

# Education, marital status and caste in determining female employment in the industrial sector of India: An exploratory analysis

Soumita Das

(Economics, Central University of Kerala, India)

---

**Abstract:** The female labour force participation rate (FLPR) has been showing a declining trend over the last decade, with a considerable gender gap reigning in the industrial sector. In this study, we utilise the Periodic Labour Force Survey (PLFS) 2019-2020 to examine the prevailing gender gap in the industrial sector, with a thorough analysis at a regional level and sub-sectoral level. A logistic regression model has been used to explore and identify the potential determinants behind the low female employment in the industrial sector of India. The major findings indicate that the caste system, education, and marital status all have a substantial impact on our economy. With a huge divergence in the gender gap in the employment status between Northern and Southern region of India, the country can only get closer to SDP 15.1.1 and a nation without poverty by fostering a co-dependence and a cooperative culture coupled with a uniform social and economic growth.

**Key word:** Female employment; Industrial employment; Economic growth

---

Date of Submission: 05-12-2022

Date of Acceptance: 17-12-2022

---

## I. INTRODUCTION

Gender equality and economic progress are inextricably linked. A country's progress cannot be achieved by disregarding the two important pillars of our society. For a long time, women have been held captive by antiquated laws all over India. The laws such as Section 66(1)(b) of the Factories Act (1948), Section 46(1)(b) of Mines Act (1952) in the name of creating a safe environment for women kept them under the shackles of patriarchal ideologies. Simultaneously with economic progress, the idea of egalitarian development also came into process. Laws such as Maternity Benefit Act, 1960, The Prohibition of Sexual Harassment of women at workplace Act, 2013 were implemented to protect and promote women at workplace. Several vocational training centres for women were also started. Directorate General of Employment and Training is the primary organization in charge of offering women vocational training in traditional and modern courses as well as certification in procuring employment for women in the country's industries, services, and other sectors with skilled female workers.

In India, apart from economic disadvantages, social constraints have always been a crucial influence in limiting women's participation in the labour force. These constraints include the spouse and in-laws' discouragement of women's movements outside the house (Thomas, 2012). Married women face particularly severe cultural restrictions on their mobility, resulting in a 'marriage effect' among the female labour force (Sudarshan and Bhattacharya 2009). The importance of marital status for women's labour force participation can also be seen in the lower rates of participation by married women compared to divorced/widowed/separated women (Chatterjee et al. 2015; Chaudhuri and Verick. 2014). Caste is the second main axis of inequality and disadvantage in India, in addition to gender and social class. However, with the reservation system into effect, employment of women in the workforce is showing an increasing trend (Das and Desai, 2003).

Today, even though women have become more educated, independent and confident but still they face discrimination in this male centric society. Sustainable Goal 15.1.1 (non-discrimination on the basis of sex) has brought this issue on a global fore-front which requires immediate action. Promoting women employment will not only help utilize the dormant resources but also help in economic development of the country as a whole (UNDP Report).

## II. SECTORAL DISTRIBUTION OF EMPLOYMENT GENERATION IN INDIA

Female labour force participation has been showing a declining trend over the past decade. With a further analysis in sectoral India, it is seen that with the advent of education and ambition, people started migrating from agricultural sector to industrial and service sector. Today in rural India, the majority of female workers are engaged in the agricultural sector or traditional industries while in urban India, there has been a

steep rise in employment in the service sector from 35.7% in 1977-78 to 60.7% in 2018-19. The secondary sector or the industrial sector has seen the weakest growth over the past decade with an enormous and pervasive gender gap. In 2020, female employment in the industrial sector was recorded to be 17.92% while that of male employment was recorded to be 28.24% (modelled ILO estimate, World Bank). This divergence in employment in the industrial sector has resulted in the underutilization of the true potential of Indian resources. It was estimated that if women employment was of the same rate as of male employment, GDP would have risen by 43 percent (Times of India, September 2021). Thus, employment of women acts as an important instrument not only in maintaining social progress but also in the economic growth of the country.

Bridges (1980) revealed that women are under-represented in capital intensive industries. Furthermore, certain industries like durable goods manufacturing, employ fewer women than expected. Within the industrial sector, the industry which absorbed the maximum number of employees is the manufacturing sector after the agricultural sector, though there has been a fall in the share of women employment in this sector by 20%. However, there has been a jump in the employment of women in the construction industry after 2004-05 as compared to its preceding periods. The only other industry where female employment has risen is electricity and water between 2007-08 and 2009-10. Despite this increase, the industry only accounts for 0.1 percent of female employment (Majumdar & N, 2011).

In the context of under-employment of females in the industrial sector, an important factor which arises is the rate of employability prevailing in these sectors. Since liberalisation in 1991, industrialisation in certain states of India have been showing an upward trend. The top five states which own 53% of India's total industry capacity are Tamil Nadu with the rate of growth of 2.5 times over the past years followed by Maharashtra, Gujarat, Uttar Pradesh and Andhra Pradesh. In addition to this, according to the figures from the Ministry of Commerce and Industry, FDI inflows into the country have surged 20-fold since the financial year 2003-04, when they were only 4.3 billion US dollars. India is also becoming a popular destination for investments in manufacturing industries from around the world, with a surge of FDI inflows by 76 percent. The computer software and hardware industry has emerged as the leading receiver of FDI influx, accounting for 25% of total FDI inflow, followed by the Automobile Industry.

### **III. SIGNIFICANCE AND OBJECTIVE OF THE STUDY**

Female labour force participation rate usual status in India stands as low as 25.1% as compared to 41.6% of male labour force participation rate (PLFS Report 2020-2021). From prior sectoral analysis of trends and patterns of employment in India (Hirway, 1999; Talwar, 2005; Mehrotra & Sinha, 2017), a striking fall in female employment in India is observed in the industrial sector since 2012 (World Bank). There have also been case studies conducted mainly concerned with determining the fall in female employment in selected industries at specific parts of India (Saravanan, 2010; Krishnappa, 2013). However, studies are scanty in analysing the fall in female participation in employment in the Industrial sector all over India.

Over the last decade, there have been various government interventions undertaken to encourage and increase women employability in the industrial sector through skill development programmes. Hence, analysing and exploring the possible reasons for the low employment status of females in India especially in the industrial sector becomes crucial. This paper also attempts to analyse the patterns of female employment region specific as well as sub-industry specific.

### **IV. DATA AND METHODOLOGY**

Large sample unit level data from the Periodic Labour Force Survey (PLFS) database have been used to analyse the given objectives. The PLFS data 2019-2020 includes a huge sample of households from 28 states and the 8 Union Territories except some villages of Andaman and Nicobar Islands which were very difficult to reach during the Covid outbreak. For the collection of data. A total of 12,569 First Stage Unit households constituting 6913 households in rural areas and 5656 households in the urban areas have been surveyed in the year 2019-2020.

According to the broad sectors in National Industrial Classification (NIC, 2004), secondary sector or the industrial sector is mainly classified as the code B, C, D, E and F which are Mining and Quarrying sector, Manufacturing sector, Electricity, gas, steam and air conditioning sector, Water supply; sewerage, waste management and remediation activities sector and Construction sector respectively (Ministry of Statistics and Programme Implementation). These sectors together are clubbed and constituted as the industrial sector in this study.

The research paper for this classified the geographical area under the study, India into five geographical regions as adopted by the Government of India, 2011 in the report, "The working of The Minimum wages Act, 1948. The stratification has also been adopted by Sorsa et al. (2015) in a study aimed to analyse the determinants of low female participation in India. The study classifies India mainly into five distinct regions

namely Eastern region (Assam, Bihar, West Bengal, Jharkhand, Odisha and Chhattisgarh), Southern region (Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu);

Northern region comprising of Himachal Pradesh, Punjab, Uttaranchal, Haryana, Delhi, Rajasthan, and Uttar Pradesh), Western region (Madhya Pradesh, Gujarat, Maharashtra and Goa) and North Eastern region (Assam, Tripura, Manipur, Meghalaya, Nagaland, Mizoram and Arunachal Pradesh).

The study is mainly descriptive as well as empirical using econometric tools. The initial phase of the study advances with descriptive statistics and the latter with econometric analysis using SPSS and Microsoft Excel. Logistic regression is used. In the study, female employment in the industrial sector is taken as the dependent variable which is dichotomous in nature. The independent variables used are general education, technical education, marital status and social group. Logistic regression is one of the most significant statistical tools used by statisticians and researchers when working with binary datasets (Agresti, 2007; Hastie et al., 2009; Hilbe, 2009; Kleinbaum et al., 2007). In a similar study by Das & Desai (2003), logistic regression analysis was used to analyse or predict the probability of females being employed with respect to education and household characteristics.

## **V. ANALYSIS AND DISCUSSION**

### **ANALYSIS OF THE GENDER GAP IN EMPLOYMENT IN THE INDUSTRIAL SECTOR OF INDIA**

Gender gap in all sectors is ubiquitous in all domains of social and economic life in India. This fact has been further held up by the Global Gender Gap Index 2021 where India ranks 140 out of 156 countries. Gender gap in employment opportunities is also a concerning issue in India with the rising divergence in the employment status of males and females in different sectors of economic activity. The dwindling proportion of female participation in the Industrial sector has become a larger concern to be reckoned with. Female employment in India in the industrial sector is recorded to be 17.328% as compared to 82.617% male employment in the industrial sector (PLFS 2019-2020).

If one further delves deeper into the industry classification of gender employment sub-sector specific as under NIC 2004, it is found out that the highest gender gap exists in the electricity (91.997%) and mining industries (89.897%). The mining and electrical business in India is male-dominated and antagonistic to women working in it. The major reasons being the inability to accommodate proper health facilities for women. Cultural norms also play a significant role (Nayak and Mishra, 2005). It is also believed that “if a woman goes underground, minerals start disappearing” (Ranchod, 1997). Manufacturing sector acts as the major source of employment for females (25.397%) with the lowest persisting gender gap.

A detailed regional analysis reveals that a large gender gap in employment is present in almost all the regions of India. The highest Gender gap in employment in the industrial sector exists in the Northern part of India (78.999%) followed by North Eastern region (75.958%). Southern part of India accounts for the highest female employment in the industrial sector (27.711%) with the least gender gap (44.578%). In a similar study, female participation in the labour force was found to be higher in the Southern and Western region than the Northern region (Sorsa et al, 2015).

### **ANALYSIS OF THE DEMOGRAPHIC PROFILE OF FEMALE EMPLOYEES IN THE INDUSTRIAL SECTOR**

Economic growth may be significantly impacted by the demographics of the population particularly when it changes due to economic ups and downs and their ripple effects. This section explores the various demographic attributes of the female employees namely Age, Education, Marital status and Caste in the industrial sector with supporting tables and graphs. This section also delves deeper into the demographics of female employees in the industrial sector as per region specific and sub-sector specific.

Age plays a significant role in employment theory, and there are significant differences in the age distributions of female participants in the employment sector (Durand, 1975). From the PLFS 2019-2020 report, it is perceptible that the female population within the age bracket of 30-59 are the major participants in the industrial sector of India (66.3%) which is followed by females in the age bracket of 15-29 (27.53%). Low female employment in the industrial sector is seen in the age bracket of 0-14 (0.3558%) which is followed by age group of 60 and above (5.79 %) both of which theoretically are unproductive on the incidence of dependency.

General Education also plays a dominant role in determining female employment in the industrial sector in India. It is seen that majority of female employees in the industrial sector are without any formal education (34.058%). Females working in the industrial sector with basic primary educations accounts for 21.919%, secondary level education accounts for 29.843% and higher secondary education accounts for 6.774%. This negative relation can be highlights that structural effects and cultural effects where women are encouraged to leave the labour force with higher education and higher family status (Sharma, 1980; Standing,

1991). Das and Desai (2003) had further worked on this aspect and found out that educated women prefer white collar jobs to manual labour work in the industrial sector.

In recent years with technological progress and with the growing digital economy Technical Education have become an anchor in the employment process. The rapid industrial growth of any country is due to the acquisition of technical skills through skilled manpower and increased productivity (Golwala, 2017). Unfortunately, it is seen that only 2.429% of females employed in the industrial sector are equipped with technical knowledge in the year 2019-2020 in spite of the various Government aided programmes like Technical Education Quality Improvement Programme (TEQIP), Women's Vocational Training Programme (WVTP), etc.

Marital status entails more domestic obligations for women than being single, hence it has a significant impact on female employment. A survey done revealed a significant correlation between marital status and employment for women using the Chi-square test (Mon, 2000). It was found out that women are under the twin effect of cultural norms and structural norms during their quest of finding a job. Married and single women (whether widowed or separated) encountered more barriers to career growth as compared to single women because of their responsibility and family obligations, which had a significant impact on both their work-life challenges and career decisions (Buddhapriya, 2009). Approximately 40 percent of the female population engaged in an industrial sector have either never married (19.45%), divorced (18.97%) or widowed (1.13%) which can be considered as a significant figure in such a traditional and cultured country like India (PLFS 2019-2020).

Caste is considered to be the second main axis of inequality and disadvantage in India, in addition to gender and social class (Agarwal, 1994). In direct hiring across all of India, other than through an open competition, the prevailing caste reservations in employment is marked at 16.6 percent for Scheduled Castes, 7.5 percent for the Scheduled Tribes and 25.8 percent for Other Backward Class (Ministry of Personnel, P.G. & Pensions, GOI). This policy implementation has resulted in an increasing trend in the employment generation. It can be seen that the majority of females engaged in the industrial sector belongs to Other Backward Class (43.95 percent) followed by Scheduled Caste (26.558%) and Scheduled Tribe (20.584%) as per the PLFS report 2019-2020.

### **Demographic Profile of Female Employees in The Industrial Sector Region Specific**

Regional differences in India are a legacy of previous colonial conquest. It is generally agreed that the loss and degradation of India's historic industries were caused by unbalanced government policies. Large provinces grew up around the port cities of Bombay, Madras, and Calcutta during the pre-independence era due to entrenched interests in the policy initiatives, and these provinces eventually became the most developed states of modern India. Also, several states with abundant mineral resources, like Bihar, Madhya Pradesh, and Orissa, saw an uneven pattern of economic growth. Additionally, the trickle-down effect of certain industrialised and booming regions did not reach the hinterland or the backward regions of the country. Today, the total number of industries in India stands at 2,42,395 (ASI, 2019) with the five most industrialised states being Tamil Nadu, Maharashtra, Gujarat, Uttar Pradesh and Andhra Pradesh (The Indian Blog, 2020). A detailed region-specific analysis will further elucidate on the aspect of a low rate of female employment in the Industrial sector of India.

Table 3 shows the detailed analysis of female employment in the industrial sector region specific. It can be seen that the Southern region has a majority of female employees belonging to the age bracket of 30-59 while the majority of female employees belonging to the age group of 15-29 belongs to the Northern region. Eastern region has a mere 1.102% of female employees in the age group of 0-14 which is marked as a maximum percent of female employees of this particular age group.

As of General Education, it can be concluded that Northern region have the highest percent of employees who have no formal schooling. The majority of the employees from the North-Eastern (40.349%), Southern (34.298%) and Western (32.789%) regions have completed Secondary schooling. The highest percent of Graduate employees in the industrial sector are from the Western region. A declining trend or an inverse relation can be seen between the level of general education and industrial employment in Eastern and Northern region while an inverted V-shaped relation between rise in the level of education and female industrial employment can be seen in the North Eastern region with its peak in female industrial employment occurring with Secondary Schooling (40.349%). As of Technical Education, Southern region has the maximum percent of females employees endowed with technical knowledge (4.071%).

A region-specific inspection into the marital status of female employees reveals that North Eastern (49.94 %) and Northern region (49.26) have the highest cumulative percent of currently unmarried women comprising of never married, divorced and widowed females. Among all the regions, Southern region has the highest percent of divorced as well as widowed females working in the industrial sector.

Table 3 shows that the maximum percent of female employees from the Eastern, Southern (58.134), Northern (44.304) and Western (38.228%) regions in the Industrial sector belong to Other Backward Class. Among all the regions, North-Eastern region has the highest percent of female employees belonging to Scheduled tribe category (30.488%).

**TABLE 3: - Demographic Profile of female employees' region specific (in Percent)**

DEMOGRAPHIC INDICATORS/ REGIONS	EASTERN	NORTH-EASTERN	SOUTH-ERN	NORTH-ERN	WESTERN
<b>AGE</b>					
0-14	1.102	0.000	0.113	0.630	0.000
15-29	33.892	30.159	20.672	35.554	27.897
30-59	60.447	65.184	71.891	58.176	67.663
60 and above	4.559	4.657	7.324	5.640	4.440
<b>GENERAL EDUCATION</b>					
No Formal Schooling	39.183	23.123	23.021	47.847	29.858
Primary Schooling	29.31	24.764	28.166	16.069	18.736
Secondary Schooling	24.965	40.349	34.298	20.407	32.789
Higher Secondary Schooling	3.59	8.277	6.121	7.865	9.397
Graduate and above	2.951	3.488	8.394	7.812	9.22
<b>TECHNICAL EDUCATION</b>	0.914	0.209	4.071	1.633	1.653
<b>MARITAL STATUS</b>					
Never married	38.148	41.292	32.881	42.247	36.886
Currently married	53.803	50.053	53.201	50.737	52.814
Divorced/Separated	7.686	8.246	13.223	6.761	9.792
Widowed	0.363	0.409	0.695	0.255	0.508
<b>SOCIAL CLASS</b>					
Scheduled Caste	24.019	9.660	19.37	24.491	15.049
Scheduled Tribe	9.940	30.488	3.966	4.060	15.580
Other Backward Class	39.009	21.36	58.134	44.304	38.228
Others	27.032	38.492	18.530	27.145	31.143

Source: Author's calculation based on PLFS Unit Level Data 2019-2020

### Demographic Profile of Female Employees in The Industrial Sub-Sector Specific

The specifics of female employment in the industrial sector will be further clarified through a sub-sectoral categorization, which will aid in the development of policies for the improvement of female employment in the industrial sector as a whole. Table 4 shows the detailed analysis of female employment in the industrial sub-sector specific. It can be seen that the Mining sector accounts for the maximum percent of female employees belonging to the age group of 30-59 followed by Water supply sector i.e., 88.783 percent and 87.010 percent respectively. Among all the industrial sectors, Construction sector is seen to have a higher percent of female employees belonging to the age group of 60 and above (7.55%). This aspect can be validated in an article by Snook (2017) that older people are valued and retained more in the construction industry due to the unavailability of skilled and experienced workers, stable work and better contacts.

Table 4 also shows that females with higher level of General Education (Graduate and above) are mainly employed in the electrical industry (60.509%) while sectors like construction and water supply employ mainly uneducated females (55.869 and 53.637 percent) respectively. This can be mainly contributed to the fact that these industries require high levels of manual labour which educated women are generally reluctant to opt for or are not given the employment opportunity at all. Females with Technical education are employed mainly in the Electrical sector (29.136%).

On further exploration on the sub sector specific female employment in India, one can arrive at an estimate that the highest number of unmarried/widowed or divorced females are from Industrial sector caters to the water supply sector (45.555%) followed by electrical sector (44.777%). The maximum percent of married women is employed in the construction sector (73.691%).

The sub-sectoral analysis of female employment in India by caste shows that the mining industry employs the highest percentage of employees from scheduled tribes (43.24%), the water supply industry employs the highest percentage of employees from scheduled castes (56.36%), and the manufacturing industry employs the highest percentage of employees from other backward class categories (49.98%).

**TABLE 4: - Demographic Profile of female employees' industrial sub-sector specific**

DEMOGRAPHIC INDICATORS/ INDUSTRIAL SECTORS	SUB-	MINING	MANUFACTURING	ELECTRICITY	WATER SUPPLY	CONSTRUCTION
<b>AGE</b>						
0-14		0.000	0.490	0.000	0.000	0.058

*Education, marital status and caste in determining female employment in the industrial sector ..*

15-29	11.117	30.995	37.345	11.275	20.026
30-59	88.783	63.312	62.655	87.010	72.358
60 and above	0.099	5.204	0.000	1.715	7.559
<b>GENERAL EDUCATION</b>					
No Formal Schooling	0.000	24.727	16.912	53.637	55.869
Primary Schooling	0.000	21.65	0.000	14.893	23.135
Secondary Schooling	0.000	35.468	21.757	14.35	17.069
Higher Secondary Schooling	0.000	8.795	0.822	4.78	2.055
Graduate and above	0.000	9.359	60.509	12.34	1.871
<b>TECHNICAL EDUCATION</b>	0.000	2.987	29.136	2.703	0.800
<b>MARITAL STATUS</b>					
Never married	14.931	17.747	28.604	8.465	6.602
Currently married	65.989	69.469	55.223	54.445	73.691
Divorced/Separated	16.173	11.652	14.646	35.374	18.597
Widowed	2.907	1.132	1.527	1.716	1.11
<b>SOCIAL CLASS</b>					
Scheduled Caste	7.642	18.439	24.168	56.362	35.502
Scheduled Tribe	43.246	5.384	1.303	2.670	20.802
Other Backward Class	32.266	49.985	37.005	28.845	37.028
Others	16.846	26.192	37.525	12.124	6.668

Source: Author's calculation based on PLFS Unit Level Data 2019-2020

### ECONOMETRIC ANALYSIS

The econometric model can be described as-

$$Y = \beta_0 + \beta_1 * Gedu + \beta_2 * Tedu + \beta_3 * Mst + \beta_4 * Caste + \beta_5 * Reg + \mu$$

where  $\beta_0$  is a constant, Gedu is General level of Education, Tedu is Technical Education, Mst is Marital status, Caste is the division of social group, Reg is the regional variations and  $\mu$  is the stochastic error term. The dependent variable (Y) is defined as the odds ratio of female employment in the Industrial sector.

Table 6 presents the logistic regression results (adjusted odds ratios) between the dependent variable Female Employment in the Industrial sector i.e., employed and not employed, and independent variables vis General Education Level, Marital Status, Social Group and regions. It can be interpreted that the independent variables which are not significant with  $\alpha = 0.05$  are females with marital status as widowed and divorced. The case of females who do not have schooling is taken as the benchmark or the base category. The result from Table 10 shows that having some schooling increases the odds of females to get employed in the Industrial sector rather than having no schooling. Females with primary education have twice the odds of getting employment (2.091) and females with Secondary schooling have almost thrice the odds of employment in the Industrial sector (2.952). Surprisingly, it is seen that females with Higher secondary education have the more odds of employment in the Industrial sector than Graduated females. As one further looks into the causality of the independent variable never married as the benchmark category, it is seen that marriage increases the odds of females to get employed in the Industrial sector (1.971). In the third part on taking Scheduled Tribe as a benchmark category, the log of odds of Other Backward classes getting employment is higher (1.094) while the log of odds of female Scheduled Castes for getting employment in the Industrial sector is lower (0.466) than the benchmark category.

On delving into the regional analysis, it is observed that the log of odds of getting employment in almost all the regions (Western, Southern and Northern) are higher than the benchmark category i.e., Eastern region. The odds of female employment in the North Eastern region (0.859) are lower than Eastern region. Females living in the Southern region have the highest log of odds of getting Industrial employment among the females residing in all other regions (1.876). One of the logical inferences that can be drawn is that the major industrial base of India is situated in the Northern, Southern and Western region making these regions more employable. Tamil Nadu is the leading state with 38131 factories followed by Gujarat and Maharashtra with 26842 and 25972 factories respectively (ASI, 2018-19). Table 5 summarizes the logistic regression and its corresponding values obtained.

**TABLE 5:** Logistic Regression: Factors influencing female employment in the industrial sector of India.

INDEPENDENT VARIABLES	ADJUSTED ODDS RATIO	95%C.I.		LEVEL OF SIGNIFICANCE
		Lower	Upper	
No Formal Schooling	1			0.000
Primary Schooling	2.091	1.834	2.383	0.000
Secondary Schooling	2.952	2.586	3.37	0.000
Higher Secondary Schooling	3.838	3.389	4.346	0.000
Graduate and above	2.753	2.37	3.197	0.000
No Technical Education	1			0.000
Technical Education	1.259	1.018	1.559	0.034
Never married	1			0.000
Currently married	1.971	1.538	2.526	0.000
Widowed	0.875	0.689	1.111	0.272
Divorced/separated	0.966	0.753	1.239	0.785
Scheduled tribe	1			0.000
Scheduled caste	0.466	0.419	0.519	0.000
Other Backward class	1.094	1.004	1.192	0.041
Others	1.124	1.043	1.21	0.002
Eastern	1			0.000
North-Eastern	0.859	1.686	2.049	0.000
Southern	1.876	1.044	1.293	0.006
Northern	1.162	1.731	2.034	0.000
Western	1.305	1.196	1.424	0.000
Constant	0.046			0.000

## VI. MAJOR FINDINGS & POLICY IMPLICATION

The present study made an attempt to analyse the undermining determinants which impacts female employment in the Industrial sector of India. The major inferences drawn from the study are summarised below. The employment of females in India is low with a huge gender gap existing in the Industrial sector with approximately 82% comprising of males and a mere 18% comprising of females which prompts the need for immediate inclusion of gender employment in the Industrial sectors of India.

The present study has been conducted for the age group of 15-65 and it is found out that the majority of female employees working in the Industrial sector are within the age bracket of 30-59 indicating more experienced and skilled people are preferred than that newly employed or recruited. The econometric analysis showed a positive relation between general as well as technical education and log of odds of industrial employment. This indicates that there is scope for skill development, better and improved training processes for females in India.

On a thorough analysis into the social profiles of the employees, it is seen that though females who are not currently married consist of about 40 percent of the female population working in the Industrial sector, marriage doesn't act as a hindrance in the path of female employment in the Industrial sector. Females belonging to Other Backward Class have higher odds of getting employment than Scheduled caste and Scheduled Tribe females. According to 2019-2020 PLFS data, major percent of females working in the Industrial sector belong to the Other Backward class (44 percent).

The present study has also made an attempt to analyse the regional variations existing in the industrial sector. Southern region has the highest odds of females getting employed in the Industrial sector. From the PLFS report 2019-2020 it can also be concluded that presently employment is high in the Southern region of India accompanied with a high level of education of females in the Southern states. This prompts the need for the Northern and Eastern states to look into and adopt the policy implementation strategies carried out in Southern states of India.

The major inferences drawn in the above section prompts certain policy recommendations which would help in an inclusionary growth with social and gender justice. The government policies and intervention designed to counter this issue by introducing skill-based training programme did not bring much result post its implementation. A policy recommendation in this aspect can be postulated by adopting behavioural frameworks rather than traditional policy designing methodology. After the pandemic, a slowdown or recession is the perfect time for a country to expand its physical infrastructure i.e., expansionary fiscal policy. India is in need of world-

class physical infrastructure for robust economic growth into the middle of this century (Dham, 2021). The physical infrastructure in India is astonishingly inadequate for meeting the country's global ambitions with the major industrial base being located majorly in five states. Therefore, the government should invest in developing industrial infrastructure for increasing employment in the industrial sector specially in the Eastern and the North Eastern regions. It was also observed from the PLFS report that 60 percent of the people illiterates are females. This low figure is the result of not only economic factors but also social factors. Hence along with building educational institutions the government should design policies to create awareness about the importance of female education at a grassroot level. One simple way to achieve it by making it a compulsion or by giving monetary incentives to parents for educating their girl child especially in rural areas up to a certain age limit. From our analysis we found that the log of odds of getting employment in the Eastern and the North Eastern region are low. Though there is high industrial employment in the Northern region, the gender gap in employment is high. Therefore, the financial commission and the NITI Aayog must look into this aspect and provide monetary benefits for their industrial progress with increased employment potential for females.

Sustainable Development Goal (SDG), "Gender Equality" works towards the cause of attaining gender equality. As per the Economic Survey Report 2021-2022, performance on this indicator is not categorised as good indicating that the government should look into this indicator. The previous Millennium Development Goals (MDGs) served as an example of what is achievable when there is political will, supported by resources and policy measures, to advance gender equality. The SDGs are now offering a further revolutionary chance to step our support for women's empowerment. There are significant potential advantages for women as individuals, their families, societies, and national and international economies. All 17 SDGs recognise how important it is to involve women in driving global advancement in order to achieve sustainable development where gender parity and economic growth works together.

#### REFERENCES

- [1]. About Women Labour | Ministry of Labour & Employment. (n.d.). Retrieved July 28, 2022, from <https://labour.gov.in/womenlabour/about-women-labour>
- [2]. Accept Terms and Conditions on JSTOR. (n.d.). Retrieved July 28, 2022, from [https://www.jstor.org/tc/accept?origin=%2Fstable%2Fpdf%2F2095243.pdf&is\\_image=False](https://www.jstor.org/tc/accept?origin=%2Fstable%2Fpdf%2F2095243.pdf&is_image=False)
- [3]. Determinants of the Low Female Labour Force Participation in India. (n.d.-a). <https://doi.org/10.13140/RG.2.1.2837.5129>
- [4]. Determinants of the Low Female Labour Force Participation in India. (n.d.-b). <https://doi.org/10.13140/RG.2.1.2837.5129>
- [5]. Economic and Political Weekly. (2002a).
- [6]. Economic and Political Weekly. (2002b).
- [7]. Existing Reservation Quota Limit of the Indian States - News Analysis News. (n.d.). Retrieved July 28, 2022, from <https://www.indiatoday.in/news-analysis/story/existing-reservation-quota-limit-of-the-indian-states-1799705-2021-05-07>
- [8]. Gender Bias in the Scientific and Technical Labour Market: A Comparative Study of Tamil Nadu and Kerala on JSTOR. (n.d.). Retrieved July 28, 2022, from [https://www.jstor.org/stable/29794192?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/29794192?seq=1#metadata_info_tab_contents)
- [9]. Ghosh, B., & Mukhopadhyay, S. K. (n.d.). Displacement of the Female in the Indian Labour Force.
- [10]. Gupta, V. (2021). Female Employment in India: Tracking Trends During 2005–2019. *The Indian Journal of Labour Economics* 2021 64:3, 64(3), 803–823. <https://doi.org/10.1007/S41027-021-00330-0>
- [11]. How India can promote job creation - The Hindu BusinessLine. (n.d.). Retrieved July 28, 2022, from <https://www.thehindubusinessline.com/opinion/how-india-can-promote-job-creation/article35286136.ece>
- [12]. Issues and Challenges of Women Employees in Indian Technical Industries. (n.d.).
- [13]. Karan, A., Negandhi, H., Hussain, S., Zapata, T., Mairembam, D., de Graeve, H., Buchan, J., & Zodpey, S. (2021). Size, composition and distribution of health workforce in India: why, and where to invest? *Human Resources for Health*, 19(1). <https://doi.org/10.1186/S12960-021-00575-2>
- [14]. Mukherjee, S. S. (2015). Gender and Education More educated and more equal? A comparative analysis of female education and employment in Japan, China and India. <https://doi.org/10.1080/09540253.2015.1103367>
- [15]. Nair, G. (n.d.-a). Post-Reform Labor Market Paradoxes in India. In *International Review of Business Research Papers* (Vol. 4, Issue 4).
- [16]. Nair, G. (n.d.-b). Post-Reform Labor Market Paradoxes in India. *International Review of Business Research Papers*, 4(4), 396–405.
- [17]. *OcasionalPaper\_56*. (n.d.).
- [18]. Raj, M. (2014). Women Empowerment through Employment Opportunities in India. *International Journal of Management and International Business Studies*, 4(1), 93–100. <http://www.ripublication.com>



- [19]. Sharma, S., & Kaur, R. (n.d.). Glass Ceiling for Women and Work Engagement: The Moderating Effect of Marital Status. <https://doi.org/10.1177/2319714519845770>
- [20]. Shodhganga@INFLIBNET: An economic analysis of female beedi workers in tirunelveli district of tamilnadu. (n.d.). Retrieved July 28, 2022, from <https://shodhganga.inflibnet.ac.in/handle/10603/253668>
- [21]. Shodhganga@INFLIBNET: An economic study of industrial workers in Theni district. (n.d.). Retrieved July 28, 2022, from <https://shodhganga.inflibnet.ac.in/handle/10603/125100>
- [22]. Shodhganga@INFLIBNET: Education-employment profile of women: an analytical case-study of small scale units in an industrial estate. (n.d.). Retrieved July 28, 2022, from <https://shodhganga.inflibnet.ac.in/handle/10603/17149>
- [23]. Shodhganga@INFLIBNET: Gender dimension of employment in Karnataka a case study of Koppal district. (n.d.). Retrieved July 28, 2022, from <https://shodhganga.inflibnet.ac.in/handle/10603/98752>
- [24]. Skill India and Make in India: Can they Empower India's Women? (n.d.).
- [25]. Solving the Industrial Skills Gap | Automation World. (n.d.). Retrieved July 28, 2022, from <https://www.automationworld.com/process/workforce/article/22006009/solving-the-industrial-skills-gap>
- [26]. Sundari, S. (2006). Women in the labour market : a spatial analysis with reference to Tamil Nadu estate. *The Indian Journal of Economics*, 86(4).
- [27]. Sundari, S. (2020). Structural Changes and Quality of Women's Labour in India. *Indian Journal of Labour Economics*, 63(3), 689–717. <https://doi.org/10.1007/S41027-020-00245-2/FIGURES/9>
- [28]. Why\_are\_Educated\_Women\_Less\_Likely\_to\_Be\_Employed\_. (n.d.).wid98-2. (n.d.).
- [29]. Xavier, S. (n.d.). A Regional Analysis Of Female Workforce Participation Across Indian States An inquiry into the recent decline in female labour force participation in India.
- [30]. सांराय, &लयिककयकाया. (2019). आवधकम Periodic Labour Force Survey (PLFS) Ministry of Statistics and Programme Implementation वाषकरपोट Annual Report आवधकमबलसवण (पीएलएफएस Periodic Labour Force Survey (PLFS) Government of India Ministry of Statistics and Programme ImplementationinGoIStatsGoIStats Ministry of Statistics and Programme Implementation goistats. [www.mospi.gov.in](http://www.mospi.gov.in)[www.mospi.gov.in](http://www.mospi.gov.in)

Soumita Das. "Education, marital status and caste in determining female employment in the industrial sector of India: An exploratory analysis." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 27(12), 2022, pp. 11-19.