Research Article

DETERMINANTS OF MARKET PARTICIPATION IN SMALL SCALE BEEF CATTLE ENTREPRENEURS: EVIDENCE FROM PABNA AND SIRAJGANJ DISTRICTS OF BANGLADESH

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Abstract

The study was designed to determine the factors that influence the cattle farmers to participate and motivate in cattle marketing and preferred marketing channels in special focus on Pabna and Siraiganj Char areas of northern Bangladesh. Purposive sampling "snowballing" procedure was employed to contact 180 respondents. Semi-structured questionnaires were used to collect data from small-scale cattle farmers through face to face interview. The data was analyzed using the Heckman two-stage selection model and Multinomial logistic regression model. Six factors were identified motivating cattle farmers to choose marketing channel namely, the gender of the household head, marketing information received, education and number of cattle sold. It was found that age, gender, level of education and hard size significantly influenced the decision to participate in cattle marketing. Gender, price information, group marketing, marketing experience, vehicle ownership and marketing under contract significantly influenced the extent of market participation. Further, gender, group marketing, hard size, price information, marketing under contract and vehicle ownership significantly influenced the choice of cattle marketing channels. The study strongly recommends increasing the number of cattle marked through formal channels and need to lower transaction cost, increase bargaining power, increase the hard size, access to information and participation in terminal markets. The current policy advice should focus on the effects of policy distortions and adequate attention should be given to the serious, embedded institutional deficiencies that limit many commercial farmers from taking advantage of market opportunities.

Keywords: Cattle entrepreneurs, influencing factors, market participation

Introduction

One of the major food problems in Bangladesh is the gross deficiency in protein intake, both in quantity and quality. The low protein intake has been responsible for reduced human productivity with high incidence of infant mortality, severe malnutrition and general weakening of human body which pre-dispose people to diseases, low health status and shorter lifespan. Livestock are an integral component of agriculture in Bangladesh and make multifaceted contributions to the growth and development in the agricultural sectors. The livestock resources of Bangladesh are mainly based on cattle, goat, sheep, buffalo and poultry. About 24.5 million cattle heads are distributed throughout the country which ranks 12th in the world and 3rd in Asian countries (FAO, 2010). Although the growth of livestock production is the second highest among all other sub-sector of agriculture in Bangladesh (BER, 2012), the production and consumption of livestock products is still much lower in consumption with other countries. The increasing trends of meat consumption have already been evident in several Southeast Asian countries such as Indonesia, Malaysia, Philippines and Thailand (Skunmun et al., 2002). Among meat consumption of 180 countries in the world, Bangladesh stands in 18th position which is about only 7.13 kg per capita per year (DLS, 2009) compared to the USA of 124 kg and the global average of 38 kg (Smith et al.2007). The quantitative production of meat in Bangladesh in 2005 was 1.06 million tons against the total requirement of 6.30 million tons (BBS, 2009). The projected production of meat is 2.87 million tons in 2015, but its total requirement would be 6.86 million tons. It indicates a huge gap exit between production and the total requirement. This sector plays a major role in the national economy and it is the source of income and employment for the rural population. Bangladesh has the

leading livestock population in Asia and the animal population census. Estimates of the livestock population of Bangladesh are 23.4 million cattle, 1.45 million buffalo 3.16 million sheep, 25.6 million goats, 221.30 million chicken and 41.23 million ducks. Estimates a 1.1% growth rate for cattle which is against a backdrop of 2.5% human population growth per annum. In other words, the livestock population growth has been lagging behind the human population growth. The majority of the world's rural poor and a significant proportion of the urban poor keep livestock and use them in a variety of ways that extend far beyond income generation. In many cases, livestock are a central component of smallholder risk management strategies. The economic contribution of the livestock sub-sector in Bangladesh is also about 12% of the total and 33% of agricultural GDP and provides livelihood for 65% of the population of poverty for many smallholders in the developing country. According to the report, the requirement of animal protein per head per day is 120 gm whereas the availability is only 22.0 gm (DLS, 2011) and the deficit of meat is more than 80% in 2010. To satisfy the animal protein requirement, beef fattening can play an important role. It is also an emerging sector for employment and improving socio economic condition of rural masses by generating gainful employment and augmenting family income particularly small and marginal farmers in rural areas. Beef fattening is an effective instrument for poverty alleviation for the rural poor people. The Directorate of Livestock Services (DLS) of the Government of Bangladesh has taken beef fattening as an action program to generate income for the rural poor farmer. Cattle are bought by the farmers usually 3-6 months before Eid-ul-Azha (Muslim festival) and then they are fattened and sold. The majority of small-scale beef cattle entrepreneurs in Bangladesh have ventured into livestock due to the high market value associated with the cattle. In Pabna and Sirajganj districts, livestock is largely grown by small-scale agribusiness entrepreneurs. Despite high beef cattle market value, the farmers in the study area faced with the marketing problem evidenced by low farm-gate prices. These poor prices among small-scale cattle entrepreneurs have led to low household income. Bartha and Bauer (2007) observed that factors which proved to have a significant impact on small-scale livestock farmers' decision to participate in market were: (i) market information, (ii) distance to the preferred marketing channel, (iii) the level of training (iv) extension visits, and (v) age. Major reforms like improving market infrastructure by providing more and better markets and making it easier for farmers to access them is deemed necessary for increasing the level of commercialization (Shilpi and Umali Deininger, 2008). The majority of the smallholders farmers are located in remote areas with poor transport and poor market infrastructures, contributing to the high transaction costs faced. Transaction costs have been secluded to be the key reasons for smallholder farmers' failure to participate in the markets (Makhura et al. 2001). The study has investigated the determinants of livestock market participation, linked to transaction costs, which were used as critical measures in determining why some farmers opted not to participate in markets, while others opted to participate as a seller. This study, assist in identification and generation of appropriate intervention measures that have enabled the rural population to benefit from markets, therefore, filled that knowledge gap by clarifying underpinning drivers of market participation among small-scale cattle entrepreneurs in the study areas.

Therefore, the paper has the following specific review objectives-

i) To determine the factors influencing participation and extent of participation in marketing of beef cattle in Pabna and Sirajganj districts.

ii) To determine the factors influencing the preference of beef cattle marketing channel in Pabna and Sirajganj districts.

Materials and Methods

Description of the study areas

The study was carried out in two upazilas namely Raigonj and Sathia under Sirajgonj and Pabna districts, respectively. Preliminary visits were made for the selection of study area. The data was collected through interview schedule selecting 180 respondents of two upazilas who were involved in beef cattle production and marketing.

Method of data collection

The data required for the study were collected through a small scale survey, key informants in-depth interviews and review of secondary data. A structured questionnaire consisting both open and closed types of questions to generate detailed information on factors that could influence farmers cattle marketing preferences was used. A total 180 farming households who are small scale cattle farmers were interviewed using a purposive sampling "snowballing" method. The snowballing method identifies cases of interest from people who know people that are information-rich, that is, good examples for study and good interview.

Analytical Techniques

Two types of analytical technique, namely: descriptive and econometric were used for analyzing the collected data. To achieving the objective Heckman two-stage and Multinomial Logistic Regression model (econometric model) used, respectively.

a) Heckman two-stage model: To determine the factors influencing participation and extent of participation in beef cattle marketing, the Heckman two-stage selection model was used. The model consisted of two steps; firstly, selection equation was estimated using a probit model and secondly, an outcome equation was estimated using OLS regression. A Probit model predicts the probability of whether an individual household participated in the beef cattle market or not as shown.

$$\Pr(Z_i = 1/w_i \alpha) = \phi(h(w_i, \alpha)) + \varepsilon_i$$
 ------(1)

Where is an indicator variable equal to unity for small-scale beef cattle farmers that participated in the marketing, is the standard normal cumulative distribution function, a is the vector of factors affecting the decision to participate in beef cattle market, α is the vector of coefficients to be estimated, and is the error term assumed to be distributed normally with a mean of zero and a variance σ^2 . The variable takes the value of 1 if the marginal utility the household i get from participating in marketing of beef cattle is greater than zero, and zero otherwise. This is shown as follows,

$$Z_i^* = \alpha w_i + \mu_i$$

Where

 Z_i^* is the latent level of utility the small scale cattle farmers get from participating in the market, $\mu_i \sim N(0,1)$ and,

$$Z_i = 1i \int Z_i^* > 0$$
$$Z_i = 0i \int Z_i^* \le 0$$

In the second step, additional repressors in the sales equation will be included to correct for potential selection bias. This repressor is Inverse Mills Ratio (IMR). The IMR is computed as:

$$\frac{\phi(h(w_i\alpha))}{\phi(w_i,\overline{\alpha})}$$
(3)

Where ϕ is the normal probability density function? The second-stage equation is given by:

Where E is the expectation operator, Y is the (continuous) proportion of beef cattle sold, x is a vector of independent variables affecting the quantity of beef cattle sold, and β is the vector of the corresponding coefficients to be estimated. Therefore, Y_i can be expressed as follows:

 $Y_i^* = \beta' \chi_i + Y \lambda_i + \mu_i -----(5)$ $Y_i^* \text{ is only observed for those cattle farmers who participates in the marketing where } \mu_i \sim N(0, \sigma_{\mu}).(Z_i = 1), \text{ in }$

which case $Y_i = Y_i^*$.

The model can thus be estimated as follows; in the first step of deciding whether to participate in cattle marketing or not. This can be specified as:

Where participation is denoted by 1 and non- participation is denoted by 0, β_0 is a constant, β_1n are parameters to be estimated are vector of explanatory variables.

The Second step which involves a decision on the extent of beef cattle marketing is estimated by use of an OLS as follows;

Where Y denotes the proportion of beef cattle sales, β_0 is a constant, β_1n are parameters to be estimated are vector of explanatory variables.

Model specification Heckman two-step procedure: Heckman (1979) proposed a two-step procedure which only involves the estimation of a standard probit and a linear regression model. The two equations for the two steps are specified as follows: The variables to be used in Heckman two stages are shown;

Step 1. (Selection equation)

$$P_{i}(0,1) = \beta_{0} + \beta_{1}\chi_{1} + \beta_{2}\chi_{2} + \dots + \beta_{n}\chi_{n} + \varepsilon \dots$$

$$P_{i}(0,1) = \beta_{0}age + \beta_{2}gend + \beta_{3}educ + \beta_{4}Hsize + \beta_{5}Occup + \beta_{6}HsInc + \beta_{7}VehOwn + \beta_{8}Hardsize + \varepsilon_{i} - \dots - \dots - \dots - \dots - \dots - (9)$$
(8)

Step 2. (Outcome equation)

 $Y_i = \beta_0 + \beta_1 \chi_1 + \beta_2 \chi_2 + \dots + \beta_n \chi_n + \varepsilon \dots$ (10)

Proportion of cattle sales

$$\begin{split} Y_i &= \beta_0 + \beta_1 age + \beta_2 gend + \beta_3 educ + \beta_4 Hsize + \beta_5 Occup + \beta_6 HsInc + \beta_7 VehOwn + \beta_8 Dismkt \\ &+ \beta_9 \operatorname{Pr}ic + \beta_{10} HardSize + \beta_{11} MktGrp + \beta_{12} Contr + \beta_{13} \operatorname{Pr}ic \inf r + \beta_{14} MktExpr + \beta_{15} IMR + \varepsilon_i - -(11) \end{split}$$

Where,

A. Dependent variable

 Y_i = Type of household (market participant/non-market participant), Dummy (1= market participant, 0 = Non-Market participant)

Extended

 Y_i = Extent of participation (Proportion of beef cattle sale)

B. Independent variables

 χ_1 = Age in years (In years continuous)

 χ_2 = Gender (Dummy, 1 = Male, 0= Female)

 χ_3 = Education, (1 = No education, 2 = Primary, 3 = Secondary, 4 = Tertiary)

 χ_4 = Household size, (Size of the household continuous)

 χ_5 = Occupation, (1 = Farmer, 2 = Businessman, 3= employed)

 χ_6 = Household income (In BDT)

 χ_7 = Vehicle ownership (Dummy1 = Yes, 0 = No)

 χ_8 = Distance to the market (In Kms)

 χ_{9} = Hard Size (number of cattle sale)

 χ_{10} = Price information, (Dummy, 1 = Yes, 0 = No)

 χ_{11} = Price of output (In BDT)

- χ_{12} = Contract Farming (Dummy, 1 = present, 0 = absent)
- χ_{13} = Marketing in groups (Dummy, 1 = Yes, 0 = No)

 χ_{14} = Marketing experience (In years)

 χ_{15} =Inverse Mills Ratio,

 $\beta_{\rm = Co-efficient and } \varepsilon_{\rm error terms}$

b) Multinomial Logistic Regression model : To determine the factors influencing the preference of beef cattle marketing channel in Pabna and Sirajgonj districts, the multinomial logistic regression model was used. The

preference of a given marketing channel is discrete because it is chosen among other alternative channel. Let P_{ij} represent the probability of preference of any given market channel by beef cattle farmers, then equation representing this will be,

$$P_{ij} = \beta_0 + \beta_0 X_0 + \dots + \beta_k X_k + e^{-----(12)}$$

Where i takes values (1, 2, 3), each representing the preference of marketing channel (Primary Market =1,

Secondary market =2, Terminal market =3). X_i are factors affecting preference of a market channel, β are parameters to be estimated and e is randomized error. With j alternative preferences, the probability of choosing channel j is given by,

Where z_j is a preference and z_k is alternative preference that could be chosen. The model estimates are used to determine the probability of preference of a market channel given j factors that affect the preference X_i . With a number of alternative preferences log odds ratio is computed as,

$$Ln\left(\frac{P_{ij}}{P_{ij^*}}\right) = \alpha + \beta_1 \chi_1 + \beta_2 \chi_2 + \dots + \beta_k \chi_k + e_i \dots + \beta_k \chi_k$$

 P_{ij} and P_{ik} are probabilities that a farmer will choose a given channel and alternative channel respectively.

 $Ln\left(\frac{P_{ij}}{P_{ik}}\right)$ is a natural log of probability of preference j relative to probability preference k, α is a constant, β is a matrix of parameters that reflect the impact of changes in X on probability of choosing a given channel, e is the error term that is independent and normally distributed with a mean zero. The parameter estimates of the multinomial logistic regression model provide only the direction of the effect of the independent variable on the dependent variable but do not represent either the actual magnitude of change nor probabilities. The marginal effects or marginal probabilities are functions of the probability itself and measure the expected change in the probability of a particular preference being made with respect to a unit change in an independent variable from the mean. Marginal effects of the attributes on preference are determined by getting the differential of probability of a preference and it is given by,

multinomial Logit model is given below;

$$P_{ij} = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon_i - \dots + (16)$$

Cattle farmers' preferred the market channel

$$P_{ij} = \beta_0 + \beta_1 \chi_1 + \beta_2 \chi_2 + \beta_3 \chi_3 + \beta_4 \chi_4 + \beta_5 \chi_5 + \beta_6 \chi_6 + \beta_7 \chi_7 + \beta_8 \chi_8 + \beta_9 \chi_9 + \varepsilon_i - \dots - (17)$$

Where,

A. Dependent variable

 P_{ij} = Household preference of beef cattle marketing channels, here, Primary Market =1, Secondary market =2, Terminal market=3

B. Independent variables

 χ_1 = Age in years (continuous)

 χ_2 = Gender, Dummy (1 = Male, 0 = Female)

 χ_3 = Education, (1 = Primary, 2 = Secondary, 3 = High secondary, 4 = degree and above)

 χ_4 = Hard size, in number (continuous)

 χ_5 = Vehicle ownership, Dummy (1 = Yes, 0 = No)

 χ_6 = Marketing in groups, Dummy (1 = Yes, 0 = No)

 χ_7 = Marketing experience, in years (continuous)

 χ_8 = Price information, Dummy (1= Yes, 0 = No)

 χ_9 = Contract Farming, Dummy (1= Yes, 0 = No)

 β = Coefficient and ε = Error term

Results and Discussion

Heckman two-step procedures were used to determine the factors influencing participation and extent of participation in beef cattle marketing. The variables included in the model were age, gender, household income, education, occupation, household size, beef cattle price, contract, price information, vehicle ownership, marketing experience, group marketing, beef cattle production and distance to market. The data were analyzed and post estimation of the selection equation results was done to obtain the marginal effects. The marginal effects were used for interpretation, since the coefficients of selection equation have no direct interpretation. The reason is that they are just values that maximize the likelihood function. Marginal effects have a direct interpretation (Heckman, 1979).

a) Factors influencing market participation: To determine the factors influencing market participation of beef cattle in Pabna and Sirajganj districts, a Probit model was estimated in the first step of the Heckman selection equation. The results presented in Table 1. Four variables (age, gender, education and beef cattle production) were significantly found to influence the farmers' decision to participate in the beef cattle market. The Inverse Mills Ratio (IML/Lambda) term was significant and positive at (0.003), which suggest that the error term in the selection and primary equation is positively correlated. This implies that unobserved factors that make participation in beef cattle marketing are more likely to be associated with higher scores on the dependent variable. The marginal effects were used to interpret the results. Age of the household head significantly and negatively influenced market participation. An increase in the age of household head by one year decreases the probability of participating in the beef cattle market by 0.02%, all other factors held constant. This implies that the younger people are more enthusiastic to participate in the beef cattle market than the older people Barret *et al.* (2007) stated that younger people participated more in the market because they are more receptive to new ideas and are less risk averse than the older people.

Gender of the household head significantly and positively influenced market participation. Being male-headed household increases the probability of participating in the beef cattle market by 3.88%, all other factors held constant. This suggests that the male headed households are more market oriented than female, hence they participate more in the market for cash crops like beef cattle. Education level of the household head significantly and positively influenced market participation. One year increases in household head education, increase the probability

of participating in the beef cattle market by 0.02%, all other factors held constant. This can be explained by the fact that as an individual access more education he/she is empowered with the marketing skill and knowledge that will spur individual to participate in the market, this suggests that higher level of education provides a greater opportunity for the farmers to participate in the beef cattle market. Beef cattle production significantly and positively influenced market participation. An increase in a weight of beef cattle production by one kilogram increases the probability of participating in the beef cattle market by 0.02%, all other factors held constant. This implies that as the beef cattle production increases, market participation also increases.

Table 1. The neckinali two-step selection equation rest	Table 1.	The Heckman	n two-step	selection	equation	resul
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Variable x	δy/δ	Coef.	Std. Err	P > z
Age	-0.0002**	-0.0498	0.0241	0.040
Gender	0.0388**	1.1690	0.5550	0.035
Household size	-0.0044	0.2781	0.1838	0.130
Education in years	0.0002***	0.1613	0.0528	0.005
Beef cattle production in Kgs	0.0002***	0.0528	0.0100	0.000
Vehicle ownership	0.0459	0.1610	0.6412	0.802
Occupation	0.0002	0.0494	0.3997	0.902
Household income	-0.0140	0.0823	0.2882	0.775
Mills lambda	-0.0690***	-0.0690	- 0.0690	0.003
Rho	-1.0000			
Sigma	0.0690			
***: significant at 1% level; **: significant at 5% level; *:	Source: Survey data (2014)			

b) Factors affecting the preference of beef cattle marketing channels: The multinomial logistic regression model was used to determine the factors influencing the preference of beef cattle marketing channels in the study areas. The variables included in the estimation were: age, gender, education, vehicle ownership, beef cattle productions, marketing group, marketing experience, price information and contract marketing.

Explanatory variable	Primary Market		Secondary m	Secondary market		Terminal market	
	δy/δx	P-value	δy/δx	P-value	δy/δx	P-value	
Age	-0.0654	0.119	-0.1656	0.183	-0.0823	0.169	
Gender	2457*	0.088	0.2573*	0.059	-0.0133	0.871	
Education	-0.0088	0.581	- 0.0146	0.513	0.0234	0.171	
Group marketing	-0.3681***	0.002	0.1752	0.274	0.1963*	0.088	
Market experience	-0.0719	0.123	0.0510	0.181	0.0144	0.349	
Hard size	-0.2725***	0.008	0.3372***	0.003	0.0578	0.287	
Price information	-0.1851	0.241	0.2681 **	0.046	0.1122	0.237	
Contract marketing	0.3961*	0.079	-0.2872	0.107	-0.0282	0.719	
Vehicle ownership	0.0001	0.987	0.042	0.3197**	0.3319**	0.019	
Number of observations = 180, Wald chi ² (18): 87.42, Prob. > Chi^2 = 0.000, Pseudo R ² = 0.3967, Log likelihood = -53.754							

Table 2. Marginal effect on the preference of marketing channels

 ***: significant at 1% level; **: significant at 5% level; *: significant at 10% level.
 Source: Survey data (2014)

Table 2 presents the results of the multinomial logistic regression. The Chi-square value of -53.754 showed that likelihood ratio statistics are highly significant (P< 0.000) suggesting that the model had strong explanatory power. The pseudo-R square was 0.3967 indicating the explanatory variable explained about 39.40% of the variable in the preference of market channels. Before the marginal effects were run, the coefficient estimates were run and presented in table1 to provide only the direction of the effect of the independent variable on the dependent variables but not the actual magnitude of the change of probabilities. Thus, the marginal effects from the MNL model, which measure the expected change in the probability of a particular preference being made with respect to a unit change in an independent variable are reported and discussed. The significant value (also known as p-values) show whether a change in the independent variable significantly influences the Logit at a given level (Gujarati, 2007).

Gender of the household head had a significant influence on the preference of primary market and secondary market. Male-headed household had a higher probability of selling at secondary markets by 25.73%; however, they had a lower probability of selling at primary market by 24.57%. A plausible explanation for this is that male-headed households tend to risk takers thus they are capable of searching markets in the distance and competitive places like secondary market. Conversely, female household's head tends to be confined at home by household chores hence hindering them from attending the market places. The finding concurs with that of Morrison et al. (2007), who found

that female farmers are faced with gender specific constraints like a time burden that limit them from accessing the best market for their output. Group marketing had a significant influence on the preference of primary market and terminal market. The farmer who belongs to group marketing had a lower chance of selling at farm primary market by 36.81%; but also had a higher chance of selling at terminal market by 19.63%. The justification behind this is that the farmers who collectively market their production to the distant places like terminal markets tend to incur a lower transaction cost. Njuki et al. (2009) stated that besides reducing transaction costs, collective marketing empowers farmers to negotiate for better trade terms and prices. This finding is in line with the argument of Jari and Fraser (2009), who stated that the farmers who participate in groups have the ability to reach a distant market because they are able to share information and broaden social capital within the groups. Beef cattle production had a significant influence on the preference of primary market and secondary market. An increase in the number of beef cattle productions increases the probability of selling at secondary markets by 33.72%, while a decrease the number of beef cattle productions increases the probability of selling beef cattle at primary market by 27.25%. This means that the farmers who have more productions have more opportunities of selling their produce at the market places than those with the little produce. The finding is in line with that of Chalwe (2011) who found more of the beans produced are sold to the private traders in the market places than to other households at the primary market. Price information had a positive influence on the preference of the secondary market. An increase in price information by one unit increases the probability of selling the beef cattle production in the secondary market by 26.81%. Price information informs the farmer on prevailing pricing condition. This shows that the farmers who market their produce at secondary market incur neither higher transaction cost like terminal marketer nor poor prices like primary market actors. Contract marketing had a positive significant influence on the preference of primary market. The farmers who were under contract in marketing had a higher probability of selling at primary market by 39.61%. Contract marketing guarantees the farmers with a ready market. In essence, a ready market reduces the farmers' costs that are associated with searching the potential buyers and transport. For this reason, the farmers opt to sell at primary market in order to incur zero transaction cost. The finding is consistent with that of Escobal and Cavero (2007) who found that marketing of agriculture commodity at the primary market in Peru involves no tax obligation (taxes are not levied) or trade commitments, since the farm is an open market and there is no restriction or barrier. Vehicle ownership had a significant influence on the preference of the secondary market and terminal market. An increase in the vehicle ownership by one vehicle increases the probability of selling at secondary markets and terminal markets by 31.97% and 33.19%, respectively. Vehicle ownership helps in reducing the long distance constraints and aids in offering the greater depth in marketing preferences. The result concurs with argument of Chalwe (2011) who stated that the availability of on-farm transport increases the probability of transporting goods to private traders in the market.

It can be concluded that marketing of livestock is probably one of the most complex policy issues to be addressed for improving household food security in study areas because livestock production is their main source of income. Six factors were found to be significant in influencing the extent of market participation such as age, gender, education level, group marketing, price information, marketing experience, vehicle ownership and contract marketing had a positive influence on the proportion of cattle sales. Age was negatively significant meaning that more of younger people participated in cattle marketing. The rationale behind this is that younger people tend to be energetic and risk takers. Gender of household head was positive and significant. Male-headed households tend to be more of a market oriented than female household heads mainly because men are perceived to be more resource endowed than women. Education level was positive and significant. Six factors were found to be significant in determining factors influencing the preference of cattle marketing channel. Gender, group marketing, price information, contract marketing and vehicle ownership significantly influence the preference of cattle marketing channel. Gender had a significant influence on the preference of marketing channels. Based on the results of the study, education level, gender, vehicle ownership, price information, group marketing and market contracting were significantly found to influence the cattle market. The study recommends that for holistic market participation among cattle farmers, proper marketing infrastructure is necessary. The government and other policy makers should have some role in access to marketing information and abilities of cattle farmers through avenues like mass media, extension service and other means of capacity building. It also determined the factors that influence the preference of marketing channels. However, the study proposes further research on: i) impact assessment of transaction cost of market participation among cattle farmers in the study area. There is need to determine the constraints and barriers that affect the cattle farmers as they are reflected in transaction cost. ii) the factors that influence the preference of marketing channel among the cattle farmers.

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