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Assessing Wellbeing in the Indian Leather Industry: Evidence from Kanpur's Factory Workers

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Abstract

The wellbeing of workers in the labour-intensive industries like leather manufacturing is vital for their economic stability. This study investigates the multidimensional wellbeing of workers engaged in the Kanpur's leather cluster, an important hub of India's export economy. The study uses primary data collected from randomly selected 103 workers. The survey conducted on factory workers captured the demographics and the five key dimensions of wellbeing: personal wellbeing, health and material wellbeing, workplace wellbeing, and relational wellbeing. Descriptive statistics and stepwise regression analysis were conducted on the survey data to identify the influence of socio-economic, workplace, and demographic factors on different dimensions and the overall wellbeing of the workers engaged in the leather cluster. The descriptive statistics show stark differences in the education levels and skill type amongst the respondents. Results of the stepwise regression analysis reveals gender, job security, job duration, age, and education as the critical determinants of overall wellbeing of the workers. In addition, the workers' skill type, weekly working hours, wages, and housing status also significantly influence different wellbeing dimensions. Importantly, the wage inequality and gender disparities exacerbate challenges, particularly in respect of women and unskilled workers. Thus, the findings underscore the negative impacts of informal employment and highlight the importance of supportive workplace environments. Policy interventions should, therefore, include promoting formal employment, strengthening health and safety measures, addressing wage inequality, and providing targeted supports. Incorporating wellbeing metrics into the industry evaluation mechanism can potentially ensure holistic labour assessments. Nevertheless, future research should explore these aspects in other clusters with more qualitative perspectives for deeper understanding of the underlying dynamics.

Keywords: Human-resource, job-satisfaction, multidimensional wellbeing, informal labour

1. Introduction

The leather industry is one of India's oldest manufacturing industries, serving the international market since the mid-nineteenth century. Approximately 46 percent of the industry's production is exported, making it the eighth-largest contributor to India's export earnings (Ministry of MSME, 2018). India's leather sector is highly employment-intensive, providing livelihoods to approximately 4.42 million individuals in 2023–24, the majority of whom belong to marginalized communities (DGCI & S, n.d.). The industry is geographically concentrated in key production centres—Chennai, Kolkata, Kanpur, and Agra—which are organised in the form of industrial clusters. These clusters predominantly comprise small and medium enterprises (SMEs), which form the backbone of production and employment generation (Nadvi & Schmitz, 1994). Over the past few decades, the liberalisation and global integration of India's economy have significantly reshaped the labour dynamics within the leather industry. While India has enacted a comprehensive legal framework to safeguard labour rights, its practical enforcement remains limited, especially within the informal and SME-dominated segments of the sector (Singh, 2013). The labour market challenges in India are exacerbated by a dualistic structure, where the organised sector benefits from better pay and union representation. In contrast, the informal sector, which has increased significantly to around 90 percent (Economic Survey, 2019-20; Mehrotra, 2019), suffers from precarious employment conditions (Souza, 2008). These issues have broader implications for workers' wellbeing, especially in industrial clusters such as the leather industry in Kanpur, which relies heavily on informal labour. The study, therefore, focuses on Kanpur Leather Cluster (KLC) to evaluate workers' wellbeing under the backdrop of structural challenges. The analysis integrates a multidimensional view of wellbeing, emphasizing the interplay between subjective, material, workplace, health, and relational components.

This research paper is structured into five interconnected sections to facilitate a comprehensive understanding of the study. The first section introduces the contextual background, outlines the key research objectives, and highlights the significance of assessing worker wellbeing in the Indian leather industry. The second section offers a brief but informative profile of the Kanpur Leather Cluster, the primary site of investigation. The third section details the research methodology, including the development of the wellbeing framework, data sources, and analytical tools employed. The fourth section presents the empirical findings and a critical discussion of the key patterns and their implications. Finally, the fifth section concludes the paper by summarising the main insights, acknowledging the study's limitations, and proposing directions for future research.

1.1 Literature Review

Wellbeing, in the context of labour, is a multifaceted concept encompassing physical, psychological, and social dimensions. Research indicates that physical, psychological, and social elements are fundamental to optimal occupational wellbeing (Radzi et al., 2023). However, traditional economic theories often focus on material wellbeing, primarily wages, working hours, and employment security, as the main indicators of worker satisfaction (Clark, 2005; Sen, 1999). More recent frameworks such as the OECD Better Life Framework (2011), GNH Framework, Wellbeing Economics Framework, WHO Wellbeing Framework, and National Wellbeing Framework have broadened the scope to include non-material aspects such as subjective wellbeing, mental health, job satisfaction, relationship, and access to social security (Bardhan, 2010; Stiglitz, Sen, & Fitoussi, 2009). These multidimensional frameworks are essential for understanding the factors contributing to workers' wellbeing in labour-intensive sectors like manufacturing. Importantly, improved levels of worker wellbeing have also been shown to positively correlate with enhanced productivity and employee retention,

underscoring both economic and human resource benefits of prioritising wellbeing in the workplace (Bellingan et al., 2023; Katja Kraljević et al., 2025).

In the literature, employment is seen not only as a source of income but also as a key determinant of self-worth, social inclusion, and skill formation (Dolan et al., 2008). Non-wage factors such as occupational health and safety, workplace social dynamics, and the availability of benefits like health insurance and pensions are critical in shaping worker satisfaction (Freeman, 2004; Drapeau et al., 2012). Working time arrangements also have a significant impact. The total weekly hours, work schedule structure, and rest provision influence physical and mental health, income stability, and even commuting safety (Fagan et al., 2012; Golden & Bonnet, 2022). A growing body of research has found that better work-life balance enhances job satisfaction and feelings of security (Burke & Greenglass, 1999; Gragnano et al., 2020; Susanto et al., 2022). Precarious employment conditions, particularly those involving informality, short-term contracts, and low bargaining power, are consistently linked to reduced life satisfaction, poor mental health, and lower physical wellbeing (Green, 2015; Nella et al., 2015; Singh, 2024). Employees under such precarious conditions frequently experience anxiety, despair, and stress due to workload and pressure, resulting in instability and diminished productivity (Seidu et al., 2024). These concerns are particularly salient in sectors like India's leather industry, where informal and contract-based employment dominates. In such contexts, non-economic factors may be as important as, or even more important than, wages in determining workers' overall wellbeing. Given these diverse influences, there is increasing consensus on the need for wellbeing metrics that go beyond income to capture the full range of workers' experiences. From a policy standpoint, this necessitates preference-based, multidimensional measures that can be collapsed into a single index for effective decision-making and resource allocation in worker-centric policy frameworks (Ta et al., 2024).

Literature on industrial clusters provides a valuable backdrop for understanding the structural challenges facing workers in sectors like leather manufacturing. Numerous scholars have examined the role of small firms in clustered formations across global South and North contexts. Piore (1992), Pyke and Sengenberger (1992), and Sverrisson and Pietrobelli (2004) highlight the contributions of small and medium enterprises to employment generation, local innovation, and regional development. Humphrey and Schmitz (2000) build on this by emphasising the upgrading potential of clusters in global value chains. However, the transplantation of European-style industrial district models into developing countries like India often fails to account for endemic informality, weak enforcement of labour laws, and sweatshop-like conditions (Das, 2005; Knorringa, 1999, 2005). The cases of the Palar Valley cluster in Tamil Nadu and the Agra footwear cluster illustrate this paradox: dynamic economic clusters that simultaneously host poor, vulnerable working populations (Kennedy, 1999). These insights provide an important context for understanding the structural underpinnings of wellbeing within the Kanpur Leather Cluster (KLC), which faces similar contradictions.

1.2 Gaps in the Literature

Despite the conceptual advances outlined above, several empirical gaps remain. Firstly, most studies on labour wellbeing have either adopted a unidimensional approach or relied on macroeconomic datasets, which often fail to capture the detailed assessment of wellbeing components. Secondly, very few studies adopt robust statistical methods such as regression analysis to quantify how different socio-economic and workplace variables relate to multiple dimensions of individual wellbeing. Furthermore, studies that do engage with workers' wellbeing often confine themselves to material indicators, overlooking psychological, health-related, and relational aspects. Furthermore, while recent studies acknowledge the growth of

informal employment and its impact on workers, they rarely explore this within specific industrial clusters like KLC through a worker-centric lens. As a result, there is limited understanding of how gender, job nature, educational background, and weekly work hours intersect to influence wellbeing outcomes in these environments. This study seeks to address these gaps by conducting a detailed, regression-based analysis of wellbeing among factory workers in Kanpur's leather cluster. By employing a customised survey instrument based on globally recognised wellbeing frameworks and statistically identifying the most salient predictors of wellbeing, the study aims to provide a sector-specific, empirically grounded contribution to the literature on industrial labour and wellbeing in the Global South.

1.3 Objectives

The objectives of this study are threefold: first, to assess the current wellbeing levels among KLC workers; second, to identify the key determinants of these wellbeing outcomes; and third, to provide actionable recommendations for improving workers' wellbeing in the leather sector.

2. Study Area Profile

Kanpur is an industrial city located along the banks of the river Ganges in the northern Indian state of Uttar Pradesh. Its industrial foundation dates back to the colonial era, when in 1778 the East India Company relocated its troops from Bilgram in Hardoi district to Kanpur (Joshi, 2002). The Company was granted twelve villages extending from old Kanpur to Jajmau along the riverfront. This relocation laid the groundwork for the city's industrial development, particularly in the textile and leather sectors, which gained momentum due to growing military demand. Kanpur's strategic importance increased further between the 1860s and 1880s, when global demand for Indian hides and skins rose sharply, accompanied by a surge in exports (Bhattacharya, 2013). The city soon became a major centre for the production of military goods, including uniforms, saddlery, and leather harnesses, supplying the British colonial army (Pandey, 1970).

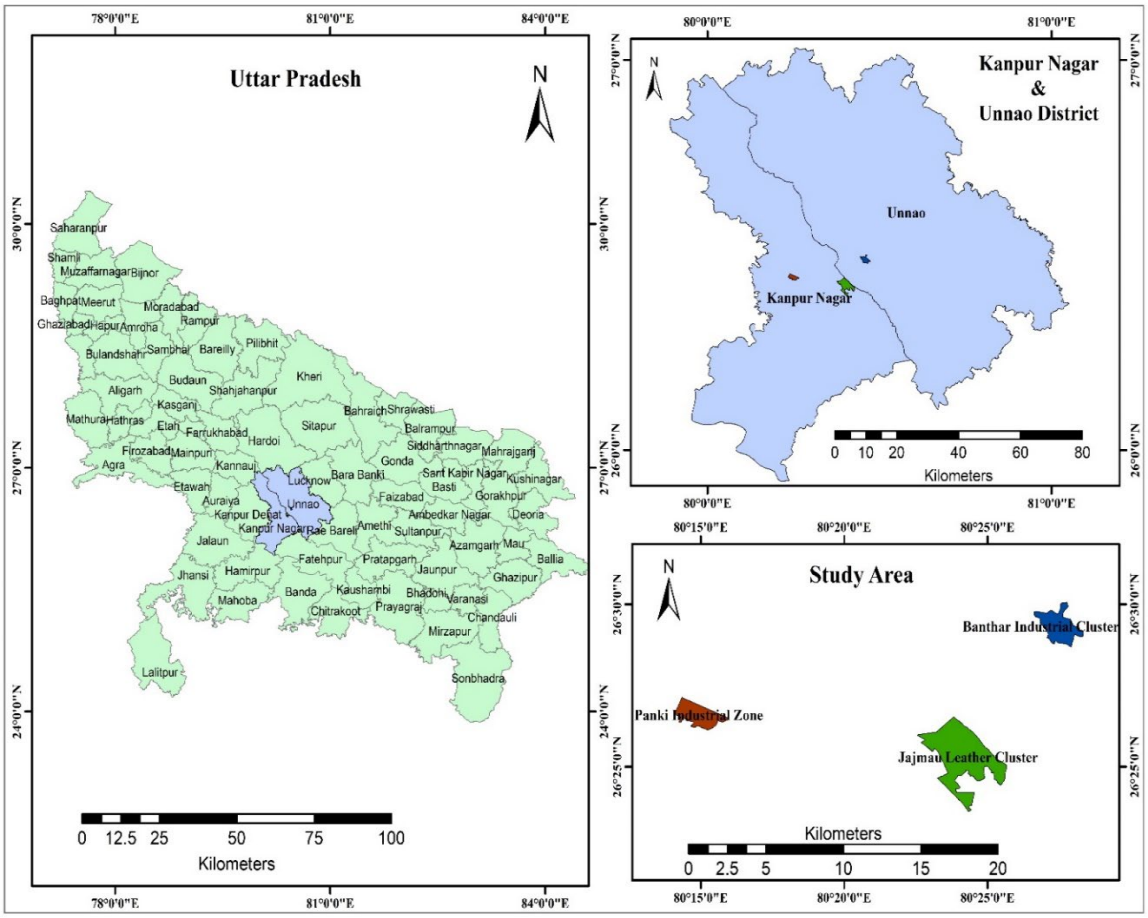

Figure 1. Location Map of the Study Area
Source: Drawn by the authors using ArcMap 10.8

The Jajmau area, situated on the eastern edge of the city, emerged as the nucleus of the leather industry during the 1960s and 1970s. Today, Kanpur's leather cluster comprises over 400 active factories and is geographically spread across three main industrial zones (see Fig. 1). The traditional core in Jajmau (marked in green) houses approximately 150 operational tanneries and several leather goods manufacturing units. The second cluster, the Leather Technology Park in Banthar (marked in blue), has developed more recently as part of a government-led initiative to relocate polluting industries to the city's outskirts, where improved waste management and sewage treatment infrastructure are available. A third cluster is situated in the Panki Industrial Zone (marked in red), located in the western periphery of Kanpur, where a number of leather goods factories operate.

3. Data Sources and Methods

This paper presents a structured methodology for assessing the wellbeing of factory workers within an industrial cluster. Central to this approach is the development of a labour-specific survey questionnaire, tailored to capture the multidimensional aspects of worker wellbeing. The survey development process involved multiple steps: first, existing globally recognised wellbeing frameworks were reviewed to identify those most relevant to industrial labour, ensuring comprehensive dimensions. Next, five frameworks were shortlisted based on global relevance, comprehensiveness, and contextual applicability to Indian factory labour, and categorised into domains (e.g., physical health, subjective wellbeing) and sub-domains (e.g., occupational safety, job satisfaction). Contextual analysis and stakeholder feedback informed the selection of sub-domains most pertinent to leather industry workers.

A pilot survey was then conducted to test the questionnaire aligned with these sub-domains, assessing its reliability and validity, and refining it based on feedback. Finally, the validated survey was implemented using convenience sampling. The research was conducted across 13 leather factories, covering a total of 103 workers. The sample size was determined based on the accessibility of respondents and their willingness to participate and share information. While not randomly selected, the sample includes a diverse cross-section of workers across skill levels, job types, and demographic backgrounds. Given this diversity and the distribution across multiple factory units, the sample can be considered broadly representative of the workforce in the Kanpur Leather Cluster.

Descriptive statistics and stepwise multiple regression were performed using IBM SPSS Version 29 to analyse the data. Stepwise regression was particularly chosen to identify the most significant predictors of worker wellbeing from a larger set of socio-economic and occupational variables. Given the exploratory nature of the study and the limited theoretical consensus on context-specific drivers of wellbeing in informal industrial clusters, this method allowed for the construction of a parsimonious and data-driven model (Draper & Smith, 1998). The approach is particularly suited to studies like ours that aim to inform targeted policy interventions by highlighting key determinants. The econometric (linear regression) specification used in the stepwise regression is:

$$Y_i = \beta_0 + \beta_1 Gender + \beta_2 Age + \beta_3 Education + \beta_4 Ethnicity + \beta_5 Housing + \beta_6 SkillType + \beta_7 JobNature + \beta_8 WageIncome + \beta_9 JobDuration + \beta_{10} WeeklyHours + \varepsilon_i$$

In the regression model, Y_i denotes the dependent variable representing one of the wellbeing dimensions under analysis. The predictors X_{1i} to X_{ni} correspond to the values of the independent variables that were found to be statistically significant in the stepwise regression process. The term β_0 represents the intercept, capturing the baseline level of the dependent variable when all predictors are equal to zero. The coefficients β_1 to β_n indicate the estimated effect of each corresponding predictor on the dependent variable, holding all other variables constant. Finally, ε_i denotes the error term, accounting for the variation in Y_i not explained by the included predictors. The study examined five dimensions of wellbeing—**Personal Wellbeing, Health, Material Wellbeing, Workplace Wellbeing,** and **Relational Wellbeing**—along with **Overall Wellbeing**. The overall wellbeing scores were calculated by cumulating the scores of health, material wellbeing, workplace wellbeing, and relational wellbeing. The impact of ten independent variables—**gender, age, education, ethnicity, housing, skill type, job nature, wages, job duration,** and **weekly working hours**—was analysed using a stepwise regression approach.

4. Results and Discussion

The descriptive profile of the surveyed factory workers, provided in Tab. 1, revealed several structural patterns. A significant proportion of workers (nearly 64 percent) possess only up to middle school (8th standard) education, with just 9.71 percent having attained a bachelor's degree or higher. Caste composition within the workforce was evenly distributed across General, Other Backward Classes (OBCs), and Scheduled Castes (SC). Sample didn't have any respondent from Scheduled Tribes category. The balanced spread of workers among General, OBCs and SCs highlights the socio-economic diversity within the cluster. Housing status provided more direct insights into material wellbeing, with 65.05 percent of respondents owning their homes and the remaining 34.95 percent residing in rented accommodations.

Table 1. Descriptive data of the Socio-Demographic aspects

Socio-demographic aspects		**Frequency**	**Share (%)**
Education Level	No formal education	10	9.71
	Primary	15	14.56
	Middle	41	39.81
	Secondary	27	26.21
	Bachelor or above	10	9.71
	Total	103	100.00
Caste	General	35	33.98
	OBC	34	33.01
	Scheduled Caste	34	33.01
	Total	103	100.00
Types of houses	Rented	36	34.95
	Owned	67	65.05
	Total	103	100.00

Source: Primary Survey

Proceeding to work-related variables provided in Tab. 2, the wage data collected from the surveyed workers has been categorised into four income brackets: 9743, 9743-10716, 10717-12004, and >12004 (all figures in INR) based on the wage classifications notified by the Government of Uttar Pradesh for unskilled, semi-skilled, and skilled workers at the time of data collection (Labour Department, 2022). The wage distribution revealed a pronounced concentration of low-income workers, with only 22.33 percent earning ₹12,005 or more (the minimum wage prescribed for skilled workers. This wage pattern underscores the economic vulnerability of a substantial portion of the workforce and reflects the broader issue of marginal earnings in India's informal manufacturing sectors. In terms of employment stability, the sample was nearly evenly split between temporary (49.51 percent) and permanent workers (50.49 percent), a pattern that reflects the pervasive contractualisation of labour in India's industrial clusters. Regarding the payroll structure, the majority of workers (77.67 percent) received their wages on a monthly basis, providing a degree of income stability. In contrast, a smaller segment was paid either on a daily wage basis (14.56 percent) or through piece-rate systems (7.77 percent). These alternative payment modes, particularly daily and piece-rate wages, are commonly associated with greater financial uncertainty, income volatility, and performance-related pressures.

Table 2. Descriptive data of Work-Related aspects

Work-related aspects		**Frequency**	**Share (%)**
Wages (in INR)	<9743	30	29.13
	10716-9743	24	23.30
	12004-10717	26	25.24
	>12004	23	22.33
	Total	103	100.00
Skill-type	Skilled	70	67.96
	Unskilled	33	32.04
	Total	103	100.00
Nature of Job	Temporary	51	49.51
	Permanent	52	50.49
	Total	103	100.00
Payroll basis	Daily	15	14.56
	Monthly	80	77.67
	Piece-rate	8	7.77
	Total	103	100.00

Source: Primary Survey

The administered questionnaires' reliability was tested before data analysis to remove any items containing outlier responses. Tab. 3 shows the Cronbach's alpha value of each dimension.

Reliability of the material wellbeing questionnaire increased with the removal of item 3. Hence, it was omitted from the analysis. The normal Q-Q plot and Shapiro-Wilk test of the residuals were checked for normal distribution.

Table 3. Reliability Statistics of the Questionnaire

Dimensions	**Cronbach's Alpha**	**No. of Items**
Personal Wellbeing	0.741	9
Health	0.737	3
Material Wellbeing	0.757	3
Workplace Wellbeing	0.585	7
Relational Wellbeing	0.701	6

Source: Authors

Findings from stepwise regression analysis revealed (Tab. 4) that multiple factors affected the different dimensions of workers' wellbeing. All the estimated models were statistically significant. Though these models did not have very high explanatory power as it was indicated by the value of adjusted R^2. The results for each dependent variable (wellbeing dimensions) are discussed below:

Personal wellbeing was significantly predicted by gender and skill type, with both showing a positive association. This implies that male and skilled workers reported higher levels of personal wellbeing. The role of skill type suggests that workers with specialised training or experience may derive greater job satisfaction and a stronger sense of self-worth. Health was significantly predicted by age and gender. Age negatively affected self-rated health, while gender had a positive effect, indicating that older workers and women reported lower health scores than younger and male workers. This finding is consistent with previous research (Boerma et al., 2016; Carmel, 2019).

Table 4. Stepwise regression analysis indicating the significant predictors of the wellbeing dimensions (N=103)

Variable	**Personal Wellbeing**		**Health**		**Material Wellbeing**		**Workplace Wellbeing**		**Relational Wellbeing**		**Overall Wellbeing**	
	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat
Intercept	3.099***	9.844	48.413***	5.850	119.729***	4.874	74.078***	4.835	42.152***	4.600	882.590***	7.961
Gender	0.498***	2.697	14.895***	3.492			10.664***	3.100	15.695***	3.242	164.960***	2.824
Age			-0.550***	-4.550							-4.857**	-2.846
Ethnicity												
Education					-4.493***	-2.703	-3.836***	-3.387			-39.274**	-2.025
Housing					8.553**	2.249						
Skill Type	0.334**	2.330										
Nature of Job									-8.432***	-2.675	-85.798*	-1.940
Wage-Income									-0.002**	-2.026		
Job-Duration											68.057***	2.808
Weekly-Hours					-1.776***	-3.937	-0.596**	-1.997				
F-statistic	11.56***		13.51***		9.69***		6.05***		5.55***		5.79***	
R^2	0.188		0.213		0.227		0.155		0.144		0.230	
Adjusted R^2	0.172		0.197		0.204		0.129		0.118		0.190	

Note 1: * significance at 10%, ** significance at 5%, *** significance at 1%

Note 2: Regression models for each of the dependent variables were estimated using the stepwise method considering all the independent variables together. However, the co-efficient and corresponding t-statistic of the variables excluded by the step-wise method have not been reported here.

Source: Primary Survey

Material wellbeing was significantly influenced by weekly working hours, education, and housing. Both weekly hours and education had negative effects, while housing had a positive impact. The inverse association with working hours suggests that longer hours do not necessarily improve workers' material conditions, possibly due to marginal wage structures in the leather industry. In contrast, owning a home significantly contributed to improved material wellbeing, a relationship well-supported by prior studies (Matud et al., 2019; Rachel Ong ViforJ et al., 2023). Workplace wellbeing was shaped by education, gender, and weekly working hours. Education and weekly hours were negatively associated, while gender had a positive influence. The negative effect of education may reflect dissatisfaction among more educated workers engaged in low-skill or mismatched roles. Similarly, longer weekly hours likely reduced wellbeing due to increased physical and mental strain.

Relational wellbeing was predicted by job nature, gender, and wages. While temporary employment and higher wages showed a slight negative association, gender had a positive effect, indicating that male workers reported better social wellbeing than females—consistent with findings that men tend to score higher on relational wellbeing measures (Abdullahi et al., 2019). The negative effect of wages, though minimal, suggests that monetary compensation does not necessarily mitigate social stressors or the insecurity linked with precarious jobs. Overall wellbeing was influenced by gender, nature and duration of the job, age, and education. Temporary employment, older age, and higher education were negatively associated, while gender and longer job duration had positive effects. These results reflect how underemployment and educational mismatch may reduce wellbeing among more educated workers.

5. Concluding Remarks

This study sought to assess the multidimensional wellbeing of factory workers in the Kanpur Leather Cluster (KLC) through a worker-centric lens, using a customised survey instrument grounded in global wellbeing frameworks. The stepwise regression analysis revealed that demographic and occupational characteristics—particularly gender, education, job nature, weekly working hours, and job duration—play a significant role in shaping different dimensions of wellbeing, including personal, material, workplace, health, and relational aspects.

The results highlight that female, temporary, unskilled, and older workers report significantly lower wellbeing across multiple domains. Notably, longer working hours negatively impact both material and workplace wellbeing, indicating that excessive work does not necessarily translate into better living standards. While generally assumed to be positively associated with wellbeing, education revealed a paradoxical negative relationship in some domains, likely reflecting job-role mismatch and underemployment. Temporary employment negatively predicted both relational and overall wellbeing, reinforcing the importance of secure employment arrangements for promoting psychosocial health. These nuanced findings underscore the need to move beyond wage-centric indicators and adopt multidimensional metrics to assess workers' wellbeing.

In light of these findings, the study emphasises the importance of improving workplace conditions, formalising employment contracts, and addressing gender disparities through targeted interventions. Integrating wellbeing-oriented policies into cluster-level planning could offer a more inclusive pathway to industrial development. By focusing on a specific industrial cluster and employing a quantitative approach, this research contributes empirical evidence to

the evolving discourse on labour informality and wellbeing in India. Future research can build on this framework by including longitudinal data, expanding to other industrial clusters, and incorporating qualitative insights to deepen the understanding of lived labour experiences.

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