Conference Proceedings

WOMEN'S EMPOWERMENT THROUGH AGRICULTURAL ENTREPRENEURSHIP: THE CASE IN MYMENSINGH DISTRICT

Shajahan Kabir[1]
Khorshed Jahan[2]

DOI: 10.5937/EEE24029K
JEL: L26, O13
Review Scientific Paper

ABSTRACT

This study attempts to investigate by using both quantitative and qualitative research tools to examine the extent of women's technology adoption in agriculture and their consequent empowerment attainment in selected villages of Mymensingh Sadar. To achieve the objectives of the present study, necessary data were collected from two selected in Mymensingh district by using a simple random sampling technique, the study selected a total of 60 women respondents. The quantitative analytical tools employed to attain the specific objectives included various descriptive statistical measures, perception index and women empowerment index by adoption technology. The results of the perception index analysis indicated that the majority had moderate to high favorable perception of the greater extent of women's engagement in the adoption of agricultural technology among which may have low to moderate favorable perception of consequent empowerment attainment. The findings show that almost in all cases, the decision was taken jointly by males and females. It is a very satisfactory case that the decision is taken by a female alone, particularly in the cases of purchase of agricultural equipment, maintenance of agricultural equipment, motivation to use agricultural technologies, and selling of old machinery. The value of the average women empowerment score is 1.81, which is below the average empowerment score of 2. The WEI as presented in the study clearly describes that women are less empowered since the WEI scores are less than the average level. The overall women empowerment status was unsatisfactory in the study areas, where there is huge scope to work. Various problems such as insufficient capital, lack of profit, inadequate training facilities, lack of adequate farm machinery etc. issues are faced by the respondents in those areas.

KEYWORDS

agriculture, entrepreneurship, women empowerment

[1] Bangladesh Agricultural University, Department of Rural Sociology, Mymensingh, Bangladesh, mskabir786@gmail.com, ORCID: 000-0002-2655-1324
[2] BRAC University, Early Childhood Development, Dhaka, Bangladesh, MS student khorshed.jahan18@gmail.com, ORCID: 0000-0002-2655-1324

BACKGROUND OF THE STUDY

World Economic Forum placed Bangladesh in the first spot consecutively for the second time. The Womenfolk in Bangladesh now is playing the role of catalyst in development efforts (WEF, 2017).

Globalization has boosted women's engagement in the workforce, particularly in the service sector, across the world and in Bangladesh in particular. Women make up 49.42 percent of Bangladesh's population, and nearly 71.18 percent of them are literate (World Bank, 2019).

Agricultural technology, based on indigenous knowledge, traditional farming practices and local value systems, which has been accumulating over generations and over the years should also be considered. Technologies and techniques used by farmers, including a source of their leadership as well as methods of the most appropriate way of farming, are also included (Roy *et al.,* 2017). Moreover, the availability of information is an important resource for women with the potential to empower them in terms of new attitudes (Seymour *et al.,* 2016).

Bangladesh is a developing country positioned in the South Asian region. Without active participation of women in the mainstream of the economy, gender discrimination cannot be reduced. Women can be involved in business activities of entrepreneurship where they can contribute directly to their families and the economy. Among total Women entrepreneurs, it is rise to 36 % in 2019 from 32% in 2017 (Prothom Alo, 2019).

Agricultural technologies have direct and indirect impacts on women's access to income, including technologies, improving their quality of life through the increase in production and productivity (Radović Marković, 2019). The main challenges women face in accessing and adopting agricultural technologies include socio-economic constraints, limited information, knowledge and skills, beliefs about gender roles, time constraints, etc. (Rola-Rubzen, M.F.,2020) Different preferences for technologies stemming from different tasks and responsibilities also greatly affect the process of the adoption of technology (Huyer, S. 2016).

In Bangladesh, being a traditional Muslim society, women harshly participate in agricultural activities outside the home (Mortuza *et a*l. 2004). Women's agricultural activities were traditionally connected to homestead production and post-harvest operations. Bangladesh considers women's participation a vital issue in the path of women's empowerment and one of the main drivers of transforming the country's status from low-income to middle-income.

Hafiza *et al.* (2015) indicated that in Bangladesh, women are generally less able than men to participate in economic opportunities because they face a work burden that men do not. To develop appropriate policies for the relevant target groups. Rural women will benefit not only in the research area but also in those areas in Bangladesh where similar problems exist. This project would also help initiate collaborative research programs with regional and international organizations in the proposed field of national interest.

To carry out the current status of rural women to enhance their empowerment status and role at the household level, this study has analyzed the impact of agricultural entrepreneurship on the empowerment of rural women in the Mymensingh district.

The following specific objectives.

1. To explore the perception of the respondents on women's empowerment attainment in small entrepreneurship in agriculture.

2. To analyze women's empowerment through agricultural entrepreneurship.
3. To suggest strategic policy recommendations for the empowerment of women.

RESEARCH METHODS AND TECHNIQUES

Selection of the study area

To achieve the objectives of the present study, necessary data were collected from two selected villages namely Borar Char and Char Kalibari under Sadar upazila of Mymensingh district. A map of Sadar Upazila under Mynensingh district showing the study area has been presented in Figure 1.

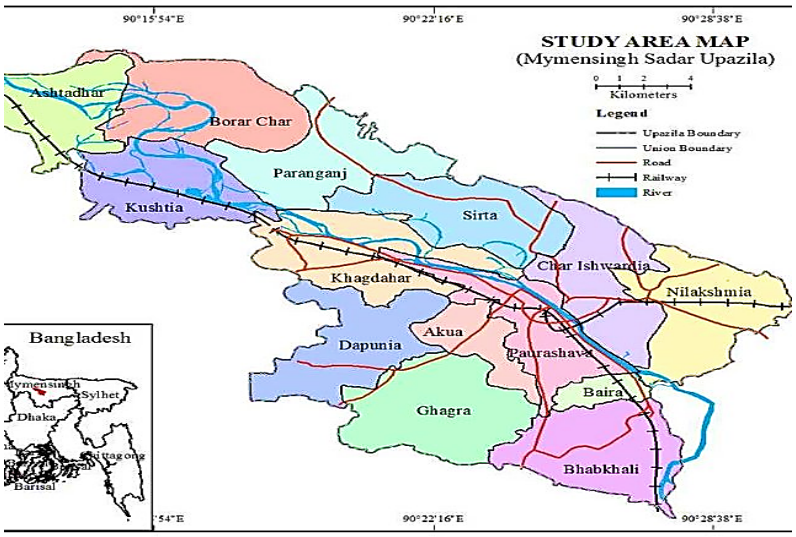

Figure 1. Map of Mymensingh Sadar showing the study area

Considering the objectives, time and availability of funds and manpower, women active in the agricultural sector mentioned above were selected randomly. Considering the above-mentioned aspects, a sample size of 60 women agriculture entrepreneurs who adopted agricultural technology was chosen randomly for the present study.

DATA COLLECTION AND ANALYSIS

The study conducted a series of activities to collect effective and consistent data using both quantitative and qualitative research approaches. Quantitative data was collected through semi-structured interviews and qualitative data was collected through case studies and FGDs. The respondents were available during the period of data collection and primary data were collected from Junly-September 2023.To have secondary data, various books, periodicals, reports, magazines, newspapers and articles through websites are accessed.

The obtained data were then compiled on a master sheet and then tabulated and analyzed, keeping the objectives of the study in mind. Data entry was done by the researcher himself. Different computer software packages like Microsoft Excel, SPSS Package 20 etc. were used for analyzing the data.

Descriptive analysis such as numbers percentages, and rank order was used. Pearson's product-moment correlation coefficient (r) was used to explore the relationship between the selected variables. The Pearson's Product Moment Correlation Coefficient follows:

The equation is:

$$Yi = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 + \beta 7X7 + \beta 8X8 \ldots \varepsilon i$$

PERCEPTION ANALYSIS ON WOMEN EMPOWERMENT IN THE ADOPTION OF AGRICULTURAL TECHNOLOGY

The perception score for each respondent was calculated by perception Index (Roy, 2009) using the following formula:

Perception Index (PI) = 5×SA+4×A+3×U+2×DA+1×SDA (in favor)

Analysis of the Women Empowerment Index (WEI) in agricultural entrepreneurship.

The methodology was used by Bose, et al. (2009), to assess the individual empowerment status and position, women with an average score of 2 or more than 2 were labelled empowered.

$WEI_{currently}=\sum WEI_{currently}$ /N

$WEI_{before\ being\ involved}=\sum WEI$ /N

$WEI= (WEI_{currently}+WEI_{before\ being\ involved})$ /2

Women empowerment index= (WEI currently. = WEI before being involved.) /2

Decision-making criteria: Less empowered, if WEI≤2 and Highly empowered, if WEI ≥ 2

RESULTS AND DISCUSSION

HOUSEHOLD LANDHOLDING OF THE RESPONDENTS

In South Asian societies, the size of landholding by people is one of the key determinants of achieving high economic status in both the rural and urban areas (Hossain, 2000). The common landholding prototype in rural Bangladesh indicates that land is mostly owned by men whereas women hardly get any ownership of land. The best way of accessing land for any woman in Bangladesh is through having the use right to land if permitted by the owner of the land (like husband, son, rich peasant and so on).

The five categories based on land ownership (BDHS, 2015) are:

- No land (only own homestead area);
- Minor (0.5 to 1.00 acres of land);

- Little (1.01 to 2.00 acres of land);
- Intermediate (2.01 to 3.00 acres of land); and
- Big (3.01 acres and above land).

Results of Figure 2 indicate that 10% households of the respondents didn't own any cultivable land (except homestead area) and thus termed to be landless in the study area. Among the landowners, 16.67% households of the respondents held land in the range of 0.05 to 1.00 acres and thus enjoyed the status of marginal land owners. Then again, 33.33% of households of the respondents held land in the range of 1.01 to 2.00 acres and thus enjoyed the status of small landowners. Yet again, 36.67% of households of the respondents were holding land in the range of 2.01 to 3.00 acres and thus enjoyed the status of medium or intermediary land owners. Finally, only 3.33% households of the respondents were holding land in the range of 3.01 and above acres of land and thus enjoyed the status of large landowners in the study area.

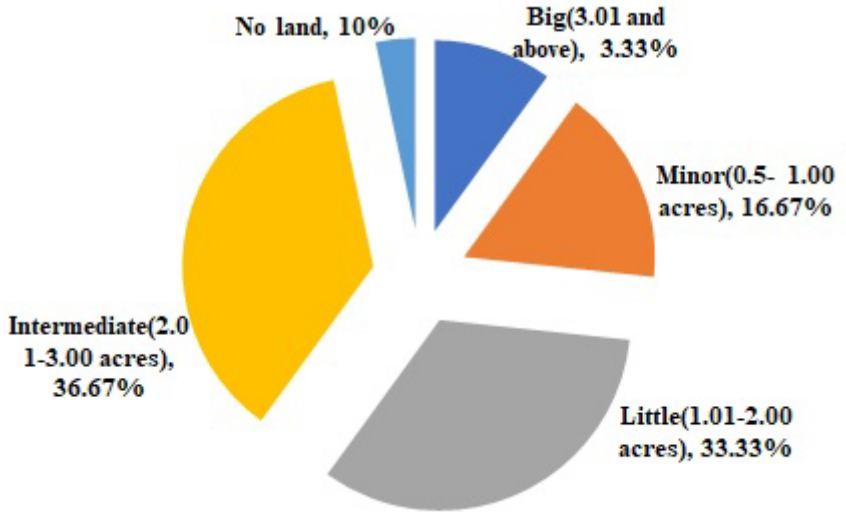

Figure 2. Percentage distributions of respondents based on their household landholding

THE AVERAGE ANNUAL HOUSEHOLD INCOME OF THE RESPONDENTS

Average annual household income is also an important determinant of the economic status and livelihood diversification of people residing in a society.

The annual family income of the respondents ranged from 50 to 240 ('000' BDT), with an average of 85.38'000' BDT and a standard deviation of 30.750. Based on their annual family income, the respondents were classified into three categories i.e., low, medium and high income. Data presented in Figure 3 show that the highest proportion of the respondents (66.67%) were in the medium-income category, where 26.66% of them were in the low-income category and 6.67% had higher incomes. Similar findings found Salam (2013). Ultimately standard of living of respondents could be improved.

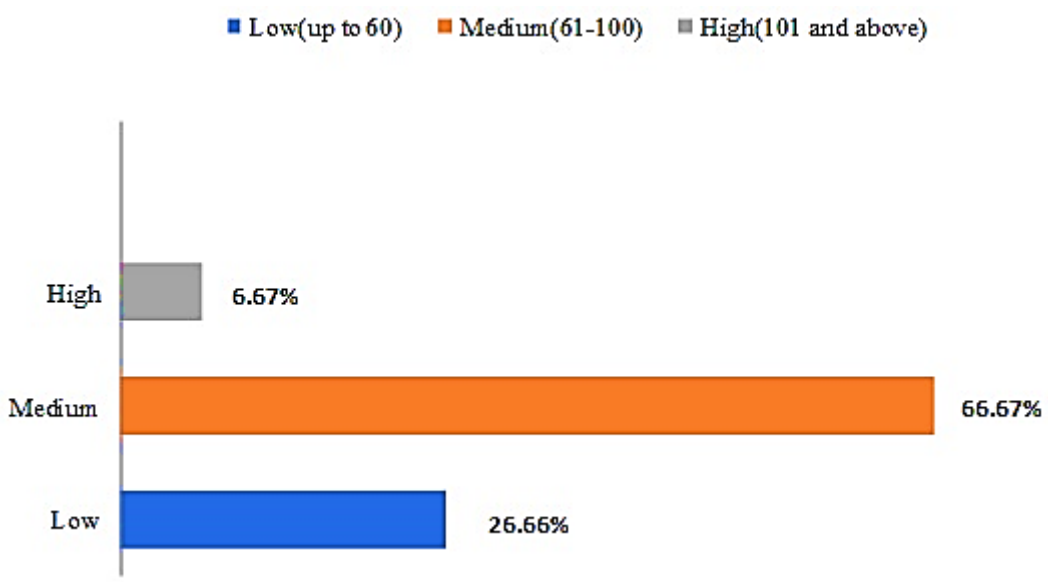

Figure 3. Percentage distributions of respondents based on their average annual household income

FACTORS INFLUENCING WOMEN ENTREPRENEURS IN AGRICULTURAL ACTIVITIES

The Pearson's Product Moment Correlation Coefficient The equation is – $Yi = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 + \beta 7X7 + ... \varepsilon i$

Table 1. Correlation Coefficient for factors influencing income by using new technology

Variables	Coefficient	P-value
Constant.	6275.45	.522
Education (X1) (Years of schooling)	.300	.040**
Family size (X2) (Number).	.16	.03**
Farm size (X3) (acre)	.140	.382
Experience of modern technology (X4) (Years)	. 492	.000***
Training on new technology (X5) (Number of days)	.290	.040**
Technological support from NGO (X6) (yes/no)	.20	.34
Decision making ability to use the new technology(X7) (yes/no)	.204	.042**
Where, Yi = Income of respondents β0 = Intercept; β1 to β7 = Regression coefficients of the independent variables; and ε = Disturbance term or error term	Observation = 60	

The findings of this research are in line with those of previous studies regarding education (Mortuza 2013) and income (Radovic 2013-Parveen 2004) in Bangladesh.

The family size of respondents has a positive coefficient which is 0.16 and it is highly significant. The respondents' experience in modern technology has a positive coefficient and it is 0.492. It was highly significant at the 1 per cent level, which is evidence that more experienced respondents had a greater income. The training on a new technology of respondents has a positive coefficient and it is 0.290. It is significant at a 5 per cent level. It means that rural farmers' training facilities have a great impact on their income. Further, decision-making abilities to use new technology also show a significant role in farmer's income in the study area and the coefficient is .204. Technological support from NGOs is not significant because they are free and farmers are not interested in accepting it easily.

PERCEPTION OF WOMEN'S EMPOWERMENT IN ADOPTION OF ARGICULTURAL TECHNOLOGY

Table 2. Perception index analysis on women's empowerment through agricultural technology adoption

Sl. no.	Statements	Nature of judgment					Perception index	Rank
		Strongly agree	Agree	Undecided	Disagree	Strongly disagree		
i. Women in agriculture entrepreneurship								
A	Planning of farming by women	11	9	11	16	13	169	11
B	Permission by husband to get involved in agricultural entrepreneurship	26	15	3	10	6	225	6
C	Vital role played in agriculture by women	41	6	1	8	4	252	3
ii. Women's roles and extent of engagement in the adoption of agricultural technology								
D	Selection of crops to be produced in a season	23	13	2	14	8	209	7
E	Selection of production methods	9	4	4	30	13	146	14
F	Selection of machinery used for crop production	28	16	3	9	4	228	5
iii. Women's asset and skill orientation								

G	Training is essential for women	31	23	1	3	2	262	1
H	Lack of land rights	36	13	2	6	3	253	2
I	Lack of technology operating skills	37	10	3	5	5	249	4
iv. Women's empowerment attainment								
J	Women's access and control over land and technology	8	17	5	19	11	172	10
K	Women's access and control over earnings	17	15	4	14	10	195	8
L	Women's autonomy in production	10	6	4	26	14	152	13
M	Women's capacity to use technology	15	14	2	18	11	184	9
N	Women's sense of using technology	15	3	3	24	15	159	12

Source: Sample survey, 2022

The perception index score ranked 1st in the 7th statement with a total score of 262 as the judgments of the respondents are favourably positive on 'training is essential for women'.

The 2nd rank of the perception index score is occupied by the 8th statement with a total score of 253 as the judgments of the respondents are favourably positive on 'lack of land rights by women'. As a consequence, there is severe landlessness among the low and middle-class respondents which is an absolute barrier to women's empowerment attainment as noted by Okin (1989) and Young (1990) in the liberal feminist approach by the statement that without equal access and control over land by men and women, attainment of empowerment by women is hard to imagine.

The 4th rank of the perception index score is occupied by the 9th statement with a total score of 249 as the judgments of the respondents are favorably positive on 'lack of technology operating skill' is high.

Regarding women in the agriculture sector of the study area, the perception index scores indicate that women play a vital role in agriculture as 3rd statement has scored 252 and is ranked 3rd among all statements. Apart from this a large number of respondents positively agreed on having permission from their husbands to get engaged as economically active participants in agriculture as 2nd statement has scored 225 and is ranked 6th among all statements. The 1st statement under this heading is ranked 11th as few respondents responded to plan the farming operation.

Regarding women's roles and extent of involvement in the agriculture sector of the study area, the perception index scores indicate that a large number of respondents positively agreed on selecting the crops to be produced in a particular season which has scored 209 and is ranked 7th among all the statements. The 5th rank of the perception index score is occupied by the 6th statement with a total score of 228 as the judgments of the respondents are favorably positive on 'Selection of machinery used for crop production'. The 5th statement under this heading is ranked 14th which indicates to the point that respondents have very limited scope in selecting agricultural production methods.

Regarding women's consequent empowerment attainment, the 8th rank of the perception index score is occupied by the 11th statement with a total score of 195 as the judgments of the respondents are favorably positive on 'women's access to control over earnings. The other four statements, 10th,12th,13th and 14th under this heading ranked 10th,13th,9th and 12th respectively which indicates the point that respondents have very limited scope in having access and control over land and technology, having autonomy in production, and the capacity of using technology.

Table 3. Women Empowerment Index (WEI) by Adoption Agricultural Technology

Empowerment parameters	Currently				5 Years Before			
	Women	Men	Both	WEI	Women	Men	Both	WEI
	3	1	2		3	1	2	
Purchase of agricultural equipment	17	8	35	2.15	13	32	15	1.68
Maintenance of agricultural equipment	17	13	30	2.06	12	36	12	1.60
Capital management for agricultural machinery	14	15	31	1.98	11	34	15	1.61
Motivating to use agricultural technologies	19	14	27	2.08	10	39	11	1.51
Operating agricultural machinery on the farm	15	18	27	1.95	12	37	11	1.58
Selling of old machinery	20	17	23	2.05	9	39	12	1.50
Empowerment	2.04				1.58			

No. of respondent, N=60

WEIcurrently=∑WEIcurrently /N

=2.04

WEIbefore being involved=∑WEI /N

=1.58

WEI= (WEIcurrently+WEIbefore being involved) /2

= (2.04+1.58)/2

=1.81

Decision-making criteria: Less empowered, if WEI≤2 and highly empowered, if WEI ≥ 2
The value of the average women empowerment score is 1.81, which is below the average empowerment score of 2. The WEI as presented in Table 3 clearly describes that women are less empowered since the WEI scores are less than the average level. Practically, women bring motivation, they have a vision which is different, realistic, modern and enthusiastic. When civil society and social structures leave them with the possibility of evolving their careers, women take the initiative. They are quite naturally drawn to initiative, to creation and to management of businesses. So, by promoting women's empowerment through skill and entrepreneurship the government of any developing country can ensure freedom of choice and a better quality of social living for men and women. However, about 52 per cent of the population of Bangladesh are in absolute or moderate poverty and about 76 per cent of them live in rural areas (Mohiuddin; Moniruzzaman; Mahmud, 1998).

RECOMMENDATIONS FOR CONSIDERING WOMEN ENTREPRENEURSHIP DEVELOPMENT

- Enhanced women's basic education, with a focus on numeracy, literacy, information and communication technologies, business management, simple record keeping, marketing, and sustainable (agricultural) production methods.
- Strengthen the capacity of rural women entrepreneurs' associations to advocate for and serve the needs of their members, support research on rural women's entrepreneurship (at local, regional or national levels) and disseminate information on good practices in promoting sustainable businesses run by rural women.

CONCLUSION

Bangladesh's rural women experience unfavorable social discrimination and economic inequalities. Namely, they are deprived of many human rights. In the socio-economic context of Bangladesh, men make all the decisions. On the other hand, women are given the opportunity to make decisions on very few issues. The use and adoption of various agricultural technologies in the context of women empowerment issues and access to these technologies are closely linked. Compared to men, rural women have limited access to advanced agricultural technologies in farming and consequentially use more traditional technologies. Furthermore, it has been confirmed by the study that rural women face physical and economic constraints in terms of access to modern techniques of farming. Attention to women's empowerment through agricultural technology adoption is not new, but it has not always been acted upon accordingly. At the outset, the study revealed that the majority of the respondents had moderate to high favorable perception of the greater extent of women's adoption of agricultural technology but many of them had low to moderate favorable perception of their consequent empowerment attainment in the study area.

REFERENCES

Bose, M. L., Ahmad, A., Hossain, M. (2009). The role of gender in economic activities with special reference to women's participation and empowerment in rural Bangladesh. Gender, Technology and Development, 13(1), 69-102.

BDHS (2015). Preliminary Report, National Institute of Population Research and Training, Mitra and Associates, Dhaka.

Hafiza, S, Kamruzzaman, M., Begum, H. A. (2015). Addressing multiple dimensions of gender inequality: the experience of the BRAC Gender Quality Action Learning (GQAL) programme in Bangladesh. Gender & Development, 23(2), 333-346.

Huyer, S. (2016). Closing the gender gap in agriculture. Gender, Technology and Development, 20(2), 105-116.

Likert, R 1932: A Technique for the Measurement of Attitudes. Archives of Psychology.

Mohiuddin, M., Moniruzzaman, M., Muhammad, Monowar, H. (1988). Women Entrepreneurship Development In Rural Areas: A Case Study In Rural Areas: A Case Study On BSCIC Funded Enterprises. Dhaka University Journal of Business Studies, 19 (1), 45-63.

Mortuza, A. (2013). Higher Education in Public Universities in Bangladesh. Journal of Management and Science, vol. III., no 2. Available at: http://jms.nonolympictimes.org(accessed March 10th, 2020).

Okin, S, M. (1989). Reason and feeling in thinking about justice. Ethics, 99(2), 229-249.

Parveen, S., Leonhausar, T. (2004). Empowerment of Rural Women In Bangladesh: A Household Level Analysis. Conference on Rural Poverty Reduction through Research Development and Transformation. Deutscher-Tropentag-Berlin, 5-7th October.

Prothom, A. (2019). Women entrepreneurs still face hurdles. Available at: https://en.prothomalo.com/business/local/womenentrepreneurs-still-face-hurdles (Accessed 1 November 2020).

Radović-Marković, M. (2013). Female entrepreneurship: Theoretical approaches. Journal of Women's Entrepreneurship and Education, 1-2, 1-9. Available from: https://www.library.ien.bg.ac.rs/index.php/jwee/article/view/104 (accessed on 6 June 2020).

Radović Marković, M., Radulović, D. (2019). The determinants of income of rural women in Bangladesh. Sustainability, 11(20), 5842.

Rola-Rubzen, M. F., Paris, T., Hawkins, J., Sapkota, B. (2020). Improving gender participation in agricultural technology adoption in Asia: from rhetoric to practical action. Applied Economic Perspectives and Policy, 42(1), 113-125.

Roy, P. K., Haque, S., Jannat, A., Ali, M., Khan, M. S. (2017). Contribution of women to household income and decision making in some selected areas of Mymensingh in Bangladesh. Progressive Agriculture, 28(2), 120-129.

Seymour, G., Doss, C., Marenya, P., Meinzen-Dick, P., Passarelli, S. (2016). Women's empowerment and the adoption of improved maize varieties: Evidence from Ethiopia, Kenya, and Tanzania. Selected paper prepared for presentation at the 2016 Agricultural &Applied Economics Association Annual Meeting, Boston, July 31-August 2.

Young, I. M. (1990). Throwing Like a Girl: A Phenomenology of Feminine Body Comportment Motility and Spatiality. Human Studies, 3(2), 137-156.