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PROMOTING CASSAVA VALUE ADDITION AMONG SMALLHOLDER FARMERS: WHAT DRIVERS MATTER IN KENYA? THE CASE OF CASSAVA FARMERS IN BUSIA COUNTY, KENYA

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Abstract

Cassava is a multifunctional crop with benefits ranging from its role as a source of food, income, and raw material in industrial processing. It grows in marginalized arid and semi-arid regions characterized by long periods of drought and consistent crop failure. In Kenya, cassava is a staple crop and ranks as the second most important root crop after the Irish potato. Nevertheless, there is a low cassava value addition in the country. This study therefore establishes factors influencing smallholder farmers' decision to participate in cassava value addition. The study was conducted in Busia County. A multistage sampling procedure was used to obtain data from 362 cassava farmers. Descriptive statistics and probit regression were used to analyze the data. Descriptive results revealed a low level of cassava value addition among smallholder farmers. Education level, farm size, yields, access to credit, and processing equipment influenced the farmers' participation in cassava value addition positively while off-farm income and distance to the market had a negative influence. The study recommends strategies that could be applied to improve farmers' participation in cassava value addition. They include providing financial support to cassava farmers through accessible credit facilities and processing equipment. Likewise, the adoption of high-yield cassava varieties should be emphasized. Similarly, policymakers should formulate appropriate policies that promote farmers' engagement in cassava value addition.
Keywords: *Smallholder cassava farmers, food security, value addition, probit model.*
Jel Codes: *Q1, Q10, Q16*

1. Introduction

In the wake of climate change, low agricultural productivity, and the failure of conventional food systems, cassava has been identified as one of the pathways with the potential to address the challenge of food insecurity and rising poverty levels due to its ability to resist pests and diseases, withstand harsh climatic conditions, and low input requirements. Cassava grows majorly in the marginalized arid and semi-arid regions characterized by long periods of drought, poor soil conditions, and resource-poor farmers (Emongor et al., 2023; FAO, 2013). Cassava provides essential nutrients such as carbohydrates, vitamin C, calcium, iron, riboflavin, and thiamine to the diets of over one billion people globally (Adebayo, 2023). It is also a source of income for over 800 million people worldwide. Hence, the crop has the potential to sustain livelihoods, contribute to food security, and mitigate poverty, especially in areas prone to drought and poor soils (Mashenene et al., 2023; Nnodim & Ndidi, 2018).

Globally, cassava is ranked the fifth most important staple crop behind rice, wheat, maize, and potato in terms of production and caloric intake, with an estimated average yield ranging between 50t/ha to 80t/ha. It forms part of the staple food in many developing countries, particularly in sub-Saharan Africa (SSA), Latin America, and Asia. Moreover, when compared to other staple crops, global cassava yield remains relatively low, with an average yield ranging between 10.4 to 12.8t/ha (FAO, 2013). Africa is the largest producer of cassava accounting for nearly 56% of the global production. This dominance is probably due to the prevalence of tropical and sub-tropical weather conditions in Africa, which provides a suitable environment for cassava production. Nevertheless, cassava production in Kenya remains low, with an average yield of 11.8t/ha, which is far below its potential yield of 50t/ha (FAOSTAT, 2022).

Cassava is a multifunctional crop grown primarily by small-scale farmers for subsistence purposes while the surplus is sold at the local markets. However, over the years, agricultural production has experienced a paradigm shift from subsistence to commercial, where farming is regarded as a viable enterprise (Ricketts et al., 2014). Commercially, a significant proportion of the produce is allocated to the market while the surplus is reserved for home consumption. At home or industrially, cassava serves as a source of food and raw material in industrial processing (Afolami et al., 2015). At home, cassava roots are boiled, fried, or roasted, and consumed as snacks, chips, or raw. The dried roots are milled into flour and used to make products such as cakes, bread, and porridge. The tender leaves contain high levels of proteins and vitamins and are often consumed as vegetables (Githunguri et al., 2017). Besides being a source of food, cassava is used as raw material in industrial processing to manufacture gluten-free flour, alcoholic beverages, biofuel, starch, pharmaceutical products, and animal feeds (Mulu-Mutuku et al., 2013; Ibegbulem & Chikezie, 2018). Therefore, cassava forms part of the household diet and serves as a food and income security crop for rural poor households in SSA (Mashenene et al., 2023).

In Kenya, cassava is an important food crop for households in arid and semi-arid regions, with a small proportion directed toward industrial production (Republic of Kenya, 2019). It is ranked the second most important root crop after the Irish potato (Opondo et al., 2020). It is widely cultivated in the Eastern, Western, and Coastal parts of Kenya (Kidasi et al., 2021). Cassava produces high yields with minimal inputs and poor soils. Hence, it is a viable enterprise for resource-poor farmers (Parmar et al., 2017). However, fresh cassava is highly perishable and loses its economic value within a few days of harvest, leading to low financial gain and a short marketing period (Westby, 2002). Therefore, cassava provides a great opportunity for value addition.

Value addition in the agricultural sector plays a central role in ensuring food security, poverty reduction, and employment creation. Agricultural value addition is regarded as any activity carried out by an individual to improve the shelf-life of perishable products, increase market demand and income, and reduce post-harvest losses (Paraman et al., 2015). It entails transforming farm produce into value-added food products to enhance consumer acceptability and profitability (Bosompem et al., 2024; Lu & Dudensing, 2015). Hence, value addition can improve household food security by increasing food availability, and access, and reducing post-harvest food losses (Donkor et al., 2018). Cassava value addition encompasses myriad practices such as processing, drying, extracting, or any other activity aimed at improving its value.

Amid rapid population growth, high poverty rates, and urbanization, value addition presents a lucrative business opportunity for smallholder cassava farmers to generate more income (Manganyi et al., 2023). It enables cassava farmers to diversify their income streams and improve profit margins (Jacob et al., 2023). Besides, value-added cassava products attract higher prices compared to raw cassava, especially during the bumper harvest when the supply is high (Adejobi & Adeyemo, 2012). Despite the aforementioned benefits of value addition, most farmers in developing countries such as Kenya are unable to benefit from such opportunities due to low involvement in cassava value-adding activities. (McNulty & Oparinde, 2015). This study, therefore, sought to establish the potential factors influencing the smallholder farmers' decision to participate in cassava value addition. Besides, there exists a dearth of empirical evidence regarding the farmers' participation in cassava value-addition activities in Kenya. Hence, the study strives to fill this knowledge gap.

The study could help inform policymakers on possible policy interventions geared to promote cassava value addition and thus improve the farmer's income and well-being. Additionally, the study provides strategies that can be adopted to integrate and encourage farmers into value addition, which would ultimately enhance food security and rural development through the proliferation of agro-processing industries, poverty reduction, and job creation in rural areas. Likewise, the study extends existing knowledge frontiers on cassava value addition, especially in SSA. Hence, it provides a reference point for future studies.

2. Material and Methods

2.1 Description of Study Area

The study was conducted in Busia County, Kenya. The County is among the leading producers of cassava in Kenya, with about 61-80% of its population participating in the cassava value chain (Emongor et al., 2023; Republic of Kenya, 2016). The County is characterized by rapid population growth (approx. 893,681) and arable lands (81%) (KNBS, 2019). Agriculture is the main economic activity in the County, accounting for about 78% of the total workforce and about 50% of the household incomes. Cassava is among the main crops grown for food and income in the County. Additionally, a large proportion of the land in the County is arable, which provides a favorable environment for cassava production. Moreover, Busia is among the Counties where cassava has been promoted as a poverty-eradicating and food security crop with a potential for up-scaling (Kivuva et al., 2019). Therefore, the County presents a suitable context for this study.

2.2. Sampling Procedure and Data Collection

A cross-sectional survey design was employed to obtain data from the respondents. The data was collected between September 2023 and October 2023. The target respondents were smallholder farmers who engaged in cassava production. The study was conducted in Busia County. The County hosts the majority of smallholder cassava producers in Kenya (Republic of Kenya, 2016).

A multistage sampling procedure was used to obtain data from 385 cassava-producing households in Busia County. The first stage involved the purposive selection of three sub-counties (Teso South, Teso North, and Nambale), which form the leading cassava-producing areas in the County. This followed a purposive selection of two (2) wards from each sub-county, based on their near similarities and extent of cassava production. In the third stage, 40 to 70 respondents were sampled systematically in each ward, from a list of cassava-producing households. The list was generated with the help of the ward agricultural officer. The sample was proportionately distributed according to the population size of the respective ward. This procedure yielded a sample size of 385 households (n=385), following the Cochran (1977) formula (Equation 1);

$$n = \frac{z^2 * p(1-p)}{e^2} = \frac{1.96^2 * 0.5(1-0.5)}{0.05^2} = 385 \quad (1)$$

Where; n represents the target sample size (smallholder cassava farmers), p represents the proportion of the population containing the major interest (p= 0.5), while z and e represent the confidence interval (1.96) and marginal error (0.05) respectively.

A semi-structured questionnaire was developed to facilitate data collection from the respondents. In the beginning, the questionnaire was subjected to quality checks such as pretesting to validate its suitability and relevance to the study. The tool was then administered to the respondents by trained enumerators. The data obtained was on socio-economic characteristics, institutional factors, and farm characteristics. Before the survey, two focus group discussions from each ward consisting of eight to ten participants were conducted to generate an in-depth understanding of cassava production and value addition.

After the survey, 23 questionnaires were found to be incomplete and therefore they were dropped, leaving a sample of 362. Therefore, the response rate in the study was about 94% of the targeted sample size. The data was cleaned and entered into SPSS version 25 and STATA version 17 statistical software for analysis.

2.3 Empirical Model Specification and Estimation Procedure

In the study, data analysis was carried out in two steps. In the first step, descriptive statistics such as means and percentages were used to profile the socioeconomic characteristics and institutional factors of the respondents. Independent t-tests and chi-square tests were used to compare the characteristics of cassava value adders and non-value adders in the study areas. In the second step, the probit regression model was used to assess the determinants of smallholder farmers' decision to participate in cassava value addition.

2.3.1 Determinants of Participation in Value Addition

Given the nature of farmers’ participation in cassava value-addition activities (1 for participants and 0 for non-participants), various methods to assess farmers' involvement in agricultural value-addition activities exist in the literature (Ater et al., 2018; Agwu et al., 2015). Binary logit, linear probability (LP), and probit models are common probability models used to analyze dependent variables with binary responses (Ngore et al., 2011). The binary logit model uses a logistic cumulative distribution function to analyze data with an error term being logistically distributed (Greene, 2002). However, it was unsuitable in the current study that assumed a normal distribution of error terms. Moreover, the linear probability model (LPM) generates probabilities that lie above or below zero (0), leading to questionable $R^{2,}$ and goodness of fit. Additionally, LPM does not assume the homoscedasticity distribution of error terms. Hence, it was ineligible in this study. Due to the weaknesses of LPM and logit models, a binary probit model was used to evaluate possible factors influencing the smallholder farmer's decision to participate in cassava value-addition activities.

The probit estimates the probability of occurrence of an event, in the current context, the decision to engage in cassava value-addition activities or not to participate. The model was preferred due to its ability to resolve the heteroscedasticity problem and constrain the utility value of the decision to participate in value addition which lies within zero (0) and one (1) (Mkandawire et al., 2018). Additionally, the probit model assumes a normal distribution of the error terms, as was the case in this study. Therefore, the choice of the probit regression model was informed by its intrinsic merit over the other probability models.

The model was specified as follows;

$$Y_{(1,0)} = \alpha_1 + \beta_1 x_1 + \ldots\ldots\ldots\ldots + \beta_n x_n + \varepsilon_n \quad (2)$$

; y is the binary dependent variable (1= cassava value adders and 0= non-value adders), α_1 is the constant while β_n represents the vector of unknown coefficients to be estimated. Vector x_n represents the explanatory variables hypothesized to influence the decision of farmers to add value to cassava while ε_n is the error term. Table 1 presents the variables used in the probit model, their units of measurement, and the hypothesized effects.

For easier interpretation of the results, marginal effects were computed by taking the first derivative of explanatory variables with respect to the explained variable (Greene (2002), as shown in equation 3.

$$\frac{dy}{dx} = F(\beta x) \quad (3)$$

Table 1. Description of variables used in the Binary probit model

Variable	Variable description and units	Hypothesized effect
Gender	Gender of the respondent; 1= male; 0=Female	+, -
Age	Age of the respondent in years	+, -
Household size	Number of individuals within the cassava-producing households	+, -
Education level	Number of years spent in school	+, -
Experience	Number of years in producing cassava	+
Farm size	Total area under cassava in acres	+
Yield	Total yield in the previous season in tons per acre	+
Access to equipment	Access to value addition equipment; 1=Yes; 0 = Otherwise	+
Credit	Access to credit to produce cassava; 1 = Yes; 0 = No	+
Training	Received training on cassava value addition; 1= Yes; 0 = No	+, -
Group Membership	1= Member of a group; 0 = Not a member	+
Distant to the market	Distance to the nearest market in Kilometers	-
Off-farm income	Average annual income from other sources (Ksh)	+, -

Note: Ksh=Kenyan Shilling

Furthermore, diagnostic tests for statistical problems were carried out to establish the suitability of variables in the data set. A Variance Inflation Factor (VIF) was conducted on the data to rule out the possibility of multicollinearity between the independent variables. Conventionally, VIF <5, indicates the absence of multicollinearity (Otieno, 2012). The study reported a mean VIF value of 1.62, with individual VIF scores ranging between 1.57 and 2.02, confirming the absence of multicollinearity. Likewise, the Breuch-Pagan test was carried out to detect heteroscedasticity in the data set. The result yielded a P-value of 0.7214 which is greater than 0.05, indicating the absence of serious heteroscedasticity in the data set.

3. Results and Discussions

3.1 Socioeconomic Characteristics of Smallholder Cassava Farmers

Table 2 presents the results of the socioeconomic characteristics and institutional factors of the participants and non-participants of cassava value addition and the differences between them. The results indicate a low level of cassava value addition among the respondents (30.1%). Two-tail t-test reveals that smallholder cassava farmers are relatively similar in terms of household size, age, and distance to the market. However, they differ significantly in terms of years of schooling, area under cassava, years of producing cassava, and cassava yields. The χ^2-test indicates that the respondents are similar in terms of marital status, access to training, and group membership. Nevertheless, they differ significantly in terms of gender, access to credit, and processing equipment.

The study findings revealed a high level of illiteracy among the respondents with the majority attaining primary school education level (8). However, farmers participating in cassava value-addition activities were relatively more educated with nine years of schooling compared to seven for non-participants. This result was consistent with those of Habteyesus et al. (2018), which indicated that value adders of coffee are more literate compared to non-value adders. Likewise, experience in producing cassava differed significantly between the respondents. Smallholder cassava farmers participating in value-addition activities were more experienced with 14 years of producing cassava compared to 10 years of non-participants.

Table 2. Socioeconomic Characteristics of Participants and Non-Participants of Cassava Value Addition

	Mean			t-ratio	P-value
Continuous Variables	Participants (n=109)	Non-participants (n=253)	Pooled sample (n=362)		
Age	46.51	48.65	47.27	0.71	.481
Household size	7.00	8.00	6.82	0.82	.352
Education level in years	9.09	7.13	8.00	2.85**	.045
Experience in years	14.17	10.42	12.87	2.67**	.024
Area under cassava in acres	2.10	1.27	1.85	1.94*	.072
Yield (tons per acre)	11.94	9.88	10.55	7.88***	.000
Distance to the market	4.01	5.68	4.81	0.94	.674
Annual off-farm income (Ksh)	49,952	45,582	48,100	1.54	.140
Categorical Variables	**Percentages (%)**			**χ^2- ratio**	**P-value**
Gender Female	77.00	84.00	79.00	22.94**	.000
Marital status Married	81.19	79.91	83.86	1.06	.307
Access to credit Yes	48.32	32.04	38.01	4.41**	.047
Access to training Yes	18.70	10.12	12.48	.091	.841
Group Membership Yes	52.8	48.67	49.05	1.63	.195
Access to processing equipment Yes	29.04	8.05	10.18	3.77**	.025
Observation (n)	**30.11**	**69.89**	**100.00**		

Notes: *, **, and*** indicate significant level at 10%, 5%, and 1%, respectively. 1USD=118 Ksh at the time of the survey. Source: Field survey, 2023

Furthermore, there was a significant difference in the land allocated for producing cassava by value adders and non-value adders. On average, value adders had a relatively larger proportion of land (2.10 acres) under cassava compared to non-value adders (1.27 acres). This finding collaborates with those of Bosompem et al. (2024) and Ntabo et al. (2024) who indicated that farmers who participated in value-addition have more land allocated to cassava production compared to non-participants. The yields per acre also differed significantly between the participants and non-participants of cassava value addition. Farmers who engaged in cassava value-addition were observed to have higher yields compared to non-participants.

The results further indicate statistical differences between female and male respondents. Overall, cassava production was largely dominated by women (79%). Nonetheless, there was a higher involvement of women participating in cassava value-addition activities (77%) than men (21%). This could be attributed to the belief that food processing is a primary responsibility of women in society (Jacob et al., 2023). Hence, the majority of cassava value addition was undertaken by women. Similar results were reported in previous studies by Okeleke et al. (2019) and Falola et al. (2016).

In terms of credit access (Table 2), a small proportion of respondents accessed credit facilities (38%). Moreover, there was a statistical difference between cassava value adders and non-value adders in terms of credit access. This suggests that credit access could have significant effects on smallholder farmers' decision to add cassava value. Approximately, 48% of the cassava value adders had accessed credit compared to 32% of non-value adders, implying that a relatively high proportion of respondents participating in value addition had access to credit facilities. This could partly be explained by the assertion that value addition increases the farmers' income, thereby improving their ability to obtain a credit facility. The finding was in tandem with those of Donkor et al. (2018) who indicated that cassava processors have higher credit access than non-processors.

The study also indicated significant differences between farmers with access to processing/value-addition equipment and those without. Generally, there was low access to processing equipment among the respondents (10%). About 29% of respondents participating in cassava value-addition had access to processing equipment compared to 8% of non-participants.

3.2. Determinants of Cassava Value Addition

Table 3 presents the results of the probit regression model on potential factors influencing smallholder farmers' decision to participate in cassava value addition practices. To assess the model goodness of fit, log-likelihood, Pseudo R^2 and p-value were used. The study reported a log-likelihood value of -204.54, Pseudo $R^2 = 0.785$, and a p-value = 0.000, suggesting goodness of fit. However, the estimated parameters in the probit model give direction rather than probability change. Therefore, the average marginal effects are preferred since they measure the actual effect of a unit change of the explanatory variable on the respondents' decision to participate or not to participate in value-addition practices.

In the study, average marginal effects were used to evaluate the effect of the unit change expressed as a percentage change of the probability of the respondent participating in cassava value-adding activities. The results are presented in Table 4 below.

The results (Table 4) indicate that education level, access to credit, farm size, total yields, access to credit, and processing equipment influence the smallholder farmers' decision to participate in cassava value-addition practices positively and significantly while the distance to the nearest markets and off-farm income were found to have a negative and significant effect on farmers' engagement in value addition activities.

Table 3. Factors Influencing Cassava Value Addition Among Smallholder Farmers

Estimated parameter	**Estimate**	**Std. Err.**	**P-value**
Gender	-2.024	0.698	.251
Age	-0.708	0.402	.381
Household size	0.346	0.103	.529
Education level	0.288**	0.430	.047
Experience	0.379	0.341	.862
Area under cassava	4.525***	1.029	.009
Total yield	5.471***	2.861	.005
Access to credit	0.634	0.678	.074
Access to training	0.055	0.778	.256
Access to market information	0.177	0.131	.563
Group membership	0.842	0.211	.416
Access to value addition equipment	0.078**	0.312	.031
Distance to the nearest market	-1.545*	0.423	.064
Annual off-farm income	-0.059**	0.692	.078
Constant	3.608***	2.404	.005
Diagnostic statistics			
LR Chi^2 (14)	188.43		
Prob Chi^2	0.000		
Pseudo R2	0.785		
Log-likelihood	-204.54		

Notes: *, **, and *** denotes significant levels at 10%, 5%, and 1% respectively. Source: Field Survey, 2023

Table 4. Average Marginal Effects on the Factors Influencing Cassava Value Addition

Estimated parameter	**dy/dx**	**Std. Err**	**P-value**
Gender	-0.176	.214	.189
Age	-0.189	.097	.222
Household size	0.109	.012	.143
Education level	0.074**	.038	.023
Experience	0.025	.012	.321
Farm size	0.304***	.181	.003
Total yield	0.401***	.232	.002
Access to credit	0.086**	.043	.027
Access to market information	0.003	.004	.172
Access to training	0.008	.287	.155
Group membership	0.041	.114	.168
Access to value addition equipment	0.023**	.021	.014
Distance to the nearest market	-0.037*	.223	.056
Annual off-farm income	-0.018	.058	.024
Constant	0.641***	.012	.001

Notes: *, **, and *** denotes significant levels at 10%, 5%, and 1% respectively.
Source: Field Survey, 2023.

Education level was positively and significantly associated with the decision of farmers to engage in cassava value-addition, implying that a unit increase in years spent in school, improves the probability of smallholder farmers to participate in cassava value-addition practices by 7.4%. The positive association can be explained by the assertion that educated individuals are equipped with the necessary skills and knowledge that can be used in cassava value addition to improve their income level. This result agrees with those (Jacob et al., 2023).

Farm size was found to have a significant positive effect on the participation of smallholder farmers in value addition. This result indicates that a unit increase in land size for cassava production increases the likelihood of farmers' participation by 30.4%. This finding was in tandem with those of Jacob et al. (2023) and Falola et al. (2016) who indicated that farm size influences the farmers' engagement in value-addition practices. Similarly, access to credit was positively correlated with farmers' participation in cassava value addition. Based on the marginal effects (0.086), farmers who accessed credit were 8.6% more likely to engage in cassava value addition. Similar results were reported by Donkor et al. (2018), Falola et al. (2016), and Ntale et al. (2014). This could be explained by the assertion that farmers with credit access are more likely to invest and allocate a certain proportion of the funds to cassava value-adding activities.

Furthermore, the cassava yield had a positive significant effect on the farmers' decision to participate in value addition activities. The marginal effect associated with participation was 40.1%, suggesting that a unit increase in cassava yields increased the likelihood of farmers participating in cassava value addition by 40.1%. The positive relationship could be attributed to the fact that farmers with relatively high yields can afford to engage in more value-addition practices. This finding was consistent with those of Bosompem et al. (2024). Likewise, access to processing equipment had a significant positive effect on the participation of farmers in cassava value addition. Respondents with access to processing/value-addition equipment are more likely to add value to raw cassava. According to marginal effects (0.023), farmers who have access to processing equipment are 2.3% more likely to engage in cassava value-addition practices. This finding corroborates those of Falola et al. (2016), indicating that the availability of processing equipment improves the chances of farmers to pursue cassava value-addition activities.

The distance to the nearest market was found to be negatively and significantly associated with the farmers' decision to participate in cassava value-addition practices. In line with marginal effects (-0.037), an increase of one kilometer from the market, reduces the likelihood of the farmers engaging in cassava value addition by 3.7%. The negative association can be attributed to constraints of access and availability of markets for cassava value-added products. Therefore, farmers residing far away from the markets may not enjoy the benefits of value addition due to high transportation costs. Income from off-farm activities was also found to have a significant negative effect on respondents' likelihood to participate in cassava value-addition activities. The marginal effect indicates a unit increase in off-farm income reduces the probability of smallholder farmers engaging in value-addition activities. This may arise when the farmers' income from off-farm sources is relatively higher than the income from cassava value-added products. Therefore, such farmers tend to ignore cassava value addition and concentrate on other income sources that earn them more.

4. Conclusion and Recommendations

This paper established the factors influencing smallholder farmers' decision to participate in cassava value addition in Busia County, Kenya. Descriptive statistics and a probit regression model were employed for data analysis. The study revealed a relatively low cassava value addition among the respondents (30.1%), implying that the majority of farmers still produce cassava for subsistent purposes. However, women (77%) dominated cassava value addition in the study area. Besides, there was a significant difference between cassava value adders and non-value adders in terms of gender, education level, experience, access to credit and processing equipment, farm size, and cassava yields. Education level, farm size, cassava yields, access to credit, and processing equipment influenced the farmers' participation in cassava value addition positively while off-farm income and distance to the market had a negative influence.

In line with the findings, the following recommendations are suggested; first, the provision of financial support to cassava farmers through accessible and affordable credit facilities and processing equipment could be explored to enhance farmers' participation in cassava value addition. Second, the adoption of high-yield cassava varieties should be emphasized to improve yields and promote value addition among cassava farmers. Additionally, since off-farm income had a negative influence on farmers' participation in value addition, diversification strategies should therefore focus on farmers' engagement in various value-addition practices rather than participation in off-farm activities. Consequently, there is a need to develop accessible road networks, which would enable farmers to access markets for value-added products and hence improve their income and likelihood of participating in cassava value-addition activities. Moreover, policymakers and other relevant stakeholders should develop programs and policies that promote cassava value addition. The programs and policies should be geared toward raising farmers' awareness regarding the benefits of cassava value addition. Ultimately, it will improve the probability of farmers participating in cassava value-addition activities.

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