STATISTICAL DISCRIMINATION AND WORK-PLACE PRODUCTIVITY: A CASE STUDY OF THE TEXTILE INDUSTRY IN LUDHIANA (PUNJAB)

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Introduction

Sustainable development hinges on creating sufficient employment opportunities, vital for uplifting the deprived where both quantity and quality of employment are crucial. Absence of economic growth benefits trickling down widens social and economic disparities, prompting out-migration among low-income groups.As established by economic theory and empirical literature, migration decisions are influenced by pull and push factors including employment opportunities, working conditions, standard of living, among others.

According to the Census of India 2011, both intra-state and inter-state migration are prevalent, driven by the right to movement- as provided by the Indian Constitution- and economic necessity. Internationally, India is a popular migration destination, with immigrants primarily from Bangladesh, Sri Lanka, and Nepal. Addressing the economic and social vulnerabilities of migrants, whether internal or international, is imperative for sustainable development.In the majority of Indian labour markets, there exists a diverse composition of workforce cohorts, raising concerns regarding the potential for workplace discrimination. Labour market discrimination in India has been found to be present based on geographical location of workers (Kapoor, 1987), based on caste, based on religion, and based on gender across rural and urban labour markets.

In this backdrop, the present study aims to evaluate the extent of socio-economic security of the immigrants (out of Punjab residents) in the Textile Industry of Ludhiana City of Punjab. The state of Punjab is chosen primarily because of the enormous number of migrants it provides shelter and work to, every year. As per the Punjab Human Development Report-2004, total migrants in Punjab were 21.65 lakhs which have been classified sector-wise.The manufacturing sector receives the highest number of migrants (58 per cent). Out of the total migrants in the manufacturing sector, as per the data, the Textile Industries employed 4 lakhs migrants.

Punjab has emerged as a key hub for textile-based industries including yarn,

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readymade garments & hosiery. With the development of apparel parks, textile policies & other incentives for the creation of textile infrastructure, the state offers opportunities for investment.Ludhiana District is the largest district of Punjab in terms of its area as well as percentage of population and is selected in the list of first twenty cities of the country to be developed as a smart city in 2016-17. Ludhiana's textile industry comprises 10,000 industrial units, consisting of exporters, brand producers and high-scale manufacturers. The industry employs more than five hundred thousand skilled workers (Statistical Abstract of Punjab, 2020).Ludhiana city has emerged as the largest manufacturing cluster in north India (Punjab Economic Survey, 2021-22).According to the Census of India-2001, Ludhiana district has 67 per cent of migrant workers in the total workforce of the city out of which 27.7 per cent are intra-state migrants, 36.3 per cent inter-state and 4 per cent international migrants. The sources of origin of the inter-state migrants are primarily Uttar Pradesh and Bihar, followed by Haryana, West Bengal, Rajasthan etc.

1. THEORETICAL BACKGROUND

The study examines the socio-economic treatment of migrant workers in Ludhiana's textile industry, integrating human resource development and labour market theories. Labour markets, influenced by factors like perceived efficiency and union dynamics, operate beyond classical or Keynesian models. In a competitive oligopoly with few strong unions, a bilateral oligopsonistic market emerges, affecting societal welfare. Misalignment of employer-employee objectives results in inefficiencies like shirking and principal-agent problems. Firms use New-Keynesian strategies such as efficiency wages and implicit contracts to enhance labour productivity. Labour selection involves discrimination techniques, with statistical discrimination prevailing due to information asymmetry and past employment records, perpetuating segregation and inequality.

Economic discrimination models by (Becker, 1957), (Arrow, 1973), (Phelps, 1972), (Aigner & Cain, 1977), and (Lundberg & Startz, 1983) inform the analysis, distinguishing collective and competitive discrimination. Employers discriminate based on tastes, statistical inferences, or occupational segregation. Ludhiana's textile industry exemplifies statistical discrimination, where migrant labour is perceived as more efficient. Statistical discrimination can involve 'first' moment, based on perceived productivity differences, or 'second' moment, stemming from productivity variance (Dickenson & Oaxaca, 2004).

2. REVIEW OF LITERATURE

2.1 Literature on the labour market discrimination

2.1.1 International: Global and domestic labour markets face various forms of discrimination based on factors like race, gender, caste (especially in India), and religion. (Lang, 1986)

attribute labour market discrimination to communication costs between different groups, suggesting competitive markets may reduce such costs. (Dickenson & Oaxaca, 2004) examine second moment statistical discrimination, indicating employer loss aversion influences discrimination measures. They stress considering productivity risk for worker groups.

2.1.2: India: Kapoor (1987) assesses earning gaps between native and migrant workers in Punjab, observing higher labour market discrimination against migrants from Uttar Pradesh compared to other states.Islam et al. (2018) quantify caste-based statistical discrimination in Uttar Pradesh's health sector, finding that between 47 to 80 per cent of patients statistically discriminate, particularly against low-caste doctors. Mitra &Sambamoorthi (2008) analyse employment outcomes based on disability status in the agrarian labor market, revealing a 26.8 per cent employment differential attributed to statistical discrimination.

2.2. Literature on Immigration to Punjab: Punjab Economic Survey (2021-22) ranks Punjab 8th in migrant population share, with most in-migrants settling in Ludhiana and SAS Nagar. (Malhotra & Devi, 2018) identify migration push and pull factors in Ludhiana, citing better working conditions and familial support as major pull factors.

3.   OBJECTIVES OF THE STUDY

The present analysis endeavours to achieve the following objectives which will be indicative of the economic and social security of the migrant workers who are non-Punjabis.

F   To assess the presence of any preferential treatment given to the immigrants in Ludhiana's textile industry using the statistical discrimination model.

F   To identify the economic as well as non-economic factors responsible for a biased enrolment of migrant labour.

4.   DATABASE, SAMPLE CHARACTERISTICS AND STATISTICAL TOOLS

4.1 Sample Selection

The present study is based on the primary data analysis where the sample is selected from the Textile Industry of Ludhiana district (Punjab) using multi-staged cluster sampling as well as purposive sampling, containing both quantitative facts as well as qualitative details. The city of Ludhiana is primarily chosen because of its vital position in the industrial standing in North India.Further, the enterprises within them have been selected randomly.

4.2 Sample Characteristics

The sample size for the study included 18 manufacturing enterprises comprising 2074 workers fromthe Textile Industry of Ludhiana City which have been classified in the categories of Small, Medium and Large as per the number of workers employed under

them. Following is the criteria of classification used:

a.   Small: 0-19 workers

b.   Medium: 20-49 workers

c.   Large: 50 and above workers

The Government of India categorizes the enterprises in Micro, Small and Medium on the basis of an enterprise's investment in machinery and plant. However, in the present study, labour is the focal point, own classification has been created. The sample consists of 9 large firms (1895 workers), 4 medium (115 workers) and 5 small (64 workers).

4.3 Methodological Tools

4.3.1 Data Collection using

a.   Structured Interview Schedules: To collect data from the employers,structured interview schedules were employed covering size of the workforce (both migrants and locals), nature of employment, average work hours per day, monthly wage-rate, additional perks, number of locals as well as migrants at managerial, clerical and manual level, credentials for screening, perceived efficiency by the employer and past years' employment record.

b.   In-depth Interview with Semi-structured Schedules: This method has been used to interview the Punjab president of Textile and Hosiery Mazdoor Union, Punjab an affiliated labour union of Trade Union Coordination Centre (TUCC).

4.3.2 Mann-Whitney 'U' Statistic

It is employed to make comparisons between the number of local workers hired and the number of migrants hired with the following research hypothesis:

H0: No significant difference between the population of Migrants and Local workers in Ludhiana's firms

H1: The population of migrants is significantly greater than the population of Local workers in Ludhiana's firms

Thus, a one-tailed Mann-Whitney U test has been conducted to ascertain the existence of statistical discrimination from employer's perspectives in the hiring process.

5.   STATISTICAL ANALYSIS AND FINDINGS OF THE STUDY

The following section is divided into three sections- analysis of the employers' responses,analysis of employee union's president's responses, and robustness analysis.

Figure 1: Category-wise composition of the workforce in the sample

Source: Authors' calculations
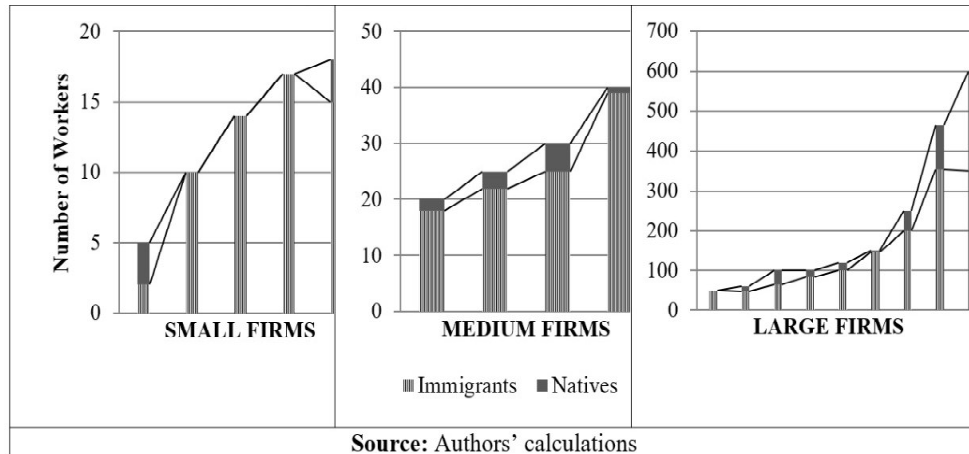
5.1 Analysis of Employers' Responses

Composition of Workers

Fig. 1 describes the category-wise composition of the workforce in small, medium and large firms. It is apparent that immigrant labour forces almost comprise 91 per cent and 90 per cent of immigrant workers for the small and medium level enterprises indicating their clear dominance. The numbers are marginally lower for the large enterprises wherein the share of the non-native labour segment is 74 per cent of the total employment in such firms. Overall, sample statistics posit a 3/4th presence of the immigrant workers and a mere 25 per cent of the local labour. Such bias is indicatively not only due to the economic factors.

Relevance of the model:

One can hypothesise multiple scenarios to the discriminatory employment practice which include a) tastes of the employers - if they attach non-pecuniary costs to associating with the local labour which are generally not related to their productive capacities, b) occupational segregation - making the job as non-competitive to the local labour by restricting their entry and c) statistical - employers perceive a high level of efficiency for the non-native labour by judging the efficiency of immigrant labourers on the basis of their group characteristics.

However, occupational segregation cannot solely account for biased employment practices, as both immigrant and local manual labourers are observed. Taste-based discrimination is also not a primary factor, given employers' hiring decisions are not based on personal preferences. Instead, statistical discrimination predominates, influenced by

perceptions of economic efficiency. Employers, guided by rational decision-making amidst information asymmetry, utilise group attributes as proxies for productivity, resulting in a skewed labour-force distribution. This practice impacts wage and non-wage benefits, work hours, absenteeism, and the hierarchical presence of local versus immigrant labour, which are the five parameters analysed in the following sections.

5.1.1 Wage differentials

In majority of the firms, per piece wage-rate system prevailed. Assuming efficiency levels to be constant, more the workers invest their time in working, more will be their earnings. The results indicated unequivocally that immigrants were working over and above the scheduled time. Thus, in absolute sense they were earning more but not in a preferential sense.In the sample, 2 out of 18 firms explicitly paid higher wages for the scheduled time to the migrant workers than to the local labour for the same number of working hours. The reason could be the retention of hard-working and efficient employees. Thus, wage differentials do not exactly reverberate the presence of statistical discrimination towards the immigrant labour.

5.1.2 Social-Security/Non-wage differentials

Non-wage perks primarily include gifts on festivals, bonus in kind, accommodation to some, and provision of tea or coffee regularly etc. which vary from firm to firm. Eight firms reported no additional perks given to any of the category while seven reported additional perks given to migrant labour only and the remaining three claimed of giving an equal level of non-wage perks to both local and immigrant workers. None of them stated any preferential treatment given to local workers over the migrants although the opposite is true in some cases.
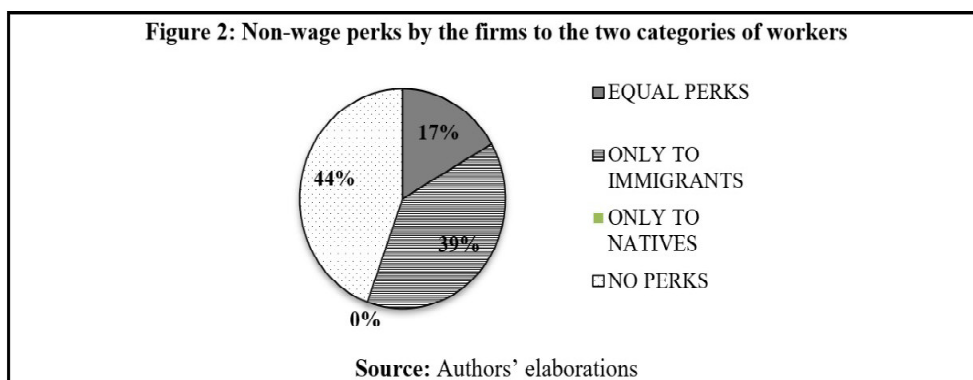

Figure 2: Non-wage perks by the firms to the two categories of workers

- EQUAL PERKS
- ONLY TO IMMIGRANTS
- ONLY TO NATIVES
- NO PERKS

17%
44%
39%
0%

Source: Authors' elaborations

Fig. 2 shows the percentage of firms giving equal perks, preference to locals, preference to migrants and no perks at all.

5.1.3 Differentials in Average Work Hours

Employers may favour individuals from a labor group based on their extended availability for production throughout the day and most of the year. With this perspective, the employers were asked regarding the availability of the local and non-local labour. The results exhibit that the immigrant labour has on a daily average, a 36 minute longer work day.

Table-1: Average Working Hours of Native and Immigrant Workers	
Category	**Average Working Hours Per Day**
Native	9.8
Immigrant	10.4
Source: Authors' elaborations	

5.1.4 Hierarchical Preference

The presence of the labourtype at the different levels of the organisational structure can also be a relevant indicator of the discriminatory employment practices as depicted in Fig. 3. The manufacturing firms are generally composed of two types of labour: a) manual-skilled labour- operating at lower levels and b) Managerial and Clerical labour- operating at upper levels of the hierarchy.

Figure 3: Hierarchical Preference of Labour in the firms
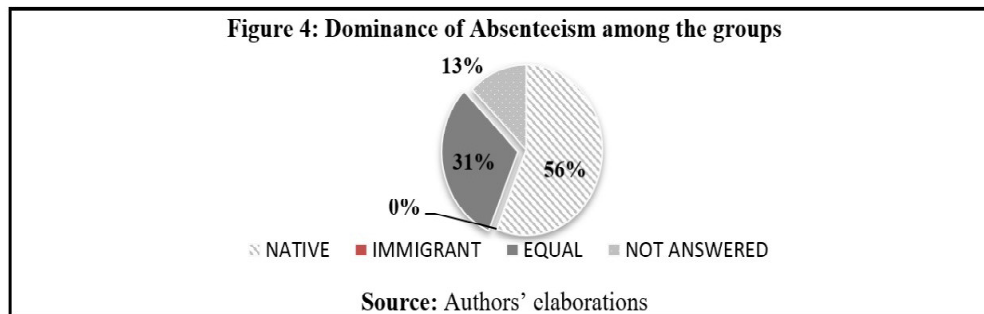
Source: Authors' elaborations
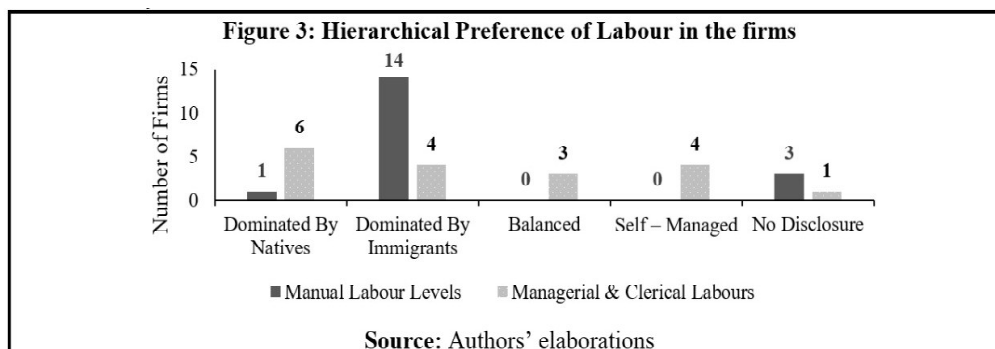
While the manual labour categories are dominated by the non-native categories, the higher levels of hierarchy are occupied by the local labour. The statistical discrimination against the labour from the areas in and around is observable only for the manual labour category but not for the upper levels in the hierarchy. So, the hierarchical presence is a mixed indicator that may not conclusively reveal the presence of statistical discrimination. Only 4 of the total 18 firms, have their managerial levels being controlled by non-native labour while 14 firms have the immigrant-labour dominance in the manual labour category.

These results indicate that while the managerial levels are dominated by local labour, the dominance of the immigrant labour at the manual labour level is prominent. So, conclusive statistical discrimination in favour of the non-native labour is present only for the lower hierarchical levels.

5.1.5 Absenteeism

Absenteeism is particularly a decisive factor in influencing the employers' decision. The distance factor plays a crucial role in increasing the availability of immigrant labour for majority portion of the work-calendar and helps in reducing undue shirking. Notably, the responses indicate a clear dissatisfaction of the employers towards the local labour. As Fig. 4 illustrates, 56 per cent of the employers expressed dissent towards the regularity of the local labour, 31 per cent reported equivalent absenteeism while none of the firms reported a higher degree of absenteeism for the non-local labour.

Figure 4: Dominance of Absenteeism among the groups

13%
31%
56%
0%

NATIVE   IMMIGRANT   EQUAL   NOT ANSWERED

Source: Authors' elaborations

5.2 Analysis of Responses from the side of Labour Unions

The outcome of the interview with representatives of one of the Labour Unions in the city can be broadly summarized as follows:

F   Local workers have a greater tendency to unionise and to oppose a hike in work hours and other factors. So, employers prefer not to employ them. They have family commitments and they work for hours as designated by the govt. unlike the migrant labourers who are lured to do work for more hours at minimal overtime payments.

F   There is contractual labour with no permanent record and social security

F   No over-time wages are paid

The interaction with the President of Textile and Hosiery Mazdoor Union indicated a contrasting view as compared to the outcome from the interaction with the employers. He stated that only in the case of registered and regulated firms, minimum wage laws and regulations were followed and overall, there are arduous living conditions, working environment and limited health-education facilities.

Thus, as per them, statistical discrimination is practiced in the firms of Ludhiana city, as a move towards exploiting both local and migrant labour.

5.3 Robustness Assessment

The results for majority of the parameters indicate the presence of statistical

discriminationin the Textile Industry of Ludhiana. However, the robustness assessment is necessary to confirm the same. The following section is divided into two parts to achieve the aforementioned:

a)   Perceived Efficiency Levels

The enterprises were asked to respond to the question of their perception regarding the efficiency levels of the two groups. Seventeen of eighteen firms responded to a survey about the efficiency levels of two groups, as depicted in Fig. 5. Fourteen firms reported high efficiency levels among migrants, three reported moderate efficiency levels, and none deemed migrants inefficient. In contrast, none of the firms perceived local workers as highly efficient; most rated their efficiency levels as moderate, with five stating they were low.

An in-depth interview conducted with the President of the Industrial Association of Ludhiana revealed statements in congruence with the analysis as they mentioned the migrant workers being more skilled, hardworking, high in supply, coming from Industrial regions and hence, employers have higher preference for them.In contrast, the local workers are limited in supply, arrogant, complacent and less efficient. In their words, 'Migrant workers are completely disorganised while the local labour is more demanding and agitating'. As per them the firms follow the norms of Minimum Wage Legislation.

The results in totality show that majority enterprises rate the efficiency levels of Migrants above that of the local workers, which shows that these results match with the results of statistical analysis pointing towards consistency and robustness.

Figure 5: Perceived Efficiency Levels among the two groups

Source: Authors' elaborations
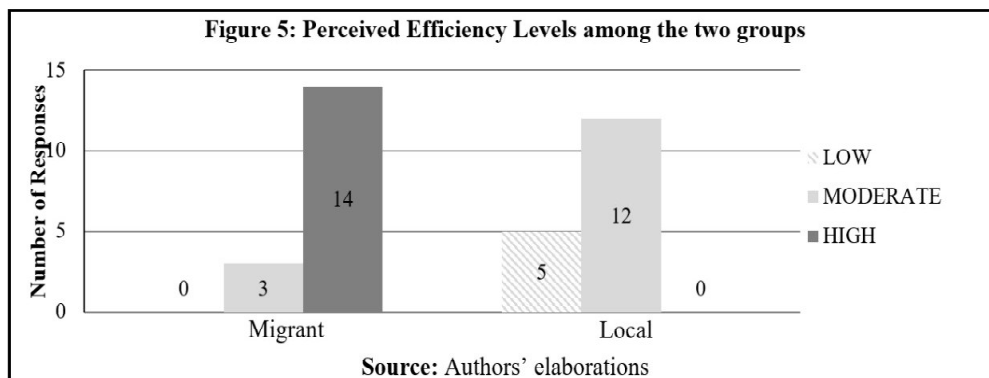
b.   Comparing the number of workers hired in each of the categories using Mann-Whitney U Test

The U statistic is calculated to be 82.5 which is highly significant at 95 per cent level of significance. This implies that the null hypothesis of no significant difference between the population of locals and migrant workers in the firms of Ludhiana is rejected and hence,

we may conclude that there exists a significant difference in the number of migrants as well as locals working in the firms of Ludhiana city. This evinces the presence of preference given to the migrant workers during the hiring process and hence is indicative of the practice of statistical discrimination.

Here the theory reaches a stage where employing migrant labour is an efficient move that helps raise profitability, and in-turn leads to the socio-economic security enhancement of the migrant workers.

6.   CONCLUSION & POLICY IMPLICATIONS

The Ludhiana textile industry is therefore engaged in employment practices that are not solely based on a competitive bidding system.The study tests the presence of statistical discrimination using primary-data analysis for 5 parameters and it was found that two indicators of average work hour differential and absenteeism clearly demonstrate the presence of statistical discrimination. Hierarchical preferences are indicative of statistical discrimination only for the low-tier jobs and the upper-tiers result in preference for the local labour. The remaining two effects are neutral in their operation. The findings are supported by robustness checks in the form of structured interview results as well as the Mann-Whitney Test. The preferential treatment to the immigrant labour, although directly beneficial to the employers in terms of enhanced efficiency, is also equally consequential in lifting the living standards of the immigrant manual labour.

However, employee unions cite wage disparities, exploitation, and job insecurity for the natives, often due to contractual employment through middlemen. The industry's fate could entail capitalist exploitation through daily-contractual jobs, a bilateral monopoly with strong workers' unions, or local labour empowerment. Industry fate closely correlates with workers' well-being, necessitating welfare-oriented policies. Policy makers must ensure social security for vulnerable workers and raise awareness of wage norms to enhance industry welfare and efficiency.

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