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# Demographic Factors influencing Default in Rotating Savings and Credit Association in Yewa North Local Government Area of Ogun State, Nigeria

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**ABSTRACT**

*The high rate of default among Rotating Savings and Credit Association (ROSCAs) in Yewa North Local Government Area of Ogun State necessitates studies to understand the underlying cause. To this end, this study assessed the effect of demographics of participants in the association on default likelihood. The study employed quasi-experimental research design. The sample for the study was obtained through proportional sampling technique. Descriptive and inferential statistics including frequency distribution tables and logit regression model were used in analysing the data. Results revealed that participants aged 51-60 had the highest default rate at 20.6% within the group of defaulters. The majority (57.3%) of defaulters were found to be females. Lower earners (less than N50,000 per month) constituted the highest percentage (42.7%) within the group of defaulters. Dependency ratio (t-value =,3.472), age (t-value = 4.073), duration of membership (t-value = 2.178), employment status (t-value= 1.759) and household size (t-value = 2.516) positively influence default in the association while income (t-value = -2.315) negatively influenced default in the association. Marginal effect results revealed that a unit increase in dependency ratio, age, membership duration, employment status, and household size increased default by 6.85%, 0.41%, 3.52 %, 4.91 and 1.47% respectively while a unit increase in income reduced default by 0.07%. The study concludes that household size, income level, age, and the dependency ratio are significant factors influencing likelihood of default in ROSCAs. The study recommends tailored financial education programs that specifically address the needs of members with larger households or higher dependency ratios. The study suggests future research should focus on a longitudinal analysis of default rates, a broader geographical scope, and the effect of external economic conditions on ROSCAs to enhance understanding and generalizability of findings.*

## INTRODUCTION

Rotating Savings and Credit Associations (ROSCAs) represent a fundamental component of the informal financial sector in many developing countries. These associations, characterised by their simplicity and accessibility, play a pivotal role in providing financial services to those who are often excluded from formal banking systems (Zambrano, Giraldo, Perdomo, Hernández & Godoy, 2023). In ROSCAs, members contribute a fixed amount regularly into a common pot, which is then allocated to a different member each cycle (Eilertsen, 2022; Akerele, Obasanya, Adeboun, Olusola & Olugbemi, 2021).

ROSCAs are fundamentally grassroots financial systems, built on the principles of trust, reciprocity, and community solidarity (Hossein & Christabell, 2022). They are particularly prevalent in areas with low-income populations who often find themselves outside the purview of traditional banking services due to various barriers such as lack of collateral, formal employment, or documentation (Zambrano et al., 2023; Ademola, Ben-Caleb, Eluyela, Falaye, & Ajayi, 2020). ROSCAs are critical for addressing larger financial needs like business investments, educational expenses, or healthcare costs (Eilertsen, 2022; Obasanya, 2019).

The simplicity and accessibility of ROSCAs make them an attractive option for many. There is typically no need for complex documentation or formal procedures, making it easier for individuals with limited literacy or financial knowledge to participate (Lowenstein, 2023). Moreover, the communal aspect of ROSCAs fosters a sense of belonging and mutual support, often extending beyond financial transactions to encompass social and emotional support networks (Pambekti, Yusfiarto, & Nugraha, 2022). Despite their importance, ROSCAs face significant challenges, particularly in managing default risks, which threaten their sustainability and effectiveness.

ROSCAs face a significant challenge with loan defaults, primarily due to a lack of customer profiling based on demographic factors (Doris,2022). Previous studies indicate that demographic characteristics such as age, education level, civil status, and gender influence loan repayment behaviour (Doris, 2022; Orjiako & Ogbukwa, 2012; Obasanya, 2019). However, no studies have specifically addressed this issue in ROSCAs in the Yewa North Local Government Area (YNLGA) of Ogun State. The focus on the YNLGA is justified because studies have reported high default rate in the area.

Orjiako & Ogbukwa (2012) reported a loan default rate of 31% by smallholder cooperative farmers in YNLGA in 2012. In 2015, in the same local government area, Orjiako et al. (2015) found 20.83% loan default rate among smallholder cassava farmers using econometrics analysis technique. Obasanya, in 2019, reported high ROSCA defaults by 56.75% of the sampled ROSCAs participants in Yewa Division (a division in which the Yewa North Local Government Area is domiciled) (Obasanya, 2019). These high loan or credit defaults pose a substantial threat to the viability of these community-based financial systems.

The consequences of these defaults are manifold. Financially, they disrupt the circulation of funds within the ROSCA, impeding members from accessing their share at the expected time (Obasanya, 2019). This not only affects individual financial plans but also has the potential to destabilise the entire ROSCA system. When one member fails to contribute, it can trigger a chain reaction of financial strain throughout the group.

Beyond the immediate financial impact, defaults can undermine the foundational trust and community solidarity upon which ROSCAs are built. Trust and regular contributions are the pillars supporting the associations (Akerele et al., 2021; Obasanya, 2019). When members fail to meet their commitments, it can lead to a breakdown in trust and cause internal conflicts, affecting the cohesion and collaborative spirit of the group. This is particularly problematic in tightly-knit communities like those in the YNLGA, where social relationships are closely linked with economic interactions.

So many socio-economic factors influence default. Such factors include individual financial discipline or capability. Other factors include economic instability, unexpected health expenses, unemployment, or underemployment inhibiting their ability to significantly influence members' ability to fulfil their ROSCA contributions (Boateng, 2015). Lack of financial literacy and management skills are other factors that can exacerbate the situation, as members might struggle to balance their ROSCA commitments with other personal financial obligations (Boateng, 2015).

These imply that various factors can influence default. Notwithstanding, this study focuses on the demographics of participants as potential determinants of default in ROSCA.

Towards addressing the increasing trend of defaults, the foremen are often selective in choosing ROSCAs' participants based on income potentials of the participants. They usually use minimum income threshold (Zambrano et al., 2023). Although the use of a minimum threshold of income has become a method to select the participants of ROSCAs, Zambrano et al. (2023) posits that this would deny access to people who really need that financial service and would not necessarily default in the association. Beside income, other demographics of the participants can also influence default in the study area as reported by Obasanya (2019) as well as Ojiakor & Ogbukwa (2012).

**Objectives of the Study**

The general objective of this is to examine the effect of participants' demographics on default likelihood in ROSCAs in the Yewa North Local Government Area of Ogun State. The specific objectives are to:

i. describe the demographics of participants in ROSCAs in the study area;

ii. examine the effect of demographics of participants on default likelihood in the association

The research hypothesis is stated below:

Demographics of ROSCAs' participants do not significantly default likelihood in ROSCAs in the study area.

## LITERATURE REVIEW

### Conceptual Review

### What is ROSCA?

ROSCA represents a unique financial mechanism where participants mutually contribute to a pooled fund, which is then allocated to one participant at a time, typically on a rotational basis (Akerele et al., 2021). The primary goal of ROSCAs is to accumulate a substantial sum from fixed contributions by participants, which is then handed over to each of the participants in a rotational manner (Obasanya, 2019). ROSCAs serve various purposes, from funding businesses and acquiring capital goods to smoothing income and providing a socialisation platform (Eilertsen, 2022). They are not just about financial transactions; they also offer opportunities for social networking and cultural engagement. However, they are challenged by the risk of defaults, as they operate without a legal regulatory framework, relying heavily on the mutual trust of participants (Obasanya, 2019).

There are various types of ROSCAs, each with its unique operational mode. There are random, bidding and consumer durable ROSCAs (Mushuku & Mayisa, 2014). Random ROSCAs allocate the pooled funds in a non-biased manner, using lottery system in which participants to receive the pot is selected by randomly or by chance (Akerele et al. 2021; Obasanya, 2019). Bidding or auction ROSCA's introduce a competitive element, where participants bid for the pot where the highest bidder wins. Consumer durable ROSCAs, on the other hand, can either incorporate random or bidding system of pot allocation but distribute physical goods instead of cash, offering an alternative that can be particularly effective in managing the impact of inflation or deflation on the real value of the pot (Obasanya, 2019; Mushuku & Mayisa, 2014). Obasanya (2019) found that the random ROSCAs dealing in cash transactions are the most predominant in Yewa Division of Ogun State- a division in which the study area is domiciled. Hence, this study focused on the random ROSCAs for a more context-specific study.

## Demographic factors affecting default

Demographics, in a group setting, refer to the personal characteristics of members of the group that can influence their behaviour within the group (Karakowsky & Siegel, 2018). These characteristics typically include age, gender, marital status, education level, income level, occupation, household size, and sometimes more nuanced factors like ethnic or cultural background, religion, and socio-economic status.

Demographic factors such as age and gender play a significant role in the financial dynamics of informal savings groups like ROSCAs (Sudhakar & Agarwal, 2018). Older members are often reported to be associated with a lower rate of default, likely due to their greater financial experience and stability (Collins, Lam & Herbert, 2011). Women, often central to household financial management, have been found to be more consistent in repaying loans, influenced by both social factors and their roles within the family (Karlan & Morduch, 2010).

Education and income are equally important; higher levels of education are often thought of to improve financial literacy, leading to more prudent financial behaviours and potentially lower default rates (Lusardi & Mitchell, 2014). Those with higher incomes have generally been found to have a better buffer against financial emergencies, thus lowering their default risk (Banerjee & Duflo, 2014). Marital status and household size also impact repayment capabilities, with married individuals and those from larger households facing different financial pressures (Sherraden, 2017).

## Loan Default

The definition of loan default varies across different contexts. Default, in its broadest sense, refers to the failure to fulfil an obligation (Ptak-Chmielewska & Kopciuszewski, 2022). As per standard financial practices, default occurs when a borrower fails to make scheduled debt payments (Mensah et al., 2013). This definition, however, can vary in the specificity of its criteria. In formal financial settings, loan default typically refers to the failure to meet the agreed-upon terms of a loan agreement, primarily the non-payment of scheduled debts (Ptak-Chmielewska & Kopciuszewski, 2022). The Basel Committee on Banking Supervision (2017) defines default in banking as a situation where the borrower is 90 days past due on a payment, or where there is a reasonable indication that the borrower is unlikely to fulfil his or her payment obligations without recourse to actions such as foreclosure.

In informal settings, such as ROSCAs, the definition of loan default can be more nuanced. ROSCAs are community-based savings and loan groups where members contribute to a fund that is distributed in a rotating manner to each member. In these groups, default may occur when a member fails to contribute their share, with the potential to jeopardise the collective savings plan (Ardener & Burman, 1995). In this study, definition of default by Mensah et al. (2013) was adopted. According to the author, default occurs when a borrower fails to make scheduled debt payments. The adoption of this definition is premised on the critical importance of timeliness in contribution in ROSCA. A one-time default by a participant (especially in ROSCAs without provision for insurance) can lead to a chain reaction that eventually collapse the association.

Default can be measured in various ways. Quantitative measures in formal institutions include default rates and loss given default (Schuermann, 2004). Schuermann (2004) highlights that these measures are essential for assessing the health of loan portfolios and for regulatory purposes. In ROSCAs and similar informal groups, the measurement, according to Ardener & Burman (1995) is less standardised and may rely on group-specific norms and agreements. The authors note that in these groups, measuring default may involve assessing the social and communal impacts of non-payment, not just the financial aspects. In this study, the measurement focuses on making financial

repayment as at when due such that when a participant fails to pay (usually within 24 hours after the scheduled payment time), the participant is adjudged to have defaulted.

**Conceptual Framework**

The conceptual framework of the study is presented in Figure 1. The framework presents a focused investigation into the Rotating Savings and Credit Associations (ROSCAs), specifically examining how the demographics of participants may influence the likelihood of defaulting on financial contributions by participants in the association. It centres on testing the null hypothesis ($H0_1$) that there is no significant relationship between the demographic variables of participants and propensity to default in the association.

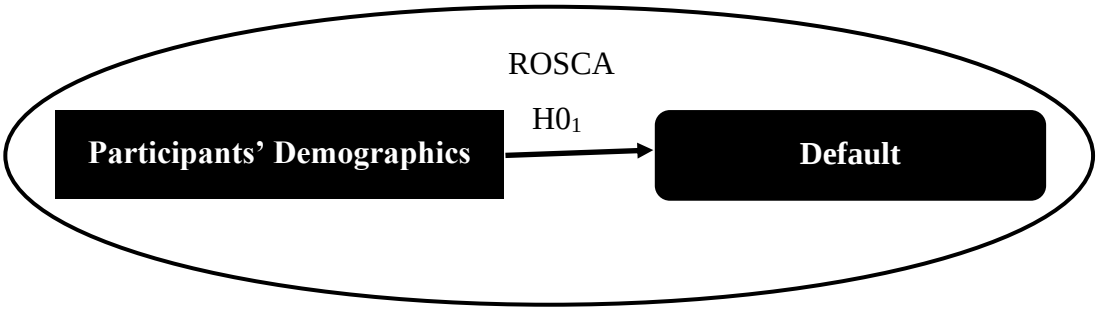


**Figure 1: Conceptual Framework**

**Theoretical framework**

The theory guiding this study is social stratification theory, pioneered by scholars like Max Weber and Pierre Bourdieu. The theory focuses on how individuals are grouped based on various social attributes such as age, gender, and marital status, impacting their social status and access to resources (Bourdieu & Wacquant, 2013; Vandergeest & Buttel, 1988). This theory provides a framework for understanding how demographic characteristics influence behaviour, highlighting how different groups experience varying financial stability and default risk. It considers societal structures and inequalities, offering a nuanced perspective on demographic effects on default behaviour, though it may oversimplify complex social dynamics and individual variations within social strata (Crompton, 2008), yet useful in this study.

**METHODOLOGY**

This study utilised a quasi-experimental research design. The research was conducted in Yewa North Local Government Area of Ogun State, Nigeria which is the largest in Ogun State in land area (see Figure 1). The LGA has a rapidly growing population estimated at 312,700 in 2022. Yewa North is predominantly agricultural with a robust trade sector. The local economy is supported by the cultivation of crops such as cocoa, cotton, and cassava and active local markets in towns like Ayetoro, Oja Odan, and Ijoun, These markets contribute significantly to the area's economic activities.

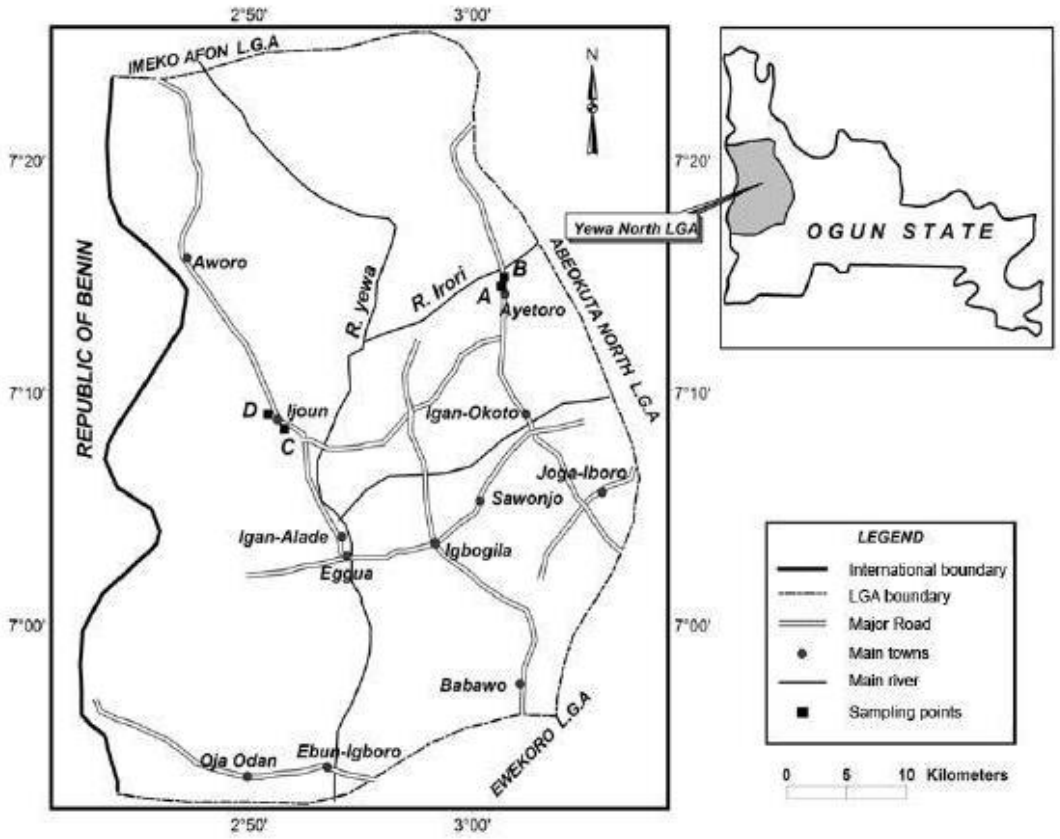


**Figure 2*:* Yewa North Local Government Map in Ogun State**

**Source:** Bamidele et al. (2018)

The study focused on random ROSCAs within the local government area. In a preliminary study conducted from May to August 2023 across the 11 wards of the LGA using snowball sampling technique, 714 ROSCAs were identified, with 544 qualifying as random ROSCAs. Snowball sampling is sampling system that relies on referrer to obtain samples ideal for use in reaching difficult-to-reach groups (Parker, Scott & Geddes, 2019; Biernack & Waldorf, 1981). ROSCAs are usually unregistered without an umbrella body which make them difficult to reach through conventional sampling techniques. The ROSCAS were found to vary in size, with membership ranging from a minimum of 7 to a maximum of 246 members (Preliminary survey, 2023).

To determine the appropriate sample size, Taro Yamane (Yamane, 1973) formula cited in Oluwasanya (2022) was used. The formula is provided hereunder.

$$n = \frac{N}{1 + N\,(e)^2}$$

Where:

n = Sample size

N = Population

e = Sampling error assumed as 5% or 0.05

1 = Unity (constant)

The 'n' is the unknown, N = 544, e = 0.05

'n' = $544/1+544(0.05)^2$

= 544/2.36 = 230.5, approximately, 231

A proportional sampling technique was used in selecting the sample for the study. The samples were selected based on the proportion of random ROSCAs in each of the wards. Due to financial and time constraints, only 60% of the size proportional to the number of random ROSCAs in each of the wards were eventually sampled. This amounted to 138 random ROSCAs. Four questionnaires were given to each of the selected ROSCAs implying that a total of 552 questionnaires were distributed. The associations' foremen or coordinators assisted in distributing the questionnaires to ROSCA participants, with each foreman distributing four questionnaires—two to participants who had defaulted before and two to those who had never defaulted but joined the association at relatively the same time. The sampling procedure is provided in Table 1.

**Table 1: Proportional sampling of random ROSCAs in the study area**

| **S/n (i )** | **Wards in the Local Government** | **Number of random ROSCAs found in a preliminary survey** ($P_i$ ) | **Selected ROSCAs proportional to number found** ($P_i$/TP x 231) $P_i = P_1, P_2, ..., P_{11}$. | **60% of proportional number of ROSCAS selected "R"** | **Number of participants "R" x 4** |
|---|---|---|---|---|---|
| 1 | Ayetoro I | 48 | 20 | 12 | 48 |
| 2 | Ayetoro II | 63 | 27 | 16 | 64 |
| 3 | Idofoi | 54 | 23 | 14 | 56 |
| 4 | Iboro/Joga | 56 | 24 | 14 | 56 |
| 5 | Imasayi | 43 | 18 | 11 | 44 |
| 6 | Ebute Igbooro | 30 | 13 | 8 | 32 |
| 7 | Ibese | 45 | 19 | 11 | 44 |
| 8 | Iggua | 59 | 25 | 15 | 60 |
| 9 | Ijoun | 63 | 27 | 16 | 64 |
| 10 | Sunwa | 41 | 17 | 10 | 40 |
| 11 | Ohunbe | 42 | 18 | 11 | 44 |
| | **Total** | **544 (TP)** | **231** | **138** | **552** |

A structured questionnaire was used for data collection. The instrument's validity was ensured through face and content validity, with experts and educated ROSCA foremen providing input. To test reliability, a pilot survey was conducted with 30 ROSCAs outside the study area. The

Cronbach's alpha estimate for the questionnaire was estimated at 0.76, indicating good reliability for a developing questionnaire (Shittu, Ayoola & Onasanya, 2022).

**Dependent variable**

Let $Y$ denote the binary outcome variable representing defaulting behaviour, where:

$Y$ = 1 indicates that the participant has defaulted.

$Y$ = 0 indicates no default.

**Independent Variables**

$X_1$ = Household dependency ratio (working member of household/household size)

$X_2$ = Age of the participant (in years).

$X_3$ = Income Level (in Naira)

$X_4$ = Duration of Membership in the ROSCA (years).

$X_5$ = Employment status (Employed = 1; Otherwise = 0).

$X_6$ = Education level (years of formal education).

$X_7$ = Household size (number of members).

$X_8$ = Gender (male = 1, 0 = otherwise).

$X_9$ = Marital status (Married = 1, 0 = otherwise).

**Logit Regression Equation:**

$$log\frac{P(Y=1)}{1-P(Y=0)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_9 X_9$$

*Where:*
$\beta_0$ = the intercept

$\beta_1, \beta_2, \ldots, \beta_9$ = the coefficients representing the effect of each independent variable

To address the issue of multicollinearity, the variance inflation factor (VIF) for each of the independent variable was calculated using the following formula:

$$VIF_i = \frac{1}{1 = R_i^2}$$

Where:

$VIF_i$ = the Variance Inflation Factor for the i-th independent variable.

$R_i^2$ = the coefficient of determination (R-squared) of a regression of the i-th independent variable on all the other independent variables.

## RESULTS AND DISCUSSION

### Demographics of Respondents

The demographic factors of the participants are presented in Table2. Results indicate that default rates vary significantly, with the highest default rate observed in the 51-60 age group at 20.6%, while the 41-50 age group demonstrates the highest non-default rate at 37.8%. This suggests a particular default pattern among middle-aged participants within ROSCAs. Gender disparities also emerge, with females exhibiting a higher default rate of 57.3% compared to males at 42.7% within group, hinting at a possibility of a significant moderate influence of gender on defaulting behaviours.

Education level further delineates participant behaviour, where individuals with no formal education predominantly do not default (44.8%), and those with secondary education are more likely to default (45.0%). This trend highlights a correlation between educational attainment and default rates, with lower educational levels associated with higher adherence to ROSCA commitments (against a *priori* expectation). This might not be unconnected to the fact that those with no or lower form of formal education value the ROSCA arrangement more given limited alternatives. Based on the result in the table, marital status appears to affect financial behaviour, evidenced by a higher default rate among married participants (69.5%) versus a higher non-default rate among single individuals (27.6%).

Income levels reveal a clear pattern; participants earning between ₦100,000- ₦149,999 (Mean = ₦101,570, SD = ₦6,576) are least likely to default (42.2%), contrasting with those earning less than ₦50,000 (Mean = ₦52,354, SD = ₦9,590), who have the highest default rate (42.7%). This suggests a strong link between income level. Income levels reveal a clear pattern; defaulters had a mean income of ₦52,354 with a standard deviation of ₦9,590, whereas non-defaulters had a higher mean income of ₦101,570 with a standard deviation of ₦6,576 indicating that non-defaulters had a higher average income and less income variability compared to defaulters.

Household size also appears to influence adherence to ROSCA commitment to regular contribution payment, with larger households of 7-9 members (mean = 7.6, SD = 1.2) demonstrating a higher non-default rate (53.4%), while households with 4-6 members (mean = 4.6, SD = 0.31) show the highest default rate (46.6%), against a priori expectation. According to a *priori* expectation, the higher the household size, the higher the tendency to default. Value placed on continued participation in ROSCAs might be responsible for this.

Interestingly, the duration of ROSCA membership appears to correlate with default rates. Members with 5-6 years (Mean =5.32, SD = 0.23) of participation show the highest non-default rate (43.1%), whereas those with only 1-2 years (Mean =1.02, SD=0.35) of membership exhibit the highest default rate (45.0%). Employment status, particularly self-employment, is prevalent among both defaulters (45.0%) and non-defaulters (51.7%), indicating that the variable may not have significant effect defaulting behaviours.

Overall, the results suggest that factors like age, education, income, household size, and years of membership in ROSCAs may significantly influence default rates. It appears that middle-aged, higher-income earners, lower educational qualifications and individuals with larger households are less likely to default, while younger, lower-income earners with smaller households or newer memberships are more prone to default. To examine the effect of the variables of default, the logit regression analysis was done and the results presented in Table 3.

**Table 2: Distribution of respondents by demographic characteristics**

| Variables | Age Group | ROSCAs Defaulters (n =131) | | ROSCA's non-defaulters (n =116) | |
|---|---|---|---|---|---|
| **Age** | | **Freq** | **%** | **Freq** | **%** |
| | ≤ 20 | 21 | 16.0 | 22 | 19.0 |
| *Defaulters:* (Mean = 39.4, SD =6.7) | 21-30 | 21 | 16.0 | - | - |
| *Non-defaulters:* (Mean = 26.9, SD =5.4) | 31-40 | 21 | 16.0 | 14 | 12.1 |
| | 41-50 | 25 | 19.1 | 44 | 37.8 |
| | 51-60 | 27 | 20.6 | 22 | 19.0 |
| | Above 60 | 16 | 12.3 | 14 | 12,1 |
| **Gender** | Female | 75 | 57.3 | 71 | 54.2 |
| | Male | 56 | 42.7 | 60 | 45.8 |
| **Education** | No formal education | 19 | 14.5 | 52 | 44.8 |
| | Primary | 40 | 30.5 | 23 | 19.8 |
| | Secondary | 59 | 45.0 | 31 | 26.7 |
| | Tertiary | 13 | 9.9 | 10 | 7.6 |
| **Marital status** | Single | 23 | 17.6 | 32 | 27.6 |
| | Married | 91 | 69.5 | 65 | 56.0 |
| | Widow/er | 7 | 5.3 | 4 | 3.5 |
| | Separated | 10 | 7.6 | 15 | 12.9 |
| **Income (Naira)** | <50,000 | 56 | 42.7 | 9 | 7.8 |
| *Defaulters:* (Mean = 52,354, SD = 9,590) | 50,00-99,000 | 33 | 25.2 | 15 | 12.9 |
| *Non-defaulters:* (Mean =101,57, SD= 6, 576) | 100,000-149,999 | 21 | 16.0 | 49 | 42.2 |
| | 150,000-199,999 | 16 | 12.3 | 20 | 17.2 |
| | ≥200,000 | 5 | 3.8 | 23 | 19.9 |
| **Household size** | 1-3 | 13 | 9.9 | 15 | 12.9 |
| *Defaulters:* (Mean = 4.6, SD = 0.31) | 4-6 | 61 | 46.6 | 25 | 21.6 |
| *Non-defaulters:* (Mean =7.6, SD= 1.2) | 7-9 | 42 | 32.1 | 62 | 53.4 |
| | ≥10 | 15 | 11.4 | 14 | 12.1 |
| **Membership (years)** | 1-2 | 59 | 45.0 | 23 | 19.8 |
| *Defaulters*: Mean =1.02, SD=0.35) | 3-4 | 21 | 16.0 | 25 | 21.6 |
| *Non-defaulters:* Mean = 5.32, SD =1.23) | 5-6 | 34 | 26.0 | 50 | 43.1 |
| | >6 | 17 | 13.0 | 18 | 15.5 |
| **Employment status** | Unemployed | 34 | 26.0 | 8 | 6.9 |
| | Employed | 25 | 19.1 | 30 | 25.9 |
| | Self-employed | 59 | 45.0 | 60 | 51.7 |
| | Students | 13 | 9.9 | 18 | 15.5 |

Source: Field Survey, 2023

**Effect of demographic variables on propensity to default**

The logit regression analysis illustrated in Table 3 comprehensively examines how various demographic factors affect the likelihood of defaulting within a Rotating Savings and Credit Association (ROSCA). The model demonstrates a strong fit, as evidenced by a Chi-square statistic of 64.36, significantly higher than the nine degrees of freedom. This result indicates a substantial enhancement over a null model, confirming that the predictors selected effectively encapsulate the

variations in default likelihood and providing a robust basis for understanding risk factors within ROSCAs (Rogers & Revesz, 2019).

The analysis highlights several key demographic predictors: the dependency ratio shows a positive coefficient of 0.2754, with a corresponding marginal effect of 6.85%, indicating that each unit increase in the dependency ratio significantly raises the default risk (t-value = 3.472). Similarly, age is another critical factor, with a positive coefficient of 0.0167 and a marginal effect of 0.41%, suggesting that each additional year in age increases the likelihood of defaulting (t-value = 4.073) by 0.41%. In contrast, income level presents a negative coefficient of -0.00003 and a marginal effect of -0.0007, demonstrating that higher incomes marginally decrease default risk, which reflects the protective role of financial security (t-value = -2.315). Moreover, duration of membership in ROSCAs, indicated by a coefficient of 0.1425 and a marginal effect of 3.52%, suggests that longer membership durations correlate with a higher risk of default.

The current study's observation that larger household sizes correlate with a higher default risk resonates with findings in other contexts, such as the study by Ojiako & Ogbukwa (2012) on small-holder cooperative farmers. Income level's influence on default risk also mirrors trends observed in other studies. The negative correlation between income levels and default risk in ROSCAs aligns with findings from Essien, Ibekwe, Akpan, & Ben-Chendo (2016) and Acquah & Addo (2011), where higher income levels were associated with either improved repayment performance or lower delinquencies.

Other demographic factors such as employment status, education level, household size, gender, and marital status also play roles, albeit with varying significance. Household size, for instance, with a positive coefficient of 0.0592 and a marginal effect of 1.47%, significantly correlates with an increased default risk (t-value = 2.516), underscoring the financial burden larger families may bear.

The finding that older ROSCA members are slightly more prone to default is a trend also noted in other research, such as the studies conducted by Oladeebo & Oladeebo (2008) and Oni, Oladele & Oyewole (2005). This might indicate that older individuals have different financial priorities or face distinct constraints, affecting their ability to meet credit obligations. Not all findings from the ROSCA study align with existing literature, offering new insights into the unique dynamics of ROSCAs.

For example, factors like employment status and education level, despite their intuitive influence, did not demonstrate statistically significant impacts in this study. Gender and marital status, incorporated into the analysis, did not show significant effects on default probability either, suggesting these factors may not be crucial in determining default risk within the ROSCA framework. The non-significance of marital status and education level in influencing default risk contrasts with Magali's (2013) findings suggesting that these factors may play a different role in ROSCAs compared to other credit systems. This discrepancy could be attributed to the unique socio-economic and cultural contexts in which ROSCAs operate, differing from more formal financial settings.

**Table 3: Logit Regression analysis of the effect of demographics on default in ROSCA**

| Variable | Coefficient | Standard Error | t-value | Marginal Effect | VIF |
|---|---|---|---|---|---|
| Constant | 0.5102 | 0.1987 | 2.568 | - | - |
| Dependency ratio (X1) | 0.2754*** | 0.0793 | 3.472 | 0.0685 | 1.2 |
| Age (X2) | 0.0167*** | 0.0041 | 4.073 | 0.0041 | 1.5 |
| Income Level (X3) | -0.00003** | 0.00001 | -2.315 | 0.0007 | 1.3 |
| Duration of Membership (X4) | 0.1425** | 0.0654 | 2.178 | 0.0352 | 1.4 |
| Employment Status (X5) | 0.1983* | 0.1127 | 1.759 | 0.0491 | 1.1 |
| Education Level (X6) | -0.0311 | 0.0284 | -1.095 | 0.0076 | 1.6 |
| Household Size (X7) | 0.0592** | 0.0235 | 2.516 | 0.0147 | 1.7 |
| Gender (X8) | -0.0845 | 0.0572 | -1.477 | 0.0209 | 1.2 |
| Marital Status (X9) | 0.1037 | 0.0831 | 1.248 | 0.0256 | 1.3 |
| Chi-square | 64.36 | | | | |
| Degrees of Freedom | 9 | | | | |

Source: Field Survey, 2023. ***, **, * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

## CONCLUSION AND RECOMMENDATIONS

The study examined the impact of demographic factors on default probability in ROSCAs. Findings revealed that household size, income level, age, and dependency ratio are significant demographics influencing default likelihood in the association. Specifically, larger household sizes and higher dependency ratios were found to be associated with increased default risks, whereas higher income levels generally reduce such risks. Older members were found to be more prone to default than the younger ones.

Based on these insights, the study recommends implementing targeted financial education tailored to the needs of members with larger households or higher dependency ratios. Additionally, the study suggests initiating income enhancement programs such as skills training or microenterprise support to mitigate default risks. The recommendations also include developing age-specific strategies and implementing risk assessment tools that factor in the key demographic variables, to better predict and manage potential defaults within ROSCAs.

The limitations of this study informed the following suggestions for further studies. One, future studies could benefit from a longitudinal approach to better discern the causal relationships influencing default rates over time. Two, expanding the research geographically could enhance the generalizability of the findings. Three, exploring the impacts of cultural, social, and external economic factors on default behaviours in ROSCAs could offer a more comprehensive view of the challenges and dynamics within these financial systems.

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