



Distribution of Workforce in Indian Industry: Inter State Variations

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Abstract

Lessons on the progress of Indian economy through the phenomenon of leapfrogging has been in the headlines of economic discussions all through the recent period of time. The paper aims at addressing the sectoral wise classification of workers within industry at the All-India level and the major states of India during 1983-2012. The rise in industrial employment share is almost entirely for construction particularly for the men and women workers of rural India during the post-reform years. However, the employment story is not the same for urban India. We could find significant state level employment variations across the different sub-sectors within the Indian Industry during the pre- and the post-reform years.

Keywords: Employment, Gender, Sectoral, Industry, Rural, Urban

Background:

Tales regarding distribution of workers across the different economic sectors of Indian economy has been narrated by many researchers, academicians, social scientists in the past. Lessons on the progress of Indian economy through the phenomenon of leapfrogging has been in the headlines of economic discussions all through the recent period of time. The academic literatures put forwarded by The Sunday Diplomat, 2024; Giri, 2022; Schwartzberg, 1963; Chand & Singh, 2022; Majumder, 2022; Bhaumik 2002 has repeatedly and unanimously harped upon the overcrowding of the workers in the primary sector of the Indian economy – hence resulting to increasing incidence of disguised unemployment in India. Now, the pertinent question that need to be addressed here is that what happens to this pool of disguised unemployed workforce. Where in the job world are they getting absorbed into after being thrown away from the primary sector. Are the sub-sectors within the secondary sector in India lending its helping hand to this pool of jobless workers. What sorts of sectoral variation could be traced within industry across the workforce of the different states of Indian economy should also be looked upon.

Objectives:

Against this backdrop, the concerned paper pertains to answer the above-mentioned questions. The main objectives of the paper appear to address the following issues –

- To look into the sectoral wise classification of workers within industry at the All-India level.
- To look into the employment behavior of workers within the secondary sector across the major states of India.

- c. To explain the industrial employment variations from a gender perspective across the major states of India.
- d. To find out answers as to why employment variations arise across the major states of India.

Data Base & Methodology:

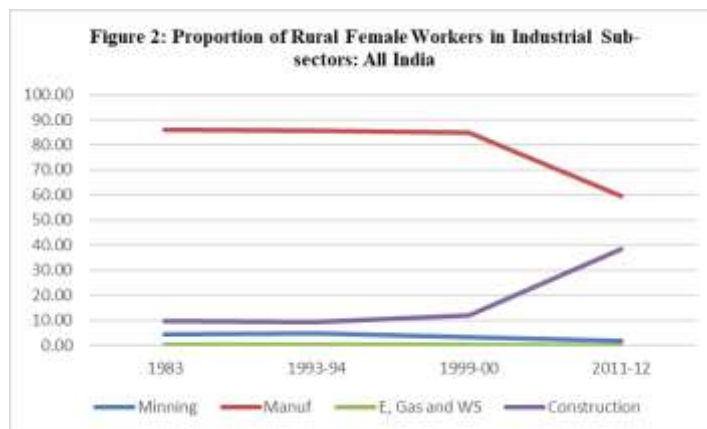
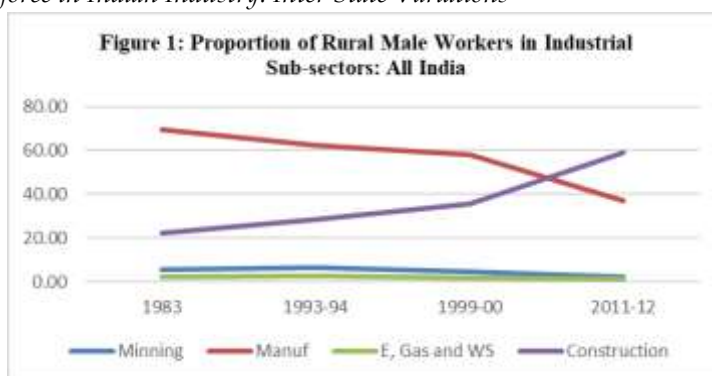
The main source of data in this study has been the Employment-Unemployment surveys conducted by the National Sample Survey Organization (NSSO). This study uses the data for four years: 1983 (38th round), 1993-94 (50th round), 1999-00 (55th round) and 2011-12 (68th round). We must note a fact here that years falling within 1983 to 1993-94 is regarded here as pre-reform era and the one in between 1993-94 to 2011-12 indicates the era of post-reform. Also, it must be mentioned that the employment estimates of this study are based on NSSO's Usual Status approach (US-PS+SS). The extraction and processing of the unit level information has been done using STATA 12 software package. All relevant tabulation exercises have been done in MS-EXCEL. Also, all necessary modifications have been considered such that the National Industrial Classification records of the years 1983 to 2011-12 could be compared for the study.

Apart from discussing the issue of sectoral employment at the all-India level, we have looked into the same for the industrial sectors across the 17 major states, mainly, Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. It may be noted that three new states have been formed in between our study period, which are Jharkhand, Uttarakhand and Chhattisgarh, carved out respectively from Bihar, Uttar Pradesh and Madhya Pradesh. So, we have data for these new states only for the year 2011-12 but not for the previous years. Therefore, in order to attain inter-temporal comparability in our analysis we have merged Jharkhand with Bihar, Uttarakhand with Uttar Pradesh and Chhattisgarh with Madhya Pradesh. Thus, any discussion regarding Bihar, Uttar Pradesh and Madhya Pradesh in our study would refer to these undivided states.

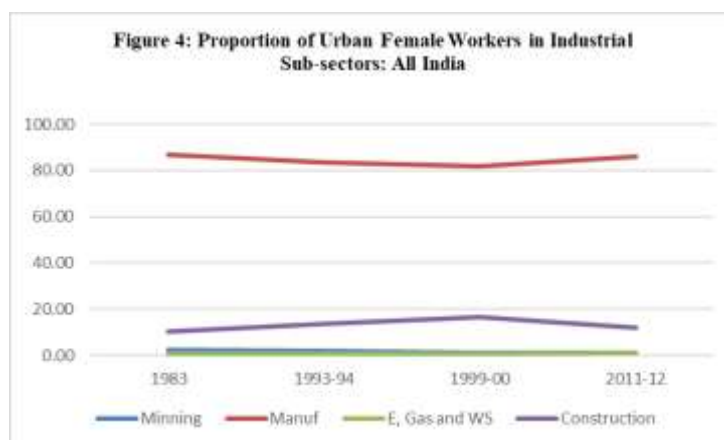
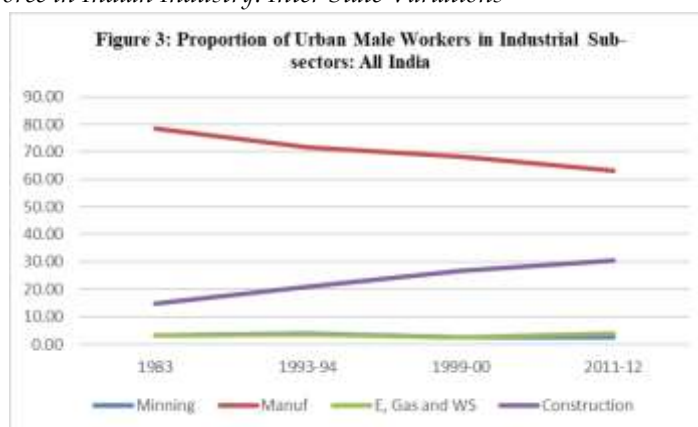
Results and Discussions

• Variations in Workforce within Industry: All-India Analysis

The analysis of the distribution of the workforce within the different sub-sectors of the secondary sector of the Indian economy brings into forefront some important observations for the period 1983 to 2011-12. Taking a closure look at the pictorial representation of the proportion of men and women workers across the sub-sectors of Indian Industry for rural India indicates that manufacturing has been the highest labor absorbing one (amongst mining, construction and electricity, gas and water supply) during the chosen period of time (Figure 1).



The proportion of rural Indian women (as seen in Figure 2) working in the manufacturing related activities has remained more or less consistent during the pre-reform years (1983 to 1993-94); however, a sharp decline has been noted for the same during the post 1999-00 years of study. Further, a complete reverse mirror image of the same has been seen for the rural women workers engaged in the construction sector for the entire post-reform years (1999-00 to 2011-12). One could easily trace out a steady and sharp rise in the engagement of Indian women of the rural areas in activities related construction works during the post-reform years. On the other hand, we observe engagement of rural men in construction-oriented tasks has surpassed their participation in manufacturing jobs particularly mid-1999-00 onwards. Hence, one may easily opine that there has been a significant job-switch cross for rural men (as seen from Figure 1) who are employed in Indian Industrial activities from manufacturing related tasks to construction works in the later half of the post-reform years.



On the other hand, manufacturing has always emerged as the top employer among all other sectors within industry for the men and women workers of urban India throughout the study period of pre- and post-reform. One notable observation in the context of urban India is that there is a sharp decline of women workers in the construction works in between the years 1999-00 and 2011-12. Thus, to conclude, the rise in industrial employment (i.e., mining, manufacturing, construction, electricity, gas and water supply) share is almost entirely for construction particularly for the men and women workers of rural India during the post-reform years. However, the employment story is not the same for urban India. This can be explained by the fact that majority of workers employed in urban construction projects are residents of rural India and hence are been counted as rural workers by the data enumerators. So, employment is getting generated in rural economy itself due to fall in the price of cement and rising real agricultural wage especially after 2005 (Nagraj, 2016).

Another striking observation that can be reached upon is that the construction jobs are less women employment friendly all throughout the period of study. This could be linked to the fact that the high skilled end operations in construction related activities demand less of women workers guided under the belief that the skill quotient of women workers are far below their male counterparts (Baruah, 2010). Such similar incidents of under evaluation of women's skill levels is also well -reflected in the employment share of another sub-sector of industry – Electricity, Gas and Water Supply during the period of study.

- **Variations in workforce within Industry: A State Level Analysis**

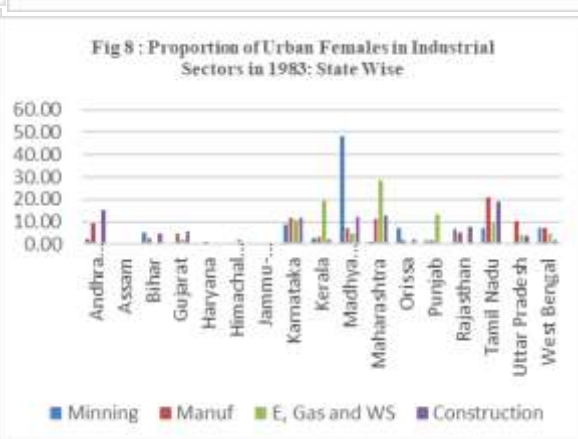
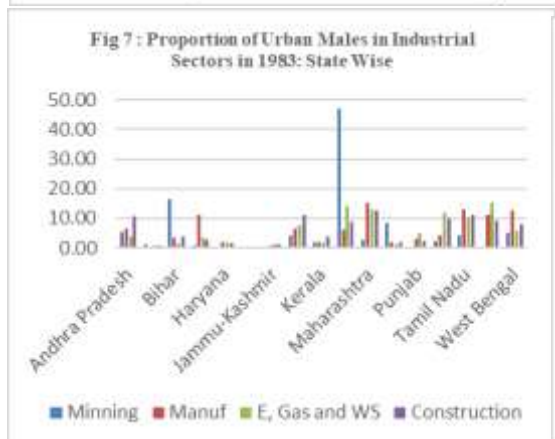
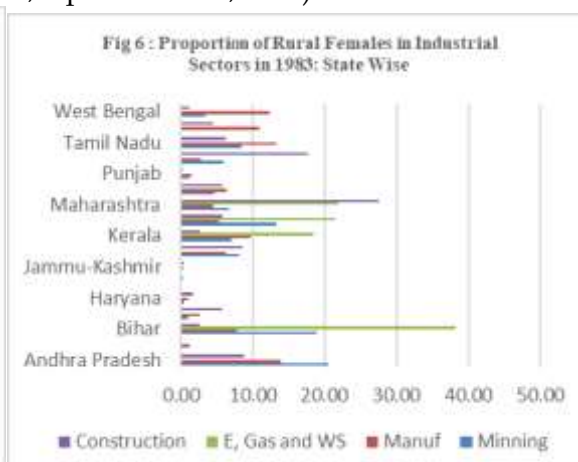
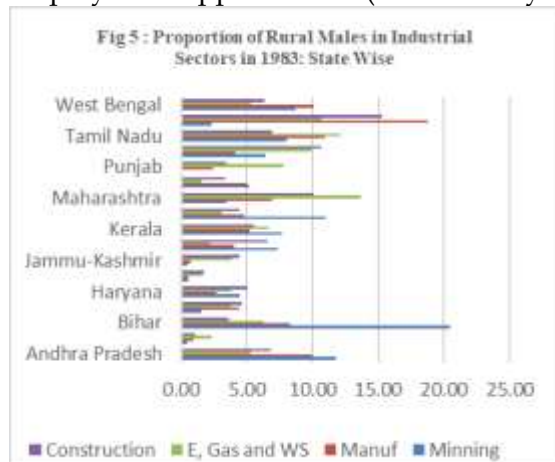
As we all are aware of the fact that in India, the economic sub-sectors which comprise of the secondary sector or industry comprises of mining, manufacturing, electricity, gas and water supply and construction. In this section, we are focused towards understanding the state level variations noted with regard to distribution of Indian workforce across these economic sub-sectors within industry. The period of time chosen by us for our study here is ranging in between 1983 to 2011-12 – the pre- and post-reform years. Further, the analysis here incorporates the behavior of both male and female workers of the rural and urban areas of the major states of India with the aim of having a better and disaggregated picture.

- **Pre-reform Period Analysis:**

Amongst all the major states of India, the rural male residents of Bihar are employed in activities related to mining & quarrying in highest proportion during the year 1983. Our tabulations have pointed out that a good proportion of the rural men workforce of Madhya Pradesh, Kerala, Karnataka and Andhra Pradesh are performing mining & quarrying works in the same time period. In contrast to rural men, mining does not seem absorbing rural women workers to a larger extent across all the major states of India for the chosen year. The only exception in this regard are the rural women of Andhra Pradesh – this can be linked to the wide prevalence of domestic violence and spousal violence in this southern state of India which might have acted as a reason behind accepting informal mining activities like collecting and selling minerals or working in small-scale mines forcibly (Dutt, 2007). In fact, we reach upon the finding that during the pre-reform years, jobs generated out from the mines and quarrying pits have absorbed a high per cent of urban dwellers (both men and women) of central and eastern states of India - Madhya Pradesh, Bihar and Orissa. Few plausible explanations put forwarded by scholars in the existing literature includes creation of welfare funds, enactment of legislation for Resettlement and rehabilitation of mineral-mining-project affected population by the concerned state governments and availability of ample mining resources in the states (Teri, 2001).

Manufacturing has been a significant employment provider to the men and women of the rural areas of Uttar Pradesh, West Bengal and Tamil Nadu during the pre-reform period. On the other hand, urban men of Gujarat, Maharashtra and West Bengal are working into the Indian manufacturing industry in highest proportion. In fact, the construction sector has absorbed a good proportion of urban women workers across all the major states of India in 1983 barring West Bengal. This could be explained in terms of focus on unpaid work, lack of education and skills training for women in construction related fields and also the prevalence of traditional gender roles that prioritized women's domestic duties (Sarkar 2015). Mining and Manufacturing went hand-in-hand in absorbing good per cent of urban women of Bengal. It is worth to mention here that construction has played the lead role in absorbing rural women workers of Rajasthan, Gujarat and Maharashtra in the same time frame. Parallel to construction works, manufacturing and mining appears as one of the promising sectors for the rural women of Orissa and Karnataka respectively. In fact, for Orissa, it is seen that both manufacturing and mining are of similar importance so far as absorption of rural male workers are concerned. Such an outcome can be explained by the

state's agricultural backwardness, poverty, and the emergence of rural non-farm employment opportunities (Subrahmanyam, Aparna & Rao, 2010).



The public utilities sector (electricity, gas and water supply) has also been a key provider of employment to the rural males of Maharashtra, Tamil Nadu, Punjab, Assam in 1983. The rural women workers of Bihar, Madhya Pradesh and Kerala has been found working in greater numbers in the utilities in the same year. The concerned sector has seemed employment friendly for the men of Rajasthan and Uttar Pradesh and women of Kerala, Maharashtra and Punjab of urban India during the pre-reform year. The growing importance of public utilities for these male workers of Punjab during these years can be understood from the increasing landlessness and the agrarian crisis in the state which opened the need for alternative employment opportunities – where public utilities offering a relatively stable source of income (Sethi & Kaur, 2013).

• Post-reform Period Analysis:

During the initiating year of reform policy, a good proportion of rural men are found employed in laborious activities in mines and quarrying sites in a large number of states, namely, Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Orissa and Rajasthan. One should note here that a greater proportion of rural men workers of Rajasthan are also found engaged in construction works parallel to working as miners. Amongst all the major states of India, rural men of Bihar and Punjab are working in public utilities sector in higher proportion. The principal work activity of the rural men of Uttar Pradesh, Gujarat,

Tamil Nadu and West Bengal is manufacturing in 1993-94. It has been seen that the rural male workers of Maharashtra are working in more or less equal proportion in manufacturing, construction, electricity, gas and water supply during the study period.

In the later half of the post-reform period, we note that the public utilities sector is attracting rural male workers from a larger number of states (Himachal Pradesh, Jammu-Kashmir, Karnataka, Orissa, Punjab and Tamil Nadu) compared to the initiating year of reform policy (stemmed from a combination of factors, including infrastructure development, economic opportunities, and traditional labor roles (Mospi, 2014). The new entrants to the manufacturing sector have been Haryana and Maharashtra for these rural men during the year 2011-12. Among the major states, Bihar and Uttar Pradesh have shown remarkable increase in engagement of rural men workers in construction industry during the years of post-reform. A similar increasing trend of engagement in mining and quarrying has been noted for rural women in greater number of states all throughout the period of post-reform years.

In fact, the increasing conglomeration of these women workers is found in the mines of the eastern states of India – Bihar, Assam and Orissa and in the Southern State – Andhra Pradesh during the study period. It needs attention here that the importance of the construction sector in terms of employment provider is growing at a consistent rate for the urban men in most of the states in between the years 1993-94 and 2011-12. The Southern states namely Kerala and Karnataka have absorbed the maximum proportion of urban men in construction works amongst all the major states of India in 2011-12. All through our analysis, for the first time we found the eastern state of India – West Bengal has recorded a good proportion of its urban males engaged in mining works (this can be owed to the promising investment opportunities in the sector created by the Government of West Bengal (<https://wb.gov.in/business-mining-industry.aspx>). A point that needs attention is that construction works has absorbed a good proportion of women in Rajasthan in the rural and urban areas in the year 2011-12. This increased participation of women in construction work was partly due to the expansion of public works employment, particularly through schemes like MGNREGS, which created opportunities for rural women, and the higher wages offered in construction compared to agricultural labor (Mahajan & Nagraj, 2017).

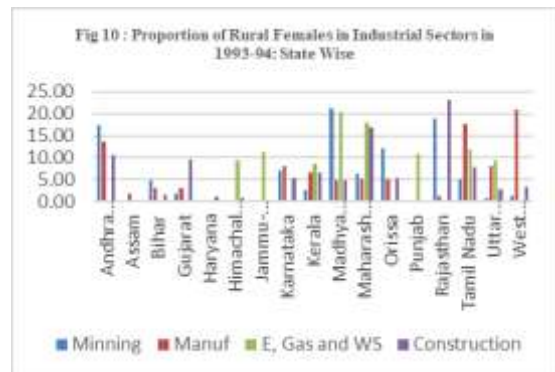
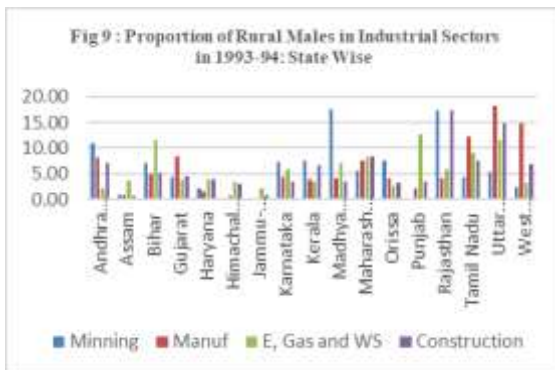


Fig 11 : Proportion of Urban Males in Industrial Sectors in 1993-94: State Wise

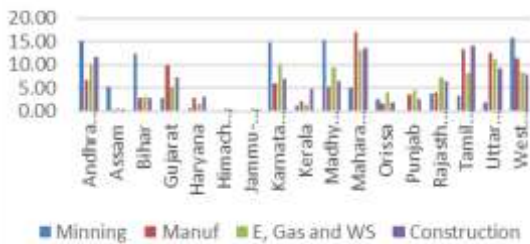


Fig 12 : Proportion of Urban Females in Industrial Sectors in 1993-94: State Wise

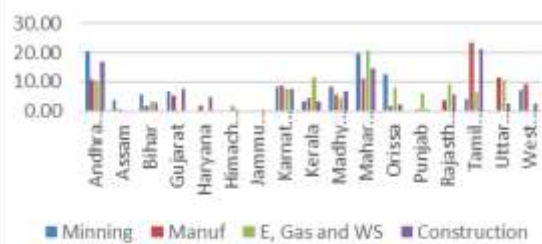


Fig 13 : Proportion of Rural Males in Industrial Sectors in 1999-00: State Wise

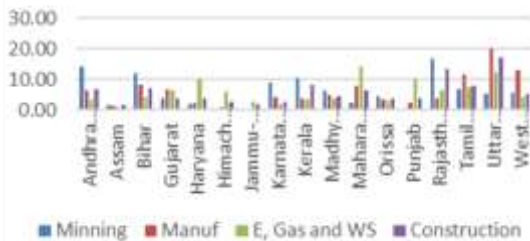


Fig 14 : Proportion of Rural Females in Industrial Sectors in 1999-00: State Wise

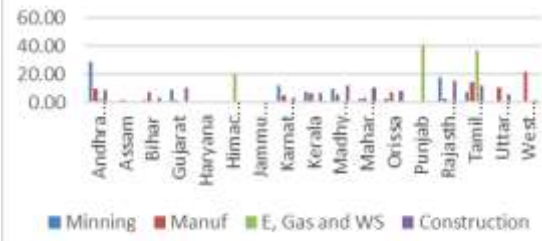


Fig 15 : Proportion of Urban Males in Industrial Sectors in 1999-00: State Wise

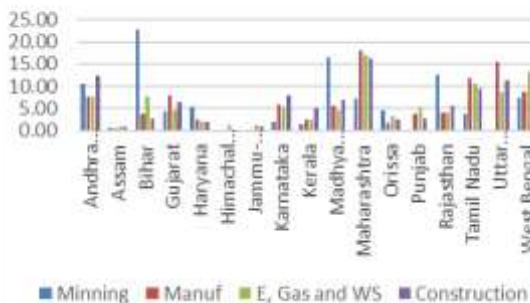


Fig 16 : Proportion of Urban Females in Industrial Sectors in 1999-00: State Wise

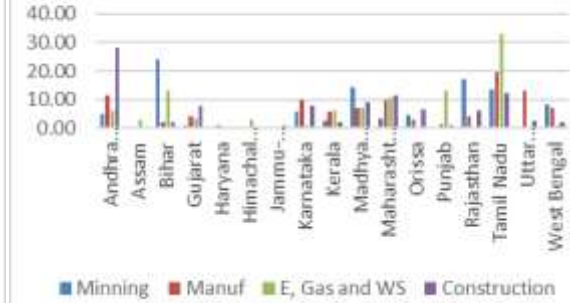


Fig 17 : Proportion of Rural Males in Industrial Sectors in 2011-12: State Wise

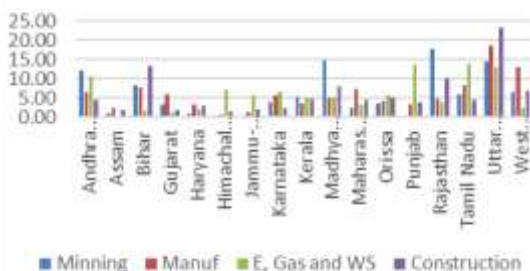
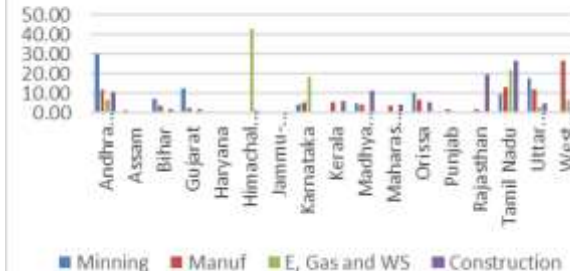
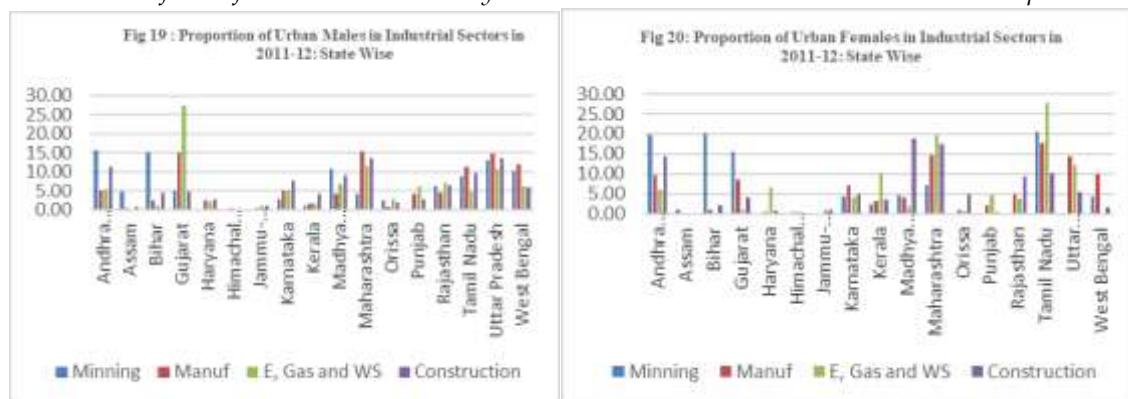


Fig 18 : Proportion of Rural Females in Industrial Sectors in 2011-12: State Wise





Conclusion

The paper has been successful enough to conclude that the secondary sector of the Indian economy is playing a crucial role in absorbing the huge pool of job-seekers in them during the chosen period of study (1983 to 2011-12). The analysis at the All-India level brings into forefront that across the sub-sectors of Indian Industry for rural India, manufacturing has been the highest labor absorbing one (amongst mining, construction and electricity, gas and water supply) during the chosen period of time. One could easily trace out a steady and sharp rise in the engagement of Indian women of the rural areas in activities related construction works during the post-reform years. There has been a significant job-switch cross for rural men who are employed in Indian Industrial activities from manufacturing related tasks to construction works in the latter half of the post-reform years. The rise in industrial employment (i.e., mining, manufacturing, construction, electricity, gas and water supply) share is almost entirely for construction particularly for the men and women workers of rural India during the post-reform years. However, the employment story is not the same for urban India. The construction jobs are less women employment friendly all throughout the period of study. Parallel to this, we could find significant state level variations across the different sub-sectors within the Indian Industry during the pre- and the post-reform years.

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