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WHO WANTS TO GET INVOLVED? DETERMINANTS OF SANYA JUU FARMERS' WILLINGNESS TO INVEST IN A DAIRY PROCESSING CO-OPERATIVE PLANT

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ABSTRACT: Smallholder dairy farmers in Tanzania face persistent challenges in accessing formal markets and securing fair prices for their produce. Although cooperatives offer a promising platform for collective investment and market integration, actual financial participation remains uneven. This study explored what drives dairy farmers in Sanya Juu to invest—or not—in a proposed dairy processing cooperative. Drawing on the Theory of Planned Behavior, it examined how farmers' belief in cooperative values, their financial literacy, and perceived benefits influence their investment decisions. A total of 150 dairy farmers, including both cooperative members and non-members, were surveyed using structured questionnaires. Key informants were used to collect qualitative data for triangulation of quantitative findings. Quantitative data were analyzed through descriptive statistics, t-tests, and binary logistic regression while qualitative data were thematically analyzed. The findings indicate that while 63.3% of all respondents expressed willingness to invest, a slightly higher proportion of non-members (67.2%) were willing compared to members (60.7%). Differences in belief in cooperative values between the two groups were generally insignificant, although non-members showed stronger conviction in integrity, while members placed more emphasis on solidarity. Binary Logistic regression analysis revealed that belief in self-help, self-responsibility, solidarity, and equity significantly influenced the willingness to invest. Demographic factors such as age, sex, and education had no meaningful predictive power. The

study concludes that farmers' internal commitment to cooperative values—rather than membership status or background—plays a decisive role in shaping their investment behavior. To encourage broader participation, cooperatives must foster transparent leadership and reinforce cooperative values through continuous education. Policy support should also prioritize inclusiveness and trust-building mechanisms to expand member and non-member engagement.

Keywords: Cooperative investment, dairy farmers, cooperative values, Sanya Juu, participation

INTRODUCTION

Dairy farming continues to be a lifeline for rural households across the world (Chang'a, 2025; FAO, 2021; Dror & Allen, 2011). Beyond contributing to food security, it also generates cash income that supports education, health, and social needs (Kimaro *et al.*, 2013). According to OECD/FAO (2023), global milk production has grown significantly, driven largely by improved production technology, population expansion and urban dietary shifts. However, this growth has been uneven, with Asia accounting for over 42%, followed by Europe (26%), and the Americas (18%) (FAO, 2023). Despite this growth in other parts of the world, the dairy industry remains underdeveloped in Sub-Saharan Africa, where processing infrastructure is limited and smallholder farmers face significant market access barriers (Reardon *et al*., 2021). In many Sub-Saharan African countries—including Tanzania—small-scale dairy producers face persistent difficulties in processing technologies, accessing structured markets, and competitive pricing (Maleko et al., 2018). While the appetite for dairy products is increasing, especially among urban populations, smallholders often remain stuck at the lower end of the value chain, selling raw milk at low margins and bearing the risks of spoilage and market rejection (Munyori, 2019; Urugo *et al*., 2024). ILRI (2022) notes that in many countries, including Tanzania, more than 70% of milk is consumed in raw form in the informal markets. This reliance on informal marketing exposes farmers to fluctuating prices, quality concerns, and regular losses—especially during hot seasons when milk spoils before it reaches consumers. A dairy farmer in Sanya Juu in Kilimanjaro region, for instance, may have no access to cold storage and is therefore forced to sell milk at any available price, often less than its worth. The lack of nearby processing facilities makes it difficult for such farmers to tap into larger markets or transform their milk into higher-value products like yogurt or cheese. In Tanzania, dairy farming plays a key role in the livelihoods of rural households, especially in regions like Kilimanjaro, Iringa, Tanga, Arusha and Mwanza (Chang'a, 2025). Tanzania is estimated to have about 25 million cattle, but only a small fraction, around 1.5 million, are improved dairy breeds capable of producing significant quantities of milk (MLF, 2022). Despite producing nearly 2.85 billion litres annually, the sector struggles with poor integration into formal processing systems. Over 70% of the milk is sold informally at the farm gate, with farmers often earning just TZS 900 to 1000 per litre—far below the market value of processed products like yogurt or UHT milk, which sell for more than TZS 4,000 to TZS 5,000 of the equivalent amount. During the rainy season, some farmers are forced to dump unsold milk, as transportation becomes impossible and local demand saturates. These issues underscore a broader failure to harness the full value of dairy production through processing and market organization. In countries like Kenya and Rwanda, dairy processing cooperatives have proven to be a turning point for smallholder farmers (Onyango *et al*., 2023). By contributing capital or supplying raw milk to their cooperative,

members collectively invest in infrastructure such as milk chilling tanks, pasteurizers, and small-scale packaging units. Kenya's New Kenya Co-operative Creameries (KCC), for example, is now processing over 500,000 litres per day and supporting more than 100,000 farmers with stable markets and better prices (Bartenge, 2012). These cooperatives not only stabilize incomes but also ensure milk safety and prolong shelf life. In Rwanda and Uganda, farmer-led dairy plants have helped increase farm-gate prices by as much as 40% (Bizimana & Nyiraneza, 2022). While Tanzania has its own unique challenges, these examples suggest that with the right governance and member engagement, cooperatives can transform local dairy economies. For farmers in Sanya Juu, such experiences offer both inspiration and a possible roadmap—though adapted to local realities. In Sanya Juu, a highland ward in Siha District of the Kilimanjaro Region, dairy farming is more than a livelihood—it's part of the community's identity. Many households here keep a few improved dairy cows and produce between 10 and 20 litres of milk each day. Despite this output and the area's location between Moshi and Arusha highway, there is still no an appropriately established dairy processing facility that could cater for the dairy farmers' needs in the area. As a result, farmers must sell their milk the same day—mostly to middlemen who come with plastic containers and offer prices that rarely reflect the value of the milk. According to local co-operative officers, milk spoilage can account for up to 25% of daily production, especially during warm seasons or when buyers delay. Without processing infrastructure, most farmers remain stuck in a cycle of low returns and unpredictable sales. Despite the promise of dairy cooperatives, many dairy-related co-operative ventures in Tanzania struggle to raise capital from their members. A report by the Tanzania Cooperative Development Commission (TCDC, 2021) revealed that fewer than 35% of members actively participate in cooperative investment drives. Several reasons were cited: farmers often mistrust management, lack clear information on how funds will be used, or simply cannot afford to contribute due to daily financial constraints. In some cases, non-members feel sidelined or discouraged from participating, believing that cooperatives only benefit a few insiders. These concerns point to more than infrastructure gaps; they highlight the social and institutional obstacles that must be addressed if cooperative ventures like dairy processing plants are to succeed (Chumo *et al.,* 2016). In Sanya Juu, conversations around establishing a dairy processing cooperative have begun to surface in farmer meetings and local planning sessions. While the idea has generated interest, especially among the more commercially-oriented farmers, actual financial commitments remain uneven. Some farmers, both co-operative members and non-members have pledged support, while others hesitate, citing past experiences with failed ventures or uncertainty about the plant's viability. Although the area produces enough milk and lies close to high-demand markets, the gap between enthusiasm and financial commitment raises serious concerns. The concerns prompt the need to investigate whether the farmers' conviction to co-operative values —both organizational and operational—influence the conviction to invest in the dairy processing co-operative. This study was motivated by a recurring question among stakeholders and farmers in Sanya Juu: "Who is actually ready to invest?" While there is growing dialogue about establishing a dairy processing cooperative, little is known about what drives or hinders individual farmers—from contributing financially. Existing research tends to focus on cooperative outcomes or access to services, but rarely addresses the personal conviction and social factors shaping investment behavior at the household level.To explore this, the study addresses three objectives: (i) to examine differences in the level of conviction in cooperative values between co-operative

members and non-members; (ii) to assess the willingness of non-members to invest in Dairy plant; and (iii) to identify factors influencing farmers' willingness to invest in a dairy processing plant, including voluntary engagement and private investment

LITERATURE REVIEW

Cooperative Values: Operational definitions: Cooperative values play a pivotal role in shaping farmers' attitudes and behavior toward investment in cooperative ventures (Ghauri *et al.*, 2021). These values are often categorized into organizational (or foundational) values and operational (or functional) values (ICA, 1995). The distinction between the two helps explain not only the philosophical underpinnings of cooperatives but also the practical dimensions that influence member participation and loyalty. Organizational (Foundational) Values refer to the core beliefs and guiding principles upon which cooperatives are established. According to the International Co-operative Alliance (ICA. 1995), these include self-help, self-responsibility, democracy, equality, equity, and solidarity. These values form the identity and social mission of cooperatives, emphasizing mutual support and collective empowerment. Farmers who strongly believe in these principles are more likely to see cooperative investment not only as a financial act but as a contribution to community development and shared welfare. This belief fosters a sense of ownership, trust, and long-term commitment among members and prospective investors. Operational (Functional) Values, on the other hand, are concerned with the actual practices, governance mechanisms, and service delivery processes of a cooperative. These include transparency, accountability, member participation, leadership integrity, and responsiveness to member needs. When these values are upheld, cooperatives function efficiently and build credibility among members. Farmers assess these operational aspects when deciding whether to invest; they are more likely to commit financial resources when they perceive that funds will be managed responsibly, decisions are democratic, and the cooperative delivers real benefits such as better prices, training, or reliable markets. The integration of both sets of values is central to farmer confidence and voluntary investment (Polo-Garrido & Fouché, 2025). A cooperative may be structurally sound and have a promising business model, but without a strong foundation in cooperative values, especially trust and transparency, investment participation is likely to remain low (Polo-Garrido & Fouché 2025). In this study, it is posited that a farmer's conviction in both organizational and operational values significantly influences their willingness to invest in a dairy processing plant.

Theoretical Framework: The study adopts the Theory of Planned Behavior (TPB), a framework that examines how attitudes, perceived norms, and a sense of control influence individual decision-making. In this context, the theory helps unpack whether farmers believe in cooperative values, feel encouraged by peers, and consider themselves financially capable of contributing. The study also considers practical variables such as age, income, financial literacy, and trust in leadership. Through this lens, the research aims to link the level of faith in cooperative values among farmers and their commitment to investing in a dairy plant. This will offer practical insights that local cooperative leaders, policy actors, and farmer groups can use to build a more inclusive and trusted investment process.

Empirical Literature: Several empirical studies have explored factors influencing farmers' participation and investment in agricultural cooperatives, particularly in the dairy sector. These studies help to contextualize the current research within existing literature, highlighting key variables such as cooperative values, financial literacy, and trust in leadership. Dreier and Cook (2020) investigated how cooperative organizational and operational values affect

member participation in dairy cooperatives in the United States. Their study revealed that members are willing to accept slightly lower milk prices if they perceive cooperative governance to be transparent, inclusive, and reflective of shared values like equity and democracy. These findings suggest that adherence to cooperative principles enhances members' trust and confidence, which are critical for motivating investment. Similarly, a study conducted by CEGEA-UPV (2014) on Spanish dairy cooperatives found that when operational practices such as accountability and financial clarity are aligned with foundational cooperative values like solidarity and equity, members are more willing to contribute equity capital. The study concludes that cooperative identity and value coherence serve as strong drivers for mobilizing member investment. Ntakyo et al. (2021) examined the influence of informal financial literacy training on rural farmers in Uganda and found that improvements in financial knowledge and behavior significantly influenced their ability and willingness to participate in agricultural investments. The study supports the inclusion of financial literacy as a critical factor in shaping investment willingness among rural dairy farmers. The study supports the inclusion of financial literacy as a critical factor in shaping investment willingness among rural dairy farmers. Gachango et al. (2014) assessed the adoption of milk cooling technology among Kenyan smallholder dairy farmers. Their findings show that factors such as cooperative membership, age of household head, and access to cooperative services significantly increased farmers' likelihood to invest in cooling equipment—reinforcing the importance of social and institutional drivers in investment decisions. Similarly, Makundi and Thomas (2023) analyzed how governance structures and farmer–industry linkages shaped the dairy innovation system in Tanga, Tanzania. Utilizing surveys of 100 producers and 20 key informants, they underscore the crucial role of transparent governance and contractual clarity in fostering member trust and participation in cooperative-led dairy processing ventures. These findings align with the current study's focus on conviction in both organizational and operational cooperative values. In a related study, Ahmed and Mesfin (2017) examined the welfare impacts of agricultural cooperative membership among smallholder farmers in eastern Ethiopia. Their results indicate that members experienced significantly higher household consumption and welfare, influenced by factors such as proximity to cooperative offices, education level, landholding size, and engagement in social networks. Furthermore, Bizimana and Nyiraneza (2022) investigated determinants of participation in milk collection centers among Rwandan smallholder dairy farmers. Through a probit analysis of 120 households, they found that access to reliable market outlets, higher formal education levels, trust in cooperative leadership, and perceived reliability of infrastructure were statistically significant predictors of investment and participation. Despite these insights, limited studies have simultaneously addressed both cooperative members and non-members, particularly in the context of investment decisions in a proposed cooperative facility. Moreover, few studies have used the Theory of Planned Behavior (TPB) as a guiding framework to examine psychosocial and economic factors shaping investment intentions. The current study fills this gap by applying the TPB model and examining differences in conviction toward cooperative values between members and non-members, while incorporating variables such as financial literacy, trust, age, and access to information.

Conceptual Framework: Each group of independent variables is hypothesized to influence farmers' decision on whether to invest in the proposed dairy processing cooperative plant.

Organizational cooperative values
- Self Help
- Self-responsibility
- Democracy
- Equality
- Equity
- Solidarity

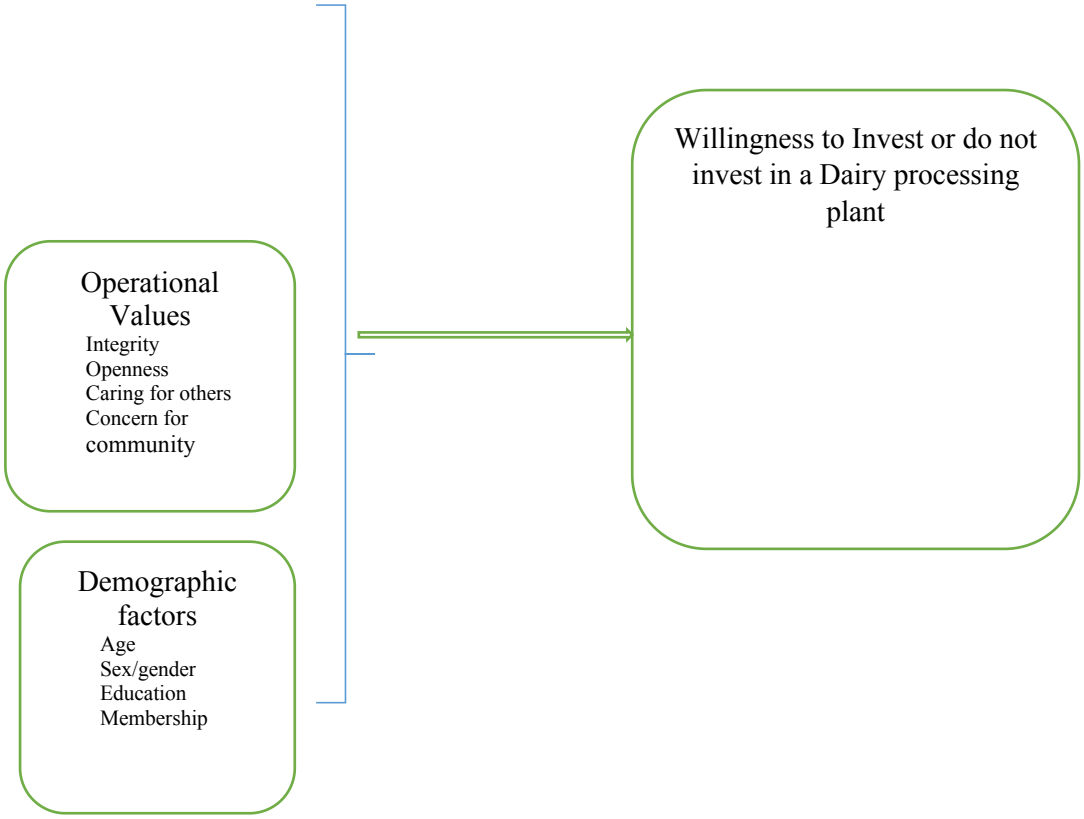

Figure 1: ***Conceptual framework of the study***

METHODOLOGY

Research Design: This study adopted a mixed methods approach, with quantitative methods as the primary strategy and qualitative methods used to triangulate and deepen understanding of the findings. The mixed approach was selected to enhance the richness of data and improve the validity of the results by triangulating Quantitative findings with qualitative ones (Creswell & Plano Clark, 2018).

Study Area and Population: The study was conducted in 2024 in Sanya Juu District, Kilimanjaro Region, covering four operational dairy cooperatives: Lawate, Kiringi, Gararagua, and Kishisha. These cooperatives serve as milk collection points for both registered cooperative members and non-member farmers within their localities. The study population consisted of all dairy farmers who sell milk through these cooperatives, including both cooperative members and non-members.

Sampling Procedure and Sample Size: A multistage sampling technique was used. First, the four cooperatives were purposively selected due to their active involvement in milk collection and distribution. A stratified random sampling method was then applied to select respondents from two strata: cooperative members and non-members. With a population of 246 farmers in the area, a total of 150 dairy farmers were selected proportionally from each cooperative as follows:

	Lawate	Kiringi	Gararagua	Kishisha	Total

Estimated Population	64	55	73	54	246
Sampled Farmers;	39	34	44	33	150
Members	23	20	26	20	89
Non-members	16	14	18	13	61

Data Collection Methods: Structured questionnaires were administered to the sampled farmers for quantitative data collection. Key informant interviews (KIIs) were carried out with Managers of the Dairy Cooperatives, Livestock officers, and community elders to gather qualitative insights and triangulate quantitative results.

Variables and Measurement: Table 1 presents the variable types, variables and how the variables were measured.

Table 1: Variable types and variable measurements

Variable Type	Variable	Measurement/Scale
Independent (Group 1)	Organizational Values: self-help, self-responsibility, democracy, equality, equity, solidarity	5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree)
Independent (Group 2)	Operational Values: integrity/honesty, openness, caring for others	1=Yes 0=No
Independent (Group 3)	Age, Education level	Age (in years); Education (categorical: none, primary, secondary, tertiary)
Dependent	Willingness to Invest in the dairy processing plant	Dichotomous: 1 = Yes, 0 = No

Data Analysis: The Independent samples t-test was used to compare mean conviction scores on cooperative values between the two groups (members vs. non-members) for Objective one. The analytical method is appropriate for comparing the means of two independent groups on continuous variables collected through Likert scale responses (Pallant, 2020). For Objective (ii) which was intended to determine the proportion of farmers willing to invest in the proposed plant, descriptive statistics (frequencies and percentages) was applied as it is suitable for summarizing categorical data, such as investment willingness (Yes/No). For Objective (iii) intended to identify determinants of farmers' willingness to invest, the analytical method used was the Binary logistic regression to estimate the probability that a farmer is willing to invest based on independent variables (Hosmer, Lemeshow, & Sturdivant, 2013).".

The Binary Logistic Model:

$$\text{Log}\,(P / (1 - P)) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n$$

Where:

P = probability of being willing to invest

X_1 to X_n = independent variables (cooperative values, age, education level)

Triangulation Using Qualitative Data: Qualitative data obtained through KIIs were analyzed thematically to validate, explain, and deepen the findings from the quantitative phase. Unusual findings such as a larger percentage of women than men in Dairy co-operatives were explained and accounted for through Key Informants Interviews.

Furthermore, for statistically significant differences found in the analysis of conviction to cooperative values between members and non-members, qualitative narratives were used to help explain why.

FINDINGS AND DISCUSSION

Demographic characteristics of respondents: Table 2 presents the demographic characteristics in terms of and educational level of respondents

Table 2: Distribution by Age and Education level

Members					**Non-Members**			
	Mean	Min	Max	Std	Mean	Min	Max	Std
Age	63.5	49	78	7.4	65.2	46	80	9.2
Education	8.4	7	16	2.6	7.8	7	11	1.6

Age Distribution: The mean age of cooperative members is 63.5 years (ranging from 49 to 78 years), with a standard deviation of 7.4, while that of non-members is 65.2 years (ranging from 46 to 80 years), with a standard deviation of 9.2. This indicates that both groups are relatively older, suggesting that dairy farming in Sanya Juu is dominated by an aging population. Non-members were slightly older on average, which may suggest either reluctance among older farmers to engage in cooperative structures or structural constraints that limit their participation. The higher standard deviation among non-members suggests greater variability in age, possibly reflecting diverse motivations or limitations in engaging with cooperatives. The age profile might influence investment decisions, as older farmers may be more risk-averse or less likely to invest in long-term ventures like a dairy processing plant. However, they may also be more experienced and thus better informed about the cooperative landscape.

Education Level: In terms of education level, the mean years of formal education among cooperative members was 8.4 years, compared to 7.8 years among non-members. Cooperative members' education levels range from 7 to 16 years (with a standard deviation of 2.6), while non-members' range is from 7 to 11 years (standard deviation of 1.6). The findings imply that Cooperative members are relatively better educated, which might influence their openness to organized group initiatives and capacity to engage in decision-making and investment analysis. On the other hand, non-members show limited variation in education, suggesting a more homogeneous group in terms of educational exposure, possibly reflecting barriers to cooperative entry or participation. These differences are relevant because prior literature (e.g., Bizimana & Nyiraneza, 2022; Ntakyo et al., 2021; Chumo *et al.,* 2016) has shown that education can positively influence farmers' participation in collective infrastructure and willingness to invest in value-added dairy initiatives.

Sex/Gender of Farmers: Figure 2 shows the proportion of female and male respondents among non-members, cooperative members, and the total sample of dairy farmers in Sanya Juu

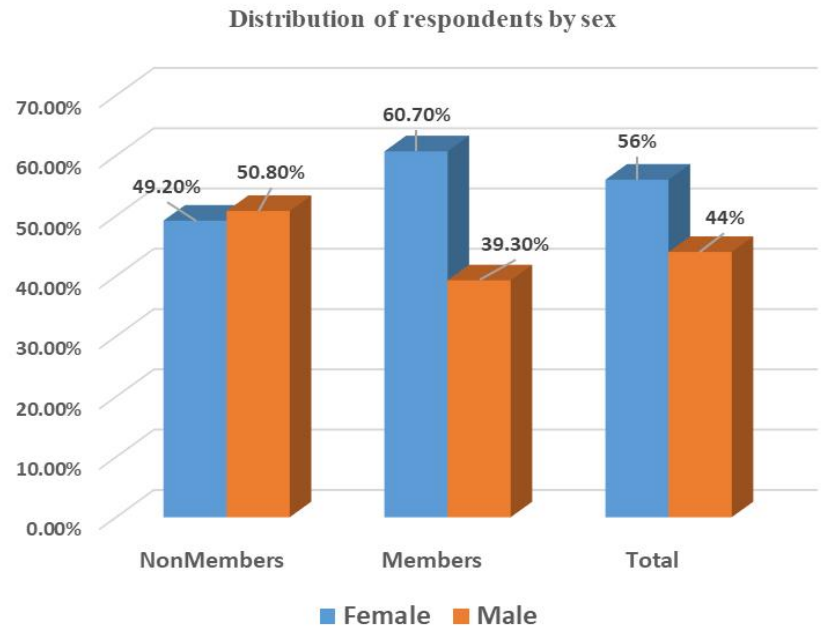

Figure 2: Gender Distribution of Dairy Farmers

Among non-members, the gender distribution is almost equal, with females at 49.2% and males at 50.8%, while Among cooperative members, there is a notable gender gap: 60.7% are female while only 39.3% are male. Across the entire sample, females account for 56%, while males represent 44%. Contrary to many studies where male dominance is prevalent in cooperative membership, this dataset shows a higher female representation among cooperative members in Sanya Juu. During the interview with one Key informants, it revealed that in most Chagga families dairy farming is generally managed and run by females in a family.
He asserted:

> *Traditionally men used to deal with coffee and maize production for commercial purposes. The role of the men was to buy dairy cattle and then hand them to their wives to support the family. Wives must take care of the cows including processing and marketing of the milk. This tradition has continued to-date. Since the marketing is collectively done at the Dairy cooperative society, women become members automatically" Interview, June 2024*

Even though Sanya Juu area is predominantly inhabited by the Chagga tribe, there are also *Maasais* whereby milk is also under the management of women, particularly married women even though the cows are owned by men. The implication of these findings is that Cooperatives should capitalize on the strong female participation by supporting leadership training, inclusive governance, and gender-sensitive investment opportunities. This finding supports the case for scaling up cooperative models in rural areas as tools for women's economic empowerment in agriculture.
Farmers' Willingness to Invest: The table presents the distribution of cooperative members and non-members in terms of their stated willingness to invest in the proposed dairy processing plant.

Table 3: Willingness to Invest

Option	Members		Non- Members		Total	
	No.	%	No.	%	No.	%
Willing	54	60.7	41	67.2	95	63.3%
Not willing	35	39.3	20	32.8	55	36.7
Total	89	100	61	100	150	100

From the table, out of 89 cooperative members, 54 (60.7%) expressed a willingness to invest, while 35 (39.3%) were not willing. Among 61 non-members, 41 (67.2%) were willing to invest, while 20 (32.8%) were not. Overall, 63.3% of all respondents were willing to invest, while 36.7% were not. The findings show a moderately high level of willingness to invest in the plant among both cooperative members and non-members. Interestingly, non-members appear slightly more willing to invest (67.2%) (when expressed as a percentage of Non-members alone) than members (60.7%). This is somewhat counterintuitive, as cooperative members are typically expected to have greater trust in and loyalty to cooperative-led initiatives. When key informants were consulted during the interview, it was revealed that there were concerns among some members that their cooperatives were not well governed by the existing leadership while some other members complained of lack of funds to invest in dairy processing plants.

> *"Some members are skeptical whether the current cooperative leadership can manage efficiently the diary plant. Given the experience of the cooperatives, there are still some doubting Thomases. However, their doubts are baseless because for the past five years our cooperative has been working very well"* Interview, July, 2024

On the other hand, non-members see the Dairy plant investment as a pathway to future cooperative inclusion and improved access to processed dairy markets.

> *"Non-members are now attracted by the idea of buying a ptocessing plant. They see it as an opportunity to generate more profit as they will be selling finished or semmi-finishe dairy product that fetch better market prices"* Interview, July 2024

The implications of these findings are that there is a growing enthusiasm among non-members on the potential of a cooperative enterprise to foster farmers' interest through joint investment. On the other hand, cooperative leaders should not take for granted members and must work on building transparent, inclusive decision-making structures and offering clear benefits of ownership in the processing plant. These findings align with Gachango et al. (2014) and Ahmed & Mesfin (2017) who emphasize the role of trust, perceived benefits, and governance in influencing agricultural investment. The results also support the Theory of Planned Behavior, where behavioral intentions (such as investing) are shaped by attitudes, perceived norms, and perceived control—factors that may differ between members and non-members.

Discussion on Conviction to Organizational Cooperative Values: Table 4 provides data on dairy farmers' level of belief and conviction to organizational values on a 5-point Likert scale. These values, namely: self-help, self-responsibility, democracy, equality, equity, and solidarity represent the organizational (foundational) values of cooperatives.

Table 4: Level of belief and conviction to Organizational Values (expressed under a 5-point Likert Scale)

Variable	Definition	Members		Non -members		Overall Mean	
		Mean	*%*	*Mean*	*%*	*Mean*	*%*
CSHV	Self-Help	3.3933	67.9	3.3634	67.3	3.3756	67.5
CSRV	Self-responsibility	3.9303	78.6	3.9180	78.4	3.9253	78.5
CDMV	Democracy	3.6798	73.6	3.5656	71.3	3.6333	72.7
CEQV	Equality	2.98	59.6	2.84	56.8	2.92	58.4
CETV	Equity	2.79	55.8	2.66	53.2	2.73	54.6
CSDV	Solidarity	4.1	82.0	3.2	64.0	3.65	73.0

For instance, the mean score for members' belief and conviction on Self-Help (CSHV) value is 3.39 (67.9%) while non-members is 3.36 (67.3%) and the overall mean score for both members and non -members is 3.38 (67.5%). Other scores can be inferred from the table. Generally, members consistently showed slightly higher conviction than non-members across all organizational values, suggesting that cooperative affiliation positively reinforces foundational beliefs. However, values related to fairness (equity and equality) were rated lower than individual responsibility and solidarity, indicating a potential perceived gaps in farmers' belief in benefit sharing and farmers' belief in democratic values. On the other hand, the high rating for self-responsibility and solidarity, particularly among members, aligns well with the Theory of Planned Behavior: these values likely influence positive behavioral intentions such as investment willingness. The implications of these results are that awareness programs and governance reforms may be needed to strengthen conviction around equity and equality, especially for inclusive investment ventures like a processing plant. Conversely, the ifferences in perceived solidarity between members and non-members indicate that social cohesion and trust are stronger within cooperatives, which could be harnessed to promote investment and innovation.

Conviction to Operational Cooperative Values: Table 5 presents the belief and conviction of respondents toward four operational cooperative values—integrity, openness, caring for others, and concern for the community—measured as binary responses (0 = no conviction, 1 = conviction). The values are analyzed separately for cooperative members and non-members.

Table 5: Belief and conviction to Operational values (expressed on a zero or 1 Scale)

Variable	Definition	Members		Non -members		Overall Mean	
		Mean	*%*	*Mean*	*%*	*Mean*	*%*
CITV	Integrity	.5281	52.81	.7213	72.13	.6067	60.67
COV	Openness	.5562	55.62	.5984	59.84	.5733	53.33
CFOV	Caring for Others	.7925	79.25	.7672	76.72	.7811	78.11
CSRV	Concern for community	.637	63.70	.612	61.2	0.6245	62.45

The surprising result in this table is that non-members reported higher conviction to integrity than members. This could be interpreted as a systemic flagging honesty and lack transparency or trust within the cooperative governance structures, which could influence negativity among members and discourage stronger belief in this value among current members. In contrast, the unexpectedly higher rating of integrity among non-members might reflect a perception of what they expect or wish cooperatives could deliver. Alternatively, the higher conviction in caring for others and concern for the community suggests a cultural and social base that favors collective efforts like cooperative investment. The strong support for pro-social values like caring for others provides a strategic platform for collective action such as pooling resources to establish a dairy processing plant.

Mean Differences in Cooperative Values between Members and Non-members: This section presents the findings from the independent samples t-test conducted to compare the mean levels of belief and conviction in cooperative organizational and operational values between cooperative members and non-members among dairy farmers in Sanya Juu.

Table 6: Testing the mean differences (t-test for Equality of Means)

Independent Samples Test

variable	F	t	diff	sig	Std error
CSHV	2.108	.394	148	.694	.07652
CSRV	.647	-.202	148	.840	.06092
CDMV	2.368	-1.552	148	.123	.07356
CEQV	21.222	-2.192	148	.030**	.065
CETV	3.115	-1.065	148	.288	.123
CSDV	.904	-.025	148	.980	.03700
CITV	1.410	4.121	148	.000***	.04689
COV	.919	.715	148	.476	.05897
CFOV	10.821	1.702	148	.091*	.02359
CFCV	11.479	-1.648	148	.102	.01535

For most of the variables, the t-test results indicate that cooperative membership status does not significantly influence most cooperative values. However, two values, equality (CEQV) and integrity (CITV) exhibited statistically significant differences. Cooperative members reported relatively higher belief in equality. In contrast, non-members displayed higher conviction toward integrity, possibly reflecting idealized expectations or underlying concerns regarding governance among members. The absence of significant differences in values such as solidarity, democracy, and openness suggests these are widely held social norms among dairy farmers, irrespective of cooperative affiliation. A marginally significant difference in the value of caring for others may imply a slightly enhanced communal spirit among members.

Inferential Results: Inferential results from a binary logistic regression model assessing the likelihood of farmers' willingness to invest in a proposed dairy processing cooperative plant are presented in this section. The dependent variable is binary (1 = willing to invest, 0 = not willing). Independent variables include cooperative organizational and operational values and selected demographic characteristics**.**

Table 6: Binary Logistic Regression Analysis: Willingness to Invest

Variable	Definition	B	S.E.	Wald	Sig.	Exp(B)
CSHV	Self Help	4.558	1.268	12.925	.000***	95.403
CSRV	Self-responsibility	4.604	1.853	6.174	.013**	97.214
CDMV	Democracy	-.443	.879	.254	.614	.642
CEQV	Equality	-8.265	5818.318	.000	.999	.000
CETV	Equity	1.742	.549	10.056	.002***	5.707
CSDV	Solidarity	6.547	2.269	8.324	.004***	697.093
CITV	Integrity	2.086	1.435	2.113	.146	8.051
COV	Openness	-2.010	1.103	3.321	.068*	.134
CFOV	Caring for others	-7.205	3.624	3.953	.047**	.001
CFCV/CSR	Concern for community	-47.925	33312.203	.000	.999	.000
AG	Age	-.006	.028	.040	.841	.994
SX	Sex	-.439	.525	.699	.403	.645
EL	Education level	.162	.119	1.872	.171	1.176
MSP	Member	-.177	.498	.127	.722	.837
C	constant	65.965	37606.179	.000	.999	

Significant Predictors (p < 0.05)

Variable	**B**	**Sig.**	**Exp(B)**	**Interpretation and implications**
CSHV (Self-help)	4.558	.000***	95.403	Strong positive predictor. Farmers with strong self-help values are 95x more likely to invest. Strong motivator; 95 times more likely to invest.
CSRV (Self-responsibility)	4.604	.013**	97.214	Significantly increases investment willingness.
CETV (Equity)	1.742	.002***	5.707	Valuing fairness increases investment likelihood.
CSDV (Solidarity)	6.547	.004***	697.093	Strongest predictor of investment willingness.
CFOV (Caring for Others)	-7.205	.047**	0.001	Negative effect; may indicate fear of collective burden.

Marginally Significant Predictor (p < 0.1)

Variable	B	Sig.	Exp(B)	Interpretation
COV (Openness)	-2.010	.068*	0.134	Marginally significant; openness alone not a decisive

factor.

Implications: The results reveal that conviction in cooperative organizational values such as self-help, self-responsibility, equity, and solidarity are strong predictors of willingness to invest in collective infrastructure. Values matter more than demographics in determining investment behavior. These findings suggest that internal motivation and shared cooperative values play a more critical role than demographic characteristics. The negative relationship with caring-for-others may point to perceived risks or over-responsibility in cooperative ventures. These insights are important for cooperative leaders in designing messaging and governance structures that appeal to shared values and enhance inclusiveness and fairness.

CONCLUSION AND STUDY IMPLICATIONS

This study set out to understand the underlying factors influencing farmers' willingness to invest in a dairy processing cooperative in Sanya Juu, Kilimanjaro. Drawing on the Theory of Planned Behavior, the results clearly show that individual conviction in cooperative values—especially self-help, self-responsibility, solidarity, and equity—had more bearing on the willingness to invest than characteristics such as age, education level, or even cooperative membership. Notably, non-members appeared slightly more willing to invest than members, challenging assumptions that membership alone ensures investment interest. Insights from key informants suggest that trust in cooperative leadership and transparency are major concerns among some members, which may explain the unexpected patterns. Additionally, the active role of women in dairy management—rooted in local customs and household practices—emerged as a key factor in cooperative engagement. These observations reinforce the idea that emotional connection to cooperative ideals and confidence in governance structures significantly shape investment decisions. For cooperatives to mobilize more farmers, there is a need to re-invest in value education, leadership training, and transparent communication. Efforts should focus not only on members but also on non-members, many of whom are eager to engage if given the opportunity. Strengthening accountability and inclusivity within cooperative leadership could also build the trust needed to attract wider participation.

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