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Wage Disparities and Occupational Segregation by Gender in India: An Empirical Analysis using PLFS Survey Data 2017-18 to 2021-22

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Abstract

This paper explores the magnitude and evolution of gender based occupational segregation in India for the period 2017 to 2022, and the gender wage gap corresponding to different groups of occupation. A disproportionately large percentage of the working age group women are engaged in the unpaid nurturing, caregiving works, domestic chores or other support giving based services. The Periodic Labour Force Survey data sets (2017-18 to 2021-22) has been used for the analysis. The national and international definition of the work and employment differs. Focusing on the marketed economic activities only undermine women's work to a great extent. But again, not all marketed economic activities are also not recognized for the accounting labour statistics. The first objective of the paper is to examine whether women's work force participation rate significantly differs from men if those unrecognized works get their recognition. Further skill based occupational groups has been constructed in line with International Standard of Occupations and it has been reflected that how women's' work highly concentrated in low and unskilled and low paying occupations in the care giving, sales, teaching, teaching supports and labourers kind of works. Considering the daily real wages for the regular and casual workers, the study unveils the existence of gender wage gap too. It has been found that it is the Diploma and Certificate level of education and age give women the edge to fight against the pay disparity. A mapping exercise reveals that contrary to our perception, it's the southern part of India is the underperformer in terms of pay equity, despite them having higher social development indicators. The econometric analysis of wage disparity, followed three levels of linear regression approach and the Multinomial Logit Model. The result finds the existence of gender pay disparity and which cant be explained by the differences of productive capacities among men and women. Also, the gender pay gap get worse for regular jobs in the non-agricultural sector as one move from the high skilled occupations to low skilled occupations. According to a report by the International Labour Organization (ILO), the gender pay gap in India stands at 27 per cent as of 2023 implying that women earn 73 percent of what men earn for doing the same job22. The reason behind this pay disparity can be differences in the job market, human capital characteristics, elements of discrimination and demand supply dynamics of the labor market as well as policy induced. In this term paper my effort was limited only to explore the existing gender pay gap through the lens of occupational patterns of men and women. Through further research in this area, it can be investigated the determinants of the gender pay gap in the Indian context and the changing pattern of those determinants over the time. Since 1990 India has gone through a considerable change in its macroeconomic structure. It would be part of the quest of the analysis whether this pay disparity has any power to change the macroeconomic stability of the economy which often

interspersed with the turmoil of the external economic and policy environment.

I. Introduction

This paper explores rediscovering the magnitude and evolution of gender occupational segregation and wage gaps in India for the period spanning 2017-18 to 2021-22 using Periodic Labour Force Survey Data. To a certain extent the paper reflects the idea developed in the paper "Women workers in India: Labour Force Trends, Occupational Diversification and Wage Gaps"(Mondal et al., n.d.).

The analysis largely focuses on the broad trends of work participation rates of women workers in different occupations, exploring the wage gap associated with the group of occupations where women were heavily represented and identifying as well as capturingthe discrimination by gender component of the wage gap phenomena if any. The existence of gender gaps in wages reflect inequality and discrimination. The evidence of gender inequality and discrimination in the Indian labor market, across sectors, occupations, educational status and within it, are quiet glare (Gupta & Kothe, 2021). Although women ofworking age constitute on average half of the working age population, their contribution towards the paid economic activity is abysmally low across sectors and regions compared to men. A large portion of these working age women are engaged in the unpaid nurturing,caregiving works, domestic chores or other supportive works. This burden falls both on those who are in the labor force and out of the labor force. This unequal share of responsibility not only restricts their access to the labor market opportunities to full potential, it limits their choices and ability so that they remain in the low paying traditionally women centric jobs too (Afridi et al., 2018).

The macroeconomic environment and policy of an economy too has a huge impact on the micro-behavioral restricted choice and decision of women labor and to a large extent it gets reflected in gender inequality in the labor market in terms of wage, employment, occupational segregation (Braunstein, n.d.). There exists an extensive literature on studying pay gap by gender through the lens of discrimination, its determinants and implication.

Pioneering work by Gary Becker[1] and Kenneth J. Arrow[2] opened up the gate for researchers for further exploration of the different dimensions of the issue. Arrow's approach "statistical discrimination approach"[3] was disapproved by the Becker's taste-based discrimination[4] or the concept of sexism as the main basis of discriminatory labor market outcomes. The new theories of differential labor market outcomes, moved over the human capital approach and are putting more emphasis on the gender differences in occupations and industries, labor division of gender roles and noncognitive skills in explaining the existing gender division of labor market outcomes (Blau & Kahn, 2016)

Indian working women and their participation to work

The International Labour Organization defines "employment as persons of working age engaged in any kind of activity to produce goods or provide services for pay or profit, whether at work during the reference time period or not at work due to temporary absence from job, or to working time arrangement."[5] There is a subtle difference between work and employment, the catch is the phrase "for pay or profit". So only certain kinds of activity which are performed for pay or profit are recognized as employment. Whereas work according to labor statistics language, all kinds of activities which are performed by persons of any sex and any age to produce goods and provide

services either for others or for own use irrespective of pay or profit in exchange. So work covers the entire spectrum of human activities and employment is only a small subsection of it, comprising marketed economic activities. Leaving aside the non economic activities of human beings, there is a spectrum of activities which results (directly or indirectly) producing goods and services that adds to the value to the national product are considered as the economic activity, marketed or non marketed. Marketed economic activities are for pay or profit. The UN System of National

1 "The Economics of Discrimination, Becker." https://press.uchicago.edu/ucp/books/book/chicago/E/bo22415931.html. Accessed 14 June. 2023. 2 "What Has Economics to Say about Racial Discrimination? - JSTOR." https://www.jstor.org/stable/2646963. Accessed 14 June. 2023.

3 "Statistical Discrimination - an overview | ScienceDirect Topics." https://www.sciencedirect.com/topics/computer-science/statistical-discrimination. Accessed 14 June. 2023.

4 "TASTE-BASED OR STATISTICAL DISCRIMINATION - JSTOR." https://www.jstor.org/stable/42919257.Accessed 14 June. 2023.

5 "Definition - Employment (according to the International Labour..." 5 June. 2023, https://www.insee.fr/en/metadonnees/definition/c1159. Accessed 14 Jun. 2023.

Accounts[6] considers all kinds of activities that produce goods and services for own use and own account of fixed assets. But the Periodic Labour Force Survey[7] NSS0[8] does not

consider the entire range of non marketed activities as economic activities. Only the production of primary product but not its processing (except thrashing and storing) for self consumption is considered as the economic activity. [9]

By this definition, a person in the capacity of either labor or supervisor producing fixed assets either for own account which includes self use or for his/her own household's usage, or for some other private or community facilities for free of charges are considered as economic activities. Article 19 (1)(g),[10] Right to profession confers the fundamental right toevery citizen to exercise the trade, profession or occupations of his/ her choice. Of Course that right comes with a rider and it does restrict on this choice all unlawful trades, professions and occupations under the law. Prostitution in India is legal but nowhere on any official document its legality has been expressed explicitly. However, soliciting and public prostitution and trafficking are illegal. Recently the Supreme Court of India has given direction[11] towards the entitlements of sex workers of dignity and constitutional rights.

Purely within the technicality of definition, prostitute is a self employed person providing service for pay, which is adding value to the national product and thus the work should be recognized as marketed economic activity. Yet either because of the moral code of the national and social agencies or due to the complexity of the task to distinguish work of self employed or forced prostitutes , refrained the PLFS to accept the "prostitution" as economic activity. Begging too on the other hand is not recognized as economic activity, although it is not illegal and it generates income. Begging as such does not produce any goods nor does it provide any service for pay or profit. Therefore not recognizing begging

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6 "The System of National Accounts (SNA) - UN Statistics Division." https://unstats.un.org/unsd/nationalaccount/sna.asp. Accessed 14 June. 2023. 7 "Periodic Labour Force Surveys | Government Of India - MoSPI." https://mospi.gov.in/Periodic-Labour-Surveys. Accessed 14 June. 2023.

8 "National Sample Survey Office (NSSO) | Government Of India - MoSPI." https://mospi.gov.in/NSSOa. Accessed 14 June. 2023.

9 "Schedule & Instructions | Ministry of Statistics and Program ... - MoSPI." https://www.mospi.gov.in/schedule-instructions. Accessed 14 June. 2023. 10 "Article 19(1)(g) in The Constitution Of India 1949 - Indian Kanoon." https://indiankanoon.org/doc/935769/. Accessed 14 June. 2023.

11 "Supreme Court directions on sex workers: history of the case, and " 28 May. 2022, https://indianexpress.com/article/explained/sc-directions-on-sex-workers-history-of-the-case-and-where-it-stands-now-7940364/. Accessed 14 Jun. 2023.

as economic activity is not really an arguable issue but definitely not ignorable. In the Periodic

Labour Force Survey, the code "97" is used for begging, prostitution etc.

Over the period of this study 2017-18 to 2021-22, on average it has been estimated that onaverage per year, India had 70 percent of its women were of the working age 15-64. But a large proportion of that working age women were out of the labor force, which means their work was not being recognized and accounted for the purpose of labor statistics. Employment status codes, which means the economic activity status code of PLFS has specified under the number head "93" and "92" of this kind of work. The codes explain the work as follows:

92 = A person not being available for work due to attending domestic duties only

93 = A person not being available for work due to attending domestic work and also engaging in free collection of goods (vegetables, roots, cattle-feed, fire-wood etc) , sewing, tailoring and weaving etc. for household use.

Both the codes are recognized as out of the labor force. Not recognizing women's household chores or domestic duties as economic activity, has long been the matter of academic debate and discourse of feminist literature. Here in this section of the study, the focus is on those whose work are not being recognized and being labeled as "out of labor force" due their engagement in the domestic duties only and along with the domestic duties other work, which had potential imputed market values. Sewing, tailoring, weaving etc. are not considered as producing fixed assets. Fixed assets produced for own account which includes both self and the own household are recognized as economic activity, but these women centric works are not. There are three points on which it can be argued that these works should be regarded as the economic activities. First, when these works like household chores, sewing, weaving, cattle- feeding, collecting goods, tailoring kind of services are being outsourced to some external helps, like housemaids, laborers, tailors, weavers etc., their works are regarded as economic work. Second, Involvement and functioning of the other members of the households, mainly men in other economic activities become seamless because these works are being taken care of by the women oftheir households. Finally it can be argued that the work performed by the unpaid family workers for the household enterprises are recognized as work, and status is given as employed, But the domestic duties and other works specified above for the households are not recognized as work. The complete disregard towards women's traditional non marketable caregiving works for the household put them in the category of discouraged workers and make them belong to the out of labor force. The opportunity cost of entering into the labor market for these women seems high as domestic duties and other works for the household performed by those women may need to be outsourced and if the labormarket does not guarantee employment in adequately remunerative jobs.

On average per year over the period of study, 49 percent of the total population were women, which is almost half the population. Dynamics of the labor market reflects the overall as well sectoral macroeconomic dynamics of an economy. Here in this section the objective is to see the trend of workforce participation rate of women over the reference time period. How this 49 percent population fared in terms of their involvement in the labor market as employed in their usual status. Work force participation rate of women is the proportion of the women population who are employed (here, in usual status)[12]. Economic activity status (both principal and subsidiary)[13] codes 11 to 51 are recognized as the codes for employed in usual status. Detail of these codes are as

follows:
11: worked in household enterprise (self-employed) as own account worker12: worked in household enterprise (self-employed) as employer
21: worked as helper in household enterprises (unpaid family worker) 31: worked as regular salaried/wage employee
41: worked as casual wage labor in public works
51: worked as casual wage labor in other types of work
The work participation rate of rural women aged 15-64 years increased from 22.14 percentin 2017-18 to 29.44 in 2021-22, while the rate for urban women increased much less, 18.24

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[12] "Labour Bureau's employment survey added in CMIE's States of India " 12 Jun. 2017, https://cmie.com/kommon/bin/sr.php?kall=warticle&dt=20170612154533&msec=906&ver=pf. Accessed 14 June. 2023.

[13] "Labour Bureau's employment survey added in CMIE's States of India " 12 Jun. 2017, https://cmie.com/kommon/bin/sr.php?kall=warticle&dt=20170612154533&msec=906&ver=pf. Accessed 14 June. 2023.

percent in 2017-18 to 21.19 in 2021-22. Referring to Table 1 & 2, it is visible that urban women's work participation ratio has been much lower than the rural women's, which itself is way lower than its male counterpart. It could be possible because, the existence of the agricultural sector in rural areas, which do provide jobs to on average 74 percent of working rural women of working age. On the other hand, although more than 90 percent of urban women working are engaged in the nonagricultural sector, it fails to pull the work participation rate of urban women. It can be theorized that urban economic expansion is not adequately facilitating the kind of jobs where women are mostly concentrated. Or it could be argued that the opportunity cost of women in the urban areas to join the labor force became much more than the rural women.

Table 1: Rural women's (15-64) work participation rates in their usual status , 2017-18 to 2021-22

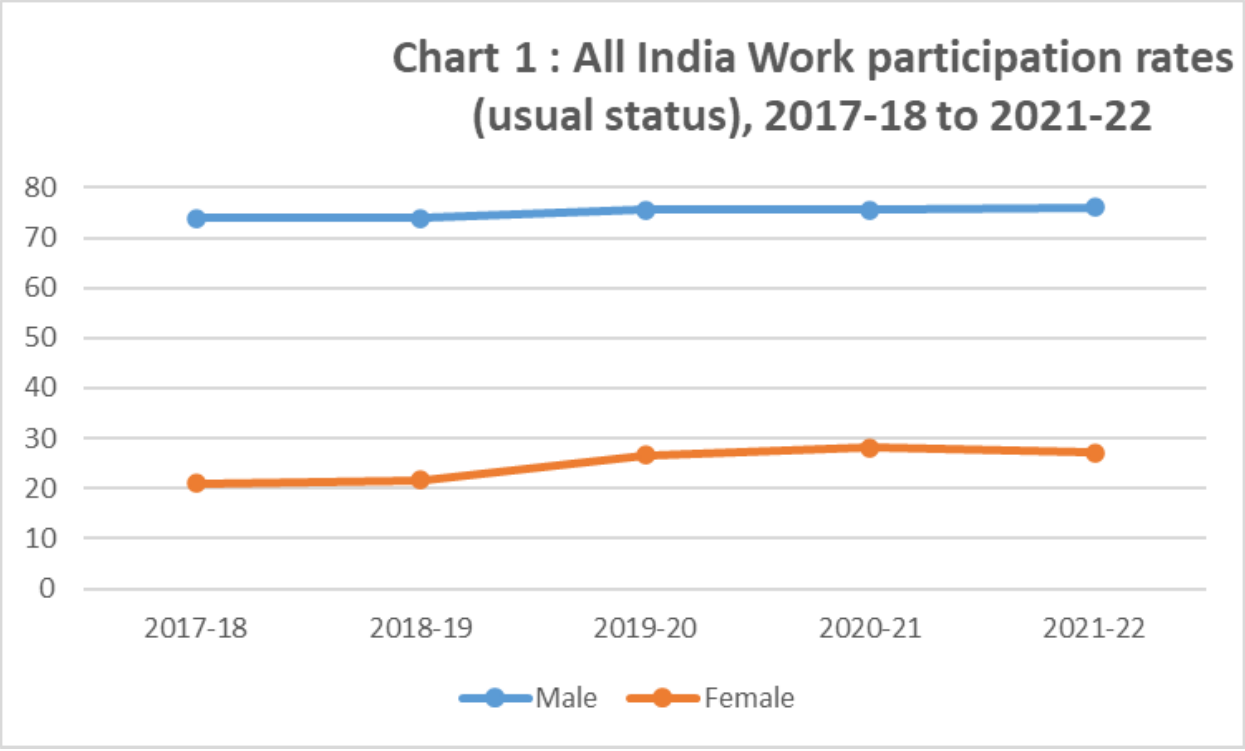
Year	Code 11-51	Code 92	Code 93	Code 97
2017-18	22.14	43.06	19.16	0.58
2018-19	23.1	39.52	21.13	0.71
2019-20	28.96	33.43	21.58	0.6
2020-21	31.41	31.17	21.14	0.53
2021-22	29.44	31.72	22.52	0.29

Computed from PLFS 2017-18 to 2021-22 data

Table 2: Urban women's (15-64) work participation rates in their usual status ,2017-18 to 2021-22				
Year	**Code 11-51**	**Code 92**	**Code 93**	**Code 97**
2017-18	18.24	56.78	4.97	0.52
2018-19	18.45	55.6	5.74	.0.96
2019-20	21.4	52.91	6.68	0.48
2020-21	20.68	53.07	6.7	0.44
2021-22	21.19	52.43	7.05	0.27

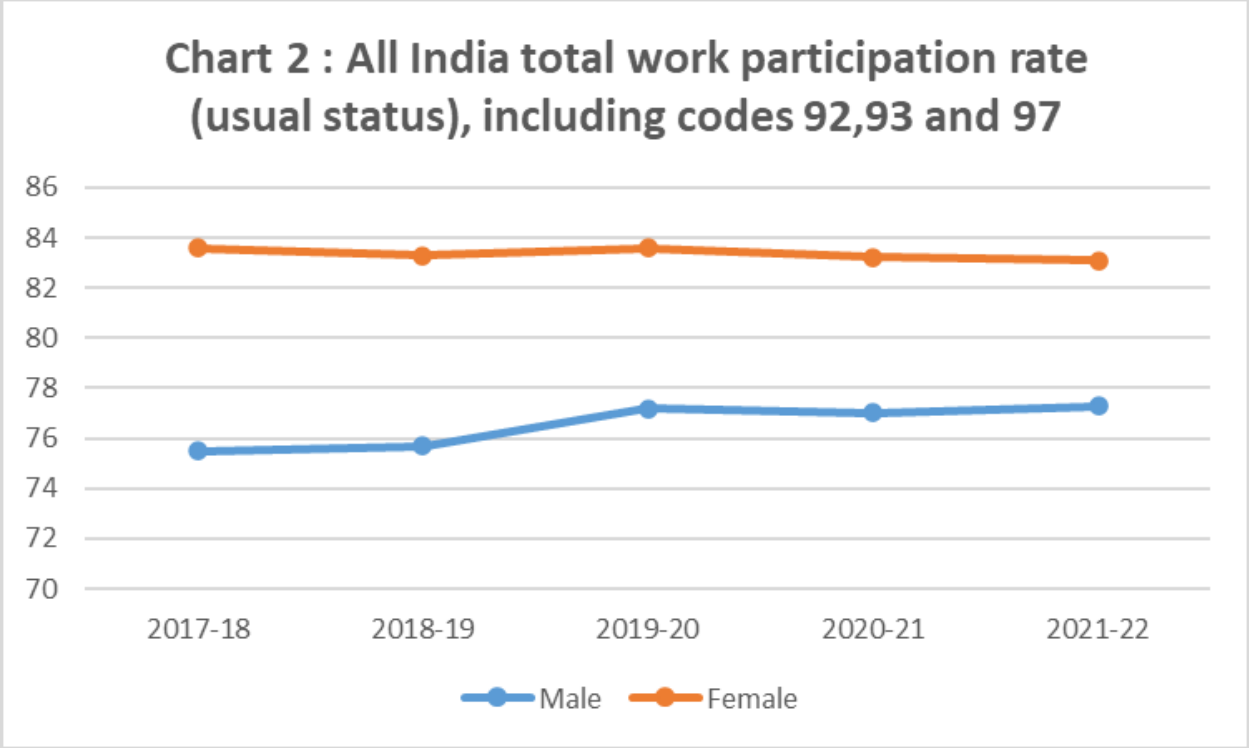
Computed from PLFS 2017-18 to 2021-22 data

All India average work participation rate for women was 25 percent, whereas 75 percent ofmen of working age were employed on average. This stark difference in the work participation rate can be visualized in the following chart 1.



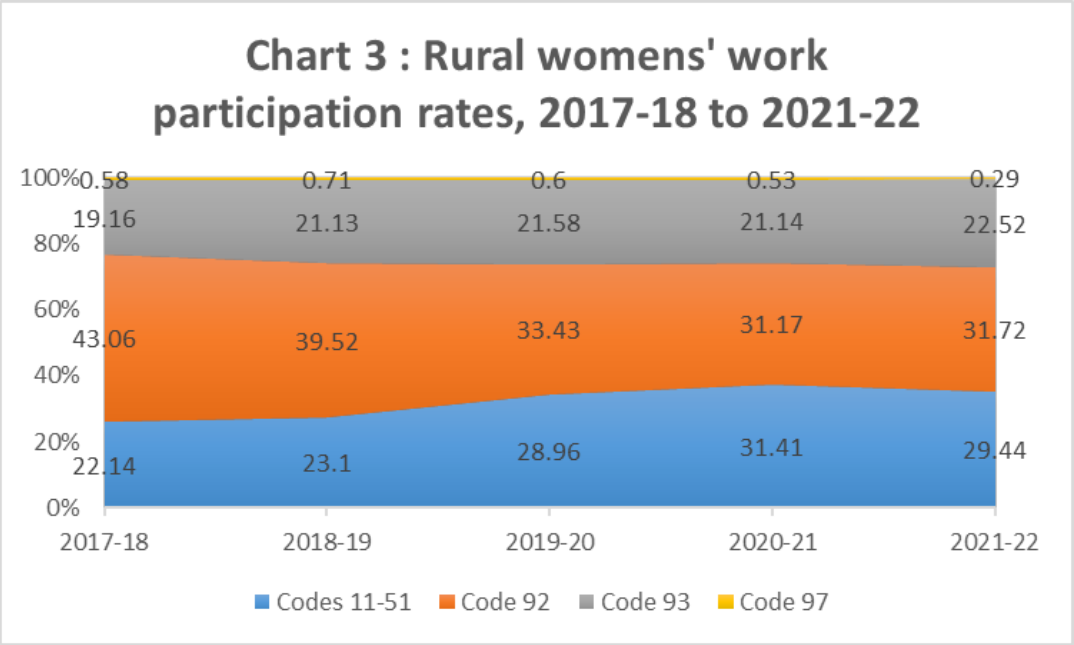
The above chart shows the comparison of work participation rates of men of women takinginto the consideration of employed status as per the PLFS document, that is codes 11 to 51.Chart 1 cut out the picture that, women's work and their earning remained as the secondary and non-important .

The increment in the work participation rate for urban women from 2017-18 to 2021-22, almost 3 percentage points compared to men's which was barely 1 percentage point. The increment was even higher (7.3 percentage points) inthe rural areas than in the urban areas (2.95 percentage points). It's only amongst the highly educated working women, the urban women's work participation rate is consistently higher than its rural counterparts, as the urban economy offers more opportunity to highly educated women than the rural area can possibly offer. So, the low educated, and low-income group of women are forced to stay out of the labor force and focus on their domestic duties, rather than being in demanding and low paying jobs. But if we include theactivity status codes, 92, 93 and 97 along with the existing 11-51 codes and try to make a comparison of work participation rates of men and women, the scenario would reverse completely, as depicted in the Chart 2:

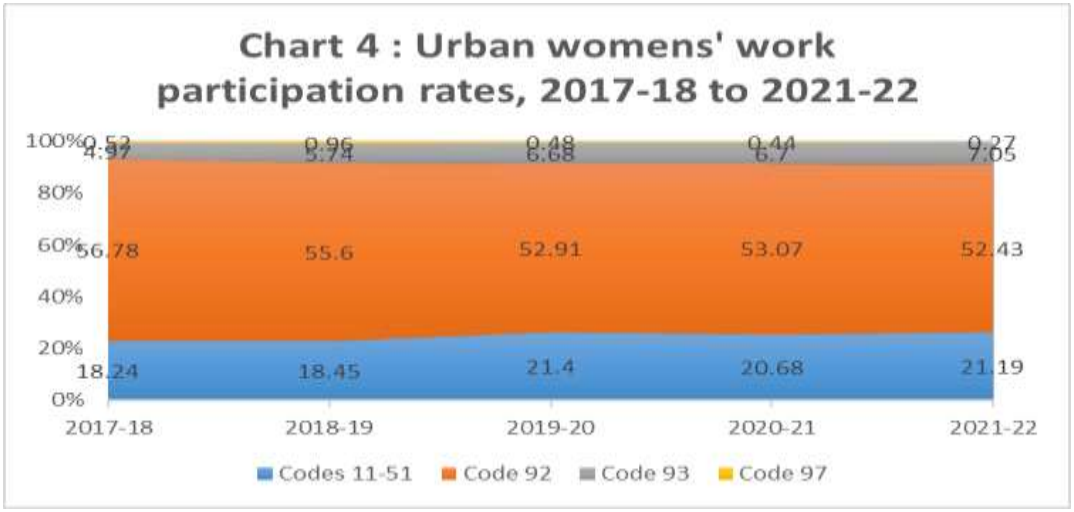


At the all-India level, now the women's work participation rate surpassed the men's. So, once we include Codes 92, 93 and 97 in the definition of work, the work participation rate for allwomen in India has been consistently higher than men. The average per annum work participation rate of women was approximately hopping 83 percent, whereas men had 76 percent.

Chart 3 and 4 shows that once such work like, begging, prostitution (paid but unrecognized: Code 97) and domestic work only (unpaid & unrecognized: 92) and along with the domestic work other works (unpaid & unrecognized: 93) are factored in our all-inclusive definition of work, in the rural area, the aggregate work participation rate of women actually exhibiting almost 1 percentage point drop compared to the 7.3 percentage point increase in the case of exclusive 11-51 definition of work.



On the other hand, the aggregate work participation rate of women in the urban area barely changed compared to the 2.95 percentage points increase in exclusive 11-51 work participation rate for women. A close look at the Chart 3, highlights the fact that there is a decline in the work participation rate of rural women exclusively belonging to Code 92, meaning those women who could not participate in the labor force due to their domestic duties only. So, the increase in the work participation rate of rural women (exclusively belonging to Codes 11-51) accounted for the joining of the labor force by those women who could not do so due to their domestic duties.



The proportion of women in the urban area (Code 93) who were out of the labor force due to their domestic duties and other works mentioned above, who potentially could be in the labor force, were much smaller than in the rural areas. But the irony is the proportion of those women who were absent

from the labor force because of their involvement in the domestic duties purely, were much larger than in the rural areas. Thus, hardship of domestic chores and other works together falls more on the rural women of the working age. Women whose work has been recognized as economic work for pay or profit and are given the status of "employed" are largely following the pattern of traditional roles of women which they usually perform in their domestic front for the households, like caregiving, teaching, domestic chores as well as laborers. In the next section I have tried to explore this pattern of occupational segregation of women in the non-agricultural sector.

II. Occupational Segregation of women workers in non-agricultural occupations, 2017-18 to 2021-22

By gender-based occupation segregation, we mean the distribution of men and women over different types of occupations having different patterns.[14] Separation of men and women into different occupations is often the result of social norms, stereo typifying the concept of role of men and women in their involvement in economic activities, differences in required productive characteristics for market based work and entry level discrimination. This form of labor market inequality has a deep impact on average earnings of women and their working condition. In this section I have tried to explore the depth and the pattern ofgender-based employment segregation for the Indian labor market. I have considered the data from the PLFS Survey 2017-18 to 2021-22 on women workers in the age group 15-64, which is internationally recognized as the working age group. In this period of study,70 percent of women were of that age group, and so were men. But the low workforce participation rate (approximately average 25%) of women of that age group, which we have seen in the previous section, dampens the spirit of demographic dividend in the context of women.

PLFS Survey 2017-18 to 2020-21 followed the occupation code structure of NCO -2004 (National Classification of Industries)[15] and for the year 2021-22, the survey adopted the updated code structure NCO-2015[16]. Following the official NCO documents, here in this section, occupations are divided into five skill categories (i) Skill Not Defined (ii) High Skilled (iii) Medium Skilled (iv) Low Skilled and (v) Unskilled. The first category, Skill Not Defined comprises the legislators, Senior Officials and Managers where skill levels, which are nothing but educational attainments, are so diverse that the group of occupations could not be categorized under a single head on the basis of educational attainment. Here in this section the analysis is restricted to the non-agricultural sectors only. As in the year 2021-22,

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14 "Gender-based Employment Segregation - World Bank documents." https://documents1.worldbank.org/curated/en/483621554129720460/pdf/Gender-Based-Employment-Segregation-Understanding-Causes-and-Policy-Interventions.pdf. Accessed 14 Jun. 2023.

15 "NATIONAL CLASSIFICATION OF OCCUPATIONS-2004." https://labour.gov.in/sites/default/files/CodeStructure.pdf. Accessed 14 June. 2023.

16 "NATIONAL CLASSIFICATION OF ... - Ministry of Labour & Employment."

https://labour.gov.in/sites/default/files/National%20Classification%20of%20Occupations_Vol%20II-B-%202015.pdf. Accessed 14 June. 2023.

PLFS survey adopted the NCO-2015, the direct and straightforward comparison of skill groups in some cases, may not be suitable. The educational requirements for the different skill levels as defined by the NCO documents were, more than 15 years of formal education required to be qualified as high skill, 14-15 years of formal education for medium skill, 11-13 years of formal education for low skilled and up to 10 years of formal education and/or informal skills for unskilled/elementary skilled.

Corresponding educational requirements according to the ISCO-08[17] specified post-graduation university degree, first university degree, secondary education and primary education, for high skilled, medium skilled, low skilled and unskilled respectively.

Urban Areas

Over the period of study, more than 90 percent of urban women workers were engaged in the non-agricultural occupations. More than half of these occupations were generated in the service sector followed by the manufacturing sector. On an average in this period, 60 percent of urban women workers who were in the non-agricultural occupations, were inregular employment, 28 percent were own account workers and 13 percent of them wereworking as casual laborers other than in public works. Own account workers are the self-employed who operate their enterprises on their own without hiring any labor or with the help of unpaid helpers. At a first glance, the engagement of 60 percent of women workers in the regular jobs may create a secure and promising impression of women's' work. But further examination reveals that urban women who were in regular nonagricultural employment, 23 to 24 percent of them were in the enterprise type of proprietary, Govt & Local Bodies, Public/Pvt. Ltd Company, each. Own account production of fixed assets for own use, when produced by a single member is classified as a proprietary enterprise. So, it implies that women who work as a regular employee in proprietary enterprises, worked as unpaid family helpers. A good 16 percent of womenworkers who were engaged in the regular job, were employed by the households as domestic help, cook or as other menial workers.

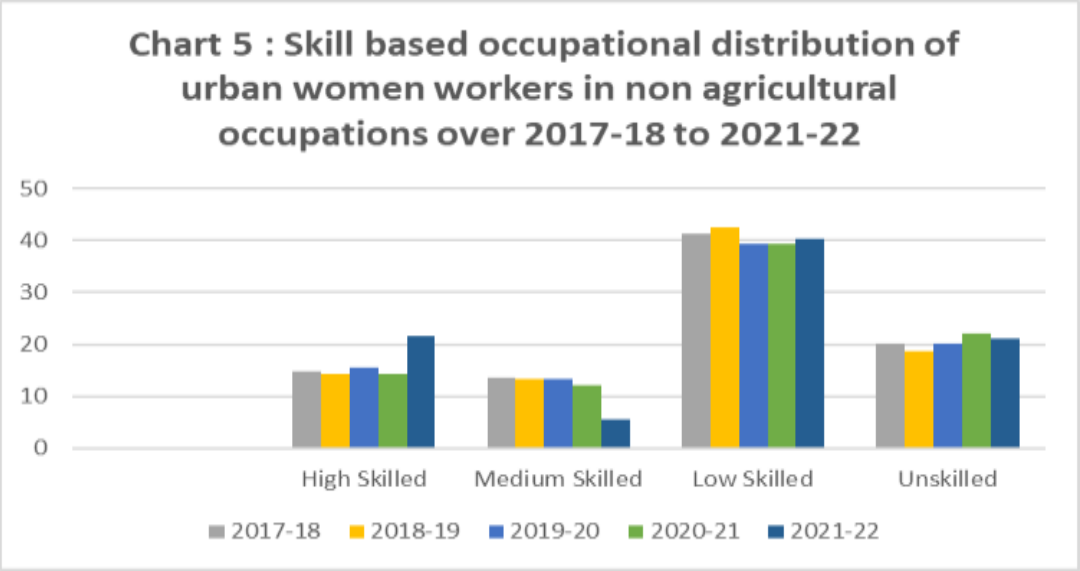
Approximately 60 percent of the non-agricultural urban women workers continued to remain in the low skilled and unskilled occupations, which are clerks, sales & service, craft

17 "ISCO - International Standard Classification of Occupations - ILO." https://www.ilo.org/public/english/bureau/stat/isco/isco08/. Accessed 14 June. 2023.

related, operator & assemblers and other elementary occupations. The increase in the proportion of urban women workers who found jobs in the highly skilled nonagricultural occupations, mainly the "professionals", indicates the general rise in the skill levels of women workers. Within this group, urban women workers in "secondary education teaching professionals" had significant shares for the period 2017-18 to 2021-22. Later in the year 2021-22, when "primary and early childhood teaching professionals" were included in the high skill

occupation category as per the NOC 2015, urban women's presence in that sub category, got highest share in the high skill occupation category (23.5
%) , leaving behind "secondary education teaching professionals" at the second position (18.1%).For the period 2017-18 to 2020-21, urban women in the high skill sub category occupations, "business professionals" and "computing professionals" also had significant shares. On average 44 percent of urban women workers who were engaged in the "business professionals " occupations, were self-employed, of which 23 percent of them worked as unpaid family workers. The silver lining is, there is a declining trend in women working as unpaid family workers within the "business professionals" occupation. In 2021-22, following NCO-2015 occupational codes, the newly included two sub categories, "Software and Application Developers and Analysts" and "Database and Network professionals" together got a significant proportion, 14 % of urban women workers within the high skilled occupation category. If we proxy this compound subcategory for the "computing professionals" which was a single subcategory then in the period 2017-18 to 2020-21, it shows a rising trend over the entire period of study.

Within the high skill occupations, women's' presence is consistently prominent, particularly in the conventionally understood female dominated teaching and human health activities. Although within the high skill occupations, for urban women workers in the human health activities were dominated by the "Nursing" and "Midwifery" professions, later years the differences between other than nursing health professionals and nursing professionals got eliminated. Urban Women in teaching profession within the high skill occupations, wereled by secondary and primary teachers. The chart below (Chart 5) reflects the skill- based distribution of urban women workers in non-farm occupations over the period 2017-18 to 2021-22. Here the "Skill Not Defined" category has been omitted, so focus can be on the well defined skill-based occupations. Average 60% of urban women's' non- farm jobs were generated in the "Low Skilled" and



"Unskilled" categories together and it barely changed over the time. Contrary to this grim picture, the chart shows that there was a significant increase in the presence of urban women workers in the high skilled occupations. We need to remember that "Primary and early childhood teaching professionals" were part of the "Medium Skilled" occupations according to the NCO 2004 which

was adopted till 2021 and after that it became part of the"High Skilled" occupation category as per the NCO 2015, which got adopted for 2021-22 PLFS survey. 2021-22, data shows that 23.51 percent of urban high skilled non-farm women workers were in the "Primary and Early Childhood Teaching Professions" the highest in that category, which requires lower educational qualifications than secondary and higher levels of teaching qualification hence low pay. Mushrooming private elementary schools in the urban area, preference of women candidates for the elementary teaching along with the social norm of considering women's' earning as the secondary earning may have played the role behind the large proportion of urban non-farm women workers represented in these low paying elementary teaching occupations. So, the rise in the "High Skilled" category of urban women non-farm workers actually happened between 2021 to 2022, at the cost of fall in the share of "Medium Skilled" category. So, we can't be absolutely sure whether there was an increase in the general skill levels of the urban women workers in the nonagricultural occupations. Nevertheless, the inclusion of "Primary and Early Childhood" occupations in the "High Skilled" category of occupations may indicate the general skill level of workers engaged in those occupations.

In urban areas, within the high skilled occupations, there were some successes in absorption of women workers into more high impact industries like programming & broadcasting, computer programming & service activities, financial & insurance activities, legal & accounting activities, management-advertising & market research and architecture-engineering, and scientific research. The 31 percent rise in the proportion of urban women professionals into these dynamic jobs together, primarily led by computer programming and science activities.

Approximately, on average 41 percent of urban women workers in non-agricultural sectors are engaged in the "Low skilled" category of occupations. Among the "Low Skilled" category of non-agricultural occupations, the manufacturing sector accounted for most of the jobs for urban women workers. Three prominent industries where urban women who are engaged in the low skilled occupations were manufacturing sector, trade hotel and restaurant and other service industries. Within the manufacturing sector urban women in the low skilled non-farm workers were mostly engaged in the manufacturing of food & beverages, textile & apparel, tobacco related products and manufacturing of wood, leather,paper and related products. Of these the most prominent one is manufacturing of textileand apparel where mostly women are employed in the urban area. In the trade - hotel &restaurant segment of industrial activities a large proportion of urban women who found employment in the low skilled nonagricultural occupations, were engaged in the "housekeeping and restaurant service workers" and "shop salesperson and demonstrator". Among the other kinds of service activities, urban women holding low skilled occupations were engaged in large proportions were "personal care activities" & "housekeeping and restaurant service work". Off all those low skilled non-farm occupations urban women's' share was increasing in the component of "shop salesperson & demonstrator" kind of activities. In the low skilled category of non- farm jobs in the manufacturing sector, urban women were grossly underrepresented in the manufacturing of chemical, metal, electrical, machinery, motor vehicles, rubber, plastic and other non-metallic products. Thus, the pattern reveals a clear gender-based segregation of occupations in the factory work.

On average 20 percent of the women workers who were employed in the non-agricultural sectors

were into the "Unskilled" occupations. The "Unskilled" category of non-agricultural occupations of urban women reflects heavy bias towards the "other services" which is other than "trade hotel and restaurant services". On an average a little more than half the "Unskilled" occupations were generated in the "others services" industrial activities. Manufacturing sector and the construction sector accounted for 19 percent and 15 percent of "Unskilled" occupations for urban women workers respectively. Within the "Other Services" activities which accounted for little more than half the urban women workers in the unskilled occupations, on average 80 percent of those women were engagedin the menial jobs like "Domestic & Related Helpers, Cleaners and Launderers". A significant proportion of urban women workers are "Garbage collectors" or "Refuse workers" within the same category. On average 79 percent of urban women workers who are in the unskilled manufacturing sector, found themselves in the role of "manufacturing laborers". 84 percent of the unskilled occupations which emerged from the construction activities, are "mining & construction" laborers" for the urban women workers. So, we see highly segregated unskilled occupations where urban women were lopsidedly represented.

The category where skill level could not be defined, on average 11 percent urban women who were employed in non-agricultural sectors found their occupations, of which 85 percent were generated in the other "other services" category of industries which excludes "Trade-Hotel & Restaurant. 80 percent of urban women who found employment in this category, were "Directors & Chief Executives". The main occupations in this group, where presence of women are prominent were "Directors & Chief Executives", "Production & Operation Department Managers", "Other Department Managers", "Business services & Administration" and "Professional Service Managers". Of these, "Professional & Service managers" in this "Skill Not Defined" group was a new inclusion according to the NCO 2004. More than 90 percent of the "Directors & Chief Executives" were in proprietary kinds of enterprise, which means directors and chief executive women here are the sole owners oftheir enterprises which produce their own account fixed assets for their own use. That itself explains the significance and importance of the women's working conditions in those enterprises. Same can be said about the "production & operations department managers", "other department managers" and "business services and administration". The newly included subcategory, "professional services managers" in 2021-22, employed 13.14 percent of urban women who were in the "skill not defined" category of occupations in the "other services" industries. Of these, women were 38.14 percent in the "Govt. & local body", 10.75 percent in the "Public Sector Enterprises" and 41.49 percent in the "Public/Private Limited Company" in the urban area.

The "Medium skilled" occupations are made up of technicians, operators, service agents and associate professionals in the field of health, education, sports, finance, science & mathematics, business, sales, administration, religion, legal, social work, information & communication and telecommunication. PLFS 2021-22 has removed the associate professionals in the field of education from the group and placed it in the "high skilled" category. Medium skilled nonagricultural occupations accounted for on average 13 percentof urban women who were employed in the non-farm sectors, excluding the year 2021-22. The year 2021-22 has been excluded in this average calculation due to the removal of associate professionals in the field of education, one sector

women's presence is heavy particularly in the pre-primary, primary and secondary levels of education. 38 percent of the "Medium skilled" non-farm occupations are from the manufacturing sector, 35 percent from "trade-hotel and restaurant" and 13 percent from "other services" respectively. Till 2020-21 the most concentrated profession was pre-primary, primary and middle school teaching associate professionals, accounting for on average 51.1 percent of urban women's' jobs within this group. In 2021-22, nursing, midwifery, medicine and pharmaceuticals technicians together accounted for 46.41 percent of occupations in this group for urban women.

Without dividing the non -agricultural occupations into different skill-based categories, the detailed activities according to the NIC (The National Industrial Classification) - 2008[18], wecan see urban men and women were both engaged in the manufacturing of textile & apparel and wholesale and retail trades (except motor vehicles) and related works. But other than those two kinds of activities, urban women were engaged more into teaching, up to secondary level and personal care services which mainly comprises work of beauticians, hairdressers, and human health activities, mainly nursing and midwifery. The gender line of activities are prominent in the urban area, where females could not significantly transcend into more dynamic and masculine activities like

18 "National Industrial Classification (NIC) - 2008." 5 Sep. 2008, https://www.ncs.gov.in/Documents/NIC_Sector.pdf. Accessed 14 June. 2023.

construction, transport, storage and communication. Urban females remained confined into the low paying female centric jobs. Among the highly educated urban women, this barrier is slowly diminishing as more urban women are getting into the architect, engineering, finance, software developers & analysts professions.

Table 3: Top Sectoral activities of working age urban women workers (usual status)

Women	Mnf of Textile & Apparel	Wholesale & Retail Trade (Except Motor Vehicle)	Primary Education	Secondary Education	Other Personal Services	House-maids & Servant	Human Health Activities
2017-18	13.55	10.83	7.93	6.28	5.24		
2018-19	14.05	10.88	7.87	6.31	4.67	8.29	
2019-20	12.13	20.39	6.83	5.87	3.21		4.72
2020-21	12.57	13.93	5.81	5.37	4.84	7.49	6.38
2021-22	14.08	12.69	5.7	5.58	3.71	8.03	6.87
		Wholesale & Retail					

Men	Mnf of Textile & Apparel	Trade (Except Motor Vehicle)	Land, Water Transport	Constructi-on of building			
2017-18	6.5	19.61	9.27	8.66			
2018-19	5.78	20.24	8.75	8.65			
2019-20	5.4	23.88	8.72	9.17			
2020-21	4.89	22.4	8.58	10.46			
2021-22	5.83	20.33	7.76	9.99			

Computed from PLFS 2017-18 to 2021-22 data

Rural Area

As agriculture is the mainstay of rural India, not surprisingly, 74 % of the rural working women of the age 15-64 were engaged in agriculture. Only 26% of them were engaged in nonagricultural work, which is in stark contrast to the urban scenario. These jobs were mostly created in the manufacturing sector, construction, trade-hotel and restaurant and other service industries. Of these, it is the "Other Service " industries, where most rural women in the non-agricultural occupations were engaged, followed by the manufacturing industries. Mining and Quarrying, Electricity-water etc. divisions of industries were primarily male dominated industries, where presence of rural females in non-agricultural work were abysmally low. Average percentage of non-farm rural female workers in the regular job was approximately 39 percent which was more than the male counterpart. The other kinds of employment status where percentages of rural non-farm women workers were more than its male counterparts were, working as casual laborers in the public works and self-employed rural women working as unpaid family workers as helpers. Public works are the activities sponsored by Government and local bodies which cover local area development projects or Government sponsored poverty alleviation Programme such as National Rural Employment Guarantee (NREG) works,[19] Sampoorna Grameen Rozgar Yojana (SGRY)[20], National Food for Work Programme (NFFWP),[21] etc. That is why we see more than half the rural non-farm women workers whose employment status was regular salaried employees, were working in the Government & Local body enterprises. On average 97 percent of rural non-farm self-employed, own account workers were actually involved in the proprietary enterprise where they were the sole owner producing fixed assets for own use.

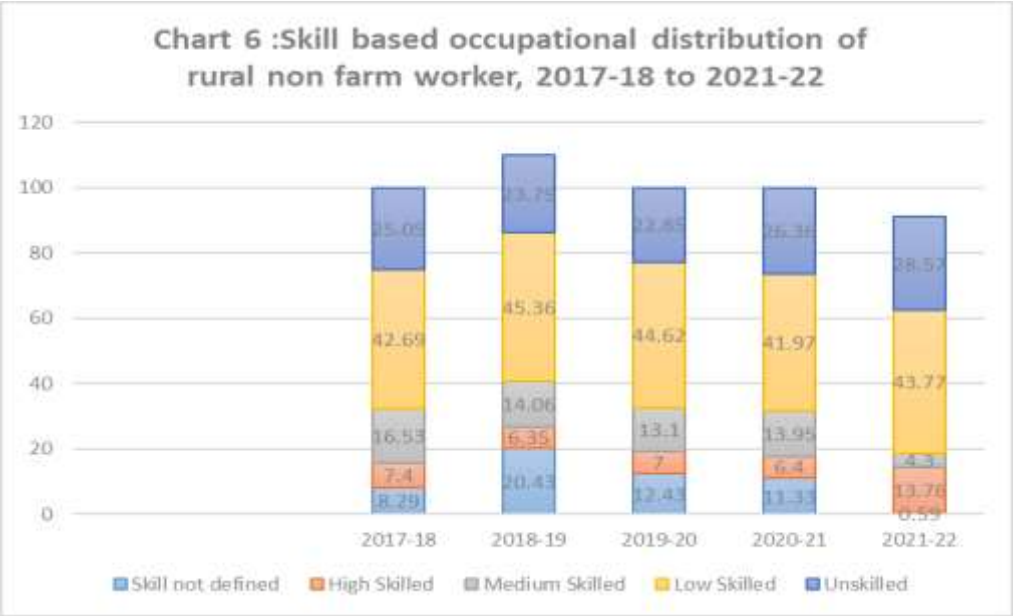
In rural areas, among non-agricultural women workers, approximately 44 percent of them were engaged in the "Low Skilled" category of occupations which are clerks, service workers, shop & market sales workers, craft & related trades workers, plant & machine operators & assemblers. Concentration of the rural women non-farm workers were least in

19 "Mahatma Gandhi NREGA | Ministry of Rural Developmenthttps://nrega.nic.in/. Accessed 14 June. 2023.

[20] "Sampoorna Grameen Rozgar Yojana (SGRY) Guidelines." https://www.india.gov.in/sampoorna-grameen-rozgar-yojana-sgry-guidelines. Accessed 14 June. 2023.

[21] "National Food For Work Programme (NFFWP) - Details." https://tnepds.co.in/national-food-for-work-programme/. Accessed 14 June. 2023.

the "High Skilled" category of occupations. The second highest group for those women was the "Unskilled" category.

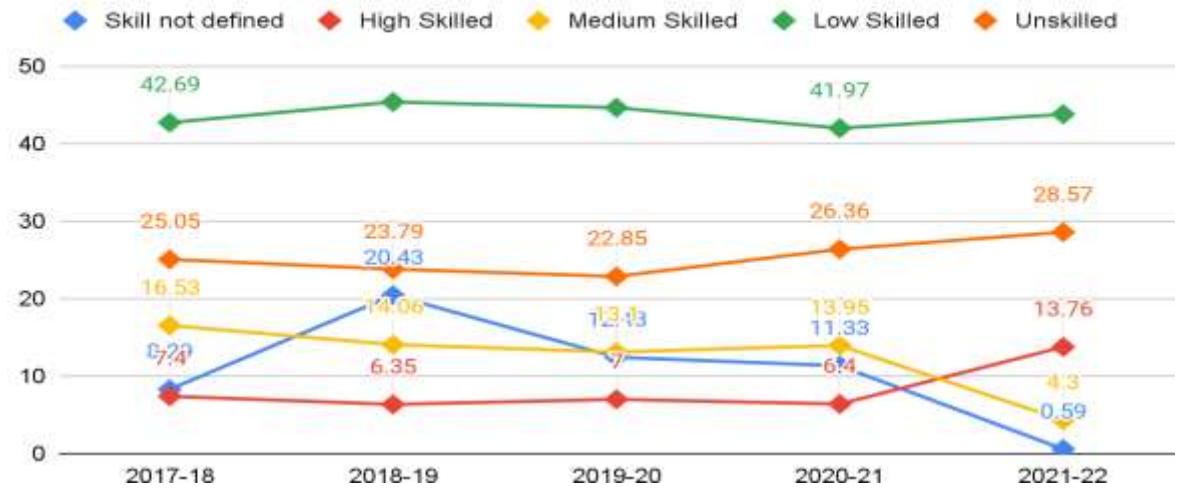


Within the "High skilled" category of non-agricultural occupations, rural women were mostly engaged in the traditionally women centric occupations like teaching, but secondary level of teaching and nursing and midwifery occupations. Till 2021-22, the primary and early childhood teaching was not a part of the "high skilled" occupations, as discussed earlier. Later in the year 2021-22, this level of elementary teaching switched its membership from the "medium skilled" to "high skilled" category of occupations. That could be the reason behind the significant rise in the percentage of women workers in high skilled occupations and fall in the medium skilled occupations. There was a significant proportion of this category of women employed as the business professionals over the period of study. In the year 2021-22, "business professionals" subcategory was no longer present in the "High Skilled" category as per the NCO 2015 occupational code structure. Closest proxy of the "business professionals" I could find was "Sales, Marketing & Public Relations" in the "high skilled" occupations nomenclature. On average 77 percent of rural women who are business professionals were the sole owners and produced fixed assets for self-consumption. Manufacturing sector and trade-hotel & restaurant sectors accounted for almost on average 78 percent of rural women business professionals in the "high skilled" nonagricultural occupations, although the share of these two sectors in the business professional occupation is on a declining trend over the period of study. Within the manufacturing sectors, rural women were mostly engaged in the manufacturing of food & beverages, manufacturing of textile & apparel. Wholesale and retail trade except motor vehicles is the prominent trade and service

activities within the "trade-hotel & restaurant" sector of business professional occupations. Rural women business professionals, in the non-farm sector were finding jobs in the emerging activities like "accommodation & food service activities" , "financial & insurance activities" within the "high skilled" category of occupation.

In the medium skilled occupations, the pattern of occupational diversification, rather segregation of rural women is same as the urban picture. Till 2021 the dominant professionof rural working women in the no farm sector were middle, primary and preprimary education teaching associate professionals, roughly 70 percent. Apart from the education sector, the next sector where rural women were mostly concentrated were nursing andmidwifery associate professionals and other modern health associate professionals in the middle skilled category of non-farm occupations. As stated earlier, the removal of the primary and preprimary school teaching from the middle skilled in the year 202-22, made the proportion of rural women in that "middle skilled "nonagricultural occupations to fall from the 17-18 to 20-21 average and emergence of nursing and pharmaceutical technicians as the most important profession for rural women in that category. The littlehope we see, beyond the traditional role of women in the "middle skilled" occupation group, is a small but consistent rise in the proportion of rural working women in the "physical and engineering science technicians" within the "middle skilled" nonagricultural occupation.

Chart 7: Change in the proportion of rural women in non farm skilled based occupations, 2017-18 to 2021-22



As noticed in the above chart in the "low skilled" and "unskilled" groups of occupations, the proportion of rural working women in the non-agriculture started with a larger base, reflecting a rising trend. So any revealing pattern of within group as well as inter group occupational distribution or diversification can portray the picture of rural women's actual scenario of work and working condition, despite having higher work participation rate compared to their urban counterpart. Within the "low skilled" occupation group our reference group of women were primarily engaged as shop sales-person & demonstrators, food processing & related trades workers,

textile garment & related trades workers. The proportion of rural women engaging in this sub category is increasing. Among these three prominent occupations, men and women were almost equally represented as the shop sales-person and demonstrators, probably reflecting more gender-neutral marketing strategy the emerging market economy is exhibiting even in the rural area. The other low skilled occupations where men were engaged were as car-van-motorcycle drivers, building painters, building finishers & frame related workers, mechanics & repairers. More than half of the "low skilled" nonagricultural occupations for women were generated in the manufacturing sector, but women's jobs were limited to manufacturing of the tobacco, textile and apparel products. Whereas men's jobs within the low skilled manufacturing jobs are more diverse. Rural men in the low skilled occupation category were more equitably distributed over all the sectors like manufacturing, trade-hotel and restaurant, other services, transport storage & communication & construction. Broad sectoral divisions of low skilled rural women were mostly concentrated in the manufacturing, trade-hotel & restaurant and other services sectors. Almost in half of the "Unskilled" nonagricultural occupations, rural women worked as mining and construction laborers, especially as construction laborers and its share was increasing. The other prominent sub categories of occupations within the "unskilled" occupations were manufacturing laborers and domestic & related helpers, cleaners and launderers. Mostly these rural unskilled women non-farm laborers were either working in their own proprietary business or as casual laborers in Govt. & local body sponsored development & poverty alleviating projects. Both in the low skilled and unskilled group of occupations, the proportion of women in the rural area engaged in the manufacturing sector and other services (except trade-hotel and restaurants services) were much larger than the men.

Same as in the urban area rural India too exhibits the pattern of occupational segregation of women within the "Skilled not defined" category of occupation. Men and women here in this case showed similar occupational distribution. Both showed that more than 90 percent of rural workers in the non-agricultural sector, of their own gender, were into "Directors & Chief Executives" occupations, which later in 2021-22 came to be known as "Managing directors & Chief Executives". Under the both nomenclatures, it includes working proprietors & directors across sectors including chief chef and principal of college. Thus its self-explanatory that the data showed 98 percent of these rural "directors and chief executives"under the "skill not defined group" of non-agricultural occupations, were working proprietors and only 2 percent were directors. Almost 40 percent of these rural women proprietors were engaged in the manufacturing of tobacco and textile & apparel and into wholesale/retail trades (except motor vehicles). While proprietor women's share was increasing in the manufacturing sector, proprietor men's share was shifting from manufacturing to services and transport, storage & communication activities.

The table below shows the sectoral activities, where the proportion of rural men and women are larger than in the other activities of their own group irrespective of the different skill-based categories of occupations. Unlike the urban sector, in the rural non agricultural

Table 4: Top Sectoral Activities of Working age Rural Women Worker				
Women	**Constructionof Building**	**Mnf of Textileand Apparel**	**Wholesale & Retail Trades (Except MotorVehicles)**	**Primary Education**
2017-18	10.11	12.9	11.08	15.03
2018-19	9.07	14.01	12.32	13.83
2019-20	11.77	13.42	13.06	13.09
2020-21	13.52	14.81	12.64	12.1
2021-22	11.3	16.21	12.81	10.82
Men	**Constructionof Building**	**Land andWater Transport**	**Wholesale & Retail Trades (Except Motor vehicles)**	
2017-18	26.66	10.59	15.73	
2018-19	28.28	10.59	16.73	
2019-20	29.09	10.89	16.14	
2020-21	29.98	10.37	16.38	
2021-22	30.53	9.38	16.68	

Computed from PLFS 2017-18 to 2021-22

occupations did not show stark gender demarcation. The promising sign is that in the rural area, the proportion of women "social science related professionals" was showing an increasing trend although it started with a very low base.

The list in the Appendix I depicts the groups of non-agricultural occupations of rural and urban women workers in their usual status in the third quartile. 75 percent (and more) of working age women who were employed in the non-agricultural sector of a particular sector and year, were engaged in these occupations. For the sake of making the comparison, visually simplistic, only 2017-18 and 2021-22 survey data has been considered. However, the nomenclature of occupations was different in 2021-22, as it used NC0-2015 compared to 2017-18, which used NCO-2008. The level of disaggregation in NCO-2015 was much more detailed in the NCO -2008. In a broad outlook, rural and urban areas are not showing much of a difference except college and university level of teaching and working as construction laborers are more of urban occupations, placed at the two extreme points of skill radar.

III. Gender Wage Gaps

Indian women laborers not only face non recognition of their otherwise potentially marketed economic activities and other marketed activities for social taboos, also we have explored in the previous section, how their occupations get concentrated in the area of caregiving, sales, teaching

and laborers which are typically low paying jobs. Here in this section, I have tried to unveil the existence of the gender wage gap in the Indian labor market, considering the daily real wages in the regular and casual workers of the working age population, over the period of 2017-18 to 2021-22. Table 5 shows the average real wages of workers.

Table 5: Average Real Wages of Workers (Rs. per day at 2017-18 prices)

	Regular Workers				Casual Workers			
	Rural		Urban		Rural		Urban	
	Male	Female	Male	Female	Male	Female	Male	Female
2017-18	452.96	299.22	613.01	497.38	266.42	169.9	336.3	199.42
2018-19	444.22	287.9	618.09	480.19	282.69	177.89	351.93	220.39
2019-20	414.14	298.8	575.59	461.56	279.65	178.29	353.42	229.38
2020-21	444.02	283.39	602.11	468.84	288.3	185.57	362.96	236.14
2021-22	451.45	294.62	618.99	492.24	319.81	209.24	386.25	252.25

Daily money wages are deflated by Consumer Price Index for Agricultural Laborers for rural workers and Consumer Price Index for Industrial Workers for urban workers. All the figures are computed from PLFS 2017-18 to 2021-22 data.

Gender wage gap, as measured by the female's wage as a percentage of male wage, has increased for the regular workers both in the rural and urban areas, whereas for casualworkers, the gap has declined in both areas, in 2021-22 from the 2017-18. In both cases, the intensity of improvement and deterioration of gender wage gaps were more in the urban areas than in the rural areas. So, the decreasing gender gap in wages was evident forall categories except for the regular workers. But if we see in an absolute sense, the average daily per annum gender gap in wages was much larger for urban casual workersthan for urban regular workers. The per annum average of daily real wages gender paygap for rural casual workers was more than the rural regular workers.

The pattern varied according to different educational categories. Table 6 shows per day real wages of regular women workers as a percentage of real wages of male workers in regularjobs with different levels of education in 2017-18 to 2021-22.

Table 6: Average Pay Gap of Real Wages (per day) of Regular Women* workers by Education level

	Rural				
	2017-18	2018-19	2019-20	2020-21	2021-22
Illiterate	50.08	52.86	53.15	58.44	49.75
Literate w/o formal education	44.04	47.44	52.58	58.31	51.54
Up to Middle School	52.68	56.80	61.35	56.35	55.19

Secondary & Higher Secondary	63.53	59.42	67.26	64.42	55.69
Diploma/ Certificate	95.30	104.48	80.24	87.63	104.12
Graduation & above	75.47	75.64	87.27	70.53	70.90
	Urban				
Illiterate	54.41	56.62	57.47	56.18	56.19
Literate w/o formal education	63.83	53.26	61.48	62.56	60.32
Up to Middle School	59.39	62.85	58.99	62.67	59.27
Secondary & Higher Secondary	78.29	73.29	76.96	78.04	70.85
Diploma/ Certificate	89.49	82.56	88.52	87.27	86.70
Graduation & above	84.37	81.09	81.28	81.26	81.14

*Computed from PLFS 2017-18 to PLFS 2021-22, using the formulae (female real wage/male real wage)*100*

Compared to 2017-18, the gender gap in real wages of regular workers has deteriorated in 2021-22, except for the educational categories "Literate w/o formal education" , "Up to Middle School" and " Diploma/ Certificate" , in the rural areas. In the urban areas, except for the "Illiterate" category the pay gap in real wages have declined across all educational categories. It would be naive not to admit that both in rural and urban sectors, the pay gap in real wages in regular jobs for diploma/certificate level of education, is the lowest. It also could be noticed that women are getting paid least equitably in the lower level of educational categories namely "Illiterate", "Literate w/o formal education" and "Up to Middle School". Leaving aside the "diploma and certificate" level of education, within the formal school level education subcategory levels, the gender equity in pay is better in the urban areas than in rural areas. The pattern got reversed for the "Diploma/Certificate" level of education. A closer look reveals that for the "Diploma/Certificate" level of education, rural areas seem to be fairer than the urban areas. If we compare the per annum average gender equity in pay for "Diploma/Certificate" level of education, over the rural and urban sectors, it was the rural sector where women were paid approximately 94 percent of their male counterparts daily real wages, whereas in the urban sector, it was only approximately 87 percent. It needs to be remembered that workers in regular jobs who possess maximum diploma or certificate level education, must have finished at least the middle school level of formal education. So it is the diploma or certificate level of education which gives women the edge to be paid more equitably over those who just possess either middle school or secondary/ higher secondary levels of education.

Table 7: Ranking of Activities where women are engaged as regular and casual workers (CWS)				
	2017-18		**2021-22**	
Broad Classification of Industries	**Rural**	**Urban**	**Rural**	**Urban**

Agriculture	1	5	1	5
Mining & Quarrying	10	14	10	14
Manufacturing	2	1	2	1
Electricity, Gas & Water	13	12	10	13
Construction	4	10	4	10
Wholesale & Retail Trade	5	3	5	3
Transport,Storage,Accommodation & FoodServices	6	9	7	9
Information, Communication,Financial & RealEstate	9	7	9	6
Professional, Scientific and Technical Activities	11	11	11	11
Administrative Activities	7	8	6	7
Education, Health & Social Service	3	2	3	2
Art, Entertainment & Recreation Activities	12	13	12	12
Other Services	8	6	8	8
Household as Employer Activities	7	4	6	4

Table 7 shows that, taking into account the regular and casual workers, in their current weekly status, the top 5 activities where rural women were engaged persistently in 2017-18 and 2021-22, in descending order, were, Agricultural Activities, Manufacturing activities, Education-Health & Social Service Activities, Construction Activities and Wholesale & Retail Trade Activities. For the urban areas, the top 5 activities in descending order were, Manufacturing activities, Education-Health & Social Services Activities, Wholesale & Retail Trade Activities, Household as Employer activities and Agriculture. So except for the construction activities (in the rural areas) and household as employers kind of activities (inthe urban areas) all other activities are as the top job providers to women in regular and casual jobs in their current weekly status. Although the orders were different for different sectors.

Table 8: Pay Gap in daily real wages of regular and casual women workers (cds) in different activities

	2017-18		**2021-22**	
	Rural	**Urban**	**Rural**	**Urban**
Agriculture	70.51	50.07	74.54	60.68
Manufacturing	65.09	60.84	72.78	67.03
Education, Health & Social Service Activities	49.49	76.65	43.03	73.28
Wholesale & Retail Trade	76.73	85.3	79.92	75.84
Construction	61.74	74.69	62.25	78.42

Household as Employers Activities	51.52	47.5	43.75	48.72

*Computed from PLFS 2017-18 and PLFS 2021-22, using the formulae (female real wage/male real wage)*100*

We have seen earlier that urban working age women in regular and casual work together were concentrated most in the manufacturing sector. But although the pay parity in the manufacturing sector in the urban areas improved by almost 6 percentage points in 2021-22 from its 2017-18 level, it remained lower than the rural areas throughout. Theworst pay inequity can be noticed in the "Households as Employers Activities" in the urban areas, which is the 4 largest activities for urban women workers, taking regular and casual work together in their current daily status. This class includes activities of private households as employers of domestic personnel such as maids, cooks, waiters, valets, butlers, laundresses, gardeners, gate-keepers, chauffeurs, care-takers, governesses, babysitters, tutors, secretaries etc. Reverse is true for the construction activities.

To explore further into the manufacturing sector, occupations in the manufacturing sector are divided into three main groups, according to their levels of daily average real remuneration from regular and casual work together. The three groups are described as:

1. Senior officials, managers, professionals, associate professionals and technicians who are usually workers with high education levels and relatively higher wages, described as "White-Collar workers"
2. Clerks, sales and service workers, who usually have education levels lower than those of white - collar workers as well as lower average wage levels. They are described as "Pink-Collar-workers"
3. "Blue-Collar workers", who are craftsmen, machine operators and those engaged in what are classified as "elementary occupations", who receive on average lower wages than pink collar workers and usually low levels of education or no formal levels of education.

Chart 8: Change in the gender pay gap in different collared occupations in the manufacturing sector, Rural Area

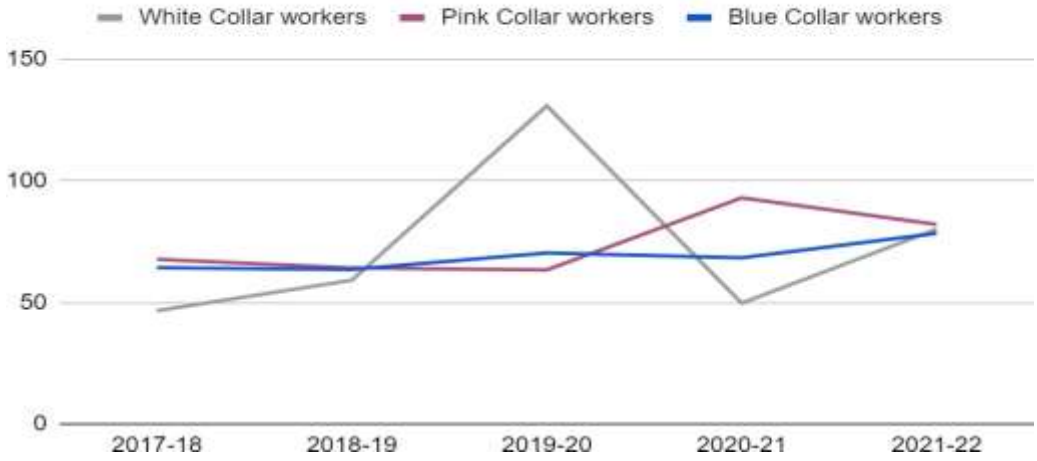
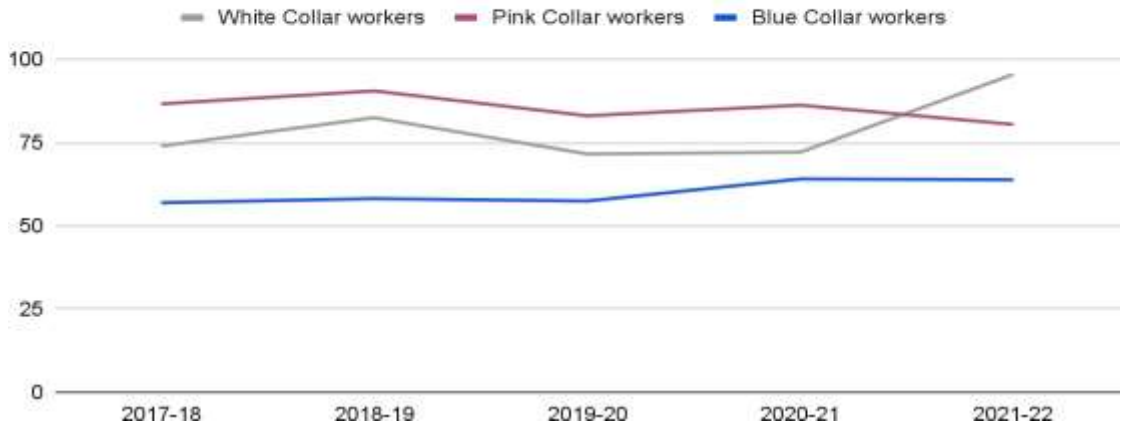


Chart 8 & 9 show the changing scenario of gender equity in pay for female workers in different collared occupations within the manufacturing sector, in the rural and urban sectors respectively.

Chart 9: Change in the Gender Pay Gap in different collared occupations in the manufacturing sector, Urban areas



Both the charts show that gender equity in pay was at its highest in the pink-collar jobs,compared to it in the white collar and blue-collar jobs to begin with. But at the end of the period of study, in the year 2021-22, rural sector exhibiting a convergence in the gender pay gap calculated as female's wage as a percentage of male payment in the regular andcasual work together, in their current weekly status. In the urban areas, white collar jobshad shown tremendous improvement in terms of the gender equity in pay, as it surpassed its lower level and turned out to be higher than the pink collared workers. But it is the blue-collar occupations where the gravitational force was the highest. Approximately on an average, 83 percent of rural women workers in the manufacturing sectors were blue collar workers. The figure for the same in urban areas was 74 percent. Although the gender disparity in pay has improved for the blue-collar women workers, for the urban area it remained lower than the rest of the other types of workers. Rural areas, on the other hand fared better when it comes to gender equity in pay for the blue-collar workers, as it improved and merged with the other two types of workers. So, types of occupations, where women were concentrated most were the where gender gap in pay was worst, within themanufacturing sector.

Social norms and patriarchy to certain extent affect women's' choice of participating in the labor force and acquiring human capital required for the job market too (Afridi et al., 2023),(Afridi et al., 2018). Primary responsibility of domestic chores, child bearing and rearing which comes with the social institution 'marriage'. Marriage market does have the power to be one of the deciding factors in women's' involvement in the socially accepted occupations to a large proportion (Afridi et al., 2023). I have tried to investigate whether marital status, age, controlling for educational attainment, has anything to do with the pay gap in daily real wages in regular and casual work together, in the current reference week. Through Table 9 and 10, effort has been made to unravel the pattern of gender inequity of pay if any in that framework.

Table9: Gender Pay Gap by educational attainment, age and marital status, Rural areas						
	Not Married			Married		
Illiterate	**15-25**	**26-45**	**46-64**	**15-25**	**26-45**	**46-64**
2017-18	60.79	67.62	80.85	66.12	65.17	64.56
2021-22	83.67	71.81	70.66	73.98	68.52	62.71
Literate w/o formal Education						
2017-18	73.53	67.62	79.25	60.78	62.79	56.88
2021-22	85.20	66.73	73.92	79.19	66.06	66.30
Up to Middle School						
2017-18	65.95	69.93	66.76	64.31	55.87	47.44
2021-22	75.99	67.99	71.06	73.11	59.28	52.46
Secondary & Higher Secondary						
2017-18	64.22	76.86	80.44	51.98	57.71	75.69
2021-22	68.27	74.39	71.72	70.30	54.24	49.53
Diploma/ Certificate						
2017-18	79.22	94.86	39.57	74.58	93.30	88.90
2021-22	92.41	152.44	238.34	99.28	84.96	102.01
Graduation & Above						
2017-18	77.71	82.16	34.99	70.59	75.60	113.37
2021-22	81.08	86.32	35.82	107.97	80.89	61.90

Table 10: Gender Pay Gap by educational attainment, age and marital status, Urban areas						
	Not Married			Married		
Illiterate	**15-25**	**26-45**	**46-64**	**15-25**	**26-45**	**46-64**
2017-18	73.89	71.15	58.6	57.38	56.46	49.42
2021-22	73.24	74.51	78.92	61.22	58.49	51.29
Literate w/o formal Education						
2017-18	60.67	73.09	83.28	37.92	58.39	62.46

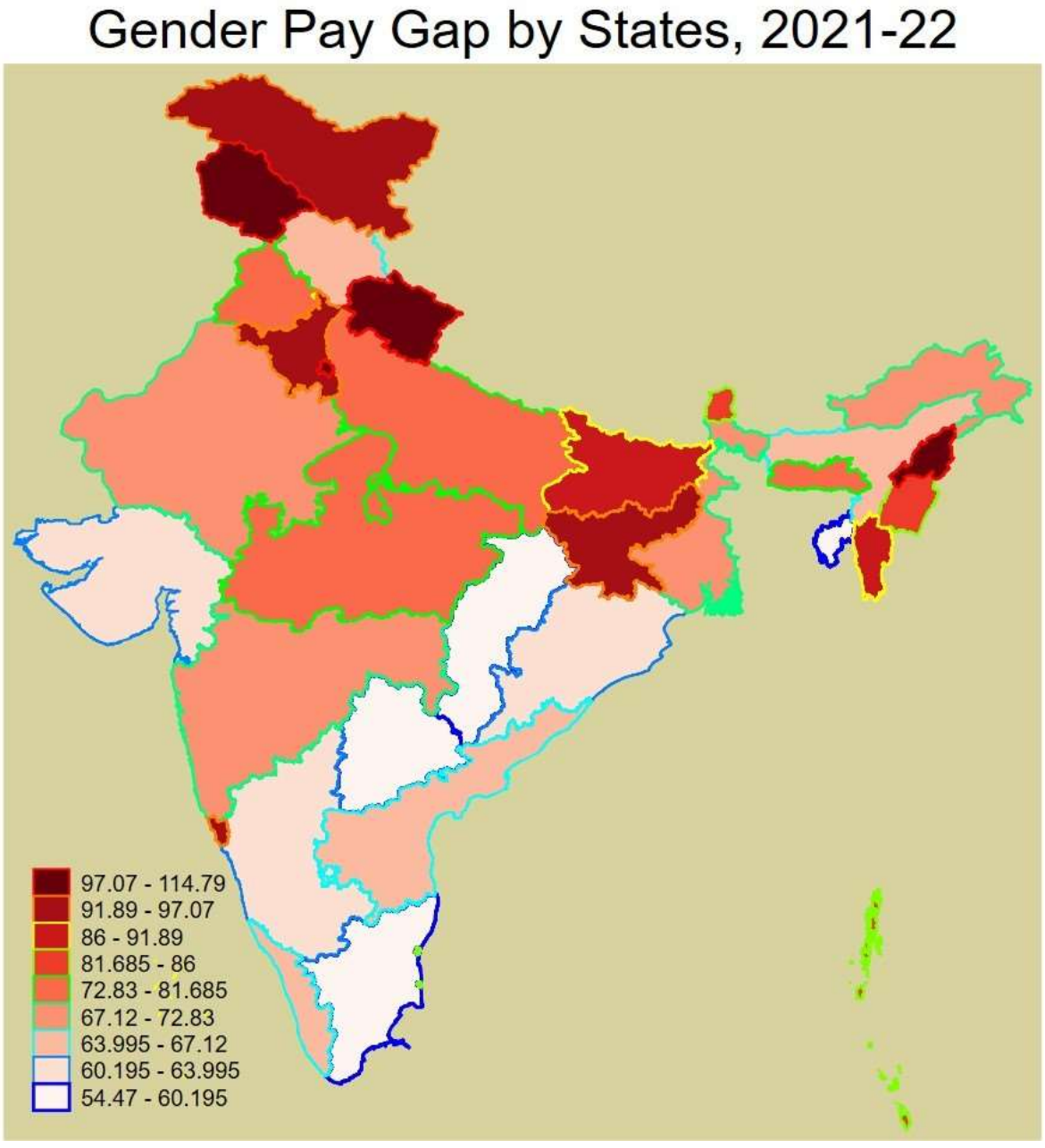
2021-22	52.72	64.35	102.42	63.43	54.64	61.01
Up to Middle School						
2017-18	70.81	79.57	83.52	50.56	52.58	52.26
2021-22	70.15	73.94	75.61	64.45	53.10	56.21
Secondary & Higher Secondary						
2017-18	80.41	85.71	95.58	73.28	79.44	95.22
2021-22	67.28	90.38	109.21	82.07	59.23	80.02
Diploma/ Certificate						
2017-18	99.16	111.24	248.44	84.37	88.04	100.39
2021-22	105.00	88.68	202.97	63.64	97.09	90.63
Graduation & Above						
2017-18	89.39	94.58	91.33	106.98	89.12	94.92
2021-22	99.25	98.82	95.12	122.28	80.64	87.41

Figures of both tables are computed from PLFS 2017-18 and 2021-22 data

Here we have made three age subcategories 15-25, 26-45 and 46-64 within the working range. Marital status of a worker of the working age, are classified into two broad categories, 'Not Married' and 'Married'. The 'Not Married' category clubbed those who are currently not married, separated and widowed together. Gender equity in pay has improved over the time period in the rural area for each educational category, by age and marital status except for a few exceptions. The improvement was deeper in the case of workers possessing diploma/certificate level of education in the rural area. As workers of urban areas of different age cohorts are being compared across their marital status and for different educational attainments, the gender equity in pay was improving, as the age group is ascending except in 2021-22 for the 'graduation and above' education category. Thus, it can be concluded that age does seem to give edge in fighting against the gender paydisparity. Age also can be used as a proxy for the experience. In 2021-22, the daily real wages (not being shown in the table) of married women workers deteriorated in the 26-45 age category compared to 15-25 category, for the lower levels of education (up to middle school). But this trend disappears for higher education categories. 26-45 is the prime productive time of any worker's life cycle and also for women that's the child bearing and rearing age which disrupts the continuity of the time and effort of that work life cycle. In both rural and urban areas, the female wages as a percentage of male wages are much lower for the married women compared to those who are not married, across all age categories and educational categories. So there seems to be a marriage and reproductive penalty women are facing in terms of payments for their work.

At all India levels, in 2021-22, the following map shows the performances of different statesin terms of average female daily real wages as a percentage of male wages, in regular and casual work together, in their current weekly status.

Worst performing states were Telangana, Tripura, Chhattisgarh and Tamil Nadu. The overachievers were, Uttarakhand, Jammu-Kashmir, Delhi and Nagaland. There is as such no regional pattern could be drawn regarding the pay parity, but it can be said that country's northern, central and eastern parts are paying women workers their daily real wages much closer to male workers' wages. The southern part of India, was particularly underperformer in terms of pay equity, despite them having higher social development indicators. Here through this map, the status of the pay gap in wages are being displayed only for 2021-22. Due to the unavailability of earlier years' shape files, inter temporal comparison throughmap could not be done.



IV. Econometric Analysis of Pay Gap

The average daily real earnings (regular jobs in the non-agricultural sector) of female and male in 2017-18 were Rs. 588.22 and Rs.464.70, respectively. In the rural area the pay gap between men and women was Rs.148.48 and for the urban area the figure was Rs.115.88. A part of the difference could be attributed to differences between two groups of workers in several characteristics that are associated with the earning function. Here in this section for the econometric analysis, I have tried to investigate the statistical validity of the gender pay gap based on the earning function. Following the empirical methodology of the Banerjee and Knight's (Banerjee & Knight, 1985) paper on c*aste in the Indian urban labor market*, I have exercised three regression models to see whether there is and how each determinants of workers' earning function are different and whether they can explain the pay differences of men and women.

For the empirical analysis, the dependent variable is *log of daily real wages,* workers of working age (15-64) earned in the regular jobs in the non-agricultural sectors in the reference week. The regressors are, *educational attainment, sector of residence, age, skilled based occupations divisions, marital status*. For the econometric analysis, the year which has been analyzed is 2017-18. The other years have been ignored for the purpose of keeping this term paper in appropriate size. Also, analysis is restricted to regular jobs in the non-agricultural sector and workers of working age. The educational attainment variable is classified into five groups: Illiterate, Elementary Education, Diploma Level Education, Secondary-Higher Secondary Education and Higher Education. Thus, educational attainment is a factor variable. Age is a continuous variable which we use as a crude proxy for the experience, which has an impact on the earning function. Earning function is the outcome of the forces of demand and supply. There is vast literature which focuses solely on the supply side of earning functions, which means human capital variables in explaining the earning outcomes. But there is no academic justification of restricting the independent variables in the estimated equation to be the conventional productivity explaining variables. There could be other variables as well. As we have seen throughout this analysis, there is considerable difference in the pay gaps between rural and urban areas. Therefore, workers' place of residence, which we assume is also the place of work too, is being considered as the argument of the earning function. Occupations of the regular jobs in the nonagricultural sector is divided into four groups, High skilled occupations, medium skilled occupations, low skilled occupations and unskilled occupations. As mentioned in the previous section, according to the NCO 2004, the skill level of the Division I occupations could not be defined. For the purpose of the analysis, it has been estimated that the average years of formal education of the Div I (Legislators, Senior Officials and Managers),in 2017-18 was approximately 11 years. Thus, for the ease of our analysis this group has been clubbed with the 'Professionals' under the high skilled occupations. Associate Professionals are termed as the 'Medium Skilled Occupations' and all 'Elementary Occupations' were as 'Unskilled Occupations'. Clerks, shop & sales workers, operators and assemblers are grouped together as 'low skilled occupations' (Mondal et al., n.d.). There is a well-documented literature on how marital status affects workers productivity and hence earning of workers. The most common explanations are, married person allocates more time to the market to carry out the responsibilities and the added expenses that come with the package of marriage (Cornwell, n.d.). Thus, marital

status comes as another control variable for our earning function, with only two statuses, 'Not Married' and 'Married'. So, we have four dummy (factor variables) and one continuous variable as regressors. Additionally, to distinguish between men and women, a female dummy too has been created, where women are members of the group and men are non-members.

There are three models of regressions, as suggested by Banerjee & Knight paper (Banerjee & Knight, 1985). Table 11 is displaying the result of the regressions from the three models. The model 1 is the baseline model which assumes there is no distinction between the earning function of the men and women. Model 2 explicitly takes the female dummy as one of the regressor, which assumes there are differences in the earning function of menand women, but it is captured in the intercept term only and coefficients are same for men and women. Model 3, by considering the female interaction term with each of the regressors, assumes that the earning functions are different from men and women both in terms of intercept and coefficient. Following is the result of the model and its interpretation.

Table 11: Regression Analysis of earnings

Explanatory Variables	**Model 1**	**Model 2**	**Model 3**		
	w/o female dummy	**with female dummy**	**Coefficients ofMale**	**Female Interactive Terms**	**Coefficients ofFemale**
Illiterate	(base)	(base)			
Elementary Education	0.3970322*	0.2882432*	0.1801633*	0.1293063*	0.3094695*
Secondary & HigherSecondary Education	0.666189*	0.5425956*	0.3951065*	0.4087008*	0.8038073*
Diploma Level Education	0.9683853*	0.8369999*	0.6395972*	0.7097089*	1.349306*
Higher Education	1.063714*	0.9541917*	0.7327575*	0.6794106*	1.412168*
Rural Area	(base)	(base)	(base)	(base)	(base)
Urban Area	0.1697829*	0.177581*	0.1245692*	0.2226487*	0.3472179*
Age	0.0299383*	0.041326*	0.044222*	0.0003041	0.0445262*
Age^2	-0.0001356*	-0.0002729*	-0.0003174*	0.0000453	-0.0002722*
High Skilled Occupation	0.4684146*	0.4771606*	0.4647219*	-0.1134556*	0.3512663*
Medium Skilled Occupation	0.2458667*	0.2918544*	0.3376507*	-0.2614337*	0.762171*
Low Skilled Occupation	0.2142598*	0.1588463*	0.1211719*	0.042362*	0.1664081*

Unskilled Occupation	(base)	(base)	(base)	(base)	(base)
Not Married	(base)	(base)	(base)	(base)	(base)
Married	0.1702416*	0.0986736*	0.1335408*	-0.1417906*	-0.0082498
Female	-	-0.4220862*	-0.959358*	-	-
Constant	3.927664*	3.979684*	4.132207*	-	3.172849*
R^2	0.3469	0.3897	0.406		
Adj R^2	0.3468	0.3896	0.4059		
F	3947.36	4359.03	2429.29		
Residual Sum of square	34800.7858	32519.5941	31649.8144		
N	81,754	81,754	81,754		

In all the models, 'Illiterate', ''Unskilled Occupation', Rural Areas and 'Not Married' are taken as base variables of their own category. Size of the entire sample of workers of working age (15-64) who are having positive log of daily real wages from regular jobs in non-agricultural occupations, is 81,754, out this 63,404 were male and 18,350 were female. All * in the superscript against the coefficients figures represents their significance at the 1 percent level using the two-tailed test.

Interpretation of the Model 1

Model 1 assumes there is no difference in the earning functions of men and women in any way. Thus, explicitly the female dummy has not been taken as the regressor. Compared to illiteracy, higher educational attainment rewards workers with higher increments of remuneration, which is obvious. The elementary, secondary-higher secondary, diplomalevel and higher education increases the daily real wages by 40 percent, 67 percent, 97 percent and 106 percent respectively. Residing in the urban area rather than in the rural area enhances the real daily remuneration by approximately 17 percent. The effect of age, which we have considered as the crude proxy for experience, is positive and significant, but diminishing, although the later effect is less strong. As skill and education here are interchangeably used, it is quite expected that compared to unskilled occupations, occupations associated with higher skill levels would be paying more. Compared to being in unskilled menial occupations, moving to a low skilled occupation and medium skilled occupation would increase the daily real wages by 21.4 percent and 24.5 percent. There is only a 4-percentage point difference in moving to medium skilled occupation compared to low skilled occupation from the unskilled occupation. A worker being married would earn
17 percent higher compared to the person's unmarried state. As stated earlier the responsibility, financial burden and maturity that comes with marriage must be the explanation behind this result. But this marriage reward needs to be scrutinized in model 3 through the lens of gender. Because marriage may not be equally rewarding or not rewarding at all for women. Similarly, we will see progressing in achieving higher levels ofeducation compared to no formal education at all is more rewarding for women than men, in terms of higher daily real wages.

Interpretation of the Model 2

Model 2 assumes that there is a difference between the earning functions of the men and women and it is captured only by the intercept term and not the estimated coefficients of the regressors. Therefore, the female dummy as a regressor has been used in the Model 2 regression analysis. Hypothesis that the intercept of the earning functions for female and male are not different has been tested and rejected at the 1 percent level of significance. Therefore, in the Table11, Model 2, the coefficient of the female dummy is significant. Introduction of the female dummy has reduced the values (not sign) of the coefficients of all the regressors except region, age, medium skilled occupations and high skilled occupations. The intercept which is reported in the table for Model 2, is for the male (3.979684), the intercept for the female is 3.5575978 (= intercept of male- female dummy coefficient). Thus, the earning function of men starts at a higher intercept than the earning function of women. Both the earning functions have the same slope as per assumptions of the model. So even if men and women are having the same level of characteristics as described in the model, men are to be paid higher than the women, as their earning function lies parallelly above the women's.

Interpretation of the Model 3

In table 11, the Model 3 has got three columns. The first column shows the coefficients of all the regressor for male. The interaction term of the female dummy and other regressors are in the second column. The third column is dedicated for coefficients of all the regressors for women, which we have derived from the first two columns of model 3. It shows that shifting from the unskilled occupations to the high skilled occupations would increase men's daily real wages by 46.47 percent but for women the increment is only 35.12 percent. The shifting from the unskilled occupations to low skilled or medium skilled occupations is more rewarding for women than men. So, these low skilled and medium skilled occupations are the kind of occupations we have seen earlier too, where women are more concentrated than men. Same could be said about the effect of shifting one's base from rural area to urban area on daily real wages, which goes more in favor of women than men. The positive and diminishing age effects are almost same for men and women, differ only at the fourth decimal places in favor of women. Interestingly, being married compared to unmarried, enhances the daily real reward of men by 13.35 percent. Whereas women face marriage penalty, their changing status to married from not married reduces their daily real wages in regular jobs in the non-agricultural sector by approximately 1 percent, but it is not statistically significant. Women's intercept too is 1 percent lower than that of men's.

Oaxaca Blinder Decomposition

Table 12: Overall Effect of Oaxaca - Blinder Decomposition

	Coefficient	Std. Error	P >|z|
Group_1 (Men)	6.12627	.0028948	0.000
Group_2 (Women)	5.739416	.0072039	0.000
Difference	.3868543	.0077637	0.000
Endowments	-.0618019	.0054473	0.000

Coefficients	.4170369	.0063777	0.000
Interactions	.0316193	.0029046	0.000

After examining the regression analysis, it was revealed that compared to unskilled occupations, being employed in a higher skill level of occupations was rewarding in termsof daily real wages for both men and women, but their degree of reward differs by their gender. Here in this subsection, it has been tried to explore how much of the gender pay gap can be explained by the endowment differences (explained) and how much is for the coefficient differences (unexplained). The results shown here are associated with when women are paid according to the men earning function. The estimated mean log daily real wages for men (Group_1) is 6.12627 and for women (Group_2) the figure is 5.739416. Theestimated difference between the estimated mean log wages paid to men and women, when women were paid according to men earning function is .3868543. The endowment effect explains that when women had the same characteristics as men, then women's mean log wages would have decreased by -.0618019, which is 16 percent of the difference. The coefficient effect, which accounts for differences in the coefficients of regressors of earning functions, explains 107 per cent (over explains) the differences. This could be because on average women's characteristics (for example education) were at a higher level than that of men and yet females were paid less than men due to the post labor market discrimination other than productivity differences.

Predicting probabilities of being in different Occupations

The following table is showing the adjusted predicting probabilities along with actual proportion of male and female in different types of occupations classified according to the skill levels associated with it, at the all-India level. The probabilities are derived using themultinomial logit model (Brown et al., 1980).

Table 13: Adjusted Predicted Probabilities & Actual Proportions

Occupation	Male (Predicted Probability)	Male (Actual Proportion)	Female (Predicted Probability)	Female (Actual Proportion)	(Female wage/male wage) *100
High Skilled Occupation	12.27 %	17.98%	20.69%	25.31%	94.35
Medium Skilled Occupation	10.02 %	11.83%	25.52%	24.22%	92.04
Low Skilled Occupation	69.40 %	59.59%	42.16%	33.48%	91.97
Unskilled Occupation	8.29 %	10.60%	11.60%	16.99%	87.37

So, it's being noticed that, for the high skilled occupations and unskilled occupations, thetwo extreme ends of the occupations, the predicted probabilities at which men and women should be in those professions are less than the proportion at which they were in those occupations. Also,

women's probability as well as the actual proportion of being in high skilled occupations and unskilled occupations are more than men's. It's in the medium skilled occupations, women are working at less than their full potential in the medium skill occupations, but the actual proportion at which they were working in the medium skilled occupations were more than the prediction. Indian men and women both are underrepresented than their respective predicted probabilities in the low skill occupations. Women's representations in the low skill occupations were less than that of men's. So, the kind of occupations, unskilled occupations, where the actual proportion at which they were engaged in those occupations as well as the predicted probabilities were more than men's, the pay gap in wages was the highest. On the other hand, the pay gap is the lowest in the high skilled occupations where again women's actual proportion and predicted probability were more than men's. Table 13 reveals that movements in descending order towards the occupations from high skilled to unskilled occupations, the gender pay gap got worse for regular jobs in the non-agricultural sector. As skill is measured by the educational attainment, it is the education which plays the instrumental role in creating the level playing field in the regular jobs in the non-agricultural sector, purely in terms of wages men and women earned from those jobs.

V. Conclusion

According to a report by the International Labour Organization (ILO), the gender pay gap in India stands at 27 per cent as of 2023 implying that women earn 73 percent of what men earn for doing the same job[22]. The reason behind this pay disparity can be differences in the job market, human capital characteristics, elements of discrimination and demand supply dynamics of the labor market as well as policy induced. In this term paper my effort was limited only to explore the existing gender pay gap through the lens of occupational patterns of men and women. Through further research in this area, it can be investigated the determinants of the gender pay gap in the Indian context and the changing pattern of those determinants over the time. Since 1990 India has gone through a considerable change in its macroeconomic structure. It would be part of the quest of the analysis whether this pay disparity has any power to change the macroeconomic stability of the economy which often interspersed with the turmoil of the external economic and policy environment.

22 "In 2023 Gender-Pay Gap In India Stands At Appalling 27%." 26 Jan. 2023, https://www.womensweb.in/2023/01/in-2023-gender-pay-gap-in-india-stands-at-appalling-27/. Accessed 20 June. 2023.

References:

1. Afridi, F., Arora, A., Dhar, D., & Mahajan, K. (2023). Women's Work, Social Norms and the Marriage Market. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4361917
2. Afridi, F., Dinkelman, T., & Mahajan, K. (2018). Why are fewer married women joining the workforce in rural India? A decomposition analysis over two decades. *Journal of Population Economics*, *31*(3), 783–818. https://doi.org/10.1007/s00148-017-0671-y
3. Banerjee, B., & Knight, J. B. (1985). Caste discrimination in the Indian urban labor market.
4. *Journal of Development Economics*, *17*(3), 277–307.https://doi.org/10.1016/0304-3878(85)90094-X

5. Blau, F. D., & Kahn, L. M. (2016). *The Gender Wage Gap: Extent, Trends, and Explanations* (Working Paper No. 21913). National Bureau of Economic Research. https://doi.org/10.3386/w21913
6. Braunstein, E. (n.d.). *A Consideration of its Gendered Employment Effects*.
7. Brown, R. S., Moon, M., & Zoloth, B. S. (1980). Incorporating Occupational Attainment in Studies of Male-Female Earnings Differentials. *The Journal of Human Resources*, *15*(1), 3. https://doi.org/10.2307/145344
8. Cornwell, C. (n.d.). *Marriage and Earnings*.
9. Gupta, P., & Kothe, S. K. (2021). Gender Discrimination and the Biased Indian Labour Market: Evidence from the National Sample Survey. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3978324
10. Mondal, B., Ghosh, J., Chakraborty, S., & Mitra, S. (n.d.). *Women workers in India: Labour Force Trends, Occupational Diversi cation and Wage Gaps*.