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Occupational Segregation by Caste and Gender in India*

Anu Rammohan [†] Srinivas Goli [‡] Bheemeshwar Reddy A [§]

Abstract

Much of the existing studies on occupational segregation in India have largely focused on gender-based occupational segregation. However, the occupational segregation experienced based on gender is not similar across the different social groups (caste and religion). The intersectionality of gender and social group can be a basis for analysis of occupational segregation in a population. This paper provides empirical evidence on occupational segregation by the intersectional axes of gender and social group in India. Further, this paper documents the monetary gains and losses of each group due to their occupational segregation.

Keywords: Occupational segregation, Caste, India, Wage gap

JEL Codes: J16, J31, J71

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1 Introduction

Existing social science research has demonstrated that marginalised groups have an unequal share of the opportunities that open up in the process of development. In India, one of the main features of the post reform period has been jobless economic growth - while the gross domestic product has increased, employment generation has not kept pace. The sectors which have the potential to generate the bulk of employment such as agriculture and manufacturing also experienced a relatively slow rate of growth compared to tertiary sector (Government of India, 2016). The female labour force participation rate in India has declined from 34.1 percent in 1999-2000 to 27.2 percent in 2011-12. The labour force participation rate of females in India is low not only when compared to developed countries, but also when compared to other developing countries. Such low female labour force participation in India reflects the disadvantage faced by females in the country's labour market. Similarly, the wage disparity between female and male workers in India provides further evidence of female disadvantage in the labour market.

Among the explanations proposed for this large gender-based wage gap in the country is the presence of gender-based occupational segregation or the lower representation of females in highly paid occupations. Occupational segregation is regarded as a feature of labour market inequality and it can lead to over-representation of disadvantaged groups in low-skilled and low-wage-occupations (Anker, 1998; Blau, Brinton and Grusky, 2006; Kaufman, 2010). In the context of developed countries, several studies have shown that occupational segregation is an important factor that can explain earning gaps between two groups in an economy (Blau and Kahn, 2007; Coelli, 2014).

Although occupational segregation has been extensively studied in the literature focusing on advanced economies, relatively few studies have analysed this issue in the Indian context. Recent studies have shown the persistence of high level of gender-based occupational segregation in India (Agarwal, 2015; Chattopadhyay, Chakraborty and Anker, 2013; Swaminthan and Majumdar, 2006). For instance, Chattopadhyay, Chakraborty and Anker (2013) documented changes in gender-based occupational segregation in the organised manufacturing sector using data from the Annual Survey of Industries for the years 1989-90 and 2000-01. They found evidence of a decline in occupational segregation in the organised manufacturing sector between the period 1989-90 and 2000-01. A similar conclusion was reached by Duraisamy and Duraisamy (2014) using data from different rounds of Employment and Unemployment Surveys.

However, occupational segregation can affect the population of diverse social groups (caste and religious groups) differently. In the Indian context, it is important to consider the role of caste, a system of graded inequality that divides Indian society into separate vertically organised groups. Caste is an important marker of social stratification in Indian society, and the government initiated caste-based affirmative action policies are in place for over six decades. There exists huge evidence in India about labour market discrimination against disadvantaged caste groups (Deshpande and Sharma, 2015; Iyer et al., 2013; Thorat and Sadana 2009). A study by Das and Dutta (2007) found caste to be an influential factor in determining the remuneration of individuals in the labour market, and there is also evidence of discrimination against lower caste workers both in private and in the public sectors in India (Madheswaran and Attewell 2007). Motiram and Singh (2012) have presented evidence of rigidity in intergenerational occupational mobility, particularly among lower castes and in rural areas. Agrawal (2016) showed that in 2009-10 Scheduled Caste and Scheduled Tribe groups experienced higher levels of occupational segregation compared to other social groups in India.

One of the major limitations of the existing studies on occupational segregation in India is that they have exclusively studies either gender based occupational segregation or caste based occupational segregation. In other words, such studies have documented occupational segregation only along a single axis (gender or caste) of social identity. Different studies have argued that multiple axes of identity, for example, gender and social group (caste and religious group), are intersectional categories and these mutually reinforce each other and thereby, can act as collective source of labour market disadvantage for women, especially for those who belong to marginalised social groups (Browne and Misra, 2003; McCall, 2001; Epstein, 1973; Beal 1969). It is possible that social group can influence the occupation that males and females join or belong to, and it is likely that social group-based occupational segregation may affect females and males differently. Studies from developed countries show that females and males belonging to different racial and ethnic groups experience different levels of segregation (Del Río and Alonso-Villar, 2015; Guinea-Martin et al, 2015; Reskin et al, 2004; Spriggs and Williams, 1996). However, in India the empirical research on occupational segregation based on intersectional axes of the gender-social group is negligible. Thus, it is important to not only document occupational segregation based on gender and social group (caste and religion) separately, but also to analyse occupational segregation based on the intersectional lens of the gender-social group.

Finally, mere documentation of occupational segregation is not adequate to assess the impact of the gender-social group based occupational segregation. Hence, occupational segregation may affect different groups differently; some may have monetary gains while others may experience loss due to occupational segregation. In India, there exists substantial differences not only in the wage gaps between males and females, but also across the historically marginalised social groups such as Scheduled Castes and Scheduled Tribes and others (Madheswaran and Attewell 2007, Agrawal 2014, and Sengupta and Das 2014). This wage gap between two groups can be attributed to their representation in a particular occupation or the wage difference within the occupation. In other words, to understand the impact of occupational segregation for different groups, it is important to quantify the inequality in labour market due to occupational segregation.

The main objective of this paper is to analyse the occupational segregation and its contribution to the gender-social group based wage gaps in India. Using data from the nationally representative Employment and Unemployment Survey 2011-12, we make two contributions to the existing literature on occupational segregation in India. First, the paper analyses occupational segregation based on intersectional axes of gender and social groups by categorising wage workers according to the gender and social groups. Second, this paper estimates average wage gain or loss to each group due to their occupational segregation (i.e., over representation or under representation in an occupation).

The rest of the paper is organised as follows. In the next section, we present our methodology for measurement of occupational segregation. In section 3, we outline the main findings from our empirical analysis, and section 4 presents our conclusions.

2 Methodology

2.1. *Measures of Occupational Segregation*

In India, most of the existing studies have examined occupational segregation between males and females using the dissimilarity index or the Duncan index (Duncan and Duncan, 1955). The dissimilarity index used for measuring the occupational segregation uses distribution of males as a reference category to capture occupational segregation of females. However, such comparison of one group with another is confusing in the presence of multiple groups. To address this problem, Alonso-Villar and Del Río (2010) proposed multiple local segregation measures to measure occupational segregation in multiple group contexts. These measures compare a group's occupational sorting with the occupational structure of the economy. Ac-

cordingly, in the context of multiple groups, a given group is considered to be occupationally segregated as long as their occupational distribution differs from the occupational distribution of the economy. Following Alonso-Villar and Del Río (2010) below we present different local segregation indices used for measuring occupational segregation of each group.

$$D^g = \frac{1}{2} \sum_j \left| \frac{c_j^g}{C^g} - \frac{t_j}{T} \right| \quad (1)$$

$$G^g = \frac{\sum_{i,j} \frac{t_i}{T} \frac{t_j}{T} \left| \frac{c_i^g}{t_i} - \frac{t_j^g}{t_j} \right|}{2 \frac{C^g}{T}} \quad (2)$$

$$\Phi_\alpha^g = \sum_j \frac{c_j^g}{C^g} \ln \left(\frac{\frac{c_j^g}{C^g}}{\frac{t_j}{T}} \right) \quad \alpha = 1 \quad (3a)$$

$$\Phi_\alpha^g = \frac{1}{\alpha(\alpha - 1)} \sum_j \frac{t_j}{T} \left[\left(\frac{\frac{c_j^g}{C^g}}{\frac{t_j}{T}} \right)^\alpha - 1 \right] \quad \alpha \neq 0, 1 \quad (3b)$$

Where c_j^g denotes the number of workers belonging to group g in occupation j , t_j represents the sum of total number of workers in that occupation in the economy, the term $C^g = \sum c_j^g$ represents the sum of the number of workers from group g in the economy, and the expression $T = \sum t_j$ denotes the total number of workers in the economy. D_g is similar to dissimilarity index and it takes values between 0 and 1 (Moir and Selby Smith, 1979). Index G^g also ranges between 0 and 1 and it is adopted from inequality index, Gini. Φ_α^g is unbounded index. α is segregation aversion parameter. Higher the value of α , the higher the aversion to segregation.

2.2 Estimating the Cost of Occupational Segregation

It is not enough to merely demonstrate the presence or absence of certain groups in a particular occupation. The critical question that needs to be addressed is whether being underrepresented or overrepresented in a particular occupation accrues either monetary advantage or disadvantage to different social groups. To address this issue, we compute the per capita monetary gain and loss accruing to a group due to occupational segregation using the index, Γ , proposed by Del Río and Alonso-Villar (2015). The index Γ can be written as shown below:

$$\Gamma = \frac{1}{2} \sum_j \left(\frac{c_j^g}{C^g} - \frac{t_j}{T} \right) \left(\frac{w_j}{\bar{w}} \right) \quad (4)$$

In equation (4), the first part of the index is a comparison between the share of the group in each occupation $\frac{c_j^g}{C^g}$ with the share of the occupation j^{th} in the total employment in the economy, $\frac{t_j}{T}$. If this difference is positive, then the group is over represented in occupation j , and a negative difference denotes an under-representation in occupation j . In the next part of the index, $\frac{w_i}{w_j}$, the term w_j denotes the average wage of that occupation and \bar{w} denotes the average wage of the economy. In other words, this index expresses the per capita monetary gain or loss for individuals from a group, being over represented or underrepresented in occupation j , as a share of the average wage of the economy (\bar{w}). Thus, this index allows us to compare groups in terms of their gains and loss.

The index, Γ , has a simple and intuitive interpretation. An index value of 0.2 would mean that the group has a per capita gain of 20% of the average wage in the economy, and a value of -0.2 would imply a loss of 20% of the average wage of the economy. The advantage of using this index is that it also remains unaffected by the change in the size of the groups or changes in the total number of workers in the economy.

However, it is important to note that the index Γ only explains part of the wage-gap of a group, as it assumes that there are no wage differences among groups in a given occupation. However, individuals belonging to different groups receive different wages despite being within the same occupation. Del R o and Alonso-Villar (2015) have shown that the wage gap of a group can be decomposed into wage gap due to occupational segregation, Γ , and wage gap due to wage differences among the groups within the same occupation, Δ . Del R o and Alonso-Villar (2015) state that the earning gap ratio can be expressed in the following way:

$$Egap = \left(C^g \sum_j \frac{c_j^g}{C^g} w_j^g - C^g \sum_j \frac{t_j}{T} w_j \right) \frac{1}{C^g \bar{w}}$$

$$Egap = \left(C^g \sum_j \frac{c_j^g}{C^g} w_j^g - C^g \sum_j \frac{c_j^g}{C^g} w_j + C^g \sum_j \frac{c_j^g}{C^g} w_j - C^g \sum_j \frac{t_j}{T} w_j \right) \frac{1}{C^g \bar{w}}$$

$$Egap = \left[\sum_j c_j^g (w_j^g - w_j) \right] \frac{1}{C^g \bar{w}} + \sum_j \left(\frac{c_j^g}{C^g} - \frac{t_j}{T} \right) \left(\frac{w_j}{\bar{w}} \right)$$

The *Egap* decomposition is useful to understand the contribution of occupational segregation (Γ) and wage disparity to a group's positive or negative earning gap (Δ).

3 Data

We use data on occupations and wages from the 68th Round of the National Sample Survey’s Employment and Unemployment Survey (EUS 2011-12), to analyse occupational segregation and its consequences in per capita monetary gains loss and gain to a group. The Employment and Unemployment Survey is a nationally representative repeated cross-sectional multi-stage cluster sample survey which is conducted by National Sample Survey Office of the Government of India. It is the most important labour force survey in India. The Employment and Unemployment Survey provides information on “wage and salary earnings (received or receivable) for the work done during the week (in Rupees.)” for each casual and regular worker during reference period of last week preceding survey date. However, as this survey does not collect information on earnings for self-employed workers, we restrict the analysis to only wage workers, that is, those who are either regular salary workers or casual workers. We divide workers into five different social groups Scheduled Castes, Scheduled Tribes, Other Backward Classes, Muslims(all Muslims irrespective their social group i.e., Muslims also include OBC/ST/SC Muslim groups) and Others. Further, each these social groups are divided into males and females, giving us ten mutually exclusive categories. We restrict our analysis to 15 years and above age group.

The Employment and Unemployment Survey provides occupation data based on the National Classification of Occupations-2004 (NCO-2004) which consists of 113 occupational titles. However, to analyse occupational segregation, we use two digit NCO-2004 occupations, given that the number of individuals in each of the three-digit occupation would be very small in some of the occupations.

4 Results

4.1 Occupational segregation

Table 1: Occupational segregation by gender and social group in India, 2011-12

Group	$\Phi_{0.1}$	$\Phi_{0.5}$	Φ_1	Φ_2	D	G
Men	0.0127	0.0126	0.0125	0.0123	0.0687	0.0878
Women	0.2464	0.1893	0.1569	0.1362	0.2284	0.292
ST	0.1696	0.152	0.1365	0.1191	0.2232	0.2694
SC	0.0756	0.07	0.0646	0.0573	0.1565	0.179
OBC	0.0043	0.0042	0.0041	0.004	0.0334	0.0447
Muslims	0.0744	0.0763	0.0804	0.0959	0.1539	0.2074
Others	0.198	0.199	0.2049	0.2354	0.2847	0.349

Note: Segregation is calculated using different local segregation indices (Reference category: All currently employed workers in the economy)

Table 1 presents the occupational segregation based on gender and caste separately using different local segregation indices for wage workers in India. Overall the occupational segregation varies substantially between males and females as well as across different social groups in India. Females show very high occupational segregation as compared to males. Among social groups, SCs and Others show much higher occupational segregation as compared to the rest of the social groups in India.

Table 2: Local segregation of the gender-social groups in India, 2011-12

Gender-social group	$\Phi_{0.1}$	$\Phi_{0.5}$	Φ_1	Φ_2	D	G
Other men	0.2277	0.2263	0.2317	0.2696	0.2976	0.3747
OBC men	0.0177	0.0175	0.0174	0.0175	0.0697	0.098
Muslim men	0.0948	0.0957	0.0984	0.1105	0.1919	0.2398
ST men	0.144	0.1288	0.1153	0.1	0.2005	0.25
SC men	0.0703	0.0654	0.0608	0.0547	0.1418	0.1827
Other women	0.469	0.4266	0.435	0.607	0.3687	0.4828
OBC women	0.2346	0.1738	0.1378	0.1115	0.2082	0.2616
Muslim women	0.3953	0.3135	0.2879	0.33	0.2754	0.3966
ST women	0.503	0.3606	0.288	0.2449	0.3068	0.3938
SC women	0.4227	0.3173	0.2651	0.2403	0.3011	0.383

Note: Segregation is calculated using different local segregation indices (Reference category: All currently employed workers in the economy)

We further analysed overall occupational segregation by dividing all wage workers into ten mutually exclusive gender-social groups such as, ST females, SC females, OBC females, Muslim females, Other females, ST males, SC males, OBC males, Muslim males, and Other males (Table 2). Occupational segregation based on the gender-social group was the highest among Other women followed by Other men. On the contrary, OBC men showed the lowest occupational segregation among all gender-social group categories. Table 2 also shows that females from socially marginalised social groups such as SC, ST, Muslim experience much higher occupational segregation compared to their males counter parts. To assess the impact of segregation for each of the gender-social groups, we analyse the per capita wage loss and gain for each gender-social group in the next section.

4.2 Consequences of Occupational Segregation

As discussed previously, the consequence of occupational segregation for a group may depend on the type of occupations in which the group is either over represented or under represented. Following Del Río and Alonso-Villar (2015), we analyse the level gains (or losses) incurred by a group due to its over-representation (or under representation) within some occupations. As discussed in the methodology section, we decomposed earning gap ratio ($Egap$) of a group into per capita wage gain (or loss) due to occupational segregation (Γ) of the group and wage gap due to wage disparity between groups within occupations (Δ) (see Table 3).

Table 3: Decomposition of the per capita earning gap ratio ($Egap$) for gender-social groups in terms of segregation ($\Gamma \times 100$) and within-occupation wage disparities ($\Delta \times 100$) in India, 2011-12

Gender and social group	Γ	Δ
Other males	49.7	31.2
Other females	45.5	-6.6
OBC males	-0.5	1.6
OBC females	-12.7	-25.3
Muslim males	-10.1	-6
Muslim females	-9.9	-30.5
ST males	-19.4	-2.6
ST females	-30.4	-19.8
SC males	-17.8	0.5
SC females	-25.2	-19.5

Occupational segregation (uneven representation in different occupations) of SC, ST, Muslim females led to a substantial loss in terms of per capita wages. For example, on the one hand, females from ST category incurred 30.4 per cent per capita loss in the average wage of the economy due to their occupational segregation. On the other hand, as a result of occupational segregation, Other males gained 49.7 per cent, and Other females gained 45.5 per cent above the average wage of the economy.

Females and males from SC, ST, Muslim groups, particularly females from SC, ST, Muslim social groups incurred huge loss as a consequence of their uneven representation in different occupations. On the contrary, males and females from the socially advantaged Other group have gained most due to their uneven representation across different occupations in the economy. This suggests that while males and females from socially advantaged Other social groups were segregated into high paid jobs, females from SC, ST, Muslim groups were segregated into low paid jobs.

We further analysed the contribution to the earning gap ratio ($Egap$) respectively by per capita wage gap due to occupational segregation (Γ) of a group and wage gap due to wage

difference between groups in the same occupation (Δ). According to Table 3, females in the ST category incur 50.2 per cent monetary loss (EGap) on the average wage of the economy in which 30.8 per cent gap is attributable to their occupational segregation (Γ), and 19.4 is due to wage disadvantage within the occupation (Δ). In other words, the per capita earning loss incurred by ST females can be explained by occupational segregation and wage disparities within the same occupation.

To sum up, all ten gender-social groups experience various levels of per capita earnings gap ratio in India (see Table 3). However, both occupational segregation and wage disparity within occupations contributed to the negative (EGap) earning gap ratio for SC, ST, Muslim females and SC, ST, Muslim males. Negative earning wage ratio of females from other group can only be attributable to disadvantages faced by them within occupations. For both males and female from socially marginalised social groups such as SC and ST, the occupational segregation (Γ) contributed more to their monetary loss (Egap) than wage disadvantage within the same occupation (Δ).

5 Conclusion

Using data from Employment and Unemployment Survey 2011-12, this paper provides a detailed disaggregated analysis of occupational segregation through a complex intersectional framework of gender-social groups for wage workers and assesses the impact of occupational segregation on monetary advantage and disadvantage accruing to each group in India. In this paper, a group is considered occupationally segregated as long as the occupational distribution of the group differs from the occupational distribution in the economy. This paper shows that occupational segregation faced by different social groups varies substantially by their gender and social group in India. The results based on intersection axes of gender and social group showed that females from socially marginalised groups such as SC, ST, Muslim experience much higher occupational segregation compared to males from their respective social group. Similarly, the analysis showed that females from Other social group experienced higher occupational segregation than rest of the groups.

Occupational segregation can have either positive or negative effect. Hence, we used Del Río and AlonsoVillar (2015) methodology to analyse monetary gain or loss to a group due to occupational segregation. Females from Other social group gained 45.5 per cent on per capita in the average wage of the economy due to their occupational segregation. On the contrary, occupational segregation of females from SC, ST, Muslims groups led to substantial monetary losses. Females from socially advanced social groups (Other) were segregated into better-paid jobs whereas, the females from socially marginalised groups such as SC, ST, and Muslim were

mostly concentrated in low paid jobs. Our findings show that despite segregation being higher for females from Other social group than their counterparts from SC, ST, Muslim groups, the effect of their segregation was positive. Our findings are consistent with previous evidence on wage discrimination faced by females from marginalised social groups in India. A recent study by Sengupta and Das (2014) showed that once accounted for productivity differences across different gender social groups in India, females from deprived social background such as SC and ST groups experienced more severe wage discrimination as compared to females from other social groups.

Females from other SC, ST, Muslim group not only suffer the wage loss due to occupational segregation but also due to the gender wage gap within the same occupation. On the contrary, females from Other social group are disadvantaged only due to within-occupation wage disparity. For example, at the all-India level, socially marginalised SC women incur 25.2 per cent loss in per capita average wage of the economy due to occupational sorting into low paid occupations and they also incurred 19.5 per cent loss in per capita average wage of the economy due to within-occupation wage disparity. The results highlight the need for using an intersectionality framework in studying labour market inequalities in India.

Males from OBC social group are least segregated among all the gender-social groups. However, they did not gain monetarily due to their uniform presence across occupations in the economy. Similarly, males from SC, ST, Muslim social groups face lower occupational segregation than the females from the same social groups, but they too incurred a substantial monetary loss due to their disproportionate presence in low paid occupations. On the contrary, males from Other social group are most segregated among all males, but they not only benefit from substantial monetary gains from their occupational segregation but also enjoy wage advantage within the occupations.

Our analysis finds that occupational segregation based on complex multiple axes framework of gender-social groups varies substantially when compared to the analyses based on single axis framework of gender or social groups in India. The findings confirm that females become more disadvantaged when multiple layers of marginality operate on them. Finally, occupational segregation is an important factor in explaining per capita wage loss for doubly disadvantaged groups such as females from SC, ST and Muslim social groups in India. Higher concentration of SC, ST, Muslim females in low paid jobs can be attributed to their differences in characteristics such age, educational attainments and other factors such as labour market discrimination. From a policy perspective, this study highlights two critical points. First, the findings suggest that within the ‘deprivation layers’ of caste and religion, women bear the additional burden of their gendered location. Second, the gendered occupational segregation and wage disparities in the country despite the overall economic development,

needs a considerable attention in socio-economic policies.

References

- Agrawal, T. (2016). Occupational Segregation in the Indian Labour Market. *European Journal of Development Research*, 28(2), 330-351.
- Agrawal, T. (2013). Are there glass-ceiling and sticky-floor effects in India? An empirical examination. *Oxford Development Studies*, 41(3), 322-342.
- Agrawal, T. (2014). Gender and caste-based wage discrimination in India: some recent evidence. *Journal for Labour Market Research*, 47(4), 329-340.
- Alonso-Villar, O., and Del Río, C. (2010). Local versus overall segregation measures. *Mathematical Social Sciences*, 60, 30–38.
- Anker, R. (1998) *Gender and Jobs: Sex Segregation of Occupations in the World*. Geneva: International Labour Office.
- Beal, F. M. (1969): *Double Jeopardy: To Be Black and Female*, Hartford Web Publishing. <http://www.hartford-hwp.com/archives/45a/196.html>. (Date of retrieval: 02 Feb 2017).
- Blau, F. D., and Hendricks, W. E. (1979). Occupational segregation by sex: Trends and prospects. *Journal of Human Resources*, 14, 197–210.
- Blau, Francine D., Mary C. Brinton, and David B. Grusky. (2006). “The Declining Significance of Gender?” Pp. 3–34 in *The Declining Significance of Gender?*, edited by Francine D. Blau, Mary C. Brinton, and David B. Grusky. New York: Russell Sage.
- Blau, Francine D. and Lawrence M. Kahn. 2007. “The Gender Pay Gap.” *The Economists’ Voice* 4 (4): Article 5
- Browne, I., and J. Misra (2003): The intersection of gender and race in the labor market, *Annual Review of Sociology*, 29(1), 487-513.
- Chattopadhyay, M., Chakraborty, S., and Anker, R. (2013). Sex segregation in India’s formal manufacturing sector. *International Labour Review*, 152(1), 43-58.
- Charles, M., and Grusky, D. B. (2004). *Occupational ghettos: The worldwide segregation of women and men* (Vol. 200). Stanford, CA: Stanford University Press.
- Coelli, M. B. (2014). Occupational differences and the Australian gender wage gap. *Australian Economic Review*, 47(1), 44-62.
- Das, Maitrei Bordia and Puja Vasudeva Dutta (2007): “Does caste Matter for Wages in the Indian Labor Market?” paper presented at the Third IZA/World Bank Conference on Employment and Development, Rabat, Morocco, 5 May .
- Desai, S. B., Dubey, A., and Joshi, B. L., Sen, M., Shariff, A., and Vanneman, R. (2010a).

Human development in India: Challenges for a society in transition. Oxford, UK: Oxford University Press.

Dutta, M., and Satyabhama, S. (2010). Regional Variations in Occupational Segregation in India: Some Evidence. *Agriculture Industry Interactions: An Approach to Developing Economies*, 143.

Del Río, C., and Alonso-Villar, O. (2015). The Evolution of Occupational Segregation in the United States, 1940–2010: Gains and Losses of Gender–Race, Ethnicity Groups. *Demography*, 52(3), 967-988.

Deshpande, A., Goel, D., and Khanna, S. (2015). Bad Karma or Discrimination? Male-Female Wage Gaps among Salaried Workers in India.

Duraisamy, M., Duraisamy, P. (2014). Occupational segregation, wage and job discrimination against women across social groups in the Indian labor market: 1983–2010. (Working Paper). Chennai: Madras Institute of Development Studies.

Epstein, C. F. (1973): Positive Effects of the Multiple Negative: Explaining the Success of Black Professional Women, *American Journal of Sociology*, 78(4), pp. 912-935.

Estevez-Abe, M. (2006). Gendering the varieties of capitalism. A study of occupational segregation by sex in advanced industrial societies. *World Politics*, 59(01), 142-175.

Frankel, D. M., and Volij, O. (2011). Measuring school segregation. *Journal of Economic Theory*, 146(1), 1-38.

Government of India (2016). *Economic Survey 2015–16*, Ministry of Finance, Government of India, New Delhi.

Guinea-Martin, D., Mora, R., and Ruiz-Castillo, J. (2015). The joint effect of ethnicity and gender on occupational segregation. An approach based on the Mutual Information Index. *Social science research*, 49, 167-178.

Iyer, L., Khanna, T., and Varshney, A. (2013). Caste and entrepreneurship in India. *Economic and Political Weekly*, 48(6), 52-60.

Jacobs JA, Lim ST. 1992. Trends in occupational and industrial sex segregation in 56 countries, 1960–1980. *Work Occup.* 19:450–86.

Jarman, J., Blackburn, R. M., and Racko, G. (2012). The dimensions of occupational gender segregation in industrial countries. *Sociology*, 46(6), 1003-1019.

Lippa, R. A., Preston, K., and Penner, J. (2014). Women’s Representation in 60 Occupations from 1972 to 2010: More Women in High-Status Jobs, Few Women in Things-Oriented Jobs. *PloS one*, 9(5), e95960.

Madheswaran, S., and Attewell, P. (2007). Caste discrimination in the Indian urban labour market: Evidence from the National Sample Survey. *Economic and political Weekly*, 4146-4153.

- McCall, L. (2001): *Complex inequality: Gender, class and race in the new economy*. Routledge, New York.
- Motiram, S., and Singh, A. (2012). How Close Does the Apple Fall to the Tree? Some Evidence on Intergenerational Occupational Mobility from India. *Economic and Political Weekly*, 47(40).
- Kaufman, R. L. (2010): *Race, gender, and the labor market: Inequalities at work*. Lynne Rienner Publishers, Boulder, CO.
- King, D. K. (1988): "Multiple Jeopardy, Multiple Consciousness: The Context of a Black Feminist Ideology, *Signs*, 14, 42-73.
- Reskin, Barbara, Lowell Hargens, and Elizabeth Hirsh (2004): "Picturing Segregation: The Structure of Occupational Segregation by Sex, Race, Ethnicity, and Hispanicity." Unpublished paper, University of Washington.
- Spriggs, William and Rhonda Williams (1996): "A Logit Decomposition Analysis of Occupational Segregation: Results for the 1970s and 1980s." *Review of Economics and Statistics* 78: 348-355.
- Schäfer, A., Tucci, I., and Gottschall, K. (2012). Top down or bottom up? A cross-national study of vertical occupational sex segregation in twelve European countries. Sengupta, Anindita, and Panchanan Das."Gender Wage Discrimination across Social and Religious Groups in India." *Economic and Political Weekly* 49, no. 21 (2014): 71.
- Swaminathan, M and Majumdar, S (2006) Workers in urban India: Changes in gender segregation of occupations, 1983-2000. *Indian Journal of Labour Economics*, 49(2):273-29.
- Thorat, Sukhadeo and Nidhi Sadana (2009) "Caste and Ownership of Private Enterprises" *Economic and political weekly* 44(23):13-16