

Economic and Social Determinants of Credit Delinquency in Microfinance: Empirical Evidence in Cusco, Peru

Determinantes económicos y sociales de la morosidad crediticia en microfinanzas: Evidencia empírica en Cusco, Perú

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Edison Alan Alves Choque
eaalvescusco@gmail.com**Cómo citar:**Alves Choque, E.A., Vargas Bejarano, M.N., Palomino Bejar, V.M.S. (2026). Economic and Social Determinants of Credit Delinquency in Microfinance: Empirical Evidence in Cusco, Peru. *Integración*, 10(2), 11-18. <https://doi.org/10.36881/ri.v10i2.1394>**Fuente de financiamiento:** No financiado.**Declaración de conflictos de interés:** Los autores declaran no tener conflictos de interés**Resumen**

La morosidad crediticia constituye una amenaza persistente para la sostenibilidad de las entidades microfinancieras peruanas. El objetivo del presente estudio fue identificar y describir los factores económicos y sociales asociados a la morosidad en prestatarios de la Caja Municipal de Ahorro y Crédito Cusco (CMAC Cusco), durante el año 2024. Se adoptó un enfoque cuantitativo, con alcance descriptivo, diseño no experimental y corte transversal. La muestra estuvo conformada por 399 prestatarios en estado de mora, calculada mediante la fórmula para poblaciones de tamaño desconocido ($n = 384$; IC 95%; $p = q = 0.5$; $e = 0.05$), ampliada por participación voluntaria. Se empleó un cuestionario de 25 ítems con escala Likert de cinco niveles, cuyos coeficientes de confiabilidad ($\alpha = 0.73-0.90$) resultaron adecuados. Los resultados muestran que los problemas de salud ($M = 23.2$) y la situación socioeconómica ($M = 20.8$) son los factores de mayor incidencia en la morosidad, mientras que la situación familiar ($M = 12.5$) y el aumento en el pago de intereses ($M = 15.6$) presentan menor impacto. Se concluye que la morosidad en CMAC Cusco responde a una convergencia de vulnerabilidades económicas y sociales que deben ser consideradas en el diseño de políticas crediticias preventivas.

Palabras clave: morosidad, riesgo crediticio, factores económicos, factores sociales, microfinanzas, Caja Municipal.**Abstract**

Credit delinquency represents a persistent threat to the sustainability of Peruvian microfinance institutions. The aim of this study was to identify and describe the economic and social factors associated with delinquency among borrowers of the Caja Municipal de Ahorro y Crédito Cusco (CMAC Cusco) in 2024. A quantitative approach was adopted, with a descriptive scope, non-experimental design, and cross-sectional timeframe. The sample comprised 399 borrowers in arrears, calculated using the formula for populations of unknown size ($n = 384$; 95% CI; $p = q = 0.5$; $e = 0.05$) and extended through voluntary participation. A 25-item Likert-scale questionnaire was administered, yielding adequate reliability coefficients ($\alpha = 0.73-0.90$). Results indicate that health problems ($M = 23.2$) and socioeconomic status ($M = 20.8$) are the factors with greatest incidence on delinquency, while family situation ($M = 12.5$) and increased interest payments ($M = 15.6$) show comparatively lower impact. It is concluded that delinquency at CMAC Cusco reflects a convergence of economic and social vulnerabilities that should be incorporated into preventive credit policy design.

Keywords: delinquency, credit risk, economic factors, social factors, microfinance, municipal savings fund.**OPEN ACCESS**
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Introduction

The financial system plays a structural role in the economic development of countries. In Peru, Municipal Savings and Credit Banks (CMACs) have played a central role in democratizing credit, particularly among segments of the population with less access to traditional banking. In this context, CMAC Cusco stands out as one of the most important microfinance institutions in the system, with 136 branches in 20 departments, approximately 3,500 employees, and 1,500,000 clients (Caja Cusco, 2024). However, like all microfinance institutions, it faces the persistent challenge of delinquency in its loan portfolio.

According to data from the Superintendency of Banking, Insurance, and Private Pension Fund Administrators (SBS, 2024), CMAC Cusco registered a delinquency rate of 4.08% at the end of 2023, lower than the average for the savings and loan association system (5.71%), but significant in terms of its impact on profitability, liquidity, and institutional sustainability. The accumulation of non-performing loans generates the need to establish provisions that reduce profitability and negatively affect the entity's risk rating. Likewise, borrowers in default experience direct consequences: accumulation of late payment interest, deterioration in credit bureaus, and limited access to future financing (Collier, 2021).

The literature on loan delinquency has advanced considerably in identifying institutional and macroeconomic factors associated with payment defaults. Research such as that by Quispe et al. (2022) and Chong (2021) has documented the effect of informal employment, loan amounts, and deficiencies in credit evaluation processes. Likewise, Naz et al. (2024) and Hinostroza (2021) have shown that the lack of financial guidance and inadequate institutional support increase borrowers' vulnerability. However, a gap persists in the literature regarding the relative weight of social factors—such as family grief, religious dynamics, or cultural context—in the microfinance contexts of the Andean regions of Peru, where these dimensions are particularly relevant.

In light of this gap, this research poses the following research question: What are the economic and social factors that influence borrower delinquency at CMAC Cusco in the Cusco region during 2024? The study is justified both by its theoretical relevance—by contrasting delinquency models in an Andean microfinance context—and its practical relevance, since its findings can guide the design of credit policies that

are more sensitive to the social and economic profile of borrowers.

The overall objective of this study is to identify and describe the economic and social factors associated with loan defaults among borrowers of the CMAC Cusco savings and loan cooperative in the Cusco region during 2024. To this end, the typology of default factors developed by Wadud et al. (2020), based on the work of Kau et al. (1993, 1994), is adopted as a conceptual framework. This typology distinguishes between economic factors (job instability, health problems, family bereavement, couples' financial difficulties, increased interest rates and loan amounts) and social factors (socioeconomic, cultural, family, and religious conditions). This taxonomy provides a robust analytical structure for operationalizing the determinants of default in contexts where personal and community factors are key.

Theoretical Framework

Credit Delinquency: A Conceptual Approach

Delinquency is defined as the failure to meet the payment terms agreed upon in a financial obligation, which generates penalties, increases costs through late payment interest, and damages the debtor's credit history, limiting their access to future financing (Collier, 2021). In the microfinance sector, delinquency not only constitutes a credit risk management problem for the lending institution but also reflects the economic and social vulnerability of borrowers (Naz et al., 2024).

Measuring delinquency can be approached from multiple criteria. In the Peruvian system, the SBS (Superintendency of Banking, Insurance and Private Pension Fund Administrators) establishes that a loan is considered delinquent when it accumulates more than 30 days of arrears for loans to micro and small businesses, or when a consumer loan installment is more than 30 days overdue, with the outstanding balance considered delinquent after 90 days (SBS, 2024). This operational definition is consistent with Basel II standards for estimating credit risk exposure (Bermúdez et al., 2020).

Economic Factors of Delinquency

Wadud et al. (2020) documented the set of economic situations identified by Kau et al. (1993, 1994) that contribute to payment defaults. Among these, job insecurity is of central importance: job loss immediately reduces the borrower's ability to pay, particularly in the Peruvian context, where informal employment exceeds 70% of the active workforce (Ludeña, 2024). Health problems represent another highly significant factor, given that unexpected medical expenses can significantly

compromise household liquidity, especially in the absence of adequate health insurance coverage (Virtual Nurse, 2015). Family grief, in addition to its emotional impact, carries tangible economic consequences, such as funeral expenses and the loss of a co-breadwinner (Cabodevilla, 2007).

Regarding credit variables, the loan amount is an indicator of the borrower's degree of over-indebtedness (Pedrosa, 2020b), while an increase in the interest rate directly increases the financial burden (Pedrosa, 2020a). The financial difficulties arising from marital breakdown add a dimension of conflict to the shared management of the family budget (Bolaños, 1998). Recent research confirms that these factors reinforce each other when there is no financial guidance prior to loan disbursement (Hinostroza, 2021; Chong, 2021).

Social Factors of Delinquency

The borrower's socioeconomic status is recognized as a consistent predictor of delinquency in the Latin American context (Quispe et al., 2022). This variable synthesizes the individual's position within the social and economic structure, integrating aspects such as income level, access to basic services, and financial management capacity (Westreicher, 2021). Cultural circumstances influence delinquency through social norms and habits that can normalize late payments or generate financial obligations associated with collective practices (Podestá, 2006). In Andean communities, cultural celebrations and reciprocal commitments constitute expenditures that compete with formal financial obligations.

Family dynamics also modulate repayment capacity: household composition, caregiving responsibilities, and intrafamily conflicts can divert resources toward unforeseen needs (Veloza-Morales et al., 2023). For its part, religious circumstances introduce periodic financial obligations—such as tithes and offerings—that reduce the income available for debt servicing (Sarrazin, 2021). Naz et al. (2024) documented these dimensions in a systematic review of microfinance institutions in South Asia, demonstrating their cross-cultural relevance.

Empirical Background

Quispe et al. (2022) analyzed the determinants of delinquency in the Peruvian banking and microfinance system between 2015 and 2020, showing that informal employment, lack of financial guidance, and social vulnerability are structural factors contributing to default. Chong (2021) examined the impact of loan amount, collateral, and borrower characteristics on payment defaults in the Malaysian banking system, concluding that clear loan terms and the borrower's

financial literacy significantly reduce the risk of default. Hinostroza (2021) demonstrated, in the context of Banco Pichincha in Peru, that the lack of credit monitoring and financial advice is a key factor in portfolio deterioration. Finally, Naz et al. (2024) and Chen and Chen (2021) provide evidence on the relevance of personal and sociocultural factors in microfinance institutions in emerging contexts. Together, these precedents support the relevance and feasibility of the present study.

Methodology

Institutional Context

The research was conducted at Caja Municipal de Ahorro y Crédito Cusco S.A. (CMAC Cusco), an institution founded in 1988 that currently operates in 20 departments of Peru with 136 branches and 1,500,000 active clients. In the Cusco region, it has 36 branches (Chang, 2021). The study focused on borrowers with overdue loans in the Cusco department during 2024.

Design and Scope

The research adopts a quantitative approach, a descriptive scope, a non-experimental design, and a cross-sectional approach. A descriptive scope is appropriate when the objective is to characterize the properties of a phenomenon without establishing causal relationships (Hernández-Sampieri & Mendoza Torres, 2018). A non-experimental design involves observing variables in their natural state, without intentional manipulation. A cross-sectional approach involves collecting data at a single point in time.

Participants

The target population consisted of all borrowers with overdue loans at CMAC Cusco within the Cusco region during the study period. Since the exact number of borrowers in arrears varies dynamically, it was classified as a population of unknown size, and the corresponding sampling formula was applied:

$$n = Z^2 \times p \times q / e^2$$

Where $Z = 1.96$ (95% confidence level), $p = q = 0.50$, and $e = 0.05$, resulting in a minimum sample size of $n = 384$. During fieldwork, 15 additional borrowers agreed to participate voluntarily, resulting in a final sample of $n = 399$ participants. The sampling was non-probabilistic and based on convenience, by contacting borrowers identified at branches throughout the region.

Instrument

A 25-item questionnaire was designed, distributed across two dimensions: economic factors of delinquency (15 items, 6 indicators) and social factors of delinquency

(10 items, 4 indicators). The response scale was a five-point Likert scale (1 = Never to 5 = Always). Content validity was assessed through expert judgment—three specialists in finance and methodology—who verified the appropriateness, relevance, and clarity of each item. The instrument's reliability was estimated using Cronbach's alpha coefficient, yielding values between $\alpha = 0.73$ and $\alpha = 0.90$, all above the minimum acceptable threshold of 0.70 (Kline, 2016), indicating adequate internal consistency. The questionnaire was administered in person at CMAC Cusco branches in the Cusco region during 2024.

Data Analysis Procedure

The scores for each indicator were scaled on a scale of 0 to 30 points to facilitate comparison between dimensions. Measures of central tendency (mean, M) and variability (standard deviation, SD), as well as the skewness coefficient, were calculated to assess the data distribution. Skewness values between -3 and 3 indicate the absence of pronounced bias (Kline, 2016). The indicators were classified into three impact levels based on the distribution of the score range: low (0–10), medium (11–20), and high (21–30), corresponding to the lower, middle, and upper thirds of the measurement range. Statistical processing was performed using IBM SPSS Statistics v. 26 software.

Results

Table 1 summarizes the descriptive statistics and internal consistency coefficients for the ten indicators evaluated. Skewness values range from -1.1 to 0.5 , confirming the absence of pronounced biases in the distributions. Alpha coefficients range from 0.73 to 0.90 , validating the precision of the measurements.

Table 1

Descriptive statistics and internal consistency coefficients of the study variables ($n = 399$)

Indicator	Items	M	SD	α	Skewness
Economic default factors					
Job instability	3	17.4	7.7	0.85	-0.4
Financial difficulties with the partner	3	16.8	4.4	0.73	0.4
Family bereavement	2	18.2	4.5	0.83	-0.7
Health problems	2	23.2	5.0	0.89	-1.1
Increase in interest payments	2	15.6	11.6	0.85	0.3
Loan amount	2	18.6	7.4	0.81	-0.5
Social default factors					
Socioeconomic status	3	20.8	6.5	0.78	-0.3
Cultural status	3	15.9	9.0	0.90	0.5
Family status	3	12.5	7.8	0.86	0.5
Religious status	2	15.9	10.9	0.81	0.5

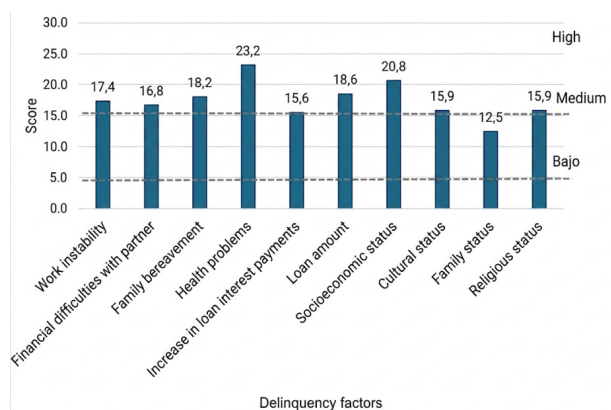
Note: Scores are scaled on a scale of 0 to 30. Impact levels are defined as follows: low = 0–10; medium = 11–20; high = 21–30. α = Cronbach's alpha coefficient. Author's own elaboration.

Regarding economic factors, health problems stand out as the indicator with the greatest impact ($M = 23.2$, $SD = 5.0$; high level), followed by the loan amount ($M = 18.6$, $SD = 7.4$) and family bereavement ($M = 18.2$, $SD = 4.5$), both at a medium level. The increase in interest payments has the lowest mean in this dimension ($M = 15.6$), although it also shows the greatest variability ($SD = 11.6$), suggesting substantial differences in the perception of this factor among borrowers. Job instability ($M = 17.4$) and financial difficulties with one's partner ($M = 16.8$) are also at the medium level.

Regarding social factors, socioeconomic status is the predominant indicator ($M = 20.8$, $SD = 6.5$; high level), while cultural status ($M = 15.9$, $SD = 9.0$) and religious status ($M = 15.9$, $SD = 10.9$) have identical means at the medium level, although religious status shows greater dispersion. Family status obtains the lowest score in this dimension ($M = 12.5$, $SD = 7.8$), although it remains at the medium level.

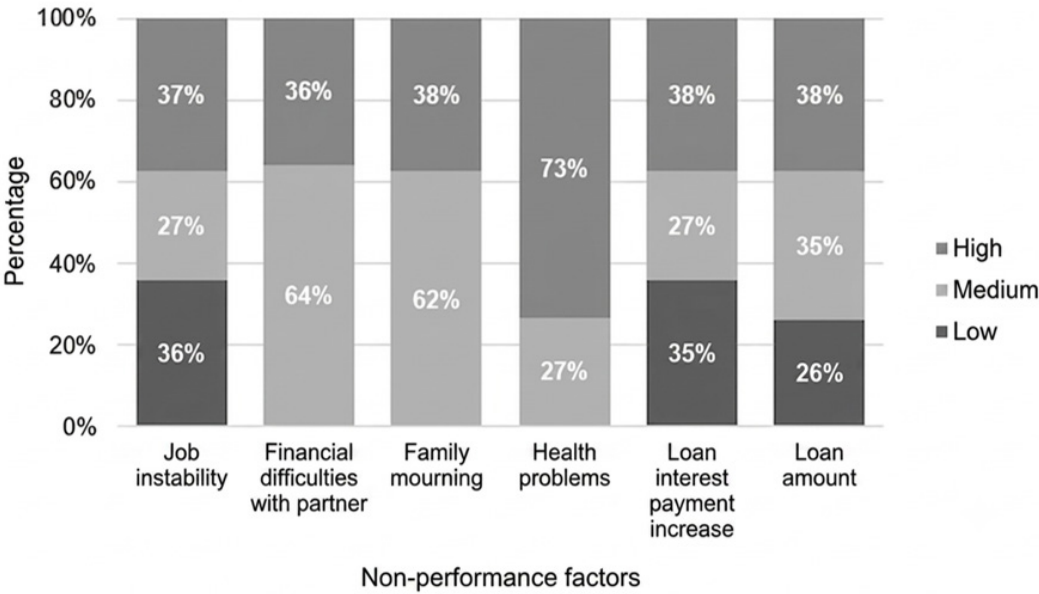
Figure 1

Delinquency factor scores ($n = 399$)



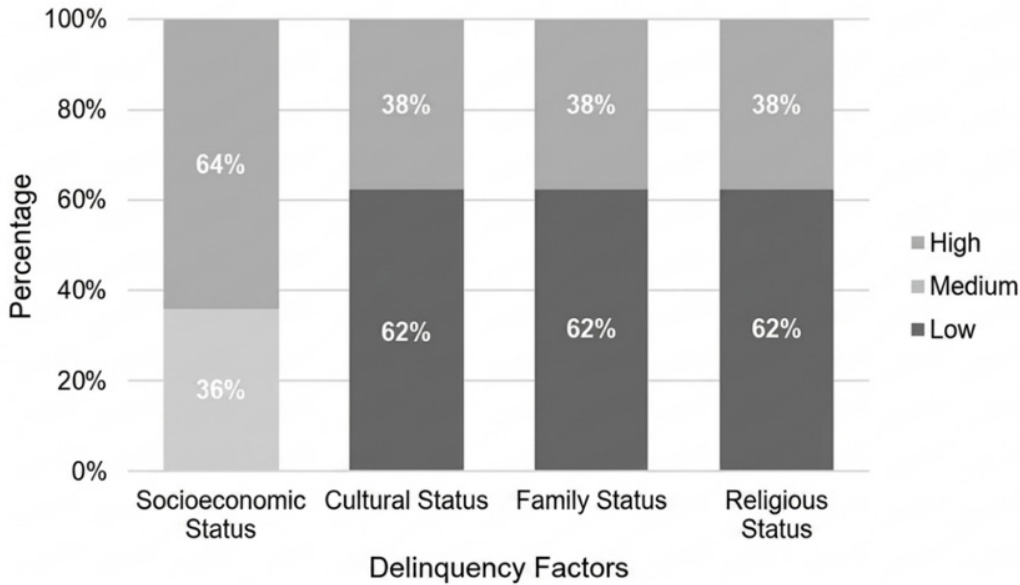
Note: This figure graphically represents the average scores of all indicators, allowing visual comparison of their relative position on the low-medium-high continuum.

Figura 2
Niveles de presencia de los factores económicos de morosidad



Nota: Esta figura muestra la distribución porcentual de los niveles de impacto para los factores económicos.

Figure 3
Levels of presence of social factors of delinquency



Note: This figure shows the percentage distribution of impact levels for social factors.

In the economic dimension, health problems account for the highest percentage of responses at the high level (73%, n = 293), which contrasts with increased interest payments (38%, n = 152) and job insecurity (37%, n = 255), while cultural, family, and religious factors (n = 148), whose percentages at the low level are also

significant (35% and 36%, respectively). In the social dimension, socioeconomic status is the factor with the highest percentage of responses at the high level (64%, n = 148), while cultural, family, and religious factors show more balanced distributions between the medium and low levels.

Discussion

The findings of this study confirm that delinquency at CMAC Cusco stems from a combination of economic and social vulnerabilities that affect borrowers' ability to repay. The results are consistent with the specialized literature and introduce nuances relevant to the Andean microfinance context.

The predominance of health problems ($M = 23.2$) as the most significant economic factor is consistent with the findings of Naz et al. (2024), who identified medical emergencies as one of the main predictors of default in microfinance institutions in emerging economies. In the Peruvian context, where health insurance coverage among microfinance borrowers is limited, an unexpected medical expense can irreversibly compromise a household's liquidity. This result differs from that of Chong (2021), who, in the Malaysian banking context, found that the loan amount was the predominant factor, which could be explained by the differences in levels of formal employment and health coverage between the two systems.

The socioeconomic status as the social factor with the greatest impact ($M = 20.8$) coincides with the results of Quispe et al. (2022), who documented that socioeconomic vulnerability is a structural determinant of delinquency in the Peruvian microfinance system. This convergence suggests that, regardless of the region or type of institution, the borrower's material living conditions constitute the fundamental substrate upon which the other factors act. Hinostroza (2021) complements this approach by noting that the absence of prior financial advice and credit monitoring amplifies the effects of socioeconomic vulnerability on delinquency, a finding that is consistent with the profile of borrowers at CMAC Cusco.

Social factors related to culture, religion, and family present medium but statistically different levels of impact. Naz et al. (2024) and Chen and Chen (2021) noted that in microfinance contexts with strong community roots, cultural and religious obligations can compete with formal debt servicing. In the Cusco region, the density of religious festivals and commitments—particularly in communities with Andean traditions—lends cultural plausibility to this finding. However, the high standard deviation in the religious ($SD = 10.9$) and cultural ($SD = 9.0$) factors indicates that the influence of these factors varies considerably among borrowers, suggesting an individualized analysis in credit evaluation.

This study has inherent design limitations. As it is a descriptive, cross-sectional study, it is not possible to establish causal relationships between the identified factors and delinquency, nor to account for their evolution over time. Furthermore, the convenience sampling limits the generalizability of the results to the entire population of borrowers in default. Future research could apply longitudinal or analytical designs to explore interactions between variables and develop predictive models of delinquency risk adapted to the Peruvian Andean context.

Conclusions

This study identified and described the economic and social factors associated with delinquency among 399 borrowers of CMAC Cusco during 2024. In the economic dimension, health problems were the most prevalent factor ($M = 23.2$; high level), followed by loan amount ($M = 18.6$) and family bereavement ($M = 18.2$), both at a medium level. In the social dimension, socioeconomic status was the predominant factor ($M = 20.8$; high level), while cultural, family, and religious factors had medium impacts, with family status registering the lowest level ($M = 12.5$).

The study's fundamental contribution lies in the empirical documentation of the relative weight of social factors in microfinance delinquency in an Andean region of Peru, a dimension scarcely explored in the national literature. The results validate the taxonomy of Kau et al. (1993, 1994, cited in Wadud et al., 2020) in the context of CMAC Cusco, while also revealing local particularities—such as the high incidence of health problems and socioeconomic conditions—that enrich our understanding of the determinants of delinquency in emerging economies with high levels of informal employment.

These findings have direct implications for credit risk assessment in microfinance institutions: integrating social vulnerability indicators into scoring systems could improve the predictive capacity of delinquency risk and guide the design of credit products better suited to the socioeconomic and cultural profile of borrowers in the Cusco region.

Ethical Considerations

Participants signed an informed consent form prior to the application of the instrument. The research respects the principles of voluntariness, anonymity, and confidentiality of the information collected.

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Conflicts of interest

The authors declare no conflicts of interest.

Statement on the use of Artificial Intelligence (AI)

ChatGPT was used to assist in identifying websites and online resources cited in this article. No AI tools were used for writing, data analysis, or generating scientific content. The authors assume full responsibility for the integrity of all content presented.

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