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Determinants of Women in Post-Production Agri-value Chain Activities on Group Participation in Njoro and Molo Sub-counties, Nakuru County, Kenya

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The Kenyan government has been promoting group participation to enhance agricultural productivity through marketing and financial access to improve livelihoods. Groups have also been valued for their ability to foster social capital and collective actions. However, women's involvement in these groups has not been primarily focused on and taken seriously. Although previous researchers have clearly shown the importance of group participation, the determinants of group

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participation by women agri-preneurs is still unknown. This article therefore, determined the factors influencing women participation in groups in Njoro and Molo Sub-counties, Nakuru County. A multistage sampling technique was employed. Njoro and Molo Sub-counties in Nakuru County, Kenya between March and August 2023.The study sampled 267 female agri-preneurs, both group participants and non-participants. Data processing was done using STATA and SPSS software. The Binary Logit regression model determined the factors influencing women participation in groups. The major factors influencing women agri-preneurs' participation in groups included: Previous experience about group membership, the size of agribusiness enterprise in terms of income and ability of the female agri-preneur to access and borrow the loan at 95% confidence level. : Previous experience about group membership (P=.000), the size of agribusiness enterprise in terms of income (P=.000) and ability of the female agri-preneur to access and borrow the loan (P=.002) were statistically significant in (P<.05) to their participation in groups. Previous experience about group membership, the size of agribusiness enterprise in terms of income and ability of the female agri-preneur to access and borrow the loan positively influences women participation in groups. This can be attributed to more experience, skills, knowledge and attitude that female agri-preneurs get as they involve more in previous groups and the accessibility of the resources needed to manage their post- production activities

Keywords: Groups; women agri-preneurs; credit access; group participation; post production activities; agri-value chain.

1. INTRODUCTION

Agri-value chain refers to interrelated practices needed to move an agricultural product through the various phases such as from input suppliers until the agricultural good or service reaches the final consumer [1-4]. Agri-value chains are important in economic growth and development in Kenya through; creation of employment to majority of women and youths, industrialization, food security, improved incomes, earns the country foreign exchange and enhances both local and international peace and harmony [5, 6].

In getting the determinants of agri-value chains, participation factors such as group membership and agribusiness diversification ensures efficiency and effectiveness in management of agri-value chain associated costs such as transaction costs. About 200 million people participate in groups across developing countries [7]. Joining the group will lead to better knowledge and access to financial aid through loans and grants to increase their agribusiness activities [8]. Group membership also enables women agri-preneurs to make better decisions that may facilitate access to credit, information and use and access to the right technology [4]. According to the study by Kumar et al. [9], women's participation in groups is beneficial for developing an economy's social and financial sectors; this is achieved through self-help groups in India supported by the government, which eventually become agribusiness groups. This is because the women are empowered through groups and encourage each other as they carry out group activities. Research by Moreka [10] found that capital access encourages more women to participate in agribusiness groups because it is easier to get a loan or grant as a group than as an individual. Therefore, women find it beneficial to join or form a group to acquire land from financial institutions, government, and international fund aids directed to agribusiness. Agribusiness needs a lot of funds, and it is hard to raise funds as a woman; therefore, it encourages women to come and work as groups to access capital for agribusiness startups or expansion. It is also evident from the study that 95% of the participants applied for loans but were unsuccessful, and those in groups are in a better position to get financial services from both government and financial institutions.

Another research by Ingutia and Sumelius [11] led to a finding that women joining farmer groups is influenced by access to credit. Credit advancement to farmers is vital and is connected to collateral. Accessing a credit facility as an individual farmer is almost impossible unless you have collateral. Therefore joining a group will help women access credit facilities available for women and agribusiness players in the sector. The same research also found that land ownership was a barrier to women joining groups to boost their agribusiness. The land is an essential requirement in agribusiness, and if not allowed to own it. Limited access to women when utilizing the land and using the same land for credit access and developing it for agribusiness

because they do not have full rights as those of the land owner.

This is also related to a study that was conducted by Kavulya et al [12] on the performance of SACCOs in Kenya, that indicated that majority of members who participate in SACCOs in Kenya are male with low proportion of women.

Women play an essential role in economic development through agribusinesses in the rural economy, especially growth in the Gross Domestic Product (GDP). However, women agri-preneurs face more challenges in starting, managing, and making decisions in post-production agri-value chains activities. These challenges include; inaccessibility and ownership of assets, social-cultural hindrances, versatility factors, and illiteracy in terms of innovation and market innovativeness [13].

These challenges faced by women agri-preneurs, therefore, call for group participation since it plays a vital roles in the operation and success of many firms and enterprises today. Working as a group is essential for the group participants, for it acts as an ingredient on and off the race track [14]. One of these benefits is to reduce the high transaction costs associated with input and output market participation resulting from information asymmetries and limited access to credit, which can be responded to collectively through group participation [15].

As more countries participate in agri-value chains, Global Agri-Value Chains (GAVC) enables it to satisfy the global demand for food and other agricultural materials [16]. Global agri-value chains result in internationalization, leading to wealth and employment creation, foreign exchange, proper nutrition, poverty elimination, and food safety and security. It also expands on markets for the products [17]. The Agri-value chain sector also ensures the fulfillment of the Millennium Development Goals (MDGs) and a food-secure society globally [18]. This sector also fights global food insecurity and malnutrition by extending food shelf life [19].

Adoption of the 2030 Agenda for Sustainable Development (ASD) by the United Nations (UN) General Assembly that comprises 17 Sustainable Development Goals (SDGs) that need transformation changes in agri-value chains towards social, economic, and environmental sustainability [20]. There have been notable shifts in global production, distribution, and consumption of food due to transformations in global agri-value chains [21].

Despite the various benefits linked to group membership, there is still scanty literature to show the factors influencing women agri-preneurs to participate in groups. Although majority of participants in post- production agri-value chains have been noted to be women [22]. However women agri-preneurs are limited to and held back as a result of factors such as low asset ownership and other social related factors.

Based on the merits associated to group membership, there is need for women involved in post-production agri-value chain activities to participate in groups for them to be able to have more access to resources, trainings, market and credit. This accessibility enables women agri-preneurs to participate more in groups hence resulting to increased income and reduced risks. According to Ingutia and Sumelius [11], the need to access credit influences women agri-preneurs to join groups because it is difficult to get a loan as an individual since individual women agri-preneurs lack collateral needed to acquire a loan. Abdul-Rahaman [15], linked group membership to reduction of high transaction costs associated with input and output market participation as well as reduced costs associated with credit access.

According to Nakuru County Integrated Development Plan, post-production agri-value chain activities are the main source of revenue to the County government [23]. However, there are more male participants in the listed post-production activities than women in the County, despite the fact that women play a significant role in the same activities informally and also dominate in the population of the county. Both small and medium size agribusiness enterprises exist in this county with a few large enterprises. Njoro and Molo Sub-counties have been classified as those regions that are very suitable for agricultural activities and most agribusiness activities. Women from these areas participate in groups and play a big role in ensuring that post-production agri-value chain activities remain effective. However, most of the micro and medium enterprises from there two sub-counties are unregistered only with a few registered Nakuru CIDP, 2018.

Group formation and participation are seen as possible institutional solutions that would help overcome market-related failures like high transaction costs among agribusinesses. The concept of group formation has a long history

from the Colonial period when cooperatives were developed with different objectives. There has been a rise in stakeholders championing group formation, (in particular women and youth groups) to respond to additional trading measures along the agribusiness value chain. Studies have shown that groups help respond to efforts on quality and safety standards and ever-changing procurement systems [24-28]. Groups also create avenues for capacity building and skills development, enhancing agribusiness experts' bargaining positions [29-36].

Several studies have analyzed the role of attitudes and preferences on the functioning of groups, impact of groups on: market access, credit access, and technology adoption [37-42]. Despite the many studies on the role of groups in women's transformation [43-47], there still exists scanty literature on the factors that influence groups' participation by women involved in post-production activities such as value addition, distribution and selling of agricultural products. This study, therefore, sought to fill this knowledge gap by studying the determinants of group participation by women agri-preneurs.

2. MATERIALS AND METHODS

2.1 Study Area

The study was carried out in Njoro and Molo Sub-counties of Nakuru County. Nakuru County covers an area of 7496.5 km² with an approximate population size of 2,162,202, according to the Kenya population and housing census (2019).The main agricultural products produced in this county are mainly maize, beans, Irish potatoes, wheat, and horticultural products such as vegetables, flowers, and fruits. Livestock reared includes cattle, sheep, goats, and poultry. Nakuru County receives rainfall throughout the year, with much rain experienced in April, May, and August. There is less rain in January and February received in Nakuru County; rainfall ranges between 22mm and 143mm. Nj oro and Molo sub-counties cover approximately 713km² and 478.79km² respectively. Njoro Sub-county lies at 0.3305° S, 35.9434° E while Molo Sub-county lies at 0.2471° S, 35.7374° E. The population size of Njoro sub-county is 208,300, while that of Molo sub-county is 156732 (Census, 2019). The study also focused on two wards in every sub-county. In Njoro, Mau-Narok and Mauche wards were considered, and in Molo sub-county, Elburgon and Molo wards were considered. The study wards have women who predominantly depend on agribusiness activities. There also exist groups in the identified wards. The map of the study area is shown in Fig 1:

2.2 Sampling

This study was focused on women who participate in post-production agri-value chain activities.These activities were: selling, distribution and value-addition of agricultural products. Both women agri-preneurs participating in groups and non-participants made up the study's target population. Cochran's formula (1977) was applied in obtaining the sample size. This is because it calculates an ideal sample size given a desired level of precision, desired confidence level, and the estimated proportion of the attribute present in the population. Although there were other alternative methods of sample size determination Cochran's for this case was suitable as shown below:

$$\mathrm{n} = \frac{Z^2\,Pq}{e^2} \quad (1)$$

where; n is the desired sample size from the target population; Z is the normal standard deviation at the required confidence level of 95% (*Z*=1.96); p is the proportion in the target population assumed to contain the desired characteristics (Female agri-preneurs who participate in either formal or informal groups) (p=0.5); q is the proportion in the target population assumed not to contain the characteristics (Female agri-preneurs who are non-participants of either formal or informal groups), q=(1-p)=0.5; and e is the acceptable margin error (e=0.06).A bigger error has been used for diversify in the women because the women to targeted in this study participate in many types of activities.

$$\mathrm{n} = \frac{1.96^2\ x0.5x0.5}{0.06^2} \quad =267 \quad (2)$$

To obtain impact estimates generalizable to the target population, comparison units were pooled to have a reasonable number of observations with features corresponding to those of the treated (group participants) units (Heinrich *et al*., 2010). Based on this argument, therefore, a higher sample size for untreated (group non-participants) 60% were used to avoid bias and to optimize estimation of treatment effects as shown in the Table 1 based on the information given by agricultural officers from both sub-counties on women participating in agribusinesses:

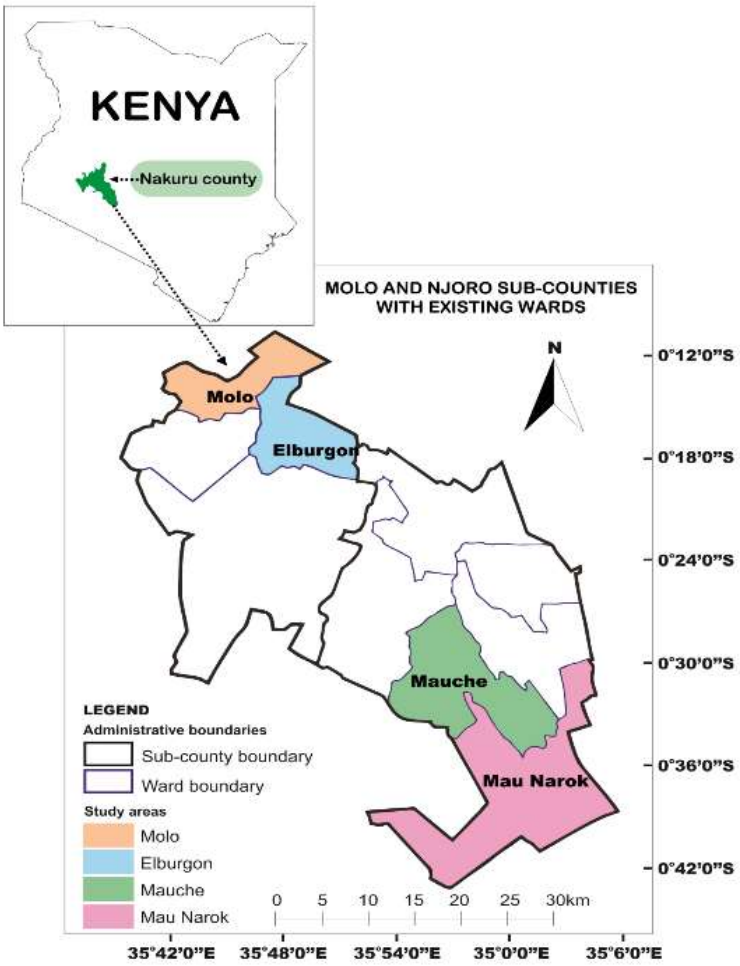

Fig. 1. Map of the study area (Molo and Njoro Sub-Counties)

Table 1. Proportionate sample distribution

Wards	Populations	Treated (40%)	Untreated (60%)	Total
Njoro Sub-County				
Mauche Ward	4999	30	45	75
Mau Narok Ward	5051	30	46	76
Molo Sub-county				
Molo Ward	3900	23	35	58
Elburgon ward	3847	23	35	58
Total	**17797**			**267**

2.3 Data Collection

The study used primary data.The Primary data was collected using semi-structured administered questionnaire. A pilot study was conducted to test the validity of the questionnaire by interviewing 25 women agri-preneurs in Keringet ward in Kuresoi- South sub-county in Nakuru County. Well-trained enumerators did the data collection process. Semi-structured questionnaires were used because they gave room for more information for the study. The study also involved many respondents, making this method appropriate. The questionnaire consisted of general information about the female agri-preneurs, such as age, education level, size of the household, employment status, agribusiness experience, decision making, any leadership role, group perception, any past experience about group participation, type of the

agribusiness enterprise, size of the enterprise in terms of income, number of business lines, source of funds for the enterprise, government's role, credit accessibility, market and technology accessibility.

2.4 Analytical Framework

The binary logit model was used to analyze this objective. The logit model was chosen because it enables handling of both ordinal and nominal independent variables, especially with the assumption that the model has a non-linear relationship between the dependent and independent variables. Moreover, group participation is endogenous thus can be affected by self-selection problem. However, the problem of selection bias has no effect on the logit regression model hence fit for this objective. The explained variable was a binary variable stating whether the respondents participate in groups or not. In the study, the decision by female agri-preneurs to join groups was modeled as a binary choice with the assumption of utility maximization by female agri-preneurs subject to resource constraints (Manski, 1977). A female agri-preneurs chose to join a group if the utility, *Uc* derived from group participation, was higher than the utility derived from non-participation, *Ui*. The utility *Ui* of a female agri-preneurs in this study was expressed as a function of various exogenous variables, *Xi,* and a vector parameter *β.*

$$Ui = Vi\ (\beta Xi) + ui \quad (3)$$

Where: *ui* is the error term. Important to note is that group participation decision is affected by external and internal influencing factors.

Depending on the utility, the probability of a female agri-preneurs being a group participant will therefore be given by;

$$P(ui < \beta Xi) \quad (4)$$

This can be expressed in an equation as;

$$P(C = 1) = P(ui < \beta Xi) = Vi\ (\beta Xi) + ui \quad (5)$$

Where *P* denotes probability, C = 1 for group participants, and C = 0 for non-participants. According to the previous literature, the internal factors that will be expected to influence female agri-preneurs decisions to group participation include demographic factors such as the age of the female agri-preneurs, education level, income, household size, experience, employment status of the female agri-preneurs among other covariates.

The external factors expected in this study will include socio-cultural and economic factors. The socio-cultural factors will include: leadership position of female agri-preneurs in the community, time taken to operate agribusiness activities, who makes decisions in the agribusiness enterprise, ability to have partners by women agri-preneurs, and previous group experiences. The economic factors will include the type of business enterprise, size of business enterprise, government policy, credit access, market access, and technology access on group participation.

The general equation of the Logit model will be described as follows:

$$q(E(y)) = \alpha + \beta x1 + \gamma x2 \quad (6)$$

Where q is the link function, E(y) is the expectation of the target variable, and α + βx1 + γx2 is the linear predictor (α, β, γ are the coefficients). This model will provide the probability of success or failure on the outcome of the dependent variable. Hence the sum of the two possible outcomes must be equal to 1 (Sperandei, 2014).

Therefore, by estimating the probability of success as *P*, then the probability of failure becomes *1-P.*

To derive the Logit function, a simple regression equation will be applied;

$$q(Y) = \beta o + \beta\ (Xi) \quad (7)$$

Where; y is the dependent variable and *Xi is* the dependent variable. The probability of success will be established by a general equation as;

$$P = \exp(\beta o + \beta(Xi)) = e\text{^}(\beta o + \beta(Xi)) \quad (8)$$

To satisfy the condition that probability must be equal to or less than one, equation 6 will be divided by a value of more than 1.

$$p = \exp(\beta o + \beta(Xi)) / \exp(\beta o + \beta(Xi)) + 1 = e\text{^}(\beta o + \beta(Xi)) / e\text{^}(\beta o + \beta(Xi)) + 1 \quad (9)$$

Then equation 7 will give probability as:

$$p = e\text{^}y/\ 1 + e\text{^}y \quad (10)$$

Equation 8 will be the Logit function. *P* denotes the probability of success. The probability of failure will be estimated from equation 8 as;

$$1- p = 1-(e^y/ 1 + e^y) \quad (11)$$

In addition to probability estimates from the logit model, the study will go ahead to estimate the odds ratio of the outcome using logistic regression. The odds ratio is always estimated from the logit model transformation by dividing Equation 8 by Equation 9

$$\text{Odds ratio} = P/(1-p) = e^y \quad (12)$$

By introducing log,

$$\text{Log } (P/(1-p)) = y \quad (13)$$

The logit model for the estimation of the probability of group participation will be generally expressed as;

$$P(1-0)= \beta0+\beta_1X_1+\ldots\ldots\beta_nX_n+u \quad (14)$$

$$U\approx N(0,1).$$

The logit model will be specified as;

$$P(grpparti) = \beta0+\beta_{1age} +\beta_{2educa}+ \beta_{3employ}+ \beta_{4Hhsize} + \beta_{5holdleadership} + \beta_{6decisionmaking}+ \beta_{7agribusinesstime}+\beta_{8bspartner}+\beta_{9experie}+\beta_{10btype}+\beta_{11bs size}+\beta_{12gvtpolicy}+\beta_{13borrowing}+\beta_{14tech}+u \quad (15)$$

3. RESULTS AND DISCUSSION

To Determine the Factors that Influence Women agri-preneurs' Participation in Groups in Njoro and Molo Sub-Counties in Nakuru County, the binary logit model was used to analyze this objective. The logit model was chosen because it enables handling of both ordinal and nominal independent variables, especially with the assumption that the model has a non-linear relationship between the dependent and independent variables. Moreover, group participation is endogenous thus can be affected by self-selection problem. However, the problem of selection bias has no effect on the logit regression model hence fit for this objective. The explained variable was a binary variable stating whether the respondents participate in groups or not. In the study, the decision by female agri-preneurs to join groups was modeled as a binary choice with the assumption of utility maximization by female agri-preneurs subject to resource constraints (Manski, 1977). A female agri-preneurs chose to join a group if the utility, *Uc* derived from group participation, was higher than the utility derived from non-participation, *Ui*. The utility *Ui* of a female agri-preneurs in this study was expressed as a function of various exogenous variables, *Xi,* and a vector parameter *β.*

$$Ui = Vi (\beta Xi) + ui \quad (16)$$

$$P(grpparti) = \beta0+\beta_{1age} +\beta_{2educa}+ \beta_{3employ}+ \beta_{4Hhsize} + \beta_{5holdleadership} + \beta_{6decisionmaking}+ \beta_{7agribusinesstime}+\beta_{8bspartner}+\beta_{9experie}+\beta_{10btype}+\beta_{11bs size}+\beta_{12gvtpolicy}+\beta_{13borrowing}+\beta_{14tech}+u \quad (17)$$

This signifies that a relationship existed between group participation and the factors influencing group participation. Hence the null hypothesis that states that there is no association between the term and the response is rejected. Based on previous studies, this inference is consistent with their findings (Moreka, 2019, Bwiru, 2020, Kumar *et al*., 2021). Besides, between 62% (Cox & Snell R Square) and 83.9% (Negelkerke R Square) of the variance in group participation is explained by the factors influencing group participation (Table 3).

Table 2. Omnibus test of model coefficients for factors influencing group participation

		Chi-square	Df	Sig.
Step1	**Step**	268.519**	16	.000
Block		268.519**	16	.000
Model		268.519**	16	**.000**

****, **, * =level of significance at 1%, 5% and 10% respectively.*

Table 3. Factors influencing group participation model summary

Step	-2Log likelihood	Cox &Snell R Square	Negelkerker R Square
1	104.491[a]	.621	.839

Source: Survey data

Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

In addition, a percentage accuracy classification (PAC) of 93.5% was yielded by the factors influencing group participation (Table 4).

This implies that the explanatory variables in the model accurately predict group participation for the female agri-preneurs by 93.5%. Inferring that 93.5% of the times we predict female agri-preneurs to participate in groups is correct. The results of the model showed further that the relationship between the explanatory variables and group participation amongst female agri-preneurs differs considerably (Table 5).To determine whether the association between the response and each term in the model is a statistically significant, the *p*-value for the term is compared to the significance level to assess the null hypothesis that states that there is no association between the term and the response.

Table 5 shows that within the hypothesized 14 explanatory variables, included in the model, three were found to have a significant relationship with group participation. These were: size of agribusiness enterprise, experience about group membership and ability to borrow a loan; however, the descriptions for the relationship exhibited by all variables are stated below. Odds ratio of less than one means a negative relationship.

3.1 Size of agribusiness enterprise

There is a positive relationship between the size of agribusiness enterprise and women group participation. This is statistically significant at 5% level of significance (Wald $\chi 2=23.752$, df=1, $p<0.05$). Results indicate that female agri-preneurs with large enterprises had 0.027 more chances of participating in groups than those with small sized agribusiness enterprises. Some members view groups to be demanding more time and resources especially a case of

Table 4. Percentage accuracy classification table for factors influencing group participation

Observed		Are you participating in groups		
		No	Yes	Percentage correct
Step 1 Are you participating in groups	No	157	9	94.6
	Yes	9	102	91.9
Overall percentage				**93.5**

The cut value is .500

Table 5. Factors influencing group participation variables in the binary logistic regression equation

variables in the equation	B	S.E.	Wald	Df	Sig.	Exp(B)
Age of the female agri-preneurs	0.014	0.029	0.245	1	0.621	1.014
Education level of female agri-preneurs	-0.673	0.463	2.114	1	0.146	0.510
Size of the house hold	-0.032	0.129	0.062	1	0.803	0.968
Employment status of Female agri-preneur	-2.422	1.409	2.955	1	0.086	0.089
Time in agribusiness activity	-0.025	0.040	0.383	1	0.536	0.975
Who makes decisions about agribusiness	0.093	0.416	0.050	1	0.823	1.098
Hold leadership position	-1.419	0.875	2.627	1	0.105	0.242
Do you have any business partner	-1.411	1.116	1.599	1	0.206	0.244
Experience about group membership	-3.666**	0.701	27.323	1	0.000	0.026
Selling	0.865	6.099	0.020	1	0.887	2.374
Value addition	2.110	0.921	5.245	1	0.022	8.250
Distribution	-1.076	0.927	1.349	1	0.246	0.341
The size of agribusiness enterprise in terms of income per month (1)	-3.615**	0.742	23.752	1	0.000	0.027
Government support to group participation	-0.475	0.985	0.233	1	0.630	0.622
Able to borrow a loan	-1.886**	0.604	9.755	1	0.002	0.152
Are you able to use and access technology	-1.326	0.839	2.498	1	0.114	0.265
Constant	7.191	3.225	4.972	1	0.026	1328.057

****, **, * =level of significance at 1%, 5% and 10% respectively*

merry-go round and Chama in Kenya. Groups also create market avenues and credit access opportunities for members hence helping in business growth and sustainability. Through collective action costs can be spread, volume in the market increases and better prices for products can be negotiated which helps businesses to grow and make more profits [48].

This is also highlighted by the study that was conducted by Mutonyi [49] that stated that group participation results from the challenges that small and medium size enterprises face especially in Africa and Asian countries. Small and medium scale holders experience high level of poverty due to limited access to market opportunities which is linked to high transaction costs and imperfect markets. Access to either domestic or international markets is achieved by increased bargaining power, increased economies of scale, negotiation for better prices, facilitation of certificates and labels.

3.2 Previous group experience

There is a positive relationship between group experience and group participation. This is statistically significant at 5% level of significance ((Wald $\chi2=27.323$, df=1, $p<0.05$). Results indicate that female agri-preneurs with good previous experience about group participation have more chances of participating in groups by 0.026 times than those female agri-preneurs with a bad previous experience about group participation. Groups are linked to be beneficial therefore those who benefits and grow their agribusinesses from groups have high chances of always participating in those groups so as to continue benefiting from such groups.

People have a habit of letting their past experiences dictate their future actions and affect their decisions. Group participation is associated with decision making taking quite a long time which may not be favourable to some participants; there is also conflict in understanding roles and responsibilities within the group [50]. Liverpool-Tasie [51] highlights in his study that group participation helps women participate in agribusiness activities to pull their resources together, search for a joint market for their products, and reduction in transaction costs associated with economies of scale.

3.3 Able to borrow a loan

There is a positive relationship between ability to borrow loans and women group participation. This is statistically significant at 5% level of significance ((Wald $\chi2=9.755$, df=1, $p<0.05$). Results indicate that female agri-preneurs who can access loans in groups had 0.152 more chances of participating in groups than those who are not able to borrow loans in groups. This could be because loans enable female agri-preneurs to meet costs related to their agribusinesses. This is consistent to the study that was done by Maina [52] on influence of participation in self -help groups that results showed that women participation in groups had appositive influence on loan access.

The results established in this study are also consistent with those of Orso and Fabrizi [53] that indicated that women who participate in groups are likely to be members of these groups for a long time because of the benefits derived from them and loan obligations. Also, the research that was conducted by Ogunmodede et al [54]. revealed an increase in income for group participants, which indicates the positive impact of group participation. Research by Moreka [55] found that capital access encourages more women to participate in agribusiness groups because it is easier to get a loan or grant as a group than as an individual. Therefore, women find it beneficial to join or form a group to acquire land from financial institutions, government, and international fund aids directed to agribusiness. Agribusiness needs a lot of funds, and it is hard to raise funds as a woman; therefore, it encourages women to come and work as groups to access capital for agribusiness startups or expansion. It is also evident from the study that 95% of the participants applied for loans but were unsuccessful, and those in groups are in a better position to get financial services from both government and financial institutions. Another research by Ingutia and Sumelius [11] led to a finding that women participation in groups is influenced by access to credit.

4. CONCLUSION

As mentioned, Previous experience about group membership, the size of agribusiness enterprise in terms of income and ability of the female agri-preneur to access and borrow the loan positively influence the women agri-preneurs' participation in groups. This can be based on more experience, skills, knowledge and attitude that female agri-preneurs get as they involve more in groups. Some of these experiences gained includes: trainings on; proper customer service, risk management, financial literacy and access to markets and other financial resources. To get a

deeper understanding of how female in post-production agri-value chain activities get support from family, furthers research should be conducted to get theirs opinions, whether husbands support their spouses in agribusiness enterprises

5. RECOMMENDATIONS

Based on the findings from this study, women agri-preneurs are still less empowered in technology use and access in Njoro and Molo sub-counties in Nakuru County. Women agri-preneurs need to have knowledge and skills on the innovations related to proper marketing of their agribusiness enterprises; how to learn from social medial on customers' needs and outsmart their competitors. This will boost female agri-preneurs business growth and expansion through gaining support from participating in policy making and investors to make the right technologies available for women agri-preneurs.Also the findings reveal that government has less support on women groups especial the support benefits a few women and this was linked to most group leaders being corrupt and the support only benefiting them. The government should come up with better policies on how to ensure that every woman benefits from its support. The government can support women in groups through training, tax relaxation aid funds for because it has great benefits to women.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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