

Impact of RMG Sector on Livelihood Change of Women Employees of Bangladesh

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Abstract The present study was conducted to document the sociodemographic profile of women workers in RMG sectors and to assess the impact of employment in RMG for livelihood change. For this study, two garment factories from Gazipur district and other two garment factories from Dhaka district were selected purposively. Related data and information were collected from 60 sample women workers. Both tabular and quantitative analyses were done to achieve the objectives. In this study, the women workers were categorized into four groups and they are operator, helper, polyman and quality controller (QC). It was found that 75 percent of the women workers completed primary education and no women worker found above secondary level of education. Average monthly income of the operator, helper, polyman and quality controller was BDT 6,675, BDT 4,954, BDT 5,600 and BDT 6,350, respectively. The value of coefficients of the variables income of women garment worker, income of other family members, number of working members and years of schooling of women workers were found significant to increase the household income. Findings of the study showed that with the involvement in garments industry all women had brought positive changes in different types of livelihood assets such as financial capital, physical capital, human capital, social capital and natural capital. About 90 percent of women workers claimed both income and savings increased. Again, 77 percent women workers reported that their overall livelihood status has improved after involving in garments industry. About 73 percent of them reported that their medicine facilities had improved because the garments factories provide free medical checkup and free medicine for the workers. Moreover, 70 percent, 66 percent and 74 percent of women workers opined that their clothing, sanitation and housing facilities had improved respectively than before. By getting employment opportunity in RMG sector, the women are contributing both in society and economy of the country.

Keywords: *livelihood status, women garment workers, employment opportunities and livelihood assets*

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1. Introduction

The Ready Made Garments (RMG) sector plays a significant role in escalating the economic growth of Bangladesh. The sector draws global attention for its unique quality of production and to create huge employment opportunity semi-skilled and unskilled women workers across the country. From decades after decades we have seen the dependence on garments industry growing in Bangladesh [13]. For the last 40 years, the RMG industry started developing in Bangladesh as an export-oriented industry and even the domestic market for RMG has been increasing very fast due to increase in personal disposable income, increase per capita income and change in life style of Bangladeshi people. The RMG is the leading sector of Bangladesh in terms of employment, production and foreign exchange earnings [18]. It also earned about 78 percent of the yearly foreign exchange earning of the country and this sector also contributes around 13 percent to the GDP which was only around 3 percent in 1991. This sector has provided

employment opportunities for young female comes from rural areas. The workers who left their rural work to take up new jobs in the garment factory earned higher wages than their previous work. Moreover, part of their earnings from the garment work might be used to improve their families' standards of living who were residing in the countryside. Many families are proud of having their daughters' works in the garment industry because part of their daughters' income could partially share with the family to improve family's living condition. The RMG industry enjoyed an impressive rise over the year. The growth of RMG industry along with employment is shown in Table 1.1.

Out of 4 million manpower employed in RMG sector, 3.20 million are women (85%), majority of them are disadvantaged and economically poverty stricken women folk [5]. The country's RMG sector, to a creditable level has relieved Bangladesh from over populous unemployment burden through providing the largest employment opportunities. This sector has uplifted the neglected section of the population, thus radically transforming the socio-economic condition of the country. This is a clear indication of the industry's contribution to

the overall economy. The new wage structure of BDT.5300 minimum monthly salary for Bangladesh ready-made garment (RMG) workers is set to be effective from December 1, 2013. The new wage structure also includes a 5 percent yearly increment on every worker's basic salary. This sector brings in about 76 percent of the country's total merchandise export earnings [5]. Women's employment in this sector has narrowed the gender gap in many spheres including participation in labour force, social prestige, control over income and decision making. At the same time, there is widespread occupational segregation and gender discrimination in wage rates. There has been an increasing trend of rural women and working mother's involvement in the RMG sector which contributed to a greater extent for increasing family income and livelihood. Bangladesh already has various commitments to maintain labour standard such as minimum wage, maternity leave, discourage child labour and so on. Most of the labour forces of this industry are women. So, improvement of this sector depends on improvement of the women workers. This study was expected to assess the livelihood and health status of the women garment workers.

Table 1.1. Growth of RMG industry and employment

Year	Number of garment factories	Employment (million)
2000-01	3480	1.8
2001-02	3618	1.8
2002-03	3760	2.0
2003-04	3957	2.0
2004-05	4107	2.0
2005-06	4220	2.2
2006-07	4490	2.4
2007-08	4743	2.8
2008-09	4925	3.5
2009-10	5063	3.6
2010-11	5150	3.6
2011-12	5700	4.0
2012-13	5876	4.0
2013-14	4222	4.0
2014-15	4296	4.0

Source: BGMEA Directory, 2015.

1.1. Hypothesis of the Study

In order to guide relevant data collection, analysis and interpretation of data, a hypothesis was formulated for empirical testing. To achieve the livelihood pattern of women garment workers, t-test was undertaken. For t-test the following null hypothesis was undertaken:

Null hypothesis: Readymade garments have no effect on the expenditure pattern of the women garment workers.

Alternative hypothesis: Readymade garment have effect on the expenditure pattern of the women garment workers.

2. Literature Review

Literature review gives an understanding to determine the priority of what ought to be studied and demonstrate the consistency of the research to the large theme of knowledge. There have been a few studies in Bangladesh dealing with women workers at Readymade Garments Industry. Most of the researchers examined the economic,

social and health conditions of the women workers. The common and relevant studies which have been conducted in the past in home and abroad are highlighted here.

[2] attempted to assess female labour migration from rural to urban areas. The study conducted in Tongi and Gazipur Sadar areas under Gazipur district, where a large number of factories are available. Sustainable Livelihood Approach (SLA) was used to assess the impact of migration. Findings of the study showed positive changes in different livelihood assets such as financial capital, natural capital, social capital and also decision making and empowerment of workers.

[4] in his study showed the present status of garment workers in Bangladesh. The purpose of the study was to explore the present socio-economic status of the garments workers. The study based mainly on economic and social status of 100 garments workers from Rampura and Badda areas of Dhaka city. It was found that the socio-economic condition of the garments workers was not in a lofty stage. Among workers about 70 percent were women, who worked dawn to dusk even up to late night when their wages were not in the satisfactory level. It was found that they were deprived from better food, cloths, medicines and their children were deprived from their care. They had no time or scope for recreation. The study examined that, worldwide economic meltdown had affected RMG sector of Bangladesh as some workers had lost their jobs and trend of works had been declined.

[6] conducted a study on Socio-economic conditions of Female Garment workers in Chittagong Metropolitan area. The paper was an endeavor to depict the conditions of the female workers from two perspectives, one was social perspective and another economic perspective. The study suggested that the standard of living of the female garment workers was in precarious condition and they were not free from vicious circle of poverty and they were facing extreme difficulties in obtaining their basic needs for survival even.

[13] conducted a study on the working conditions and reproductive health status of female garment workers of Bangladesh. Most of the respondents were of 16 to 30 years. The researcher had some important and interesting findings. First, participants in the study reported a lack of consciousness about occupational safety and health issues. A more disturbing finding was a lack of awareness about reproductive healthcare of female garment workers. Second, the female workers reported several health-related problems associated with their working environment. The findings examined that most of the workers lived in slum areas with inhuman living condition. Their salary was very low and sometimes salary was not paid in due time.

[1] in his study showed that the impact of garments industry on livelihood pattern of women garment workers in Narayanganj district of Bangladesh. The study analyzed the women participation in industrial work and their socioeconomic changes as well as their livelihood pattern. Findings showed that a few respondents had brought positive changes in different types of livelihood assets. The study examined that provisions of credit for garments women workers were considered to be an economic as well as social relief for self-employment with a view to increasing their income and improving their living condition.

[14] conducted a study on occupational health hazards in garments sector of Bangladesh. The purpose of the study was to analyze the occupational health hazards of the selected garments workers as well as their health condition. The survey revealed that average of the workers was only 24 years and the total number of female was higher than male (male-female ratio 0.8). The findings showed that the particular nature of work in garments created various types of health hazards such as headache, malnutrition, musculoskeletal pain, eye strain, less appetite, chest pain, fainting, diarrhoeal disease, hepatitis, food poisoning, asthma, fungal infection, helminthiasis, dermatitis etc. It occurred due to heavy work load with prolonged work in congested and hot humid environment and not to take meal at appropriate time.

[8] conducted a research on the standard of living of garment workers in Cambodia. It focused on the main basic living requirements of the garment workers in Cambodia including food, health, housing, utilities and transportation. Another important characteristic of the research is to uncover the opinions of the workers toward their standard of living and reveal their difficulties in daily life. The first and foremost finding of the research confirmed that there are four important indicators should be taken into account and they are food, housing, utilities and health. According to workers perception transportation and education were seemed to be less important for their daily life. The study examined that the workers were generally young unmarried females migrating from other provinces seeking for extra income to support their families. Those migrants had to share accommodations either with friends or relatives or co-workers in order to reduce their financial burdens. Most of the workers were found to accept to work overtime in order to increase their income to send remittance to their families. The result of the study showed that the standard of living of female garment workers was not good and they were suffering with many difficulties related to health, housing and utilities, security, education and transportation.

[3] conducted a research on rural to urban migration of women and their changing livelihood pattern after joining garments industry. The location of the study was Dhaka district. The purpose of the study was to analyze the economic, social and health conditions of women garment workers as well as their livelihood pattern. Findings showed that few respondents had brought positive changes in different types of livelihood assets, such as financial capital, natural capital, physical capital, human capital, social capital and also decision making and empowerment issues. The survey also revealed that 63 percent respondents responded that their overall livelihood pattern has improved after involving in garment factory.

[10] made a study on rural to urban migration and its impact on the livelihood patterns of migrants of Bangladesh. The study was an attempt to analyze various socio-economic aspects of rural to urban migration including its impact on the livelihood patterns of migrants. Findings of the study showed that the young, educated and unmarried persons were largely migrating to the city. The study examined that migration from rural to urban area improved the income level, educational attainment, expenditure pattern and increased the use of modern facilities like gas stove, pressure cooker, television, refrigerator, mobile phone etc. It was observed that the

problem of housing appeared to be very high in the city since 50 percent of the migrants were residing either one or two rooms. The study revealed that the majority of the respondents were dissatisfied with their job due to low income earned from it. Overall findings showed that rural to urban migration had positive impact for the improvement of the migrants' livelihood patterns.

[16] conducted a study on the working conditions in Cambodia's garment sector. He mentioned that there were no forced labor, some child labour, but that was found only some exceptional dissimulation including sexual harassment. With regard to the payment to wages the study indicated that those problems related not so much to irregularities with regard to the payment of minimum wages. With the exception of minimum wage payments to casual/ short-term workers, but mostly related to other payments such as overtime, bonuses, leave entitlements etc. Workers were often forced to work overtime and they worked overtime too often and too long. Freedom of association, including anti-union discrimination, was a problem in some factories.

[9] conducted a research on important issues for women workers in the garment sector of Indonesia. This research focused on the garments industry, one of three sectors being addressed in WIEGO's global markets program. The goal of the paper was to identify: key issues in the garment sector, gaps in the current research on these issues, key actors including organizations, activists, researchers and policy makers and directions for future research, action and policies. The purpose of the paper was to explain how current changes in global production and distribution systems affect women. The findings of the research showed the ways to help women to challenge, to adjust and to take advantage of the changes and opportunities resulting from the emerging trade and investment patterns.

[15] carried out a study on women labour in Sri Lanka. The study focused on women's participation in foreign currency earning activities in Sri Lanka, including their wage levels and also the impact of ethnicity, age, educational levels and skills of the different components of those activities in which women participate. The paper analyzed the degree to which the new demands on women resulting from the effect of SAPs on their households had stimulated women increasing participation in foreign currency earning activities.

The review and discussions indicate that a few studies were conducted on the socio-economic condition and livelihood pattern of women garment workers. However, some studies were undertaken that examined the health status, different health hazards of garment workers and some studies addressed about rural to urban migration. So, an impact study on the socioeconomic condition and livelihood pattern of women garment workers after involving in RMG sector is thus important from the socioeconomic point of view.

3. Methodology

Primary and secondary data were collected to meet the objectives of this study. Primary data were collected personally from the women garment workers through a sample survey with the help of interview schedule. On the

other hand, secondary data were obtained from the secondary sources like Bangladesh Garment Manufacturers and Exporters Association (BGMEA), Export Promotion Bureau, related journals, research papers, various published and unpublished reports and books. In this study both qualitative and quantitative methods were used. Quantitative method like survey method was chosen because it was thought to be more advantageous. For in-depth knowledge, qualitative technique like Focus Group Discussions (FGD) and some

key informant interview were applied. Gazipur and Dhaka districts were selected purposively on the basis of larger number of garment factories are existed. As sample of 60 women workers, 25 were chosen from Gazipur and 35 were chosen from Dhaka city randomly. Sixty women workers were categorized into four groups according to their work pattern in the garments industry such as operator, helper, polyman and quality controller as shown in Table 3.1. Simple random sampling technique was followed in selecting the sample respondent.

Table 3.1. Sample distribution

Areas	Selected factories	Operator	Helper	Polyman	QC	Total
Gazipur	Onus Garments Ltd.	10	3	-	1	14
	Citadel Apparels Ltd.	7	2	-	2	11
Dhaka	Fashion Linkers Ltd.	8	2	2	4	16
	Parvez Fashion Ltd.	10	4	2	3	19
Total		35	11	4	10	60

The interview schedule was prepared in such a way that all aspects associated with the objectives could be included. A draft schedule was pre-tested on few respondents and then finalized for data collection after necessary correction and modification. The study was based on a set of factory level primary data collected from the selected women workers employed in different factories located in Dhaka and Gazipur. The data were collected during the period from mid February to March, 2014. For the analysis of data, simple statistics and Statistical Package for Social Science (SPSS) were used to get the meaningful results. In this study, t-test was undertaken to test the hypothesis. For statistical analysis, multiple regression analysis was undertaken to analyze the individual effect of income generating factors on household income of women workers employed in garments industry.

Functional analysis was used to assess the quantitative relationships between dependent variables and set of explanatory variables. To determine the effects of the explanatory variables, linear and log linear model were initially estimated for household income. On the basis of assumed conditions, the multiple regression function was specified as follows:

$$Y = f(X_1, X_2, X_3, X_4, X_5)$$

Household income, $Y = AX_1^{b_1} X_2^{b_2} X_3^{b_3} X_4^{b_4} X_5^{b_5} e^{u_i}$.

The equation alternatively expressed as log-linear form:

$$\ln Y = \ln a + b_1 \ln X_{1i} + b_2 \ln X_{2i} + b_3 \ln X_{3i} + b_4 \ln X_{4i} + b_5 \ln X_{5i} + U_i$$

Where, Y = Household income (BDT per month)

X_1 = Income of the women worker (BDT per month)

X_2 = Income of family members (BDT per month)

X_3 = Working members (No. /household)

X_4 = Working period (No. of years)

X_5 = Years of schooling (No. of years)

a = Intercept;

b_1, \dots, b_5 = co-efficients; and

U_i = Error term.

4. Results and Discussion

4.1. Sociodemographic Profile of Women Workers

Every person differs from another person regarding various sociodemographic criteria. It was, therefore, assumed that involvement in the garments industry, utilization of salary, generating output, and expenditure patterns of the respondent might be influenced by their different characteristics. These characteristics were age, education, occupation, family size, marital status, annual income, annual expenditure, health condition etc. Social status and living standard of an individual is largely determined by these characteristics.

Table 4.1. Age distribution

Categories	Areas	18-25 yrs	26-35yrs	36-45 yrs	Total	Average age
Operator	Gazipur	10 (17)	5 (8)	2 (3)	17 (28)	24
	Dhaka	10 (17)	6 (10)	2 (3)	18 (30)	23
Helper	Gazipur	4 (7)	1 (2)	-	5 (8)	21
	Dhaka	3 (5)	2 (3)	1 (2)	6 (11)	20
Polyman	Gazipur	-	-	-	-	-
	Dhaka	2 (3)	2 (3)	-	4 (7)	22
QC	Gazipur	2 (3)	1 (2)	-	3 (5)	23
	Dhaka	4 (7)	2 (3)	1 (2)	7 (12)	25
Total		35 (58)	19 (32)	6 (10)	60 (100)	

Source: Field Survey, 2014. (Figures within parentheses indicate percentage).

Age: Age of the women workers was classified into three categories and then combined with four categories of women workers based on their work performance. It is clear from the table that most of the women workers in

each category belonged to the age group of 18 to 25 years. The table shows that 17 percent operators of the total women workers both in Gazipur and Dhaka city was between 18-25 years. In case of helper, in Gazipur there

was 7 percent women workers belonged to 18-25 years and in Dhaka 5 percent helper was between 18-25 years. The minimum numbers of women workers were between the ranges 36 to 45 years. Only 3 percent operators of the total women workers both in Gazipur and Dhaka city were between 36-45 years. So, in this study most of the women workers were between the ranges 18 to 25 years. The average age of the women workers of each category in each area is shown in Table 4.1.

Literacy Level: Literacy may be defined as the ability of an individual to read and write or formal education receives up to certain standard. Women workers were classified into three categories to examine their education level. Table 4.2 reveals that 22 percent operator of the total women workers in Gazipur district had primary education and in Dhaka district 25 percent operator had primary education. Only 2 percent operator in Dhaka district was illiterate and can sign only. About 7 percent operator of the total women workers in Gazipur district had secondary education. Quality controller (QC) was not found to be illiterate. It was observed from the study that most of the women workers had primary education and very few had secondary education. There were no women workers above secondary level of education (Table 4.2).

Table 4.2. Literacy level

Categories	Areas	Illiterate	Primary	Secondary	Total
Operator	Gazipur	-	13 (22)	4 (7)	17 (28)
	Dhaka	1 (2)	15 (25)	2 (3)	18 (30)
Helper	Gazipur	1 (2)	3 (5)	1 (2)	5 (8)
	Dhaka	2 (3)	4 (7)	-	6 (10)
Polyman	Gazipur	-	-	-	-
	Dhaka	1 (2)	3 (5)	-	4 (7)
QC	Gazipur	-	2 (3)	1 (2)	3 (5)
	Dhaka	-	5 (8)	2 (3)	7 (12)
Total		5 (8)	45 (75)	10 (17)	60 (100)

Source: Field Survey, 2014. (Figures within parentheses indicate percentage).

Marital Status: Of the total 60 women workers 25 percent operator were married in Dhaka city and rest 5 percent were unmarried. About 22 percent operator was married in Gazipur. Of the total women workers 73 percent were married and 27 percent were unmarried. Table 4.3 shows marital status of categories of women workers.

Table 4.3. Marital status

Categories	Areas	Married	Unmarried	Total
Operator	Gazipur	13 (22)	4 (7)	17 (28)
	Dhaka	15 (25)	3 (5)	18 (30)
Helper	Gazipur	3 (5)	2 (3)	5 (8)
	Dhaka	4 (7)	2 (3)	6 (10)
Polyman	Gazipur	-	-	-
	Dhaka	3 (5)	1 (2)	4 (7)
QC	Gazipur	2 (3)	1 (2)	3 (5)
	Dhaka	4 (7)	3 (5)	7 (12)
Total		44 (73)	16 (27)	60 (100)

Source: Field Survey, 2014. (Figures within parentheses indicate percentage).

Family Size: The family size and its composition are related to occupation and income. The average family sizes of operator (4), helper (4), and quality controller (4) in Gazipur were larger than those women workers in Dhaka city (Table 4.4). It was observed that operators had comparatively larger family size than other categories. In

this study average numbers of household working members of each category were considered belonging to the age group 18 to 60 years.

Table 4.4. Family size

Categories	Areas	Family member	Male	Female	Average (18-60 years)	
					Male	Female
Operator	Gazipur	4	2	3	1	1
	Dhaka	4	2	2	1	1
Helper	Gazipur	4	2	2	1	1
	Dhaka	4	2	2	1	1
Polyman	Gazipur	-	-	-	-	-
	Dhaka	3	1	2	1	1
QC	Gazipur	4	2	2	1	1
	Dhaka	4	2	2	1	1

Source: Field Survey, 2014.

Occupational status: It was observed that 42 percent of total women workers were employed in garment factories of Gazipur and the rest 58 percent were employed in garment factories of Dhaka (Table 4.5).

Table 4.5. Occupational status

Areas	Operator	Helper	Polyman	QC	Total
Gazipur	17 (28)	5 (8)	0 (0)	3 (5)	25 (42)
Dhaka	18 (30)	6 (10)	4 (7)	7 (12)	35 (58)
Total	35 (58)	11 (18)	4 (7)	10 (17)	60 (100)

Source: Field survey, 2014. (Figures within parentheses indicate percentage).

Income level: Income level of women workers mainly depends on their work pattern in the garment factories. It is revealed from the Table 4.6 that there was some variations in income earned by operator, helper, polyman and quality controller in the two study areas. The average income of operator (BDT 6675) for all areas was higher than the helper, polyman and quality controller because their category is upgraded than other categories. The average income of helper, polyman and quality controllers was calculated to BDT 4,954, BDT 5,500 and BDT 6350 respectively.

Table 4.6. Level of income (BDT/month)

Categories	Gazipur	Dhaka	Average
Operator	6671	6678	6675
Helper	4920	4983	4954
Polyman	5400	5600	5600
QC	6367	6343	6350

Source: Field survey, 2014.

Working hour: There is seasonality in production in the garments industry, hence working hours vary accordingly. The peak season is from October to January, while the slack season is from March to June in each and every year. As the labour requirement increases during the peak season, the workers are required to work overtime. Table 4.7 shows the distribution of overtime of women worker done per month.

Table 4.7. Distribution overtime

Hour / month	Age group (years)			Total
	18-25 yrs.	25-35 yrs.	35-45 yrs.	
1-25	3 (5)	1 (2)	2 (3)	6 (10)
26-50	6 (10)	8 (13)	1 (2)	15 (25)
51-75	14 (23)	4 (7)	2 (3)	20 (33)
76-100	11 (19)	6 (10)	2 (4)	19 (32)
Total	34 (57)	19 (32)	7 (12)	60 (100)

Source: Field survey, 2014. (Figures within parentheses indicate percentage).

Working Period in RMG: The workers' promotion depends on their working period and work performance. Table 4.8 shows that operator's working period was more than helper and other categories. Seventeen percent operators of the total women workers were employed for 2 to 4 years in Dhaka city and that of 3 percent operators working 8 years or above in Gazipur. Seven percent helper

of total women workers was working for 1 year in Dhaka and Gazipur and there were no women workers employed as helper above working period of 4 years. There was only 3 percent quality controller whose working period was between 5 to 7 years. In total 47 percent of the total women workers' working period was between 2 to 4 years.

Table 4.8. Working period in RMG

Categories	Areas	Up to 1 yr.	2-4 yrs.	5-7 yrs.	Above 8 yrs.	Total
Operator	Gazipur	-	7 (12)	8 (13)	2 (3)	17 (28)
	Dhaka	-	10 (17)	7 (12)	1 (2)	18 (30)
Helper	Gazipur	4 (7)	1 (2)	-	-	5 (8)
	Dhaka	4 (7)	2 (3)	-	-	6 (10)
Polyman	Gazipur	-	-	-	-	-
	Dhaka	2 (3)	2 (3)	-	-	4 (7)
QC	Gazipur	-	3 (5)	-	-	3 (5)
	Dhaka	2 (3)	3 (5)	2 (3)	-	7 (12)
Total		12 (20)	28 (47)	17 (28)	3 (5)	60 (100)

Source: Field survey, 2014. (Figures within parentheses indicate percentage).

4.2. Impact of RMG on Livelihood Improvement

The expansion of RMG industry has caused tremendous social changes. The garment industry is the only industry which significantly empowers female to participate in productive works in national economy. Most of those who are working in this industry are young energetic females who migrated from the rural areas. They receive higher wages than before when they engaged in rural job. The attractive employment opportunity has changed the traditional patriarchal hegemony of the fathers, brothers and husbands. Most of the working ladies can now make

decisions about their life because they are now independent. They tend to send their little brothers and sisters to schools as a result, the literacy rate is increasing. They can participate in family decision making and can support their family members.

Monthly income by service length: Table 4.9 shows that 58 percent women workers whose job length was between 2 to 4 years, earned above BDT 5,500 and 13 percent earned below BDT 5,500. On the other hand, 12 percent women workers worked for 8 or above years, of them 8 percent earned salary above BDT 6,500 and 3 percent above BDT 5,500. A closer positive association between monthly income and service length were existed.

Table 4.9. Monthly income by service length

Income (BDT)	Up to 1 yr .	2-4 yrs.	5-7 yrs.	Above 8 yrs.	Total
4500-5500	6 (10)	2 (3)	-	-	8 (13)
5501-6500	4 (7)	20 (33)	9 (15)	2 (3)	35 (58)
Above 6500	-	4 (7)	8 (13)	5 (8)	17 (28)
Total	10 (17)	26 (43)	17 (28)	7 (12)	60 (100)

Source: Field Survey, 2014. (Figures within parentheses indicate percentage).

Household income: There are different factors that can influence the household income and they are income of women garment worker, income of other family members,

number of working members of women worker's household, working period in garment factory, years of schooling of women worker.

Table 4.10. Estimated values of coefficients and related statistics

Independent variables	Coefficient	Standard error	t values
Intercept	3.301**	0.604	5.464
Income of women worker (X_1)	0.227*	0.040	5.593
Income of family members (X_2)	0.644*	0.046	10.222
Working members (X_3)	0.138*	0.031	2.901
Working period (X_4)	-0.003	0.014	-0.057
Years of schooling (X_5)	0.147**	0.021	2.199
R^2		0.954	
Adjusted R^2		0.950	
Returns to scale ($\sum bi$)		1.153	
F- value		226.496*	

Note: *, ** significant at 1% and 5% level.

The estimated value of the coefficient of income of women garment worker (X_1), income of other family members (X_2), working members (X_3), years of schooling (X_5) were 0.227, 0.644, 0.138 and 0.147, respectively which were positive and significant at 1 percent and 5 percent probability level. On the other hand, the

coefficient of working period of women worker (X_4) was 0.003 which was negative and insignificant indicating had no effect on household income. The value of coefficient of multiple determinations, R^2 was 0.954 and adjusted R^2 was 0.950. A return to scale ($\sum bi$) was 1.153 which indicates increasing returns to scale and the F-value of the

model was 226.496 which was highly significant at 1 percent probability level (Table 4.10).

Expenditure pattern: Average monthly expenditure of the women workers are observed so that we can understand the effect on expenditure pattern of the women workers as a result of their involvement in RMG industry.

Table 4.11. Item wise expenditure (BDT per month)

Items	Before	After	t value with 59 df
Food	1008 (197.69)	1440 (305.98)	21.479*
Housing	865 (227.42)	1188 (336.53)	13.804*
Transport	132 (42.37)	135 (47.21)	1.333 ^{NS}
Clothing	143 (37.36)	271 (39.37)	25.700*
Medicare	142 (34.09)	145 (37.92)	1.124 ^{NS}
Child education	312 (339.04)	575 (567.36)	8.059*
Entertainment	53 (58.53)	119 (98.33)	9.815*
Savings	422 (508.60)	770 (755.05)	7.323*

Source: Field Survey, 2014. (Figures in parentheses indicate standard deviation).

Table 4.11 shows that expenditure on food, housing, clothing, child education, entertainment, and savings of the women workers got significantly ($P < 0.01$) higher after joining RMG factory compared to that time when they were not involved in RMG. On the other hand, transportation cost and medicare cost of the women workers was insignificant that means there was no effect on expenditure on the transport and medicare of the employment in RMG.

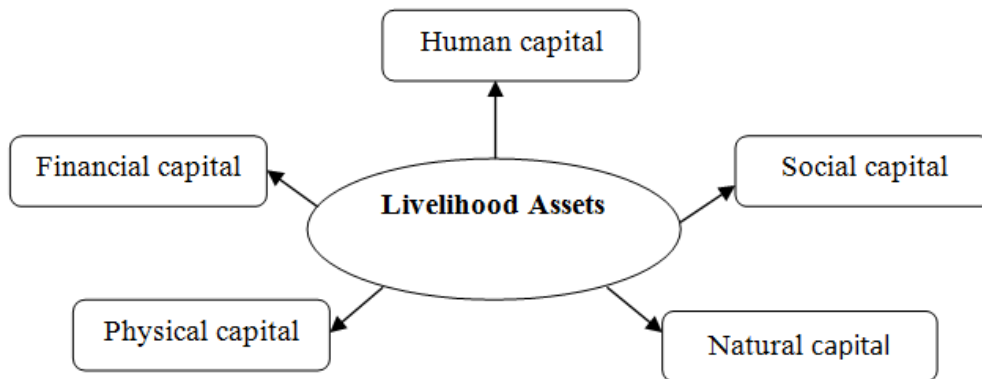


Figure 1. Different types of livelihood assets

The size and shape of the asset pentagon- that is, the amount and relative importance of each type of capital varies between communities and between wealthy and poor households within the same community. Rich communities may control more and better financial and natural capital than poor communities and within any given community; rich households control more land, livestock and physical and financial capital than poor households [12].

Using the above pentagon as guide can help investigators to get more clear picture of the household and its livelihood assets.

Financial capital: Financial capital includes financial resources such as savings/debt, gold/ jewelry, income, credit and insurance etc. For all women workers of different categories, there was significant change in increasing the financial capital. Eighty percent of the total women workers’ income increased after involving garment factory while 73 percent women workers opined that their savings increased (Table 4.12).

4.3. Changing Livelihood Assets

A person’s livelihood refers to their ‘means of securing the basic necessities – food, water, shelter and clothing- of life’. The sustainable livelihoods idea was first introduced by the Brundtland Commission on Environment and Development, and in the 1992 United Nations Conference on Environment and Development expanded the concept, advocating for the achievement of sustainable livelihoods as a broad goal for poverty eradication [11]. In 1992, Robert Chambers and Gordon Conway proposed the following composite definition of sustainable livelihood, which is applied most commonly at the household level: “A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term” [11]. Livelihood assets refer to the resource base of the community and of different categories of households. There are different types of assets- human, natural, financial, physical and social and these are interlinked. These assets are shown in Figure 1 using a pentagon.

Table 4.12. Changes in financial capital after joining in RMG (% reported)

Categories	Income	Savings
	Increased	Increased
Operator	90	73
Helper	85	62
Polyman	70	81
QC	75	77
Average	80	73

Source: Field survey, 2014.

Physical capital: Physical capital includes the household goods, tools, equipment and physical infrastructure of the households. Some of the physical capitals such as television, mobile, khat etc. were included in this study. Uses of CD/VCD player, television and mobile were also increased for all categories of women workers Household furnitures like khat/chaki and chair/table had increased by 18 percent and 5 percent, respectively. The scope of using different physical assets had increased for the operator than others categories of workers as they earned more than others (Table 4.13).

Table 4.13. Changes in physical capital after joining in garments industry (% of reported)

Categories	CD/VCD	Television	Mobile	Khat/Chaki	Chair/Table
	Increased	Increased	Increased	Increased	Increased
Operator	15	25	45	25	10
Helper	4	5	20	15	5
Polyman	3	4	17	15	2
QC	3	6	25	15	2
Average	6	10	27	18	5

Source: Field survey, 2014.

Human capital: Development of human capital is one of the pre-requirements for successful attainment of other types of assets [17]. It denotes education, skills, knowledge, good health and ability to work, people's health and ability to work and the knowledge and skill and have acquired over generation of experience and observation, constitute their human capital. It reveals that after joining garment factory, their mobile operating capacity had increased to 85 percent because they bought mobile after joining. Hundred percent and 96 percent

women workers reported about counting and signature ability, respectively after joining garment factory. Irrespective of all categories, about 58 percent women workers reported good access to different sources of information after joining garment factory. At present, about 63 percent women workers claimed good health condition. Their health condition improved than before because they earned more than before and maintained balanced diet (Table 4.14).

Table 4.14. Changes in human capital after joining (% of reported)

Categories	Mobile operating capacity	Counting ability	Signature ability	Access to information	Average good health
	Increased	Increased	Increased	Increased	Increased
Operator	100	100	100	65	70
Helper	95	100	95	55	55
Polyman	70	100	90	50	65
QC	75	100	100	60	60
Average	85	100	96	58	63

Source: Field survey, 2014.

Social capital: Social capital refers to kin networks, group membership, socio-political voice, degree of trust, reliability and adaptability. The way in which people work together, both within the household and in wider community, is of key importance for household livelihoods. It reveals that 24 percent of total women

workers increased good social network after joining in RMG. Decision making ability of women worker was increased by 23 percent. Almost in all issues, women workers involvement has increased compared to before joining garment factory (Table 4.15).

Table 4.15. Changes in social capital after joining in garments industry (% reported)

Categories	Good social network	Decision making ability	Good relationship with in-laws	Access to social assets
	Increased	Increased	Increased	Increased
Operator	30	25	20	50
Helper	19	20	10	40
Polyman	22	23	20	30
QC	23	25	17	50
Average	24	23	17	43

Source: Field survey, 2014.

Natural capital: Natural capital consists of natural resources including their flows and services. Here information about land and trees as natural capital of women workers collected. Table 4.16 shows the changing nature of different component of natural capital of women workers. It reveals that there was very small percentage of women workers who had land or trees. Before joining in garment factory only 4 percent women workers' had land and after joining it has increased to 6 percent.

Table 4.16. Changes in natural capital after joining in garments industry (% of reported)

Categories	Land	Tree
	Increased	Increased
Operator	10	17
Helper	5	12
Polyman	6	15
QC	3	13
Average	6	14

Source: Field survey, 2014.

4.4. Changes in Overall Livelihood Status

To analyze the overall improvement in the livelihood of household, the women workers were asked about their opinion for their overall changes in their livelihood status that might have taken place due to involving in RMG sector. Table 4.17 showed that 77 percent of total women workers reported that their livelihood status improved due to involving in garment factory. About 89 percent of the total operator reported about their improved livelihood status due to involvement in RMG sector.

Table 4.17. Changes in overall livelihood status (% reported)

Categories	Improved
Operator	89
Helper	55
Polyman	75
QC	90
Average	77

Source: Field survey, 2014.

4.5. Improvement of Health Condition

Amartya Sen said that health status is a key indicator of a population's welfare. In addition, Stauss and Thomas also stress that improving the health status of the population leads to greater economic productivity. Health is a very important and basic necessity for living. The workers not only have to pay for the hospital or medical fees, when they are sick, but also they may not get paid if they are absent from work. Moreover, the way the workers live and work is in the dangerous situation that health is very much to be cared of. Assessing the worker's health status is very challenging because the result be possibly subjective. The subjectivity is influenced by education, perception, knowledge of specific illness and income [8].

Health status of a worker could be determined by different factors such as BMI measure, patterns of diseases and illness they suffered from and different health issues such as drinking water, sanitation system, medical facilities, clothing pattern, housing condition and quality of food also influenced the health status of the workers.

4.6. Health of the Women Workers

Workers believe that their health is much related to the working condition rather living condition. There are

several factors relate to accessibility to health service such as physical access; ability to pay; knowledge and information about availability; personal beliefs and perceptions of need and quality of health care; and of the functioning of referral systems. One of the declared aims of occupational health is to provide a safe 'occupational environment' in order to safeguard the health of the workers and to set up industrial production [7].

4.7. Changes in Health Issues

Health related issues such as drinking water, sanitation, medicare, nature of clothing, housing condition and quality of food largely determine the health status of a person. Table 4.18 represents that changes taken place in health conditions of the women workers. About 64 percent of total women workers opined in favor of improving their drinking water condition and 73 percent of them reported that their medicine facilities had improved because the garments factories provide free medical checkup and free medicine for the workers. Moreover, 70 percent, 66 percent and 74 percent of women workers opined that their clothing, sanitation and housing facilities had improved respectively. About 65 percent of total women workers had reported about their improved quality of food due to more income earned than before.

Table 4.18. Changes in health issues (% of reported)

Categories	Drinking water	Sanitation	Medical facilities	Clothing	Housing	Quality food
	Improved	Improved	Improved	Improved	Improved	Improved
Operator	75	80	80	75	70	80
Helper	55	70	75	65	65	75
Polyman	65	55	65	60	75	65
QC	60	60	70	80	85	65
Average	64	66	73	70	74	71

Source: Field survey, 2014.

5. Conclusion and Recommendation

Due to participation in this income generating sector their life and status in the society got upgraded. Employment opportunities of women in RMG sector upgrade the women workers, both socially and economically. The garment industry has led to significant changes in the socio-economic condition, livelihood pattern of working women. Women involvements in decision making, buying and selling, food selection, children education etc. are crucial for their empowerment. Unless and until they fail to ensure the basic rights of the poor female garment workers, it cannot be expected this sector to achieve its desired goal.

The following recommendations are put forward for the present study:

- Government should ensure the workers' wages in regular basis on right time and on right scale.
- Child care with schooling system may there be introduced
- Maternity leave and weekly holiday with pay for the female workers should be ensured.

References

- [1] Ahmed, S. (2009). Garments Industry and Women Livelihood: An Impact Study in Narayanganj District of Bangladesh. M.S Thesis, Department of Agricultural Finance, BAU, Mymensingh.
- [2] Akter, J. (2013). Female Labour Migration from Rural to Urban: A Socioeconomic Study on the Garment Workers. M.S Thesis, Department of Agricultural Economics, BAU, Mymensingh.
- [3] Begum, F. (2008). Rural Women in Urban Garments: A Study on Livelihood Pattern of Women Garment Workers at Dhaka city. M.S Thesis, Department of Rural Sociology, BAU, Mymensingh
- [4] Bhuiyan, Z. A. (2012). Present Status of Garment Workers in Bangladesh: An Analysis. Journal of Business and Management, pp 38-44.
- [5] BGMEA (Bangladesh Garment Manufacturers and Exporters Association) Member's Directory (2015). Annual Report. Dhaka, Bangladesh.
- [6] Chowdhury, N. J. and H. Ullah (2010). Socio-Economic Conditions of Female Garment Workers in Chittagong Metropolitan Area-An Empirical Study. Vol.5, No.2.
- [7] Chanda, S. L. (1997). Report on the Symposium on Academic, Education and Training in Occupation Health and Hygiene, in K. Park (ed.), Preventive and Social Medicine. Banarsidas Bhanot Publishers, India.
- [8] Chansamphors, C. (2008). The Standard of Living of Garment Workers in Cambodia: Its Determinants and Workers' Perception. CICP Working Paper No.26.
- [9] Delahanty, J. (1990). A Common Thread: Issues for Women Workers in the Garment Sector. The North-South Institute.
- [10] Farid, K. S. (2006). Rural to Urban Migration: Impact on Livelihood Patterns of Migrants. M.S Thesis, Department of Rural Sociology, BAU, Mymensingh.
- [11] <http://en.wikipedia.org/wiki/Livelihood>.
- [12] <http://www.fao.org/docrep/009/ag257e/AG257E08.htm>.
- [13] Mridula, S. M. and K. A. Khan (2009). Working Condition and Reproductive Health Status of Female Garments Workers of Bangladesh. Study report of Bangladesh Occupational Safety, Health and Environment Foundation (OSHE), West Pantapath, Dhaka.

- [14] Nahar, N. (2009). Occupational Health Hazards in Garments Sector: A Study in Gazipur District. M.S Thesis, Department of Rural Sociology, BAU, Mymensingh.
- [15] Samarasinghe, V. (1998). The Faminization of Foreign Currency Earnings: Women's Labour in Srilanka. *Journal of Developing Areas*. 32(3): 303-326.
- [16] Sibbel, L. (2004). Linking Trade with Labor Rights: The ILO Garment Sector Working Conditions Improvement Project in CAMBODIA. Raoul Wallenberg Institute of Human Rights and Humanitarian Law.
- [17] Sharmin, S. (2006). Socioeconomic Impact of Developing Shrimp Industry on Livelihoods of Stakeholders and Women in Bangladesh. M.S Thesis, Department of Rural Sociology, BAU, Mymensingh.
- [18] World Bank (1990). *Garments: Global Subsector Study*.