



Women's Participation in Small Ruminant Rearing and Household Decision Making Process at Banshkhali Upazila in Chattogram District

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ABSTRACT

The study was carried out to examine participation of women in small ruminant rearing and household decision making process at Banshkhali Upazila in Chattogram. Four villages were purposively selected based on the density of small ruminant rearing. Data were collected from 50 households using random sampling method with a structured questionnaire. Descriptive statistic, Participation Index and Logistic Regression Analysis were used to analyse the data. The results of the study showed that (36%) young women were engaged in small ruminant rearing (26-35 age group) and major proportion of the respondents (46%) in the study areas were primary educated. About 52% of the respondents have a family size consisting of 6-10 members. Nearly half (46%) of the women involved in rearing small ruminants earned between BDT 12,000.00 - BDT 18,000.00 per annum. The participation index implies that large proportions of women were always participating in supplying water, feeding and providing fodder and cleaning barns/corrals/pens of small ruminants. Moreover, they were rarely participating in construction of house/barns/corrals/pens, rearing in confinement/partial-confinement/free ranges system and bringing animal to veterinary surgeon for vaccination purpose. In household condition, women involved in decision making for rearing livestock, marriage of children whereas rarely participate in activities such as selection of variety and inputs for agricultural production, education of children, purchase of household assets and have minimal participation in selling household assets, freedom of mobility. A logistic regression analysis revealed that women's participation in household decision making process was negatively related with family size and farm size, but positively related with respondent's income ($P < 0.05$) and education ($P < 0.01$). It may be concluded that higher the education and income of women, more the tendency of making household decisions alone.

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Introduction

Women play a vital role in agricultural sector all over the world. Along with agriculture, they are also engaged significantly in livestock rearing (Moser, 2007) for accelerating family income (Etenesh, 2005; Batool *et al.*, 2014) and to meet the household food requirement (Mullins *et al.*, 1996; Dolberg, 2001).

In Bangladesh, about 49.4% of total population consists of female. Rural women are largely deprived of autonomy as their lives are controlled by male governance in the patriarchal society. Like other patriarchal societies, men have greater power and authority in household decision-making simply by virtue of being men and therefore 'head' of the family in Bangladesh (Schuler *et al.*, 1996; Sultana, 2010). The

women are subjected to aggressive behavior at the hands of their husbands and other male members of husband's family.

The role of women in small ruminants keeping is very significant in the rural families in Bangladesh. Small ruminants are considered as the fixed deposits for the rural poor household and the means through which rural women are able to contribute meaningfully to the cash needs for her and family members as well. The economic contribution of rural women is largely ignored in all over the world (ADB, 2004). Active participation of women at all levels of decision making is important to achieve equality and peace in family as well as the development of the country (Hoque and Itohara, 2008). Women's decision-making power is limited to some

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extent yet in third world countries, like Bangladesh (Sultana *et al.*, 2010). In South Asia, economic empowerment has been the entry point for overall empowerment of women if they are organized under a common platform (Carr *et al.*, 1996). Blood and Wolfe (1960) described that husband-wife decision making power depends upon the resources such as income, educational attainment and occupation. They also find out that women decision making power may increase on their resources increase. If women are involved in more income generating activities, their participation in decision making and socioeconomic upliftment in the family will also increase.

Notwithstanding, many types of research have analyzed the participation of women in livestock rearing activities (Hossain *et al.*, 2004; Hoque and Itohara, 2008; Ayoade *et al.*, 2009; Narmatha *et al.*, 2009; Batool *et al.*, 2014; Dan and Kim, 2020), but there is hardly any work about the women's participation and decision making power in household level through small ruminant rearing in Bangladesh. For that reason, the current study was conducted with the objectives of investigating women's involvement in small ruminant rearing activities and their participation in household decisions at Banshkhali Upazila in Chattogram District.

Materials and Methods

The study was conducted in four villages (namely Sambol, South Sambol, Chanua and Shekerkhil) under Banshkhali Upazila of Chattogram district. Banshkhali Upazila is located at 22.05°N 91.94°E in Bangladesh. It has 55,609 households and a total area of 376.9 km². The areas were purposively selected based on density of small ruminant population. Data were collected from 50 women small ruminant rearers following random sampling method during November to December, 2019 through direct interviews using a structured questionnaire. A list of farm households in each village was obtained from the respective local district assemblies like Department of Livestock Services (DLS), and agriculture office. The information supplied by the women was recorded directly in the questionnaire. Both qualitative and quantitative data were collected using household survey method. A survey schedule was developed and pre-tested for the study. Survey questionnaire was prepared in the light to the objectives of the study. The qualitative data were recorded using interview and observation method.

Analytical techniques

After data collection, the questionnaires were checked for completeness, cleaned, organized, coded and then entered into MS-Excel and STATA (Stata 14, Stata Statistical Software, Stata Corporation, College Station, Texas 77845 USA) for analysis. Both the descriptive and

econometric methods were used to achieve the objectives. Income from small ruminant was defined as the total earning of respondent from small ruminant rearing during a year. Monthly family income was defined as the total earning of respondent and other members of the family from agriculture, livestock and non-agricultural sources (e.g., selling labour, service, business, remittance etc.) during a month.

For measuring the participation index of the respondents about household decision making process, a 3-point Likert Scale was used. The scales were weighted in order of importance from; always involved=3, rarely involved=2, not at all=1. The respondents were asked to indicate their level of participation in small ruminant rearing and household activities. Ranking of different activities performed by rural women, the frequency of responses from each of the three point continuum of a specific activity under major activity was tabulated and multiplied by concerned score. Then they were added together to get the total score for each specific activity for the purpose of their ranking (Sailaja and Reddy, 2003).

Participation score for each respondent was calculated by using the following formula:

$$\text{Participation Index (PI)} = 3 \times \text{AI} + 2 \times \text{RI} + 1 \times \text{NAA}$$

Where, AI= Always Involved, RI=Rarely Involved, NAA= Not At All

Logistic regression model was estimated using binary dependent variable. The binary variable was assigned the value 1 for decision that was taken by women alone and the zero otherwise. The logit model has been specified as follows:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + U_i$$

$$\text{Loge} \frac{Y}{1-Y} = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + U_i$$

$$L = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} U_i \dots \dots \dots (1)$$

Here, Y_i = A binary variable having '1' for scoring above 50 percent of household decisions taken by women alone and '0' otherwise, X_1 = Woman's Income from Small Ruminant rearing (Tk/year); X_2 = Age (year); X_3 = Education (Dummy; 1=Illiterate, 2=Primary, 3=Secondary, 4=SSC, 5=HSC and above); X_4 =Family size (number); X_5 = Farm size (decimal); X_6 =Experience (years); and U_i =Error term.

Results and Discussion

Socioeconomic profile of the respondents

It was observed that, mostly (36%) young women were engaged in small ruminant production (26-35 age group) and in second portion (26%) were middle aged group

(36-45 age) in the study areas. Dan and Kim (2020) found that majority (72.4%) of the respondents were in the age bracket of 21 to 40 years which is consistent with this present study. Maximum respondents (94%) of the study areas were married followed by widowed (4%) and divorced (2%) (Table 1). The findings agree with that of Fabiyi *et al.* (2007) and Ayoade *et al.* (2009) who reported the majority of women involved in livestock production were married. The marital status of a woman supports her in determining the level of participation in the income generating activities.

Table 1 showed that major proportion of the respondent (46%) in the study areas were primary educated followed by illiterate (26%). Educated women could have positive influence on their extent of involvement in livestock production. About 52% of the respondents have a family size of 6-10 members. Large family size has a positive consequence for small ruminant management and household activities. In contrast, Azid *et al.* (2001) asserted that large family size increase family responsibilities of women have lower participation in economic activities.

Data on occupation indicated that a greater proportion (80%) of the respondents who are full time house wives also engaged in raising of small ruminant. Nearly half of the women (46%) involved in raising small ruminant earned between BDT 12000 – BDT 18000 in a year (Table 1). With this scenario, we can infer that most of the women involved in small ruminant production in the study areas are of low economic base. Our findings agree with that of Dan and Kim (2020) that about 52% of the respondents those are full time housewives also engaged in raising of animals and 47% of the women involved in raising animals earned between BDT 2209.73 – BDT 6629.20 monthly.

Income status of the respondents' households

Family income at rural areas is composed of agricultural and non-farming sources. Agricultural income is considered as earning from crop, livestock, poultry, vegetable and fruits. On the other hand, non-farming activities included business, services, remittances, labor selling, rickshaw/taxi pulling, handicraft maker etc. In the study areas, labor selling, rickshaw/taxi pulling, handicraft maker etc. have greater contribution (28%) to family income. Income from business avail second largest income (26%) of the total income (Figure 1). It implies that in the study areas people are engaged in

various business activities. Livestock is the important source of income in rural household. About 22 percent of the total income earned from livestock in the study areas. Roy *et al.* (2017) found that about 23%, 19%, 10% and 9% of the total income earned from service, day labour, business and livestock, respectively.

Table 1. Socio-economic characteristics of the respondents

Characteristics	Frequency	Percentage
Age		
Below 25	9	18
26-35	18	36
36-45	13	26
46-55	7	14
above 55	3	6
Marital status		
Married	47	94
Widow	2	4
Divorced	1	2
Education		
Illiterate	13	26
Primary	23	46
Secondary	7	14
SSC	4	8
HSC and above	3	6
Family size		
Below 5	17	34
6-10	26	52
10 and above	7	14
Occupation		
Housewife and raising small ruminant	40	80
Housewife, raising small ruminant, agricultural farming	4	8
Housewife, raising small ruminant, tailoring	2	4
Housewife, raising small ruminant, shopkeeper	2	4
Housewife, raising small ruminant, handicraft maker	2	4
Women's income from raising small ruminant		
10000-below 12000	18	36
12000-18000	23	46
19000-25000	8	16
26000 and above	1	2

Involvement of rural women in various livestock and household activities

Women are often less concerned in the decision making process at every stages of family life. In this study, an attempt was made to analyze women's participation in small ruminants rearing and decision making process in household condition.

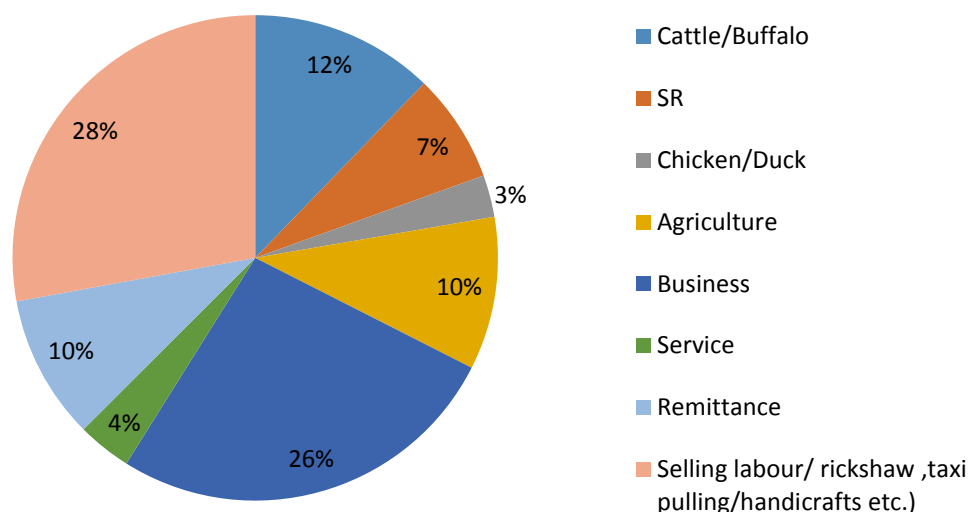


Figure 1. Average monthly income of respondent households

Extent of rural women's participation in small ruminant raising activities

Women's small ruminant rearing activities have been presented in Table 2. The result shows that the decisions regarding supplying water attain highest score at 138. The 2nd highest ranked decision is on feeding and providing fodder for animals. Cleaning barns/corral/pens ranked the 3rd position of women participation in small ruminant rearing. It is clear from the results that, rural women are mostly involved in indoor activities regarding small ruminant rearing. Table 2 further divulged that rural women in the study area rarely participate in construction of small ruminant house/ barns/ corral/ pens, confinement/partial-confinement/free ranging of animal and animal bring to veterinary surgeon/ vaccination purposes. This finding agree with Saghir *et al.* (2005), Dan and Kim (2020) and Roy *et al.* (2017) who reported women participate in various activities of livestock management such as fodder cutting, watering and feeding of animals, animal shed cleaning, grazing of animals, gathering dung. It is also observed that a bigger proportion (above 80%) was not at all involved in milking and marketing /sales of animals.

Extent of rural women's participation in various household decisions

Rural women's participation in various household activities as well as participation indices and order of ranking is presented in Table 3. The result revealed that two third of the respondent were always involved to take decision in family income. These activities had participation indices of 115 and ranked 1. It implies that women take decision and contribute in case of earning family income. Next in rank and participation indices is rearing of livestock. It is evident that decision regarding marriage of children attain 3rd highest score 109.

Women rarely participated in activities such as selection of variety and inputs for agricultural production, education of children, purchase of household assets whereas a minimal participation in sale of household assets, freedom of mobility. It is clear that women decision in sale of household assets and freedom of mobility are not considered significantly in most of the household. The decisions are predominantly made by male members (Table 3). This finding agrees with that of Dan and Kim (2020) and Roy *et al.* (2017) where women participate in various household activities such as washing clothes, cleaning house, preparing food, marriage of children, receiving credit, education of children and rearing livestock.

Factors affecting rural women's participation on household decision making process

To estimate the relationship between the household decision level and different explanatory variables, logistic regression model was found more suitable. Results of the logit model estimated through log likelihood method have been shown in Table 4. Income from small ruminant rearing has a positive effect on the probability of making household decisions by women and the relationship was significant ($P < 0.05$). Here, odd ratio implies that if women's income from small ruminant increased then the log of odds in favour of taking household decision by women will increase 1.0003 times, holding other variables constant. The age and experience of women in decision making was positive but the relationship was not significant. Education is another factor that influences taking decision by women at household level. Moreover, odd ratio of education implies that if women's education level increased, she will be 8.37 times more likely to take household decisions, keeping other factors constant.

Table 2. Extent of rural women's participation in small ruminant raising activities.

Activities	Extent of participation			Participation indices	Rank
	Always	Rarely	Not at all		
Construction of house/barns/corral/pens	15 (30)	24 (48)	11 (22)	104	7
Herding/tethering	35 (70)	6 (12)	9 (18)	126	5
Fodder harvesting	8 (16)	8 (16)	34 (68)	74	11
Grazing of small ruminant	30 (60)	9 (18)	11 (22)	119	6
Confinement/partial confinement/free range	14 (28)	24 (48)	12 (24)	102	8
Feeding/providing fodder	39 (78)	5 (10)	6 (12)	133	2
Supplying water	43 (86)	2 (4)	5 (10)	138	1
Caring for sick animals	37 (74)	7 (14)	6 (12)	131	4
Animal bring to veterinary surgeon/vaccination	6 (12)	28 (56)	16 (32)	90	9
Cleaning barns/corral/pens	36 (72)	10 (20)	4 (8)	132	3
Discussions in extension service	9 (14)	15 (30)	28 (56)	79	10
Milking	0 (0)	7 (14)	43 (86)	57	13
Marketing /sales of animals	2 (4)	6 (12)	42 (84)	60	12

Source: Authors' estimation based on field survey, 2019. Note: Figure in parenthesis is percentages.

Table 3. Extent of rural women's participation in various household decisions.

Activities	Extent of participation			Participation indices	Rank
	Always	Rarely	Not at all		
Agricultural Production process	14 (28)	17 (34)	19 (38)	95	7
Selection of variety & inputs for production	13 (26)	24 (48)	13 (26)	100	5
Family income	24 (48)	17 (34)	9 (18)	115	1
Family expenditure	17 (34)	10 (20)	23 (46)	94	8
Family saving	14 (28)	11 (22)	25 (50)	89	11
Sanitation and safe water	12 (24)	11 (22)	27 (54)	85	12
Health care of family members	11 (22)	13 (26)	26 (52)	85	12
Education of children	12 (24)	25 (50)	13 (26)	99	6
Purchase of household assets	9 (18)	23 (46)	18 (36)	91	9
Rearing of livestock	18 (36)	28 (56)	4 (8)	114	2
Selling household assets	4 (8)	13 (26)	33 (66)	71	14
Marketing of Agril. production	2 (4)	12 (24)	36 (72)	66	15
Receiving credit	15 (30)	25 (50)	10 (20)	105	4
Marriage of children	19 (38)	21 (42)	10 (20)	109	3
Freedom of mobility	12 (24)	16 (32)	22 (44)	90	10

Source: Authors' estimation based on field survey, 2019. Note: Figure in parenthesis is percentages.

Table 4. Logistic regression analysis (dependent variable, household decision making status)

Independent Variables	Coefficient	Std. Err	Significant level	Odds Ratio
Income from Small Ruminant	0.00036**	0.00016	0.026	1.000361
Age	0.04098	0.0727	0.557	1.041832
Education	2.1256*	6.520	0.006	8.377638
Family size	-0.13009	0.2451	0.641	.8780099
Farm size	-0.03255	0.0206	0.126	.9679694
Experience	0.14794	0.2382	0.471	1.159449
Constant	-7.1405	0.0026	0.029	.0007923

Source: Author's estimation based on field survey. Note: *=Significant at 1% level, **= Significant at 5% level, N=50

One possible explanation was that the higher the education of women, the more the tendency of making household decisions alone. Hossain *et al.* (2004) also found that the educated women were more empowered than the illiterate women which were consistent with Roy *et al.* (2017). Family size and farm size has negative and insignificant effect of having women household decision.

Conclusion

Small ruminant rearing is an important sub-sector of agricultural economy that offers remarkable options for increasing family earnings through female's contribution because it requires less initial cost of investment, less place and less take care. Socio- economic status of women small ruminant rearer (eg. their level of education, income) determined the extent of their

involvement in livestock and household management activities. It appears from the study that most of the respondents rarely take their decision in different small ruminant raising and household activities. The contribution of women in different activities as well as in total family income was substantial. At present, women are participating in various agricultural and non-agricultural activities for improving their economic vulnerability. But their contribution is largely ignored in our patriarchal society. Women's participation in household decision making process was negatively related with family size and farm size, but positively related with respondent's income ($P < 0.05$) and education ($P < 0.01$). It indicates that educated and earner women were more empowered and have the tendency of taking household decisions alone. The age and experience of women in decision making was positive but the relationship was not significant. It was found from the research that to improve women's economic condition, it is important to increase their participation in different income generating activities and household decision making events. The output of this study may layout proper directions to the researchers and policymakers for livelihood upliftment of women small ruminant rearers' in Bangladesh.

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Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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