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# Participation of Small-Scale Farmers in Collective Marketing of Potato in Molo Sub County, Nakuru County, Kenya

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**Abstract**
*Engaging in high value potato (Solanum tuberosum) markets is one important strategy which can assist small scale farmers to increase food security and move out of poverty. Collective marketing has been identified as one of the best strategies to improve the participation of small scale farmers in better markets. However, only a few farmers in Kenya practice collective marketing. This paper therefore, examines the extent of collective marketing amongst small scale potato farmers in Nakuru County. It further discusses reasons for low participation and suggests solutions to increasing participation in collective marketing. The study was conducted in four wards which were purposively selected namely, Molo, Elburgon, Mariashoni and Turi in Molo Sub County, Nakuru County where 118 potato small scale farmers belonging to potato groups were proportionately selected and interviewed. Data was subjected to descriptive statistical analysis using frequencies, percentages and thematic analysis. Only 7.6% of small scale farmers were involved in collective marketing. Women, youth and farmers with high literacy levels were high amongst members who participated in collective marketing. The study also found out that lack of access to better markets, lack of storage facilities and lack of training on collective marketing, were contributing reasons for low participation in collective marketing. Additionally, feeling of being exploited by buyers and lack of trust among group members reduced participation in collective marketing. The study findings may help policy makers, programme implementers and extension workers to advocate for increased participation of small scale farmers in collective marketing through policies and trainings.*
***Keywords:*** *Collective Marketing, Middlemen, Molo Sub County, Participation, Potato Small Scale farmers*

## 1. Introduction

Small scale farmers play a critical role in fighting poverty and contributing towards rural livelihoods and global economy (International Food Policy Research Institute [IFPRI], 2016) Their contribution would be enhanced if they go beyond subsistence set up and become more entrepreneurial and market oriented (Mukundia, 2014; Sinyolo & Mudhara, 2018). High transaction costs is one of the key reasons for small scale farmers' failure to participate in high value markets (Muthini, 2015). Additionally, small scale farmers lack marketing knowledge and skills, and information on prevailing market prices and have weak institutions (Gyau, Mbugua & Oduol, 2016). Small scale farmers are further disadvantaged by their lack of assets and limited access to credit (Abebaw & Haile, 2013). These challenges lead them to sell their produce to middlemen at farm gate price which is usually low.

Collective action is one of the initiatives that may enhance small scale farmer's participation in high value markets (FAO, 2016; Fischer & Qaim, 2014). When acting collectively, farmers may be in a better position to secure access to new technologies, increase market efficiencies, and obtain the necessary market information (Transmania Institute of Agriculture [TIA], 2014). Farmers may also be able to secure access to credit facilities, increase economies of scale and improve bargaining power in the value chains (Lapar *et al.,* 2010; Taiy *et al.*, 2016). There are several activities which farmers who are involved in collective actions engage in. Some of them include; farming, table banking, merry go round, welfare support and collective marketing (Kibe, Mwangi, Nkurumwa & Mulu-Mutuku, 2017). However, collective marketing has been one of the developments believed to improve the income of the small scale farmers (Nyikahadzoi, Siziba, Nokoe, Njuki & Adekunle, 2010).

Collective marketing has several benefits including: enabling farmers to sell their produce together and reduce transaction costs and utilize high-value markets. Evidence from many countries shows that collective marketing reduces the cost of getting the product to the markets, improves the bargaining power of farmers and enables small scale famers to access services that private sector or government could not provide (Chau, Lebailly & Trung, 2017). Against the background of potential benefits of collective marketing, the support of farmer groups is high on the policy agenda of African countries (Bernard & Spielman, 2009). The Government of Kenya, for example, initiated the formation of farmer groups to promote the active participation of small scale farmers in markets (Shiferaw, Obare, Muricho & Silim, 2009). Success stories of collective marketing in Kenya are documented in several studies, for example banana farmer organizations in Muranga, Nyeri, Embu and Meru counties (Fischer & Qaim, 2012), collective marketing of chicken in Kakamega County (Gicheha, Ngigi, & Hillary, 2015) and Mango group farmers in Makueni County (Muthini, 2015).

Despite the success stories, very few potato farmers in Nakuru County, one of the leading potato producing counties in Kenya, participate in collective marketing (Taiy *et al.,* 2016). A study conducted in Nakuru and Baringo counties by Farm Attachment Program (FARMUP) (2015) indicated that out of 39.1 percent farmers involved in collective actions, only 1.7 percent participated in collective marketing despite being exploited by middlemen (Taiy *et al*., 2016). Similarly, a baseline study conducted among potato farmers in Nakuru County in the year 2017 indicated that farmers who are involved in collective action, only 4.7 percent of farmers are involved in collective marketing of potato (Kibe *et al.,* 2017).

Potato is one of the major crops of economic significance in Kenya. It is the second most important staple food crop after maize (Jassens, Wiersema, Goos & Wiersema, 2013). The role of maize in feeding the population is greatly challenged as famine is constantly experienced in many regions of the country (Wang'ombe & van Dijk, 2015). Potato provides a reliable source of income, employment and food (Food and Agriculture Organisation [FAO], 2014). It is estimated that the crop is grown by approximately 600,000 to 800,000 small scale farmers with a total production of 1 to 1.4 million tonnes worth KSh30 to KSh40 billion per year (as cited in Kibe, Mwangi, Kaguongo & Kaguora, 2018). However, small scale farmers' benefits from the potato value chain are minimal, over 90 percent of potatoes is marketed through middlemen (Jassens *et al.,* 2013; Wang'ombe & van Dijk, 2015).

Middlemen dominate a large part of the potato value chain, they access market information and exploit farmers in the process (Jassens *et al.,* 2013). Middlemen take advantage of information that is not available at either end of the value chain. They sometimes form cartels that distort market information by creating parallel information leading to exploitation of farmers. Sometimes middlemen meet to set prices that are not informed by market dynamics of demand and supply hence advertising the commodity at the expense of the consumer and trader (Mutunga, 2014). Hence, if farmers can participate in collective marketing, they can be empowered to explore better markets and overcome the exploitation by middlemen.

The study, on which this paper is based, was conducted in Molo Sub-County in Nakuru County. Molo is one of the eleven administrative sub-counties that make up Nakuru County among others namely; Naivasha, Nakuru East, Nakuru West, Gilgil, Rongai, Nakuru North, Subukia, Njoro, Molo, and Kuresoi North and Kuresoi South (Nakuru County Intergrated Development Plan [NCIDP], 2013). Molo sub-county has four wards namely: Mariashoni, Elburgon, Turi and Molo. It is located along the Mau Forest which runs on the Mau Escarpment and is one of the coldest places in the country. Hence, its geographical position makes it a suitable place for growing potatoes among other crops. Molo was chosen for the study because it is ranked the first largest potato producer in Nakuru County, Kenya (Kenyan National Potato Policy, 2009; Draft Nakuru Potato Strategy, 2018).

## 2. Materials and Methods

The target population for this study were small scale farmers in active potato farmer groups who were from the four Wards of Molo Sub County namely; Molo, Elburgon, Mariashon and Turi. The target population of the study was 18,039 small scale potato farmers in Molo Sub County. The study involved farmers who were in potato farmer groups. There were 10 active potato farmer groups having 247 members in total. The Sub County was purposively selected due to the prevalence of potato farming. A random sampling method was used to select a sample of 118 potato small scale farmers who were proportionately selected from the four wards.

A cross sectional survey research design was used. This design was appropriate for this study because it intended to collect data at one point in time and generalize to the target population. Data was collected through a researcher administered structured questionnaire. The resulting data was subjected to Statistical Package for Social Scientists (SPSS) version 20 and analysed descriptively using frequencies and percentages. In addition,

information emanating from open ended questions was incorporated. Thematic analyses of the qualitative data were carried out. The results are presented in the next section.

## 3. Results and Discussion

### 3.1 Profile of the Respondents

Data on characteristics of the potato small scale farmers that was collected include gender of the respondent, age of the respondent and level of educated completed. Understanding of respondents' profile was important to understand the kind of farmers involved in potato groups.

Overall, there was a higher percentage of women respondents than males in the area of the study. The number of female respondents was more than twice that of male respondents who were 67.8% and 32.2% respectively as shown in **However the** results might be biased towards women as some groups were composed of women group members only. This might have contributed towards the higher of women.

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**Table 1**: Gender of Respondents

| Gender | Number | Percentage |
|---|---|---|
| **Female** | **80** | **67.8** |
| **Male** | **38** | **32.2** |
| **Total** | **118** | **100** |

The findings in Table 1 show that the number of women involved in potato groups was higher compared to men. This can be attributed to the fact that some groups were comprised of women members only while there were no men members group only. According to Food and Agricultural Organization (2011) women are more engaged in farming of food crops more than men. Another study also found out that women are greatly involved in the production and handling of crops (Manfre *et al.,* 2013). Therefore, the high percent participation of female small scale farmers in potato production in Molo Sub County is consistent with findings of other studies on female participation in farm activities.

The ages of respondents ranged from 23 to 77 years with a mean age of 47.91 years and a standard deviation of 12.127. Above a third of the respondents (34.7%) were aged between 46 and 55 years old followed by respondents aged between 36 and 45 years (22.9%). Only 7.6 percent of farmers were elderly aged above 66 years while the youths aged 35 years and below were represented by 16.9 percent and respondents aged between 36 and 45 years were 22.9 percent as shown in **Figure 1.** The age of the majority respondents in this study is therefore similar to the average age of Kenyan farmers which is 55 years (The Young Agropreneur, 2011).

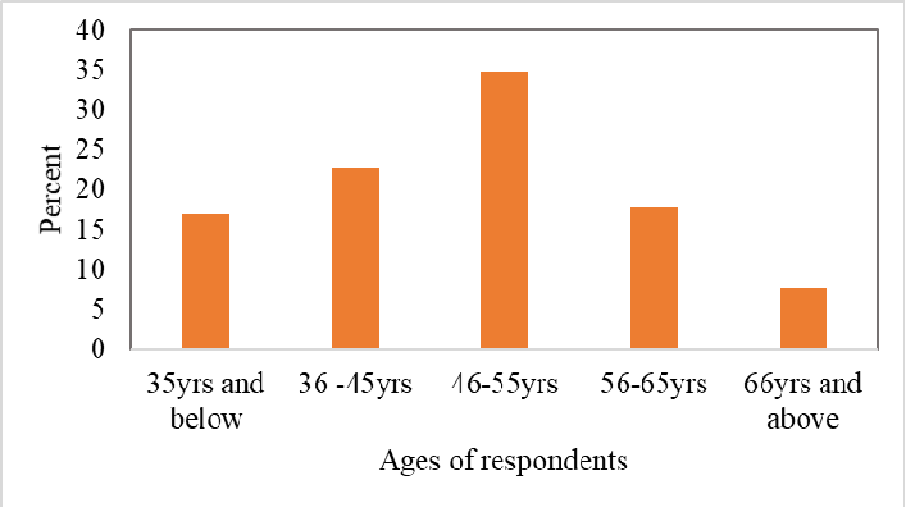


**Figure 1**: Age Distribution of respondents

It can be inferred that demographically, potato farmers in Molo Sub County are in productive age group which ranges from 18 to 64 years old (NCIPD, 2018). Provision of support such as capacity development and provision of good business environment to this age group is important in reducing poverty levels (NCIPD, 2018). It can also be inferred that farming in Kenya is done by middle aged farmers compared to the young people.

On the level of education completed, the highest percent (61%) of the respondents had achieved primary education while 26.3% had attained secondary education. A smaller proportion of respondents (5.9%) indicated they had achieved tertiary education while only 6.8% indicated they did not have any formal education as shown in Figure 2.

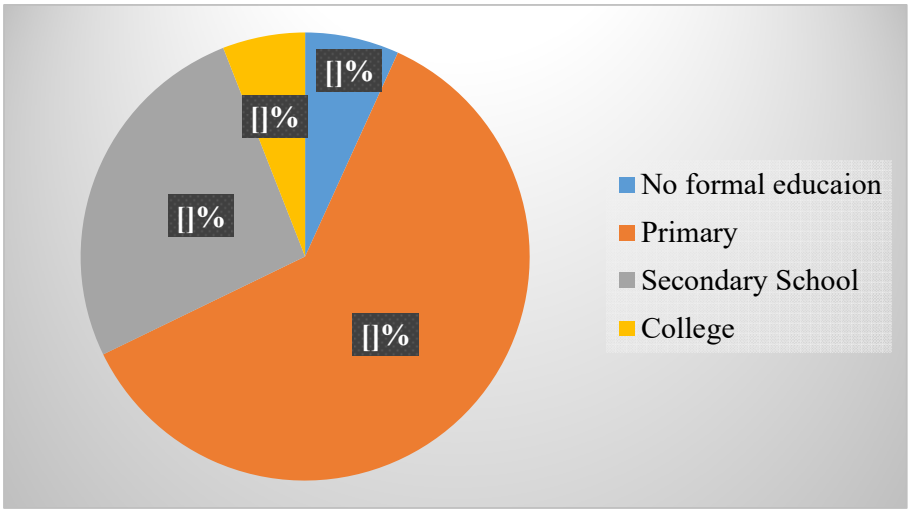


**Figure 2***:* Level of Education Completed by Respondents

The study findings therefore imply that literacy levels in the study area were high with over 90 percent of respondents attaining a certain level of formal education. According to Nyikahadzoi *et al., (*2010), education level increases the probability of participating in collective marketing. It opens the mind of farmers to knowledge, provides hands-on training and better methods of farming and keeps the farmer well informed about innovations and allows farmers to share their experiences (Eric *et al.,* 2014; Okpachu *et al.,* 2014).

### 3.2 The Extent of Collective Marketing of Potato in Molo Sub-County

The study also sought to determine the extent of collective marketing of potato in Molo Sub County. The study evaluated the collective marketing practiced in the area of study, level of participation and characteristics of people who were involved in collective marketing. In the area of study, majority of the respondents (97.5%) grow potatoes for both selling and home consumption while 0.8% grow potatoes only for sale and 1.7% grow potatoes only for consumption as indicated in **Error! Reference source not found.**.

**Table 2:** Purpose for Growing Potatoes

| **Purpose for growing potato** | **Percent** |
|---|---|
| Home consumption | 1.7 |
| Sale | 0.8 |
| Both | 97.5 |
| **Total** | **100.0** |

The results therefore indicate that potato crop contributes towards farmers income among the respondents. Similar study conducted in Molo and other Counties also indicated that farmers in Kenya grow potatoes for both cash and food consumption (Muthoni, 2013). There were six main purposes which brought respondents together in groups namely; group farming, collective marketing, information sharing, input procurement, table banking and merry go round. Farmer groups are a strategy used by the current Kenyan Government to maximize the efficiency of its agricultural production by spreading newly developed technologies to farmers as well as setting

up common goals and developing new strategies. Farmer groups are used to provide farmers in all parts of Kenya with updated technologies, information and methods (Kim, 2010).

Information sharing among farmers happens when they share experiences and also through trainings from organisations. Groups are avenues of information exchange, farmers majorly rely on other farmers as their source of information (Maindi-Nyambune, 2014). Additionally, Governments and developmental organisations find it easy and prefer to work and conduct trainings with farmers who are already organised in groups compared to individuals (Sinyolo & Mudhara, 2018).

Table banking and merry go rounds both help farmers to access small loans amongst themselves. Merry go rounds are informal groups of people who come together for the purposes of saving together and borrowing from one another in a rotational manner while table banking is also another group funding strategy where members of a particular group meet once every month, place their savings, loan repayments and other contributions on the table then give out immediately either as long term or short term loans to one or a number of interested members (Onyango, 2017).

The respondents were asked the reasons they joined groups, and results were as shown in **Figure 4.** The results showed that majority of farmers joined groups for information sharing purposes. The percentage of men who joined to gain from information sharing was high compared to women with 97.4 percent and 88.8 percent respectively. The other highly group participated activity was table banking followed by merry go round where females participated more in both compared to males. The percentage participation for females in table banking and merry go round were 52.5 and 45 while it was 18.4 and 5.3 for males respectively. In contrast, group farming and collective marketing had high participation of men represented by 36.8 percent and 18.4 percent while women participated by 8.8 percent and 16.3 percent respectively.

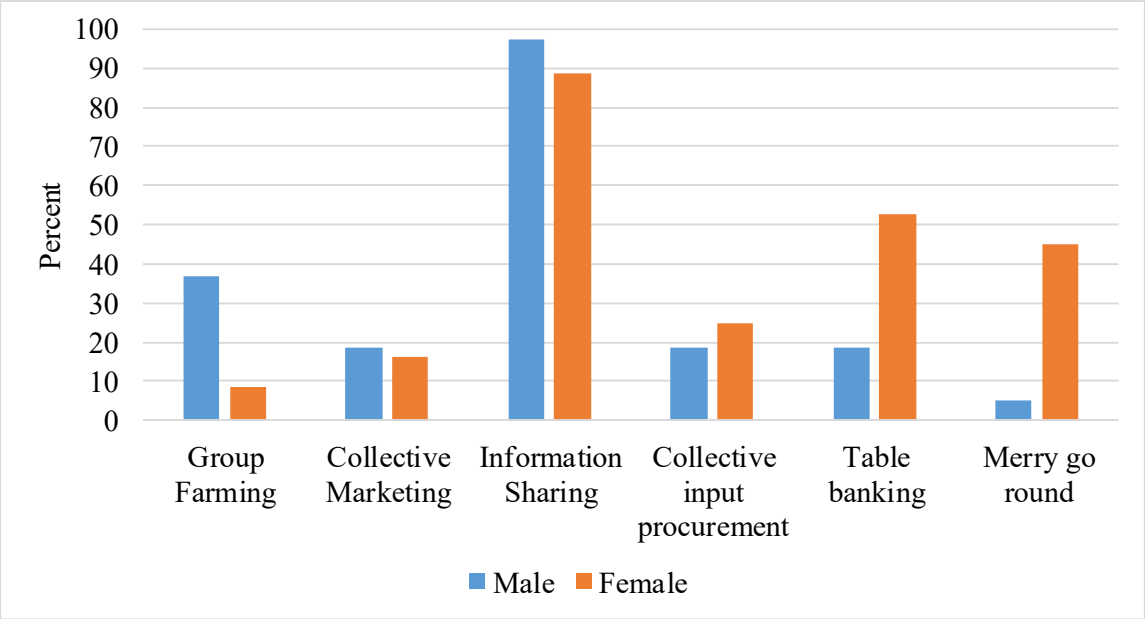


**Figure 4**: Reasons for Group Membership

Further analysis, indicated that the relationship between gender and group farming, $r(116) = 0.343$, $p < 0.05$, gender and table banking, $r(116) = -0.323$, $p < 0.05$ and, gender and merry go round, $r(116) = -0.397$, $p < 0.05$ were statistically significant. The results in this study shows that men have high percentage of participation in group farming. However, this contradicts with the findings by Mutunga (2014) who found out that in Kenya, women carry out most of the activities at the farm level while men engage in off-farm or other activities like marketing. Men get attracted to activities that usually involves money. Table banking and merry go round activities are popular in Kenya usually participated by women who often use the money borrowed as capital for their livelihood projects (Onyango, 2017).

Over 90 percent of potatoes in the study area were marketed through brokers. Only few farmers marketed their potatoes through groups. Collective marketing was found to be practised in two forms.

The first form of collective marketing was group selling where farmers in a group have a piece of land whether owned by the group or hired, member grow potatoes together and sell. This farm act as a demonstration plot, farmers learn good agricultural practices and are encouraged to practice the same at their individual farms. Additionally, farmers benefit from the sells made from the group farm, the profits are spread and shared equally among members. The other part of money goes to the group account which is used to facilitate procurement of farm inputs and other group transactions. In the study area, out of 10 active potato groups interviewed, only four of them had a group farm and were involved in group farming and marketing. This therefore, shows that even the level of this collective marketing is low.

The second form of collective marketing which is also the main focus in this study is where individual farmers belonging to a group, grow potatoes individually and then pool them together and sell them through the group. The group leaders are the ones responsible for finding markets and selling farmers' potatoes on their behalf. In the study area, farmers who were participating in this form of collective marketing were only 7.6 percent. Majority of farmers (92.4%) sold their potatoes as individuals. This is shown in **Figure 5.**

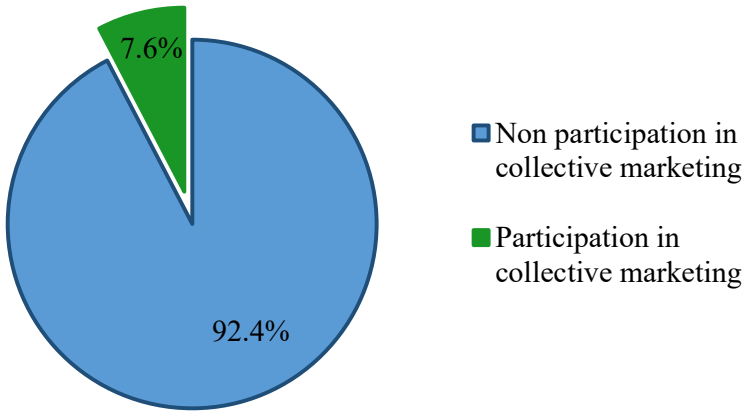


**Figure 5***:* Extent of participation in collective marketing

From the results, it can be inferred that few farmers are participating in collective marketing. Respondents who participated in this form of collective marketing, said that their potatoes were packed in standard bags. Further analysis also showed that members who were involved in collective marketing were able to sell at a standard price per kilogram compared to those who sold individually at different sizes of bags. This was good to them as they were able to sell at a better price compared their friends who sold through brokers. Below is a summary of the characteristics of the 7.6 percent respondents who were involved in collective marketing.

### 3.2.1 Gender

The results in **Table 3** indicate that twice number of women (66.7%) compared to 33.3% of men were involved in collective marketing. However, further analysis showed that the relationship between gender and participation in collective marketing was not statistically significant, $r(116) = 0.093$, $p > 0.05$.

**Table 3:** Characteristics of Respondents Involved in Collective Marketing.

| Gender | Percentage |
|---|---|
| Male | 33.3% |
| Female | 66.7% |

According to the study, gender does not play a role in collective marketing. However, the findings by Arlotti-Parish (2014) concluded that marketing groups are predominantly participated by women compared to their male counterparts. This contradicts with Mathenge, Place, Olwande and Mitoefer, (2010) who in their study found that that men participate more in markets compared to women. Earlier results in this study, in **Error! Reference source not found.**, had also indicated that more men cited collective marketing as the reason for joining groups compared to women.

### 3.2.2 Age of Respondents

Age of a farmer is another factor observed to have influenced participation in collective marketing (Gicheha et al., 2015; Omiti, 2009). Analysis by gender in Figure ***6***6. shows that female respondents who are youths aged 35 years and below were involved more in collective marketing than males represented by 50 percent and 33.3 percent respectively. The highest number of male respondents engaged in collective marketing were aged between 46 to 55 years old represented by 33.3 percent while their female counterparts were represented by 16.7 percent. All the respondents involved in collective marketing were in the reproductive age as their ages were less than 65 years old.

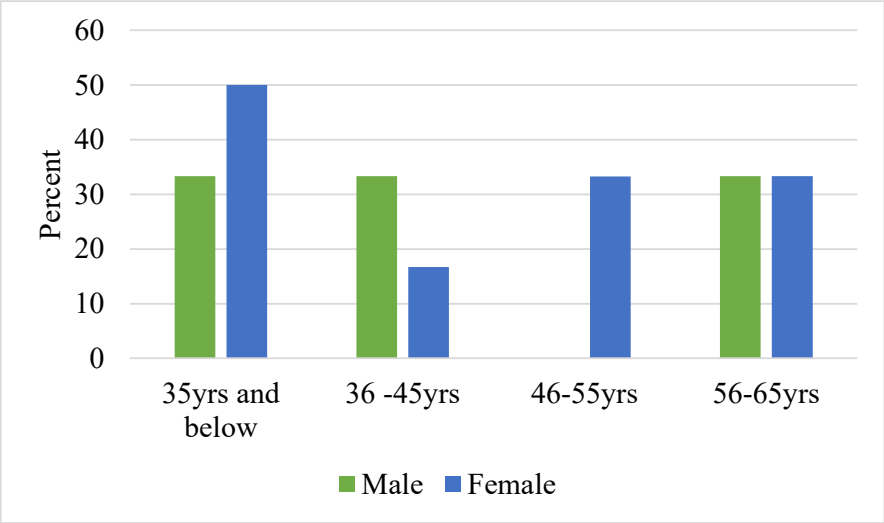


**Figure 6**: Age of Respondents

Further analysis revealed that the relationship between participation in collective marketing and respondents' age was negative but statistically significant, $r(116) = -0.185$, $p < 0.05$. This means that an increase in age reduced the probability of participation in collective marketing. Overall, higher percentage of respondents participating in collective marketing were youths. The findings of this study contradicts with several studies which have shown that older farmers engages more in collective marketing, youths find agriculture not to be attractive. Older farmers are likely to participate in collective marketing than younger farmers as they have more experience and networks which help them to fetch more markets for their produce (Omiti, 2009). The study conducted by Gicheha et al., (2015) also found out that an increase in age of the farmer was a highly significant determinant on farmers' participation in collective marketing.

High engagement of youths in collective marketing may be attributed to many programs which are focusing on empowering young people to engage in value chains. The study by Yami et al., (2019) found out that recent interventions implemented by governments and development partners across Africa have succeeded in producing several favorable outcomes for the youths. These interventions include rebranding of agribusiness as a competitive career path for the youth, youth attitudinal change toward agribusiness, improved access to productive resources, increased business management skills, increased learning and use of ICT in agribusiness, increased market access, increased business networks, and increased mobilization toward agribusiness, youth startups in agribusiness, and gainful youth employment in the agricultural value chains. Therefore, there is a possibility for many youths to start engaging in agribusiness as the unemployment rate in Africa keeps on increasing. Program implementers should not be excluding young people when reaching out for agricultural entrepreneurship.

### 3.2.3 Level of Education

Literacy levels among respondents who participated in collective marketing were high, 88.8 percent of the respondents had attained a certain level of education. Majority of respondents had attained primary education (44.4%) while secondary education was attained by 33.3 percent and the least attained was tertiary education represented by 11.1 percent. Spearman's test results revealed that the relationship between participation in collective marketing and level of education was positive. However, the relationship between the two variables

was not statistically significant, r (116) = 0.054, p > 0.05. Therefore, having attained a certain level of education has a positive influence in respondents' participation in collective marketing.

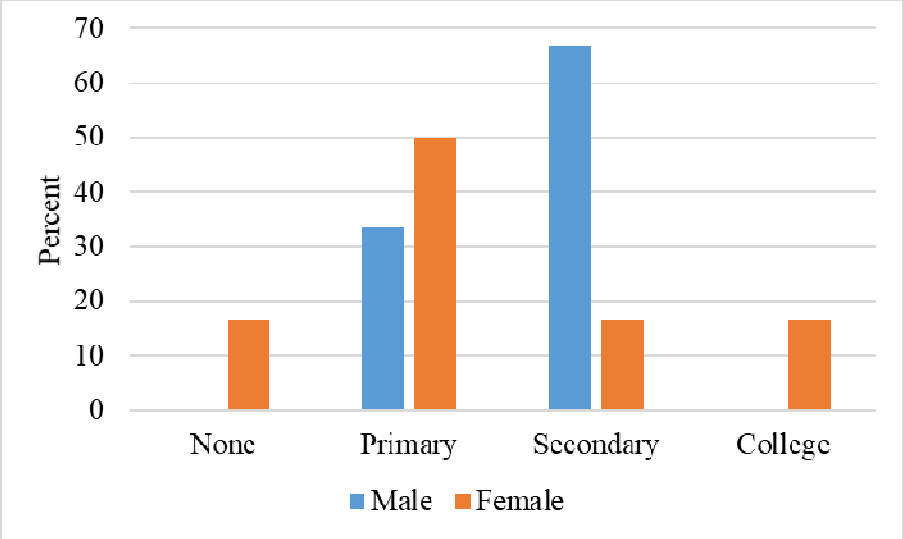


**Figure 7:** Respondents Level of Education

Analysis by gender in **Figure 7** shows that men were more educated compared to women with 33.7% of them having attained primary education while majority, 66.7%, had achieved secondary education. However, results shows that women respondents had attended highest level of education which is tertiary education represented by 16.7% while none of their male counterparts had gone up to that level. Education enhances access to knowledge and information, it plays a crucial role in enhancing the understanding of market dynamics and informed group market participation decisions (Martey, Al-Hassan R., & Kuwornu, 2012). It empowers members to analyze and utilize market information which could lower production and market risks in addition to reducing transaction costs (Maindi-Nyambune, 2014).

In this study, it can be infered that education plays a role in farmers'decision to participate in collective marketing. The findings of this study are consistent with that of Olwande and Mathenge (2010) who found out that education was an important determinant of market participation. Mango *et al.,*(2017) also concluded that farmers need at least primary education to effectively commit themselves in collective marketing. Hence, collective marketing participation rates amongst rural households can be improved by educated farmers. Therefore, initiatives by government and Non Governmental Organisations (NGOs) in relation to collective marketing should be targeting to include more people who have attained a certain level of education in order to increase participation.

### 3.3 Reasons for not Selling through the Group

Thematic analysis of the respondents' open ended questions revealed a number of reasons for low participation in collective marketing. These reasons are discussed under six themes: lack of access to better markets, exploitation by buyers, lack of good organisation and management amongst farmers, lack of storage facilities, lack of trust and unity, and lack of trainings on collective marketing.

Over 90 percent of potatoes in the study area were marketed through brokers. The other frequent channel for selling potatoes was direct to consumers of which small scale farmers still fetch low prices. Small scale farmers lack links and connections to better high value markets. Mostly, brokers who sometimes form cartels, have good connections and are well linked to the processors and other potato buyers, hence they have an upper hand over small scale farmers. Farmers also had reported that it is not even easy for them to sell their potatoes at a better price even when they transport themselves to urban markets such as Nairobi. They usually end up in the hands of brokers who shield them from accessing the buyers. As result, brokers end up buying potatoes at even lower prices compared to when they would have sold at farm gate. This therefore, makes farmers opt to sell their potatoes at farm gate to avoid incurring transport costs and then lose eventually.

Small scale farmers also explained that some organisations in addressing the problem of markets, do not fully address the problem. They come from urban cities and buy potatoes from them at a better price compared to when the potatoes are sold to brokers. However, these organisations only selects bigger sized potatoes and leave the rest of the small sized to the farmers. It's hard for farmers to find markets for the remaining potatoes which even bring big losses to them. On the contrary, brokers are not selective, they buy unsorted potatoes from small scale farmers, and hence farmers opt to sell to them to avoid wastage of their potatoes.

Respondents also acknowledged that they are not highly organised, which may be a contributing factor for not selling their potatoes together. They plant potatoes at different times and hence there are variations in harvesting interval due to different maturity stages. Most buyers prefer to buy potatoes in bulk, which unless small scale farmers are organised, they cannot afford to supply individually.

Lack of storage facility/cold store is another contributing factors towards the reasons for not participating in collective marketing. Most farmers produce potatoes twice a year due to bimodal rainfall patterns in most potato growing areas (Muthoni *et al*., 2013). The seasonality in potato production leads to glut and lean times. During glut season, the supply of potatoes is high hence it sold at low price while during lean season potato is sold at a good price. During glut season, every small scale farmer sells their potatoes leading to over flooding in the market hence potatoes are sold at low price. The common potato variety grown in Molo Sub County in Kenya is Shangi which has less dormancy period if not stored properly. Therefore, storage facilities would enable farmers to keep their potatoes longer and sell at a good price when the supply is low.

The most important behavioural qualities among group marketing members is trust. However, in the study area, the results showed that trust was missing among some group members. They did not believe in their leadership and also in their fellow group members. It is anticipated that where a higher level of trust exists, group will be more willing to act in collective marketing. The study by Collins, Gray, Reid, Shadbolt and Dooley (2018) identified trust as essential for collective actions. Trust avoids the need to monitor others in a group and contributes to the development of long term obligations between people, which help in achieving positive collective outcomes (Pretty, 2003).

Finally**,** small scale farmers also said they did not have prior information and experience about collective marketing. Lack of such information contributes to their less participation in collective marketing regardless of affiliating themselves to different groups. Despite results showing that most farmers join groups to benefit from information sharing, they lack technical skills on how they can market their potatoes together. It is therefore important that government and organisations working with farmers should be including trainings on collective marketing.

**Conclusions and Recommendations**

It is evident from the study that few farmers are participating in collective marketing of potato in Molo Sub County, Nakuru County. There is need to enhance and promote the increased participation of farmers in collective marketing among the already organised potato farmers so that they can benefit from selling collectively. Targeting farmers who have completed a certain level of formal education with collective marketing interventions would promote increased participation in collective marketing. The study also has revealed that youths should not be neglected in value chains as it is evident in the study that youths participation in collective marketing is higher.

The study recommends that efforts should be made to assist farmers through building of storage facilities. Lack of proper storage at farm level demands that farmers sell their potatoes soon after harvesting in order to avoid losses as potato is a highly perishable produce. Farmers should also be assisted with access to and better links to markets. Enforcing and strengthening the implementation of the new potato regulation launched by Government of Kenya in June, 2019, The Crops [Irish Potato] Regulation (2019) would be a solution to the many challenges small scale farmers are facing. The Regulation stipulates that potatoes will be sold at better prices through collection centres registered under County Governments. Provision of trainings on collective marketing would enlighten farmers with information on collective marketing.

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