobiech, A. L., & Wilson, J. O. S. (2020). Cooperative financial institutions: A review of the literature. *International Review of Financial Analysis, 71, 101520*. https://doi.org/10.1016/j.irfa.2020.101520

Muhammad, R., Suluki, A., & Nugraheni, P. (2020). Internal factors and non-performing financing in Indonesian Islamic rural banks. *Cogent Business & Management*, *7*(1), 1823583. https://doi.org/10.1080/23311975.2020.1823583

Nugroho, R., & Setiawan, B. (2021). Breadth and depth outreach of Islamic cooperatives: Do size, non-performing finance, and grant matter? Journal of Islamic Monetary Economics and Finance, 7(1), 87-110. https://doi.org/10.21098/jimf.v7i1.1257

Purwidianti, W., & Tubastuvi, N. (2019). The effect of financial literacy and financial experience on SME financial behavior in Indonesia. *Jurnal Dinamika Manajemen*, *10*(1), 40-45. https://doi.org/10.15294/jdm.v10i1.16988

Rahardjo, D. A. S., & Suwardi, S. (2022). The role of Indonesian credit cooperatives towards strengthening financial literacy and improving financial behavior. *Akuntansi 45*, *3*(1), 122-135. https://doi.org/10.30640/akuntansi45.v3i1.629

Rahman, S. A., & Abdullah, N. (2023). Self-control as a mediator between saving intention and saving behavior among young adults. *Journal of Consumer Finance*, *9*(2), 88-101.

Rajha, K. S. (2016). Determinants of non-performing loans: Evidence from the Jordanian banking sector. *Journal of Finance and Bank Management*, *4*(1), 125-136.

Riitsalu, L., & Põder, K. (2016). A glimpse of the complexity of factors that influence financial literacy. *International Journal of Consumer Studies*, *40*(6), 722-731. https://doi.org/10.1111/ijcs.12285

Salas, M., Lamothe, P., Delgado, E., & Valero, F. (2024). Determinants of nonperforming loans: A global data analysis. *Computational Economics, 64, 2695-2716*. https://doi.org/10.1007/s10614-023-10543-8

Setyowati, E., Setyawanto, T., Lazarus, & Hafidz, J. (2022). Legal reconstruction of the credit union operation in Indonesia for community welfare based on the Pancasila justice value. *Scholars International Journal of Law, Crime and Justice*, *5*(7), 281-289.

Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D., & Tinghög, G. (2017). Does self-control predict financial behavior and financial well-being? Journal of Behavioral and Experimental Finance, 14, 30-38. https://doi.org/10.1016/j.jbef.2017.04.002

Sulaksana, R. D. I. Z. F. (2022). Improving Indonesia's financial literacy through financial education programs. *Journal of Business Management Education*, *7*(1), 9-19.

Susanto, A., & Siregar, D. (2024). The impact of self-control on pay-later usage and credit scores among young consumers. *Journal of Consumer Finance*, *10*(1), 30-44. https://doi.org/10.7890/jcf.2024.023

Thornton, J., & Di Tommaso, C. (2021). The effect of non-performing loans on credit expansion: Do capital and profitability matter? Evidence from European banks. *International Journal of Finance & Economics*, *26*(3), 4822-4839. https://doi.org/10.1002/ijfe.2042

Wicaksono, A. B., & Nuryana, I. (2020). Pengaruh sikap keuangan, teman sebaya, dan kecerdasan spiritual melalui kontrol diri terhadap perilaku pengelolaan keuangan. *Economic Education Analysis Journal*, *9*(3), 940-958. https://doi.org/10.15294/eeaj.v9i3.42352

Widjaja, I., Arifin, A. Z., & Setini, M. (2020). The effects of financial literacy and subjective norms on saving behavior. *Management Science Letters*, *10*(15), 3635-3642. https://doi.org/10.5267/j.msl.2020.6.030

Zamore, S. (2023). Excessive focus on risk? Non-performing loans and efficiency of microfinance institutions. *International Journal of Finance & Economics*, *28*(2), 1290-1307. https://doi.org/10.1002/ijfe.2477

Zolkifli, N. A., Hamid, M. A., & Janor, H. (2015). Liquidity risk and performance: The case of Bahrain and Malaysian banks. *Global Economy and Finance Journal*, *8*(2), 95-111.