

# Green Transitions and Paycheck Inequality: Wage Differentials in Indian Manufacturing

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## Abstract

*Differences in wages paid to workers are always an important issue in the growth of manufacturing sector. The present study attempts to analyse the differences in wages in manufacturing sector across Indian states from 1980-81 to 2021-22. To study the trends in real wages, the analysis is conducted at nine points in time. i.e., 1980-81, 1985-86, 1990-91, 1995-96, 2000-01, 2005-06, 2010-11, 2015-16 and 2021-22. The study has also made analysis of state-specific intercept coefficients of fixed effect model to statistically conclude that there exists a significant difference in wages paid to workers across states. Further, the study has explored various determinants of wages in manufacturing sector. It has been found that labour productivity, capital intensity and employment per factory exerts a positive and significant impact on real wages while concentration of firms is having negative and significant effect on real wages.*

**Keywords:** *Wage difference, Manufacturing sector, Capital intensity, Employment per factory, Gujarat*

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## INTRODUCTION

The Liberalisation policy of 1991 has been a major turning point in industrial development of India. The reforms of 1991 led to the breakdown of various industrial controls and liberalised the trade of goods and services. The post reform era witnessed a high growth rate in per capita income and it significantly improved the standard of living of people. According to the 'Standard of living theory of wages', with improved standard of living, workers are able to get higher wages. But these higher wages are not uniform across regions and industries. Industries are paying different wage rates to the workers. These differences in wages are caused by a variety of reasons. Some industries are able to pay higher wages because they may be geographically concentrated or they may be capital intensive. Therefore, they require highly skilled workers and hence, to employ those workers they have to pay higher wages. Another reason could be there may be variations in the productivity of the workers. Hence, there exist differences in wages among workers. In developing countries, like India, wage inequalities can be seen across states. For instance, in 2021, workers are paid wages equal to Rs 8,55,537 lakhs in Gujarat while in Himachal Pradesh, wages paid are Rs 94,514 lakhs only. In the same year, wages received in West Bengal is Rs 4,55,432 lakhs while in Punjab workers are paid wages Rs 3,23,478 lakhs. Further, the wages in Andhra Pradesh are Rs 7,64,103 lakhs while in Orissa wages received is Rs 2,60,723 lakhs. So, workers are paid different wages across different states. Therefore, it is important to analyse the changing pattern of wages to workers in Indian manufacturing sector across states and to explore the factors determining the wages of workers. The study covers six Indian states. These are Gujarat, West Bengal, Andhra Pradesh, Punjab, Orissa and Himachal Pradesh.

The paper is organised as follows: Section II briefly discusses review of literature on wages in Indian manufacturing sector. Section III describes the objective and research methodology of the study. The results and analysis are presented in section IV. Section V concludes the study and suggests some recommendations.

## REVIEW OF LITERATURE

There exists a vast literature exploring the differences in wages in manufacturing industries of India. Verma (1972) and Sen (1985) have highlighted the factors explaining inter-industry wages and earning structure in manufacturing industries. Results have revealed that productivity, skill growth, trade unionism and consumer's price index are found

to be significantly related to wages. Further, Tulpule and Datta (1988) have observed that real wage growth rate has followed a fluctuating pattern from 1961 to 1983. Labour productivity, fixed asset per employee, union, ratio of non-production employees to total employees are found to exert influence on real wages to workers. Nagaraj (1994) has observed that earnings per-worker has increased faster than per capita income in registered manufacturing as well as in consumer non-durable goods industries. Various economists have also studied wage disparities in other countries. Like, Osburn (2000) and Mishel and Bernstein (2003) have analysed the wage pattern and inter-industry wage differential in industries of United States. Authors have emphasised on the importance of low unemployment and minimum-wage to reduce the wage growth gap between low paid workers and medium workers. Further, authors have mentioned skill requirement, capital intensity, job condition, industry concentration etc. as the prominent factors leading to wage differential in United States.

Galbraith, Chowdhury and Shrivastava (2004) have found that public sector industries like rubber, plastic, basic metal industries, petroleum and coal, electricity generation and distribution, transport equipment, chemicals and machinery and equipment have contributed much higher to the wage inequality as compared to industries like cotton textiles, non-metallic mineral products, beverages and tobacco, food manufacturing and wood products in manufacturing sector in India. Further, various authors have explored the wage inequalities among different workers. Like, Dutta (2005) has analysed that wage inequality among the regular and casual workers in Indian industries. Educational achievement and industry affiliations are found to determine wage inequalities in all sectors including agriculture, organised and unorganised manufacturing and services. Further, Bhandari and Heshmati (2006) have studied the wage inequality between permanent and contract workers. Education, experience, seniority, skill, advanced skill, union membership and migration are found to be the important factors leading to wage disparities.

Across states, various researchers have studied wage inequalities. Ghose and Roy (2007) have revealed that Andhra Pradesh, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Orissa, Punjab, Uttar Pradesh and Delhi have lower wage growth rate while, in Assam and Haryana, the growth of wage rate is higher. Further, Karan and Selvaraj (2008) have found wages disparities among casual workers and regular workers in both rural as well as urban areas. Authors have also found that female workers are paid fewer wages than their male counterparts especially in rural areas. Further, Mathur and Mishra (2008) have revealed that from 1973 to 2003, the growth rate of real wages is highest in Bihar and lowest in Tamil Nadu, Himachal Pradesh and Rajasthan. Sidhu's (2008) study is worth noting. Author has empirically examined the factors behind wage differential across industrial groups in India and concluded that wage disparities have increased in all the sector of the Indian industry mainly due to the variations in technology and labour productivity.

Several economists have statistically explored the determinants of wages in India. Sidhu (2010), Das (2012) and Manonmani (2012) have concluded that factors like labour productivity, capital intensity, consumer price index for industrial workers, net value added and total factor productivity index are significantly associated with the wages of workers. Krishna and Bino (2013) have observed that wages of workers are not only affected by economic factors but also by non-economic factors. Various qualitative factors such as sex of the workers, caste, work place location, employee- employer relationship, unionisation, and organisational structure have been included in model to explain the unexplained proportion of variation in wages. Further, Jain and Singh (2014) and Mitra and Singh (2016) have also attempted to examine the impact of net value added per unit, labour productivity, fixed capital per unit, capital intensity and employment on the differences in wages across Indian states and across manufacturing industries respectively. Sofi's (2016) work is worth mentioning. Author has analyzed the differences in wages among regular and casual workers and concluded that wage differentials are highest in Jharkhand followed by Orissa and Goa while in the remaining states wage differential is not a cause of concern. Further, Sonu Madan (2019) examines wage differentials in the manufacturing and service sectors of Haryana state, focusing on the factors influencing these wage gaps. It uses a semi-logarithmic regression model to analyze the relative importance of worker-specific factors (such as education, work experience, gender, and marital status) and firm-specific factors (such as enterprise nature, size, type, and location). The findings show that worker-specific factors account for around 50% of the variation in wage levels, while firm-specific factors explain a smaller portion, ranging from 12% to 17% depending on the sector. Lastly, Chandrima Ganguly and Joydeb Sasmal (2023) provides an empirical analysis of wage disparities across industries in India's organized manufacturing sector. Utilizing data from the Annual Survey of Industries (ASI) spanning 2000-

2001 to 2015–2016, the study identifies key determinants influencing wage differentials, emphasizing the role of labor productivity and capital intensity.

From the extensive review of literature, it has been found that authors (Tulpule and Datta, 1988; Nagaraj, 1994) have analysed the trends of wages in manufacturing industries. Several researchers (Ghose and Roy, 2007; Mathur and Mishra, 2008) have examined the inter-regional disparity of wages in manufacturing industries. The review has further revealed the determinants of wages in manufacturing industry. Researchers (Verma, 1972; Sen, 1985; Sidhu, 2008; Sidhu, 2010; Das, 2012; Manonmani, 2012; Krishna and Bino, 2013; Jain and Singh, 2014; Mitra and Singh, 2016; Ganguly and Sasmal, 2023) have found the impact of labour productivity, capital intensity, value added per worker, fixed capital per worker, skill growth, trade union membership and consumer's price index on wages. Outside India, Osburn, 2000 and Mishel and Bernstein, 2003 have covered the industries of United States to show the differences in wages of workers. Further, the researchers (Dutta, 2005; Bhandari and Heshmati, 2006; Karan and Selviraj, 2008) have studied the wage inequalities among different categories of workers like regular and casual workers, permanent and contract workers and male and female workers.

From the comprehensive review of literature, it has been found that authors have put their maximum efforts to study the different perspective of wages. But most of the studies are either analysing differences in wages in manufacturing industry at various disaggregated level or at all India level. However, there is a dearth of studies that focus on differences in wages in manufacturing sector across states. Further, the literature has shown that researchers have explored a few determinants of wages but there are numerous other variables that may affect wages in the manufacturing sector. So, the present study tries to explore the extent of differences in wages and its determinants in manufacturing sector across states from 1980 to 2021.

## OBJECTIVES AND METHODOLOGY

The main objectives of the study are:

1. To study the differences in real wages across states in manufacturing sector.
2. To bring out the factors affecting real wages across states in manufacturing sector.

The data are analysed for the period of 42 years from 1980 to 2021 across six Indian states. The states are selected on the basis of their share in gross state domestic product (Ministry of Statistics and Programme Implementation 2013-14). The study has made three categories of highest contributors to gross state domestic product, medium contributors to gross state domestic product and lowest contributors to gross state domestic product. To study the differences in real wages, the paper analyses the trends of real wages in manufacturing sector across states. The real wages are computed by dividing the wages with the number of workers. Further, the fraction is divided by consumer price index of industrial workers at 2001 prices. As per Annual Survey of Industries, the wages are expressed in terms of gross value i.e., before deduction for fines, damages, taxes, provident fund, employee's state insurance contribution, etc. The number of workers is defined to include all persons employed directly or through any contractors.

The analysis is conducted at nine points in time. i.e., 1980-81, 1985-86, 1990-91, 1995-96, 2000-01, 2005-06, 2010-11, 2015-16 and 2021-22. Then, the real wages are compared in manufacturing sector across states. Moreover, the paper has discussed state specific intercept coefficients to statistically check whether the differences in real wages in manufacturing sector across states are significant or not. The state specific intercept coefficients are the coefficients for each cross section units generated after fixed effect regression model. It consists of a common mean value of the intercept and the individual differences in the intercept values of each cross section units (states).

To attain the first objective, the hypotheses of the paper are:

$H_{0j}$ : There is no significant difference in real wages in manufacturing sector across states.

$H_{A1}$ : There is a significant difference in real wages in manufacturing sector across states.

To attain the second objective, panel data estimation technique is applied, precisely, fixed effect model as indicated by Hausman test. The explained variable of the study is real wages. The explanatory variables of the study are labour productivity, capital intensity, concentration of firms and employment per factory. The paper attempts to analyse the effect of these variables on real wages. The explained and explanatory variables are summed up in Table 1.

**Table 1: Variables of the Study**

<b>Explained variable</b>	Real wages	Wages (in lakhs) divided by total number of workers
<b>Explanatory variables</b>	Labour productivity	Net value added (in lakhs) divided by total number of workers
	Capital intensity	Fixed capital (in lakhs) divided by total number of workers
	Concentration of firms	Value of output (in lakhs) divided by number of factories
	Employment per factory	Total number of workers divided by number of factories

Labour productivity is an important variable in influencing real wages of the workers. High productive workers usually earn more wages as compared to low productive workers as former contributes more to the profits of the firms and hence, able to earn higher wages. Thus, it is expected that greater the productivity of workers, higher will be the wages. So, it is necessary to examine the influence of this variable. The second null and alternative hypotheses of the study are:

$H_{02}$ : There is no significant relationship between labour productivity and real wages in manufacturing sector.

$H_{A2}$ : There is a significant relationship between labour productivity and real wages in manufacturing sector.

In the paper, labour productivity is calculated as:

$$LP = \frac{NVA}{W}$$

Where,

LP = Labour productivity

NVA = Net value added (in lakhs)

W = Total number of workers

Wholesale price index of manufactured products at 2004-05 prices is used to deflate the nominal values of net value added (in lakhs).

Capital intensity is another crucial variable in affecting real wages of the workers. If a firm is capital intensive, then, it requires skilled workers who can efficiently work on latest technical equipments and, thus, will pay more to retain those workers. Thus, capital intensity is expected to influence the wages of the workers positively. Therefore, it is important to study its impact. The third hypotheses are explained below:

$H_{03}$ : There is no significant relationship between capital intensity and real wages in manufacturing sector.

$H_{A3}$ : There is a significant relationship between capital intensity and real wages in manufacturing sector.

In the present paper, capital intensity is computed as:

$$CI = \frac{K}{W}$$

Where,

CI = Capital intensity

K = Fixed capital (in lakhs)

W = Total number of workers

Wholesale price index of machinery at 2004-05 prices is used to deflate the nominal values of fixed capital (in lakhs).

Concentration of firms is another significant variable in affecting real wages. Firms tend to concentrate in that place where there is better infrastructure, transportation facilities, health care services etc. More the concentration of firms, more will be the opportunity for jobs for workers and, hence, an important variable to affect the real wages. The fourth null and alternative hypotheses are explained as:

$H_{04}$ : There is no significant relationship between concentration of firms and real wages in manufacturing sector.

$H_{A4}$ : There is a significant relationship between concentration of firms and real wages in manufacturing sector.

Concentration of firms is computed as:

$$CF = \frac{GI}{F}$$

Where,

CF = Concentration of firms

GI = Value of gross output (in lakhs)

F = Number of factories

Wholesale price index of manufactured products at 2004-05 prices is used to deflate the nominal values of gross output (in lakhs).

Employment per factory is also an important variable that may affect real wages. Greater the employment per factory, more will be the size of firms. Large firms tend to employ more workers to produce the required output and, hence, become an important variable to affect the wages. The fifth null and alternative hypotheses of the paper are:

$H_{05}$ : There is no significant relationship between employment per factory and real wages in manufacturing sector.

$H_{A5}$ : There is a significant relationship between employment per factory and real wages in manufacturing sector.

Employment per factory is computed as:

$$FE = \frac{W}{F}$$

Where,

FE = Employment per factory

W = Total number of workers

F = Number of factories

The data source of the study is Annual Survey of Industries (ASI) conducted by the Central Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, Calcutta.

### 1. The Model

The regression equation of the constructed model is:

$$W_{it} = a + a_1X_{1it} + a_2X_{2it} + a_3X_{3it} + a_4X_{4it} + Z_{it}$$

Where,

$W_{it}$  is real wages during the relevant year and for the relevant cross section unit (states)

$t$  represents time or the relevant year,

$i$  represents the cross section unit (states)

$X_{1it}$  is labour productivity in the  $i^{th}$  state in time period  $t$

$X_{2it}$  is capital intensity in the  $i^{th}$  state in time period  $t$

$X_{3it}$  is concentration of firms in the  $i^{th}$  state in time period  $t$

$X_{4it}$  is employment of workers per factory in the  $i^{th}$  state in time period  $t$

$Z_{it}$  is stochastic error term

### 2. Choice of Model

Panel data technique is used to estimate the above equation. The study has applied Hausman Specification Test to determine the suitable model between fixed and random effect model. The hypotheses under Hausman Specification Test are:

$H_{06}$ : Assumptions of Random Effect Model holds true.

$H_{A6}$ : Assumptions of Random Effect Model does not hold true.

If p-value is greater than 0.05, then, null hypothesis is accepted and alternative hypothesis is rejected which means that random effect model is suitable according to the data. If p-value is less than 0.05, then null hypothesis is rejected and alternative hypothesis is accepted which signifies that fixed effect model is better. In the paper, Hausman Specification Test results are presented in table 2. The p-value is less than 0.05. Thus, the paper rejects the null hypothesis and accepts the alternative hypothesis. Therefore, fixed effect model is found to be more appropriate for regression.

**Table 2: Hausman Specification Test Results**

	Real wages
Chi.Sq. Statistic	12.735983
p-value	0.0126

Source: Calculated from data from Annual Survey of Industries (Various Years), Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

### LIMITATIONS OF THE STUDY

From the review of literature, it has been found that there are various variables such as productivity of labour, capital intensity, skill of the workers, concentration of firms, consumer price index for industrial workers, trade unionism, employment per factory, etc. that affects the wages of the workers. However, the present study covered only those variables for which the data are available state-wise in the manufacturing sector such as labour productivity, capital intensity, concentration of firms and employment per factory. The study is unable to take trade unionism and skill of workers as the data for these variables are not available state-wise in the manufacturing sector. The present paper analysed the differences in real wages paid to workers in few states. The states are selected on the basis of their share in gross state domestic product as per the report published by Ministry of Statistics and Programme Implementation 2013-14. There are three categories on the basis of which states are classified. The first category includes Gujarat and West Bengal because their share in gross state domestic product is more than 5 percent. Andhra Pradesh and Punjab lies in second category because their contribution in gross state domestic product is between 3 percent and 5 percent and the last category includes Orissa and Himachal Pradesh as they contribute less than 3 percent. Hence, the scope of the study is restrained to six Indian states only. Because of the unavailability of data, the time period of the study is restricted from 1980-81 to 2021-22.

### ESTIMATION AND RESULTS

To study the differences in real wages, the paper analyses the trends of real wages in manufacturing sector across six selected states from 1980-81 to 2021-22. The analysis is conducted at nine points in time. i.e., 1980-81, 1985-86, 1990-91, 1995-96, 2000-01, 2005-06, 2010-11, 2015-16 and 2021-22. The results are shown in table 3. In Gujarat, real wages have increased continuously from Rs 39,647 in 1980-81 to 50,928 in 2005-06. After 2005-06, there is a modest decline in real wages of Rs 1192 approximately in 2010-11. However, in 2015-16, real wages have again gone up. Firms have paid highest real wages of Rs 55001 in 2015-16. Further, the real wages have shown a slightest decline in the year 2021-22 by Rs 2632.625.

**Table 3: Trends of Real Wages in Manufacturing Sector (Rs)**

Year	Gujarat	West Bengal	Andhra Pradesh	Punjab	Orissa	Himachal Pradesh
1980-1981	39647.18	55071	22510.82	30111.45	57126.78	39265.25
1985-1986	44444.75	61178.36	30062.61	34778.44	56058.51	38256.08
1990-1991	46289.12	61274.04	28662.09	41311.64	59097.58	44039.08
1995-1996	46801.53	63098.16	32695.26	42922.86	63137.2	41778.21
2000-2001	49781.54	62190.95	31998.89	39092.79	63684.2	40860.16
2005-2006	50928.25	57484.93	35008.77	40294.26	63938.11	40838.4
2010-2011	49736.5	50732.52	42380.08	38122.89	65659.83	44250.4
2015-2016	55001.75	53044.98	48376.84	44224.86	67294.81	53928.54
2021-2022	52369.125	51888.75	45378.46	41173.875	66477.32	49089.47

*Source: Annual Survey of Industries (Various Years), Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.*

In West Bengal, real wages have kept on rising from 55,071 in 1980-81 to 63,098 in 1995-96. Thereafter, from 2000-01, West Bengal has shown a declining trend in the real wages from Rs 62,191 in 2000-01 to Rs 50,732 in year 2010-11. In 2015-16, firms have increased the real wages of workers by Rs 2,312. Although a slight fall is also observed thereafter in 2021-22. In Andhra Pradesh a fluctuating pattern has been observed in the real wages paid by firms. In 1980-81, firms in Andhra Pradesh have paid Rs 22,510 real wages which have increased to Rs 30,062 in 1985-86. Thereafter, real wages have shown a fluctuating trend till 2000-01. After 2000-01, period real wages have increased. In the state of Punjab, real wages have rising continuously from Rs 30,111 in 1980-81 to 42,922 in 1995-96. Thereafter, real wages have followed a fluctuating pattern.

In the state of Orissa, except for the period 1985-86, real wages have increased from 1990-91 to 2015-16. In Himachal Pradesh, real wages have shown an inconsistent pattern between 1980-81 and 1990-91. Thereafter, real wages have continuously fallen till 2005-06. After, which the same has started to rise. So, it can be shown that workers are paid different wages in manufacturing sector across India. Therefore, it can be concluded that there exists a difference in real wages in manufacturing sector across states.

The paper has used state-specific intercept coefficients generated by fixed effect model to statistically prove that workers in different states are receiving significantly different wages in Indian manufacturing sector. The state specific intercept coefficients can be generated only after the application of fixed effect model. So, the study first, finds out the determinants of real wages in manufacturing sector across selected states and then, discusses the state specific intercept coefficients. The results of state specific intercept coefficients are discussed in table 5.

The fixed effect regression is run from 1980-81 to 2021-22. The results of the regression are presented in table 4. The value of  $R^2$  indicates that 99.14% variations in real wages are explained by labour productivity, capital intensity, concentration of firms and employment per factory collectively. Further, the F-statistics revealed that the model is correctly specified. The coefficient of labour productivity is positive and statistically significant at 1 percent level. This implies that 1 unit increase in labour productivity leads to on an average, 0.013104 units increase in real wages. Therefore, we reject the null hypothesis and accept the alternative hypothesis. It suggests that if, labour productivity rises, then, workers are able to earn higher wages. This is because higher productivity of the workers increases the output of the firms and hence, firms are able to earn more profits. More profitability of the firms enhances the wages of the workers. Further, the results revealed that the value of coefficient of capital intensity is significant and positive at 1 percent level. It means that as capital intensity increases by 1 unit, then, on an average, real wages increases by 0.002020 units. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. It further, implies that greater capital intensive firms require more of advanced technology equipments and, hence, skilled workers are required in order to work on these equipments. So, to employ skilled workers, firms are required to pay them higher wages.

It can be seen from the table that the coefficient of concentration of firms is negative and significant at 5 per cent level. It means that, on an average, if concentration of firms goes up by 1 unit, then, real wages goes down by 0.000023 units. So, we reject the null hypothesis and accept the alternative hypothesis. It may happen that if concentration of firms rises at one place, then, it may increase the employment opportunity for the workforce. So, the workers will migrate to that place where the concentration of firms have risen up in order to search for jobs and, hence, it may increase the supply of workforce as compared to the demand which may create a downward pressure on wage rate

**Table 4: Determinants of Real Wages in Manufacturing Sector**

	<i>Fixed effect coefficient</i>	<i>t-ratio</i>
Constant	-----	
Labour productivity	0.013104*	3.883282
Capital intensity	0.002020*	8.515848
Concentration of firms	-0.0000237**	-2.275532
Employment per factory	0.000565**	2.043314
$R^2$	0.9914	
F-statistic	F(10,212) = 3508.35	
p-value	0.0000	

Notes: (1) \*, \*\*, and \*\*\* respectively indicate significant at 1%, 5% and 10% levels.

Source: Annual Survey of Industries (Various Years), Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

Lastly, employment per factory has positive and significant effect on real wages at 5 percent level. It implies that if employment per factory increases by 1 unit, then, on an average, real wages increases by 0.000565 units. Therefore, we reject the null hypothesis and accept the alternative hypothesis. It implies that in larger factories, output is produced in bulk quantity and factories are able to exploit economies of scale. So, in order to retain the workers, firms might pay higher wages. So, large factories employ more workers and also pay greater wages.

Table 5 shows the results of state-specific intercept coefficients. The t-ratios indicate that all the coefficients are highly significant at 1 per cent level. Thus, state specific characteristics are statistically different among selected states. This further implies that firms in different states are paying statistically different real wages to workers. Hence, there exists a significant difference in real wages across selected states. Secondly, in West Bengal, the state specific intercept fixed coefficient (0.5136) is highest among all the states indicating that firms in West Bengal are paying highest real wages. On the other hand, in Andhra Pradesh, the fixed coefficient (0.2849) is lowest among all the states stating that firms in Andhra Pradesh have paid the lowest wages among all six Indian states.

**Table 5: State Specific Intercept Coefficient**

	<i>Fixed coefficient</i>	<i>t-ratio</i>
Gujarat	0.4011008*	25.32
West Bengal	0.5136106*	18.71
Andhra Pradesh	0.2849462*	15.45
Punjab	0.3458254*	26.01
Orissa	0.5071621*	22.54
Himachal Pradesh	0.3280424*	17.95

Notes: (1) \*, \*\*, and \*\*\* respectively indicate significant at 1%, 5% and 10% levels.

Source: Annual Survey of Industries (Various Years), Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

So, in the present paper, it can be concluded that there exists a significant difference in real wages across states in manufacturing sector. Further, real wages are significantly affected by labour productivity, capital intensity, concentration of firms and employment per factory.

## CONCLUSIONS AND POLICY RECOMMENDATIONS

The study concludes that during the period of study (1980-81 to 2021-22), there has been a fluctuating pattern of real wages in manufacturing sector in all the selected states. It can be analysed that the firms in Orissa are paying highest real wages in all the points in time taken by the study except for the years 1985-86 and 1990-91 but in Andhra Pradesh, firms are paying lowest wages during the study period except for the year 2010-11 and 2015-16. So, there exists a difference in real wages in manufacturing sector across six Indian states. Further, the study has analysed the state specific intercept coefficient to statistically conclude that wages of workers in manufacturing sector are different in different states. The paper has also found out the factors affecting real wages in manufacturing sector. All the variables labour productivity, capital intensity, concentration of firms and employment per factory have a significant impact on real wages. It is suggested that the government should improve the quality of education and training, increase the infrastructural investment, amend the tax and welfare schemes to increase work incentives to increase the productivity of workers. Further, in order to promote capital intensive industries, government must ensure the set-up of banking system as capital intensive industries requires significant investment in fixed assets and in order to finance these investment firms need to borrow it from financial institutions and banks. So, the government must ensure a proper banking system as greater capital intensity is associated with higher wages. Concentration of firms has a negative impact on real wages so the government must ensure that firms should not be concentrated at a particular place and there will be equal distribution of output among firms in that particular industry. If all the above measures to increase labour productivity, capital intensity and to reduce concentration of firms should be taken care of, it will ultimately increase the employment per factory.

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