



# Knowledge as a gateway to financial inclusion: women's characteristics and VSLA participation in Taita Taveta County, Kenya

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## Abstract

Village Savings and Loan Associations (VSLAs) are widely promoted as inclusive, community-based financial mechanisms for rural women. However, participation within communities is often uneven suggesting that structural and informational factors shape who becomes involved. This study examines the pathway linking women's socio-demographic and economic characteristics to knowledge of VSLAs, and how such knowledge influences participation in Tausa Sub-Location, Taita Taveta County, Kenya. Using cross-sectional data from 464 women, the study applied descriptive statistics, chi-square tests and logistic regression analysis to assess associations between women's characteristics, knowledge levels and VSLA membership. Just over half of respondents were knowledgeable about VSLAs, and a similar proportion were active members. Knowledge was socially patterned: women who were older, married, economically active, engaged in farming or owned land were significantly more likely to be aware of VSLAs. Knowledge emerged as a decisive determinant of participation, with women demonstrating high awareness being substantially more likely to be members. The findings reveal a sequential dynamic in which socio-demographic and economic positioning shapes informational access and informational access functions as a gateway to financial participation. While VSLAs are designed as grassroots and inclusive institutions, disparities in knowledge may reproduce existing inequalities within communities. Expanding equitable participation therefore requires targeted strategies that address informational barriers alongside financial constraints. This study contributes context-specific evidence on the informational pathway to community-based financial inclusion and highlights the need for outreach approaches that intentionally engage younger and economically marginalized women.

**Keywords:** Village Savings and Loan Associations, Financial inclusion, Knowledge, Participation, Community finance, Gender and Development

## 1. Introduction

Financial inclusion is increasingly recognized not only as an economic development priority but also as a critical social determinant of health (Letunovska *et al.*, 2023) [13]. Across sub-Saharan Africa, limited access to financial services constrains households' ability to secure food, afford healthcare, invest in education and respond to economic shocks (Rahman *et al.*, 2025) [19]. These constraints disproportionately affect rural women, who frequently experience exclusion from formal financial systems due to structural barriers such as limited asset ownership, informal employment lower educational attainment, and gendered power imbalances. In contexts where financial vulnerability intersects with health risk, expanding inclusive financial mechanisms becomes central to strengthening household resilience and population health outcomes (Jalili *et al.*, 2025) [11].

Village Savings and Loan Associations (VSLAs) have emerged as one of the most widely adopted community-based financial models across the region (Aminu, 2025) [4]. Structured around regular savings contributions, internal lending and transparent governance, VSLAs provide accessible and locally managed financial platforms in settings where formal banking infrastructure is weak (Okello & Mwesigwa, 2022) [17]. Beyond their economic function, savings groups are increasingly understood as social institutions that enhance

women's agency, social capital and collective efficacy (Maurya, 2026) [16]. These factors that are closely linked to health-seeking behavior, maternal and child wellbeing and household stability. Evidence from various African settings suggests that participation in savings groups can improve economic security, buffer households against shocks and strengthen women's decision-making power, thereby indirectly influencing health and wellbeing (Adegbite *et al.*, 2022; Lukwa *et al.*, 2022) [2, 14].

In Kenya, financial inclusion has expanded significantly over the past decade, driven by mobile banking innovations and community-based savings initiatives (Arthur *et al.*, 2025) [6]. Nevertheless, rural women particularly those dependent on subsistence agriculture and informal livelihoods continue to face structural financial exclusion. VSLAs have become an important platform for addressing these gaps, offering savings and credit services within communities that are geographically distant from formal institutions. As such, they represent a potential mechanism for strengthening economic determinants of health at the grassroots level. Despite their proliferation, participation in VSLAs is not universal within communities where they operate. Literature indicates that engagement in savings groups is patterned by socio-demographic and economic characteristics (Amoah, 2025) [5]. Age has been associated with accumulated social capital and authority within

community networks; marital status influences autonomy and bargaining power; household structure shapes financial responsibilities while livelihood engagement and asset ownership signal economic capacity (Balgah *et al.*, 2025; Chan, 2022) [8, 9]. These factors influence women's ability to participate in collective economic institutions. However, much of the literature treats participation as a direct outcome of structural characteristics, with limited attention to the informational processes that precede membership.

Knowledge constitutes a critical intermediary in this pathway. Participation presupposes awareness women must know that VSLAs exist, understand how they operate and perceive their relevance (Asitik *et al.*, 2026) [7]. In rural settings where information circulates largely through interpersonal networks, disparities in knowledge may reflect underlying social and economic hierarchies. Women who are more socially connected and economically active may be more likely to encounter information about savings groups, whereas younger and economically dependent women may remain less informed. From a public health perspective, such informational inequalities matter because they shape access to economic resources that underpin household health security.

Tausa Sub-Location in Taita Taveta County provides a pertinent context for examining these dynamics. The area is characterized by subsistence farming, limited income diversification and constrained access to formal financial services (Thiong'o, 2023) [22]. Economic vulnerability in such settings directly affects households' capacity to meet basic needs including food, healthcare and education. While VSLAs are present within the community, awareness and membership are unevenly distributed. Understanding whether disparities in participation stem from structural economic barriers, informational gaps or both is critical for designing inclusive interventions that strengthen both financial and health resilience. This study therefore examines the sequential pathway linking women's socio-demographic and economic characteristics to knowledge of Village Savings and Loan Associations, and knowledge to participation in these associations within Tausa Sub-Location. Specifically, it (1) assesses the association between women's characteristics and knowledge of VSLAs and (2) determines the association between knowledge and involvement in VSLAs. By positioning knowledge as a mediating factor between structural characteristics and participation, the study advances a more nuanced understanding of how community-based financial inclusion operates within rural contexts.

In doing so, it contributes empirical evidence to the growing recognition that economic inclusion is inseparable from broader determinants of health. Strengthening equitable access to financial institutions such as VSLAs is not solely an economic imperative, it is also a strategy for enhancing household resilience, reducing vulnerability and supporting the foundations of community health.

## 2. Methods

### 2.1 Study setting

The study was conducted in Tausa Sub-Location, Taita Taveta County, Kenya. The area is predominantly rural and

characterized by subsistence agriculture, small-scale farming and informal income-generating activities (KNBS, 2019) [12]. Access to formal financial services remains limited, and community-based savings groups such as Village Savings and Loan Associations (VSLAs) constitute an important mechanism through which women mobilize savings and access credit. Although VSLAs are operational within the community, levels of awareness and participation vary across households making the setting appropriate for examining informational and structural determinants of involvement.

### 2.2 Study design, sampling procedure, population and sample size

A community-based cross-sectional design was employed to assess the association between women's socio-demographic and economic characteristics, their knowledge of VSLAs and their participation in these associations. The study population comprised women aged 18 years and above residing in Tausa Sub-Location for at least six months prior to data collection. Both VSLA members and non-members were included to enable comparative analysis of knowledge and participation pathways. A total of 464 women participated in the study, yielding a response rate of 98%. Households were selected through a multistage sampling approach. Villages within the sub-location were first identified, followed by systematic selection of households from a structured listing.

### 2.3 Data collection

Data were collected using a structured interviewer-administered questionnaire developed from established literature on financial inclusion, women's empowerment and community-based savings models. The instrument captured socio-demographic characteristics (age, marital status, education, parity and household size), economic indicators (primary source of income, engagement in farming, land ownership), knowledge of VSLAs and membership status. Knowledge of VSLAs was assessed using composite measures of awareness of the existence of VSLAs and understanding of the services they provide. Responses were categorized into ordered levels of knowledge based on pre-defined scoring criteria. Participation was measured as current membership in a VSLA (yes/no). The questionnaire was pre-tested in a neighboring community with comparable socio-economic characteristics. Interviews were conducted by trained female research assistants in the local language to enhance comprehension and minimize social desirability bias. Confidentiality and voluntary participation were emphasized throughout data collection.

### 2.4 Theoretical framework

The study is grounded in women's economic empowerment theory and social capital theory (Shahzad *et al.*, 2025; Machio *et al.*, 2024) [21, 15]. Women's economic empowerment theory posits that access to resources, agency and participation in economic institutions are shaped by structural determinants such as age, marital status, education and asset ownership. These characteristics influence both women's access to

information and their capacity to engage in collective financial arrangements. Social capital theory further suggests that participation in community-based institutions is mediated by networks, trust and social embeddedness. In rural contexts where information diffusion largely occurs through interpersonal networks, women’s demographic and economic positioning may shape their exposure to knowledge about VSLAs. Knowledge in turn, functions as an enabling mechanism that facilitates informed decision-making and participation. Guided by this framework, the study conceptualizes a sequential pathway: women’s socio-demographic and economic characteristics influence their knowledge of VSLAs and knowledge subsequently influences participation.

**2.5 Study variables**

**2.5.1 Dependent variables**

Two primary outcome variables were examined:

- **Knowledge of VSLAs:** Assessed using structured questions measuring awareness of the existence of VSLAs and understanding of their services. Responses were categorized into levels of knowledge (That is; low, moderate, high) based on composite scoring criteria developed prior to analysis.
- **VSLA participation:** Defined as current membership in a Village Savings and Loan Association (member vs. non-member).

**2.5.2 Independent variables**

Independent variables included socio-demographic and economic characteristics:

- Age
- Marital status
- Education level
- Parity
- Household size
- Primary source of income
- Land ownership

These variables were selected based on theoretical relevance and empirical evidence linking them to women’s economic agency and community engagement.

**2.6 Statistical analysis**

Data were analyzed using descriptive, bivariate and econometric techniques. Descriptive statistics summarized participants’ characteristics, knowledge levels and participation status. Chi-square tests were used to examine bivariate associations between women’s characteristics and VSLA knowledge and between knowledge and participation. To identify independent predictors, binary logistic regression models were fitted. Two separate models were estimated:

- Determinants of VSLA knowledge
- Determinants of VSLA participation

The general econometric specification of the binary logistic regression model was:

$$\text{logit}(P_i) = \ln \left( \frac{P_i}{1-P_i} \right) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \varepsilon_i \dots \dots \dots 1$$

Where,  $P_i$  represents the probability that woman  $i$  is knowledgeable about VSLAs (Model 1) or is a VSLA member (Model 2);  $X_1 \dots X_k$  denote socio-demographic and economic characteristics;  $\beta_0$  is the intercept;  $\beta_k$  are regression coefficients; and  $\varepsilon_i$  is the error term. Adjusted odds ratios (AORs) with 95% confidence intervals were reported. Statistical significance was set at  $p < 0.05$ . Model diagnostics were performed to assess multicollinearity and goodness-of-fit.

**2.7 Ethical considerations**

Ethical approval for the study was obtained from the relevant institutional ethics review board. Authorization to conduct the study was granted by National and County authorities. Participation was voluntary, and written informed consent was obtained from all respondents prior to data collection. Confidentiality and anonymity were ensured by assigning unique identifiers to respondents and restricting access to the dataset to the research team only.

**3. Results and Discussion**

**3.1 Socio-demographic and economic characteristics of women**

The study achieved a high response rate of 98% (n=464), encompassing both VSLA and non-VSLA members. Women in Tausa Sub-Location were predominantly late adults (40–64 years, 30%) and middle-aged (35–39 years, 28%), with a median age of 48 years (SD = 15.35). Most participants were married (61%), multiparous (76%) and lived in households of 4-6 members (49%). Education levels varied with 47% completing primary school and 36% secondary school. Economically, half of the women relied on farming, 76% engaged in subsistence agriculture, and 85% owned land. Monthly incomes were generally low, with 82% earning less than KSh. 10,000, highlighting the financial vulnerability that characterizes this rural community.

These demographic and economic factors are pivotal in understanding VSLA engagement. Age, marital status, household size and economic activity shape the social networks and opportunities through which women acquire knowledge of VSLAs and decide whether to participate. The predominance of farming as a livelihood, coupled with land ownership suggests that women with economic independence and community standing are better positioned to access information and resources provided by VSLAs.

**Table 1:** Socio-demographic and economic characteristics of women in Tausa Sub-Location

Variable	Categories	N	%
Age	20	2	0.43
	20-24	21	4.53
	25-29	51	10.99
	30-34	40	8.62
	35-39	36	7.76
	40-44	38	8.19
	45-49	54	11.64
	50-54	63	13.58
	55-59	37	7.97
	60-64	39	8.41
	65-69	40	8.62
	70 and above	43	9.27
Education Level	None	18	3.88
	Primary	218	46.98
	Secondary	174	37.5
	Tertiary	54	11.64
Marital Status	Married	283	60.99
	Single	85	18.32
	Divorced	96	20.69
Parity	Nulliparous (0)	46	9.91
	Primiparous (1)	64	13.79
	Multiparous (>1)	354	76.29
Household Size	1	26	5.6
	2-3	166	35.78
	4-6	229	49.35
	More than 6	43	9.27
Monthly Income	<10,000	382	82.33
	10,000-20,000	64	13.79
	20,001-30,000	16	3.45
	>30,000	2	0.43
Main Source of Income	Farmer	220	47.41
	Business	55	11.85
	Employment	83	17.89
	None	106	22.84
Religion	Christian-Protestant	402	86.64
	Christian Catholic	55	11.85
	Muslim	1	0.22
	None	6	1.29
Land Ownership	Yes	394	84.91
	No	70	15.09
Crop Planted	Cash Crop	4	1.01
	Food Crop	302	75.88
	Both	92	23.12

*Source:* Field Survey, 2023

### 3.2 Village loans and savings association awareness

Overall, slightly more than half of the women interviewed demonstrated awareness of Village Savings and Loan Associations (VSLAs) operating within Tausa Sub-Location. Specifically, 54% of respondents reported that they were aware of the existence of VSLAs in their community. A comparable proportion (55%) indicated that they were knowledgeable about the services offered by these groups, including savings mobilization, internal lending and periodic share-out mechanisms. Findings indicate that nearly half of the women remain either unaware of VSLAs or lack adequate understanding of how they operate. This gap highlights the

presence of informational disparities within the community, despite the physical presence of savings groups. From an inclusion perspective, these results are significant. Awareness is a foundational prerequisite for participation; without knowledge of the existence and functioning of VSLAs women cannot make informed decisions about membership. The fact that awareness levels do not approach universality suggests that access to information about savings groups is unevenly distributed across the population. This study agrees with another study conducted in Uganda by Ongesa & Nyakundi, (2023) <sup>[18]</sup> where inadequate knowledge was found to hinder women entrepreneurship among the sampled respondents.

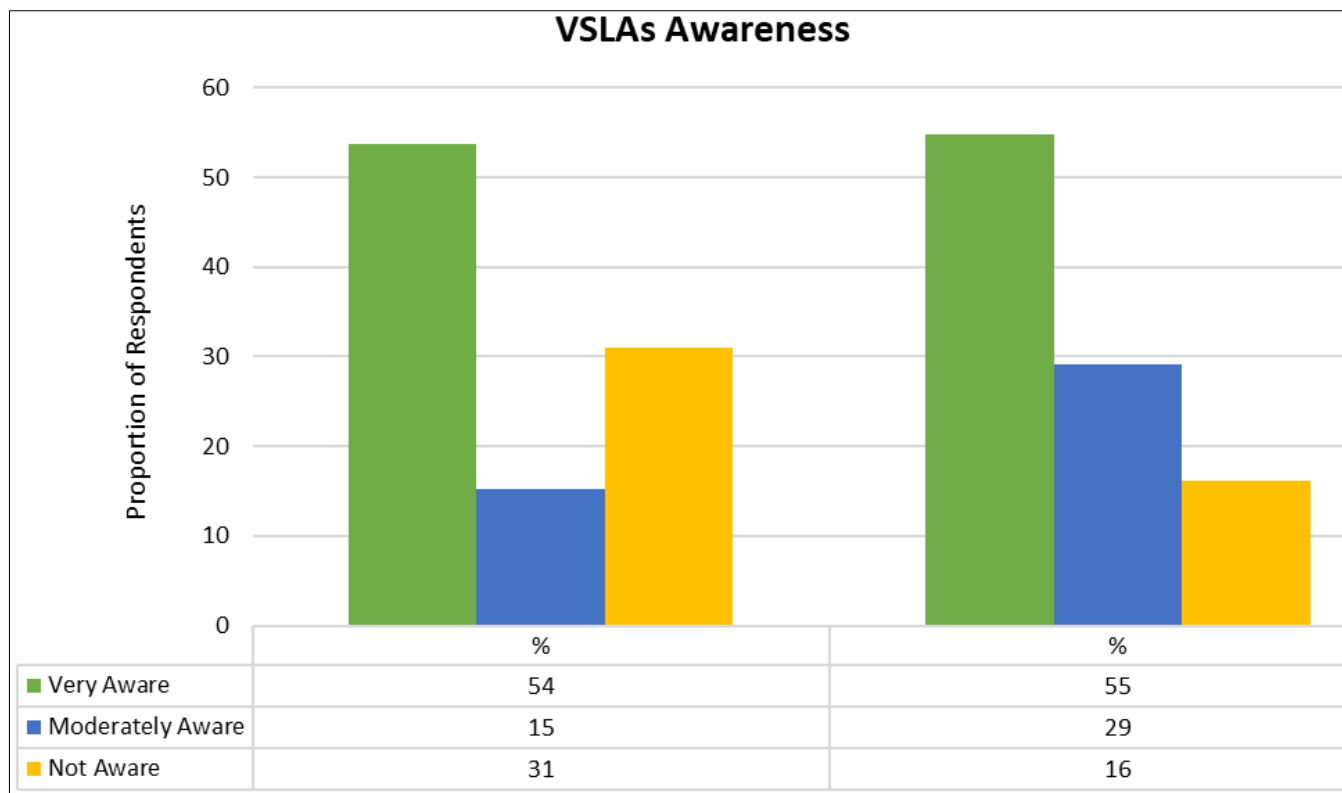


Fig 2: Awareness of VSLAs among Women in Tausa Sub-Location

### 3.3 Association between women’s characteristics and VSLAs knowledge

Bivariate analysis revealed that knowledge of Village Savings and Loan Associations (VSLAs) was unevenly distributed across socio-demographic and economic groups in Tausa Sub-Location. Pearson chi-square tests indicated statistically significant associations between VSLA knowledge and age, marital status, parity, household size, primary source of income and land ownership.

Age demonstrated a pronounced gradient. The proportion of women with high knowledge increased steadily across age categories. Younger women, particularly those below 30 years, exhibited substantially lower awareness compared to women aged 50 years and above. This pattern suggests that knowledge of VSLAs may accumulate over the life course, reflecting greater social integration and prolonged exposure to community-based initiatives among older women. Similarly, age was found to be positively correlated to knowledge of VSLAs knowledge (Chidimbah Munthali *et al.*, 2022) [10]. Marital status was also significantly associated with knowledge. Divorced and widowed women displayed higher levels of awareness compared to single women, with married women occupying an intermediate position. This may reflect

differing levels of household responsibility and financial engagement, where women managing households independently are more likely to seek information about financial opportunities. Parity and household size followed similar patterns. Women with more children and those from larger households were more likely to report higher knowledge levels. Larger family structures may increase interaction within community networks, thereby facilitating exposure to information about savings groups.

Economic factors further shaped awareness. Women whose primary source of income was farming exhibited higher knowledge compared to those without independent income. Land ownership was likewise positively associated with knowledge. Another study conducted in Uganda among maize farmers established that land ownership is positively and significantly related to VLSAs knowledge (Achieng *et al.*, 2025) [11]. These findings suggest that economic participation and asset ownership may increase exposure to informal financial discussions and collective activities where VSLAs are promoted. Overall, the bivariate results indicate that VSLA knowledge is socially patterned. Awareness is not uniformly distributed but varies across age, family structure, and economic positioning within the community.

**Table 2:** Association between individual-level characteristics and VSLA knowledge among women in Tausa Sub-Location

Variables	Categories	VSLA Awareness					Pearson $\chi^2$ (df), <i>p</i> -value
		High		Low		Total	
		N	%	n	%	N	
Age	<20	0	0%	2	100%	2	116.55(22), <0.001
	20-24	3	14%	18	86%	21	
	25-29	4	8%	47	92%	51	
	30-34	9	23%	31	78%	40	
	35-39	15	42%	21	58%	36	
	40-44	21	55%	17	45%	38	
	45-49	27	50%	27	50%	54	
	50-54	42	67%	21	33%	63	
	55-59	23	62%	14	38%	37	
	60-64	31	79%	8	21%	39	
	65-69	31	78%	9	23%	40	
70 and above	30	70%	13	30%	43		
Education Level	None	9	50%	9	50%	18	10.32(6), 0.193
	Primary	122	56%	96	44%	218	
	Secondary	82	47%	92	53%	174	
	Tertiary	23	43%	31	57%	54	
Marital Status	Married	149	53%	134	47%	283	31.29(4), <0.001
	Single	26	31%	59	69%	85	
	Divorced/Widowed	61	64%	35	36%	96	
Parity	Nulliparous (0)	9	20%	37	80%	46	32.95(4), <0.001
	Primiparous (1)	20	31%	44	69%	64	
	Multiparous (>1)	207	58%	147	42%	354	
Household Size	1	8	31%	18	69%	26	23.35(6), 0.01
	1-3	76	46%	90	54%	166	
	4-6	123	54%	106	46%	229	
	More than 6	29	67%	14	33%	43	
Main Source of Income	Farmer	149	68%	71	32%	220	60.60(6), <0.001
	Business	28	51%	27	49%	55	
	Employment	32	39%	51	61%	83	
	None	27	25%	79	75%	106	
Monthly Income	<10,000	181	47%	201	53%	382	9.20 (6), 0.245
	10,000-20,000	36	56%	28	44%	64	
	20,001-30,000	9	56%	7	44%	16	
	>30,000	2	100%	0	0%	2	
Religion	Christian-Protestant	206	51%	196	49%	402	4.75 (6), 0.735
	Christian Catholic	26	47%	29	53%	55	
	Muslim	1	100%	0	0%	1	
	None	3	50%	3	50%	6	
Land Ownership	Yes	219	56%	175	44%	394	29.72 (2), <0.001
	No	17	24%	53	76%	70	

Source: Field data 2023

### 3.4 Determinants of VSLAs knowledge

To identify independent predictors of knowledge, binary logistic regression analysis was conducted. After adjusting for potential confounders, only age and primary source of income remained statistically significant determinants of VSLA knowledge.

The effect of age persisted strongly in the adjusted model. Women aged 50 years and above were significantly more likely to be knowledgeable compared to younger women. In particular, those aged 60-64 years exhibited markedly higher odds of knowledge relative to the reference group. This suggests that the age gradient observed in the bivariate analysis is not simply explained by marital status, household size and

asset ownership, but reflects an independent influence. Age may capture accumulated social capital, leadership roles and sustained exposure to community financial initiatives. Conversely, age was found to be a negative and statistically significant determinant of knowledge about VLSAs among Cocoa farmers in Ghana (Agyapong *et al.*, 2024) [3].

Primary source of income also emerged as a decisive determinant. Women without independent income were significantly less likely to be knowledgeable compared to women engaged in farming. This indicates that economic inactivity limits access to informational networks through which VSLAs are discussed and promoted. In rural contexts, livelihood-based interactions often serve as conduits for

financial information, placing economically disengaged women at an informational disadvantage. This is in-line with another study conducted in Egypt which established that

income is appositive and significant determinant of VSLAS knowledge (Shaaban, 2022) [20].

**Table 3:** Binary logistic regression model on determinants of VLSAs knowledge

Knowledge of VSLAs and Services	Adjusted Odds Ratio	Std. Err.	Z	P>z	95% Confidence Interval	
<b>Age</b>						
<20	1	(empty)				
20-24	Ref					
25-29	0.452	0.386	-0.930	0.353	0.085	2.411
30-34	1.058	0.831	0.070	0.943	0.227	4.932
35-39	2.079	1.648	0.920	0.356	0.440	9.827
40-44	2.955	2.314	1.380	0.166	0.637	13.708
45-49	3.488	2.659	1.640	0.101	0.782	15.545
50-54	5.587	4.227	2.270	0.023	1.268	24.613
55-59	5.667	4.534	2.170	0.030	1.181	27.186
60-64	12.352	9.994	3.110	0.002	2.530	60.315
65-69	11.674	9.607	2.990	0.003	2.327	58.572
70 and above	9.734	8.113	2.730	0.006	1.901	49.857
<b>Marital Status</b>						
Single	1.012349	0.382151	0.03	0.974	0.4831	2.1215
Married	Ref					
Divorced/Widowed	0.9027739	0.288515	-0.32	0.749	0.4826	1.6889
<b>Parity</b>						
Nulliparous	Ref					
Primiparous	0.7923662	0.476694	-0.39	0.699	0.2437	2.5764
Multiparous	1.336147	0.702093	0.55	0.581	0.4771	3.7422
<b>Household size</b>						
1	0.3446626	0.197136	-1.86	0.063	0.1123	1.0574
1-3	Ref					
4-6	1.192221	0.314298	0.67	0.505	0.7111	1.9987
More than 6	2.001953	0.872651	1.59	0.111	0.8520	4.7043
<b>Main Source of Income</b>						
Farming	Ref					
Business	0.9242774	0.335492	-0.22	0.828	0.4538	1.8826
Employment	0.6976514	0.228185	-1.1	<b>0.000</b>	0.3675	1.3245
None	0.2191484	0.065934	-5.05	0.187	0.1215	0.3952
<b>Land Ownership</b>						
Yes	Ref					
No	0.6381568	0.251521	-1.14	0.254	0.2947	1.3817
_cons	3.373389	2.282943	1.8	0.072	0.8953963	12.70918

Source: Field Survey, 2023

### 3.5 Association between VSLAs knowledge and membership

VSLA membership was 53% (n=246). Knowledge strongly predicted participation: nearly all members were aware of VSLAs, and 9% of members were moderately aware of the services offered. Logistic regression revealed that women with high knowledge were more likely to be members than those with low knowledge (OR= 2105.99, p < 0.001), illustrating the critical role of awareness as a gateway to participation. Membership patterns mirrored predictors of knowledge. Elderly women (60+ years) had the highest participation (77%), while women under 34 years had membership rates below 25%. Divorced and widowed women were most likely to join (69%), compared with married (54%) and single women (31%). Larger households and women engaged in farming also had higher membership, while women without independent

income or land were underrepresented. These results highlight a strong pathway from individual characteristics to knowledge, and from knowledge to participation. Qualitative insights enriched this understanding: VSLAs were described as inclusive and safe spaces where women could discuss personal and financial challenges. Widows, divorced women and small-scale farmers particularly valued VSLAs for social recognition, emotional support and income-generating opportunities. Conversely, married women sometimes may have faced spousal resistance and women without steady income reported difficulty meeting contribution requirements, which constrained membership. These social and economic dynamics explain the observed quantitative patterns. This study agrees with Chidimbah Munthali *et al.* (2022) [10] study that found that VSLAs knowledge is positively and significantly related VLSAs membership and participation.

**Table 4:** Association between VSLA knowledge and VSLAs membership

Variable	Categories	VSLA Membership				Total (n)	Pearson $\chi^2$ , p-value
		Yes		No			
Awareness of VSLAs	Very Aware	246	99%	3	1%	249	452.10 <0.001
	Moderately Aware	0	0%	71	100%	71	
	Not Aware	0	0%	144	100%	144	
Awareness of VSLA Services	Very Aware	234	92%	20	8%	254	346.13, <0.001
	Moderately Aware	12	9%	123	91%	135	
	Not Aware	0	0%	75	100%	75	

Source: Field Survey, 2023

#### 4. Conclusion

This study examined the pathway linking women's socio-demographic and economic characteristics to knowledge of Village Savings and Loan Associations (VSLAs), and how such knowledge influences participation in Tausa Sub-Location, Taita Taveta County. The findings demonstrate that participation in VSLAs is not merely a matter of availability but is structured by informational access and underlying social positioning within the community. Knowledge of VSLAs was unevenly distributed and strongly shaped by women's age, marital status, household dynamics and economic engagement. Older women and those actively involved in farming or possessing independent income sources were significantly more likely to be knowledgeable about VSLAs. Women without independent income and asset ownership were less likely to be informed. These patterns indicate that informational access reflects existing social and economic hierarchies.

Crucially, knowledge emerged as a decisive determinant of participation. Women who were well-informed about VSLAs were substantially more likely to be members. This finding underscores the central role of knowledge as a gateway to community-based financial inclusion. It suggests that disparities in participation may originate not only from financial constraints but from informational inequalities embedded within rural social structures. Although VSLAs are designed as grassroots, self-managed and inclusive institutions, the evidence from Tausa Sub-Location indicates that inclusion is not automatic. Without deliberate strategies to expand awareness and reach socially and economically marginalized women, community-based financial mechanisms risk reproducing the very inequalities they aim to address. By foregrounding knowledge as a mediating pathway between structural characteristics and participation, this study advances a more nuanced understanding of financial inclusion. It shifts attention from membership alone to the processes through which women become informed and engaged. In doing so, it contributes context-specific evidence to inform more equitable outreach and program design in rural financial inclusion initiatives.

#### 5. Recommendations

The findings of this study have clear policy and programmatic implications. Efforts to expand women's participation in VSLAs must move beyond simply establishing savings groups and instead address informational barriers that shape inclusion.

First, targeted outreach strategies are essential. Younger women, women without independent income and those less embedded in farming networks should be explicitly prioritized in awareness campaigns. Community sensitization forums, structured information sessions and peer-to-peer outreach mechanisms can help bridge informational gaps. Information dissemination should not rely solely on existing social networks, which tend to privilege older and economically active women.

Second, integration with local administrative and community structures can enhance reach. Collaboration with community health volunteers, agricultural extension officers and women's groups can facilitate systematic dissemination of information about VSLAs, ensuring that awareness extends beyond socially dominant groups. Third, program implementers should incorporate structured financial literacy components into VSLA promotion efforts. Clear explanations of operational procedures, contribution requirements and benefits may reduce apprehension among women who perceive savings groups as inaccessible and financially burdensome. Fourth, contribution structures and membership requirements should remain flexible to accommodate women with irregular and low incomes. Without such flexibility, economically vulnerable women may remain excluded even when informed about VSLAs. Finally, policymakers should recognize that informational inequality can undermine the inclusivity of grassroots financial models. Monitoring frameworks for financial inclusion programs should therefore track not only membership rates but also awareness levels across demographic and socio-economic groups. Expanding financial inclusion requires intentional strategies to democratize information access. Stakeholders need deliberate efforts to ensure that knowledge and the opportunity to participate is equitably distributed across all segments of the community.

#### Conflict of interest

The authors reported no potential conflict of interest.

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