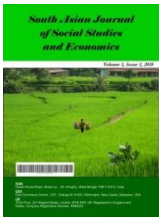

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An Empirical Study on Socio-economic Status of Women Labor in Rice Husking Mill of Bangladesh

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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ABSTRACT

The economy of Bangladesh mainly depends on agriculture. Any development can't be possible because females and males are equally distributed in the country. Women can play a vital role if they properly participated in farm activities as well as in other income-generating activities outside the home. Rice mills are very much dependent on human labour, and almost 5 millions of unorganised workers are working in different rice mills, and more than 60 per cent of them is a female worker. But the working environment suffers from different discrimination and harassment issues between male and female workers. The present study aimed to find out the socio-economic status of women labour at rice husking mill of Bangladesh. Discrimination between male and female workers and the factor affecting the standard of living of women's household will be focused. The study was carried out in two districts namely Mymensingh and Sherpur. From each district, rice husking mill was selected by using a cluster sampling technique, and 70 male and 70 female labours were considered as a sample. The survey was conducted by direct interviews using a

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questionnaire. Data generated were analysed by using tabular and statistical techniques. The average family size of the respondents was 4.46, and 57.05% of the participants were females while 42.95% were males in the household and 65.71% of female had no education. 88% of the women's main occupation was in the rice mill as a daily paid labour. Average wage rate of male and female worker was 184.31 Tk. And 135.95 Tk., respectively. Age, education, number of family member, total land, number of earning member, the wage of women labour and working time and experience were the factors influencing income and living standard of female labours. There were various social violence cases against female labours in the working environment of rice husking mills. In the study area, 93% of female workers get lower wages, 90% of them had no accommodation facility. Besides they did not have sanitation facility (80%), opportunity to take rest at the middle of work (64%) and meal support (71%).

Keywords: Women labour; socio-economic status; farm activities; daily paid labour.

1. INTRODUCTION

Bangladesh is a developing country and agriculture is one of the largest sectors of the economy contributing one-fifth of GDP [1]. Participation of both males and females is essential in the economy as there is 100.3 male against 100 female in the country [2]. In Bangladesh, rural women are involved mostly in household activities, and they also engage themselves in unpaid agricultural activities. Rice is the most staple food crops as it covers more than 70% cropped area. After completing different processes, rice comes to the consumers from the field. When the paddy is harvested from the field, it needs to be parboiling, drying and milling to get rice from paddy required for marketing and consumption. The process is done either at home or rice mill. But processing paddy at rice mills has been common for commercial rice farmers. There are three kinds of commercial mills named husky, major and automatic.

1.1 Conceptual Approaches

In Bangladesh, there are approximately 40.000 rice mills which depend on human labour both males and females. In this case, 60% of labour is female which implies that the role of women's participation in rice milling sector of Bangladesh is very high. But in rice mills, it is a common scenario that female labour gets lower wages than male. The study was undertaken to explore the socio-economic status of male and female labour, discrimination among them, social violence faced by the women labour with a particular emphasis on exploring policy related to improving the status of women in rice husking mills.

1.2 State of the Art

Modalities of such impact have been described in a good number of literature. A modest attempt has been made here to review the previous research studies which are: Hossain et al. conducted a research on nature and impact of women's participation in economic activities in rural Bangladesh: Insights from household surveys. Hossain's paper first depicts the patterns and trends in women´s work and secondly, analyses the factors that work behind the gender division of labour in rural Bangladesh. The gender division of labour found to be associated with both economic factors - wage rates, access to production factors like land, microcredit, infrastructure and socio-cultural factors [3]. Harriss worked on post-harvest rice processing systems in rural Bangladesh: Technology, economics and employment. Over 90 percent of rice produced in Bangladesh is processed by women in their homesteads and in small custom mills located in the rural areas. Harriss's paper presents an analysis of the relative economics and employment effects of the rural processing technologies and their implications for the choice of technology mix for rice processing in Bangladesh [4]. Rahman studied the wage employment market for rural women in Bangladesh. About 37% of women did not participate at all in economic activities, and another 38% worked only for up to two hours a day. Over time, men have allocated more time to non-agricultural activities in which earnings are higher, which tend to influence women's participation in agricultural activities. More important factors affecting women's empowerment are the age of women, land ownership and land tenure, and the level of education [5]. Rosenzweig conducted research on rural wages, labour supply, and land reform: A theoretical and empirical analysis. The study analysed the wage impact of a partial land reform found to be theoretically indeterminate. The empirical results suggest that a redistribution of land from large to small farm households in India would raise agricultural wage levels significantly

and thus benefit landless households, although sex differentials in rural wages would appear to widen [6]. Hoque and Itohara carried out research on Participation and decision making the role of rural women in economic activities: a comparative study for members and non-members of the micro-credit organisations. The result showed that among agricultural activities rural women's participation was relatively higher in various post-harvest activities and livestock management activities compared to other agricultural activities [7]. Rahman studied women's labour contribution to productivity and efficiency in agriculture: empirical evidence from Bangladesh. Results reveal that female labour accounts for a substantial 28% of total labour use (mainly supplied from the family) and contributes significantly to productivity as well as technical efficiency. Contrary to expectation, the cost share of female labour input is significantly higher than the male share and has a substitution relationship with all other inputs, including male labour [8]. Kabeer focused on Gender equality and women's empowerment: A critical analysis of the third millennium development goal 1. This article discusses the third Millennium Development Goal (MDG), on gender equality and women's empowerment. It explores the concept of women's empowerment and highlights ways in which the indicators associated with this goal in education, employment, and political participation can contribute to it [9]. Blackmore et al. carried research on small livestock and aquaculture programming impacts on household livelihood security: a systematic narrative review. Small livestock and aquaculture production is thought to positively impact the livelihood security of poor rural households in low-income economies. These studies indicate that raising small livestock and fish can improve income and nutrition, but results regarding women's empowerment, disease, and the environment are mixed [10]. Murshid conducted a study on microfinance participation and women's empowerment: evidence from a nationally representative sample of women in Bangladesh. The present study evaluates whether microfinance participation empowers women using a culturally suitable conceptualisation of empowerment constituting autonomy, decision-making power in the household, and justification of partner violence. Findings revealed that women who did not participate in microfinance regarding empowerment when groups were matched on socio-demographic variables ensuring that treatment and comparison groups had equal propensity to participate in microfinance, casting doubt on the assertion that microfinance participation positively affects women's empowerment [11]. Khatun et al. conducted a study on participation potential of rural women in different homestead farm activities. About 59 percent of the rural women had high participation in vegetable cultivation. Among 15 statements of different aspects in relation to vegetable cultivation, tilling by spade was ranked first. In the case of the cultivation of fruit trees, the highest proportion (46.60 percent) of rural women had medium participation and irrigation after planting was in the first position. Agriculture knowledge, attitude and innovativeness had a positive relationship with the cultivation of vegetables. On the other hand, education, family income, cosmopolitans behaviour and attitude had a positive relationship with the cultivation of fruit trees [12].

Discrimination of male-female in any sector of Bangladesh is a very common scenario. There were many studies done on this issue. But, there was no exclusive study on the male-female discrimination in rice husking mills of Bangladesh. The findings of the study are likely to be helpful to the researchers and policymakers in the formulation of policies to improve the socio-economic conditions of women labour. The study may induce researchers to conduct further research on women labour in rice husking mills. The objectives of this study are (i) to evaluate current socio-economic conditions of female labour in rice husking mills; (ii) to compare the status among male and female workers in rice husking mills; (iii) to determine the influential factors related with living standard of female labors in rice husking mills; (iv) to find out different social violence against female labors in working environment; and (v) to make some policy recommendations based on findings and opinion from sample female labor.

2. METHODOLOGY

The study was conducted in three districts namely Mymensingh, Kishoreganj, and Brahmanbaria. Rice husking mills were selected from each district by using purposive sampling technique. A total of 70 female labours and 70 male labour was considered as a sample and was interviewed using a structured questionnaire for collection of data and information. Face-to-face interview method was conducted by the researcher. Both qualitative and quantitative information were collected. Collected data

Fig. 1. Research area of the study

analysed with descriptive statistics were used for socioeconomic characteristics, current status, and social violence and policy recommendations in the study. The multinomial logistic model was used to analyse factors related to income and living standard of female labours. SPSS (Statistical Package for Social Science) was used for data analysis in this study.

3. RESULTS AND DISCUSSION

3.1 Socioeconomic Characteristics of the Sample Female Labor

The average family size of the respondents was 4.46, and 57.05% of the participants are females while 42.95% are males in the household. With regard to the education level of respondents, the percentage of the respondents having no education (65.71%) was higher than other levels (see Tables 1 and 2).

The average age of female labour was 40.2 years. In respondent's family, an average number of earning members was 1.5. Women are involved both in household activities and rice mills. As the main occupation, 88% of the women were working in the rice mill as a daily paid labour. This female worker also involved in subsidiary occupations included sewing sacks, sewing clothes, livestock rearing, working in the neighbour's household as a temporary servant etc. The average land holding of the household of the women labour was 7.5 decimal (Table 3).

Table 1. Family size and male-female distribution of family members of labours in rice husking mill

Gender	No.	Percent
Male	134	42.95
Female	178	57.05
Total	312	100
Family size	4.46	-

Source: Field survey, 2016

Table 2. Level of literacy of labours in rice husking mill

Level of literacy	No. of labour	Percent
Illiterate	46	65.71
Primary	17	24.29
Secondary	07	10
Total	70	100

Source: Field survey, 2016

3.2 Current Status of Male and Female Workers in Rice Husking Mills

Though male and female workers worked equal hours in a day (9 hours) average wage rate of male and female worker was 184.31 Tk. And 135.95 Tk. Respectively. Discrimination was also seen in access to credit in the mill, bonus/other allowance, treatment/medical allowances, casual leave/other leave, meal support, physical abuse, accommodation facilities etc. (Table 4).

Table 3. Age, earning member, occupation and land holding of female labour in rice husking mill

Particulars	Outcome
Age of female labour	40.2 years
Number of earning members	1.5
Day labour as the main occupation	88 %
Day labour as a subsidiary occupation	23%
Landholding	7.5 decimal

Source: Field survey, 2016

3.3 Factors Related with income and Living Standard of Female Labors

3.3.1 Constant or intercept term

The value of the intercept term represents the composite impact of all other influencing variables that are excluded from the model. The intercept term was 0.76, and it is negative and statistically insignificant. Information of all other explanatory variables could not consider because of resource and time constraints.

3.3.2 Age (X_l)

The calculated regression coefficient of age was 0.26 which was negative and insignificant indicating the negative effect of age on the income of women labour of rice husking mill. It implies that the age of the women labour in rice husking mill was not the main factor for income of the women.

3.3.3 Education (X_2)

The estimated value of coefficients of education was 0.90, which was positive and statistically insignificant indicating the positive effect of education on the income of women labour of rice husking mill. It implies that education of the women labour in rice husking mill was not the main factor for income of the women.

Table 4. Comparison of status among male and female workers

Sl.No	Particulars	Male		Female	
1	Wage (per day)	184.31		135.95	
2	Working time (per day)	9		9	
		Yes	**No**	**Yes**	**No**
3.	Access to credit in mill	29	41	21	49
4.	Bonus/ other allowances	43	27	44	26
5.	Treatment/medical allowances	9	61	4	66
6.	Casual leave/other leave	29	41	31	39
7.	Meal Support/other food	20	50	12	58
8.	Physical abuse	02	68	06	64
9.	Accommodation facilities	19	51	02	68

Source: Field survey, 2016

Table 5. Estimated values of the coefficient and related statistics of linear regression function of income and standard of living of women labour

Explanatory variables	Estimated coefficients	Standard errors	t-value
Intercept	-0.76	1.04	-0.73
Age(X_l)	-0.26	0.17	-1.49
Education (X_2)	0.90	0.08	1.09
Number of a family member(X_3)	0.09	0.10	0.88
Total land (X_4)	.0005	.005	0.11
Number of earning member (X_5)	0.10*	0.05	1.96
Wage of women labour (X_6)	0.88***	0.21	4.10
Working time (X_7)	0.93***	0.26	3.56
Experience (X_8)	0.03	0.04	0.63
R^2	0.713		
Adjusted R^2	0.668		
F-value	15.88***		

*Source: Author's estimation, 2016. Note: *** Significant at 1 percent level; *Significant at 10 percent level*

3.3.4 Number of family member(X_3)

The estimated value of coefficients of a number of a family member was 0.09, which was positive and insignificant indicating the positive effect of a family member on the income of women labour of rice husking mill. It implies that of a family member of the women labour in rice husking mill was not the main factor for income of the women.

3.3.5 Total land (X_4)

The estimated value of coefficients of total land was 0.0005, which was positive and statistically insignificant indicating the positive effect of total land on the income of women labour of rice husking mill. It implies that total land of the women labour in rice husking mill was not the main factor for income of the women.

3.3.6 Number of earning member (X_5)

The estimated coefficient of the number of earning member was 0.10 which was positive and statistically significant at 1 percent level. It implies that holding other factors constant, 1 percent increase in a number of earning member would increase the income by 0.10 percent for women labor in rice husking mill.

3.3.7 Wage of women labor (X_6)

The estimated coefficient of wage of women labour in rice husking mill was 0.88 which was positive and statistically significant at 1 percent level. It implies that holding other factors constant, 1 percent increase in wage of women labour would increase the income by 0.88 percent for women labour in rice husking mill.

3.3.8 Working time (X_7)

The estimated coefficient of working time of women labour in rice husking mill was 0.93 which was positive and statistically significant at 1 percent level. It implies that holding other factors constant, 1 percent increase in working time of women labour would increase the income by 0.93 percent for women labour in rice husking mill.

3.3.9 Experience (X_8)

The estimated coefficient of experience of women labour in rice husking mill was 0.03 which was positive and statistically insignificant indicating the positive effect of experience on the income of women labour of rice husking mill. It implies that experience of the women labour in rice husking mill was not the main factor for income of the women.

3.3.10 Value of R^2 and adjusted R^2

The coefficient of determination, R^2 is a summary measure, which tells how well the sample regression line fits the data that means how well the regression model fits the data. The estimated value of the coefficient of multiple determinations, R^2 of the model was 0.713 which means that the variation in the explanatory variables included in the model explained 71.3% of the variation in income of the women labour in rice husking mill. The value of adjusted $R^2$was 0.668 indicating that after taking into account the degrees of freedom (df), the variation in explanatory variables in the model still explains about 66.8% of the variation in the dependent variable. So, the fitness of the model was more satisfactory.

3.3.11 Goodness of fit (F-value)

F -value indicates the overall significance of the model. The F-value was 15.88 which was significant at 1 percent level of confidence implying good fit of the model. The F-value of women labour in rice husking mill was 15.88, which indicated that all the included variables were important for explaining the variation in income of women labour in rice husking mill.

3.4 Social Violence against Female Labors in Working Environment

There were various social violence cases against female labours in the working environment of rice husking mills. In the study area, 93% of female workers get lower wages, 90% of them had no accommodation facility. Besides they did not have sanitation facility (80%), opportunity to take rest at the middle of work (64%), meal support (71%), bonus facility (60%), economic help for sick workers (53%), loan facility from owner(50%) and insurance for accident (46%) (Table 6).

Table 6. Nature of problems faced by the labours

Overall rank	Nature of problems	No. of Respondents (N=70)	% of respondents
1	Low wage	65	93
2	No accommodation facility	63	90
3	Less sanitation facility	56	80
4	No meal support	50	71
5	No opportunity for taking rest	45	64
6	Wage discrimination among male & female labours	42	60
7	No bonus facility	42	60
8	No economic help for sick worker	37	53
9	No loan facility from mill owner	35	50
10	Excessive labour stress	35	50
11	Long time working hours	35	50
12	Lack of security	35	50
13	Long distance workplace	32	46
14	No insurance for accident	32	46
15	They had to work under the excessive heat of the sun	30	43
16	No Vacation	28	40
17	Electricity problem	23	33
18	Seasonal work	21	30
19	Rebuked by mill owners	20	28
20	Water Problem	18	26
21	No Prayer room	15	21
22	Make delay to give wage	10	14

Source: Field survey, 2016

Table 7. Suggested solutions by respondents in the rice husking mill

Overall Rank	Suggested solutions by respondents	No. of respondents (n=70)	% of respondents
1	Wage rate should be increased	60	85
2	Secured accommodation facility should be provided	56	80
3	Sanitation facility should be improved	55	79
4	Meal support should be provided	45	64
5	Need bonus	42	60
6	Need to place for taking rest	40	57
7	Provide wage in case of sickness leave	37	53
8	Need credit/loan facility	35	50
9	Lessen working hour	35	50
10	Need medical/treatment allowance	30	43
11	Need transportation cost from mill owner	30	43
12	Need vacation	28	40
13	Electricity facility should be improved	23	33
14	Need prayer room	15	21
15	Need a tube well for safe drinking water	14	20
16	Government help	5	7

Source: Field survey, 2016

3.5 Policy Recommendations Based on Findings from Sample Female Labour

The wage rate of female labour in the rice husking mills needs to be increased as agreed by 85% of the respondents. There will have no wage discrimination in the workplace. The wage of male and female should be the same. Female labour should be provided with a bonus facility for their work in the mills (60%). There will be no delay to provide wage from the miller. Secured accommodation facility should be provided to all female labour in their workplace (80%). Meal support should be facilitated (64%), security in the workplace should be provided so that female worker feels safe to work, the requirement of sanitation facility, as well as an opportunity for taking rest (57%), should be provided to female labour (Table 7).

4. CONCLUSION

The status of women in Bangladesh is domestic in nature, and they are sometimes considered as inferior to man. Women's involvement in economic activities is not easy because traditionally they are being protected by society and are more recognised for their reproductive activities than the economic role. In our study, socio-economic condition like age, education, land holding, children etc. of male and female labour in rice husking mills were almost the same. But there was variation in the wage rate. Though female labour working hours were same as male labour, female get lower wage than male. Besides the working environment in the rice mill was less comfortable and favourable than male. Women faced physical and mental harassment during working hour in the rice mill by the mill owner and male worker. So the condition of a female worker in the rice husking mills required to be improved and discrimination of male and female worker needs to be reduced. Discrimination can be reduced by equal wage rate and working hours, free food facility, medical facility and maternity leave, proper sanitation system, a place for taking rest etc. These measures should be implemented by the mill owner, local traders, and local government official altogether.

There are many NGOs and GOs in Bangladesh who can play great role to reduce male-female discrimination at rice husking mills. Finally, ensuring good environment and equal facility at rice husking mill for women will ensure their larger participation in paddy process activities which will ensure empowerment of women and economic development of Bangladesh.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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