Research Article

Income Growth and Social Development among Industrial Workers: An Empirical Study of SIDCUL Industrial Estate, Uttarakhand

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Abstract

This paper investigates the relationship between income growth and multidimensional social development among industrial workers employed in the State Infrastructure and Industrial Development Corporation of Uttarakhand (SIDCUL). Drawing theoretical inspiration from Karl Marx (Marx, 1976) and Amartya Sen (Sen,1999), the study evaluates whether wage expansion proportionally enhances workers' capabilities, long-term security, and social status. Primary data were collected from 237 industrial workers with more than ten years of continuous service in SIDCUL units. A composite Social Development Index (SDI)(ILO, 2021) was constructed using indicators of housing quality, sanitation, health coverage, food security, education access, and subjective well-being. Descriptive statistics, comparative distribution analysis, and multiple regression techniques were applied to examine the influence of income growth, asset formation, and expenditure change on social outcomes. Regression results suggest that while income growth positively influences social development, asset accumulation exerts a stronger and more sustained effect on multidimensional welfare outcomes**.** Expenditure growth shows comparatively weaker explanatory power. The study concludes that industrial wage growth alone is insufficient to ensure durable socio-economic transformation. Policies that promote asset building, financial inclusion, labour security, and social infrastructure are essential for translating industrial employment into long-term capability expansion and inclusive development.

Keywords: Industrial Labour; Capability expansion; Income growth; Labour segmentation; Organized sector; Regional development; Wage Growth; Asset Formation

Introduction

Industrialization has long been regarded as a primary engine of economic growth, employment generation, and regional transformation. In states such as Uttarakhand, industrial policy has played a decisive role in restructuring the economic landscape from agrarian predominance to manufacturing-led diversification. The establishment of the State Infrastructure and Industrial Development Corporation of Uttarakhand (SIDCUL) (Govt. of India, 1948) marked a significant milestone in this transition. The industrial estates developed under SIDCUL attracted investment in pharmaceuticals, automobiles, consumer goods, and food processing, generating thousands of employment opportunities for local and migrant workers. Large-scale manufacturing units created new employment avenues and contributed to steady increases in worker incomes over the past decade. While the rise in earnings reflects positive economic momentum, development cannot be equated solely with income growth. True development involves improvements in housing conditions, access to healthcare, educational opportunities for children, financial security, and overall life satisfaction. This study therefore critically evaluates whether wage enhancement among industrial workers has translated into multidimensional social advancement. The research seeks to examine the depth and sustainability of welfare gains and to determine whether income growth alone is sufficient to generate long-term structural shifts. This study seeks to critically evaluate the Growth Realization Hypothesis (GRH), which submits that sustained income growth proportionally enhances social development outcomes. By constructing a composite Social Development Index (SDI) (Govt. of India, 1948), the research measures whether income gains among SIDCUL workers have translated into measurable improvements in multidimensional welfare.

Industrial labour studies have historically emphasized the relationship between economic structures and workers' living conditions. Classical economy, particularly the analysis of labour under capitalism, highlights the role of industrial production in shaping class relations and socio-economic inequalities. Later development economists and social scientists extended these ideas to examine labour welfare, income mobility, and regional industrial development in emerging economies such as India.

In the context of Himalayan and northern Indian industrial regions, scholars have observed that the establishment of organized industrial estates significantly alters the occupational structure of nearby rural communities. Employment opportunities created within industrial clusters often attract migrant workers and contribute to the emergence of semi-urban labour settlements. While these developments stimulate economic activity, they also produce new challenges related to housing, healthcare access, and labour security of workers. Therefore, empirical investigations of workers' socio-economic conditions are essential for understanding whether industrial growth translates into inclusive development. Studies focusing on income levels, job stability, and social welfare benefits provide important evidence for policymakers attempting to balance economic growth with labour protection and social equity.

According to Marxian Perspective as discussed in Capital (Govt. of India, 1948), Marx (1976) argues that wage increases may improve living standards without altering structural relations of production. Workers remain dependent on capital despite rising consumption. Rising earnings do not necessarily shift class position or ownership structures. Improvements in consumption can coexist with persistent structural vulnerability. This study investigates whether wage growth in SIDCUL has altered workers' economic foundations or merely improved subsistence conditions.

The Nobel laureate Amartya Sen (1999) conceptualizes development as expansion of substantive freedoms rather than income accumulation alone (Sen, 1999). Monetary resources serve as instruments; the crucial issue is how effectively they are converted into capabilities such as Health, security, Education, Housing stability, Economic resilience, Social mobility etc.

Doeringer and Piore (1971) proposed Labour segmentation theory[5], it highlights that formal industrial sectors are rarely homogeneous. Internal labour markets create segmentation within formal sectors. Permanent and contractual workers may experience distinct levels of security, benefits, and bargaining power. Survey data show differentiation within SIDCUL employment categories, indicating that income effects may not be uniform across workers.

The objectives of this research are to examine the pattern of income growth among industrial workers over a ten-year period; to analyse changes in asset accumulation and expenditure behavior; to construct a composite index capturing social development outcomes; to estimate the relative contribution of income growth, asset formation, and expenditure change to overall social development; and to interpret the findings within broader theoretical frameworks of socio-political economy and capability expansion.

The study contributes to labour economics and regional development literature by empirically assessing whether industrial wage expansion produces structural socio-economic mobility or merely improves subsistence-level living standards.

Study Area

The study area comprises the SIDCUL Industrial Estate located primarily in Udham Singh Nagar district (Figure 1) of Uttarakhand formed after the creation of the state in 2000, was established to promote industrialization through infrastructure development, fiscal incentives, and investment facilitation (Govt. of UK 2022, Industrial development report). The corporation developed planned industrial estates equipped with roads, power supply, water

facilities, and logistical connectivity to attract private sector manufacturing units. Over the past two decades, the district has experienced rapid industrial expansion, population growth, rural-to-urban migration, and occupational shifts from agriculture to wage employment in manufacturing units. In the context of Himalayan and northern Indian industrial regions, scholars have observed that the establishment of organized industrial estates significantly alters the occupational structure of nearby rural communities. Employment opportunities created within industrial clusters often attract migrant workers and contribute to the emergence of semi urban labour settlements.

The workforce in SIDCUL engaged in production, packaging, assembly, maintenance, and administrative tasks. The organized nature of employment has improved access to statutory benefits such as provident fund contributions, Employees' State Insurance (ESI)(Employees' State Insurance Act 1948), and regulated working hours (Factories act 1948). However, segmentation within the industrial workforce persists, with varying degrees of job security, wage stability (Minimum wage act 1948.), and promotion prospects. The socio-economic background of workers is diverse. Many originate from agrarian households in nearby districts, while others migrate from neighboring states seeking stable employment. Housing arrangements vary from rented accommodations to self-owned houses constructed over time. Access to sanitation, clean drinking water, health services, and education has improved relative to pre-industrial conditions, yet disparities remain across income groups.

The industrial estate thus provides a relevant empirical context to examine whether wage growth within an organized manufacturing cluster generates durable improvements in social development indicators.

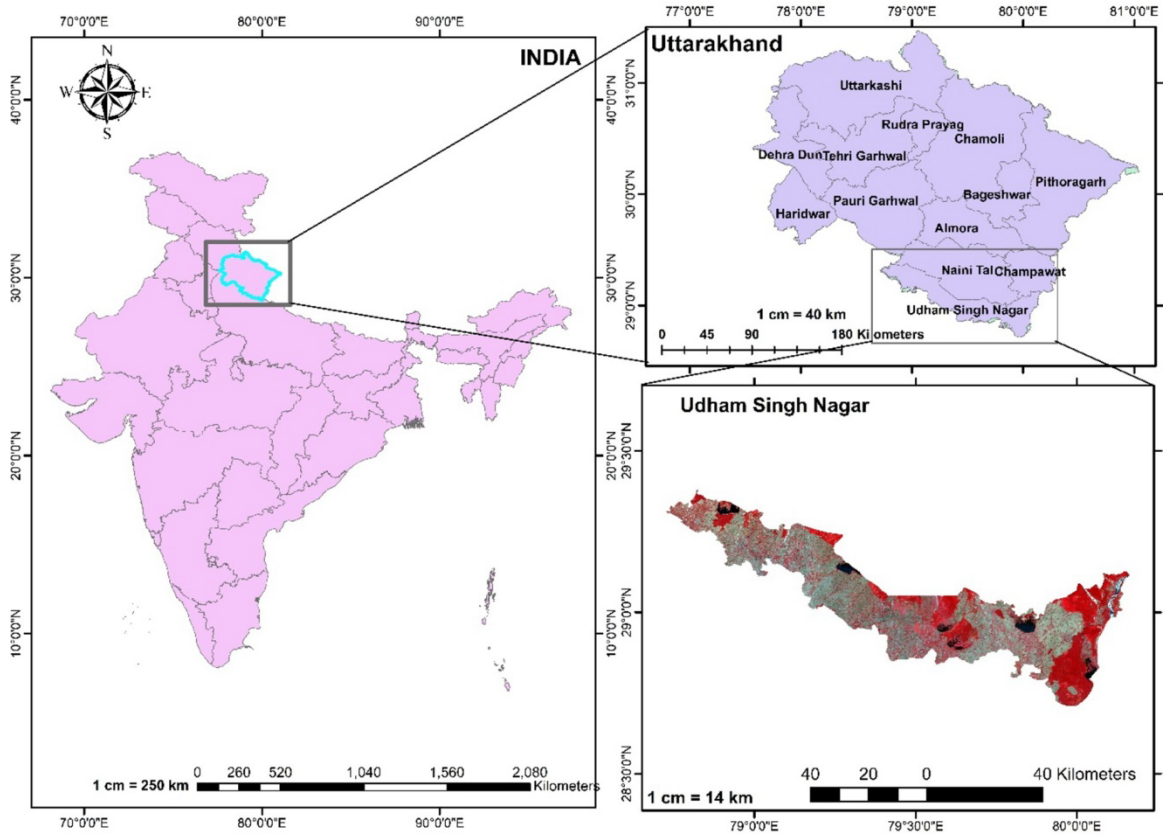


Figure 1. Udham Singh Nagar District Geographical Map

Classical political economy perspectives emphasize the structural constraints embedded within wage labour systems, arguing that income increases may not alter underlying

class relations. Contemporary labour economics literature highlights wage differentials, skill formation, and employment stability as determinants of worker mobility. Development scholars further stress multidimensional measures of welfare, emphasizing education, health access, and asset ownership alongside income indicators. Indian labour studies demonstrate that organized sector employment reduces income volatility but does not automatically ensure wealth accumulation or intergenerational mobility. Empirical research across industrial clusters suggests that asset formation, housing security, and financial inclusion significantly mediate the relationship between income growth and long-term development outcomes. This study contributes region-specific evidence from Uttarakhand, an emerging industrial state with limited micro-level labour data.

Methodology

The study is based on primary survey data collected from industrial workers employed continuously in SIDCUL units. A composite Social Development Index (SDI) was constructed to quantify multidimensional welfare outcomes. Multiple regression analysis was employed to estimate the relative contribution of income growth, asset formation, and expenditure changes to overall social development.

Sample Selection

A total of 250 industrial workers were selected using purposive sampling criteria. A structured questionnaire was used to collect information on income levels, asset ownership, expenditure patterns, housing conditions, health coverage, and subjective well-being indicators. The inclusion condition required continuous employment of at least ten years within SIDCUL units to enable meaningful comparison of past and present income levels. Income growth over a ten-year period was treated as a central explanatory variable. This ensured that respondents experienced the trajectory of wage growth associated with industrial expansion.

Respondents were drawn from multiple industrial units across sectors such as pharmaceuticals, automotive components, food processing, and consumer goods manufacturing. Both permanent and long-term contractual workers were included to capture diversity in employment conditions.

Data Collection

Primary data were collected through direct interviews using a structured questionnaire. The instrument included sections on:

Demographic characteristics (age, education, family size)
Employment history and tenure
Annual income (ten years ago and present)
Asset ownership (land, house, vehicle, savings instruments)
Expenditure patterns (education, health, housing, consumption)
Access to social amenities (sanitation, electricity, health insurance)
Subjective well-being and perceived economic security

Respondents were asked to provide approximate income categories for the past decade and current year to reduce recall bias.

Variable Specification

(a) Independent Variables

Income growth over a ten-year period was treated as a central explanatory variable. Asset accumulation and expenditure growth were included to capture broader economic behavior.

Asset Growth: Measured through an index capturing acquisition of physical and financial assets including housing, land, vehicles, savings accounts, and insurance coverage.

Expenditure Growth: Measured by changes in annual household expenditure across major categories such as education, health, and housing improvement.

(b) ***Dependent Variable:*** Social Development Index (SDI): A composite index constructed on a scale of 0–10 using standardized scores of the following indicators:

Housing quality (kachha to pucca house transition, ownership status)
Access to sanitation facilities
Availability of clean drinking water
Health insurance coverage
Children's education status
Food security stability
Savings adequacy
Subjective economic security

Each component was normalized and aggregated with equal weights to construct the composite SDI.

(c) ***Analytical Framework:*** The analysis proceeded in three stages:

Descriptive statistics and income distribution comparison.
Classification of SDI into categories (deprived, average, developed).
Multiple regression analysis to estimate the influence of economic variables on social development.

The regression model employed was:

$$SDI = \beta_0 + \beta_1 (\text{Income Growth}) + \beta_2 (\text{Asset Growth}) + \beta_3 (\text{Expenditure Growth}) + \varepsilon$$

Where:

β_0 represents the intercept,
β_1, β_2, β_3 represent coefficients of explanatory variables,
ε represents the error term capturing unobserved influences.
The model tested the statistical significance and explanatory power of each variable while estimating overall model fit using R^2.

(d) Empirical Observations

Income Mobility: Comparison of present and past income categories reveals a shift away from lower-income brackets toward middle-income ranges. Nevertheless, concentration remains strongest in moderate earnings categories rather than high-income groups.

Results

Results reveal a statistically significant positive association between income growth and SDI. However, asset formation demonstrates the strongest standardized coefficient, indicating that wealth accumulation plays a decisive role in long-term welfare enhancement. Expenditure growth shows moderate influence. The model explains approximately one-third of variation in SDI outcomes.

Comparative Income Distribution

The comparative income distribution demonstrates a visible upward shift in wage categories over the ten-year period (Table 1 & 2 and Figure 2). The proportion of workers earning below one lakh annually declined substantially. Meanwhile, representation in middle-income categories (1–3 lakhs and 3–5 lakhs) increased significantly. A modest rise is also observed in higher income brackets (5–8 lakhs and above 8 lakhs). The data indicate measurable nominal wage mobility attributable to industrial employment stability and periodic wage revisions. However, concentration remains strongest within moderate income groups rather than high-income categories, suggesting limited vertical mobility beyond middle-income status. The proportion of workers in lower-income brackets has declined, while middle-income representation has expanded considerably.

Table 1: Income Distribution (10 Years Ago)

Income Category	Workers
Up to 1 Lakh	82
1-3 Lakhs	95
3-5 Lakhs	45
5-8 Lakhs	10
Above 8 Lakhs	5

Table 2: Income Distribution (Present)

Income Category	Workers
Up to 1 Lakh	36
1-3 Lakhs	111
3-5 Lakhs	56
5-8 Lakhs	28
Above 8 Lakhs	6

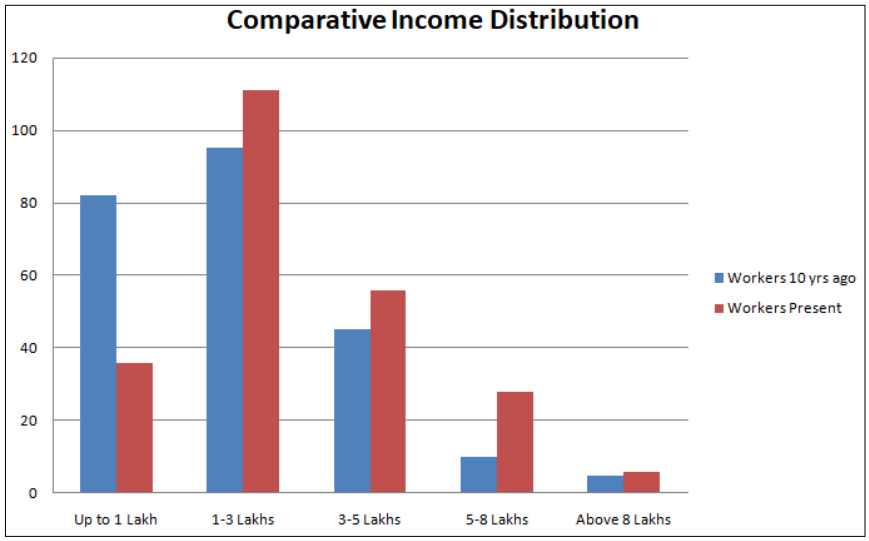


Figure 2: Comparative Income Distribution During a Decade

Regression Analysis

The regression results indicate that income growth positively influences the Social Development Index. However, asset accumulation demonstrates stronger explanatory power, suggesting that long-term wealth formation contributes more substantially to sustained social mobility. Expenditure growth shows comparatively weaker predictive strength, indicating that

higher consumption does not automatically translate into enhanced capability formation (Table 3). The model explains a meaningful proportion of variance in social development outcomes, while also implying the influence of institutional and structural variables beyond income.

Income growth exhibits a positive and statistically meaningful relationship with SDI. However, asset formation exerts a stronger influence than wage flow alone. Expenditure growth shows comparatively limited predictive strength. The model explains approximately one-third of variation in social development outcomes, indicating that non-economic factors play substantial roles.

Table 3: Standardized Regression Coefficients

Variable	Standardized Beta
Income Growth	0.32
Asset Growth	0.48
Expenditure Growth	0.19

Social Development Outcomes

While extreme deprivation has declined, the majority of respondents cluster within the "average" development range. Only a small fraction attain high-level social development status (Table 4).

Table 4: Income and Social Security Status of Industrial Workers

Worker Category	Average Monthly Income (INR)	Access to Social Security (%)
Permanent Workers	22000	78
Contract Workers	15000	42
Casual Workers	11000	18

Income Variation with Education Level

Comparative analysis of income with education level shows a positive wage growth as education level increases, at lower level it has a moderate shift as higher education level achieved like graduation and post-graduation degrees income shows a positive shift (Table 5).

Table 5: Income variation with education

Education Level	Average Monthly Income (₹)
Primary	9000
Secondary	12000
Higher Secondary	15000
Graduate+	22000

This shows a clear upward trend, income increases with higher education level Education significantly enhances earning potential.

Asset Accumulation Patterns

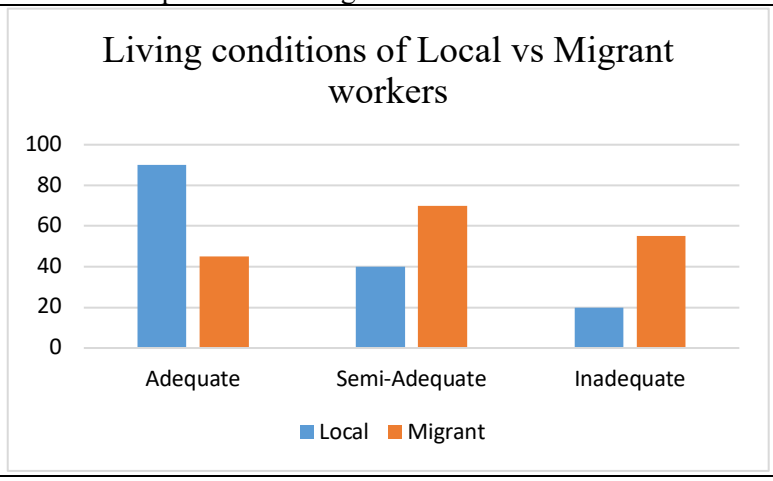
Asset ownership improved across the sample. A notable proportion of respondents reported construction or purchase of houses during the ten-year period. Ownership of two-wheelers and small four-wheelers increased. Bank account penetration and participation in formal savings instruments expanded significantly. However, land ownership remained relatively stable, reflecting structural constraints in asset diversification. Financial assets such as mutual funds or diversified portfolios were rare, indicating limited financial inclusion beyond basic savings mechanisms.

Living Conditions of Migrant and Local Workers

SIDCUL industrial workers are composed of local as well as migrant workers, because being a hilly state livelihood means are not easily available, people migrate to the industrial areas so that they can find employment (Table 6). Living conditions of these workers are sometimes adequate but sometimes inadequate also.

Table 6: Comparison of living conditions

Category	Adequate	Semi-Adequate	Inadequate
Local	90	40	20
Migrant	45	70	55



Local population shows higher adequate living conditions. Migrants show comparatively lower adequacy levels. Migration status significantly affects living conditions, with locals generally better off.

Expenditure Behaviour

Household expenditure increased in tandem with income growth. Significant increases were observed in education spending for children, health-related expenses, and housing improvement. Consumption of durable goods such as refrigerators, televisions, and mobile devices expanded. Despite higher expenditure, savings adequacy remained moderate. Many respondents reported vulnerability to medical emergencies and income disruptions, indicating that higher consumption did not always translate into financial resilience.

Social Development Index Distribution

(a) ***Socio-Economic Status (SES):*** SES is a composite measure of an individual's or family's social and economic standing based on income, housing, education, welfare and occupation. It is used to analyze, predict and correlate with variables like health, quality of life and social class.

The constructed SDI revealed the following distribution:

Deprived (SDI 0–3): Approximately 13–15 percent
Average (SDI 4–7): Approximately 78–80 percent
Developed (SDI 8–10): Approximately 6–8 percent

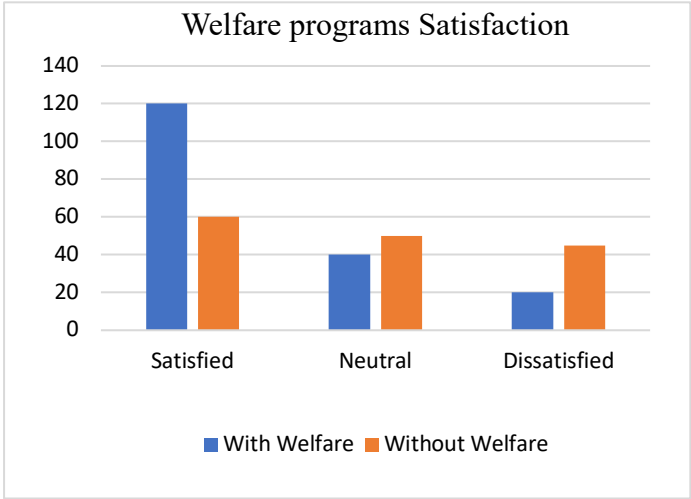
While extreme deprivation declined compared to the past, the majority of workers remain clustered within the average development category. Only a small segment achieved high multidimensional welfare status. All variables exhibited positive relationships with SDI, but asset growth demonstrated the strongest explanatory power. Income growth was statistically significant at conventional levels, confirming its positive association with social development. Expenditure growth showed comparatively weaker influence. The model explained approximately 31 percent of the variation in SDI ($R^2 \approx 0.31$), indicating

that nearly two-thirds of social development outcomes are influenced by non-economic or structural factors such as employment stability, social capital, institutional support, and cost-of-living dynamics.

(b) ***Welfare Programs Satisfaction Level Among Workers:*** Welfare programs are key to human as well as social satisfaction level, whether it is related to work related satisfaction level or living condition level satisfaction level. If welfare programs are so designed that it provides the workers a sense of security it gives them higher satisfaction (Table 7).

Table 7: Welfare Program Satisfaction

Category	Satisfied	Neutral	Dissatisfied
With Welfare	120	40	20
Without Welfare	60	50	45

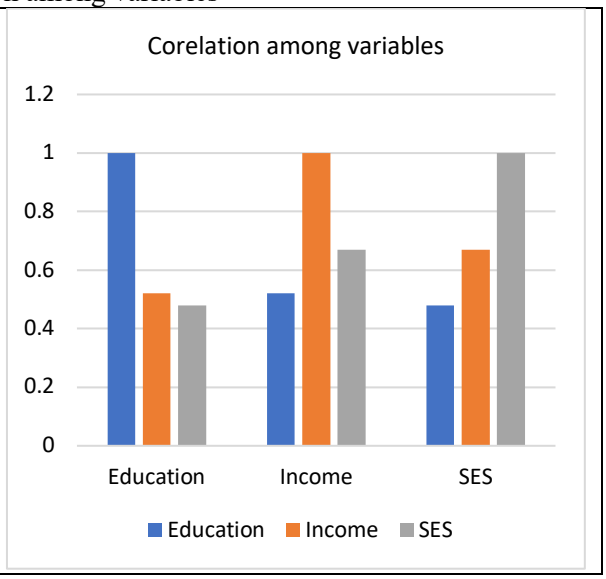


Those with welfare support show much higher satisfaction. Without welfare, dissatisfaction increases. Welfare programs strongly improve satisfaction levels.

*(c)****Correlation among Education, Income level, and SES:*** A correlation matrix is developed among variables education, income level and SES (Table 8).

Table 8: Correlation among variables

	Education	Income	SES
Education	1	0.52	0.48
Income	0.52	1	0.67
SES	0.48	0.67	1



Key Correlations

Education & Income ≈ 0.73

Education & SES ≈ 0.72

Income & SES ≈ 0.67–1.00

The lines represent correlation strengths, strong positive correlations across all variables. Education strongly influences both Income and SES. All three variables are positively and significantly correlated, indicating strong interdependence.

Discussion

The findings provide nuanced insights into the relationship between wage growth and multidimensional development. First, industrial employment has undeniably improved material living standards. Access to electricity, sanitation, health insurance schemes, and consumer goods has expanded. Food security has strengthened relative to pre-industrial agrarian uncertainty. These improvements represent tangible welfare gains. Second, asset accumulation plays a more decisive role in sustaining long-term development. Workers who invested in housing, savings instruments, and productive assets exhibited higher SDI scores. This finding underscores the importance of transforming income flow into asset stock. Third, the moderate explanatory power of income growth indicates structural limitations. Wage expansion alone cannot overcome constraints such as contractual insecurity, limited promotion opportunities, inflationary pressures, and rising housing costs.

From a capability perspective, income functions as a means rather than an end. The critical question lies in conversion efficiency. Factors such as education, health access, financial literacy, and institutional stability determine whether income translates into substantive freedoms. Labour segmentation further influences outcomes. Permanent workers with stable contracts display stronger asset growth and higher SDI scores compared to contractual workers facing job uncertainty. Thus, heterogeneity within the organized sector shapes capability expansion. The findings align with broader labour market analyses reported by the International Labour Organization, which emphasize that employment quality, not merely employment quantity, determines sustainable development outcomes.

The findings suggest that industrialization in Uttarakhand has generated measurable improvements in material living standards. Workers report better access to essential services, improved housing conditions, and enhanced consumption levels. Nevertheless, structural transformation remains incomplete. Long-term financial security, diversified asset portfolios, and upward class mobility are limited. The evidence supports the argument that while wage growth is necessary for welfare improvement, it is not sufficient for comprehensive development. Capability expansion requires complementary institutional support, financial literacy, and asset-building mechanisms.

The empirical findings of this study highlight that the socio-economic transformation occurring in industrial regions is not merely an outcome of employment generation but also a result of structural economic change. Industrialization in SIDCUL has contributed significantly to improving household income levels, access to urban amenities, and diversification of occupational opportunities for industrial workers. However, these benefits are unevenly distributed among workers depending on their skill level, job security, and access to institutional welfare mechanisms. Workers employed in permanent positions tend to experience relatively higher income stability, improved living standards, and better access to health and educational facilities. In contrast, contract and casual workers remain vulnerable to income fluctuations, lack of social security benefits, and occupational risks. This duality in the labour market reflects the broader structural inequalities that characterize industrial labour systems in developing economies.

Another significant observation emerging from the analysis is the role of education and skill development in enhancing workers' socio-economic mobility. Workers with technical training or higher educational attainment were found to occupy better-paid positions and

exhibit greater upward mobility compared to workers with minimal educational qualifications. This indicates that human capital formation plays a crucial role in determining the long-term socio-economic outcomes of industrial labour.

Conclusion

This study concludes that income expansion among industrial workers contributes positively to social development but does not guarantee structural mobility. Asset accumulation plays a more decisive role in long-term capability enhancement. Policy strategies must therefore move beyond income-centric approaches and integrate broader social protection, housing support, and institutional strengthening measures. Future research should incorporate longitudinal data to further examine the sustainability of income-driven development outcomes. Income mobility over the past decade reflects the positive impact of organized-sector industrialization. However, the relationship between income growth and social development is neither automatic nor comprehensive. Asset formation emerges as the most significant predictor of sustained multidimensional welfare. Expenditure growth enhances consumption but does not necessarily ensure financial resilience or structural mobility.

The findings demonstrate that economic development strategies focusing exclusively on wage enhancement may yield limited long-term transformation. Complementary institutional mechanisms are essential, including:

Housing and asset-building schemes
Financial literacy programs
Strengthened labour protection and job security
Accessible health and education infrastructure
Support for long-term savings and pension mechanisms

Industrial growth must be integrated with capability-enhancing frameworks to achieve durable socio-economic transformation. The study thus highlights the limits of income-centric development models and advocates a multidimensional approach linking wages, assets, and institutional support structures.

The results of the study have several important policy implications. First, there is a need to strengthen labour welfare policies to ensure that industrial development translates into inclusive socio-economic progress. Government agencies and industrial authorities should implement stronger labour protection mechanisms, particularly for contract workers who constitute a significant proportion of the workforce. Second, skill development programs should be expanded to enable workers to upgrade their technical competencies. Training initiatives coordinated between industry, government institutions, and educational organizations can significantly enhance the employability and productivity of workers. Third, improved access to healthcare, housing, and educational facilities for workers and their families can contribute to long-term social development. Industrial clusters such as SIDCUL should incorporate social infrastructure planning as an integral component of regional industrial policy.

Although the present study provides valuable insights into the socio-economic conditions of industrial workers, it is subject to certain limitations. The analysis is based on a cross-sectional survey, which restricts the ability to observe long-term changes in workers' socio-economic status over time. Future research could adopt longitudinal approaches to better understand how industrial employment influences intergenerational mobility. Furthermore, the study focuses on a specific industrial region, and therefore the findings may not be fully generalized to other industrial clusters with different institutional and economic contexts. Comparative studies across multiple industrial regions would provide a more comprehensive understanding of labour dynamics in India's industrial sector. Despite these limitations, the study contributes to the existing body of literature by providing empirical evidence on the

relationship between industrial employment and socio-economic development among workers. The findings reinforce the importance of inclusive industrialization strategies that prioritize both economic growth and social welfare.

Future research may incorporate longitudinal panel data, qualitative interviews, and comparative analysis across industrial clusters to deepen understanding of labour mobility and structural change.

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