

# Gender Imbalance in Employment and Wages - A Study on Manufacturing Sector in Assam, India

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## Abstract

In India, women form an integral part of total workforce in the manufacturing sector. But what is reality with women workers is that they lag far behind in terms of getting quality of employment and wages within the sector. For the sector, gender Gap in employment and wages has been a pervasive feature for the country. Since the initiation of economic reforms (1991), although female participation in the organised manufacturing sector is increasing, 'Gender Gap' in employment in this sector has also been widening and women as groups of workers are found to be marginalised in terms of quality employment and wages within the sector. The study was carried out on the organised manufacturing sector in the state of Assam. The finding of the study reveals that women as a group of workers lag behind in terms of getting quality of employment and wages within the sector. Gender gap in employment and wages is found to be very high in the organised manufacturing sector in the state of Assam.

**Key Words:** Women, Employment, Manufacturing, Gender, Marginalisation.

## INTRODUCTION

Manufacturing sector is one of the important sectors of Indian economy. This sector has been playing an important role in the process of generation of employment, income as well as foreign exchange earnings of the country (Golder, 2013, Kapoor, 2017, ILO, 2017). Over the last few decades, manufacturing sector is gaining attention in India's development policies. Realising the importance of the Indian manufacturing sector, the prime minister has already announced the *Make in India* programme to place India on the world map as a manufacturing hub and give global recognition to the Indian economy. It is the manufacturing sector which can lead to the increasing employment opportunities in a labour abundant country like India, where every new job created in this sector always has a multiplier effect of creating two or more additional jobs in related activities (*National Manufacturing Policy*, 2011).

Women play a very important role in increasing total manufacturing output through participating different activities within the sector (Choudhury & Panigrahi, 2013). The Government of India has been making and adopting different acts, laws and policies to protect workers both in the organised and the unorganised sectors. Despite many welfare policies adopted for the protection and safety of workers, female participation, especially in the organised manufacturing sector, has remained almost static over the last few decades (Neetha, 2014). For example, during 2000-01, female work force participation (directly employed workers) in the organised manufacturing sector was 18.05 percent and although it increased to 20.36 percent in 2004-05, it also decreased to 19.81 percent during 2010-11 (*as per Annual Survey of Industries Reports*).

Assam is considered as one of the industrially underdeveloped states of India, situated in the North-Eastern Region of the country. Despite existence of various constraints, a favourable industrial climate is being gradually created in the state and the number of registered manufacturing factories has been increasing over the last few years (*Economic Survey of Assam*, 2016-17). But, as far as women's participation in manufacturing factories is concerned, it has been observed that the share of women workers has continued to remain very low in comparison to men. As per *the Annual Report of the Office of the Chief Inspector of Factories, Government of Assam, 2017*, the share of women factory workers in total employment was 2.35 percent in 2011, whereas the share of men was 97.65 percent. Again, during 2017, the share of employment of women was 2.55 percent but the percentage share of men was 97.45 percent, which indicates a huge Gender Gap in employment in the registered manufacturing sector in Assam. Therefore, is very much imperative to find out the extent of gender gap in employment wages in manufacturing sector in the state of Assam, where the number of manufacturing units, over the last few years, has been increasing in comparison to other states of North Eastern Region of India.

## Objectives:

The main objectives of the study are-

1. To find out the gender ratio in the total employment in manufacturing units.
2. To examine wage differentials between male and female workers within the manufacturing sector.

## METHODOLOGY

The study is based on both primary and secondary data. The primary data have been collected from field study by the researcher through questionnaires and personal interviews. Secondary data have been collected from the reports of Office of the Chief Inspector of Factories, Government of Assam, Assam Statistical Hand Book, Ministry of Labour and Employment Department Government of India and Assam, Annual Survey of Industries (ASI) Reports, Government of India and from different studies, related books, journals and magazines.

### Sampling Design:

The study was carried out in Undivided Kamrup district (Rural & Metro) of Assam, as the district has the highest number of manufacturing units among all districts.

Multi-stage sampling has been adopted to collect primary data. Samples were selected at two stages.

**First Stage:** A list of Registered Manufacturing Factories has been prepared from the official data (from the *Office of the Chief Inspector of Factories, Government of Assam, 2001-20117*), where four types of manufacturing units have been selected purposively depending upon the number of workers employed in such units.

As per the data available on district-wise distribution of Registered Factories (*Office of the Chief Inspector of Factories of Assam, 2018*), there are 301 manufacturing units comprising 191 units in Food products manufacturing; 49 units in Beverages manufacturing; 31 units in Tobacco products manufacturing and 30 units in Textiles manufacturing in Undivided Kamrup District (Kamrup Rural & Kamrup Metro) of Assam.

**Second and the Final Stage:** Out of the total 301 manufacturing units, 50 percent of each unit were selected randomly, where the final sample size was 152 manufacturing units for the study.

### DATA ANALYSIS AND FINDINGS

The total number of workers employed in manufacturing of food products, beverages, tobacco products and textiles were found to be 3065 workers. Out of the total workers employed in manufacturing units, 1080 were male against 1985 female workers. The percentage share of male was 64.76 percent, where as for female, it was only 35.24 percent which indicated a huge gender gap in employment in the registered manufacturing sector (Table-1).

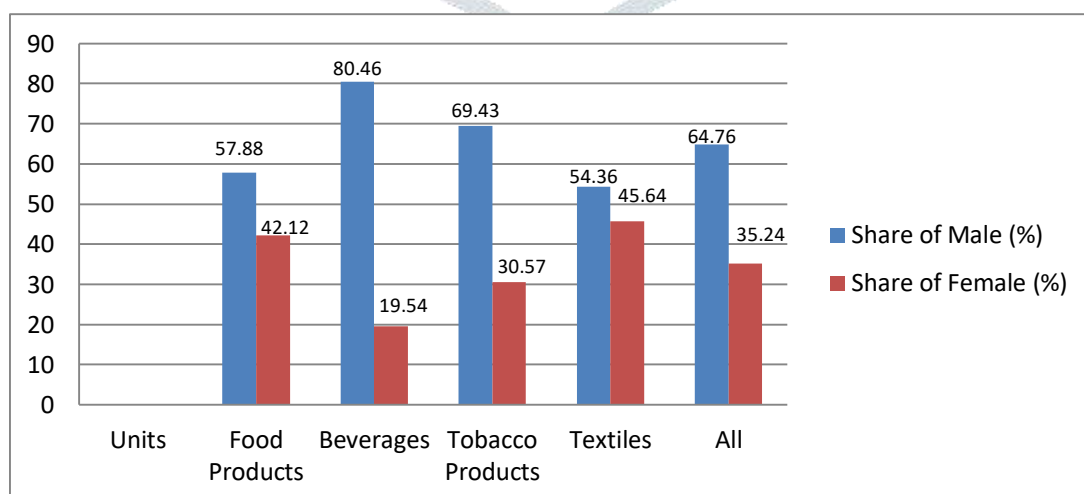
It has been observed that the proportions of female workers vary with respect to industry divisions. There were some manufacturing units, where female participation was found to be significantly low compared to other units. Within the organised manufacturing sector, the percentage share of female employment was found to be comparatively high in manufacturing of food products (42.12 percent) and textiles (45.64 percent) and it was comparatively low in manufacturing of tobacco products (30.57 percent) and beverages (19.54 percent) as indicated in the Table-1. The gender gap in employment was found to be the highest in manufacturing beverages, where female participation was as low as 19.54 percent against 80.46 percent for male which indicated a huge gender gap in employment in manufacturing of beverages within the organised manufacturing sector in the state of Assam.

The aggregate Gender Ratio (GR) was found to be 0.54, indicating that the proportion of female employment was only 54 percent of the average male employment in the organised manufacturing units (Table-1). Gender ratio was found to vary with respect to industry divisions. Gender ratio was found to be the highest in manufacturing of textiles (0.84), followed by manufacturing of food products (0.73), tobacco products (0.44) and manufacturing of beverages (0.24) respectively.

**Table 1: Percentage of Workers in Manufacturing Industries (%)**

NIC Code (2008)	Manufacturing Units	Total Worker	Male	Female	Share of Male	Share of Female	Gender Ratio
10	Food Products	1332	771	561	57.88	42.12	0.73
11	Beverages	819	659	160	80.46	19.54	0.24
12	Tobacco Products	819	268	118	69.43	30.57	0.44
13	Textiles	528	287	241	54.36	45.64	0.84
	Total	3065	1985	1080	64.76	35.24	0.54

Source: Calculated from Field Survey data



**Figure 1: Percentage Share of Male and Female Workers in Manufacturing Industries**

It was also observed the variation of female participation with respect to industry divisions. There were some manufacturing units, where the proportion of female workers was found to be comparatively high and in some units, and it was significantly low in other units.

### Distribution of Workers by Occupation and Gender:

The main occupations were identified as managerial, supervisory, clerical, machine operator, packaging, labelling, room cleaning or housekeeping, store keeper, spinning, weaving, tailoring, knitting and other manual works in manufacturing of food, beverages, tobacco products and textiles in the sample area.

It was observed that the female workers were mostly concentrated in the manual jobs such as packaging, labelling, room cleaning or housekeeping and other manual activities. On the other hand, the majority of male workers are found to be engaged in non-manual occupations like managerial, supervisory, clerical, machine operator and storekeeping. Thus, female workers are found to be marginalised in the quality of occupations within the manufacturing sector.

Table-2 shows the distribution of male and female workers in various occupations within the manufacturing units. Out of the total workers, only 6 (1.07 percent) workers were found to be working in managerial and supervisory positions in manufacturing of food products, where the number of females in the occupations like Packaging and Labelling was found to be significantly high (89.3 percent). In manufacturing of beverages, there were 36 male workers in managerial and supervisory positions but the number of female was found to be only 6 (3.75 percent). The proportions of female workers were found to be high (78.8 percent) in manufacturing of beverages. Similarly, in manufacturing of tobacco products, the number of female workers were found to be high (85.6 percent) in the activities like packaging and labelling. It was observed that the occupations like machine operators and store keepers are completely dominated by male workers in tobacco product units.

In the case of manufacturing of textiles, the number of female was only 5 (2.1 percent) engaging in the occupations like managerial and supervisory positions. Proportions of female workers were found to be significantly high in occupations like spinning (83 of female) and weaving (98 of female), compared to male workers in manufacturing of textiles (Table-2) Except spinning and weaving, significantly higher proportions of male workers were found to engage in the occupations such as managerial, supervisory, clerical, machine operators, room cleaning, tailoring and other miscellaneous activities in manufacturing of textiles.

Thus, female workers were found to be marginalised in terms of quality of occupations and overrepresented in the lower category of jobs like packaging, labelling, and housekeeping or room cleaning activities within the manufacturing sector.

**Table 2: Distribution of Workers by Occupation and Gender (in Numbers)**

Occupation	Food Products		Beverages		Tobacco Products		Textiles	
	Male	Female	Male	Female	Male	Female	Male	Female
Managerial/Supervisory	46	6	36	6	24	-	26	5
Clerical	58	10	52	5	45	4	35	12
Machine Operator	160	2	78	-	28	-	46	3
Packaging & Labelling	400	501	408	126	113	101	57	9
Store Keeper	60	5	55	7	33	-	18	-
Room Cleaning	30	28	5	12	6	11	15	5
Spinning & Weaving	-	-	-	-	-	-	36	167
Tailoring	-	-	-	-	-	-	48	37
Others	17	9	25	4	19	2	6	3
Total	771	561	659	160	268	118	287	241

Source: Field Survey

### Wage Differentials:

To assess wage differentials between male and female workers within the registered manufacturing units, the information on monthly wage, annual wages and the total man-days worked for male and female workers was collected separately from each of the sample units. It is noticed that monthly wage of female workers were found to be significantly low than that of male workers in manufacturing of food products, beverages, tobacco products and textiles.

Wage differentials between male and female workers vary with respect to industrial divisions along with the female work participation in the manufacturing units. It is evident from the following Table-3 that the Gender Wage Gap persist within the manufacturing sector where average female workers are getting only Rs. 227 per day, but male workers are getting Rs. 276 per day. So, the overall wage differential ratio is 0.82, indicating that at an aggregate level, female workers are getting on an average 82 percent lower wage than that of male workers within the sector.

Manufacturing industries such as food and tobacco products where the wage differentials between male and female workers were found to be comparatively high. In manufacturing of food products, the average daily wage of female was Rs. 214 against male workers (Rs. 271) per day (Table-3). The wage differential ratio between male and females in manufacturing of food products was 0.79, indicated that the female workers were found to be getting on an average 79 percent lesser wages than that of male. Similarly, in manufacturing of tobacco products, Female workers were getting only Rs. 237 per day, whereas average male workers wage was Rs. 292 per day. The wage differential ratio in manufacturing of tobacco products was 0.81, which indicated that average female workers wage was 81 percent of the male workers wage. Wage differential was found to be comparatively low in manufacturing of beverages and textiles. In manufacturing of beverages, average female workers were getting Rs. 230 per day against male workers wage of Rs. 273 per day. In manufacturing of beverages, the female workers were getting Rs. 84 percent of the average male workers wage. Similarly, in the case of manufacturing of textiles, average female workers were found to be getting Rs. 251 per day against the male workers wage of Rs. 280 per day. The wage differential ratio was found to be 0.90, indicated that the female workers were getting Rs. 90 percent of the average male workers wage (Table-3).

Table 3: Average Daily Wages of Workers and Wage Differentials

Manufacturing Units	Female Participation (%)	Average Daily Wage of Male (Rs.)	Average Daily Wage of Female (Rs.)	Wage Differential Ratio (F/M)
Food Products	42.12	271	214	0.79
Beverages	19.54	273	230	0.84
Textiles	30.57	292	237	0.81
Tobacco Products	45.64	280	251	0.90
All	35.24	276	227	0.82

Source: Calculated from field Survey data

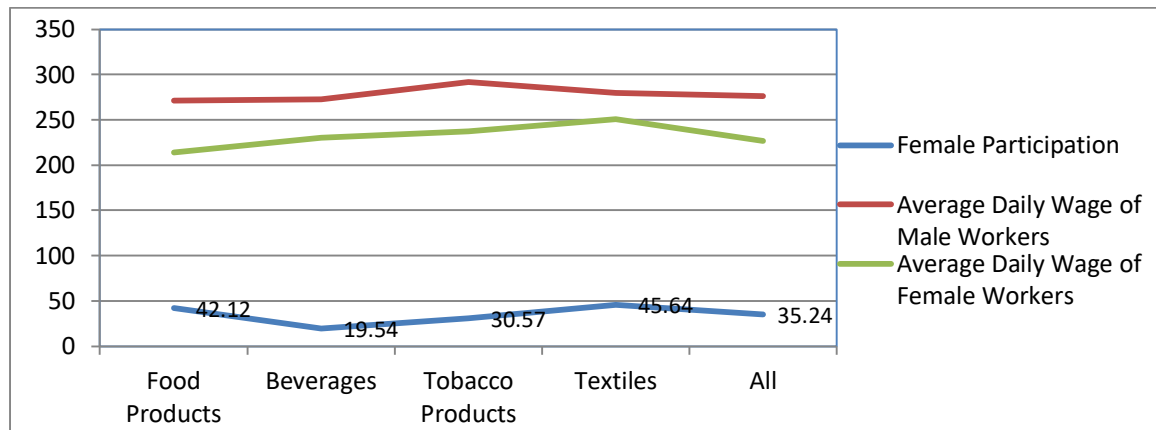


Figure 2: Average Daily Wages of male/female and Female Participation (%)

It was also noticed that the manufacturing units such as food products, female participation was comparatively high (42.12 percent), but the wage differential ratio was found to be significantly as high as 0.79. In manufacturing of beverages, female work participation was significantly low (19.54 percent) and but the wage differential ratio was comparatively high (0.84). Similarly, in tobacco product industry female participation was moderate (30.57 percent), but the wage differential ratio was high (0.81 percent).

On the other hand, in manufacturing of textiles, female participation was found to be comparatively high (45.64 percent), but the wage differential ratio was found to be comparatively low (0.90). Thus, it was observed that, except the manufacturing of textiles, the average daily wages of female workers were much lower than that of the *Minimum Wage Rate* fixed by the Government of Assam (Minimum Wage of Rs. 240/- per day fixed by the Govt. of Assam for the year, 2016-17).

## CONCLUSION

The analysis of the present study reveals that although the Government of India has been taking different laws, acts and policies for development of the manufacturing sector in the country, gender gap in employment and wages has been a pervasive feature for this sector. Women form an integral part of the total workforce in the manufacturing sector. But what is worse with women workers is that they are lagging behind in terms of getting quality of employment and wages. In this sector, women as groups of workers are found to be the marginalised section of workers employed in the manufacturing sector. Therefore, the government has to give top most priority in case of improvement of working conditions workers, especially women workers, who form an integral part of the total manufacturing workforce of the country and play a significant role in increasing the total output and income of the sector. For the success of 'Make in India' programme and development of the manufacturing sector, the Government has also the responsibility in reducing Gender gap in employment and wages within the sector. Existing Indian labour laws, like Indian Factory Act, Minimum Wage Act, Payment of Bonus Act, Equal Remuneration Act, etc, have to be incorporated gender issues and implementation of these laws needs to be monitored.

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## Notes:

1. Gender Ratio =  $F_j/M_j$ .  $F_j$  is the number of female workers in the  $j$ th industry.  $M_j$  is the number of male workers in the  $j$ th industry.
2. In Assam, the minimum wage rate for workers in registered manufacturing factories has been revised and fixed at Rs. 247.50/- per day during 2017 (Labour and Employment Department, the Government of Assam dated on 3<sup>rd</sup> November,

2015, Assam). Since the field survey was carried out during 2017, the minimum wage rate of Rs. 247.50/- per day was taken into account to examine the level of wages of workers employed in the registered manufacturing units.

3. The formula for finding out the 'Wage Differential Ratio' is adapted from Bivas Choudhury, and A.K. Panigrahi, (Central Statistics Office, Kolkata, India) 'Gender Bias in Indian Industry', *The Journal of Industrial Statistics*, 2013, Vol. 2(1), pp. 108-127.
4. The formula for wage differential between male and female workers is defined as -  
'Wage Differential Ratio' (WDR) = Average Female Workers Wage / Average Male Workers Wage.
5. The average wages of male and female workers is calculated on the basis of the total annual wages to the total man-days worked. Hence, the average female workers wage is calculated on the basis of the total female annual wage to the total man-days worked for female workers engaged in manufacturing units. On the other hand, the average male workers wage is calculated on the basis of the total annual wage to the total man-days worked for male workers.
6. Man-days = No. of workers engaged in manufacturing unit multiplied by the No. of working days, excluding the workers who are paid but remain on leave.
7. Total Man-days Worked for Male Workers = Total Man-days Worked for male workers are obtained by summing up the number of man-days worked by male workers working on all days in organised manufacturing sector.
8. Total Man-days Worked for Female Workers = Total Man-days Worked for Female workers are obtained by summing up the number of man-days worked by female workers working on all days in organised manufacturing sector.

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