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DETERMINANT OF TURMERIC PRODUCERS MARKET OUTLET CHOICE INSHEKA AND MAJANG ZONES OF SOUTH WEST OF ETHIOPIA

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ABSTRACT

This study was aimed at analyzing market outlet choice decision of turmeric producers in Sheka and Majeng Zones of South West Ethiopia with specific objectives of identifying factors affecting market outlet choice decisions of farm households, and identifying constraints and opportunities faced by smallholders in the market. The data were collected from both primary and secondary sources. The primary data for this study were collected from 838 farmers and from key informants through application of appropriate statistical procedures. The result of multinomial logit model indicated that the probability to choose the collector outlet was significantly affected by access to market information, education level, post-harvest handling, owning transport facility and adult equivalent compared to wholesale outlet. Similarly, the probability of choosing retailer marketing outlet was affected by sex of the household, access to extension service, access to market information, adult equivalent and post-harvest handling compared to wholesale outlet. Moreover, Partial marketing system and absence of policy framework to manage the illegal tradeoffs of the area are also the main difficulties on the market side. Therefore, policies aiming at increasing farmers' access to modern technology, developing and refining groundwork in the marketing system, developing negotiating power of producers are recommended to improve farmer's market participation development.

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INTRODUCTION

Turmeric (*Curcuma Longa*) is an important spice which is used as a ground spice and in curry powder, mainly as a food-coloring agent as well as a coloring material in the textile industry and a traditional medicine for a variety of diseases (Bose et al., 2008). Among the global important spices, turmeric is the highest world productive spices next to ginger with 65 qt/ha, which product is 45 qt/ha and this spice can be considered as a strategic spice for increasing the productivity and production of spices in the world. In Ethiopia turmeric productivity is 24 qt/ha and it is the main candidate spices for improving the Ethiopian spice production and productivity in spice development strategies (Ethiopian export promotion Agency, 2013). Its importance has been increasing in the world markets and the majority of demand comes from households as a coloring agent in food items. Besides food usage, it has also been used by pharmacy and dyeing industry. As far as the importance of turmeric production, the plant has been grown in different agro ecological zones by smallholder farmers, mainly as a source of income as well as for food.

According to the (Ethiopian Export Promotion Agency, 2013) indicated total production of turmeric in the three major producing regions of SNNP, Oromia and Amhara Regions was 39,620.30 quintals; with SNNP /Southern Nations and Nationalities and Peoples/, Amhara and Oromia regions accounting for 64%, 25% and 11% of total production of turmeric in the country. The area under these spices was estimated to be 120,677.81 hectare in the year 2012/13. Spices and aromatic plants are invaluable cash crops for small holder poor farmers and women in Ethiopia; They serve as a major source of household income and the government of Ethiopia (GoE) also considered as the prime candidates for the diversification of our sole export commodities coffee and sesame to augment the foreign currency earnings of the country and for improving the livelihood of poor, land-constrained small holder farmers and women. Turmeric is one of the main spices that plays important role in poverty alleviation through employment generation and creating new opportunities for poor farmers. Since its products are bulky and the labor to land ratio of turmeric cultivation is high; it has continuous demand that allows high productive employment.

	Independent variables	Direction of relationship with depend variable(preference of market outlet)
1	Sex of the Household Head(being male)	+ (positive relationship with base category variable)
2	Age of Household Head(increase)	+ (positive relationship with base category variable)
3	Access to Extension Service (Yes)	+ (positive relationship with base category variable)
4	Access to Credit (Yes)	+ (positive relationship with base category variable)
5	Access to Market Information (Yes)	+ (positive relationship with base category variable)
6	Level of Education (Literate)	+ (positive relationship with base category variable)
7	Distance to the nearest Market(increase)	- (negative relationship with base category variable)
8	Income from Off-farm activities (Yes)	- (negative relationship with base category variable)
9	Post-harvest Value addition (Yes)	+ (positive relationship with base category variable)
10	Owning Transport facility (Yes)	+ (positive relationship with base category variable)
11	Adult equivalent(increase)	+ (positive relationship with base category variable)
12	Membership to any Cooperative (Yes)	+ (positive relationship with base category variable)

Increasing turmeric production and marketing thus contribute to commercialization of the rural economy and create many off-farm jobs. However, cultivation of spices in Ethiopia has remained predominantly traditional over the centuries; being produced mainly by smallholder farmer operating on small plot land around homestead and in natural forests (Addisu, 2014). A review of literature in agro-industry study in Ethiopia indicates that the sector faces many challenges due to limited market outlets, limited efforts in market linkage activities and poor market information among actors (Dereje, 2007; Kaleb, 2008; Dendena *et al.*, 2009). Correspondingly, (Mamo, 2009) argued that small scale, dispersed and unorganized producers are unlikely to exploit market opportunities as they cannot attain the necessary economies of scale and lack bargaining power in negotiating prices. Therefore, this study would help to analyze market outlet choice decision of producers in *Sheka* and *Majang* Zones of South West part of Ethiopia.

MATERIALS AND METHODS

The study was carried out in *Sheka and Majang zone* of south west part of Ethiopia with specific objectives of market outlet choice of turmeric producers. For this study, in order to select a representative sample of turmeric producer, a multi-stage sampling technique was employed. First, by employing purposive sampling method *Yeki* and *Godere Woredas* were selected since the two woredas are the most producers of turmeric in each zone. In the second stage, with the consultation of *Woredas* agricultural experts and development agents, out of 12 and 22 *kebeles* of *Godere* and *Yeki Woredas*, respectively, 9 and 18 turmeric producer *kebeles* were purposively selected based on their level of production. In the third stage, from the identified or selected rural *kebeles*, 12 sample *kebeles* (7 from *Yeki* and 5 from *Godere*; namely *Hibret-Fre*, *Adisbirhan*, *Bechi*, *Shosha*, *Beko*, *Kome*, *Tsanu* and *Akash*, *Mkakelegna*, *dunchi*, *Geleshia*, *Kabo*) were selected randomly. In the fourth stage, using the household list of the sampled *kebeles*, 838 sample farmers were selected randomly based on proportional to the population size of the selected *kebeles*. Key informants from the support service providers were selected based on their direct responsibility and possession of detail knowledge about turmeric development in the areas to cross check the collected data from producers.

Data Analysis: Descriptive statistics, inferential statistics for household characteristics and econometric analysis by using multinomial logit model were used to analyze the data collected from turmeric producers.

Hypothesis: To identifying factors influencing turmeric market outlet choice of producers to the market it was explored

which factors potentially influence and how (the direction of the relationship) these factors are related with the dependent variables that represents turmeric market outlets of the study area. Accordingly, dependent variables were created from the data, which indicated sales to (1) wholesalers, (2) collectors and (3) retailers. For estimation purpose, the base category was access to wholesalers; thus the model assessed the effects of various independent variables on the odds of two turmeric market outlets versus access to wholesaler market outlet.

FINDINGS AND DISCUSSIONS

Turmeric is produced essentially for market and it is important cash crops in the study area by producers. According to the result of this study, all sample households are good suppliers of turmeric to the market. Analysis of factors affecting farmers' choice of market outlet was found to be important to identify factors constraining farmers' choice of market channel. Accordingly, 12 variables were hypothesized that affect farmers' choice of market outlet to sale their turmeric product. Multinomial logit model was employed to identify the factors. For the parameter estimates to be efficient, independence of irrelevant alternatives (IIA) assumption based on Likelihood Ratio test was used. The hypothesis that all the coefficients except the constant are zero is rejected at 1 percentage point level based on the Wald test. The model explained 40% of the variation in market choice among turmeric producing farmers. The possible heteroscedasticity and multicollinearity problems were also corrected. For heteroscedasticity problem, the command robust (in Stata) was used; whereas, as the result of VIF was less than 10 for all variables, there was not multicollinearity problem. According to (Green, 2012), the coefficient values measures the expected change in the logit for a unit change in the corresponding independent variable, other independent variables being equal. The sign of the coefficient shows the direction of influence of the variable on the logit. It follows that a positive value indicates an increase in the likelihood that a household will change to the alternative option from the baseline group. The result showed that some of the variables were significant at both market outlets while some others were significant in one marketing outlet but not in the other outlet. Compared to the base category (wholesalers) access to market information, education level, post-harvest handling, owning transport facility and adult equivalent determined the selection of collector as market options while the variables sex, access to extension service, value addition, adult equivalent and access to market information of household head affected the choice of retail outlet. The Marginal effects of Multinomial Logit Model presents for the choice of marketing outlets. The results of the estimated marginal effects were discussed in terms of the significance and signs on the parameters. The positive

estimated coefficients of a variable indicates that the probability of the producers being in either supplying to collector market outlet or retailer market outlet relative to supplying to wholesaler market outlet increases as these explanatory variables increase. The implication is that the probability of the producers to be on these outcomes is greater than the probability of being wholesaler outlet (the base category). The negative and significant parameter indicates the probability of using wholesale outlet is higher than the probability of being in the two alternatives. Estimates not significantly different from zero indicate that the explanatory variable concerned does not affect the probability of the producers decision to use wholesaler outlet category than in the other two categories. The result of the MNL and marginal effects and their possible explanations are presented below.

The alternative “wholesaler” was used as a base category (bench mark alternative). This implies that the discussion of the results focuses on the impact of the explanatory variables on a use of collectors and retailers category relative to use of wholesalers (the base category).

Table 1. Probability of choice - marginal effects after logit (robust std. error)

Variables	Collectors	Retailers
	$\frac{dy}{dx}$ (marginal effect)	$\frac{dy}{dx}$ (marginal effect)
Sex (Male)	-0.259	-0.503**
Age	-0.003	-0.006
Access to Extension Service (Yes)	0.086	0.176*
Access to Credit (Yes)	-0.038	0.049
Access to Market Information (Yes)	-0.217***	-0.389*
Level of Education (Literate)	-0.124**	-0.224
Distance to the nearest Market	0.048	0.086
Income from Off-farm activities (Yes)	0.058	0.111
Post-harvest Value addition (Yes)	-0.144**	-0.257*
Owning Transport facility (Yes)	-0.089**	-0.159*
Adult equivalent	-0.06***	-0.108*
Membership to any Cooperative (Yes)	0.08	0.139

Note: Wholesale outlet is base outcome. dy/dx is marginal effect. $N=838$; and ***, ** and * are statistically significant at 1%, 5% and 10%, respectively.

Source: Own computation from survey result, 2018

The sex of the farmer was an important determinant of market channel choice to choose between the retailers and wholesalers. The result shows that male household heads tend to prefer wholesalers over retailers compared to female household heads. The marginal effects imply that being male household head decreases the probability of selecting retailer outlet by 50.3 percentage points. The reason behind is that male headed households has higher level of market participation than female headed households. Being male, a farmer have more chances of selling more turmeric to the wholesalers market because male farmers have more contacts that are social with both turmeric buyers and their agents whom often meet in trading centers. Conversely, female households head tend to be confined at home by household chores hence hindering them from attending the market places. The finding concurs with that of (Geoffrey, 2015) male-headed household had a higher probability of selling to wholesaler market by 27.81 percentage points. This is also similar with (Wangombe, 2008) who found that male gender of farmer positively and significantly influenced farmer's volumes of sales in better market. Correspondingly, (Geoffery *et al.*, 2014) also found that gender of household head significantly and positively influenced the extent of market participation.

Further, being a male headed household increased the proportion of turmeric sales to wholesalers market. Educational level of household head (HEduc) was negatively and significant related with collectors outlet choice at less than 5% significance level. The result also confirmed that, if the household head is educated the probability of choice of collector outlet decreased by 12.4 percentage points relative to wholesaler outlet. Similar to this result (Abraham, 2013) found that if the household head is educated the probability of choice of collector outlet decreased by 13.9 percentage points. Education is believed to give individuals with the necessary knowledge that can be used to collect information, interpret the information received, and make productive and marketing decision. Education is related with the wholesale market outlet because as the education level increases farmers' ability to post harvests handling activities increases and strengthen the linkage with wholesalers. Access to market information (MInfo) was also found to be the determinant for market channel choice of turmeric farmers. The results indicated a negative relationship between farmers opting to distribute their own turmeric sell through the collectors and retailers. The variable is significant for both collector and retailer at 1% and 10% respectively. Access to market information for sampled farmers decreases the probability of choosing collector and retailer outlets by 21.7 percentage points and 38.9 percentage points respectively as compared to the base category. When farmers get important market information it increases farmer's ability to choose the best market channel for its product. This is similar with (Mebrat, 2014) who have found that access to market information tends to increase by 42.9% as compared to households who do not have access to market information to sale wholesalers.

These results seems to affirm the notion that market information gotten by the farmer about a certain marketing channel increases a farmer willingness to participate in that channel hence and he is likely to increase his output sales through that market channel (Otieno, et al, 2009). Again post-harvest value addition (VAdd) was negatively and significant related with collector and retailer market outlet at less than 5% significance level. Farmers who have practiced better postharvest handling choose wholesaler market outlet relative to collector and retailer outlet. The result shows that as farmers practice value adding activities the probability of choosing collector and retailer outlet decreased by 14.4 percentage points and 25.7 percentage points respectively compared to base category. This is parallel with (Abraham, 2013) who found that as farmers practiced value adding activities the probability of choosing collector outlet decreased by 30.5% compared to base category. The most probable reason might be is related to the quality of the product i.e. wholesalers seek better quality turmeric to sell to exporters or to get better market and they have better relationship with those farmers supplying better quality product. The other determinant factor for market outlet choice owns transport facility (OTran). This variable influenced producers' choice of collector at 5%. Ownership of transport facilities by farmers decreased the probability of choosing collectors outlet by 8.9 percentage points compared to base category. This is similar with (Geoffrey, 2015) who found that an increase in transportation ownership by one vehicle decreases the probability of selling to local collectors and retailers market by 35.17 percentage points and 36.16 percentage points, respectively. This might be due to the reason that, farmers who have transport facility could supply their product to wholesalers or which might go to

the collectors and retailers. This shows that the availability of transportation facilities helps reduce long market distance constraint, offering greater depth in marketing choices. Adult equivalent (AEqu) is also found to be another determinant factor. An increase in the household size by one adult member decreases the likelihood of selling turmeric to collectors and retailers by 6.1 percentage points and 10.8 percentage points respectively because large households are able to produce turmeric and provide the man power or labor in carrying them to better markets. Turmeric production is labor intensive since it is bulky product; and it planted and collected by digging. Its boiling and drying activities are also difficult up to loading. Besides, they sell more turmeric to obtain more income since their demand for basic needs is also higher. These findings are in agreement with (Gani and Adeoti, 2011), who contend that local farmers keep large family for agricultural purposes. However, (Berhanu and Moti, 2010) found a negative relationship between household size and market participation. This could have been so because household size increases domestic consumption requirements and may render households more risk averse. Further to this, families with more household members tend to consume more, which in turn decreases market participation.

However, turmeric is insignificant at home consumption. Rather it is more significant for cash income of the household. Furthermore access to extension service (AcExtS) was positively and significantly associated with use of retailer outlets at less than 10% significance level. Other things being equal, the likelihood of using retailer outlet would be increased by 17.6 percentage points for households having extension access relative to using wholesale outlet. This indicates that farmer may shift his/her mode of production from turmeric towards coffee and maize or millet. The advice of development agents and other concerned bodies are about coffee production, maize production, millet production and their marketing channels rather than turmeric production and marketing. Thus low production and unaware of turmeric marketing resulted choice of retailers (buyers and later sellers of turmeric mostly found in area of producers according to the respondents). Other study by (Abraham, 2013) indicated that the number of extension visits from government workers had a positive and significant effect on the decision to participate in the market. The authors stated that because extension workers usually provide information on market availability as well as information on new and improved varieties that enhances the farmers' knowledge and provide a range and choice of market opportunities. But in the study areas extension workers usually provide information for coffee and grain production and marketing. Thus extension service should be all inclusive but not only some crops.

Marketing constraints: the constraints of turmeric marketing were inquired from farmers and rapid market appraisal. The analysis of results of all possible sources would lead to the following list of major constraints of turmeric marketing in the study area. These are:

Lack of market to absorb the production; low price of the product; large number of middlemen in the marketing system; absence (weakness) of marketing institutions safeguarding farmers' interest and rights over their marketable produces was the major constraints. According to the survey 91.7% of the respondent responded that the absence of cooperatives for turmeric marketing. Lack of coordination among producers to

increase their bargaining power; 90.2% of the respondents replied that low price of the product is the other problems of the producers. Imperfect pricing system this also indicated in RMA the imperfect pricing system of traders was a major problem to producers. "Traders charge low price at peak supply periods which is not based on the real demand and supply interaction". This implies, "the middlemen decide on the price of turmeric products. Producers cannot negotiate since they may be denied even a low price and their products could be liable to decaying and decrease its pungency, and the other marketing problems in study area were lack of semi-processing industries".

Table 2. Major marketing constraints of turmeric producers

Major constraints	N	%
Low price	756	90.2
Lack of transportation	428	51.1
Lack of market information	447	53.4
perish ability	296	35.3
Lack of market	328	39.1
Lack of cooperative	769	91.7

Source: Own computation from survey result, 2018

The constraints of turmeric marketing were also inquired from key informant interviews'. The analysis of results of all possible sources would lead to the following list of major constraints of turmeric marketing in the study area of the two zones. These are:

Lack of market to absorb the production; Low price; Large number of middlemen in the marketing system; Absence (weakness) of marketing institutions safeguarding farmers' interest and rights over their marketable produces (e.g. cooperatives); Lack of coordination among producers to increase their bargaining power; Poor product handling; packing is traditional and only in sacks; Imperfect pricing system; The middlemen decide on the price of turmeric products; Producers cannot negotiate since they may be denied even a low price and their products could be losing its contents and kilogram; Limited access to external markets; Absence of strong cooperatives and lack of coordination between producers and traders aggravated the problem; Lack of transparency in the market information system mainly in the export market; Due to lack of transparency; farmers' negotiation skills are limited; Poor storage and transport system for and extreme rural areas is also a problem; Limited research or extension system related to turmeric marketing; Lack of semi-processing industries;

The smallholder farmers are not organized and are not leading the value chain. Therefore, they are price takers and almost not negotiate the price due to fear of post-harvest loss, in case the product is not sold.

Marketing opportunities: On the other hand, availability of market demand in different market channel, growing number of buyers, high experience in turmeric trade and growing price were some of the opportunities of turmeric by most of the producers. The survey result shows that 85.2% of the producers intended to expand turmeric sale due to the above opportunities. The government policies support spice production as means of increasing household food security. It is obvious that creating appropriate market linkages through efficient marketing arrangements and appropriate production systems would boost the living standards of millions of

turmeric crop farmers, traders and transporters operating in turmeric market supply. In particular, the government policy that is focusing on the promotion of market oriented (mainly export) agriculture is very much in support of this approach. The infrastructural development such as mobile telephone and wireless telephone are also the other advantages to improve the production and marketing system in the area. The number of turmeric exporters is increasingly growing. This is a significant opportunity. In a competitive market, an increasing number of exporters can create demand for the products and result in an increase in the producers' marketing margin. The two zones is near-by to *Oromia* Regional State beyond the two regions (*Gambela and SNNP* states) and connected by all-weather roads. Therefore, the area has a good opportunity to sell its turmeric products for different regional states. Turmeric is exported through Kenya and Sudan in addition to Somali. The increasing market outlet through the theses border provides an opportunity for improving the marketing of turmeric products. Therefore it is critical to maximize these opportunities and solve the problems that are restricting the growth of this sub-sector.

Conclusion

Turmeric is the main source of income as cash sale in the study area. It serves as a major source of household income followed by coffee according to the respondent's discussion. However, the sector is not developed as its development potential. Turmeric producers are not benefited as their products because of lack of fair market even when it is compared to other products. For example, coffees have been made by the producers themselves and represent more than 73 percent of coffee processing in Ethiopia (Dereje, 2007). Coffee producers could sell and export directly their product while most turmeric produces sale to collectors and there have not been any turmeric producer that could export. Thus, there should be an effort to improve the smallholder commercialization decision as well as the level of incomes and sustainable livelihoods. Turmeric producers in the study areas supply their produce through different market outlets. Farmers were classified into three categories according to their outlet choice decision: those who have supplied most of their produce to wholesalers (45.11%); those who have supplied most of their produce to collectors (35.34%); and those farmers who have supplied most of their produce to retailers (19.55%). The multinomial logit model was run to identify factors determining farmers' market outlet choice decision. The model results indicated that the probability to choose the collector outlet was significantly affected by access to market information, education level, post-harvest handling, owning transport facility and adult equivalent compared to wholesale outlet. Similarly, the probability of choosing retailer marketing outlet was affected by sex of the household, access to extension service, access to market information, adult equivalent and post-harvest compared to wholesale outlet. Therefore, these variables require special attention if farmers margin from turmeric production is to be increased.

Moreover marketing constraints such as limited access to market, low price of product, lack of market information and hindrance by brokers, lack of transport, and low quality of product and lack of policy framework to control the illegal trade system are the major problems. On the other hand, availability of market demand in different market channel, growing number of buyers, high experience in turmeric trade

and growing price were some of the opportunities of turmeric by most of the producers.

Recommendations

The following recommendations or policy implications are based on the result of significant variables in this study. According to the multinomial logit model of econometric result, collector outlet choice is negatively and significantly affected by owning transportation facility, post-harvest value addition, and adult equivalent size of the family and access of market information relative to wholesale outlet. Therefore, these factors must be promoted by developing farmers' awareness about marketing and post-harvest handling, developing road infrastructure and accessibility of modern inputs that reduce labor expense. Secondly, retailer outlet choice is significantly and positively affected by owning access to extension service facility. Therefore, improving extension service access to the farmers is essential to make turmeric market efficient in addition to developing road infrastructures. Retail outlet choice also negatively and significantly affected by gender of the household, adult equivalent size of the family, post-harvest value addition and access to market information. Therefore, these factors must be considered in future intervention. Moreover, turmeric is a recent crop for the country in general and the study area in particular. There is a huge potential turmeric production area and increasing market demand. However, turmeric sector is not fully developed as compared to the potential. Farmers produce based on tradition and backward way. Analyzing the challenges and opportunities for innovation of smallholders in turmeric production appears a topic for further research.

REFERENCES

- Abraham Tegegn, 2013. Value chain analysis of vegetables: the case of Habro and Kombolcha Woredas in Oromia Region, Ethiopia. M.Sc thesis submitted to the school of graduate studies, Haramaya University. 93p.
- Addisu Alemayehu, 2014. Spice Sector Development in Ethiopia: Scenario and Competitiveness. In: Report of the Third Spices, Aromatic and Herbal Plants Subsector Stakeholders Platform Workshop held in Addis Ababa. pp. -57
- Berhanu G. and Moti J., 2010. Commercialization of smallholders: does market orientation translate into market participation? Improving Productivity and Market Success (IPMS) of Ethiopia farmer project working paper 22. Nairobi Kenya, ILRI.
- Bose P, D, Sanyal and K. Majunder, 2008. Balancing sulfur and carrot grown on Red Lateritic soils, India
- Dendena Getachew, Efremlama and Lema Belay, 2009. Fresh mango value chain analysis in Arbaminch area. Organization of value chain competency. Addis Ababa, Ethiopia.
- Dereje Birhanu, 2007. Assessment of forest coffee value chains in Ethiopia: A case study in Kafa zone, Gimbo district. Agricultural Science and Resource Management in the Tropics Subtropics (ARTS). German.
- Ethiopian Export Promotion Agency, 2013. Survey of the three major spice producing Regions Addis Ababa, Ethiopia.
- Gani, B. S. and Adeoti, A. I., 2011. Analysis of market participation and rural poverty among farmers in Northern

- part of Taraba State, Nigeria. *Journal of economics*, 2(1), pp. 23–36.
- Geoffrey, S. and Hillary, B. and Lawrence, K. 2014. Determinants of Market Participation among Small-scale Pineapple Farmers in Kericho County, Kenya. MSc.Thesis Submitted to Graduate School in Partial Fulfillment for the Requirement for the Master of Science Degree in Agricultural and Applied Economics of Egerton University, Egerton, Kenya.
- Geoffrey,S., 2015. Factors Influencing the Choice of Marketing Outlets among Small-Scale Pineapple Farmers in Kericho County, Kenya. *International Journal of Regional Development* ISSN 2373-9851 2015, Vol. 2, No. 2
- Greene, W., 2012. *Econometric Analysis*. 7th edn. NJ: Prentice Hall, Pearson.
- Kaleb Shibeshi, 2008. Distributional issues in cereal value chains, the case of wheat market I Arsi. M.Sc thesis presented to the School of Graduate Studies, Addis Ababa University. 70p.
- Mamo Girma, 2009. Choice of marketing channels and transaction costs: The case of maize marketing in Shashemene District. M.Sc thesis presented to the School of Graduate Studies, Addis Ababa University. 74p.
- Mebrat Tola, 2014. Tomato value chain analysis in the central rift valley: the case of Dugda Woreda, East Shoa Zone, Oromia National Region State, Ethiopia. M.Sc thesis submitted to the school of graduate studies, Haramaya University. 103p.
- Otieno, J., Omiti, J., Nyanamba, T. & McCullough, E., 2009. Market participation by vegetable farmers in Kenya: A comparison of rural and peri-urban areas. *African Journal of Agricultural Research*, 4 (5): 451-460
- Wangombe, J. 2008. *The Potato Value Chain in Kenya and Uganda*. Maastricht School of Management, DBA Assignment.
