Association Between COSALO Savings Mobilization in Supporting Members' Livelihood Activities and Economic Welfare: A Cross-Sectional Study of Church-Based Savings and Loan Groups in Siaya County, Kenya

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DOI: https://doi.org/10.47772/IJRISS.2026.101000280

Received: 13 October 2026; Accepted: 19 October 2026; Published: 01 November 2026

ABSTRACT

Community-owned savings and loan (COSALO) groups involve regular savings by their members and the subsequent lending of the pooled resources for livelihood development purposes. Nonetheless, there is limited information on the role of the use of mobilized resources in improving members' economic welfare in faith-based organizations. This cross-sectional study sought to determine the association between the utilization of mobilized resources for livelihood development and members' perceived economic welfare. The study was conducted among 200 members of COSALO groups in the Anglican Diocese of Bondo, Siaya County, Kenya. Participants were members of a COSALO group with at least one year of membership. Data were collected using a structured, interviewer-administered questionnaire and included the perceived change in economic welfare on a five-point Likert scale and the characteristics of resource use. Associations between perceived change and each characteristic were defined using Pearson chi-square analyses (using Monte Carlo exact p-values due to sparse cells), Holm correction across the five primary tests and linear-by-linear trend analysis. Overall, 65.0% (95%CI: 58.2-71.3) of participants were aware that their economic welfare had improved either much better or better. Perceived change in economic welfare was linked with the main objective of resource use (V= .20; Holm-adjusted p= .032), the capital used (V= .20; Holm-adjusted p= .038) and the amount of proceeds which had been reinvested (V= .20; Holm-adjusted p= .042). For example, for those not reinvesting any of the proceeds, the share seeing an increase in economic welfare was 27%, compared with 87% for those reinvesting three-quarters or more of the proceeds. The frequency of resource use and support received in the form of technical or advisory services were not associated with change in economic welfare in the crude analysis. The results are limited by the purposive sampling, a cross-sectional design with no baseline measurement or a comparison group, a single self-reported measure of perceived change in welfare, and the lack of adjustments for confounders; thus, the results should be interpreted as associations rather than causal relationships. The findings indicate that pooled savings schemes like COSALO deserve consideration as a vehicle for providing livelihood support, particularly if resources mobilized are channeled into income-generating activities and reinvested; longitudinal studies with comparison groups are required to establish whether the associations are causal.

Keywords: Community savings and loan groups, Savings mobilization, Economic welfare, Livelihoods, Kenya

INTRODUCTION

Community saving and loan associations, known by different names such as village saving and loan associations, accumulating and credit associations, and chamas, enable members to regularly contribute to a shared fund and to borrow from the pot (Heitzig & O'Keeffe-O'Donovan, 2024; Lukwa et al., 2022). They are mostly significant where formal financial services are inaccessible, expensive, or require collateral. Even though the usage of formal financial services in Sub-Saharan Africa increased by 12 percentage points among the adult population, reaching 35%, most adults save in these groups outside the formal banking system (World Bank, 2025). Kenya is one of the countries that have achieved higher financial inclusion rates in the region, with 84.8% of adults owning at least one account in 2024, compared to 81.9% in Siaya County, where the current study was

conducted (Central Bank of Kenya et al., 2024).

Evidence on the positive contribution of savings groups to welfare is diverse, but the extent to which they influence the well-being of their members appears to differ. A cluster-randomized trial conducted in Uganda and Malawi revealed that promoting savings groups had a positive direct effect on businesses and financial inclusion with spillover effects on household income and food security (Heitzig & O'Keeffe-O'Donovan, 2024). In addition, an experiment conducted in Uganda revealed that promoting these groups has a positive impact on economic empowerment with improved well-being (Bjorvatn & Tungodden, 2023). However, a systematic review of informal saving groups in Sub-Saharan Africa found that these groups have financial and social benefits, but the effects varied depending on the setting (Lukwa et al., 2022). In Kenya, accountability mechanisms such as the safekeeping of the groups' funds and the segregation of the roles of chair and treasurer were associated with higher household contributions (Agesa & Agesa, 2025). Furthermore, in Murang'a East, out of 969 respondents who participated in a self-help group, most indicated that they had experienced improved wealth with income-generating assets and access to loans as significant predictors (Runo et al., 2024).

What this literature leaves hanging is the mechanism by which mobilized savings translate into welfare. The Sustainable Livelihoods Framework regards savings and loans as financial capital that derives its welfare value from being converted into livelihood strategies, under institutional and structural conditions (Natarajan et al., 2022). Several studies have found empirical support for this concept, such as participation in village savings and lending associations being associated with higher rice productivity and profit due to increased access to financial capital in Tanzania (Mtenga et al., 2024) and membership of community saving and credit groups being related to access to livelihood capitals and reduced likelihood of multidimensional poverty in rural Uganda (Arinaitwe, 2024). If conversion is key, then how members deploy pooled funds, not whether they save, is likely to be related to their prospects. This has rarely been explored in church-based groups, which blend financial intermediation with the trust and accountability of a faith community.

In the Diocese of Bondo of the Anglican Church of Kenya (ACK) in Siaya County, church-based Community Savings and Loan (COSALO) groups have existed since 2017 and cater to approximately 1,000 members out of 10,000. There is a lack of evidence on whether the utilization patterns of members of these groups influence their economic welfare. This study therefore establishes the relationship between the utilization of mobilized COSALO savings in livelihood activities by members and their perceived economic welfare levels. It evaluates the extent to which changes in welfare levels are associated with the various attributes of the use of the resource, including the primary purpose, amount of capital invested, proportion of returns re-invested, technical or advisory support provided, and frequency of use. The findings add to the discourse on informal financial intermediation and household welfare, and provide insights for group administrators and policymakers on the potential of community-based finance to enhance community welfare.

METHODOLOGY

2.1 Study design and setting

The study adopted an analytical cross-sectional survey in the ACK Diocese of Bondo, which covers Bondo and Rarieda sub-counties of Siaya County in western Kenya. The area is predominantly rural and the livelihoods of the people are largely dependent on agriculture, fishing and small enterprise (Siaya County Government, 2025). Cross-sectional surveys have been used to study welfare among members of savings and loan associations in other parts of Africa (Wolukawu & Sendagi, 2024; Wu et al., 2022).

2.2 Participants and sample

Eligible participants were adults aged 18 years and over who were members of COSALO for at least 12 months, available during fieldwork, and gave informed consent. The target population was approximately 1,000 members. A finite-population formula by Yamane, $n = N/[1 + N(e)^2]$, was used as a sample-size planning tool. With $N \approx 1{,}000$, a sample of 200 yields, mathematically, roughly a precision parameter of $e = 0.063$ (6.3%). The final sample consisted of 200 purposely selected, information-rich members (10 clergy, 20 evangelists, and 170 lay members). The sampling procedure represented a non-probability purposive sampling method, as opposed

to the simple random sampling technique. Since Yamane's formula is used for calculating sample size under the assumption of probability sampling, the calculation does not make the sample statistically representative of all COSALO members. All the 200 participants selected filled the questionnaire; thus, the percentage of participants who filled the questionnaire is 100% of the selected and not of the total population. Therefore, the findings should be considered as observations made on this sample and should not be generalized statistically to the bigger population.

Recruitment and participating groups. The Diocese's COSALO leadership was able to provide access to eligible members. Eligible members were sampled purposively. Recruitment criteria specified that participants had to be an adult, a member of COSALO for at least 12 months, available during fieldwork, and willing to participate. The final sample consisted of 10 clergy, 20 evangelists, and 170 lay members. Information on the numbers of participating COSALO group members was unavailable. The source and degree of completeness of group member lists was unavailable. The number of eligible members who declined to participate was unavailable. Information on these aspects of the sampling strategy is needed to evaluate the coverage of the recruitment campaign, the representativeness of the sample, and the potential for selection bias. The non-probability sampling strategy does not allow calculation of the probability of selection for each eligible member.

2.3 Instrument and data collection

Data were collected from target respondents through a well-structured questionnaire administered face-to-face in a private setting by the principal investigator and four trained research assistants. The assistants had a minimum of a diploma in social sciences, were proficient in the local languages and did not belong to the groups they were interviewing. The questionnaire was developed in English and translated into Kiswahili and Dholuo where needed, by forward and independent back translation. It was evaluated for its content validity by a panel of at least five experts and pre-tested by 30 participants from comparable groups who were not included in the final sample. The interviewers used non-leading questions and did not encourage COSALO membership as a route to improved welfare.

2.4 Measures

The outcome was a single self-reported item on members' perception of change in household economic welfare since enrolling in COSALO rated on a five-point scale (much worse, worse, about the same, better, much better) and, for the sensitivity analysis, dichotomized as better or much better compared with all other responses. This is a subjective, retrospective measure; no baseline data or objective measures of income or assets were available. The explanatory variables were five categorical attributes of the use of mobilized resources in livelihood activities, namely, the primary purpose of use (agricultural inputs, business start-up or expansion, school fees or education, household consumption, or emergency and medical expenses), capital invested in livelihood activities (five bands in Kenya shillings (KSh) between less than 10,000 and 100,000 or more), the share of proceeds reinvested (none to 75% or more), technical or advisory support received (none, financial literacy training, agricultural extension advice, business management training, or combined financial and technical advice), and the frequency of resource use (seasonal or crop-cycle, bi-annual, quarterly, monthly, or as needed). In this paper, the mobilization of savings refers to the pooling of members' contributions in the COSALO fund and their utilization in livelihood activities but not the volumes of contributions.

2.5 Statistical analysis

Findings were presented as frequencies and percentages with a Wilson 95% confidence interval for the overall proportion reporting better or much better welfare. For each explanatory variable, a cross-tabulation was conducted with the five-point outcome and tested using Pearson's chi-square test with Cramér's V as the effect size. Because 40-52% of cells had expected counts below five, Monte Carlo exact p-values (50,000 permutations of the outcome) were also reported while Holm's correction was used across the family of five primary tests (one for each explanatory variable compared against the five-point outcome). Holm-adjusted p-values were generated from the unrounded Pearson p-values computed from the test statistics; a separate Holm correction was performed across the five tests of the dichotomized outcome. A linear-by-linear (Mantel-Haenszel) test was carried out for the two ordered exposures (capital invested and share reinvested) in a secondary analysis, and

was not corrected for multiplicity. As a sensitivity analysis, the outcome was dichotomized and the tests repeated. The statistical package used for data analysis in the study was SPSS version 27. The two-tailed alpha level for all significance tests was set at $p < .05$ and was applied to the primary tests with Holm-adjusted p-values. All analyses were based on cross-tabulated frequencies and were calculated using SPSS version 27. Since the sample was purposive, the Wilson confidence interval and all p-values should be considered descriptive and not inferential statistics. Also, please note that the results should be interpreted strictly association-wise. Adjustment for confounders was not possible as respondent-level data were not available for this analysis.

2.6 Ethical considerations

Ethical approval for this study was granted by Great Lakes University of Kisumu Scientific and Ethical Review Committee (GLUSERC; approval number GLUSERC/024/2025). In addition, a research licence was issued by the National Commission for Science, Technology and Innovation (NACOSTI; licence number NACOSTI/P/26/4194258), and permission was granted by the Board of Finance of the ACK Diocese of Bondo. Written informed consent was obtained from all participants; those participants who could not write gave a thumbprint, witnessed by a signature, on the consent forms after being verbally informed of the research's objectives and procedures. The participants were free to withdraw their consent at any time without jeopardizing their services at the church or COSALO membership.

RESULTS

3.1 Respondent characteristics

All 200 participants filled out the questionnaire (Table 1). Women comprised 56.0%, while the majority (52.5%) were aged 36-60 years. Most respondents were married (68.0%), secondary educated (37.0%), and belonged to the COSALO for 4-6 years (60.0%). Farming was the main source of livelihood for half of the respondents (50.0%), followed by business (40.0%) and employment (10.0%).

Table 1: Characteristics of the 200 COSALO members surveyed

Characteristic	**n**	**%**
Sex		
Female	112	56.0
Male	88	44.0
Age group (years)		
18-29	25	12.5
30-35	35	17.5
36-60	105	52.5
61 and above	35	17.5
Marital status		
Married	136	68.0
Single	24	12.0
Widowed	30	15.0
Separated or other	10	5.0
Highest education		
Primary	56	28.0
Secondary	74	37.0
College or tertiary	48	24.0
University	22	11.0
COSALO membership duration (years)		
1-3	38	19.0
4-6	120	60.0
7-9	42	21.0
Main source of livelihood		
Farming	100	50.0

Business	80	40.0
Employment	20	10.0

Note. $N = 200$. Percentages for main source of livelihood are as reported for the sample; counts are derived from these percentages. COSALO = Community Savings and Loan.

3.2 Overall change in economic welfare

Overall, 65.0% of members (95% confidence interval 58.2-71.3) reported better or much better economic welfare since joining COSALO (45.0% better and 20.0% much better). A further 25.0% reported no change and 10.0% reported worse (7.5%) or much worse (2.5%) welfare.

3.3 Welfare change by use of COSALO resources

Perceived changes in welfare were associated with the main reason for the use of the resources (Tables 2 and 3; Fig. 1a). More favorable change was reported by 78.8% of members using resources for business start-up or expansion and 70.0% of those who bought agricultural inputs than those who used resources for school fees or education (54.3%) or both household consumption and emergency or medical expenses (30.0%) ($\chi^2(16) = 33.43$, $p = .006$, $V = .20$).

Table 2: Members reporting better or much better economic welfare, by use of COSALO resources

Characteristic of resource use	Members (n)	Better or much better (n)	%
Primary purpose of using COSALO resources			
Agricultural input purchase	50	35	70.0
Small business start-up or expansion	85	67	78.8
School fees or education	35	19	54.3
Household consumption	20	6	30.0
Emergency or medical expenses	10	3	30.0
Capital invested in livelihood activities			
Less than KSh 10,000	30	11	36.7
KSh 10,000-24,999	65	36	55.4
KSh 25,000-49,999	70	56	80.0
KSh 50,000-99,999	25	19	76.0
KSh 100,000 or more	10	8	80.0
Share of proceeds reinvested			
None (0%)	15	4	26.7
Less than 25%	40	19	47.5
25-49%	80	54	67.5
50-74%	50	40	80.0
75% or more	15	13	86.7
Technical or advisory support received			
None	45	21	46.7
Financial literacy training	60	49	81.7
Agricultural extension advice	40	25	62.5
Business management training	35	22	62.9
Financial and technical advice	20	13	65.0
Frequency of using COSALO resources			
Seasonal or crop cycle	75	41	54.7
Bi-annually	35	27	77.1
Quarterly	45	35	77.8
Monthly	25	14	56.0
As needed or irregular	20	13	65.0

Note. $N = 200$ for each characteristic. Percentages are the proportion of members in each category reporting better or much better economic welfare since joining COSALO. KSh = Kenya shillings.

Capital invested was also associated with welfare change ($\chi^2(16) = 32.15$, $p = .010$, $V = .20$; Fig. 1b). The proportions reporting better or much better welfare were 36.7% among those who invested less than KSh 10,000, and 55.4% for KSh 10,000-24,999 and ranged from 76.0% to 80.0% among members in the three highest bands. The trend was significant and ordered (linear-by-linear $\chi^2(1) = 20.14$, $p < .001$). The amount of the proceeds reinvested showed the most pronounced gradient ($\chi^2(16) = 30.89$, $p = .014$, $V = .20$; Fig. 1c): the favorable change increased from 26.7% among members who reinvested nothing to 47.5%, 67.5%, 80.0% and 86.7% in successive reinvestment classes (trend $\chi^2(1) = 24.24$, $p < .001$).

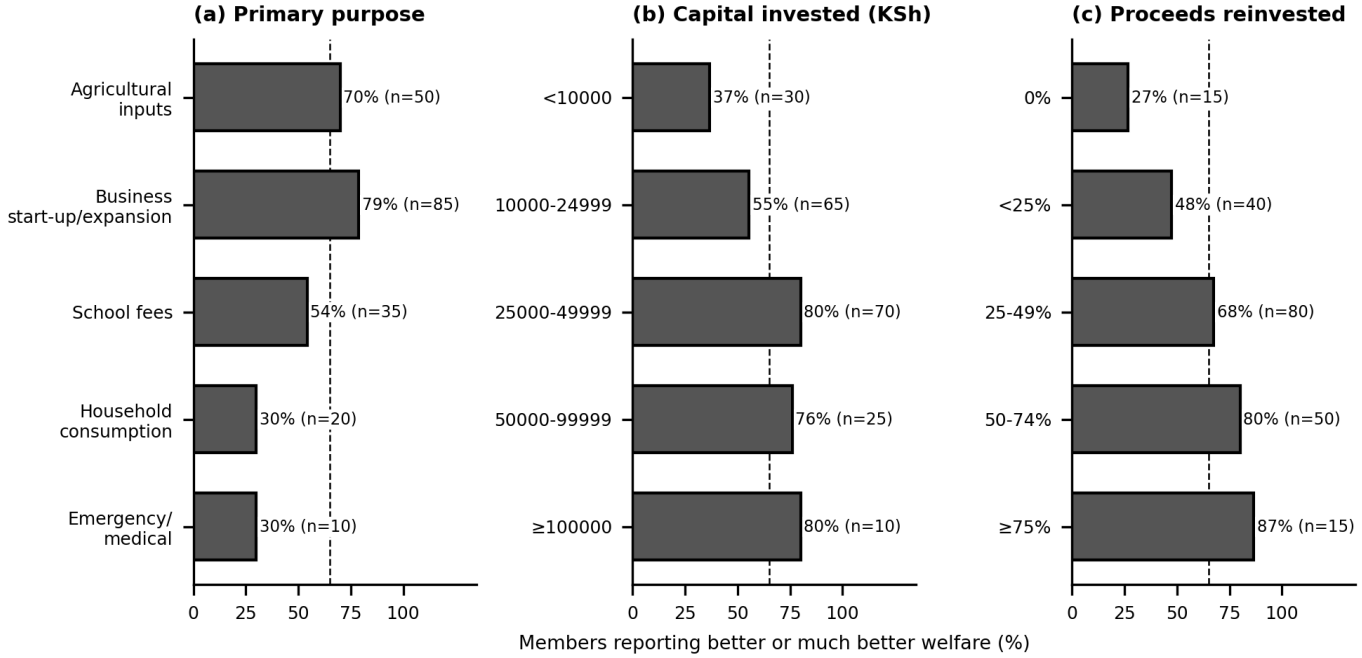


Figure 1: Share of members reporting better or much better welfare by resource use. Bars show the percentage within each category of (a) primary purpose, (b) capital invested and (c) share of proceeds reinvested; labels give the percentage and number of members. The dashed line marks the overall proportion (65.0%). KSh = Kenyan shillings.

Monte Carlo exact tests gave broadly equivalent results ($p = .008$, .012 and .016 for purpose, capital and reinvestment), and the three associations remained statistically significant after Holm correction (adjusted $p = .032$, .038 and .042, based on the unrounded Pearson p-values) across the five primary tests in contrast to the lack of association between technical or advisory support ($\chi^2(16) = 19.76$, $p = .231$, $V = .16$) or frequency of resource use ($\chi^2(16) = 13.63$, $p = .626$, $V = .13$) and welfare change.

Table 3: Tests of association between resource use and perceived welfare change

	Pearson chi-square, five-point outcome					**Dichotomised outcome**	
Characteristic of resource use	**$\chi^2(16)$**	***p***	***V***	**MC *p***	**Holm *p***	**Dich. $\chi^2(4)$**	**Holm *p***
Primary purpose of using COSALO resources	33.43	.006	.20	.008	.032	25.61	< .001
Capital invested in livelihood activities	32.15	.010	.20	.012	.038	22.47	< .001
Share of proceeds reinvested	30.89	.014	.20	.016	.042	23.33	< .001
Technical or advisory support received	19.76	.231	.16	.227	.462	14.15	.014
Frequency of using COSALO resources	13.63	.626	.13	.636	.626	9.91	.042

Note. χ^2 = Pearson chi-square; *V* = Cramér's *V*; MC *p* = Monte Carlo exact *p* (50,000 permutations); Holm *p* = Holm-adjusted *p* calculated from the unrounded *p*-values across the five tests in the same analysis (the five primary tests form one family; the dichotomised-outcome tests form a separate family); Dich. = outcome dichotomised as better or much better versus all other responses. In the full tables, 40-52% of cells had expected counts below 5. Linear-by-linear trend: capital invested $\chi^2(1) = 20.14$, $p < .001$; share reinvested $\chi^2(1) = 24.24$, $p < .001$.

In the sensitivity analysis with a dichotomized outcome, purpose, capital invested and reinvestment remained strongly associated with favourable change (all Holm-adjusted p < .001). Technical or advisory support ($\chi^2(4) = 14.15$, Holm-adjusted p = .014) and frequency of use ($\chi^2(4) = 9.91$, Holm-adjusted p = .042) also showed statistical significance on this coarser outcome, although the latter is borderline and these sensitivity analyses were exploratory. Favourable change was less typical among members who did not receive any support (46.7%) than among those who did receive any support (62.5-81.7%), while the pattern for frequency was not monotonous (54.7% for seasonal use, 77.1% bi-annual, 77.8% quarterly, 56.0% monthly and 65.0% as needed).

DISCUSSION

4.1 Principal findings

The survey reports that 2/3 of our sampled church-based savings group members perceived their household economic welfare to have improved (better or much better) since they became COSALO members, as measured by a single self-reported item. Improvements in perceived welfare were more common among those who invested the mobilized resources in their businesses in their agricultural activities, who invested more capital and who re-invested a higher proportion of returns. The associations were of small-to-moderate size (Cramér's V ≈ .20) and were generally consistent in the sensitivity analysis (see below). They were statistically significant even after Holm correction (adjusted p = .032, .038 and .042), but given the borderline adjusted p-values, the sparse cells and the purposive sample, they should be cautiously interpreted. Usage frequency and advice reception did not differentiate between outcome groups in the primary analysis.

4.2 Interpretation

These patterns fit a conversion view of the mobilization of savings. Within the Sustainable Livelihoods Framework, financial capital contributes to welfare by being converted into welfare through the livelihood strategies into which it is channeled, shaped by institutional and broader structural conditions (Natarajan et al., 2022). Our findings are consistent with the hypothesis that perceived welfare gains are related to a pooled fund's uses, the quantities invested, and the quantities of return that are reinvested in the enterprise (contribution volumes were not analyzed; therefore, the relative contributions of accumulation cannot be evaluated). The gradient in the reinvestment share, from 27% to 87% of favorable change is compatible with such a conversion process. However, the causal relationship is indeterminable and unmeasured confounders such as initial wealth, enterprise type, age or education might explain part of the associations. Members whose enterprises are already doing well have more to reinvest and thus may be predisposed to report an improvement, making reinvestment as likely a consequence of an improvement in welfare as a precursor to it.

4.3 Relation to previous studies

The direction of our findings is consistent with more rigorous causal designs. Randomized trials in Uganda and Malawi confirm that savings groups have economic benefits when they promote productive financial activity (Heitzig & O'Keeffe-O'Donovan, 2024), and quasi-experimental evidence in Tanzania finds that participation impacts productivity and profit by expanding access to financial capital (Mtenga et al., 2024). Our results complement Kenyan evidence that income-generating assets and access to loans predict improvements in perceived wealth among self-help group members (Runo et al., 2024), and findings from rural Uganda that group membership expands access to livelihood capitals (Arinaitwe, 2024). The present study adds nuance to the understanding of deployment: within a single set of groups and around a common outcome, the purpose, scale and reinvestment of funds were found to be associated with perceived welfare, consistent with the heterogeneity of effects reported in reviews (Lukwa et al., 2022). It also expands this evidence into a faith-based context.

4.4 Consumption and emergency uses

Members who used resources primarily for consumption within the household or for emergency purposes were the least likely to report improvements (30%). This should not be seen as a reflection of shortcomings on the part of the groups. Informal savings can act as insurance against consumption shocks (Kouandou & Zeh, 2024) and group welfare funds can serve as informal insurance (Gonzales Martinez et al., 2024). The fact that borrowers in turn are those likely to be in the greatest need is consistent with the notion that the lower favorable rate reflects initial conditions and not the loan itself. The analysis is based on cross-sectional data, and cannot distinguish between these possibilities.

4.5 Advice and frequency of use

The absence of a significant association for use frequency is unsurprising given that it does not capture what funds are used for or how productively. The evidence on technical and advisory support is more ambiguous. While the Pearson test on the five-category outcome found no association, the dichotomized sensitivity analysis suggested that members with no support less often reported favorable change. The full-table test diffuses its power across 16 degrees of freedom with numerous sparse cells, whereas dichotomizing focuses it, and sensitivity analyses were exploratory. We therefore regard the advice evidence as inconclusive as a hypothesis for future work: whether support improves outcomes may be conditional on its intensity and whether members hold the capital and market access to leverage it, in line with the livelihoods literature's structural conditions (Natarajan et al., 2022).

4.6 Implications

For COSALO managers, these associations suggest that it may be useful to evaluate loans and withdrawals according to purpose, and that it would be worth encouraging members to channel some funds into agriculture and enterprise and to reinvest part of the proceeds, for instance via basic investment guidance during meeting sessions. Given the fund's reliance on trust and repayment culture, such measures need to be coupled with good governance; accountability mechanisms have been associated with higher contributions (Agesa & Agesa, 2025), and governance practices with self-help group sustainability (Njoroge et al., 2025). For policymakers and church leadership, the study indicates that community savings schemes are likely to be more effective when they are associated with enterprise, agricultural and financial-inclusion programmes, than as stand-alone savings products, a hypothesis that needs to be tested in the context of designs that support causal inference.

4.7 Limitations

The study has some limitations. The sample was purposive and drawn from a single Diocese, and is not representative of members of COSALO. While the sample size was based on Yamane's formula (as a reference), this does not make a non-probability sampling approach representative, and the 100% completion of the sample does not address this. Therefore, the confidence interval and p-values reported should be interpreted as describing the patterns observed in the sample, but should not be taken as evidence from a probability sample. The study was cross-sectional: it did not have baseline measures or a comparison group of non-members, and so it could not determine the causal effect of membership in COSALO, or whether it was the use of the funds that led to the improvement; reverse causation, including the possibility of reinvestment following improved welfare, is plausible. Welfare was measured using a single self-rated question regarding perceived change since joining and was subject to recall and social desirability bias; it was not validated against objective measures of income or assets, and exposure and outcome were measured at the same time. The cross-tabulated counts provided did not allow adjustment for age, sex, education, length of membership, or type of livelihood. Therefore, exact tests had to be used because of the sparsity of cells. Although the five main tests were adjusted for multiplicity, the sensitivity analyses were not pre-specified. Volumes of contribution were not examined, so this study addresses the deployment of mobilized savings rather than the quantity of savings. The authors recommend future studies to use probability sampling, longitudinal designs with baseline measures and comparison groups, objective indicators of income and assets, and multivariable models adjusted for possible confounders.

CONCLUSION

Among members of church-based COSALO groups in the Diocese of Bondo, favorable change in perceived economic welfare was associated with using mobilized funds for business and agriculture, investment of larger amounts of capital and reinvestment of a larger share of proceeds, but not the frequency of resource use. The findings, based on an associational analysis and purposive sampling, should not be interpreted as asserting a causal relation between COSALO and welfare gains. They do, however, suggest that perceived welfare gains from savings mobilization may be linked to its conversion into productive investment. Group managers and policymakers can respond by combining mobilization with loan appraisal by purpose, reinvestment and enterprise support, and effective governance. Probability-based longitudinal studies with comparison groups are needed to determine if these associations are causal.

ACKNOWLEDGEMENTS

The authors thank the leadership and members of the Anglican Church of Kenya Diocese of Bondo, the study respondents and the research assistants.

Ethical approval

Ethical approval was obtained as described under Methodology (GLUSERC/024/2025; NACOSTI/P/26/4194258).

Conflict of interest

The authors declare that they have no competing interests.

Data availability

The cross-tabulated counts associated with all analyses are provided (Supplementary data savings.csv) and can be used to reproduce all test statistics in Tables 2 and 3. Further, respondent-level data can be obtained from the corresponding author on reasonable request, with due regard to participants' confidentiality.

Funding

This research received no specific funding.

Authors' contributions

Nyunja, G. O: Conceptualization, Methodology, Data acquisition, Writing -original draft. Ogallo, L. and Amira, E.: Supervision, Validation, review, and editing.

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