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Research Article

A Comparative Examination of Decent Work Index in Two Indian States of Punjab and Haryana

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ABSTRACT

Purpose—The purpose of this paper is to comparatively examine the decent work index and its individual indexes in the north Indian states of Punjab and Haryana. This paper aims to shed light on areas that require attention to improve decent working conditions in both states.

Design/methodology/approach- The study employs secondary data. Individual indexes using variables reflecting four decent work dimensions: employment, social security, workers' rights, and social dialogue have been constructed using that data. Afterward, geometric mean was used to construct the Decent Work Index using individual indexes.

Findings- The study finds a comparatively higher Decent Work Index in Punjab during the initial years taken under consideration. This is owing to better social security and LFPR index performance. However, post-2015, there has been improvement in the Decent Work Index in Haryana surpassing Punjab. This can be attributed to better wages for both agricultural and non-agricultural workers and a higher Union Density Index. However, the pandemic had a major negative impact on both the states but Punjab witnessed a stronger recovery after COVID in comparison to Haryana.

Originality/value- The study comparatively sheds light on decent working conditions at sub- national level in two north Indian states of Punjab and Haryana. It also highlights the areas that require sufficient attention to overcome decent work deficits in both states.

Keywords: Punjab, Haryana, Decent Work Index, Employment, Social Security, Workers' Rights, Social Dialogue

INTRODUCTION

The concept of decent work introduced in the year 1999 by the International Labour Organization (ILO) (Fields, 2003; Anker et al., 2003) holds massive relevance for Sustainable Development Goal-8

(SDG-8), which revolves around decent work and economic growth (Chigbu &Nekhwevha, 2023; Carlsen, 2021; Liston et al., 2024). Decent work is an essential prerequisite for the promotion of sustainable economic development (Azunu & Mensah, 2019), as it promotes labor market stability, emphasizes productivity (Auer, Berg, & Coulibaly, 2005), and suppresses socio-economic disparities (Alzamel, 2024). Decent work is a multidimensional concept encompassing four crucial aspects: worker's rights, social security, social dialogue, and employment (Ghai, 2003; Thore &Tarverdyan, 2009). Each dimension comprises several variables, which shed light upon distinct aspects concerning labor market conditions. This study takes into consideration different variables, highlighting each aspect of decent work. The study specifically emphasizes both Punjab and Haryana over the period from 1999 to 2022.These states are comparable owing to some basic features. For instance, population ranking stands at 16th position for Punjab and 18th for Haryana. Similarly, their area ranking stands at 19th and 20th for Punjab and Haryana, respectively. Moreover, moving towards sectoral share, both states share a similar economic structure with the dominance of the tertiary sector followed by secondary and primary sectors (Government of Punjab, 2022; Government of Haryana, 2022) .These common features enunciate the scope of their comparability. The study facilitates the construction of a decent work index through the incorporation of relevant indicators reflecting each dimension of decent work: employment, social security, workers' rights, and social dialogue. This study fills the critical research gap through a comparative analysis of these two north Indian states and addresses all four dimensions of decent work. Unlike other studies, that emphasize decent work at the national or global level and some shedding light upon limited decent work aspects. Such as the study by Barrientos et al., emphasizes the influence of the global production network (GPN) on employees and their working conditions. It highlighted the need for decent work upliftment at the global level through economic and social upgradation in GPNs. Similarly, the study by Tomei, M., & Belser, P. addresses decent work violation at the global level by taking into consideration both live-in and part-time domestic workers comprising mainly women and girls, who are deprived of sufficient protection by labor laws. Another related study by Owens, R. & Stewart, A. has compared internships with disguised forms of unemployment. The study also stressed the dearth of on-the-job training and emphasized promoting decent working conditions specifically concerning internships at the domestic and international levels. Further a study by Scherrer, C. has focused on SDG-8 and its achievability in the countries of the global south. The research emphasized excess labor supply in comparison to the demand for labor as a major reason behind the decent work deficit. Moving towards the national level, specifically concerning India. One such study by Srivastava, R. finds compromised social and contractual security leading to declining work quality in India. The study finds the rising informal economy in India as a reason behind it. Another, study by Mitra, A. takes into consideration the lack of standard training and heterogeneity concerning the informal sector in South India. Study necessitates the need for sufficient training and skill development. Similarly, the study by Krishna, V. also emphasized training and skill formation specifically in North India to overcome decent work deficits in the informal sector. The study stressed learning by doing and interaction. An additional study related to India by Morgan et al. raises the issue of decent working conditions violation through unfreedom and forced labor in India. The study necessitates the need for efficient enforcement to eradicate such exploitation. While numerous studies analyze decent work from different perspectives, there is a dearth of comprehensive approaches specifically addressing a sub-national level. The present study narrows down the scope by specifically addressing Punjab and Haryana. It also aims to include relevant variables concerning each dimension of decent work in decent work index construction. The paper has been divided into three sections ahead. The second section sheds light upon a comparative analysis of the individual indexes based on several decent work indicators concerning both Punjab and Haryana. The third section revolves around adjusted index values for these indicators. The fourth section emphasizes Decent Work Index trends in Punjab and Haryana, followed by a conclusion. The study relies on secondary data and employs geometric mean for decent work index construction. This study aims to provide empirical evidence to support labor market research through a comprehensive index that specifically addresses decent work. It will facilitate its comparison and examine its extent in both states, pointing towards strengths and weaknesses paving the way for vital initiatives on the part of policymakers that support the scope of improvement concerning decent work in both states.

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CONCEPTUAL FRAMEWORK

The decent work concept serves as a benchmark for fair employment conditions. It was introduced by the International Labour Organization (ILO) in 1999. It is collectively shaped by its four vital dimensions revolving around employment generation, workers' rights, social security, and social dialogue (Ghai, 2003; Thore & Tarverdyan, 2009). Decent work is one of the important contributions towards sustainable development (Anker et al., 2003) , as it is essential for labor market stability, along with economic well-being (International Labour Organization [ILO], 1999). India is a developing country, where decent work is negatively influenced by the massive informal sector (Srivastava, 2012). While the ILO framework is based on a universal definition, it necessitates the need for contextual adaptation for accurate assessment of labor market conditions in sub-national areas. This study conceptualizes decent work through its four key dimensions. Initiating with employment, which indicates availability and quality of jobs, has been reflected through the unemployment rate, Labor Force Participation Rate (LFPR), fatal injuries at factories, and wages (International Labour Organization [I.L.O.], 2013; Ghai, 2003; Schulte et al., 2022). Whereas, the social security dimension indicates workers' financial protection is measured through expenditure on pensions (International Labour Organization [I.L.O.], 2013; Ghai, 2003). Moving towards labor market participation inequalities represented through the workers' rights dimension has been depicted through gender inequality concerning LFPR and the unemployment rate (Ghai, 2003; Ullah, 2013; Mehran et al., 2002). The fourth dimension, social dialogue which serves to be a proxy for collective labor participation is stressed through union density (Kenworthy & Kittel, 2003; Kuruvilla, 2006; APEC Human Resource and Development Working Group, 2022; Ghai, 2003). These quantified labor market indicators facilitate Decent Work Index construction to promote a comparative analysis of two Indian states of Punjab and Haryana. It further fuels a region-specific approach in the identification of disparities concerning labor market conditions to emphasize necessary intervention.

DATA

To facilitate Decent Work Index (DWI) construction, the present study relies on secondary data sources spanning over a period from 1999 to 2022 concerning Punjab and Haryana. The dataset includes multiple decent work indicators, related to employment, social security, workers' rights, and social dialogue. This data has been primarily sourced from national as well as state-level statistical reports. It includes the Periodic Labour Force Survey (PLFS), Reserve Bank of India (RBI) Publications, and statistical abstracts of both Punjab and Haryana. These sources are instrumental in providing annual insights into key decent work variables such as unemployment rate, Labor Force Participation Rate (LFPR), fatal injuries in factories, wages, expenditure on pension, gender disparity based on LFPR, unemployment rate-based gender inequality, and union density. The study considers the working-age population (15-59 years), which is consistent with NSSO reports. To ensure data reliability, the study accounts for data gaps, potential outliers, and inconsistencies by using interpolation and extrapolation techniques, whenever required. Additionally, union density data were not directly available, it has been calculated through actual indicators taken for available data sources. State-specific decent work data ensures a comparative and comprehensive assessment of decent work in Punjab and Haryana.

VARIABLES

For Decent Work Index construction, the present study incorporates multiple decent work dimensions revolving around employment, social security, workers' rights, and social dialogue (Ghai, 2003; Thore &Tarverdyan, 2009). Each of these dimensions consists of several variables, which shed light upon distinct aspects concerning labor market conditions. The study has employed the unemployment rate, Labor Force Participation Rate (LFPR), fatal injuries in factories, and wages as vital variables reflecting employment (International Labour Organization [I.L.O.], 2013; Ghai, 2003; Schulte et al., 2022).On the other hand, social security is represented by expenditure on pensions(International Labour Organization [I.L.O.], 2013; Ghai, 2003). Additionally, Labour Force Participation based on gender disparity and discrimination concerning unemployment rate have been employed under workers' rights (Ghai, 2003; Ullah, 2013; Mehran et al., 2002), and the social dialogue dimension has

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been reflected through union density (Kenworthy & Kittel, 2003; Kuruvilla, 2006; APEC Human Resource and Development Working Group, 2022; Ghai, 2003). All the variables have been systematically incorporated in the construction of a decent work index and facilitate comparative analysis of both Punjab and Haryana.

TRENDS IN INDEX VALUE OF DECENT WORK INDICATORS IN PUNJAB AND HARYANA

To gain meaningful insights into labor market trends in Punjab and Haryana, the index values concerning decent work indicators serve to be a vital tool. The study analyzes these index values over the period from 1999 to 2022, which address challenges and progress in decent work achievement over time. The study includes variables depicting each dimension of decent work, Initiating with the employment dimension of decent work, table 1, shows index values of related decent work indicators in Punjab and Haryana. Beginning with the unemployment rate index, Punjab has witnessed a rising trend over the years. The index value stood at 0.11 in 1999. However, it rose to 0.17 in 2004, with continuation of this trend in subsequent years it rose to 0.19 in 2009, 0.23 in 2020, and 0.53 in 2022. A significant rise was observed in 2021, where the index value stands at 0.46, which is 200% of the initial year. This is owing to reduced labor demand in comparison to its supply constraints. The average economic growth is 5% in Punjab, which is lower than in many other states, it limits job creation. Moving towards three sectors, mechanization in the primary sector has reduced labor demand, and small units offering lower pay dominated the secondary sector. The tertiary sector offers better wages but these are lower than expectations. Moreover, stringent policies concerning Canadian immigration also led to reduced job opportunities abroad (The Tribune, 2025). These are significant contributors to Punjab's rising unemployment index. On the other hand, in Haryana Unemployment Rate Index stands at 0.07 in 1999 and 0.13 in 2004. However, it rose to 0.40 in 2017 and the massive increase occurred in 2021 with the index value rising to 0.76. The major cause is a significant decline in industrial investment in Haryana from ₹4800 crores in 2018 to ₹1600 crores in 2021 owing to COVID-19 (Tiwari,2022). Further, the unemployment rate index slightly declined to 0.57 in 2022. Overall, the comparison suggests Punjab was the worst hit in the beginning of the period. But, in later years, Haryana faced a higher unemployment rate index highlighting major decent work violations. Possible reasons for increased joblessness revolve around increased in-migration in Haryana from other states like UP and Bihar, along with cost-cutting in companies to deal with rising inflation also added fuel to the fire (Tiwari,2022). Another cause is comparatively higher education levels in Haryana than in Punjab leading to excess labor supply (National Survey Office, 2006; National Statistical Office, 2023).

The study has taken the Labor Force Participation Rate Index as the other variable emphasizing the employment dimension of decent work. Punjab has witnessed a declining Labor Force Participation Rate Index trend. Its value stood at 0.55 in 1999, then dropped in 2004 to 0.42. Further, it followed a similar trend with its value standing at 0.39 in 2009 and 0.20 in 2015. It indicates a major fall in workforce participation. Afterward, there has been a slight improvement in its value to 0.29 in 2017 and 0.30 in 2019. However, in the year 2022, its value increased to 0.37 but still, these values are lower than the initial index values in the early years of the period taken under consideration.Moving towards Haryana, the year 1999 has this index value standing at 0.32, which is lower than Punjab. It has witnessed an increase to 0.35 in 2004 and 0.46 in 2009. However, it sharply declined to 0.21 in 2011. It is majorly owing to fall in female labor Force Participation Rate in both rural and urban areas of Haryana. The important factors behind it are mechanization in agriculture, and the adoption of capital–intensive techniques in the secondary sector (Mehrotra & Parida, 2017). The Labor Force Participation Index significantly fluctuated between 2015 and 2020, with values ranging from 0.31 to 0.12. The year 2019, experienced a notable dip in its value to 0.12. By 2022, there has been a slight improvement with its index value of 0.22. But similar to Punjab it is lower in comparison to the initial years considered in the study.Comparison between both states, reveals a declining labor Force Participation Rate Index in both states. But, the index value has generally been on the higher side in Punjab. So, it marks a higher decent work deficit in terms of the Labor Force Participation Rate Index in Haryana, owing to comparatively lower index values. One important reason behind this is the rise in migrants in Punjab to majorly work in the informal sector, compared to Haryana (Singh, 2018), and it is accompanied by massive demand for workforce in the unorganized sector (B. Kumar et al., 1998).

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It is due to a lack of interest on the part of Punjab's skilled residents to work as menial labor or in agriculture, causing more LFPR in Punjab (Pattanaik, 2009).

The study employs Industrial injuries as an indicator reflecting occupational safety (Zaw et al., 2020). Table 1 uses FII as an abbreviation of the fatal industrial injuries index. There have been significant fluctuations in the FII in Punjab and Haryana. Punjab witnessed relatively lower FII in the initial period taken under consideration. Such as the year 1999 found its value standing at 0.05, falling to 0.03 in 2004, then to 0.15 in 2019, and stabilizing to 0.08 in year 2011. On the contrary, Haryana has significantly higher index value of 0.35 in 1999, 0.29 in 2004, 0.23 in

Table 1: Index values concerning Employment dimension of Decent Work variables in Punjab and Haryana from 1999 to 2022.

Year	URI (P)	URI (H)	LFPRI (P)	LFPRI (H)	FII (P)	FII (H)	WAI (P)	WAI (H)	WNAI (P)	WNAI (H)
1999	0.11	0.07	0.55	0.32	0.05	0.35	-	-	-	-
2004	0.17	0.13	0.42	0.35	0.03	0.29	-	-	-	-
2009	0.19	0.07	0.39	0.46	0.15	0.23	-	-	-	-
2011	0.11	0.17	0.39	0.21	0.08	0.25	-	-	-	-
2015	0.24	0.29	0.20	0.31	0.08	0.16	0.32	0.43	0.27	0.40
2017	0.36	0.40	0.29	0.26	0.08	0.21	0.29	0.37	0.27	0.37
2018	0.19	0.26	0.25	0.20	0.19	0.17	0.29	0.40	0.26	0.35
2019	0.26	0.23	0.30	0.12	0.29	0.12	0.30	0.38	0.27	0.37
2020	0.23	0.28	0.28	0.17	0.13	0.16	0.29	0.35	0.26	0.35
2021	0.46	0.76	0.33	0.16	0.18	0.06	0.30	0.35	0.28	0.40
2022	0.53	0.57	0.37	0.22	0.14	0.11	0.31	0.37	0.29	0.45

Source: Author's calculations

Note: Here, URI is Unemployment Rate Index; LFPRI: Labor Force Participation Rate Index; FII: Fatal Injuries in Factories Index; WAI: Agricultural Workers' Wages Index; WNAI: Non- Agricultural Workers' Wages Index; P: Punjab ; H: Haryana

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2009, and 0.25 in 2011. However, FII rose abruptly in 2018 to 0.19 in Punjab, which is on the slightly higher side compared to its counterpart in Haryana with its value of 0.17. A major surge was observed in 2019 in Punjab with an index value of 0.29, compared to 0.12 in Haryana. This can be attributed to several industrial disasters in Punjab in 2019, such as the Dera Bassi chemical plant blast (Press Trust of India, 2019) and the Batala firecracker factory explosion (India Today Web Desk, 2019). Further years saw a decline in Punjab to 0.13 in 2020 and finally reaching 0.14 in 2022. On the other hand, Haryana has its value standing at 0.16 and 0.11 in 2020 and 2022 respectively. Overall, Haryana has been on the higher side especially in the initial years taken under consideration. One reason accountable for this major decent work deficit is Haryana in comparison to Punjab is a giant in the automobile sector in Haryana as it is the largest manufacturer of cars and tractors owing to the presence of Hero, Escorts, Honda, and Maruti Suzuki. The government of India has recognized the Gurugram- Manesar-Bawal region located in Haryana as an auto-hub (Saini,2011). The employees working in this sector are more prone to work-related accidents, of which several sufferers are injured or face fatal accidents during training (Bhatnagar,2022). However, in recent years, Haryana is on a slightly lower side compared to Punjab. Important reasons behind it were the implementation of special training programs to ensure workplace safety, provision of necessary safety equipment, and strictness for adherence to safety regulations (Labour Bureau, 2019). But, both states mark fatal industrial injuries pointing towards vital decent work violations.

Another vital indicator is wages. The wage trends related to agricultural workers had been reflected through the Agricultural Worker's Wages Index (WAI), owing to the non-availability of uniform data, index values were calculated from 2015 onwards. In 2015, the WAI was 0.32 in Punjab, it slightly declined to 0.29 in 2017. Further, there have been minute changes in these values to 0.30 in 2019, and eventually its rise to 0.31 in 2022. Comparatively, the WAI had consistently been higher in Haryana than in Punjab. Initiating with 2015, it stood at 0.43 in 2015, then slightly fell to 0.37 in 2017, and afterward recovered to 0.40 in 2018. By 2022, the WAI value was 0.37 in Haryana. Comparison between Punjab and Haryana reflects Haryana has a higher wage rate in comparison to its counterpart Punjab (HT Correspondent, 2024). The wage trend of workers outside agriculture had been reflected through the non- agricultural workers' wages index. Punjab marked the WNAI value standing at 0.27 in 2015, afterwards a minor fall was observed in 2018 with 0.26 as its index value. It is followed by a minor rise and falls to 0.27 and 0.26 in the years 2018 and 2020 respectively. Finally, the year 2022, witness its value standing at 0.29. Thus, the study finds slow wage growth for non-agricultural workers in Punjab. In comparison to Punjab, WNAI has consistently been on the higher side in Haryana. The year 2015 found this index value standing at 0.40. However, it experienced slight fluctuations afterward. By 2022, its value rose to 0.45. It emphasizes faster non-agricultural wage growth in Haryana. Wages for both agricultural and non-agricultural workers are comparatively higher in Haryana than in Punjab. One important reason is more demand for workers in Haryana and therefore more wages. This is due to the spread of the national capital region on all sides (Acharya, 2017).

Table 2: Index values concerning Social Security dimension of Decent Work variables in Punjab and Haryana from 1999 to 2022.

Year	PI (P)	PI (H)
1999	-	-
2004	0.38	0.23
2009	0.30	0.21

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2011	0.39	0.22
2015	0.32	0.22
2017	0.27	0.23
2018	0.23	0.19
2019	0.21	0.18
2020	0.28	0.20
2021	0.26	0.20
2022	0.20	0.15

Source: Author's calculations

Note: PI: Pension Expenditure Index ; H : Haryana; P: Punjab

Table 2 emphasizes the social security dimension of decent work. The pension expenditure index is an important indicator of the social security dimension concerning decent work. Its higher value reflects financial security and better pension coverage, while its lower value is a major decent work deficit. The study has taken pension expenditure data from 2004 onwards. It is owing to the transition to the New Scheme, 2004, and the availability of structured data from this year onwards is also a vital reason. In Punjab, the year 2004 marked the pension expenditure index value standing at 0.38. Afterward, it declined in 2009 to 0.30, followed by a temporary rise in 2011 to 0.39. However, it gradually declined with pension expenditure index value dropping to 0.32 in 2015, 0.27 in 2017, 0.26 in 2021, and finally reaching 0.20 in 2022. On the other hand, Haryana started with a lower pension expenditure index value than Punjab standing at 0.23 in 1999. Though similar to Punjab, it has followed a declining trend, with values ranging between 0.21 and 0.23 until 2017. Further, it declined to 0.19 in 2018 and 0.15 in 2022. However, both states exhibited this declining trend, owing to their relative position compared to top-performing states. A comparison between Punjab and Haryana reveals Punjab consistently has a higher pension expenditure index value. The crucial reasons behind higher pension expenditure in the Punjab government are comparatively higher public sector employment, higher pay scales of the state employees, and the influence of the pay commission (Sharma, 2024).

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Table 3:Index values concerning Workers' Rights dimension of Decent Work variables in Punjab and Haryana from 1999 to 2022.

Year	GURI (P)	GURI (H)	GLFPR (P)	GLFPR (H)
1999	0.13	0.25	0.72	0.78
2004	0.94	0.38	0.79	1.32
2009	0.38	0.42	1.1	1.44
2011	0.71	0.54	0.71	0.84
2015	0.68	0.55	0.14	0.48
2017	0.65	0.55	0.56	0.55
2018	0.94	0.48	0.73	0.51
2019	1.15	0.96	0.63	0.46
2020	1.3	0.59	0.35	0.39
2021	0.57	0.35	0.57	0.72
2022	0.67	0.30	0.48	0.40

Source: Author's calculations

Note:

Here, GURI: Gender based Unemployment Rate Index; GLFP : Gender based Labor Force Participation Rate Index; P: Punjab; H: Haryana

Gender based Index is the ratio of female and male unemployment index (Dijkstra & Hanmer, 2000).

The third dimension of decent work workers' rights. The study employs the index values concerning Gender Based Unemployment Rate and Gender Based Labor Force Participation Rate to reflect the worker's rights dimension of decent work. Beginning with Gender Based Unemployment Rate in Punjab. The higher index value reflects greater gender disparity. It has shown a fluctuating trend from 0.13 in 1999 to 1.13 in 2019, and 1.3 in 2020. The index value soared high in 2020 owing to the pandemic and its worst effect on female employment in Punjab (Kumar, 2022)., afterward it declined to 0.67 in 2022. On the other hand, in Haryana, it stood at 0.25 in 1999 and 0.38 in 2004. It peaked at 0.96 in 2019, weak investment leading to fewer employment opportunities is also an important reason

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for the overall unemployment rise (Rahar, 2019), which also triggered female unemployment that stands at 66.5% in comparison to males standing at 64% in 2019 (Reserve Bank of India, 2024). But, it further declined to 0.59 in 2020 and 0.30 in 2022. In comparison to Haryana, there is higher unemployment concerned gender disparity in Punjab. One important reason is more secondary and above educational attainment among Punjab females in comparison to their counterparts in Haryana which is an indicator of their employability (Groot & De Brink, 2000). However, limited employment opportunities for educated graduates and above are also a reason for rising unemployment (Gupta,2022). Females of Punjab also face high unemployment owing to a dearth of awareness, unsafe working conditions, and less bargaining power. Moving towards MGNREGA female workers in Punjab, lack of knowledge, form-filling difficulty, and difficulty in the execution of work are accountable factors (Krea University, 2023). Whereas, in Haryana, gender disparity is less severe, but males are more unemployed than females due to their involvement in industries that are more sensitive towards fluctuations in business cycles such as manufacturing, mining, and construction (DeBoer & Seeborg, 1984). For instance, comparison of male involvement in the mining, quarrying, and manufacturing sectors has been more in comparison to females. It is 0.15% in mining and quarrying and 12% in the manufacturing sector, in comparison to female involvement of 0% and 12.3% respectively. In comparison to Haryana, Punjab has lesser disparities in its values (National Statistical Office, 2023).

The study has also employed the Gender-Based Labor Force Participation Rate Index. Its higher value shows better gender equality concerning workforce participation. Punjab recorded a value of 0.72 in 1999, it further rose to 1.1 in 2009, afterward it sharply declined in 2015 to 0.14. After a slight recovery to 0.56 and 0.73 in 2017 and 2018 respectively, it declined to 0.63 in 2019 and 0.35 in 2020. It reflects setbacks owing to the pandemic. The year 2022, finds its value standing at 0.48. Similarly, Haryana's GLFPR increased from 0.78 in 1999 to 1.44 in 2009, before falling to 0.40 in 2022. Thus, both states witnessed fluctuating index values with notable progress in recent years, followed by major setbacks. The probable reason acting as a key driver behind it is the increase in female educational awareness leading to greater secondary school enrolment. Women have been moving towards other sectors due to better employment opportunities in urban areas. Their rising educational attainment is also a major factor behind the increase in their employability over time (Kapsos, Silbermann, & Bourmpoula, 2014). Such has been witnessed in statistical data revealing an increase in secondary and above educational attainment among females in Punjab from 16% in 2004-05 to 39.1% in 2021-22 and in Haryana from 10.2% to 33.8% in the year 2004-05 to 2021-22 respectively (National Sample Survey Office, 2006; National Statistical Office, 2023). One more reason accountable for low female LFPR is the mechanization of agriculture leading to a fall in demand for women's labor in rural areas (Mehrotra & Parida, 2017). However, females of Haryana are worse hit due to more share of the primary sector in Haryana in comparison to Punjab when taken especially in the context of rural areas (National Statistical Office, 2023).

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Table 4: Index values concerning Social Dialogue dimension of Decent Work variables in Punjab and Haryana from 1999 to 2022.

Year	UDI (P)	UDI (H)
1999	0.97	0.03
2004	0.75	0.13
2009	0.53	0.23
2011	0.35	0.16
2015	0.31	0.31
2017	0.05	0.13
2018	0.06	0.26
2019	0.04	1.00
2020	0.02	0.30
2021	0.02	0.47
2022	-	0.49

Source: Author's calculations

Note

- Here, UDI: Union Density Index; P: Punjab; H: Haryana
- Union Density= Number Of Registered Trade Union Members / Total Employees (Eurofound, 2019; Lesch, 2004)

An important variable reflecting social dialogue is union density. The construction of the union density index (UDI) for both Punjab and Haryana unveils this vital decent work dimension. Its higher value indicates better decent working conditions. Initiating with Punjab, UDI was significantly high in 1999 standing at 0.97, it followed a consistent decline with the value of 0.75 in 2004, 0.53 in 2009, and 0.35 in 2011 pointing towards weakened labor movements. It is followed by a steep decline post-2015, with a value of 0.05 in 2017 and reaching 0.02 in 2021. Moving towards Haryana, UDI stands at 0.03 in 1999. However, it followed a gradual increase with a value of 0.23 in 2009 and 0.31 in 2015. The year 2019 witnessed UDI standing at 1. It reflects higher union density in Haryana compared to other Indian states and UTs. However, the index declined in the year 2020 to 0.30 and 0.47 in 2021.

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Afterward, it witnessed a slight increase in the year 2022 to 0.49. But throwing light on statistics related to industrial disputes justifies the reason for lesser trade union density in Haryana in the initial years taken under consideration. For instance, there is a lesser number of industrial disputes in Haryana owing to wages and allowances, leave and hours of work, bonuses, reinstatement of terminated/suspended workers, retrenchment, and others standing at 54 in 2000,11 in 2010, 4 in 2017, 2 in 2018 and 2 in 2019, 2 in 2020 and 1 in 2021.In comparison Punjab which are 21 in 2000, 390 in 2012, 83960 in 2016, 270 in 2017, 91 in 2018,121 in 2019, 42 in 2020, and 110 in 2021*(Statistical Abstract of Punjab and Haryana, 2022)*. However, in recent years, industrial disputes have also increased in Punjab, but there has been a massive decline in the Union Density Index in Punjab. It is widely acknowledged that the nature of the new economy is not hospitable to the trade unions and it has made the position of trade unions much more vulnerable than at any time in the past. This study makes it clear that the new economic environment after 1991 gave a setback to the strength of trade unions as the total membership as well as average membership of unions have not shown any significant positive trend (Singh, Singh, & Singh, 2022).

DECENT WORK INDEX

Decent Work Index (DWI) is a broad concept. It assesses the quality of work by considering variables representing four vital dimensions of decent work: employment, social security, workers' rights, and social dialogue. Geometric mean is preferred for index construction (Biggeri & Mauro, 2018; Kpolovie, Ewansiha, & Esara, 2017; Al-Hilani, 2012; Chakrabartty, 2024). The formula for **Decent Work Index (DWI)** is the geometric mean of all variables:

$$DWI = (V_1.V_2.V_3 \ldots\ldots\ldots\ldots V_n)^{1/n}$$

Here,

- $\mathbf{V_1}$: URI(A): Adjusted Unemployment Rate Index; $\mathbf{V_2}$:LFPRI: Labor Force Participation Rate Index; $\mathbf{V_3}$: GURI(A): Adjusted gender-based Unemployment Rate Index; $\mathbf{V_4}$:GLFPR (A): Adjusted gender-based Labor Force Participation Rate Index; $\mathbf{V_5}$:PI: Pension Expenditure Index; $\mathbf{V_6}$: FII(A): Adjusted Fatal Injuries in Factories Index; $\mathbf{V_7}$:WAI: Agricultural Workers' Wages Index; $\mathbf{V_8}$: WNAI: Non-Agricultural Workers' Wages Index; $\mathbf{V_9}$:UDI: Union Density Index.
- **n=** number of variables

Tables 5 and 6 represent Adjusted Index Values for Decent Work Indicators over a period from 1999–2022 concerning Punjab and Haryana respectively. These adjusted values facilitate consistency. These are obtained by reversing the scale in the case of index values where higher values depict negative outcomes, such as the unemployment rate index and fatal injuries in factories index. Further, the Gender-based unemployment rate index and labor force participation rate index are divided by their maximum values in the given year, to scale it from 0 to 1.

Table 5: Adjusted Index Values for Decent Work Indicators over a period from 1999–2022 concerning Punjab

Year	URI(A)	LFPRI	GURI(A)	GLFPR(A)	PI	FII(A)	WAI	WNAI	UDI
1999	0.89	0.55	0.10	0.65	-	0.95	-	-	0.97
2004	0.83	0.42	0.72	0.72	0.38	0.97	-	-	0.75
2009	0.81	0.39	0.29	1.00	0.30	0.85	-	-	0.53

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2011	0.89	0.39	0.55	0.65	0.39	0.92	-	-	0.35
2015	0.76	0.20	0.52	0.13	0.32	0.92	0.32	0.27	0.31
2017	0.64	0.29	0.50	0.51	0.27	0.92	0.29	0.27	0.05
2018	0.81	0.25	0.72	0.66	0.23	0.81	0.29	0.26	0.06
2019	0.74	0.30	0.88	0.57	0.21	0.71	0.30	0.27	0.04
2020	0.77	0.28	1.00	0.32	0.28	0.87	0.29	0.26	0.02
2021	0.54	0.33	0.44	0.52	0.26	-	0.30	0.28	0.02
2022	0.47	0.37	0.52	0.44	0.20	0.86	0.31	0.29	-

Source: Author's calculations

Note: Here, URI(A): Adjusted Unemployment Rate Index; LFPRI: Labor Force Participation Rate Index; GURI(A) : Adjusted gender based Unemployment Rate Index; GLFPR(A): Adjusted gender based Labor Force Participation Rate Index; PI: Pension Expenditure Index; FII(A): Adjusted Fatal Injuries in Factories Index; WAI: Agricultural Workers' Wages Index; WNAI: Non - Agricultural Workers' Wages Index; UDI: Union Density Index

Table 6: Adjusted Index Values for Decent Work Indicators over a period from 1999–2022 concerning Haryana.

Year	URI(A)	LFPRI	GURI(A)	GLFPR(A)	PENSION	FII(A)	WAI	WNAI	UDI
1999	0.93	0.32	0.26	0.54	-	0.65	-	-	0.03
2004	0.87	0.35	0.40	0.92	0.23	0.71	-	-	0.13
2009	0.93	0.46	0.44	1.00	0.21	0.77	-	-	0.23
2011	0.83	0.21	0.56	0.58	0.22	0.75	-	-	0.16
2015	0.71	0.31	0.57	0.33	0.22	0.84	0.43	0.40	0.31
2017	0.60	0.26	0.57	0.38	0.23	0.79	0.37	0.37	0.13
2018	0.74	0.20	0.50	0.35	0.19	0.83	0.40	0.35	0.26
2019	0.77	0.12	1.00	0.32	0.18	0.88	0.38	0.37	1.00
2020	0.72	0.17	0.61	0.27	0.20	0.84	0.35	0.35	0.30

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2021	0.24	0.16	0.36	0.50	0.20	0.94	0.35	0.40	0.47
2022	0.43	0.22	0.31	0.28	0.15	0.89	0.37	0.45	0.49

Source: Author's calculations

Note: Here, URI(A): Adjusted Unemployment Rate Index; LFPRI: Labor Force Participation Rate Index; GURI(A) : Adjusted gender based Unemployment Rate Index; GLFPR(A): Adjusted gender based Labor Force Participation Rate Index; PI: Pension Expenditure Index; FII(A): Adjusted Fatal Injuries in Factories Index; WAI: Agricultural Workers' Wages Index; WNAI: Non - Agricultural Workers' Wages Index; UDI: Union Density Index

Table 7: Decent Work Index in Punjab and Haryana

Year	PUNJAB	HARYANA
1999	0.56	0.30
2004	0.65	0.42
2009	0.53	0.49
2011	0.55	0.40
2015	0.35	0.42
2017	0.33	0.36
2018	0.35	0.38
2019	0.34	0.44
2020	0.31	0.37
2021	0.29	0.35
2022	0.40	0.34

Source: Author's calculations

Table 7 emphasizes the Decent Work Index (DWI) in Punjab and Haryana. It is the geometric mean of the index computed using variables marking four decent work dimensions, employment, social security, workers' rights, and social dialogue. Initiating with Punjab, the DWI stood at 0.56 in 1999, it further peaked at 0.65 in 2004 reflecting improvements in labor market conditions. Important reasons behind it were the transition to the New Pension Scheme (NPS) in 2004, a higher Union Density Index of 0.75, reasonable workforce participation with LFPRI value standing at 0.42, and with lesser Unemployment Rate Index in comparison to later years. However, the index dropped to 0.53 in 2009, and 0.35 in 2015. This drop can be linked to lower labor absorption due to mechanization in

agriculture and inadequate employment opportunities due to slow industrial growth (The Tribune, 2025). It dropped to its lowest point in 2021 at 0.29. It is owing to job losses due to COVID-19 (Tiwari, 2022) causing the unemployment index value to rise to 0.46. Additionally, a drop in the pension expenditure index, a rise in fatal injuries, and a low Union Density Index also serve to be a cause behind it. However, marginal recovery was examined in 2022, with its value rising to 0.40, due to improvements in LFPRI and wage index for both agricultural and non-agricultural workers.
Moving towards Haryana, it has comparatively started with a lower DWI value of 0.30 in 1999. Further years found its value rising to 0.42 in 2004 and 0.49 in 2009. It is due to a rise in LFPRI, women empowerment concerning unemployment rate and gender equality, fall in FII and UDI improvement. However, it declined in 2021 to 0.35, due to a massive rise in URI to 0.76 from 0.28 in 2020, a fall in LFPRI, and rising gender inequality concerning URI. It is followed by a further decline in its value to 0.34 in 2022. It is owing to worsened gender disparities concerning URI and LFPRI, a fall in the pension expenditure index, and rising fatal accidents in factories index. Initially, DWI reflected better decent working conditions are on the superior side in Punjab. However, it improved steadily in Haryana post 2015 surpassing Punjab. But during the pandemic, both states witnessed a sharp decline with Punjab being worse hit. However, after the pandemic, Punjab recorded an improvement in DWI value to 0.40 in 2022 in contrast to Haryana's value standing at 0.34. It reflects stronger labor market conditions after the pandemic in Punjab compared to Haryana.

CONCLUSION

The study comparatively analyzes the Decent Work Index in Punjab and Haryana over the period from 1999 to 2022. It also takes into consideration the individual indexes reflecting four vital dimensions of decent work: employment, social security, workers' rights, and social dialogue. These include the unemployment rate index, Labor Force Participation Rate Index, Fatal injuries in factories index, Wages for Agricultural Workers Index, Wages for Non- Agricultural Workers Index, Pension Expenditure Index, Gender-based unemployment rate index, Gender-based Labor Force Participation Rate Index, and Union Density Index. Both states are compared based on these individual indicators. Initiating with the unemployment rate index, the initial period saw Punjab being a worse hit. But in later years, Haryana witnessed a higher index value which marks a greater decent work deficit in Haryana. Moving towards the labor force participation rate index, Punjab outperformed Haryana and it reflects a greater decent work deficit in Haryana. Another index concerning fatal injuries in factories, witnessed fluctuating trends in both states, though in the initial years, Haryana surpassed Punjab going towards higher index values reflecting the worst situation over there. The wage index for both agricultural and non-agricultural workers holds higher values in Haryana showing comparatively higher decent work deficit in Punjab. The pension expenditure index reflecting the Social Security dimension found Punjab with its higher value. It shows better labor market conditions over there. Another vital index, gender-based unemployment rate index shows a greater decent work deficit in Punjab with its higher value over there however gender-based labour force participation rate index witnessed fluctuating trends in both states. Similarly, the union density index has also witnessed fluctuating trends in both states. However, Punjab surpassed Haryana during the period from 1999 to 2011 but afterward followed a declining trend, with Haryana taking the lead. Thus, both states show distinct labor market challenges. The combined decent work index has shown a fluctuating trend in both states. But comparison based on average values found Punjab and Haryana standing at 0.42 and 0.39 respectively. It reflects Punjab having more favorable labour market conditions in comparison to its counterpart Haryana. Though scope of improvement as reflected through individual indicators is there in both the States that need intervention of relevant authorities to overcome individual decent work deficits to have a promising labor market ahead.

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