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An Analysis of Occupational Classification in India: An Evidence from Labour Force Survey

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Abstract

Occupation plays a crucial role in the livelihood of an individual and a household for their survival. India is a very diverse country and so has several types of occupations available to employ. However, the classification of the occupations has certain patterns and specificity in the sense of regions, gender, caste, and class. In this paper, an analysis has been performed for several occupational groups across the sector (rural-urban) and sex (male-female) based on the several age groups to understand the dynamics of occupations with respect to the age categories. For the purpose, the first periodic labour force survey 2017-18 has been used along with the 'one' digit code of national classification of occupation- 2004. This study is analytical and descriptive. The result finds the existence of rural-urban and male-female dimensions in the choice of occupation across the age groups of an individual. Most of the workers are employed in agriculture occupations, especially in the rural sector. The median age of a worker is highly concentrated for the age group of 30-44 years. A significant proportion of workers are still occupied in several occupations even after 60 years and old. This implies the need for a policy suggestion to increase the retirement age proportional to several occupations.

Keywords: Occupations, Age-Structure, Labour Force, Employment- Unemployment, India

I. Introduction

Labour force participation is an essential parameter to determine the demographic structure of an economy in the sphere of employment and unemployment situation. Several studies significantly point out the importance of demography and geography aspects in the labour market (Hollywood, Brown, Danson, & McQuaid 2007; Kancs 2011). Recent studies found that the overall worker participation ratio as well as labour force participation ratio are declining across the categories in India. Whereas, especially the women, labour force participation are declining rapidly (Mehrotra 2017; Desai & Joshi 2019; PLFS 2019). On the other hand, higher education entitlement of youth delayed the entry of the younger population in the labour market (Desai & Joshi 2019). In the labour market, despite declining the labour force, the choice of occupation for an individual has an important role. In India, very few studies focus on the part of the occupation and categorise them among the several socioeconomic categories.

The biological and physical structure plays an essential role in determining the type of job profile they choose. There are certain occupations considered as 'women-centric' and others as 'men centric.' The occupations identified for women-centric are in the field of medicine in the form of nursing, childcare, and teaching and in the care of old & sick people (Cole 2014). Whereas, there is a specific occupation identified suitable based on the geography (Rural and Urban). Occupation based on agriculture is mostly recognized for rural people, whereas most of the information technology and manufacturing jobs are based on urban settings. Among these identifiable factors, age structure has a very significant role in determining the choice of occupation by an individual. Age plays a very crucial role in determining the retirement age for an individual for occupations (Smith 1969). In India, we have a wide range of retirement age based on the occupation, but for most of the occupations, the retirement age is 60 years. However, for the occupation in higher like professorship and lecturer or in some judicial services, the retirement age is beyond 60 years. We talk about the retirement age most in case of formal employment, especially in the government sector. But in the private sector, there are no such regulations strictly followed.

Considering upon the above factors and looking upon the importance of the study, the main objectives of this paper are to analyse the occupational nature of an individual across the sector (rural-urban) and sex (male-female), and the pattern of occupations and its relationship along the age groups defined underneath. There are very few papers available on such a diverse issue, especially in the Indian context. This study adds value to the existing literature and discusses the age-specific occupations in India using the latest available labour force survey data. The paper is divided into four sections – the first section is the introduction of the study to discuss the relevance of the study. The second section elaborates on the data and methodology of the study, followed by the result and discussion in the third section. This section analyse the occupational structure based on sector, sex, and age groups. The last and final fourth section sums up the paper in the form of a conclusion of the study.

II. Data and Methodology

This paper employs periodic labour force survey (PLFS - 2017-18) data for the analysis. The periodic labour force survey (PLFS) is the first survey on the employment and unemployment situation in India after the employment unemployment situation survey conducted during 2011-12. The PLFS report was published in June 2019, and this survey had been conducted with some modifications to the earlier schedule of the Employment Unemployment survey to overcome the laggings between the survey period and report publications (PLFS 2019; NSSO 2014). Unit-level data for the first visit only of PLFS has been used for this study. Overall, the number of observations in PLFS is 433339, with 102113 Household samples. But in this paper, the individuals of age above 14 years have been used for the analysis; the reason for this is that as per the child labour law in India, individuals age below 15 are not eligible for work in any establishment.

This paper is analytical and descriptive. The descriptive statistics and various tables and figures have been generated using unit-level PLFS data. Furthermore, the overall age of an individual has been categorised into six groups in the analysis of occupation for the following age categories. These individuals are 15-21, 22-29, 30-44, 45-59, 60-75, and 75 to above. For the Occupational Classification, national classification of occupation (NCO) - 2004 has been used. Further, various occupations are classified into 1 to 3 digit codes in PLFS. Here, only the one-digit code in the form of 10 occupational groups has been classified using both principal and subsidiary status (PS+SS) of employment.

III. Results and Discussion

In India, the nature of occupational varies widely across the occupational classification as well as rural-urban setup. The broad occupational classification is shown in Table 01, and Figure 01 resembles a clear distinction between the occupation preferences among the rural and urban sectors. Further, the age-wise classification of occupation, as shown in figure 01, exhibits the importance of the choice of occupation based on different ages of an individual (Kaufman & Spilerman, 1982). In the rural sector, occupations in agriculture and fishery are dominant by around 42 percent among all occupation classification. Simultaneously, clerks have the least and only one percent contribution, followed by professionals occupation. Elementary occupation has the second most choose an occupation in a rural area after agriculture. Individuals engaged in the construction and manufacturing sector are mostly classified in the elementary occupations categories.

In the urban sector, about 18 percent of individuals are engaged in craft and related trades, followed by elementary and service workers. However, it is found that most of the occupation requires higher educational qualifications are centered among the urban sector. The occupation identified as legislators, senior officials, and managers is mostly concentrated in the urban rather than in rural. The jobs of clerks are mostly in public or government sector-oriented, and therefore most of the clerks are in urban than rural. Overall still, agriculture (31.14 %) is the most preferred occupations for most individuals, followed by occupations in constructing and manufacturing sectors (24.73%).

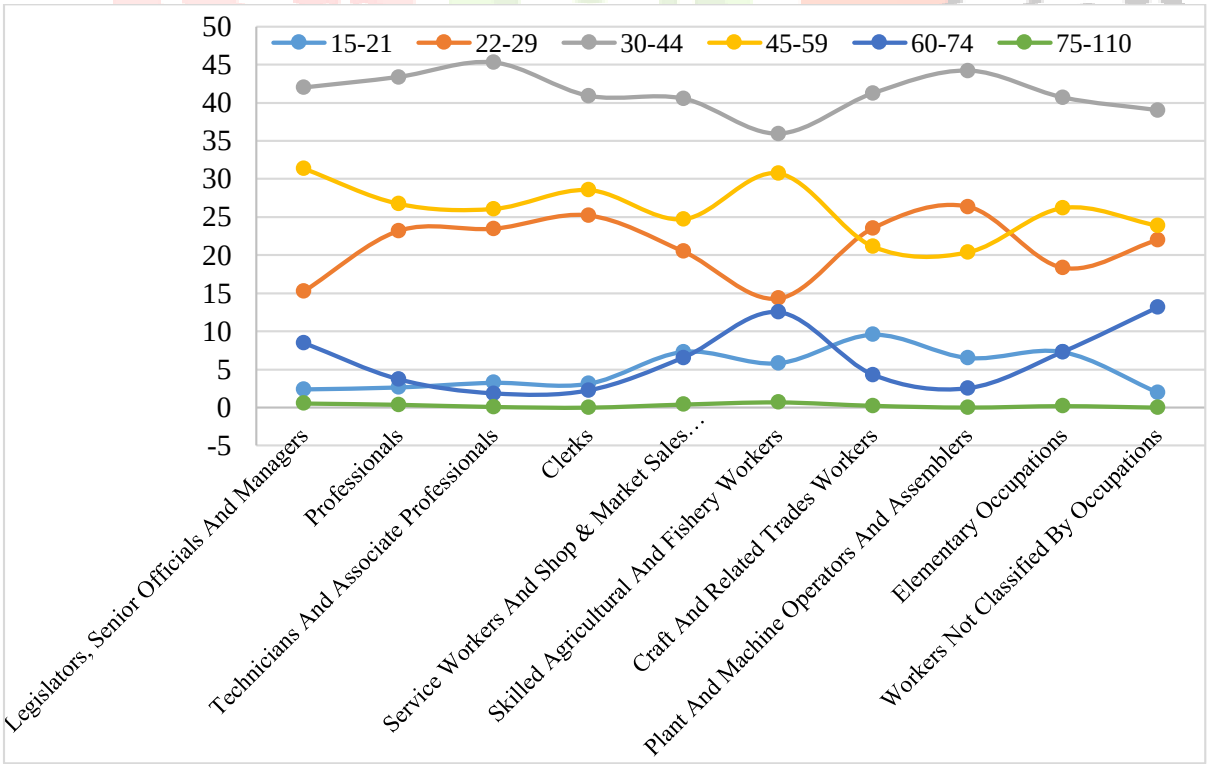
Table 01: Occupational Classification sector-wise.

Sl. No.	Occupations	Rural +Urban		Rural		Urban	
		N@	SH	N	SH	N	SH*
1	Legislators, Senior Officials And Managers	12,232	7.37	3,948	4.59	8,284	14.29
2	Professionals	8,373	4.08	2,349	1.97	6,024	9.32
3	Technicians And Associate Professionals	7,736	3.98	2,930	2.51	4,806	7.63
4	Clerks	4,282	1.96	1,173	1.04	3,109	4.26
5	Service Workers And Shop & Market Sales Workers	18,005	9.15	6,543	6.3	11,462	16.26
6	Skilled Agricultural And Fishery Workers	40,222	31.14	37,310	42.04	2,912	4
7	Craft And Related Trades Workers	19,094	11.8	8,549	9.17	10,545	18.36
8	Plant And Machine Operators And Assemblers	9,778	5.75	4,303	4.36	5,475	9.23
9	Elementary Occupations	30,248	24.73	21,060	27.99	9,188	16.62
x	Workers Not Classified By Occupations*	69	0.05	35	0.05	34	0.04
	Total	**1,50,039**	**100**	**88,200**	**100**	**61,839**	**100**

*Due to very small sample size with respect to other occupations, this category has been dropped for analysis purposes. @ = Number of samples used *Share of workers in total occupations.
Source: Author's estimation.

Figure 01 shows the age-wise classification of various occupations across the age categories. It is evident from the figure that age has a significant role in the classification of occupation and its choice by an individual. The youngest labour force of age between 15 to 21 years are mostly occupied in craft and trade-related occupations. The younger labour force is mostly occupied in some skilled work, i.e., plant and machine operators and assemblers. The median age is found to be between 30 to 44 years of age, where maximum individuals are employed with uniform occupational distributions. The most interesting fact is that people aged over 60 years are actively employed in major occupations—the most preferred occupation for over 60 years in the agriculture sector.

Figure 01: Age-Wise Occupational Classification.



Source: Author's estimation.

IIIa. Age-wise occupational classification by sectors.

The availability of jobs varies widely for rural and urban sectors. The urban sector is recognized for a better employment opportunity and well-paid jobs than the rural sector. The neoclassical theory of migration and development also suggests that the wage differential is the prime reason for the rural to urban migration (Lewis 1954; Ranis & Fei 1961; Lucas 2004). The urban setup is known for industrial development with a varied level of occupations. In the hierarchy of the job ladder, the importance of age in the choice of occupation cannot be ignored. Table 02 explicitly shows the rural-urban divide in the occupation classifications based on the age groups of an individual. It shows that, in the rural sector, about 9 percent of workers aged above 60 years are engaged in any occupation identified. Whereas engagement of aged above 60 years is slightly less in the urban sector but still significant.

Table 02: Rural-Urban Classification of Occupation.

NCO Codes	Occupations	Mean	AGE GROUPS					
			15-21	22-29	30-44	45-59	60-74	75-110
		RURAL						
1	Legislators, Senior Officials And Managers	41.16	2.75	16.64	39.65	31.27	9.17	0.51
2	Professionals	38.35	3.05	22.9	42.87	26.42	4.5	0.26
3	Technicians And Associate Professionals	37.75	3.1	20.63	47.82	26.81	1.63	0.01
4	Clerks	37.32	2.8	25.76	40.92	28.93	1.59	0
5	Service Workers And Shop & Market Sales Workers	38.11	7.09	20.47	41.19	24.5	6.28	0.46
6	Skilled Agricultural And Fishery Workers	41.76	5.9	14.52	36.06	30.55	12.3	0.67
7	Craft And Related Trades Workers	35.54	10.22	24.55	40.37	21	3.6	0.26
8	Plant And Machine Operators And Assemblers	34.42	7.18	31.19	43.02	16.36	2.24	0.01
9	Elementary Occupations	38.58	7.44	18.64	40.4	26.05	7.3	0.17
x	Workers Not Classified By Occupations	43.86	1.72	22.35	38.23	21.26	16.44	0
	Total	39.51	6.55	18.23	38.94	27.25	8.61	0.41
		URBAN						
1	Legislators, Senior Officials And Managers	41.59	2.11	14.17	43.82	31.41	7.9	0.58
2	Professionals	38.37	2.43	23.32	43.62	26.91	3.29	0.43
3	Technicians And Associate Professionals	37.22	3.39	25.78	43.17	25.46	2.04	0.16
4	Clerks	38.09	3.33	24.86	40.88	28.3	2.63	0
5	Service Workers And Shop & Market Sales Workers	38.32	7.52	20.51	39.88	24.94	6.79	0.36
6	Skilled Agricultural And Fishery Workers	45.50	4.06	9.18	32.56	35.17	17.56	1.49
7	Craft And Related Trades Workers	36.81	8.73	22.28	42.3	21.31	5.16	0.22
8	Plant And Machine Operators And Assemblers	37.20	5.74	20.66	45.57	25.14	2.88	0.01
9	Elementary Occupations	39.03	6.67	17.19	41.79	26.75	7.3	0.29
x	Workers Not Classified By Occupations	40.61	2.65	21.11	41.04	30.76	4.43	0
	Total	38.73	5.55	19.79	42.08	26.3	5.93	0.35

Source: Authors estimation.

The median age for all occupations is higher in rural (39.51) than the urban (38.73) by almost one year. It means that in the rural sector, workers work for an extra one year of their age in comparison to the urban sector. It is to note that, despite having a higher percentage of workers in agriculture and fishery aged over 60 years in the urban sector is about 5 percent higher than the rural sector. Most of the workers for all occupations are of the age group 30-44 years of age for rural and urban sectors. However, the oldest age is found in both rural and urban sectors in the agriculture and fishery sector only. Overall, it can be said that the disparity in the rural and urban sectors for some occupation is quite evident along with the age groups of the workers.

IIIb. Age-wise occupational classification by Sex

Several occupations require the physical and specific biological need to operate. The division of works based on gender is highly recognised. Some occupations are highly centric toward women, and some are towards men (Gamarnikow 1978). Several studies found that the wage-gap across gender is always consistent throughout occupations (Menon & Rodgers 2009; Mahajan & Ramaswami, 2017). Table 03 shows the occupational classification for several age groups for males and females separately. The choice of occupation by females has a unique phenomenon. However, the decline of women's labour force participation in the labour market is the most cited work in the recent period. As per the latest PLFS, women participation has been declining by two-digit numbers (PLFS 2019).

Table 03: Age-wise occupational classification by sex.

NCO Codes	Occupations	Mean	Freq.	AGE GROUPS					
				15-21	22-29	30-44	45-59	60-74	75-110
	Male								
1	Legislators, Senior Officials And Managers	41.58	9.02	2.3	15.16	41.33	31.94	8.71	0.56
2	Professionals	39.50	5.13	2.1	20.09	42.97	29.63	4.71	0.49
3	Technicians And Associate Professionals	37.87	4.37	2.8	22.98	45.27	26.6	2.21	0.14
4	Clerks	38.46	2.9	2.69	23.46	40.59	30.81	2.46	0
5	Service Workers And Shop & Market Sales Workers	38.01	12.91	7.7	21.2	39.97	24.16	6.51	0.46
6	Skilled Agricultural And Fishery Workers	42.49	24.71	5.95	14.4	33.48	30.91	14.36	0.91
7	Craft And Related Trades Workers	36.24	13.64	9.25	23.67	40.83	21.69	4.28	0.27
8	Plant And Machine Operators And Assemblers	35.68	8.17	6.4	26.49	44.13	20.5	2.47	0.01
9	Elementary Occupations	38.03	19.11	8.62	20.09	38.64	24.97	7.43	0.23
x	Workers Not Classified By Occupations	42.59	0.05	2.11	22.09	41.28	22.24	12.29	0
	Total	39.31	100	6.56	19.2	38.58	26.84	8.35	0.47
	Female								
1	Legislators, Senior Officials And Managers	40.35	5.21	2.93	15.9	45.72	27.91	7.05	0.49
2	Professionals	35.22	7.1	4.14	31.63	44.44	18.78	0.94	0.06
3	Technicians And Associate Professionals	36.70	7.81	4.13	24.32	45.26	25.09	1.18	0.01
4	Clerks	34.81	2.71	5.11	33.1	42.28	18.26	1.24	0
5	Service Workers And Shop & Market Sales Workers	39.18	8.92	5.46	17.21	42.97	27.47	6.73	0.15
6	Skilled Agricultural And Fishery Workers	40.30	33.95	5.52	14.1	42.52	30.23	7.49	0.14
7	Craft And Related Trades Workers	35.52	9.61	10.94	22.96	43.03	18.64	4.34	0.1
8	Plant And Machine Operators And Assemblers	36.14	0.91	9.79	22.62	45.91	17.41	4.27	0
9	Elementary Occupations	40.29	23.75	3.9	13.96	45.8	29.27	6.95	0.11
x	Workers Not Classified By Occupations	48.60	0.03	0	20.82	4.89	48.32	25.97	0
	Total	39.22	100	5.28	16.96	44.01	27.46	6.17	0.13

Source: Authors estimation.

It is evident from the table that, overall, the median age for both male and female are almost the same. Interestingly, the female participants of the age group of 30-44 years of age are much higher than male participation. But, in the age group of 22-29 years, the participation of females is relatively lower than the male workforce. This is true in the sense that the female of this age is most get marriage and indulge herself in household works and the care of their child. More male workers are found to be engaged in the agriculture and fishery occupations than for the female.

IV. Conclusions

Several studies estimated the relationship between the age and industrial classifications in India. However, very few studies show the importance of occupational classification and its relations with the age of a worker. This study fulfills this gap by utilizing the latest available data from the periodic force survey 2017-18. Therefore, the main objectives of this study are to understand the pattern of several occupational classifications based on several age groups. Further, analyse the relationship across the sector and gender dimension using the national classification of occupation-2004. The study shows some important and relevant findings. The study finds the existence of rural-urban and male-female dimensions in the choice of occupations across the age groups of an individual. However, the need for an increase in the retirement age is quite evident. We have found that a significant proportion of workers are still indulged in several occupations even after 60 years and old. The median age for workers found to be in the age group of 30-44 years of age. Whereas the disparity in the median age between rural and urban sectors is evident but missing among males and females. This study adds value to the available studies and validates the existing disparity among the several occupations across the sector and gender based on the several age groups of the workers.

V. References

Cole, S. (2014). *What are the Ages of the Oldest and Youngest Employees ?: An Analysis of Age by* (No. 2014–34)

Desai, S., Joshi, O. The Paradox of Declining Female Work Participation in an Era of Economic Growth. *Ind. J. Labour Econ.* **62,** 55–71 (2019). https://doi.org/10.1007/s41027-019-00162-z

Gamarnikow, E. (1978). Sexual division of labour: the case of nursing. *Feminism and materialism: Women and modes of production*, 96-123.

Hollywood, E., Brown, R., Danson, M., & McQuaid, R. (2007). Demographic and labour market change: the dynamics of older workers in the Scottish labour market. *Scottish Geographical Journal*, *123*(4), 242-256.

Kancs, D. A. (2011). The economic geography of labour migration: Competition, competitiveness and development. *Applied Geography*, *31*(1), 191-200.

Kaufman, R. L., & Spilerman, S. (1982). The age structures of occupations and jobs. *American Journal of Sociology*, *87*(4), 827-851.

Lewis, W. A. (1954). Economic development with unlimited supplies of labour.

Lucas, Jr, R. E. (2004). Life earnings and rural-urban migration. *Journal of political economy*, *112*(S1), S29-S59.

Mahajan, K., & Ramaswami, B. (2017). Caste, female labor supply, and the gender wage gap in India: Boserup revisited. *Economic Development and Cultural Change*, *65*(2), 339-378.

Mehrotra, S., & Parida, J. K. (2017). Why is the labour force participation of women declining in India?. *World Development*, *98*, 360-380.

Menon, N., & Van der Meulen Rodgers, Y. (2009). International trade and the gender wage gap: New evidence from India's manufacturing sector. *World Development*, *37*(5), 965-981.

NSSO. (2014*). "Employment and Unemployment Situation in India,"* (July 2011- June 2012).

New Delhi: Ministry of Statistics and Programme Implementation, Government of India.

PLFS. (2019). "*Annual Report: Periodic labour force Survey (PLFS)",* (July 2017- June 2018). New Delhi: Ministry of Statistics and Programme Implementation, Government of India.

Ranis, G., & Fei, J. C. (1961). A theory of economic development. *The American economic review*, 533-565.

Smith J. M. (1969). Age and occupation: a classification of occupations by their age structure. *Journal of gerontology*, *24*(4), 412–418. https://doi.org/10.1093/geronj/24.4.412