

Factors Influencing the Intensity of Market Participation by Rice Farmers in Gopalganj District: An Empirical Analysis

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Abstract *This paper investigates the factors affecting market participation by rice farmers in Gopalganj district using Tobit model. Data were collected through well structured questionnaire from 100 farmers through random sampling technique. The farmers in the study area recognized 'weak infrastructure' as the major constraint to market participation. About 95 out of the 100 sample farmers were market participants operating at various levels of market participation as revealed by the total market participation index (TMPI); 11 farmers, 17 farmers, 32 farmers and 35 farmers participated in the market at levels 1, 2, 3 and 4, respectively. The Tobit regression result showed that age, education, size of output, training, cooperative membership and price per kg. rice have positive and significant impact on the ability of farmers to participate in market while the same is influenced negatively by gender, family size, non-farm income, agriculture extension visits, market information, and distance.*

Keywords: *Market participation, Rice farmers, TMPI, Tobit.*

1. Introduction

Market participation is considered to have a vital impact for the farmers to increase their income, which in turn enhances their standard of living. Market increases purchasing power of farmers by raising their incomes, which again create demand for non-agricultural goods that helps to expand market. An

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increase in the level of income of the farmers' motivate to accumulate savings, which are turned into investment, and at the same time provide the opportunity for improved nutrition and balanced diets and, therefore, help alleviate poverty. Market participation is both a cause and a consequence of economic development. Markets offer households the opportunity to specialize according to comparative advantage and thereby enjoy welfare gains from trade.

Market participation refers to how much amount of total output is brought for sale in the market at current market price within a specific period of time particularly one year. Any market related activity which promotes the sale of produce is known as market participation (Key *et al.*, 2000; Holloway and Ehui, 2002; Lapar *et al.*, 2003). Market participation can be referred as commercialization (Latt and Nieuwoudt., 1998). The research study conducted by Staal *et al* (1997) argued that a low portion of products exchanged in the market reflects limited market participation. Goetz (1992) consider households purchase and sales to define market participation. Volumes of produce traded are used to determine market participation. In an agricultural based economy, market participation or commercialization occurs mainly when farmers shift their production decision from subsistence to commercialization and then farmers become profit oriented. Market participation in that case can be defined as earnings from market activities (Makhura *et at.*, 1997).

Rice occupies 11 percent of world agricultural land. World market of rice is dominated by Asia as it accounts for about 90 percent of world's rice area and 92 percent of production. Asia being the most populated region of the world, the major proportion of rice produced is consumed within the continent (FAO, 2004). Rice is the most important food crop in Asia as it contributes 60% of households' calorie consumption, and about 90% of the world's rice output is produced and consumed in the continent (FAOSTAT 2012). In Bangladesh, agriculture sector is dominated by crop sub-sector and crop sub-sector is dominated by rice (paddy) production. Rice supplies 71% of the total calories and 51% of the Protein in a Bangladeshi diet (BBS, 1998). In spite of this, rice yield in Bangladesh is 4.4 t ha⁻¹, which is lower than that of countries (China-6.6 t ha⁻¹, Philippines 6.01 ha⁻¹, Vietnam 4.63 t ha⁻¹), and higher than the world average (4.2 t ha⁻¹) (FAOSTAT 2012). In addition, there is high disparity between potential and national average rice yield in this country. One of the reasons for this is poor access to farmers in market.

Though rice is the major consumed item for the people of Bangladesh, its production is kept beyond their optimum level due to several constraints relating to market participation. Excluding subsistence farming, the prime objectives of all

other farming is to make profit by selling their output in market. But farmers often fail to get the fair price of their product due to several barriers relating to market participation viz. weak transportation facilities, weak infrastructure, influence of middleman on price, inequitable market price, lack of market information etc. As a result, farmers are seen to shift their production decision from rice to other crops. Improving the condition of market will provide incentives to farmers that help to increase productivity as well as production of rice, without which the continuous increase in demand for rice may not be met. For the establishment of efficient and well functioning markets, intensification of production system should be ensured that helps to keep transaction costs low, minimize risk and extend information to all participants, particularly those living in areas of marginal productivity and weak infrastructure (IFAD, 2003; World Bank, 2008). Many policy makers and development economists have emphasized the significance of market participation in agricultural and economic development. Market participation contributes to overall development and is the determinant of agricultural growth (Gani & Adeoti, 2011; Borbala et al. 1998). To this end, increased integration of farmers into markets at local, regional and national levels becomes an issue of paramount significance.

2. Literature Review

Several studies were done in this field both in domestic and abroad (Omiti *et al.* 2009; Lapar et al. 2003; Mauti *et al.*, 2013; Daramola and Oparinde, 2014; Benin *et al.* 2003). Most of the studies focus on the determinants of market participation by using different approach. The findings of these studies widely differed from each other in terms of existing relation between market participation and its determinants. Omiti *et al.* (2009) conducted a research on the intensity of market participation among smallholder farmers in Kenya. The empirical results suggest that farmers in peri-urban areas sold higher proportions of their output than those in rural areas and distance from farm to point of sale is a major constraint to the intensity of market participation. The research study conducted by Lapar *et al.*, (2003) aimed to seek policy options that promoting market participation among smallholder livestock producers in Philippines' using Probit and Tobit ideas and they concluded that weak infrastructure is the major barrier towards market participation. Adeoti *et al.* (2008) aimed to investigate the determinants of market participation among maize producers in oyo state, Nigeria using censored Tobit model. They concluded that market price, member of a producer group, farm size, educational status and total maize produced, road condition, primary occupation and transaction costs significantly affect farmers' market participation.

Mauti *et al.*, (2013) conducted a research where they investigate the factors that determine farmers' shift in market participation from village to regional market in Vihiga County. Results of the study indicate that participation in local town market rather than village market was influenced by credit access, total income, transport mode to market, access to extension services, age, value addition and the quantity of sweet potatoes supplied, while transport mode, land size, quantity of sweet potatoes and gender ensure the participation for the regional option. The research study conducted by Daramola and Oparinde (2014) investigated the determinants of market participation by maize farmers in Ondo State, Nigeria. They found that the age of the household head, experience of the household head, cropping system, quantity of harvested output, farm size, land tenure and unit price of output had significant influence on the intensity of market participation by maize farmers in rural and peri-urban areas of the state. Benin *et al.* (2003) examine the strategy for improving market participation and sales of smallholder livestock producers in Ethiopia. The analysis demonstrates that physical capital (ownership of different species of livestock and landholding) and financial capital (crop income and non-farm income) are the main factors influencing market participation and sales. Jagwe *et al.*, (2010) concluded that agricultural sector in developing countries transforms towards commercialization, smallholder farmers require taking necessary information regarding access to markets, market information, market intelligence and effective farmer organization. While there are many studies regarding the determinants of market participation in other counties, few studies were found for Bangladesh, especially for this study region. The research study operated by Belete *et al.* (2014) aimed to investigate factors affecting the market participation of maize farmer in greater Giyani Municipality using logistic regression model. Empirical result found from the study indicate that gender, farmers access to credit, marital status, market information and infrastructure, were found to be positively significant while distance to market and external source of income were negatively significant. Farmer's level of education and age of farmers were positive but insignificant. Distance to output market, experience in farming, and external source of income were negatively related to market participation. Randela *et al.* (2008) concluded that age, ability to speak/understand English, access to loans, region, ownership of transport, access to market information, distance to market are positively related to market participation while dependency ratio, born in community, land size, ownership of livestock are negatively related to market participation.

An increase in food price in international market over the past few years motivated farmers to cultivate more rice, which in turn increased domestic production. As a result export will increase and balance of payment will improve. Small farmers are often in an adverse position as compared to large farmers to take the advantage of economies of scale in production, access to information, policies such as price supports, input subsidy, market-precipitating services such as extension visitation and credit assistance and these impediments often give rise to low rates of adoption of improved technologies that could potentially increase productivity, which in turn increase market participation. When this is the case it is an open question as to the design of appropriate policies to increase market participation. The objective of the study is to explore and estimate the intensity of market participation in *Gopalganj* district. To capture this objective, the following specific objectives are considered: (i) to determine the socio-economic characteristics of rice farmers in the study area; (ii) to identify the constraints to market participation; (iii) to determine the level of market participation in the study area; (iv) to identify the factors that influencing market participation of rice farmers.

3. Methodology of the Study

3.1 Selection of the Study Area and Data Collection

The present study applies multistage random sampling method with *upazila* the first stage and respondent being the last stage. Thus, *Gopalganj* district was selected purposively. Then the researcher collects two *upazilas* randomly from *Gopalganj* district. One is, *Gopalganj sadar*, which is near the *Gopalganj* district and the other is, *Tungipara*, which is comparatively a remote area. Then from each *Upazila*, one union is selected and thus two unions are selected. After selecting union, two villages are selected from each union and thus four villages have been selected for analysis. At first the list of farmers was collected from the union office, and then 100 farmers were selected randomly. However, for this research some secondary data have also been collected.

Gopalganj district is predominantly agro-based, rice is one of the major crops produced along with other minor crops, such as wheat, oilseeds, maize, vegetables, fruits and spices. Farming is the major occupation of majority of the population and their livelihood almost completely depends on agricultural activities. The location selected for the study is almost a single cropping area where rice is grown extensively and there is a sufficient scope to improve yield through agronomic practices. All these features conform to the characteristics of Bangladesh agriculture and the study area can be considered as the area representative of the research objective.

3.2 The Empirical Model

Indexing was used to measure the level of market participation among respondents in the study area. Additionally, various levels of market participation by farmers in the study area were calculated using the formula below:

$$\text{Level of market participation} = \frac{RTMPI}{NMPW} \times 100$$

Where, $RTMPI$ = Frequency of total market participation indices; $NMPW$ = Size of market participants within a given category.

Table 2.1 indicates the basic construction of total market participation index (TMPI) used in calculating the level of market participation. Market participation

Table 3.1 : Market Participation Index

Quantity sold (kg)	Market location					Period of sale		Buyer
	Home stead (1)	Farm gate (2)	Village/ rural market (3)	Town/u rban market (4)	City/ divisional market (5)	On season (1)	Off season (2)	
0	-	-	-	-	-	-	-	-
40-800 (level I)	X ₁	X ₂	X ₃	X ₄	X ₅	X ₁	X ₂	X ₁
801-2000 (level II)	X ₂	X ₄	X ₆	X ₈	X ₁₀	X ₂	X ₄	X ₂
2001-4000 (level III)	X ₃	X ₆	X ₉	X ₁₂	X ₁₅	X ₃	X ₆	X ₃
>4001 (level IV)	X ₄	X ₈	X ₁₂	X ₁₆	X ₂₀	X ₄	X ₈	X ₄

is classified into four categories viz. *level I*, *level II*, *level III*, and *level IV*. *Level I* market participants refer to those that annually sell their product between 40 to 800 kg at market price while *level II* market participants sell at market with 801kg to 2000kg. Similarly, *level III and level IV market participants' sell (2001-4000) kg, and (4001+) kg*. To construct market participation index, farmers are considered to sell their product at five different places, including homestead, farm gate, village market, town market and city market. Consumer and trader are considered as the buyers to construct the market participation index.

Tobit model was used to determine factors influencing market participation. The Tobit regression model is specified below:

$$Y_i^* = X_i\beta + U_i$$

Where, Y_i^* = latent variable representing levels of market participation; X_i a vector of farmers characteristics felevant in explaining the levels of market participation; β =a corresponding vector of parameters to be extimated; U_i = a homoscedastic, normally distributed error term.

3.3 Specification of the Empirical Model

Following the empirical work of (Alene *et al.* 2008; Omiti *et al.* 2009; Lapar *et al.* 2003; Mauti *et al.*, 2013; Daramola and Oparinde , 2014; Benin *et al.* 2003; Jagwe *et al.*, 2010; Randela *et al.*, 2008) the present study decided to construct and use Tobit model. To determine the shares of the selected variables in the process of market participation, the following specification of the model, in Tobit framework, is applied:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + e_i$$

Where, Y is the level of market participation, X_1 = Age, X_2 = gender, X_3 =Education, X_4 = Family size; X_5 = Size of output, cooperative membershi , X_6 = Training, X_7 = Non-farm income, X_8 = Cooperative membership, X_9 = Extension visit, X_{10} = Market information, X_{11} =Distance, X_{12} = Price per kg.

β_0 is constant and $\beta_1, \beta_2, \beta_3, \dots$, are regression coefficients and e is the random error, which is normally distributed. The specific variables to be estimated in the model are described in Table 3.2. The expected signs of age, education, size of output, cooperative membership and extension visit are positive, indicating that an increase in each of these variables would increase the level of market participation.

On the other hand, only the distance variable is expected to bear the negative sign. Variables such as gender, family size, training, non-farm income, market information may influence market participation either positively or negatively.

4. Results and Discussion

4.1 Characteristics of the Farmers

The socio-economic characteristics of the farmers studied in the two *upazilas* under *Gopalganj* district are presented in Table 4.1. Sample data shows that the mean age of the farmers is 38.12 years while the modal age group is 35-44 years as depicted in table 4.1. The present study revealed that about 47% farmers were in small category and 31% farmers were in medium category. Only 5% farmer was found to be of the marginal farmer category while 17% farmers were in large category. 95% farmers were found to be married while 5% were unmarried.

Table 3.2 : Exogenous Variables Used in the Tobit Model

Variable	Type	Definition	Measurement	Expected sign
Age	Dummy	Age of the household head	Number of years	+
Gender	Dummy	Gender of the household head	1 if male, 0 female	±
Education	continuous	Education level of the household head(years of schooling)	Number of years	+
Family size	continuous	Total number of person in the family	Number	±
Size of output	Continuous	Amount of output annually sold by farmer	Kilograms for crops	+
Training	Dummy	Status of farmer whether he received training or not	1 if farmer receive training, 0 otherwise	+
Non-farm income	continuous	Proportion of non-farm income in total monthly household income	BDT (Taka)	±
Cooperative membership	Dummy	Status of farmer whether he received training or not	1 if the respondent is a member, 0 otherwise.	+
Extension Visit	Dummy	Response of farmers whether agriculture officers come to visit them with information or not	1 if yes, 0 otherwise.	+
Market information	Dummy	Market information source/arrangement	0 = informal 1 = formal	±
Distance	continuous	Average distance from farm to main point of sale	Kilometers	-
Price per kg	continuous	Average price at which each kg of output is normally sold	BDT (Taka)	+

Table 4.1 shows that, 14% farmers had no formal education and 29% farmers incomplete primary education, while the number of farmers who had taken complete primary and complete secondary education was 37% and 5%, respectively. Only 1% farmer had tertiary education. This could have negative impact on market participation. Among the 100 respondents, 41% farmers are

found to have 1 to 4 family members while 51% farmers had 5 to 10 family members. 8% farmers reported that they had family members above 10. Table also shows that about 13 percent respondents were related with agriculture activities

Table 4.1: Characteristics of the Farmers

Variable	Explanation	Number of observations	Percentage
Farm size (in <i>Bighas</i>)	Marginal (0.15-1.49)	5	5
	Small (1.50- 7.49)	47	47
	Medium (7.50-22.49)	31	31
	Large (22.5 and above)	17	17
Gender	Male	95	95
	Female	5	5
Age (in years)	25-34	28	28
	35-44	43	43
	45-55	20	20
	56-64	9	9
Marital Status	Married	87	87
	Unmarried	13	13
Education of the Farmer	No formal education	14	14
	Incomplete primary	29	29
	Primary complete	37	37
	Incomplete secondary	14	14
	Secondary complete	5	5
Family size	Tertiary	1	1
	1-4	41	41
	5-9	51	51
Farming experience (in years)	10-above	8	8
	1-10	13	13
	11-20	17	17
	21-30	45	45
Agricultural co-operative	31-40	25	25
	Member	24	24
Training	Non-member	76	76
	Have training	23	23
Access to credit	No training	77	77
	Receive credit	28	28
Distance to nearest market	Not receive credit	72	72
	1-5	15	15
	6-10	37	37
	11-15	31	31
Number of observation	16+	17	17
		100	100

Source: Authors own calculation

for 1-10 years while 17 percent for 11-20 years. The last two categories include 70 percent of the respondents who are related with agricultural activities.

In the nutshell of agricultural co-operatives, it is found that 24% farmers are related with agricultural co-operatives while 76% are without agricultural co-operatives. Only 23% farmers had received agricultural training while 77% farmers were found without agricultural training. Only 28% farmers were seen to get agricultural credit from institutional sources. Again, it is obvious from the study that, 37% and 31% farmers reported that the nearest distance from their residence to market is (6-10) and (11-15) km, respectively.

4.2 Farmers' Perceptions about Constraints Regarding to Market Participation

It is found in the survey that farmers are relatively unaware about constraints to market participation. The present study uses five points Lykerts chart in order to rank the constraints relating to market participation. A higher index value establishes the top ranking of a constraint as compared to lower index value.

Table 4.2 indicates the ranking of constraints relating to market constraints. The farmers in the study area have recognized "weak infrastructure" as the major market participation constraints (mean index value 3.23) followed by the "Influence of middle man on price" and "Inadequate market information" problems. On the other hand, "weak market monitoring cell", "inequitable market price", "weak transportation facilities" hold 4th, 5th and 6th rank with index values 1.81, 1.47 and 1.41, respectively.

Sub-division and fragmentation of land is considered one of the problems relating to market participation and holds 10th rank with index value 0.45.

4.3 Analysis of Market Participation by Farmers

Table 4.3 presents the level of market participants by small farmers. It is clear from the table that, among 47 small farmers, 9 farmers participate in market by *level I* while 31 farmers participate in market by *level II*. The number of farmers who participate in market by *level III* and *level IV* are 5 and 2, respectively.

If we take the percentage of small farmers regarding market participation we see that 19.14%, 65.95%, 10.63% and 4.25% farmers are participating in market by *level I*, *level II*, *level III* and *Level IV*, respectively.

For medium farmers, majority of the farmers participate in market by level III. Only 3.22% medium farmers participate in market by *Level I* while 16.12% and 12.90% farmers are seen to participate in market by level III and level IV.

Table 4.2 : Ranking of Constraints to Market Participation

Description of the Constraints	Mean	SD	Rank
Weak transportation facilities	1.41	0.712	6
Inadequate market information	2.57	1.071	3
Weak infrastructure	3.23	1.197	1
Weak market monitoring cell	1.81	1.386	4
Sub-division and fragmentation of land	0.45	0.641	10
Lack of agricultural credit	1.38	1.195	7
Influence of middle man on price	2.78	1.068	2
Lack of education	0.86	0.612	9
Long distance to nearest market	1.27	1.358	8
Unequitable market price	1.47	0.991	5

Source: Authors' Own Calculation.

For large farmers, 88.23% farmers are found to participate in market by level IV. The present analysis also indicates that for large farmers 5.88% and 11.76% are seen to participate in market by level II and level III.

Table 4.3 : Analysis of Market Participation by Small Farmers

Level of market participation	Number of farmers	Percentage
Level I	9	19.14
Level II	31	65.95
Level III	5	10.63
Level IV	2	4.25
Total	47	100

In conclusion, it can be said from the analysis that small farmers are seen to participate in market by *level II* whereas medium and larger farmers are found to participate in market by *level III* and *level IV*.

Table 4.4 : Analysis of Market Participation by Medium Farmers

Level of market participation	Number of farmers	Percentage
Level I	1	3.22
Level II	5	16.12
Level III	21	67.74
Level IV	4	12.90
Total	31	100

Table 4.5 : Analysis of Market Participation by Large Farmers

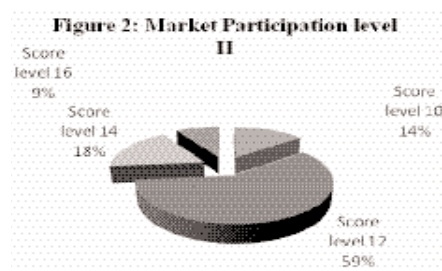
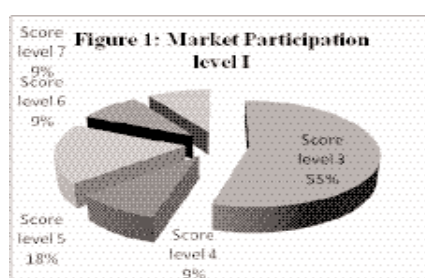
<i>Level of market participation</i>	<i>Number of farmers</i>	<i>Percentage</i>
<i>Level I</i>	00	00
<i>Level II</i>	1	5.88
<i>Level III</i>	2	11.76
<i>Level IV</i>	15	88.23
<i>Total</i>	17	100

4.4 Analysis the Level of Market participation

The present study indicates that out of 100 respondents, only 5 farmers did not participate in market. When the scores between the quantities of produce sold and other indices in the matrix (market location, period of produce sale and buyers) were computed, the minimum score was 3 implying the least participant, while the maximum score was 64 meaning the highest participant. The four levels of market participation (MP) revealed that although 95 sampled farmers participated in the market, they had different levels of participation. It is important to note that 5 did not score up 3 hence were tagged as market non-participants. The various levels of market participation and their scores are as presented in Figures 1 to 4. From the Total Market Participation Index (TMPI) it is found that 11 respondents (11.58%), 17 respondents (17.89%), 32 respondents (33.68%) and 35 respondents (36.84%) of sampled farmers participated in *levels 1, 2, 3, and 4*, respectively.

Factors Influencing Market Participation

In order to see the intensity of market participation, Tobit model is applied. Results found from the Tobit analysis indicate that factors like age, education, size of output, training, cooperative membership, and unit price are positively related to the intensity of market participation.



Result found from the regression analysis indicates that, a 1 percent increase in age, size of output, training, cooperative membership, and price per kg, keeping all other factors constant, would result an increase in market participation by 0.162, 0.005, 0.052 and 0.002 percent, respectively.

Figure 3: Market Participation level III

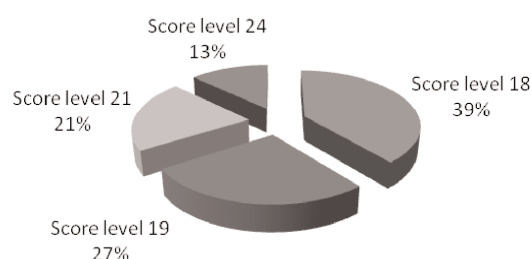
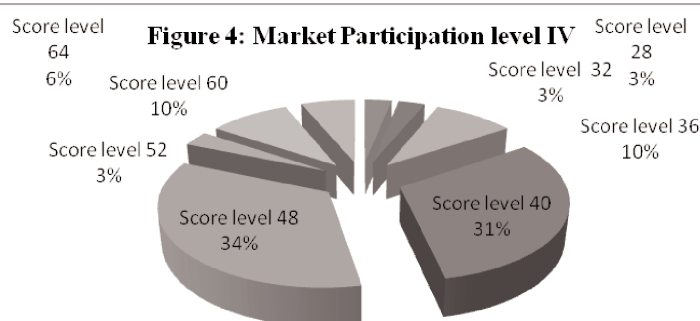


Figure 4: Market Participation level IV



On the other hand, market participation is influenced negatively by gender, education, family size, non-farm income, extension visit, market information and distance. It indicates that, a 1 percent increase in gender, family size, non-farm

Table 4.6 : Result of Tobit Regression

Variable	Coefficient	Z-statistic	Probability
Constant	85.69	5.36	0.0004
Age	0.062*	1.65	0.0962
Gender	-0.042**	-2.41	0.0290
Education	-0.005***	-4.21	0.0001
Family size	-0.035 ***	-3.56	0.0003
Size of output	0.005***	3.46	0.0004
Training	0.052	0.91	0.8983
Non-farm income	-0.025*	-1.46	0.0962
Cooperative membership	0.022***	4.42	0.0009
Extension visit	-0.001**	-2.38	0.0490
Market information	-0.076*	-1.53	0.0812
Distance to nearest market	-0.032***	-3.32	0.0006
Price per kg	0.012***	3.86	0.0003
Log likelihood ratio= -52.03		R ² = 0.42	

Source: Authors' Own Calculation

Note:*,**, and *** indicate the significant level at 10, 5, and 1%, respectively.

income, extension visit, market information and distance, keeping all other factors constant, would result a decrease in market participation by 0.042, 0.005, 0.035, 0.025, 0.001, and 0.032 percent, respectively. Frequency of extension visit should increase the level of market participation. But the coefficient of extension visit found with a negative sign indicating that an increase in extension visit would reduce the level of market participation. This could be due to less responsibility of extension officers in their duties. The negative sign of education is unexpected which could be due to lack of proper education among the respondents.

5. Conclusion and Policy Recommendation

The major objective of this paper was to identify the factors influencing market participation of rice farmers in *Gopalganj* district, including identifying the constraints to market participation and determining the level of market participation in the study area. The five point Lykert index was used to identify the extent of market participation constraints. Besides, Tobit model was used to identify the intensity of market participation. Results found from Lykert test indicate that “weak infrastructure” is the major constraint (mean index value 3.23) followed by the “Influence of middle man on price” and “Inadequate market information” problems in the study area. Our inquiry also reveals that small farmers are seen to participate in market by *level II* whereas medium and larger farmers are found to participate in market by *level III* and *level IV*.

Results found from the Tobit analysis indicate that factors like age, size of output, training, cooperative membership, and price per kg are positively related to the intensity of market participation. On the other hand, market participation is influenced negatively by gender, education, family size, non-farm income, extension visit, market information and distance. Based on the findings of this research it is necessary recommend some policies regarding the intensity of market participation. Some of the suggestions emerge from the field survey experiences of this researcher. Based on the findings of the study, the following recommendations can be made:

Due to the huge supply of rice in harvesting period, price is comparatively low than in the non- harvesting period. Farmers are often seen to be losers in this time. Incentives in the form of price support or input subsidy should strictly be put round the year, especially in the harvesting period to encourage farmers to earn better returns for their effort. If this programme can be ensured, it will give incentive to farmers to expand rice production as well as market participation.

- Due to the intervention of middleman, farmers often fail to get the fair price of their produce. Government can take appropriate step to reduce the influence of middleman in the market. In this regard, a market monitoring cell can be formed.
- Farmers should be motivated to form cooperative societies with the intension of selling their product at fair price. This will inspire the farmers that ultimately enhances market participation. Government should encourage formation of local or community associations where farmers can have a common voice, get information about market situation and assist one another via collective works.
- Effort should be geared at improving the status of rural infrastructures, especially road network. Investment in rural road infrastructure would lead to more traders penetrating the rural areas and this will increase competition and could benefit farmers through higher prices.
- Government should take necessary initiatives to spread market information among farmers through Radio, TV, newspaper and extension officers.

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