

MAKING MARKETS WORK FOR SMALLHOLDER MAIZE FARMERS THROUGH STRENGTHENING RURAL MARKET PRACTICES IN TANZANIA

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ABSTRACT

This study determines the market practices which empower smallholder maize farmers to sell at market places instead of the farm gate. Specifically, the study identifies the market practices influencing smallholder maize farmers to participate in the rural market. The study was done in six villages; Hembahemba, Njoge, and Makutupa in Kongwa district and Tambi, Mwenzele, and Mlembule of Mpwapwa district in Dodoma region. The study was done using 633 sampled smallholder farmers. Secondary data were collected from Kibaigwa international grain market which is available in the study area. The output of the binary logistic model revealed that market practices significantly influence decisions of smallholder maize farmers to participate in Kibaigwa market services at a 5 per cent level of significance. This study concluded that maize smallholder farmers in Tanzania have the potential to contribute to the economic growth of a country if they fully participate in rural markets. This can be possible if market practices are improved at market places. The study recommends that efforts should be made at upgrading rural market practices to add value to maize and enhancing smallholder farmers' participation.

Keywords: Smallholder maize farmers; Market practices; Binary logistic regression model; Market participation, and Tanzania

1. INTRODUCTION

The agriculture sector which is largely dominated by smallholder farmers is considered to be the mainstay of the economy of many low-income countries (Gollin, 2014; Ncube, 2020). This suggests that smallholder farmers are vital for national development (Mchopa & Jeckoniah, 2018; Mayala, 2019; Machimu & Kayunze 2019; Otekunrin, Momoh, & Ayinde2019). Worldwide, it employs over 40% of the population while about 60% of the population depends on it. Generally, literature posted that, 45% of the developing world's population lives involve in agriculture out of which 27% are smallholder farmers. The International Fund for Agricultural Development (IFAD) (2011) also recognized that over 2 billion people in the world depend on 500 million smallholder farms for their livelihoods.

Smallholder farmers in Tanzania are characterized by the use of poor farming technology mostly in rain-fed agriculture with limited linkages between farm and non-farm sectors (Ismail, 2014). Smallholder subsistence farmers (peasants) utilizing about 85% of the total land under cultivation with the average farm sizes of 3.0 hectares each using the hand hoe as the dominant tool. According to Ismail, Srinivas and Tundui (2015), Ismail and Changanima (2019), Zungo and Kilima (2019) maize is the most important staple food crop grown in Tanzania. Also, a significant quantity of maize is produced by smallholder farmers whereby about 70% of the land is used for maize production (Zungo & Kilima, 2019). According to the national census of agriculture for smallholder agriculture (2012), a number of households that plant maize in the long rain season are about 60.4% of the total crop growing households in Tanzania. Therefore, any attempt to improve maize smallholder farmers will mean improving the majority of Tanzanians.

Dodoma region which is among 30 regions in Tanzania dedicates a larger proportion of her land to maize crop production; it is estimated by the national census of agriculture for smallholder agriculture (2012) that, the area planted with maize per household in Dodoma region is 1.3ha being a second region after Manyara which has an

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average of 1.36ha. However, due to several factors such as poor agriculture extensions services, poor rural markets, and backwardness in technology, the sector has been performing poorly. The poor performance of agriculture and shrinking in the income of the rural population has led to the development of various market facilities at rural market places as a way of making sure that smallholder farmers are fairly participating in economic development through engaging in market activities.

On the other hand, it has been documented that the availability of market facilities in rural areas alone does not guarantee effective market participation of smallholder farmers. These market facilities require proper management accompanied by a combination of various market practices to maintain the quality of agricultural produces from the production fields to the point of sale to capture market premiums which together can ensure effective participation of farmers in the maize marketing chain. These practices include dissemination of market information, grading of maize, and training of smallholder farmers, recording of the amount of maize sold, cleaning and weighing maize before selling. McNeill and Montross (2013) pointed out that the use of market facilities requires proper operations, meaning that having well and improved market facilities will mean nothing if market practices are done in improper ways.

The theory of the market transition from state redistribution economy to market in state socialism economy also supports the fact that providing necessary market services at market place can empower and allow smallholder farmers to plan and participate in all activities relating to the marketing of their produces. This means, if governments improve the rural market by refining market practices, smallholder farmers will have the ability to plan and handle the quality as well as the price of maize. It is very common to find out the buyer dictates the price of maize because of the poor practices centred to the rural market. According to Nee, (1989), the process of transformation can only be achieved if rural markets open up alternative sources of rewards which are in most cases not dominated by the redistributive state. Nee also posted that, the shift to these rural markets can thereby decrease the reliance on the states which largely deal with policy issues instead of the implementation process. Also, the impression that market modifications open up alternative mobility networks for smallholder farmers to participate directly in the market based on the market services is that markets provide powerful incentives to direct smallholder farmers through both positive and negative sanctions. Positive market sanctions can include market practices such as cleaning, drying, grading, training, weighing, and dissemination of market information.

Apart from that, in many parts of rural areas, poor management of market practices has resulted in low remunerative prices of maize sold. Maize smallholder farmers do not see the difference between using the service or not. Consequently, by facing this challenge, maize smallholder farmers opt to sell their maize at farm gate instead of selling at market places. Also, Tanzania, like any other developing countries has limited empirical data on the influence of market practices in empowering smallholder farmers in rural markets. According to (Bellemare and Barret, 2006) and Ohen *et al* (2014), research works on market participation are scanty more especially in developing countries where important functions make certain questions paramount. To fill that gap, this study provides data on the market practices; weighing practices, access to information, recording, training, cleaning, and grading practices which empower poor smallholder maize farmers to market participation through strengthening them in rural areas. The following was the key hypothesis developed from the theory and the reviewed literature.

2. STUDY HYPOTHESES

1. H₁: Weighing practices have no significant influence on the market participation decisions of maize smallholder farmers. Reject H₁ if P-value is < 0.05, Fail to reject H₁ if P-value is > 0.05.
2. H₂: Access to information has no significant influence on the market participation decisions of maize smallholder farmers. Reject H₂ if P-value is < 0.05, Fail to reject H₂ if P-value is > 0.05.
3. H₃: Recording practices have no significant influence on the market participation decisions of maize smallholder farmers. Reject H₃ if P-value is < 0.05, Fail to reject H₃ if P-value is > 0.05.
4. H₄: Training practices have no significant influence on the market participation decisions of maize smallholder farmers. Reject H₄ if P-value is < 0.05, Fail to reject H₄ if P-value is > 0.05.
5. H₅: Cleaning practices have no significant influence on the market participation decisions of maize smallholder farmers. Reject H₅ if P-value is < 0.05, Fail to reject H₅ if P-value is > 0.05.

6. H_6 : Grading practices have no significant influence on the market participation decisions of maize smallholder farmers. Reject H_6 if P-value is < 0.05 , Fail to reject H_6 if P-value is > 0.05 .

3. METHODOLOGY

The results are based on a study conducted in the Dodoma Region in central Tanzania. A total of 633 questionnaires were used in the analysis being 103 from Njoge village, 80 from Makutupa village, 86 from Hembahemba village, 125 from Tambi village, 119 from Mwenzele village and 120 from Mlembule village. Several questionnaires with some missing data were dropped either because of incomplete information or data recording errors on the part of enumerators. According to Rubin and Babbie (2008), the extent of the missing data in questionnaires may be ignorable if it is under 15% of the total questionnaires. If the extent of missing data level is higher than 15%, then it is important to establish the pattern of missing data. In this study, only 19 out of 652 questionnaires were incomplete, which is a 3 per cent and hence ignorable.

The sampling frame for this study was the updated list of members of maize small-holder farmer households' preferably, household heads from the village registers obtained from the village government offices. These were used in selecting the households for the interviews. The study used purposive and random sampling approaches of which six villages were selected purposively based on the production level of maize, problems of market accessibility, and distances from Kibaigwa International Grain Market. The purposive selection was done in consultation with selected districts and villages officers. The random sampling procedure was employed to select respondents (households) from the selected villages.

This random sampling was done after specifying the number of maize small-holder farmers identified and selected from a list of village registers obtained from each study village. On the other hand, data collected were analyzed using a binary logistic regression model in which; model chi-square analysis was used to test the model goodness of fit. By using the logistic regression model, the probability of a result being in market participation decisions was modelled as a function of the level of market practices; weighing practices, access to information, recording, training, cleaning and grading practices. The general multiple logistic regression model is given as:

$$\logit[\pi(x)] = \log\left(\frac{\pi(x)}{1-\pi(x)}\right) = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p \dots\dots\dots (1)$$

Where $\pi(x)$ is the likelihood of participating in the market x_i 's are covariates and β_i 's are their respective parameters. The results of the model are presented in the form of a regression parameter estimate and estimated odds ratios (Exp (β)). The estimated odd ratios, determined by taking the exponent of the regression parameter estimates, shows the increase or decrease in the likelihood of participating in the market at a given level of the market practices as compared to those in the reference category. An estimate of odd ratio > 1 indicates that the likelihood of participating in the market for smallholder farmers at a given level of market practices is greater than that for the reference category. Similarly, an estimate of odd ratio < 1 specifies that the chance of participating in the market at a given level of the market practices is less than that for the reference category. A 5% level of significance was used throughout the study, any market practices with a p-value less than 0.05 were considered as significantly associated with the market participation decisions.

4. VARIABLES AND THEIR MEASUREMENTS

The findings in Table 1 show different definitions of variables used to study the influence of market practices on market participation decisions of maize smallholder farmers.

Table 1: Operationalization of market practice variables

SN	Explanatory variables	Measurement	Expected sign	Comment
1	Constant	Magnitude	?	Large size means large effects
2	Weighing practices	Categorical	+	Improve weighing practices means strengthening perceptions toward the service
3	Disseminating market information	Dummy	+	The more the ways of disseminating information are improved the more the farmers are satisfied
4	Recording	Categorical	+	The more the recording service is improved the more the farmers are satisfied
5	Training	Categorical	+	The more the training is improved and extended to the farmers the more the useful it gets
6	Cleaning	Categorical	+	The more the cleaning service is improved the more the farmers are satisfied
7	Grading	Categorical	+	Improve grading practices means strengthening perceptions toward the service

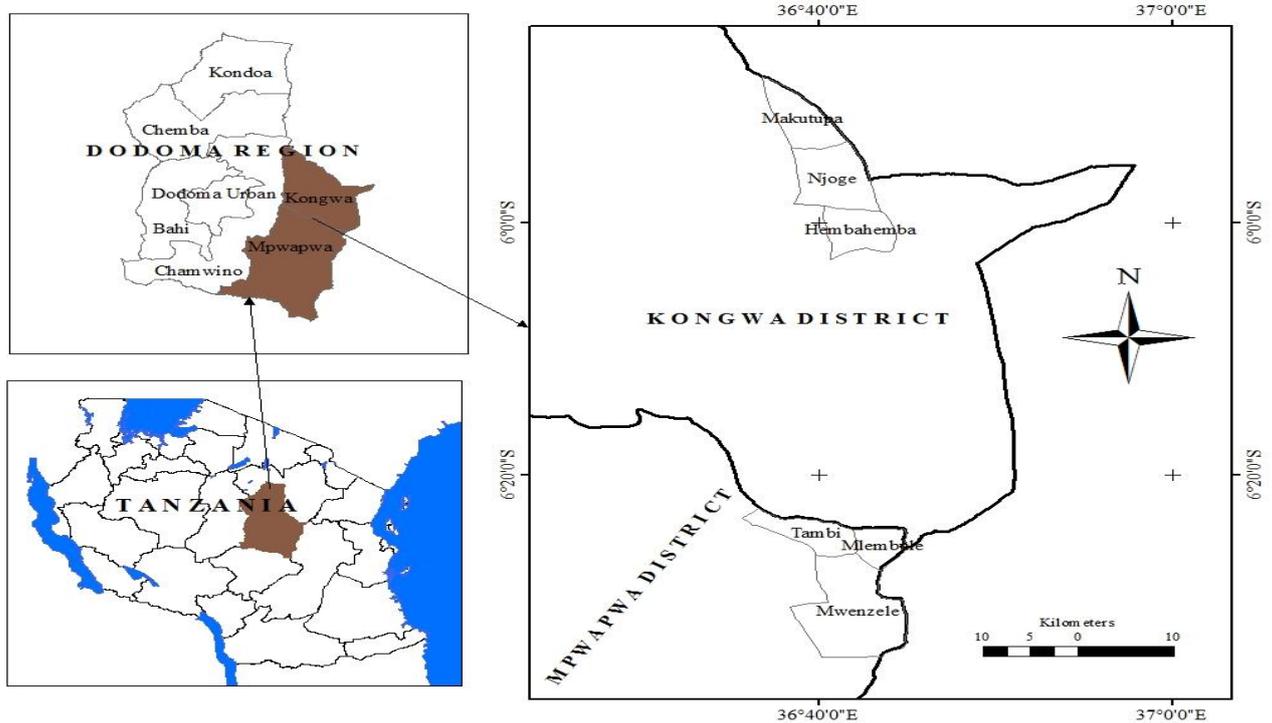


Figure 1: Map of Sampled Districts in Dodoma region

Source: Remote Sensing & GIS, Tanzania Forestry Research Institute (TAFORI)

5. FINDINGS AND DISCUSSIONS

5.1 Binary Logistic Regression Model Fitness Attributes

Independent variables captured were market information, grading of the produce (maize), training of the maize smallholder farmers, and recording of the amount of maize sold, cleaning of the maize, and weighing maize before selling. These variables were analysed in the logistic regression model. Model Chi-Square was used to test the goodness of fit of the model concerning the influence of market practices on market participation and therefore, the Model Chi-Square statistic was found to be 804.644 with a conventional p-value of 0.05 ($p < 0.001$) showing that, some of the market practice factors donate to the prediction of the likelihood of market

participation. The overall model fit statistic (omnibus test of model coefficient) is less than 0.05 and highly significant at ($P < 0.001$) with 6 degrees of freedom ($\chi^2 = 60.885, p < 0.001$).

The descriptive measures of goodness-of-fit, the pseudo R^2 is also positive and high approximately 0.72.3 which supports that the model fits the data well (Cox and Snell $R^2 = 0.092$ and Nagelkerke $R^2 = 0.723$) indicating that variations in probabilities of participating in Kibaigwa market were explained by about 72% of the covariates in the logistic regression model. The findings also indicate that the model with descriptors (PAC: 61.9) performs better than the null model (PAC: 56.9). Therefore regarding these findings hypothesis that market practices significantly influence the decisions of smallholder farmers to participate in Kibaigwa market services at a 5% level of significance was fully accepted.

Table 2: Binary logistic regression analysis for market practices

Variables	β	S.E	Wald	DF	Sig.	Exp(β)
Weighing (Poor)			14.721	2	.001	
Weighing (Fair)	.976	.255	14.633	1	.000	1.377
Weighing (Good)	.426	.385	1.226	1	.008	1.633
Information (Access information)	.592	.209	8.054	1	.001	1.553
Recording (Not satisfied)			.627	2	.731	
Recording (Satisfied)	.131	.242	.292	1	.589	1.877
Recording (Highly satisfied)	.304	.439	.479	1	.489	1.738
Training (Not useful)			9.419	2	.009	
Training (Somehow useful)	1.609	.533	9.099	1	.003	1.200
Training (Useful)	1.707	.584	8.552	1	.003	1.181
Cleaning (Not satisfied)			5.974	2	.050	
Cleaning (Somehow satisfied)	-.660	.855	.596	1	.440	.517
Cleaning (Satisfied)	-1.145	.841	1.853	1	.173	.318
Grading (Poor)			47.430	2	.000	
Grading (Fair)	-1.397	.231	36.575	1	.000	.043
Grading (Good)	-3.298	.766	18.556	1	.000	.057
Constant	2.687	.946	8.063	1	.005	14.692

Source: Analysis of field data

Results showed that, out of six covariates included in the logistic regression model, only cleaning and grading were found to constrain the market participation decisions of maize smallholder farmers. The other four covariates; weighing practices, market information practices, recording practices, and training were found to enable the decisions with positive regression coefficients. The following is the binary logistic regression equation developed from table 2 of the market practices variables:

$$\text{Logit}(P) = 2.687 + 0.976(\text{WP-Fair}) + 0.426(\text{WP-Good}) + 0.592(\text{IP}) + 0.131(\text{RP-Satisfied}) + 0.304(\text{RP-Very satisfied}) + 1.609(\text{TP-Somehow useful}) + 1.707(\text{TP-Useful}) - 0.660(\text{CP-Somehow satisfied}) - 1.145(\text{CP-Satisfied}) - 1.397(\text{GP-Fair}) - 3.298(\text{GP-Good}).$$

Where: Logit (P) = Is a probability of market participation ranging from 0 to 1, WP = Weighing practice recorded as categorical variable (Poor = 0, Fair = 1 and Good = 2), IP = Information practices recorded as dummy variable (Not satisfied=0, Yes = satisfied), RP = Recording practices captured as categorical variable (Not satisfied = 0, Satisfied = 1, highly satisfied = 2), TP= Training practices captured as categorical variable (Not useful = 0, somehow useful = 1, useful = 2), CP= Cleaning practices recorded as categorical variable (Not satisfied = 0, somehow satisfied = 1, satisfied = 2) and GP= Grading practices recorded as categorical variable (Poor = 0, Fair = 1, Good = 2).

5.1.1 Weighing of maize

Weighing practices is an enabling factor for market participation. By comparison, farmers who perceived weighing practices as fair or good were found more likely to sell at the market than those who perceived the practice as poor. This was shown by odd ratios of 1.377 and 1.633 for 'fair' and 'good' responses respectively,

this indicates that if weighing practice is improved by one unit, the odd will be 1.377 (37.7%) and 1.633 (63.3%) larger for fair and good responses respectively than for poor responses. On the other hand, weighing practice was found to be statistically significant in both categories ($p = 0.001$) for 'fair' and ($p = 0.008$) for 'good' responses. This signifies that weighing practice was a determining factor of market participation (Table 2). With these findings, the hypothesis H_1 which stated that "*weighing practices have no significant influence on the market participation decisions of maize smallholder farmers*" was rejected. This means that if the weighing practice is improved by a unit, there is a possibility of improving perceptions of smallholder farmers from poor to good and therefore attracting many maize smallholder farmers to sell at Kibaigwa market. However, it was noted during the survey that, weighing practices are not conducted properly, poor education was said to negatively affect the process. However compared to the inside market weighing tools, weighing bridge services was found to be operated in the right way. Regular skill development and training are done to the market actors about the weighing bridge operations were found to help the marketing process in positive ways. Poor perceptions toward the service were also found to be associated with illegal weighing practices in the market and this is in line with Kakaty and Borah (2011) and Ismail (2014) who observed that adequate and well-standardized market weighing facilities in the market are necessary to attract market participation only if operations relating to these facilities are done in a right way.

5.1.2 Disseminating market information

Dissemination of market information is another variable of market practice that influences the decisions of smallholder farmers to participate in the market. The variable has a positive regression coefficient $\beta = 0.592$, a statistical significance of $p = 0.001$, and an odd ratio of 1.553. Therefore, the hypothesis H_2 which stated that "*Access to information has no significant influence on the market participation decisions of maize smallholder farmers*" was rejected and hence as the management of market increases disseminating information using simplified means, maize small-holder farmers tend to increase the likelihood of selling to the market. This means that, maize small-holder farmers with 'access information' responses are more likely to participate in the market than those with 'Do not access information' responses by the odd ratio of 1.553 times (55.3%) for every increase in the dissemination of market information (Table 2). The study revealed that simple means of communication like using mobile phones have always helped to improve the process of disseminating the information to the farmers. This has helped farmers to access the information about prices and availability of buyers on time and therefore improve the decisions to participate in the market. However in some villages of Mpwapwa district, smallholder farmers complained about the untimely access to the information provided and the reasons given were the long-distance, poor infrastructures, and poor mobile network. This result aligns with the study done by Ruijs (2002), who documented those simple ways of disseminating market information allow farmers to take and easily understand market information and thus help them to make proper marketing decisions that are related to selling at the market instead of the farm gate. This is also related to searching for potential buyers, negotiating, enforcing contracts, and monitoring.

5.1.3 Recording of the quantity sold

The regression coefficient, Wald statistic, and odd ratio indicate how the recording empowers market participation for smallholder farmers. However, hypotheses H_3 which stated that "*Recording practices have no significant influence on the market participation decisions of maize smallholder farmers*" was failed to be rejected hence it was not a determinant of market participation. This is because the influence of this variable was found not statistically significant with $p > 0.05$. The findings, further indicate that compared to those who have responded with 'not satisfied' about the recording service, those with 'satisfied' responses have 1.877 times (87.7%) higher odds and those with 'highly satisfied' have an odd ratio of 1.738 times (73.8%) higher odd to participate in the market. This means, in every increase of one unit of recording practices, there will be increasing of odds of maize small-holder farmers to participate in the market by 1.877 times (satisfied) and 1.738 times (highly satisfied) which indicates that, improving recording activity of the quantity of maize sold, increases the satisfaction level of maize small-holder farmers (Table 2). It was further revealed that recording practices in rural markets have facilitated the improvement of price determination ability and flexibility in terms of preparedness for changes in market conditions for maize. Also, an increase of production was said to be contributed by proper recording at the market since keeping records, help farmers to know the trends of price changes, the number of maize traders, and the quantity of maize sold per season. Additionally, the information

provided in recordings especially of quantities sold and deadlines for sales can help to facilitate the quality improvement of the products and flexibility in productions.

5.1.4 Training practices

Analysis of logistic regression shows that the variable has a positive correlation with decisions of smallholder farmers' market participation. Both responses 'somehow useful' and 'useful' in this category were found to have a statistical significance level of $p = 0.003$ with market participation decisions. Therefore, hypothesis H_4 which stated that "*Training practices have no significant influence on the market participation decisions of maize smallholder farmers*" was rejected. The findings further imply that compared to those farmers who responded with 'not useful', smallholder farmers responded with 'somehow useful' has an odd ratio of 1.20 (20%) times more likely to sell at the market than those with 'not useful' and 'useful' responses who were found to have odd ratios of 1.181 (18%) times as large as compared to those with 'not useful' (Table 2). Generally, the findings imply that training practices influence market participation for maize smallholder farmers in surveyed villages. Observations showed that, before the construction of the Kibaigwa international grain market, maize smallholder farmers' had lack of entrepreneurial skills in the study area which prevented them from properly utilizing marketing investment information. During the study it was also found that, the training has helped them to improve the quality of packaging, improving the quality of maize produced, and increase the ability to deal with untruthful middlemen, proper management of transportation, and price negotiations. In packaging, it was observed that training has helped to transform the traditional ways of packaging to modern ways. The study further revealed that, compared to the packaging materials used before the construction of the market, current materials used are improved, convenient, and able to prevent spillage during transit and storage. A similar result was also noted by the government of India in 2008 that packaging should be cost-effective, clean, and attractive with the ability to reduce marketing cost, and materials used should be reusable. Also, it should be noted that costs associated with making transactions affect decisions of market participation for maize farmers (Ismail, *et al.*, 2015).

5.1.5 Cleaning of maize

This variable was found to have a negative correlation with market participation decisions of maize small-holder farmers. By keeping 'not satisfied' as a reference category, other categories 'somehow satisfied' and 'satisfied' were found not to have a statistical significance on market participation decisions. This indicates that the hypothesis H_5 that "*Cleaning practices have no significant influence on the market participation decisions of maize smallholder farmers*" was failed to be rejected. However, the odd ratios in both categories indicate that any attempt to improve market participation decisions of small-holder farmers by improving cleaning practices of maize will mean decreasing market participation by odd ratios of 0.517 (51.7% decrease in odds) in 'somehow satisfied' and 0.318 (31.8% decrease in odd) in 'satisfied' respectively as compared to those with 'not satisfied'. In other words, these two odd ratios imply that any unit reduction of the cleaning practice of maize will more likely increase the levels of satisfaction and therefore increase the odds of the decisions to participate in the market. However, the regression coefficient of this variable does not concur with the expected sign, it was theoretically expected that improving the cleaning of maize will mean increasing the levels of satisfaction and therefore was assumed to have a positive perception towards the service (Table 2). This implies that cleaning practice is not a determinant of market participation among maize smallholder farmers across villages.

Majority of the interviewed farmers pointed that, they are discouraged to use the service as some of the operators of those machines were used by the buyers to operate machines in their favour especially delaying the process and indicating poor quality of maize which in turn result to low price, however, it was observed during this study that, the practice could have much impacted if there was price incentive. It was also observed that there is no difference between the prices of cleaned and un-cleaned maize. Generally, lack of smallholder farmer's participation in marketing processes being caused by market activities such as cleaning of their farm produces, evidence from this study shows that some rural areas in developing countries have increased the levels of participation of smallholder farmers by improving cleaning practices as a result of setting proper procedures and market incentives at the market level.

5.1.6 Grading of maize

Model results indicate that categories in grading practice have negative regression coefficients which imply that, the variable constrain market participation decisions. However, the results indicated a high statistically significant relationship with $p = 0.001$ in both categories i.e. 'fair' and 'good'. This implies that grading practice was a determinant of market participation decisions of maize small-holder farmers and therefore the hypothesis H_6 which stated that "Grading practices have no significant influence on the market participation decisions of maize smallholder farmers" was rejected. Further, the variable was found to have odd ratios of 0.043 and 0.057 for 'fair' and 'good' categories, this means, small-holder farmers responded with 'fair' have an odd ratio of 0.043 times (4.3%) less compared to those with 'not satisfied' responses and small-holder farmers with 'good' have odd ratio of 0.057 times (5.7%) less compared to 'not fair' responses. In other words, it means there is a possibility of increasing the odds of the decisions of the maize small-holder farmers to participate in the market by an odd ratio of 0.043 times and 0.057 times if grading practice is to be removed in the market.

However, the regression coefficients of this variable do not concur with the theoretical expectation sign, it was expected that, by improving grading practice, the level of satisfaction will also improve and therefore positive perception towards the service (Table 2). This suggests that grading practice at the Kibaigwa market is a determinant of market participation among maize smallholder farmers in Hembahemba, Njoge, Makutupa, Tambi, Mwenzele, and Mlembule villages. A negative coefficient indicates that grading affects participation negatively. Three reasons were found to be associated with these findings: i) bad experience among smallholder farmers on grading practices done by the market actors ii) lack of significant differences of prices and iii) fear of competition from other maize producers. It was reported that in the first year of market operations, grading was mandatory. Every farmer was required to grade their maize-based on levels of moisture content (dryness). The market had special machines of measuring moisture content in maize. According to the farmers, corruption was involved in grading maize to favour traders. Market officers responsible for grading colluded with maize traders to lower the price of maize by reporting higher moisture content. Such a situation annoyed most farmers, hence refused the use of the service.

Secondly, there was an insignificant difference in price between graded and non-graded maize. Some of the farmers interviewed reported that the price of maize which is considered as dried was not higher as compared to other maize. Thirdly, some of the maize smallholder farmers believe that grading could lead to low prices and small quality of maize to be sold because of the high competition from farmers of other villages like Kiteto villages which take large quantities of maize to Kibaigwa market. It was further reported that at the moment grading is relied on the use of naked eyes and price is determined by informal agreement between buyer and seller though there is a room of using grading service machine available at the marketplace. However, it was revealed that, if the stated problems relating to grading practices are solved, grading can save smallholder farmers from being exploited by improving bargaining power concerning the quality realized after grading (Rushna, 2008).

6. CONCLUSIONS AND RECOMMENDATIONS

This study concludes that maize smallholder farmers in Tanzania have the potential to contribute to the economic growth of a country. However, lack of full participation in rural markets prevents maize smallholder farmers from shifting to commercial farming. Most of them opt to sell at the farm gate instead of selling at the market place where they can increase their contribution to economic growth. On the other hand, most maize smallholder farmers are constrained by several market practices, making it difficult for them to commercialize; such poor weighing practices, poor dissemination of market information, poor training and grading practices as well as poor recording and cleaning.

The study recommends that efforts should be made at upgrading rural market practices to add the value of the maize. This will also empower smallholder maize farmers as it will reduce exploitation which majorly occurs when the trading activity is done at the farm gate. It is also important to consider various training especially those related to increase the quality of maize produced so as to have a competitive advantage over large scale producers.

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