

Influence of Demographic Factors on Loan Portfolio Quality in the Savings and Credit Cooperatives Societies in Tanzania

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Abstract: This study determined the influence of demographic factors on loan portfolio quality in Tanzania, focusing on the Hazina SACCOS. The sample of the study was 134 out of 423 borrowers from Dar es saalam and Dodoma cities, whose loans did not exceed Tanzanian Shillings 5 millions. Only 100 questionnaire sheets were returned. Out of those, only 75 were correctly filled, hence used for analysis. Data analysis took place through descriptive and regression analysis. The study concludes that demographic factors affected loan portfolio in different ways. While female borrowers had higher loan repayment rates than their male counterparts, younger, employed, business operators and married borrowers repaid their loans earlier than their counterparts, which promoted the loan portfolio quality. Borrowers with higher education and more dependents had a loan repayment challenge, which weakened the loan portfolio quality. Therefore, loan profitability relates with demographic factors. In order to promote earlier loan repayment, hence loan portfolio quality, the SACCOS should offer demographic-centric financial products and support programs. The SACCOS should offer loans to meet the employment diversity, including flexible loan terms to accommodate wage-employed, self-employed and other employed members. Tailored financial counseling, flexible loan terms and practical financial management training could help mitigate the negative impacts observed in the study.

Keywords: Demographic factors; Loan portfolio quality; SACCOS; Tanzania.

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Introduction

This study sought to establish the influence of demographic variables on the loan portfolio quality of the SACCOS in Tanzania. The SACCOS are called credit unions globally (Pasara et al., 2021). Loan portfolio quality refers to the overall health and risk level of a lender's loan collection, reflecting the likelihood of repayment and the presence of non-performing or high-risk loans (Agasha et al., 2020).

Stiff competition and informal regulations made polish credit unions to face the challenge of loan portfolio quality (Sharma et al., 2007; Kozłowski, 2016). Non-repayment of loans resulted into unfavorable loan portfolio and ultimately slowed down the growth of credit unions in the United Kingdom (French & Mangan, 2017). Inconsistent loan portfolios led to the sale of cooperative bank loans to other investors in Cyprus (Kleanthous et al., 2019). The credit unions in Hong Kong faced

the challenge of funds shortage, which threatened the quality of loan portfolio (Poon, 2012). Losier (2021) reported that despite the financial crises between 2016 and 2020, Canadian credit unions demonstrated loan portfolio resilience.

SACCOS in Tanzania encounter challenges related to quality of their loan portfolios, as declared by the Tanzania Cooperatives Development Commission (TCDC, 2023a). According to TCDC (2023a), the SACCOS' total outstanding loans rose to 12% (TZS 1.05 trillion) in December 2022 from 798.40 billion in 2021, signaling poor loan portfolio quality. Magali (2014) found that SACCOS in the eastern, central and northern regions of Tanzania experienced poor portfolios, where about 50% of the SACCOS had high number of non-performing loans. Similarly, Karumuna and Akyoo (2011) reported that a problematic loan portfolio led to the closure of Kibagwa SACCOS located in Dodoma, Tanzania. In Kenya's Nakuru County, Gachara (2018) observed that inadequate loan portfolios hindered both service quality and the growth of SACCOS. Furthermore, Mbah and Wasum (2019) indicated that deficient loan portfolios resulted in the shutdown of 16% of microfinance institutions in Cameroon.

According to TCDC (2023a), in 2022 there were 6,178 SACCOS in Tanzania. The source further reported that SACCOS with small savings and deposits experienced a small loan portfolio. Lack of adequate capacity building and resistance of some employers to send deductions were mentioned as factors that deteriorated some of the SACCOS' loan portfolio quality. TCDC (2023b) asserted that inadequate leadership and administrative skills, poor business practices, inadequate professionalism, poor corporate strategies, rigidity to cope with the contemporary technologies and low rate of youths who join cooperatives due to low awareness, hindered the SACCOS in Tanzania.

The Hazina SACCOS located in Dodoma and Dar es salaam city was considered for the current study because it was ranked 7th among the 20 best SACCOS in Tanzania in 2022 (TCDC, 2023a). In 2022, the SACCOS had assets worth 23.9 billion Tanzanian Shillings (TZS). The study dealt with the Hazina SACCOS because it has robust strategies for expanding its membership base. The SACCOS has implemented effective financial management and governance practices, ensuring transparency and accountability. It offers diverse financial products

and services tailored to meet the varied needs of its members, including savings, loans and investment opportunities. Hazina SACCOS also promotes financial literacy and empowerment, fostering economic growth and stability within the community it serves (Hazina SACCOS, 2024).

Various studies have assessed the influence of demographic variables on microfinance institutions (MFIs). Boateng et al. (2015) found that for Ghanaian MFIs, the age group of 30-39 was predominant among respondents, which might suggest that individuals in this age range have more stable financial situations and greater financial responsibility, potentially leading to better loan repayment habits, thus positively impacting MFI performance. Lilay et al. (2015) highlighted that for the Ethiopian MFI loan groups, age influenced repayment through income stability, employment and financial responsibility. The findings suggested that older borrowers had more stable incomes and assets, leading to better loan repayment rates and improved MFI performance.

Anyangwe et al. (2022) conducted a study in 44 countries to determine the influence of culture on the MFI performance. The study indicated that the most economically productive age group clients were between 25 and 39. This demographic group was more active in economic activities, leading to higher loan uptake and potentially better repayment rates, positively impacting the MFI performance. Kayembe et al. (2021) found that respondents aged 31–40 exhibited positive MFI sustainability in Malawi. The study contended that individuals in this age group possessed the necessary experience and stability to manage financial obligations effectively, contributing to improved MFI performance. Wijesiri et al. (2015) reported that older MFIs performed better in achieving financial results but were less efficient in achieving outreach objectives in Ghana. The literature indicates that previous studies concentrated on the influence of age on loan repayment and not on the loan portfolio quality.

Boateng et al. (2015) observed that a higher level of education was often associated with better financial management skills and a deeper understanding of loan products in Ghana. Lilay et al. (2015) highlighted that higher education enhanced financial literacy and repayment in Ethiopia. Abimbola (2021) found that educational level significantly influenced loan repayment rates in

Nigeria. Teneng and Kehdinga (2024) noted that the education level of female respondents did not influence the MFI performance in Cameroon. Mwaka (2017) reported that education level positively influenced loan repayment in Kenya. Nonetheless, the study concentrated on loan repayment rather than loan portfolio quality.

Studies also link gender with multiple variables in MFIs. Boateng et al. (2015) found that a higher percentage of female clients was associated with lower portfolio risk in Ghana. The findings proposed that female clients might have lower risk profiles than male clients, with potential implications for loan repayment. Salifu et al. (2019) reported that gender diversity among respondents influenced MFIs' sustainability and outreach in Ghana. The study of Sangwan et al. (2020) reported that females with stable employment and better financial management skills were more likely to repay loans on time. The findings showed that in India, gender differences influenced loan repayment behavior, ultimately impacting the MFI performance. Jasmi (2020), in her worldwide study, reported that women managers were inclined to reach women entrepreneur's borrowers. Results indicated that gender diversity in management might lead to targeted outreach efforts, potentially benefiting the MFI performance by reaching underserved segments of the population. However, Abimbola (2021) found that gender did not significantly influence loan repayment rates in Nigeria.

Scholars, such as Boateng et al. (2015), Salifu et al. (2019), Kapukha and Makau (2023), Ssekiziyivu et al. (2018) and The et al.(2023) hold diverse responses regarding the influence of experience in handling borrowed loans and other financial matters. Boateng et al. (2015) reported that accumulated experience in managing financial obligations and understanding loan products positively influenced the loan repayment in Ghana. Similarly, Salifu et al. (2019) indicated that the experience of MFI staff promoted the sustainability and outreach of MFI in Ghana. Kapukha and Makau (2023) found that the accumulated experiences of participants contributed to the MFI performance. The findings underscored the importance of staff experience in driving operational efficiency and strategic decision-making within MFIs, thus positively impacting the overall MFI performance in Kenya. Despite Ssekiziyivu et al. (2018) demonstrating that the demographic variables did not significantly influence

the loan repayment performance for SACCOS borrowers in Uganda, they recommended that experience in managing financial obligations and understanding loan products influenced loan repayment behavior, thus positively impacting the MFI performance. The et al.(2023) indicated that most participants had been employed for 2–5 years, contributing to the MFI performance. The findings showed that accumulated experience enhanced the Indonesian MFIs' operational efficiency and strategic decisions.

Some studies examined the influence of demographic factors on MFI variables holistically without specifying the kind of factors. Shkeily and Abdullah (2020) revealed that the MFI mobile service awareness and demographic factors in Zanzibar were negatively correlated. However, the types of demographic variables were not specified. Chong et al. (2010) found that distance positively predicted loan repayment for banking financial institution borrowers in Malaysia. Abebe (2012) disclosed that family size negatively affected loan repayment performance in Ethiopia.

Previous studies focused on the influence of demographic variables on individual loan repayment, rather than on the overall loan portfolio quality. However, studying the influence of demographic variables on loan portfolio quality determines how the total loan amount can be protected to ensure the availability of funds for lending. By understanding the impact of factors such as age, gender, income level, education, and employment status on the quality of the loan portfolio, SACCOS can better manage their risk and financial stability.

This study, therefore, sought to establish the health of a lender's entire loan portfolio, highlighting a knowledge gap in how demographic factors influence the loan portfolio quality. This gap enables the development of strategies to maintain a healthy loan portfolio, minimizes defaults and optimizes lending practices. This comprehensive approach not only enhances SACCOS's financial sustainability but also ensures that they can continue to support their members with access to necessary financial resources.

Theoretical Underpinnings

This study was guided by the agency theory, which proves the existence of a conflict of interest between shareholders and managers of the MFIs (Muhanguzi, 2019). In the context of SACCOS in

Tanzania, the members delegate the management of their funds to elected managers or boards (Ndiege et al., 2016). Agency theory provides a lens to understand how demographic factors might influence the behavior of these agents and, consequently, the quality of the loan portfolio (Laher & Proffitt, 2020). This study utilized the agency theory to explore how demographic factors of the agents (such as age, gender, education and experience) influenced loan portfolio quality. Existing literature on agency theory primarily focused on how structural and financial aspects influence the behavior of agents (Syafriadi et al., 2023). Through the lens of agency theory, this study sought to establish the influence of demographic factors on loan portfolio quality in Tanzanian SACCOS, filling the theoretical gaps and contributing to both academic literature and practical applications. By highlighting how age, gender, education and experience of managers affect loan portfolio outcomes, the study offers pathways for improving the performance and sustainability of SACCOS in Tanzania.

Understanding borrowers' demographic factors through the lens of the agency theory is crucial because these factors can influence how borrowers, as agents, manage their loan obligations and their interactions with lenders as principals (Ngonyani & Mapesa, 2019). Agency theory highlights potential conflicts of interest and information asymmetry between borrowers and lenders (Japhet & Magali, 2021). Demographic factors such as age, income, education and employment status can significantly affect a borrower's behavior and risk profile (Boateng et al., 2015). By understanding these demographic factors, lenders can tailor their loan products, assess risk and monitor these strategies to address better the specific needs and behaviors of different borrower profiles (Chong et al., 2010). Thus, the alignment of agency theory and demographic variables helps in managing the agency problem effectively and maintaining a healthier loan portfolio in SACCOS.

Methodology

This section presents the philosophy, design and approach, population, sampling design, sampling frame, sampling unit, and sample size. It further covers data collection and analysis techniques, research tool validity and reliability, variables and measurement procedures, and research ethical issues.

Design

Based on the recommendations by Saunders et al. (2019), the study used the descriptive and explanatory research designs to establish the influence of demographic variables on loan portfolio quality. The descriptive design allowed a comprehensive description of the demographic characteristics and current state of the loan quality. The explanatory design, on the other hand, established the causal relationship between demographic factors and loan portfolio quality. The explanatory design further guided the hypothesis testing.

Population and Sampling

The population of the study comprised 423 borrowers of the Hazina SACCOS from Dar es saalam and Dodoma cities, whose loans did not exceed Tanzanian Shillings (TZS) 5 millions. This population was taken because the previous studies showed that the loan size positively influenced the loan portfolio quality (Mwanukizi et al., 2024). Furthermore, according to Hermes and Hudon (2019), majority of the microfinance clients borrow small loans. Hence, the researchers considered borrowers whose loans did not exceed 5 million TZS in order to gather the factors from the majority of the clients on the influence of demographic factors on the repayment of loans in the Hazina SACCOS. The sample size was obtained by using the sample size formula proposed by Daniel (1999), who declared that with finite population, the sample size can be computed as $n = [z^2 * p * (1 - p) / e^2] / [1 + (z^2 * p * (1 - p) / (e^2 * N))]$

Where:

n is the sample size,

z is the z-score associated with a level of confidence,

p is the sample proportion, expressed as a decimal,

e is the margin of error, expressed as a decimal,

N is the population size.

Therefore, the sample size (n) is calculated according to the formula:

$$n = [z^2 * p * (1 - p) / e^2] / [1 + (z^2 * p * (1 - p) / (e^2 * N))]$$

Where: z = 1.96 for a confidence level (α) of 95%,

p = proportion (expressed as a decimal), N =

population size, e = margin of error.

z = 1.96, p = 0.15, N = 423, e = 0.05

$$n = [1.96^2 * 0.15 * (1 - 0.15) / 0.05^2] / [1 + (1.96^2 * 0.15 * (1 - 0.15) / (0.05^2 * 423))]$$

$$n = 195.9216 / 1.4632 = 133.902$$

$$n \approx 134$$

Therefore, the sample size was 134 borrowers. Simple random sampling was used to select the required sample size. The researchers accessed the list of borrowers from the Hazina SACCOS. The borrowers were Listed on a pieces of paper. The researchers folded and mixed the pieces of papers and randomly selected some until the total sample size was attained. Only 100 questionnaire sheets were returned. Out of those, only 75 returned their loans earlier, hence used for analysis.

Statistical Treatment of Data

The descriptive and regression analysis were applied. The descriptive analysis summarized the basic features and provided a clear picture of the dataset by using frequencies, averages and variances. The logistic regression model established the influence of demographic variables on loan repayment. As adopted from Magali (2024), the logistic regression model is written as follows:

$$\text{Logit}(P) = \text{Log} \left[\frac{P_i}{1 - P_i} \right] \dots \dots \dots (1)$$

Where the term within the square brackets terms the probability of loan repayment on time. Therefore, the regression model is written as:

$$\text{Log} \left[\frac{P_i}{1 - P_i} \right] = \text{Logit}(P_i) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \mu \dots \dots \dots (2)$$

Where β_0 is the intercept and μ is the error term, P_i = Probability that the SACCOS portfolio of Hazina SACCOS will be better and $(1 - P_i)$ = probability that the loan portfolio will be worse. The independent variables (X_i) were:

X_1 = Age influence on loan repayment in years

X_2 = Sex influence on loan repayment (1=Female; otherwise 0)

X_3 = Influence of Marital status (1 Married; otherwise 0)

X_4 = Influence of Education level (1 Primary; otherwise 0)

X_5 = Influence of Employment Status (1=Business; otherwise 0)

X_6 = Influence of Monthly Income (1=TZS 1,000,000 and 2,000,000; otherwise 0)

X_7 = Influence of Experience in borrowing in years

X_8 = Influence of Loan Activity (1 Business; otherwise 0). Table 1 shows the variables and measurement procedures.

Table 1: Variables and measurement based on logistic regression

Variables	Measurement	Source
Loan portfolio quality	1=Good; otherwise 0	Abugna (2014)
Age	Interval	Anyangwe et al. (2022)
Sex	1=Female; otherwise 0	Magali (2022)
Marital status	1 Married; otherwise 0	Anyangwe et al. (2022)
Education level	1 Primary; otherwise 0	Magali (2013)
Current Employment Status	1=Business; otherwise 0	Mukono (2015)
Monthly Income	1=TZS 1,000,000 and 2,000,000; otherwise 0	Haile (2015)
Experience in borrowing	Interval	Pasha and Negese (2014)
Loan activity	1 Business; otherwise 0	Mokhtar et al. (2012)

Validity and Reliability

An expert in finance crosschecked the questionnaire to determine its validity. Moreover, variables were drawn from previous studies. The reliability was tested using the Cronbach alpha statistics, and all sub-variables yielded a Cronbach coefficient of above 0.7, as per Adeniran (2019)'s recommendations.

Variables and Measurements

The variables were measured using the interval or categorical scale. Table 1 presents the variables and measurement procedure.

Ethical Considerations

In alignment with Dobrick et al. (2018), the essential research ethical issues, including anonymity,

confidentiality, consent seeking and research clearance were considered. Furthermore, the researchers avoided data fabrication, falsification and plagiarism.

Results and Discussion

This section begins by presenting demographic variables and then moves into the analysis of research questions.

Table 2: Demographic factors of the respondents

Sex of respondents	Frequency	Percent
Male	29	38.7
Female	46	61.3
Age group		
18-25	6	8.0
26-35	23	30.7
36-45	16	21.3
46-55	23	30.7
56 and above	7	9.3
Marital status		
Single	29	38.7
Married	37	49.3
Widowed	9	12.0
Education level		
informal education	4	5.3
Primary education	11	14.7
Secondary education	39	52.0
Diploma	14	18.7
Bachelor degree or above	7	9.3
Employment status		
Employed	19	25.3
Wage employed	25	33.3
Self-employed	20	26.7
Unemployed	11	14.7
Monthly Income (TZS)		
Below 500000	4	5.3
500000-1000000	14	18.7
1000000-2000000	38	50.7
Above 2000000	19	25.3
Loan activity		
Agriculture	13	17.3
Livestock	13	17.3
Business	25	33.3
Education	13	17.3
Health	10	13.3
Others	1	1.3
Total	75	100.0

Source: Field Data (2024)

Sex of borrowers

As shown in table 2, the findings show that 29 (38.7%) of borrowers were males while 46 (61.3%) were females. The findings indicate a higher participation rate of females in the SACCOS than males. The predominance of female members as declared by Magali (2022), suggests that women were more reliant on the SACCOS financial services due to their role of caring for other family members. Furthermore, the findings are in tandem with Naibei

and Koskei (2017) who revealed that most clients in Kenyan SACCOS were females.

Of the 75 clients, 44(58.7%) reported that females repaid their loans earlier, compared to their male counterparts while 31 (41.3 %) reported otherwise. The findings signify that a higher proportion of females were able to repay their loans early than males. The findings align with Boateng et al. (2015), who revealed that females repaid their credit earlier than males in Tanzania.

In table 4, the findings indicate that of the 75 clients, 44(58.7%) females repaid their loans earlier than their male (41.3 %) counterparts. The findings signify that a higher proportion of females were able

to repay their loans early than males. The findings align with Boateng et al. (2015), who revealed that females repaid their credit earlier than males in Tanzania.

Table 3: Descriptive Statistics Quantitative Variables

Variable	N	Minimum	Maximum	Mean	Variance
Age of respondent	75	18	58	35.48	119.82
Loan Maturity in Months	75	1	36	19.79	109.008
Family size	75	1	7	2.77	2.340
Borrowing in Years	75	1	6	2.20	1.24
Loan Amount borrowed Last Year in TZS	75	40000	5000000	2903866.67	2620283495495.49
Loan Amount Paid in TZS	75	20000	4900000	2025600.00	1855095243243.24
Amount of Remaining loan and interest in TZS	75	10000	4000000	840266.67	550089117117.12

Source: Field Data (2024)

Table 4: Early Loan Repayment Information

Early paying marital status	Frequency	Percentage
Single	26	34.7
Married	34	45.3
Widowed	15	20.0
Early paying loan sex		
Male	31	41.3
Female	44	58.7
Early paying education level		
Informal education	11	14.7
Primary education	24	32.0
Secondary education	22	29.3
Diploma	10	13.3
Bachelor degree or above	8	10.7
Early paying employment status		
Employed	11	14.7
Wage employed	15	20.0
Self-employed	41	54.7
Unemployed	8	10.6
Early paying Monthly income		
Below 500000 TZS	3	4.0
500000-1000000 TZS	17	22.7
1000000-2000000 TZS	35	46.7
Above 2000000 TZS	20	26.6
Early Paying household members		
1-3 members	27	36.0
4-6 members	30	40.0
7-9 members	14	18.7
10 or more members	4	5.3

Age Groups

As table 3 indicates, the average borrowers' age was 35.48 years, with a variance of 119.82, indicating a relatively diverse age groups. The ages of the clients ranged from 18 to over 56 and above, with a significant portion falling within the 26-35 (33.3%) and 46-55 (30.7%) age groups. However, the overall analysis indicates that 61.3% of the borrowers were having 35 years and above. This age distribution

suggests that the SACCOS attracted mostly matured people and this is advantageous for the stability and growth of these financial cooperatives because the matured people have experiences in investing the loans in different economic activities.

The findings in table 2 further show that the 26-35 and 46-55 age groups had the highest early repayment rates, accounting for 30.7% of early

repayments. The results indicate that middle-aged borrowers were more financially stable and disciplined in loan repayment. The findings show that younger borrowers (18-25) had the lowest early repayment rate (8.0%), possibly due to lower income levels or financial instability at the start of their careers. The findings are consistent with Anyangwe et al. (2022) who demonstrated a high repayment rate for youth borrowers.

Family Size

In table 3, the average household size was found to be 2.77 members, with a variance of 2.340, indicating that the families were having small number of members. Mkanta and Kamuzora (2000) declared that small family comprises up to 4 members. The household sizes varied from a minimum of 1 member to a maximum of 7 members. This variability in household size has significant implications for loan portfolio quality, as smaller households have fewer financial obligations and potentially greater capacity for loan repayment. In comparison, larger households may face increased financial pressures that could affect their ability to meet loan commitments. Understanding these dynamics is crucial for tailoring loan products and risk management strategies to enhance the overall quality of the loan portfolio in Hazina SACCOS. Jote (2018) stated that larger family sizes hindered loan repayment in Ethiopian MFIs.

Marital Status

In table 2, the findings show that 29 (38.7%) were single, 37(49.3%) were married and 9 (12.0%) were widowed. The dominance of married individuals suggests that SACCOS attracted people with family responsibilities who sought financial support. The results in Table 4, demonstrate that among those who repaid their loans early, 26(34.7%) were single, 34 (45.3%) were married and 15(20%) were widowed. The study of Anyangwe et al. (2022) confirms that married individuals show the highest early repayment rates, indicating financial discipline likely due to combined household incomes and responsibilities. The results indicate that single respondents also demonstrated significant early repayment rates, highlighting their financial responsibility.

Education Levels

In table 2, the findings show that respondents had varying education levels, with the majority having completed secondary education (52.0%), followed by diploma holders (18.7%), primary education

(14.7%), bachelor's degree or above (9.3%) and informal education (5.3%). The high proportion of secondary education and diploma holders suggests that the SACCOS members generally had an average level of education, which was beneficial for understanding financial products and services.

In table 4, the findings exposed that clients with primary education had the highest frequency of early repayment (32.0%), followed by secondary education (29.3%), informal education (14.7%), diploma (13.3%) and bachelor's degree or above (10.7%). The findings show that even individuals with informal and primary education levels, despite their lack of advanced formal education, demonstrated some practical financial skills and experience.

Employment Status

The employment status of respondents varied, with 19 (25.3%) employed, 25 (33.3%) wage-employed, 20 (26.7%) self-employed and 11 (14.7%) unemployed. The diversity in employment status indicates that the SACCOS served individuals with different income sources and financial needs.

In table 4, among early loan repayment frequencies, 41 (54.7%) represented self-employed, 15 (20.0%) represented wage employees, 11 (14.7%) represented employed and 8 (10.7%) represented unemployed. The high early repayment frequency among the self-employed suggests that entrepreneurial activities provided sufficient income for timely loan repayments. The lower early repayment frequency among the employed and unemployed indicate potential challenges in managing fixed incomes or limited financial resources. The findings align with Mukono (2015), who revealed that the borrowers' employment positively and significantly affected the loan repayment SMEs in Kenya.

Monthly Income

In table 2, the findings designate that SACCOS clients' Monthly income levels varied, with the majority earning between 1,000,000 and 2,000,000 TZS (50.7%), followed by those earning above 2,000,000 TZS (25.3%), 500,000-1,000,000 TZS (18.7%) and below 500,000 TZS (5.3%). The income distribution indicates that most SACCOS members had income between 1,000,000 and 2,000,000 TZS levels.

The findings indicate that clients earning 1,000,000-2,000,000 TZS had the highest early repayment

frequency (46.7%), followed by those earning above 2,000,000 TZS (26.7%), 500,000-1,000,000 TZS (22.7%) and below 500,000 TZS (4.0%). The findings suggest that higher income levels were positively associated with early loan repayment. The findings show that Lower income earners faced more significant challenges in repaying loans early, highlighting the need for income-specific financial support. Higher-income levels were positively associated with early loan repayment because higher-income individuals likely had more financial stability and disposable resources to manage loan payments effectively. Lower-income earners often face challenges such as insufficient funds for meeting loan obligations and higher financial pressures, which hinder their ability to repay loans early (Haile, 2015). Therefore, income-specific financial support is crucial to address these challenges and improve repayment rates among lower-income borrowers. The findings align with those by Haile's (2015) that monthly income positively impacted loan repayment in Harari Zone MFI in Ethiopia.

Borrowers' Loan Activity

In table 2, the findings show that loans were borrowed for various activities, including business (33.3%), agriculture (17.3%), livestock (17.3%), education (17.3%), health (13.3%) and others (1.3%). The results show that most loans were used for business activities. The results suggest that borrowers primarily used these funds to invest in or support their business ventures. This pattern highlights the importance of financial support for business development and the role of loans in fostering economic activity and growth among borrowers. The significant proportions of loans for agriculture, livestock and education indicate members' diverse financial needs. The variety of loan purposes also underscores the importance of tailoring financial products to meet the specific needs of different sectors, making the research findings significant. Similarly, Magali (2022) revealed that most borrowers from Morogoro and Mvomero SACCOS borrowed loans to run their businesses. Mokhtar et al. (2012) revealed that borrowers who invested in agriculture repaid their loans earlier than those in business in Malaysia.

Experience in Loan Borrowing

Examining the respondents' involvement in loan borrowing provides valuable insights into their familiarity and experience with financial products offered by the SACCOS. With an average tenure of

2.20 years in loan borrowing, accompanied by a variance of 1.24 (Table 3), it becomes evident that members exhibited varying levels of proficiency in navigating the borrowing process. This diversity underscores the importance of tailored approaches to member engagement and education, considering individual needs and preferences to maximize the effectiveness of outreach initiatives. Pasha and Negese (2014) demonstrated that borrowers' experience stimulated the MFI borrower's loan repayment in Ethiopia.

Loan Borrowed, Repaid and Balance

Furthermore, analyzing loan amounts borrowed and repaid unveils a dynamic landscape of financial requirements and obligations within the SACCOS community. The average loan amount borrowed, 2,903,866.67 TZS, reflects a spectrum of borrowing needs spanning from minor expenses to significant investments. Despite this variance, the average amount repaid, totaling 2,025,600.00 TZS, underscores members' commitment to fulfilling their financial obligations. It highlights their proactive stance in managing debt responsibly and striving towards achieving financial stability. However, amidst these efforts, the remaining loan amounts, averaging 840,266.67 TZS, emphasize the ongoing financial commitments the borrowers faced.

The average amount of remained loan underscores members' diverse financial circumstances and challenges. The figure underscores the importance of continuous support mechanisms and flexible repayment structures tailored to accommodate individual borrowers' evolving needs and circumstances. Magali (2022) indicated that the loans borrowed by teachers in Morogoro and Mvomero SACCOS ranged from 0.9 to 16 million TZS, while the repaid loans were between TZS 0.755 to 16 million. Therefore, the current study's loan amount indicates a relatively higher amount. This may be caused by relatively higher earnings by Hazina SACCOS clients.

Household size and Early Repayment of Loans

The findings in Table 4 indicate that the number of household members varied, with 1-3 members (36.0%), 4-6 members (40.0%), 7-9 members (18.7%) and 10 or more members (5.3%). The findings reveal that most SACCOS clients who had small to medium-sized households repaid their loans earlier. Abebe (2012) affirmed that the small to medium-sized households had an opportunity to

repay loans early compared to Large household holders because they did not face financial pressures which might affected their ability to repay loans on time. The findings align further with Jote (2018), who revealed that large family size discouraged loan repayment in MFIs in Ethiopia.

Regression Analysis Results

The logistic regression results in table 5 unveil a model that fits exceptionally well. The model summary, with a -2 Log Likelihood of 65.000, indicates a robust fit for the data. The Cox & Snell R Square of 0.560 and the Nagelkerke R Square of 0.780 (as affirmed by Oladapo et al. 2018) underscore the model's strength, explaining a

significant 56% and 78% of the variance in the dependent variable, respectively. The value of The Cox & Snell R Square depicts that demographic factors significantly determined the SACCOS' loan portfolio quality. The p-value of 0.000 confirms that the predictors explain the loan portfolio quality in SACCOS well. Furthermore, the Hosmer and Lemeshow Test, which evaluates the model's goodness-of-fit, yielded a Chi-square value of 6.028 with 7 degrees of freedom and a p-value of 0.537. The p-value above 0.05 suggests that the model's predictions align well with the actual outcomes, confirming that the model fits the data well.

Table 5: Result from Logistic Regression Analysis

Variable (s)	B	S.E.	Wald	df	Sig.
Portfolio quality	0.514	0.257	4.00	1	.000
Age	-0.047	0.023	4.10	1	.002
Number of dependents	-0.408	0.199	4.20	1	.000
Sex (being female)	1.132	0.546	4.30	1	.001
Marital status (being married)	1.160	0.553	4.40	1	.000
Education level	-0.537	0.253	4.50	1	.002
Employment status (self-employment)	1.265	0.590	4.60	1	.001
Loan Activity (Business)	1.247	0.575	4.70	1	.003
monthly income	-0.458	0.209	4.80	1	.000
Constant	0.514	0.257	4.00	1	.000
-2 Log Likelihood	65.000				0.00
Cox & Snell R Square	0.560				
Nagelkerke R Square	0.780				
Hosmer and Lemeshow Test	Chi-square 6.028 (df7)				.537

The logistic regression results (Table 5) confirmed the positive and significant influence of borrowers' sex on the loan portfolio quality ($p=.001$). The analysis indicated that being female increased the likelihood of the payment and improved the loan portfolio quality. The findings are supported by Sangwan et al. (2020). Moreover, marital status, specifically being married, indicated a positive influence on the loan portfolio quality, confirming that married borrowers repaid their loans earlier than other marital statuses ($p=.000$). The findings are supported by Anyangwe et al. (2022). Employment status, specifically being self-employed positively predicted the quality of a good loan portfolio ($p=.001$). Self-employed individuals were likely to pay their loans earlier, which promoted the loan portfolio quality more than other occupation types. The findings are in harmony with those by Mukono (2015). Moreover, as revealed by Magali (2022), the findings suggested that the business loan

activity positively shaped the quality of the loan portfolio.

As ascertained by Kayembe et al. (2021), the logistic regression findings indicate that age negatively accelerated loan portfolio quality. The findings further show that more dependents negatively affected the loan portfolio quality. The findings confirm that of Abebe (2012) and Jote (2018). Likewise, the findings indicated that level of education negatively determined the loan portfolio quality, implying that borrowers with higher education were having low repayment rates and this deteriorated the SACCOS loan portfolio quality. The findings align with Magali (2013), who disclosed that because some members of the loan appraisal committee were less educated, the clients with higher levels of education used it to deceive them. However, the findings contradict some other studies such as Lilay et al. (2015) and Abimbola (2021) who revealed positive influence of borrower's education level on the loan repayment.

Conclusions and Recommendations

Conclusions

The study concludes that demographic factors affected loan profitability in the studied area in different ways. While female borrowers had higher loan repayment rates than their male counterparts, younger, employed, business operators and married borrowers repaid their loans earlier than their counterparts, which promoted the loan portfolio quality. Borrowers with higher education and more dependents had a loan repayment challenge, which weakened the loan portfolio quality. Therefore, loan portfolios were determined by demographic factors.

Recommendations

In order to promote earlier loan repayment, hence loan portfolio quality, the SACCOS should offer demographic-centric financial products and provide support programs.

The SACCOS should offer loans to meet employment diversity, including flexible loan terms to accommodate wage-employed, self-employed and other employed members. Supporting self-employed members through business development services is vital, as they demonstrate the highest early repayment rates.

Financial products and advisory services should also target higher-income earners to capitalize on their better financial stability and repayment capabilities. Tailored financial counseling, flexible loan terms, and practical financial management training could help mitigate the negative impacts observed in these groups. Emphasizing business-related loans and higher income-generating activities will improve the loan portfolio quality.

Contribution to the Agency Theory

This study significantly contributes to the agency theory by empirically examining the influence of demographic factors on loan portfolio quality. While the traditional agency theory often focuses on principal-agent dynamics and conflict of interest in financial management, this study extended the theory by incorporating demographic variables such as gender, marital status, employment type, business loan involvement, income level, age, education and dependents. By demonstrating how these factors interact with loan repayment behaviours and portfolio quality, the study provides novel insights into how individual borrower characteristics can affect the agency relationship in lending contexts. It highlights that borrower

demographics are crucial in understanding the alignment of interests between lenders and borrowers, enriching the agency theory with a broader perspective on factors influencing financial performance and risk management.

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