

Review Article

Reviews of Smallholder Farmers Market Participations Decisions and It Intensity in Ethiopia

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Abstract: Ethiopian economy is highly dependent on agricultural sector which account for about 38.8% of national GDP, 87% of export earnings and remains the main source of employment; generating 72.7% of total employment. The market participation is a key precondition for transformation of the agriculture sector from subsistence to commercial production. Thus, empirical evidence of smallholder farmers' participation in the market has been extensively considered for variety of agricultural products. This article reviews was based on narrative qualitative of the existed empirical literature on the market participation decision and it intensity in Ethiopia. In addition, journals, thesis, published journal, articles, government report and dissertation papers were used to satisfy the objective the article. Thus, much of the studies used econometric model to examine the factors determining and the market intensity in Ethiopia on different commodity. Therefore, several factors were revealed to have an influence on farmers' market participation decision and it intensity. Thus, factors range from social-economic, institutional, market and external factors. Therefore, the policy makers and planners of government and NGOs must be considering when set their policy and strategy of market participation and it intensity improvement in Ethiopia.

Keywords: Market, Intensity, Role, Determinant, Participation, Smallholder, Ethiopia

1. Introduction

Participation in well-functioning agricultural markets can enable farmers to increase yields, producing a marketable surplus, if sold in competitive output markets, can enable them to obtain higher prices and consequently increase their incomes. Thus, resulting income is then used to buy consumer items that households need but cannot produce. This in turn improves their capacity to cope with risks and market instability. Moreover, greater market participation significantly reduces food insecurity and poverty among households with high market participation when compared against households with low market participation [1]. The market participation in changing food markets clearly explain that reducing poverty and enhancing food security require greater smallholder integration into markets and more [2]. Smallholder farming constitutes the livelihoods of many rural households in developing economies. Thus, majority in Africa and small scale agriculture is the mainstay of the rural economy serving mainly

as a source of food income [3]. Ethiopian economy is highly dependent on agricultural which account for about 38.8% of national GDP [28], 87% of export earnings and remains the main source of employment; generating 72.7% of total employment [4]. Improved market participation is a key precondition for transformation of the agriculture sector from subsistence to commercial production [5].

Smallholder participation in food markets is typically characterized by constrained choice, and this choice is critically dependent upon their ability and willingness to participate in input and output markets and on the functionality of those markets that they are able to access. Smallholders are likely to increase their engagement in markets as sellers of food when well-functioning markets give them appropriate incentives, they have access to, and the ability to use assets productively, and efficient infrastructure allows them to transport their product to market at reasonable cost [6].

Being aware of role of market participation, has taken agricultural transformation as a means to tackle poverty and food insecurity problems through empowering smallholder farmers

and pastoralists with tools, knowledge, and support needed to transition from a traditional subsistence orientation to one that is market focused and more commercialized [7]. It is widely understood concept that, extent of income earning and the welfare status of smallholder farmers is determined by the extent they participate in a given market as seller. Therefore, study of these issues help to identify farm level factors and put forward measures for enhancing smallholders' market participation it will also contribute to food security and poverty reduction. Thus, this reviews aims to reveal status of smallholder farmers' market participation and identify determinant factors of smallholder farmers' market participation decision and level of market participation in market.

1.1. Role of Market Participation

There is general consensus that deeper market integration of smallholders is considered an important means of achieving food security status and to move out of poverty in Africa [8]. Cognizant of this, recent studies and policy initiatives have focused on ways to enhance smallholder's agricultural productivity, and enable them to achieve greater market participation. Greater market participation is not an end goal, rather the ultimate of market participation is to bring the needed improvement of the welfare of society and enable them to sustainably progress out of the multifaceted poverty [2]. Therefore, Welfare aspects are expressed through poverty, inequality and vulnerability. Thus, represented welfare in terms of consumption of basic food (grains), high-value foods (livestock products) and expenditure on clothes and shoes, durable goods, education and healthcare analysis of welfare effects of market participation was found that, those who have enough resources to meet their food needs are usually referred to as food secure. On the other hand, those with resources to meet both food and non-food needs are referred to as non-poor households (not in poverty class) and the converse is also true. In his empirical work, he found that positive relation between market participation and poverty status indicating that market participation enhances the welfare of participating households. [9]. Importance of smallholders' participation in markets is gauged by analyzing the extent to which they interact with input and output markets. Smallholders participate in markets either to buy food, procure inputs or sell their produce [3]. The intensity of smallholders' participation in input and output markets partly determines their productivity, and hence their earnings. Better linkages with markets can induce rural populations to consider farming as a profitable, and therefore a viable, livelihood choice.

Moreover, several study showed that greater market participation significantly reduces food insecurity and poverty among households with high market participation when compared against households with low market participation [10].

Thus, smallholder's market participation in changing food markets clearly explain that reducing poverty and enhancing food security require greater smallholder integration into markets [11].

1.2. Factor Affecting the Market Participation Decision at Smallholder Farmer

In agrarian economy, empirical evidence of smallholder farmers' participation in the market has been extensively considered for variety of agricultural products. Smallholders' decision to participate in larger, more lucrative national or regional markets depends on the extent of constraints they face relative to the benefits they could derive from such participation and depends on their capacity to meet minimum production requirements, both in terms of quantities and product standards; it also requires that expected profits will be large enough to encourage them to produce [12]. Emphasize that, while households whose food production hardly meets their consumption requirements are expected to have less degree of participation, incomes earned from marketing of produce may significantly facilitate input acquisition and hence increased productivity and in turn improve market participation [13]. This indicates that, market participation is said to be depend on levels of food production. Thus stated as the development of input and output markets, institutions like property rights and land tenure, market regulations, cultural and social factors affecting consumption preferences, production and market opportunities and constraints, agro-climatic conditions, and production and marketing related risks and are other external factors that could affect the market participation and level of agricultural investment [14]. Factors that affect market participation decision and extent of market participation are in respect to broad categorization of these factors into household (farmer) characteristics, private assets, public assets/social capital and transaction cost variables [9].

A number of authors have studied these factors for various crops. For instance, a study indicated that differential asset endowments, together with differential access to those public goods and services that facilitate market participation, are identified as important factors underlying heterogeneous market participation among smallholders [11]. Transaction costs affect market participation by increasing household's cost that could arise due to lack of transport facilities. Moreover, numerous difficulties related to smallholders' access to input markets result in transaction costs that adversely affect the profitability of their participation in output markets, hence affect decision to participate in a given market for a particular crop [2]. Also, the availability of market information plays an important role in their decision. Evidence on transaction cost indicates negative relationship between transaction costs and market participation [15].

On other hand, distance to main market variable is negatively correlated with marketed surplus because of the increased transaction costs associated with marketing of the farmers' agricultural produce. This is also related to access to improved seeds and other key agricultural inputs [16].

2. Factors Determining Intensity of Market Participations

Numerous factors are believed to have an influence on

farmers' market participation intensity. Such factors range from social-economic factors, institutional factors, market factors and external factors. Social-economic factors include age, gender, off-farm income, level of education, years of farming, household size, farm size and output level. Institutional factors entail membership to a group, access to extension services, access to credit, land tenure, infrastructure, contractual arrangements and, policies and law. Market factors such as access to market information, prices of output, distance to the market place, means of transport and other external factors such as natural calamities that result in crop failure also determines market participation by the farmers. Such factors range from social-economic factors, institutional factors, market factors and external factors. Social-economic factors include age, gender, off-farm income, level of education, years of farming, household size, farm size and output level. Institutional factors entail membership to a group, access to extension services, access to credit, land tenure, infrastructure, contractual arrangements and, policies and law. Market factors such as access to market information, prices of output, distance to the market place, means of transport and other external factors such as natural calamities that result in crop failure also determines market participation by the crop farmers [17]. Market participation intensity of smallholder farmers is also affected by household's age, farm/marketing experience, and education level. Accordingly, using double hurdle estimation found that, likelihood of participation in maize market negatively affected by age of household head, while sex of households negatively influenced extent of maize marketed [18]. Similarly, Experience in *teff* production increases quantity of *teff* supplied to market indicating the importance of farm experience in a market participation analysis [19]. On other hand, education level of households motivate farmers market participation through improving the skill ability to utilize market information, which may in turn reduces marketing costs and make it more profitable to participate in the market. Also education levels positively influence the likelihood of smallholder's participation decision. Lagged price also has an effect on altering households' production decision which in turn affects market participation decision and level of participation [20]. Whereas that average annual selling price from previous year had positive effect on extent of *teff* sold. In their analysis of determinants of *teff* and wheat market supply revealed that lagged price determines the quantity of *teff* supplied to the market [21]. The intensity of market participation increases positively with lagged price. Access to credit also affects market participation as evidenced by literatures.

Access to credit would enhance the financial capacity of the farmers to purchase the necessary inputs that are necessary for agricultural production which in turn enhance for market participation. In addition to this, access to credit enhancing the probability of market participation significantly. Similarly, Asset holdings of household like oxen, land, farm implements and human capital is essential for marketable surplus production at smallholder level. Large farm size increases farmers' market participation because farmers having large farm size produce

more output which increases a marketable surplus [22]. As result, suggest that land is an important factor in influencing farmer's decision to produce any cash crop. Likewise, influence of land holding on likelihood of participation and intensity of marketed surplus clearly indicated in works by [23]. The availability of labor in a large amount for agriculture is another determinant of market participation. Furthermore, household labor had positive and significant effect on smallholder's decision to participate in market indicating increase in household labor increases likelihood of market participation. Conversely [24], found negative effect of family size measured adult equivalent unit on smallholders' decision to participate in a market and intensity of market participation. This could be associated with consumption effect; as households with large family size retain significant portion of output for consumption. Similarly, using Tobit estimation, they found distance to local market, lack of labor, age of household, expensive fertilizer, training on marketing, family size, farm size, outstanding debt, crop harvested in kg, off farm income and draft power as significant variables influencing intensity of crop out market participation [26]. Moreover total quantity of food crops produced, farming experience, access to agricultural extension service; size of land used for cultivation, membership in cooperatives and household family size are important factors determining the level of participation of smallholder farmers [26].

Recently, farm household's market participation decision and volume of crop sale are determined by access to improved inputs, farm size, output price, labor use, infrastructure facility, and livestock ownership. Thus, the land holding per household and availability of labor are the main factors of production that enable farm households to produce a surplus crop for market. Moreover, [18] using double hurdle model indicated that price and non-price constraints played significant roles in determining decisions on participation in maize and cow pea markets. Thus, Total farm size, price, and ease of transportation through access to motorized equipment were positively related to decision to participate in the maize market while volume of sale was affected by location. Age and total farm size positively related to decision to participate in the cow pea market while access to mobile phone, price and location affected volume of cow pea sold positively [27]. Additionally, using double hurdle model sorted out factors affecting decision to participate in maize market.

Accordingly, gender of household head, household size, household land size, access to credit, government transfers affected likelihood of market participation positively. Intensity of maize sold was positively affected by household size, household land size, extension services, and fertilizer use. Consequently, decision to participate in rice market was positively affected by education level of household head, household size, output price, ownership of traction animal, ownership of working radio, price information, membership in farmer organization, and quantity of rice produced, while it was negatively affected by age of household. In his two step heckman estimation result, intensity of participation in rice market was affected by age of household head, size of land owned, access to credit facility, price information,

membership in farmer organization, and quantity of rice produced [2]. Conversely, using heckman estimation identified factors affecting market participation decision as; value of crop produced, any ox, number of adult family members, all weather road, access to credit, fertilizer use, cooperatives in peasant association were factors affecting market participation positively and age and family size were negatively affected market participation. Accordingly, level of participation was affected by value of crop produced, any ox, land, all weather road, access to credit, fertilizer use, market orientation index positively and by age and family size negatively. Using heckman two step estimation procedure to identify factors affecting decisions to participate in crop output market and level of participation [27]. Their finding reveal that, farm households' decision to participate in crop output markets were influenced by sex of household head, farming experience, livestock holding, cultivated land size, off/non-farm income, fertilizer used, on-farm income, market distance, and crop diversification. On the other hand, dependency ratio, cultivated land size, education status, chemical fertilizer, and distance to market were factors influencing farm households' intensity of crop output market participation. Based on the above, household characteristics, private assets, public assets/social capital and transaction cost variables are also the focus of this review.

3. Conclusion and Recommendations

3.1. Conclusion

Numerous factors are believed to have an influence on farmers' market participation decision. Such factors range from social-economic factors, institutional factors, market factors and external factors. Social-economic factors include age, gender, off-farm income, level of education, years of farming, household size, farm size and output level. Institutional factors entail membership to a group, access to extension services, access to credit, land tenure, infrastructure, contractual arrangements and, policies and law. Market factors such as access to market information, prices of output, distance to the market place, means of transport and other external factors such as natural calamities that result in crop failure also determines market participation by the crop farmers. Market participation of smallholder farmers is also affected by household's age, farm/marketing experience, and education level. Factors that affect market participation decision and extent of market participation are in respect to broad categorization of these factors into household (farmer) characteristics, private assets, public assets/social capital and transaction cost variables. A number of authors have studied these factors for various crops.

3.2. Recommendations

Households' perception on lagged price is factor affecting both households' likelihood of market participation and level of participation. Thus, if concerned bodies train farmers about contract farming and storage facilities of produces,

they feel confident on price they receive from production and will take advantage of price fluctuation thereby increase their likelihood of participation and intensity of participation in market as seller.

Quantity produced was affected both market participation decision and their intensity significantly. Therefore, policies should aim in increasing productivity and production of wheat through making agro-inputs such as fertilizer, improved seeds, and others, and strengthen existing extension service provision. The policy should also aim at stabilizing the price of these agro-inputs to ensure their affordability to farmers. Thus, decision to participate in output market was affected by size of land allocated to production indicating importance of land allocation decision in enhancing smallholders' market participation. In this regard, policy should aim at ensuring efficient utilization of land resource. Therefore, farmers should allocate their land according to market value of the crop to enhance their likelihood of market participation. Education level had a significant positive effect on probability of market participation of farmers. This shows importance of education as it acquaints households' with basic knowledge and managerial skills and helps them in making optimal decisions. Therefore, designing of policies that encourage provision of adequate, effective formal and informal education to the rural farming households to enhance households' likelihood of market participation. This should be done by regional and local government through strengthening the existing education provision system including adult education, and facilitation of time for its provision as most of farmers are busy at their farm during day time and peak seasons. Thus, Distance to nearest market and extension service center had negative effect on smallholders' decision to market participation indicating. Therefore, attention should be given to rural infrastructure development in general and, road in particular and sufficient transportation system as well. Size of family had negative on households' market participation. So, in order to enhance households' market participation, rural health extension should be strengthened on promoting family planning programs by providing trainings to spouses so that they will have planned family size and will be able to secure more income from production of marketable surplus.

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