

DETERMINANTS OF PARTICIPATION IN ROTATING SAVINGS AND CREDIT ASSOCIATIONS (ROSCAs) IN OGUN STATE, NIGERIA

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ABSTRACT

Due to favorable disposition of residents to participation in Rotating Savings and Credit Associations (ROSCAs) in the Ogun State, Nigeria many individuals are nursing the ambition to establish one. This study provides empirical link between the socio-economic characteristics of residents within the division with a view to helping prospective foreman to understand factors that predispose residents to participation for decision-making. Data were obtained from 400 respondents and 25 randomly selected residents and foremen respectively within the division. Structured questionnaire and semi-structured interview were the instrument for data collection. The mixed-method collected data were analyzed using descriptive statistics, logit regression model and content analysis as applicable. Irrespective of the respondents' ROSCA participation status, a typical respondent had about two members of his/her household working. Education, marital status, sex and annual income of the respondents were significant ($p < 0.05$) predictors of participation in the ROSCAs. Based on the study findings, it is recommended that the prospective foreman targets residents that are married, with relatively higher income level and the less-educated to increase probability of participation in the association.

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1. INTRODUCTION

The concept of ROSCAs revolves around mutual savings and credit among participants whereby the savings (pooled amount) is given to one participant at a time subject to repayment thereafter (at predetermined regular interval) until every participant had, in turn, received the pooled amount (Hevener, 2006; Biggart, 2001). ROSCA have a unique advantage over individual saving. Hence, the scheme is often referred to as pareto optimal savings scheme (Brink & Chavas, 1991). As a means of raising funds for business, for acquisition of capital goods, for offsetting costs of social functions, for income smoothing as well as being a platform for socialization (Bisrat, Kostas, & Feng, 2012). Rotating Savings and Credit Association (RoSCA)- an indigenous self-help group- has remained popular among rural and semi-urban settlements in the Yewa Division of Ogun State.

The practice of ROSCA in the division is widespread. Hence, one can conclude that it has become an acceptable means of raising funds to cater for important needs of the residents. The preliminary study conducted among residents within the Ayetoro, Ilaro, Idiroko and Imeko communities shows that 7 out of 10 respondents belonged to the unbanked population and 8 out of 10 of them (the respondents) engaged in

one form of ROSCAs or the other (See Appendix I). The level of unbanked population found was higher than the 43.6% reported in Nigeria by Fatokun (2015).

Due to the positive rating and disposition of people to ROSCAs in the division, many ROSCAs are springing up looking for participants (Preliminary study, 2017). This study provides empirical link between socio-economic characteristics of residents within the division with a view to helping aspiring foremen in decision-making on socio-economic factors the predispose residents to participation in the association. With the empirical information, the aspiring foreman can do proper targeting and campaign.

2. LITERATURE REVIEW ON FACTORS INFLUENCING PARTICIPATION IN ROSCA

Evidence from the literature shows that various factors influence participation in ROSCA. The factors vary from socio-economic, institutional to macroeconomic. This section presents some of the empirical literature on the determinants of participation in ROSCAs. Mpiira *et al.* (2013), in a survey design study, assessed the factors influencing participation of households in savings and credit schemes in Uganda. Likelihood of participation was estimated using an ordered probate function. Findings revealed that income and number of dependents in high school increased likelihood of participation while earning of salary or rent as main income source and having salaried spouse decreased the likelihood of participation in the savings and credit schemes.

Muturi (2012), in a PhD thesis, examined the factors influencing participation in ROSCAs in Nairobi, Kenya. Descriptive and econometric model analysis of data obtained systematically selected respondents (participants and non-participants) were carried out. The study findings revealed that gender, individual discount rates, household size, education level and proportion of wife's contribution in the household's budget were strong determinants of participation in ROSCAs in the study area. Also, in Kenya, Agola (2012) examined factors influencing long-term participation (sustainability) of women self-help savings and credit schemes. Descriptive statistics were the instrument for analysing the study data obtained from 125 randomly selected women in the study area. The study was also a survey in design. Findings revealed that marital status, education, age and income influenced participation in the self-help savings and credit schemes.

Kedir, Disney, & Dasgupta (2011), in a study that compared the propensity of households to engage in either bank or *equib* (ROSCA) savings found that larger households tend to participate less in bank savings. The authors rationalised the low participation in bank savings as income-induced and hinted that ROSCAs provide alternative savings mechanism for this household category. This might explain the generally-reported positive relationship between household size and ROSCA participation. Kedir & Ibrahim (2011), however, reported that participation in ROSCAs was inversely related to household size.

Anderson & Baland (2002) found that older people are more likely to participate in ROSCA when compared to the younger ones, Varadharajan (2004) found otherwise. Varadharajan reported that the older

the people in their sample attain, the lower the probability of participating in ROSCAs. The Baland observed concave relationship between age and participation in ROSCA with 35 years of age being the summit of the concave relationship after which decline set in unlike the finding of the Varadharajan that put the submit at 39 years of age. The Varadharajan also observed that the participation of other household members significantly correlated with the age of household head. The author found that while the age of the household head is increasing before reaching the submit (39 years), participation other members, except the household head was decreasing but increased thereafter.

Conversely, Tanaka, Camerer & Nguyen (2009) and Kibuuka (2007) found that the younger (middle-aged population) are more likely to participate in ROSCA than the older ones. Kibuuka (2007), reported that the majority (73.4%) of participants in sampled ROSCAs in South Africa had age range between 31-49 years. In the same vein, Malkamäki, Johnson, & Nino-Zarazua (2009) observed a significantly high participation in rosca rate for respondents between the ages 25-45.

Many studies (Dagnelie & Lemay-Boucher, 2012; Nguyen, 2010; Varadharajan, 2004) that assessed the relationship between income level and participation in ROSCA reported a U-shaped relationship. In other words, they found out that at a certain income range below the community average, consumption expenditure takes significant share of income leaving little or no room for saving in ROSCA. The savings ability and participation in ROSCA increases as income increases beyond this lower limit but up to a certain point where decline sets in. The explanation often given for decline in participation as income rises beyond the upper limit is that financial requirements of the participants or potential participants exceed what the ROSCA could provide prompting them to look for or access alternatives (Varadharajan, 2004).

Some authors (Kibuuka, 2006; Platteau, 2000; Handa & Kirton, 1999) however found no U-shaped but positive linear relationship between income and participation in ROSCAs. Plateau provides an interesting explanation why the high-income individuals continue to participate in ROSCA. He stated that social role often compels the well-to-do to constantly support the poor in the community and that the well-to-do engaged in ROSCA to dodge this role by keeping idle funds away through ROSCA rather than for any direct financial benefits.

Generally, studies around the world (Bisrat et al., 2012; Hevener, 2006; Biggart, 2001; Tsai, 2000) have reported higher tendency for women to participate in ROSCAs when compared to the menfolk. There is also a conception that women ROSCAs are more likely to be successful than those run by the men-a phenomenon attributed to gender ideologies of women's superiority in terms of honesty and purity and household management prowess (Biggart, 2001). Interestingly, many studies (Bisrat et al., 2012; Tsai, 2000) also acknowledged that the recent domination of ROSCAs by women is a role reversal of the men's domination of the association in pre-historic times. This questions the superior managerial ability, uprightness and tendency to make more credible commitments to repayment of loans arguments. If the

assertions are true, are there socio-economic and cultural transformations underpinning the role reversal? If yes what are they?

Varadharajan (2004) reported positive relationship between being married and participation in ROSCA, the finding of Gugerty (2007) in Western Kenya found no significant difference in participation based on marital status. Contrary to the findings of Varadharajan (2004), Makkamaki, Johnson and Nino-Zarazua (2009) found that being single (rather than otherwise) increases the propensity to participate in ROSCA. Raccanello *et al.* (2009), however, only found significant difference in participation in ROSCA based on marital status within the men's group but not generally.

The finding of Kedir & Ibrahim (2011) showed that religion could have significant effect on participation in ROSCA. The author reported higher likelihood of participation in ROSCA by those who practised Islam as religion. He argued that Islam religion creed forbade taking up interest-bearing financial instruments or any financial arrangement that involve interest compelling the adherence of the faith to seek for alternative non-interest savings scheme like ROSCA. It is evident from the literature reviewed that there are mixed findings on relationship between socio-economic characteristics and participation in ROSCAs. Socio-economic factors including age, income, household size, marital status, education among others have been found to have significant relationship with participation in ROSCAs across the world.

The general objective of this study was to assess the determinants of participation in Rotating Savings and Credit Associations (ROSCAs) in Yewa Division of Ogun State.

The specific objectives were to:

- i. describe the socio-economic characteristics of the respondents;
- ii. identify the mode of operation of the associations within the division;
- iii. determine the factors influencing participation in ROSCAs by residents within the division;

3. RESEARCH METHODOLOGY

3.1 Study Area

The study was conducted in Yewa Division, Ogun State, Nigeria. The division has a population figure of 1,112,761 (National Population Commission: NPC, 2010). It is one of the four ethnic/geo-political divisions in Ogun State, Nigeria. Although the division is predominantly occupied by the Yoruba ethnic group, Yewa Division is generally inhabited by people from all sub – ethnic groups in Nigeria and people from neighboring West African countries.

4. DATA ANALYSIS

Data used for this study include qualitative and quantitative data from both primary and secondary sources. Data were obtained from 400 randomly selected respondents through structured questionnaire but only 381 questionnaires were returned, good enough and used for analysis. For the qualitative data, 5 ROSCAs (one

foreman from each) were sampled in each of the Local Government Areas. In all, 25 foremen of ROSCA were interviewed. Descriptive statistics and Logit regression model were used in analyzing the study quantitative data while content analysis was done for the qualitative data using the Statistical Package for Social Sciences (SPSS) and Nvivo 11 software respectively.

5. RESULTS AND DISCUSSION

This chapter presents the analysis, interpretation and discussion of findings in the line with the study objectives.

5.1 Socio-Economic Characteristics

Results obtained on the socio-economic characteristics of the respondents (presented in Table 2a and Table 2b) revealed that while the average age of participants was 37.37 years, the average age of non-participants was 30.57 years with participants having more diverse age range. In terms of the respondents' sex, females were in the majority among both participants (65.6%) and non-participants (57.7%). The majority (79.8%) of the participating respondents were found to be married unlike the majority (61.5%) of the non-participants found to be single. The average household size of both participating and non-participating respondents was 4 and 3 individuals respectively. While the majority (67.3%) participating respondents possessed tertiary level formal education, their non-participating counterparts (53.2%) possessed secondary level formal education. Irrespective of the respondents' ROSCA participation status, a typical respondent had about two members of his/her household working.

Table 2a: Distribution of Respondents by Age

Variable	Value	Participants		Non-participants		Pooled data	
		F	%	F	%	F	%
Age (years)	<25	32	9.7	9	17.3	41	10.7
	25-34	101	30.5	33	63.5	134	35.0
	35-44	109	32.9	6	11.5	115	30.0
	45-54	79	23.9	1	1.9	80	20.9
	≥55	10	3.0	3	5.8	13	3.4
Participants: Mean = 37.37, SD = 9.87, Non-participants: Mean = 30.57, SD = 8.71; $\chi^2_{\text{cal}} = 34.604$, df = 4, and $\chi^2_{\text{tab}} = 9.49$, Comment: Significant							
Sex	Male	114	34.4	22	42.3	136	35.5
	Female	217	65.6	30	57.7	247	64.5
$\chi^2_{\text{cal}} = 1.214$; df = 1; and $\chi^2_{\text{tab}} = 3.84$; Comment: Not Significant							
Marital Status	Single	50	15.1	32	61.6	82	21.4
	Married	264	79.8	18	34.6	282	73.6
	Divorced	3	0.9	1	1.9	4	1.0
	Separated	14	4.2	1	1.9	15	3.9
$\chi^2_{\text{cal}} = 58.749$; df = 3; and $\chi^2_{\text{tab}} = 7.81$; Comment: Significant							
Household size	1-3	109	32.9	26	50.0	135	35.2
	4-6	187	56.5	14	26.9	201	52.5
	7-9	32	9.7	12	23.1	44	11.5
	≥10	3	0.9	-	-	3	0.8
Participants: Mean = 4.49, SD = 2.14, Non-participants: Mean = 3.73, SD = 2.31; $\chi^2_{\text{cal}} = 18.709$; df = 3; and $\chi^2_{\text{tab}} = 7.81$; Comment: Significant							
Formal education	None	33	9.9	3	5.8	36	9.4
	Primary	26	7.9	1	1.9	27	7.0
	Secondary	176	53.2	13	25.0	189	49.3
	Tertiary	96	29.0	35	67.3	131	34.2
$\chi^2_{\text{cal}} = 29.59$; df = 3; and $\chi^2_{\text{tab}} = 7.81$; Comment: Significant							
Working members	1 member	58	17.5	9	17.3	67	17.5
	2 members	267	80.7	36	69.2	303	79.1
	3-4 members	6	1.8	6	11.6	12	3.1
	≥5 members	-	-	1	1.9	1	0.3
Participants: Mean = 1.85, SD = 0.46, Non-participants: Mean = 2.03, SD = 0.88; $\chi^2_{\text{cal}} = 20.67$; df = 3; and $\chi^2_{\text{tab}} = 7.81$; Comment: Significant							
Main occupation	Trading	155	46.8	2	3.8	157	41.0
	Artisanship	86	26.0	20	38.5	106	27.7
	Farming	54	16.3	9	17.3	63	16.4
	Civil service	27	8.2	1	1.9	28	7.3
	Food vending	-	-	13	25.0	13	3.4
	Unemployed	9	2.7	7	13.5	16	4.2
$\chi^2_{\text{cal}} = 120.363$; df = 5; and $\chi^2_{\text{tab}} = 11.07$; Comment: Significant							

Source: Field Survey, 2018

In terms of main occupation, the participating respondents substantially engaged in trading (46.8%) unlike the non-participating respondents who engaged in artisanship (38.5%). The participating respondents had about 10.2 years of experience in main occupation unlike the non-participants who had 4.10 average working experience in main occupation. The income level per annum of participating and non-participating respondents were found to be N270,277± N240,593 and N144,558±N102,583 respectively. The non-participating respondents (100.0%) did not belong to any social group unlike the majority (58.0%) of the participants that belonged to one social group or the other. An assessment of the respondents' tribes, irrespective of participation status revealed that they were predominantly (83.3%) of the Yoruba tribe. The majority of the participants and non-participants practised either Christianity or Islam with only minority (5.2%) practicing the traditional religion. An assessment of the mode of operation of ROSCAs in the study area revealed that order of pot collection was mainly determined by random assignment or a combination of random assignment and previous position of participants in the order of pot collection. ROSCAs that disbursed funds only were clearly in the majority (88.8%). The cycles of contributions (or cycle period) was predominantly 5-day interval largely due to economic and symbolic reasons. The majority of the respondents participated in only one ROSCA at a time.

Table 2b: Distribution of the Respondents by their socio-economic characteristics (Continued)

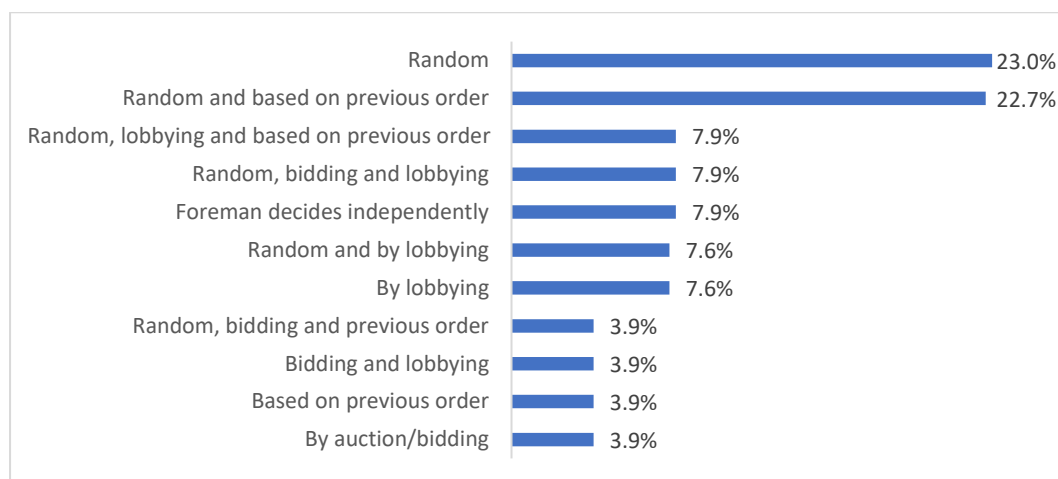
Variable	Value	Participants		Non-participants		Pooled data	
		F	%	F	%	F	%
Experience in Main occupation	None	11	3.3	10	19.2	21	5.5
	<5	65	19.6	25	48.1	90	23.5
	5-9	114	34.4	2	3.9	116	30.3
	10-14	52	15.7	14	26.9	66	17.2
	15-19	38	11.5	1	1.9	39	10.2
	≥20	51	15.5	-	-	51	13.3
	Participants: Mean = 10.22, SD = 7.35, Non-participants: Mean = 4.13, SD = 4.10; $\chi^2_{cal} = 65.420$; df = 5; and $\chi^2_{tab} = 11.07$; Comment: Significant						
Annual income (N)	None	11	3.3	10	19.2	21	5.5
	<100,000	31	9.4	2	3.9	33	8.6
	100,000-199,999	89	26.9	21	40.4	110	28.7
	200,000-299,999	120	36.2	18	34.6	138	36.1
	300,000-399,999	50	15.1	1	1.9	51	13.3
	≥400,000	30	9.1	-	-	30	7.8
	Participants: Mean = 270,277, SD = 240,593, Non-participants: Mean = 144,558, SD = 102,583; $\chi^2_{cal} = 35.791$; df = 5; and $\chi^2_{tab} = 11.07$; Comment: Significant						
Membership of social group	Member	192	58.0	-	-	192	50.1
	Non-member	139	42.0	52	100.0	191	49.9
Tribe	$\chi^2_{cal} = 60.484$; df = 1; and $\chi^2_{tab} = 3.84$; Comment: Significant						
	Yoruba	275	83.1	44	84.6	319	83.3
	Igbo	33	10.0	4	7.7	37	9.7
	Hausa	9	2.7	1	1.9	10	2.6
	Other tribe(s)	14	4.2	3	5.8	17	4.4
	$\chi^2_{cal} = 0.603$; df = 3; and $\chi^2_{tab} = 7.81$; Comment: Not Significant						
Religion	Christianity	159	48.0	24	46.2	183	47.8
	Islam	155	46.8	25	48.1	180	47.0
	Traditional	17	5.2	3	5.8	20	5.2
	$\chi^2_{cal} = 0.083$; df = 2; and $\chi^2_{tab} = 5.99$; Comment: Not Significant						

Source: Field Survey, 2018

5.2 The mode of operation of the associations

5.3 Determination of Order of Pot Collection

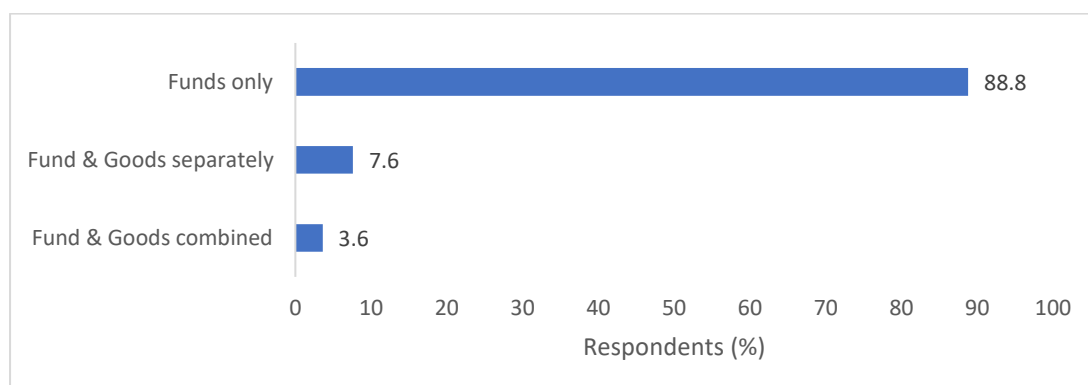
Determining the order of pot collection is an important activity in ROSCA. It may affect the participants' perception of objectivity and sustainability of ROSCA. Results obtained from the assessment of how orders of pot collection were determined as relayed by the respondents in their respective ROSCAs showed that ROSCAs in the study area used varieties of methods in determining the order of pot collection. However, 'random selection' (23.0%) and a combination of 'random and considering the previous order (i.e. the participant received the pot in previous 'round') were the most common criteria for determining order of pot collection in the current ROSCA round (see Figure 1).

Figure 1 How Order of Pot Collection was determined

Source: Field Survey, 2018

5.4 Type(s) of Pot Received or Disbursed

Types of pot refers to whether funds or goods or both funds and goods were the receivables by the ROSCA participants. An assessment of the types of pots received by the respondents revealed that vast majority (88.8%) of them participated in ROSCAs where only funds were disbursed as pots (see Figure 6). This is not surprising since the liquid funds can be converted to goods that the participants want.

Figure 6: Type of pot received (n =331)

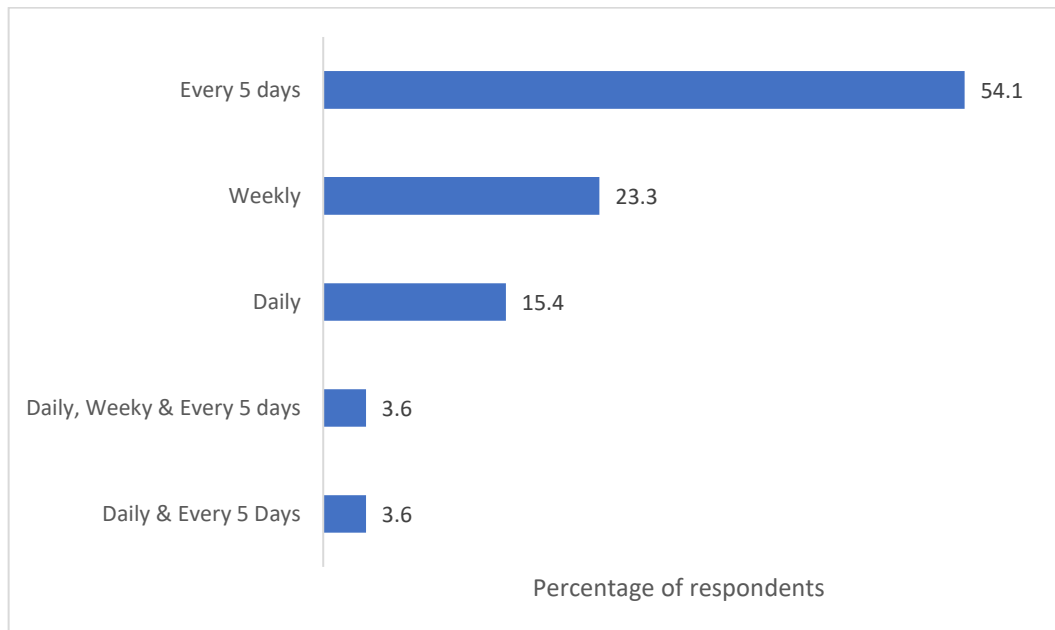
Source: Field Survey, 2018

5.5 Contribution Cycle Periods

The contribution cycle period refers to frequency with which both contributions to the pot and disbursements of funds or goods (as the case may be) to participants occurred. Findings revealed that 'every 5 days' cycle periods were the most prevalent(see Figure 7). A further probing of the reason for the prominence of the 'every 5 days' cycle period was done through a qualitative interview with ROSCA foremen in the study area (See Appendix I for results). It is evident in the quotes in Appendix I that prominence of the 5-day contribution cycle in the study area arose from thoughtful considerations bothering on economic and symbolic importance of the cycle period. The economic consideration factored in the fact that many participants relied on the market days to generate substantial income for personal and family upkeep as well as to be able to pay the required contributions. This is consistent with the submission of Adofu, Antai, & Alabi (2010) that cycle periods are often tailored towards cashflow cycles.

The symbolic importance of the ‘every 5 days’ cycle period relates to boosting memory recall of participants so that they can easily remember the contribution days. This has tendency to reduce default attributable to forgetfulness.

Figure 3: Cycles of contributions (n =331)



Source: Field Survey, 2018

5.6 Factors influencing participation in ROSCAs

Logit regression model was used to analyse the factors influencing (determinants of) participation in ROSCA in the study area focusing primarily on the socio-economic characteristics. The diagnostic variables, that is, the Chi-square and log likelihood function were estimated at 84.45 and -109.84 respectively. The chi-square was significant at 1% level implying that the model is a good fit. Out of the eleven variables fitted to the model, four (4) were found to be statistically significant at either 5% or 1% level. Education (X_2), Marital Status (X_3), Sex (X_5) and Annual Income (X_8) were the four variables that significantly predicted the propensity to participate in ROSCA in the study area. Education and sex (being male) had negative relationship with participation in ROSCA while the marital status (being married) and annual income had positive relationship with participation in ROSCA.

The inverse relationship between education and participation in ROSCA is in line with the *a priori* expectation. It was expected that educated respondents might consider a more modern alternative to ROSCA due to exposure or perhaps due to bandwagon effect of viewing ROSCA as an archaic socio-economic group. Unlike the education variable measured in years of formal education, the sex variable was a dummy. ‘Male’ was made the reference group (i.e. male = 1, otherwise = 0). The negative relationship between sex of the respondents and participation in ROSCA implies that a man is less likely to engage in ROSCA when compared to a woman. This also agrees with the literature that ROSCAs are more common among women than men (Kongolo, 2013; Tsai, 2000). On the other hand, the positive relationship between income of the respondents and participation in ROSCA negate this study *a priori* expectation that low level

of income is more likely to compel residents in the division to join ROSCAs as participants. The alternative explanation for this outcome may be that the higher the income level, the higher the probability of the respondents being called upon to participate in ROSCA. In as much as ROSCA is a self-help group, participants and particularly foreman are mindful of capacity to repay lump sum collected via income potentials. They would therefore prefer to include people with higher and stable income in ROSCAs than otherwise. This agrees with the findings of Lasagni & Lollo (2011) who reported that those participating in ROSCAs belonged to the relatively wealthier social group. Moreover, the positive relationship between marital status (being married) and participation in ROSCA might not be unconnected to the submission of Okpara (2010) who stated that the married is more likely to be under pressure to be more productive which might prompt them to join an economic group like ROSCA.

Besides, analysis of the marginal effect of the significant variables revealed that a unit increase in years of formal education (say by 1%) will decrease the probability of participating in ROSCA by about 0.18% whereas a unit increase income will increase the probability of participating in ROSCA by 0.01%. Being married increases the probability of participating in ROSCA by 0.09%.

Table 3: Logit model analysis of determinants of participation in ROSCA

Variable	Coefficient	Standard error	T-value	Marginal effect
Constant	0.0256	1.6890	0.015	-
Age (X ₁)	0.0307	0.0227	1.354	0.1784
Education (X ₂)	-0.1356**	0.0633	-2.140	0.0344
Marital status (X ₃)	1.9592***	0.4664	4.200	0.0009
Occupation (X ₄)	-0.1360	0.4977	-0.273	0.7849
Sex (X ₅)	-0.8305**	0.3862	-2.150	0.0341
Household size (X ₆)	0.0856	0.1330	0.644	0.5189
Membership of social group (X ₇)	-0.0008	0.0082	-0.101	0.9196
Annual income (X ₈)	0.71102E-0+5***	0.16828E-05	4.225	0.0001
Tribe (X ₉)	-0.7041	0.6370	-1.105	0.2637
Religion (X ₁₀)	-0.0918	0.3835	-0.240	0.8108
Proportion of working household members to household size (X ₁₁)	1.5343	1.1345	1.352	0.1933
Log likelihood function	-109.84			
Chi-square	84.568***			
Degree of freedom	11			

Source: Field Survey, 2018* Significant at 10%, *, Significant at 1% level.**

6. CONCLUSION

Based on the study findings, it is concluded participation in ROSCAs in the study area was very high. Socio-economic variables like education, marital status, sex and annual income are associated with participation in ROSCAs in the study area. Cycles of contributions and fund disbursements in the ROSCAs generally occurred at every 5-day tailored towards the cash flow of many of the participants and to boost memory recall. The pot being disbursed was generally 'fund only' with very few disbursing goods (e.g.

cement, roofing sheet etc) as pot. Random selection of participants to receive the pot was the most popular practices among the ROSCAs.

7. RECOMMENDATIONS/POLICY IMPLICATIONS

Based on the findings, this study recommends that:

- i. There should be training among ROSCAs participants on operations of the associations, collection of contribution and utilization of the money for business growth and expansion, identification of profitable projects and the use of production credit.
- ii. Production credit is recommended for the area as there are no possibilities of long term financing as most of the land in the area is communal and without title deeds. The same training may stimulate the demand for credit among those farmers who are currently not credit adopters.
- iii. There is need for financial institutions to establish more of their branches in the area, as the bulk of the loan acquired are directed to agricultural production. This will act as leverage to the problem of credit acquisition in the area.
- iv. ROSCAs are encouraged to disburse more loans to members to improve their income and alleviate household poverty.

8. LIMITATION AND CALL FOR FUTURE STUDY

Efforts were made to collection adequate and correct data from the respondent s about the ROSCAs objectives, operations, functions, membership, performance and influence in the study area from the sampled respondents, which have really helped us to make the research work a reality. However, some respondents because of lack of records, fear and apathy could not promptly and correctly respond to our requests. We intend to further do more study this regards and on the respondents' attitude and behavior society developmental research work.

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