# Pattern of Growth of Unorganised Manufacturing Enterprises in India: A State Level Analysis

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## Abstract

This paper examines the growth of employment and gross value added (GVA) in the unorganised manufacturing sector of India across different states and union territories (UTs) using four rounds of National Sample Survey Office (NSSO) data from 2000 to 2016. The paper matches the data according to the National Industrial Classification of 2008 to ensure comparability. The paper finds that most of the states/UTs experienced job-loss growth, while only five states experienced job-less growth. It also finds a positive and significant relationship between the growth of employment and GVA, supporting Kaldor's hypothesis. It suggests some policy measures to enhance the growth of GVA and employment in this sector, such as linking the entrepreneurs with various markets, identifying clusters of skill sets, and encouraging subcontracting from big firms.

*Key Words: Unorganised, Entrepreneurship, Manufacturing, Growth, Employment, Productivity.*
*JEL Classification: D24, L26, L60, R10, J21, J24,*

## 1. Introduction

Small and medium sized enterprises (SMEs) account for the majority of the world's business activity (OECD, 2019). India has a large number of Micro, Small and Medium enterprises (MSMEs) as well. Many of these enterprises are not registered under the relevant laws and regulations, such as the Factories Act, 1948 and Beedi & cigar workers Act, 1966 (NSSO, 2017). These enterprises are often referred to as informal or unorganised manufacturing enterprises in India (Sakthivel and Joddar, 2006; Das & Dandapat, 2021). According to Mehrotra (2022), India has a higher proportion of informal workers than other BRICS countries. These enterprises play a vital role in the Indian economy for their ability to create employment opportunities for a large number of people (Dandapat et al., 2021; Ganguly, 2020; Goldar & Mitra, 2013). Therefore, it is essential to promote the growth of these enterprises and their employment potential. The 'Make in India' initiative launched by the Government of India aims to increase the share of the manufacturing sector to 25 percent of GDP by 2025 (NITI Aayog, 2021). This initiative is expected to enhance the productivity and employment generation capacity of both organised and unorganised manufacturing sectors. It also helps to reduce the gender gap in employment. However, the COVID-19 pandemic has worsened the situation of poverty and unemployment in South Asia in 2020 (World Employment and Social

Outlook, 2022). The small enterprises were severely affected by the disruption of supply chains due to the nationwide lockdown and many of them had to close down (Unni, 2020; Shaikh, 2020). Hence, it is important to analyse the growth patterns of employment and GVA of the unorganised manufacturing enterprises across states/UTs in order to formulate appropriate policies for them.

## 2.Literature Review

The structural transformation of the Indian economy has been marked by a gradual shift of labour from the agricultural sector to the non-agricultural sector, as observed by Unni (1998). Within the non-agricultural sector, the service sector has emerged as the dominant contributor to the GDP, accounting for 53.3 percent in 2015-16. The construction and service sectors have also witnessed significant increases in their employment shares during 1980-81 to 2015-16, while the manufacturing sector has experienced a modest rise and the agricultural sector has seen a sharp decline (Anupama, 2016; Aggarwal and Goldar, 2019). Cornia and Stewart (2014) argued that this pattern of service-led growth is common among developing countries. Ganguly (2020) examined the growth rates of unincorporated manufacturing industries in India and found that capital-intensive industries such as transport equipment, metal products and machinery, electrical machinery and basic metals had higher output growth rates than the GDP growth rate during 2001 to 2013. Das (2022) contrasted the low growth rate of the Indian economy in the pre-reform period with the high growth rate in the post-reform period, and concluded that India had witnessed jobless growth. Goldar (2000) reported a meagre 0.53 percent per annum growth of employment in the organised manufacturing sector between 1980-81 and 1990-91, which increased to 4.03 percent per annum after the economic reforms were initiated. Unni and Rani (2004) corroborated the finding of jobless growth in the Indian manufacturing industry during the post-reform years. Thomas (2023) highlighted the regional disparities in demographic trends, noting that most of the eastern and northern states had young populations who were seeking jobs, whereas states such as Kerala and Tamil Nadu had an aging population.

The unorganised manufacturing sector in India faces many challenges in terms of growth, productivity and employment. Despite its significant contribution to the economy, this sector remains largely informal and dispersed across different regions and industries. Some of the factors that hinder the development of this sector are: lack of formal finance, power shortage, volatility of exchange rates and raw material prices, and low skill levels of workers. Several studies have analysed these issues from various perspectives and suggested possible policy interventions. For instance, Saikia and Das (2012) and Saikia (2015) examined the spatial distribution of unorganised manufacturing enterprises and found that they were concentrated in a few advanced states, while the backward states lagged behind. They also observed that high technology industries had a high degree of spatial concentration. Nagraj (2018), Rakshit (2019) and Ghosh and Abraham (2021) explored the phenomenon of 'missing middle', which refers to the dominance of own account enterprises that do not hire any workers from outside. They argued that the transition of these very small enterprises into larger ones is crucial for increasing employment and productivity in the unorganised manufacturing sector. Raj and Sen (2015) identified non-availability of formal finance as the major barrier for this transition. Bhavani and Bhanumurthy (2014) investigated the characteristics that affect the financial access of unorganised manufacturing enterprises, such as size, age, location, ownership, industry type and legal status. Dandapat and Das (2022) reported that only a small percentage of unorganised manufacturing enterprises had taken loans, and that money lenders were the dominant source of credit. Vidyarani and Maheshkumar (2022) compared the regional

variations in access to formal credit and found that the Southern region had better access than the Northeast, Central and North regions. Thomas (2013) highlighted the impact of power shortage, exchange rate fluctuations, raw material price changes and contract labour on the growth of Indian manufacturing industries. Dandapat et al. (2021) estimated the labour and capital productivity of unorganised manufacturing enterprises and found that labour productivity was higher than capital productivity, indicating the scope for increasing employment in these enterprises.

The existing literature fails to capture the recent trend of Indian unorganised manufacturing enterprises (UMEs) which is vital to take proper policy to foster the growth rate of employment and GVA across states/UTs. To fill this research gap this study sets the following objectives:

a) to examine the variation of growth of employment and GVA of UMEs across major states/UTs

b) to analyse the nature of growth of employment in respect to output across major states/UTs

c) to examine the determinants of growth of employment across states/UTs

The remaining part of the paper is divided into four sections. In Section 3 we have described the database, theoretical background and econometric model for the study. Section 4 shows the results. The structure of employment and GVA across broad activities are analysed in this section. The percentage distribution of organised vis-a-vis unorganised manufacturing sector is shown here. The growth trajectories of employment, GVA and employment elasticity are analysed. The result of analysis of econometric model is presented to show the determinants of growth of employment across major states/UTs. In section 5 we have done a detail discussion. Finally, Section 6 concludes the observations with policy suggestions.

## 3. Database and Methodology

### 3.1 Database

We have used National Sample Survey Organisation's (NSSO) Unit Level data on Unorganised Manufacturing sector to conduct this study. We have considered the following four rounds: 56$^{th}$ (2000-01), 62$^{nd}$ (2005-06), 67$^{th}$ (2010-11) and 73$^{rd}$ (2015-16) rounds. In the 56$^{th}$ and 62$^{nd}$ rounds the survey was conducted under the title 'Unorganised Manufacturing Enterprises' which covered only the manufacturing enterprises in India. In the 67$^{th}$ and 73$^{rd}$ rounds the title was 'Unincorporated Non-Agricultural Enterprises (Excluding Construction) in India'. This survey covered manufacturing, trading and other services enterprises. The sample number of manufacturing enterprises in the 56$^{th}$ round was about 1 lakh 52 thousand which estimated about 1 crore 70 lakh and 24 thousand manufacturing enterprises in India (NSSO, 2002). The sample number of manufacturing enterprises in the 62$^{nd}$ round was about 82 thousand which estimated about 1 crore 70 lakh and 70 thousand manufacturing enterprises in India. We have added both the list frame and area frame of this round to get the full sample survey (NSSO, 2007). The sample number of manufacturing enterprises in the 67$^{th}$ round was about 99 thousand which estimated about 1 crore 72 lakh and 10 thousand manufacturing enterprises in India. This estimated number is about 29.84 percent of total unorganised non-agricultural enterprises (NSSO, 2012). In the 73$^{rd}$ round the sample number of manufacturing enterprises was about 82 thousand which estimated about 1 crore 96 lakh and 64 thousand manufacturing enterprises. In this round the share of unorganised manufacturing enterprises out of total unorganised non-agricultural enterprises is about 31 percent (NSSO, 2017). However, these four study rounds are not fully comparable. The 56$^{th}$ round survey was based on National

Industrial Classification (NIC) 1998, 62nd round survey was based on NIC 2004 while NIC 2008 was followed for 67th and 73rd round surveys. All unit level data are matched based on NIC 2008 only. To match three NICs we have used concordance tables given in different NICs.

## 3.2 Theoretical background

In every economy growth is a major concern. In case of developed countries it is observed that growth of manufacturing sector ( $G_{Mt}$) significantly influenced the growth of output ( $G_{Yt}$) of the country. Thus, in functional form it can be written as

$$G_{Yt} = f(G_{Mt}), \quad f' > 0 \dots\dots\dots\dots\dots\dots\dots (i)$$

This is Kaldor's first hypothesis. This hypothesis is also known as 'manufacturing as the engine of growth' hypothesis. The second hypothesis is that there has a positive relation between growth of output and growth labour productivity (Kaldor, 1966; Das, 2014). More precisely, this second hypothesis proposed two different relations: (a) relation between growth rate of productivity ($G_{LPt}$ ) and growth rate of output ($G_{Yt}$) ; and (b) relation between growth rate of employment ($G_{Et}$) and growth rate of output ($G_{Yt}$). These relations can be written as:

$$G_{LPt} = a + bG_{Yt} \dots\dots\dots\dots\dots\dots\dots\dots (ii)$$

$$G_{Et} = G_{Yt} - G_{LPt} = -a + (1-b)G_{Yt} \dots\dots\dots\dots\dots\dots\dots\dots\dots (iii)$$

Moreover, in Kaldor growth models technological progress is considered as an endogenous factor which other neo-classical models are not considered. Technological progress is the outcome of growth of gross fixed assets and growth of labour productivity (Kaldor, 1957; Das, 2014).

## 3.3 Measurement of employment elasticity

The employment elasticity is an important indicator of measurement of growth of employment with respect to growth of output. But the selection of the method to measure the employment elasticity depends on the availability of data. If the time series data is available then point elasticity method is more appropriate otherwise arc elasticity measurement is used. Therefore, our quinquennial data allow us to measure employment elasticity by applying arc elasticity method that is the ratio of proportionate change in employment to proportionate change in output during a period (Das, 2014; Kumar and Pattanaik, 2020). It is defined as

$$e = \frac{\%\ Change\ in\ Employment\ (E)}{\%\ Change\ in\ Output\ (Q)}$$

$$or, \qquad e = \frac{\frac{E2-E1}{E1} \times 100}{\frac{Q2-Q1}{Q1} \times 100}$$

$$or, \qquad e = \frac{\frac{\Delta E}{E}}{\frac{\Delta Q}{Q}}$$

$$or, \qquad e = \frac{\Delta E}{\Delta Q} \times \frac{Q}{E}$$

Where, E represent employment and Q represent output (GVA). It indicates the change in employment of each industry for every one percent change in output. The following decisions about growth of employment can be made from the above expression:

a) If e>1 then the growth will be called as job-creating growth
b) If 0<e<1 then the growth will be called as job-less growth
c) If e<0 then the growth will be called as job-loss growth

### 3.4 Econometric model

The theoretical relationship explained in section 2.3 clearly identifies manufacturing as an engine of growth. Our study focuses on only unorganised manufacturing sector of India and tried to examine Kaldor's employment and output relationship statistically across states. We have estimated the growth for three sub periods: 2000-01 to 2005-06, 2005-06 to 2010-11 and 2010-11 to 2015-16. To examine the relation econometrically we have set two models i.e. Model 1 and Model 2. In Model 1 we have shown the impact of growth rate of output (gGVA) and growth rate of labour productivity (gLBOP) on growth rate of employment (gEMP). But in Model 2 we have considered some other explanatory variables which can be considered as control variables. These are growth of fixed assets (gFIXA), growth of rural enterprises(gRUE), growth of contract enterprises (gCONE) and growth rate of expanding enterprises (gEXPE). Thus, the regression equation can be specified as:

$$\mathrm{gEMP}_i = \beta_0 + \beta_1 \mathrm{gGVA}_i + \beta_2 \mathrm{gLBOP}_i + \beta_3 \mathrm{gFIXA}_i + \beta_4 \mathrm{gRUE}_i + \beta_5 \mathrm{gCONE}_i + \beta_6 \mathrm{gEXPE}_i + \mathrm{u}_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (iv)$$

Where subscript i indicates twenty-five two digit level industries according to NIC 2008. We have considered GVA in place of output as it is suggested by other researchers like Dholakia & Dholakia,1994; Bagchi & Sahu 2020; Ganguly, 2020. All value figures are deflated by Wholesale Price Index (WPI) where 2005-06 is the base year. Das (2014) has taken all broad activities and analysed the empirical relation between gGVA and gLBOP with gEMP. Das (2007) shown the relation between gEMP and gGVA of organised manufacturing sector of India. Kumar & Pattanaik (2020) has analysed Annual Survey of Industries (ASI) time series data and found significant relation between gEMP and gGVA. In Kaldor model the role of assets is considered as important variable in determining the gEMP. In our regression we have considered the growth of fixed assets (gFIXA) as explanatory variable of gEMP. Moreover, the rural small scale enterprises generate non-farm employment opportunity in the rural India. Thus, we have considered gRUE as explanatory variable of gEMP. It is hypothesized that the growth contracting and growth expanding enterprises negatively influence the gEMP. The reason behind this hypothesis is that contracting (gCONE) and expanding (gEXPE) enterprises use more technology as compared to non-contracting and non-expanding enterprises.

## 4. Results

### 4.1 Growth of employment and output of organised vis-à-vis unorganised sector

In this section we briefly discuss the growth trajectories across broad activities as well as across organised and unorganised manufacturing industries. The percentage share of employment and GVA across broad category are presented in Table 1. In the agriculture sector 42.8 percent workers were employed in 2019-20 as compared to 59.3 percent in 2000-01. We observed the maximum increase in employment in the construction sector of India. In the year 2000-01 the share of this sector was only 4.5 percent which significantly increased to 11.7 percent in the year 2019-20. The share of service sector in terms of employment increased from 24.3 percent in 2000-01 to 34.2 percent in 2019-20. But the share of manufacturing sector in terms of total employment generation increased marginally from 2000-01 to 2015-16 and then decreased marginally to 10.5 percent in the year 2019-20. However, the share in GVA of broad activities are not similar to share in employment. The share of agriculture & allied sector in GVA is reduced from 26.1 percent in 2000-01 to 15 percent in 2019-20. The share of construction sector in GVA increased marginally from 6.9 percent in 2000-01 to 7.9 percent in 2019-20. The share of manufacturing sector in GVA increased marginally from 15.5 percent in 2000-01 to 17.1 percent in 2019-20 whereas the share of service sector increased significantly to 55.3 percent in 2019-20 as compared to 44.5 percent in 2000-01. Moreover, the annual average

growth rates of GVA and employment are shown in Table 2. The annual growth rate of manufacturing sector in GVA was 7.3 percent during the first sub-period and it is reduced to 4.7 percent during the last sub-period. The annual growth rate of employment in manufacturing sector was 3.4 percent during the first sub-period which drastically reduced to 0.3 percent during the last sub-period. In the construction sector the annual growth rate of GVA shown a decreasing trend from the first sub-period to last sub-period. Agriculture & allied, mining & quarrying sector have shown negative growth in employment in the second and third sub-periods. In India as a whole the annual growth rate of GVA is more or less flat and it is less than 8 percent for all sub-periods. The growth rate of employment in India as a whole was 2.3 percent during the first sub-period which further reduced to less than 1 percent during the second and third sub-periods. Then the annual growth rate slightly increased to 2.8 percent during the last period.

**Table 1: Percentage distribution of GVA and employment across broad activities from 2000-01 to 2019-20**

| | GVA | | | | | Employment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Broad activity | 2000-01 | 2005-06 | 2010-11 | 2015-16 | 2019-20 | 2000-01 | 2005-06 | 2010-11 | 2015-16 | 2019-20 |
| Agriculture & allied | 26.1 | 21.9 | 18.3 | 15.4 | 15 | 59.3 | 55.7 | 49.3 | 44 | 42.8 |
| Mining and Quarrying | 4.7 | 4.5 | 4.1 | 3 | 2.4 | 0.6 | 0.6 | 0.6 | 0.5 | 0.3 |
| Manufacturing | 15.5 | 15.6 | 17.7 | 18.1 | 17.1 | 10.9 | 11.4 | 11.7 | 11.6 | 10.5 |
| Electricity, Gas & Water | 2.4 | 2.2 | 2.2 | 2.1 | 2.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| Construction | 6.9 | 8.4 | 8.9 | 8.2 | 7.9 | 4.5 | 6.1 | 9.5 | 11.2 | 11.7 |
| Service | 44.5 | 47.3 | 48.7 | 53 | 55.3 | 24.3 | 26 | 28.7 | 32.3 | 34.2 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

***Source:*** *Authors' calculation based on India KLEMS database (2022)*

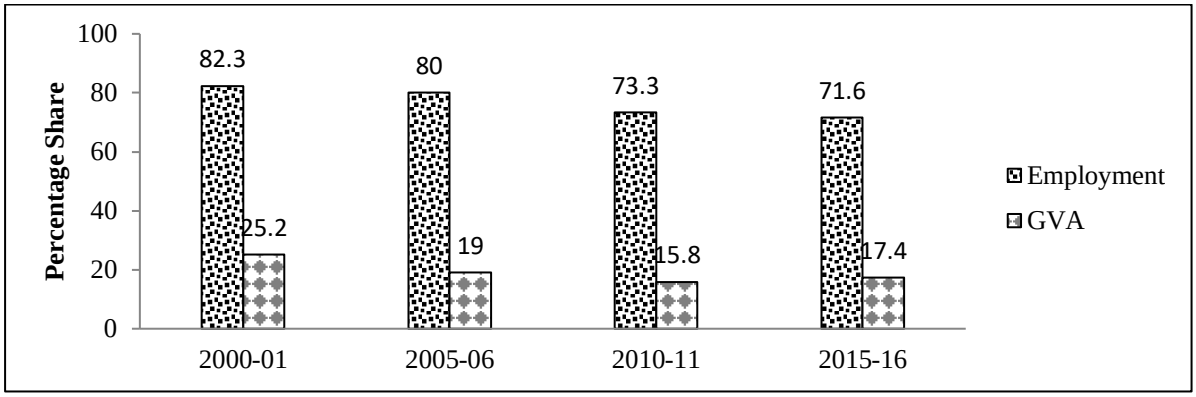
The contribution of unorganised manufacturing sector in total manufacturing sector of India shown in figure 1. Our analysis reveals that the unorganised manufacturing enterprises (UMEs) in total manufacturing sector has generated about 71.6 percent employment in the year 2015-16 which clearly shows the importance of this sector in context of Indian manufacturing sector. Although, the share decreased by about 11% from the year 2000-01 (Figure 1). The aggregate level growth analysis shows more interesting picture about this sector of India. In our study we found negative employment growth for the period 2000-01 to 2005-06 and for the period 2005-06 to 2010-11 while we found positive growth for the last sub period which is 2010-11 to 2015-16 (Figure 2). We have found that the share of GVA (at constant prices) of unorganised manufacturing enterprises decreased from 25.2 per cent in 2000-01 to 17.4 per cent in 2015-16 (Figure 1). The growth of GVA of unorganised manufacturing sector has increased from 2000-01 to 2015-16 (Figure 2).

**Table 2: Average annual growth rate of GVA and employment across broad activities**

| | 2000-01 to 2005-06 | | 2005-06 to 2010-11 | | 2010-11 to 2015-16 | | 2015-16 to 2019-20 | |
|---|---|---|---|---|---|---|---|---|
| | GVA | Employment | GVA | Employment | GVA | Employment | GVA | Employment |
| Agriculture & allied | 2.7 | 1 | 3.4 | -1.9 | 2.9 | -2 | 5.7 | 2 |
| Mining and Quarrying | 6 | 0.1 | 5.7 | -0.3 | 0.1 | -3.2 | 0.3 | -6.2 |
| Manufacturing | 7.3 | 3.4 | 11.7 | 0.9 | 7.9 | -0.2 | 4.7 | 0.3 |
| Electricity, Gas & Water | 5.6 | 3.1 | 7.9 | 3.4 | 6.1 | 4.8 | 8.5 | 5.2 |
| Construction | 13.2 | 10 | 9.6 | 11.8 | 5.2 | 3.8 | 5 | 4.1 |
| Service | 8.7 | 3.8 | 8.8 | 2.5 | 9.7 | 2.7 | 7.9 | 4.4 |
| Total | 7 | 2.3 | 8 | 0.4 | 7.2 | 0.1 | 6.5 | 2.8 |

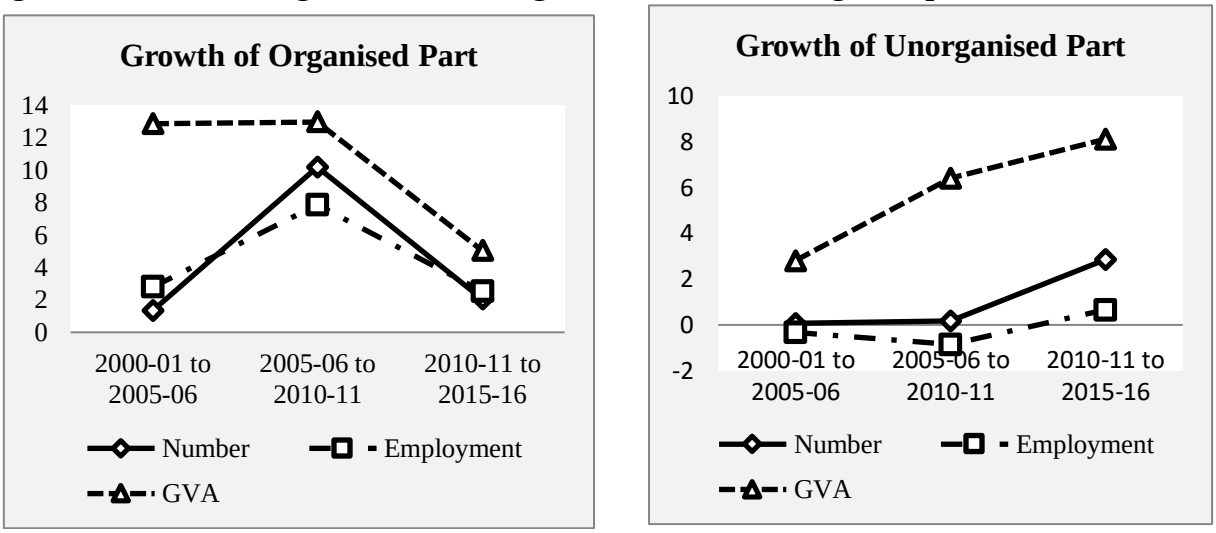
***Source:*** *As in Table 1*

**Figure 1: Contribution of unorganised manufacturing enterprises in total manufacturing sector**




***Source:*** *Authors' calculation based on Annual Survey of Industries (ASI) data for organised manufacturing sector and NSSO data for unorganised manufacturing sector*

**Figure 2: Growth of organised and unorganised manufacturing enterprises in India**




***Source:*** *As in Figure 1*

## 4.2 Growth of employment and GVA of UMEs across major states/UTs

In this section we have shown the relative share of employment, GVA of unorganised manufacturing enterprises (UMEs). The growth trajectories of employment and GVA across major states/UTs are measured for three sub-periods namely 2000-01 to 2005-06, 2005-06 to 2010-11 and 2010-11 to 2015-16 and for the period 2000-01 to 2015-16. Similarly, we have measured the trajectories of employment elasticity across major states/UTs for the above-mentioned time periods. The relative share of employment and GVA across major states/UTs are shown in Figure 3. In terms of employment generation, we have found that the percentage share of West Bengal, Uttar Pradesh, Andhra Pradesh, Tamil Nadu, Gujarat, Maharashtra, Karnataka was more than 70 percent in the year 2015-16. In terms of GVA, the percentage share of these same seven major states/UTs was about 68.73 percent in the year 2015-16.

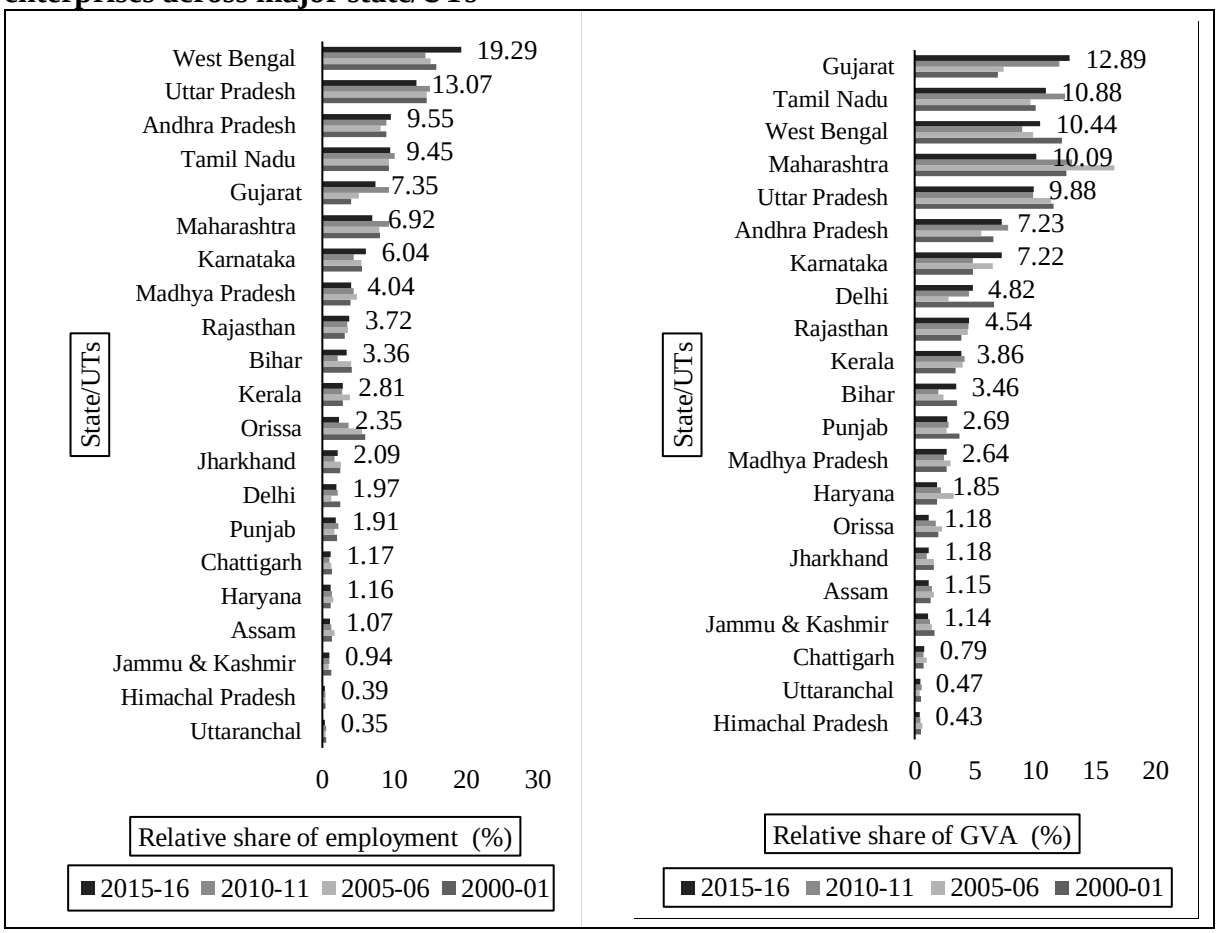
**Table 3: Growth rates of number of employment and GVA of unorganised manufacturing enterprises across major states/UTs**

| State/UTs | Employment | | | | GVA | | | |
|---|---|---|---|---|---|---|---|---|
| | 2000 to 2005 | 2005 to 2010 | 2010 to 2015 | 2000 to 2015 | 2000 to 2005 | 2005 to 2010 | 2010 to 2015 | 2000 to 2015 |
| Andhra Pradesh | -2.18 | 1.13 | 2.17 | 0.29 | -0.53 | 20.1 | 7.4 | 11.61 |
| Assam | 5.36 | -6.64 | -1.81 | -1.53 | 7.98 | 5.41 | 3.68 | 7.37 |
| Bihar | -0.63 | -9.67 | 12.3 | -1.28 | -3.87 | 3.79 | 31.14 | 9.69 |
| Chhattisgarh | -1.42 | -4.61 | 3.95 | -0.96 | 11.93 | 0.76 | 12.06 | 11.04 |
| Delhi | -10.08 | 12.58 | -0.9 | -1.53 | -9.89 | 25.78 | 11.39 | 5.44 |
| Gujarat | 4.9 | 14.72 | -3.54 | 5.19 | 5.32 | 26.32 | 11.44 | 24.07 |
| Haryana | 5.91 | -2.8 | -2.11 | -0.02 | 21.06 | -0.7 | 4.63 | 9.6 |
| Himachal Pradesh | 1.36 | -1.35 | -1.81 | -0.63 | 7.32 | 2.5 | 5.47 | 6.38 |
| Jammu & Kashmir | -6.5 | 1.22 | 0 | -1.89 | 0.78 | 4.88 | 6.83 | 4.9 |
| Jharkhand | 0.67 | -7.31 | 5.01 | -1.2 | 3.99 | -1.97 | 13.96 | 5.57 |
| Karnataka | -0.58 | -4.71 | 8.85 | 0.47 | 11.65 | 1.31 | 23.62 | 17.85 |
| Kerala | 5.94 | -5.92 | 0.7 | -0.37 | 7.88 | 9.79 | 7.22 | 12.18 |
| Madhya Pradesh | 4.15 | -2.39 | -1.02 | 0.06 | 6.25 | 3.47 | 11.69 | 9.6 |
| Maharashtra | -0.44 | 2.19 | -4.51 | -1.06 | 11.14 | 2.57 | 2.58 | 6.56 |
| Orissa | -1.64 | -7.45 | -6.63 | -4.10 | 7.01 | 2.31 | -0.54 | 3.1 |
| Punjab | -3.88 | 5.79 | -2.24 | -0.52 | -2.98 | 10.33 | 7.81 | 5.29 |
| Rajasthan | 2.6 | -1.18 | 1.98 | 1.13 | 7.04 | 8.7 | 9.83 | 12.62 |
| Tamil Nadu | -0.45 | 0.88 | -0.63 | -0.08 | 2.63 | 17.17 | 5.48 | 11.2 |
| Uttar Pradesh | -0.42 | -0.22 | -1.97 | -0.85 | 3.15 | 4.86 | 9.41 | 7.44 |
| Uttaranchal | -6.03 | 3.44 | -5.3 | -2.65 | -1.36 | 19.46 | 4.35 | 8.26 |
| West Bengal | -1.29 | -1.77 | 7.78 | 1.23 | -0.96 | 5.92 | 14.29 | 7.44 |
| Total | -0.34 | -0.84 | 0.66 | -0.18 | 3.63 | 8.57 | 9.33 | 9.84 |

***Source:*** *Authors' calculation based on NSSO Unit Level Data of 73rd, 67th, 62nd and 56th Rounds*

The annual average growth rate of employment is shown in Table 3. During the period 2000-01 to 2005-06 there were eight states/UTs which had shown positive employment growth. These are Assam, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh and Rajasthan. Andhra Pradesh, Delhi, Gujarat, Jammu & Kashmir, Maharashtra, Punjab, Tamil Nadu and Uttaranchal had shown positive employment growth during the period 2005-06 to 2010-11. Again, the positive employment growth was observed in Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Karnataka, Kerala, Tamil Nadu and West Bengal during the period 2010-11 to 2015-16. If we consider the period 2000-01 to 2015-16 then we can observe that there are six states/UTs which had shown positive employment growth. These states/UTs are Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan and West Bengal. There were no states/UTs that have experienced continuous positive growth of employment. Although, two states namely Orissa and Uttar Pradesh had shown negative employment growth in all the sub-periods. In the case of GVA, Bihar and Delhi had experienced negative growth of GVA during the first sub-period. During the sub-period 2005-06 to 2010-11 the negative growth rate in GVA was observed in Haryana and Jharkhand while the negative growth rate GVA was observed in Orissa during the period 2010-11 to 2015-6. If we consider the period 2000-01 to 2015-16 then we can observe that all major states/UTs had experienced positive growth of GVA.

**Figure 3: Relative share of employment and GVA in unorganised manufacturing enterprises across major state/UTs**




***Source:*** *As in Table 3*

**Table 4: Employment elasticity of output of unorganised manufacturing enterprises across major states/UTs**

| | 2000 to 2005 | 2005 to2010 | 2010 to2015 | 2000 to 2015 |
|---|---|---|---|---|
| Andhra Pradesh | -4.11 | 0.06 | 0.29 | 0.02 |
| Assam | 0.67 | -1.23 | -0.49 | -0.21 |
| Bihar | -0.16 | -2.55 | 0.39 | -0.13 |
| Chhattisgarh | -0.12 | -6.07 | 0.33 | -0.09 |
| Delhi | -1.02 | 0.49 | -0.08 | -0.28 |
| Gujarat | 0.92 | 0.56 | -0.31 | 0.22 |
| Haryana | 0.28 | -4 | -0.46 | 0 |
| Himachal Pradesh | 0.19 | -0.54 | -0.33 | -0.1 |
| Jammu & Kashmir | -8.33 | 0.25 | 0 | -0.39 |
| Jharkhand | 0.17 | -3.71 | 0.36 | -0.22 |
| Karnataka | -0.05 | -3.6 | 0.37 | 0.03 |
| Kerala | 0.75 | -0.6 | 0.1 | -0.03 |
| Madhya Pradesh | 0.66 | -0.69 | -0.09 | 0.01 |
| Maharashtra | -0.04 | 0.85 | -1.75 | -0.16 |
| Orissa | -0.23 | -3.23 | -12.28 | -1.32 |
| Punjab | -1.3 | 0.56 | -0.29 | -0.1 |
| Rajasthan | 0.37 | -0.14 | 0.2 | 0.09 |
| Tamil Nadu | -0.17 | 0.05 | -0.11 | -0.01 |

| | | | | |
|---|---|---|---|---|
| Uttar Pradesh | -0.13 | -0.05 | -0.21 | -0.11 |
| Uttaranchal | -4.43 | 0.18 | -1.22 | -0.32 |
| West Bengal | -1.34 | -0.3 | 0.54 | 0.17 |
| India | -0.09 | -0.1 | 0.07 | -0.02 |

***Source:*** *As in Table 3*

We have estimated the employment elasticity of unorganised manufacturing enterprises across states/UTs for all three sub-periods: 2000-01 to 2005-06, 2005-06 to 2010-11, 2010-11 to 2015-16. The employment elasticities of UMEs are shown in Table 4. We have observed the job-loss growth in UMEs in India during the period 2000-01 to 2015-16. None of the states/UTs has shown continuous job-creating growth during three sub-periods. Only Orissa and Uttar Pradesh have shown continuous job loss growth during three sub-periods. During the period 2000-01 to 2005-06, eight states/UTs have shown job-less growth. These states/UTs are Assam, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh and Rajasthan. During the period 2005-06 to 2010-11 Andhra Pradesh, Delhi, Gujarat, Jammu & Kashmir, Maharashtra, Punjab, Tamil Nadu and Uttaranchal have shown job-less growth. We have observed job-less growth in Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Karnataka, Kerala, Rajasthan and West Bengal during the period 2010-11 to 2015-16. If we consider the period 2000-01 to 2015-16 then job-less growth was observed in six states/UTs namely Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan and West Bengal. All other states/UTs have experienced job-loss growth.

**Table 5: Polled OLS regression of growth of employment**

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | Coefficient | t | Coefficient | t |
| Growth of GVA (gGVA) | 0.6765 | | 0.1211 | |
| | (0.0263) | 25.65*** | (0.0388) | 3.12*** |
| Growth of Labour productivity (gLBOP) | -0.5978 | | | |
| | (0.0481) | -12.42*** | | |
| Growth of fixed assets (gFIXA) | | | - 0.0042 | |
| | | | (0.0041) | -1.03 |
| Growth of rural enterprises (gRUE) | | | 0.7100 | |
| | | | (0.0632) | 11.23*** |
| Growth of contract enterprises (gCONE) | | | -0.0003 | |
| | | | (0.0001) | -2.59** |
| Growth of expanding status (gEXPE) | | | -0.0353 | |
| | | | (0.0112) | -3.14*** |
| Constant | -0.3831 | | -1.2848 | |
| | (0.3036) | -1.26 | (0.3462) | -3.71*** |
| N | 63 | | 63 | |
| F (2,60) | 339.51*** | | | |
| F (6,56) | | | 277.05*** | |
| R square | 0.9644 | | 0.9161 | |

*Note: Robust standard error is mentioned in parentheses*

***Source:*** *As in Table 3*

4.3 Determinants of growth of employment of UMEs

Table 5 presents the estimated results of the polled OLS regression model as specified in equation (iv). It is done by polling the data of twenty-one major states/UTs for three sub-periods. In Model 1 and Model 2, we found that the growth of GVA positively and significantly affects the growth of employment in unorganised manufacturing enterprises. Thus, our estimated result confirms Kaldor's second hypothesis of a significant relationship between the growth of employment and the growth of GVA. We observed the inverse and significant relationship between the growth of labour productivity and the growth of employment in both models. In Model 2 we observed that the growth of fixed assets, growth of contract enterprises and growth of expanding enterprises are inversely and significantly affecting the growth of employment. The growth of GVA and the growth of rural enterprises positively and significantly affect the growth of employment in unorganised manufacturing enterprises.

## 5. Discussion

Across broad activities, the share of the manufacturing sector in employment and GVA increased marginally during the period from 2000-01 to 2015-16. The growth of the manufacturing sector with respect to employment is positive but it is reduced to about less than one percent during the period 2010-11 to 2015-16 and the growth of GVA remains less than eight percent in all the sub-periods. Some studies conducted by Unni et al. (2001) and Rani and Unni (2004) observed negative growth of employment in the unorganised manufacturing sector from 1985 to 1995 while the studies found positive growth of employment during 1994-95 to 2000-01. In contrast, Sakthivel & Joddar (2006), Majumdar & Sengupta (2010) and Goldar & Mitra (2013) found positive growth in employment in the unorganised manufacturing sector. This means that the growth in employment in this sector is positive but the growth rate is very less. The low wage rate in the unorganised manufacturing sector may be a cause of slow employment growth in this sector. The unskilled or semi-skilled workers are more interested to engage in the construction sector and thus employment in this sector has been increasing during last few decades (Aggarwal and Goldar, 2019). Thomas (2013) mentioned that many workers engaged themselves in the construction sector to get steady employment opportunities. However, Chaudhuri et al. (2006) mentioned that liberalisation decreased the hidden economy of India. Less mechanisation of the manufacturing sector and high competition for quality products from other countries made this sector less attractive to small entrepreneurs. The significant change in laws related to labour and taxation during the course of time may be the cause of slow expansion of small industries (Panagariya, 2008; World Bank, 2010; Thomas, 2013).

Seven states/UTs namely West Bengal, Uttar Pradesh, Andhra Pradesh, Tamil Nadu, Gujarat, Maharashtra, and Karnataka had captured about 70 percent share in total employment and GVA in the unorganised manufacturing sector in the year 2015-16. Goldar (2011) found that these states/UTs occupied about 67 percent share in total employment in the organised manufacturing sector. Kumar and Pattanaik (2020) showed that the percentage share of these states/UT increased to about 73 percent in the year 2013-14 in total employment in the organised manufacturing sector. In the case of organised manufacturing enterprises the percentage share in GVA of these states/UTs was about 72 percent for the year 2013-14. The average annual growth of employment in the unorganised manufacturing sector was positive in six states/UTs namely Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan and West Bengal during the period 2000-01 to 2015-16. None of the states/UTs has experienced continuous positive growth in employment in all sub-periods. Orissa and Uttar Pradesh have experienced continuous positive growth in employment in all sub-periods. But in the case of

GVA all the major states/UTs have experienced positive growth. Goldar (2011) found positive growth of employment in the organised manufacturing sector in all states/UTs during the period 2003-04 to 2008-09. Sharma (2017) observed positive growth rate of employment in the organised manufacturing sector in all states/UTs except Delhi during the period 2001-02 to 2013-14.

In India the unorganised manufacturing sector has shown job-loss growth during the period 2000-01 to 2015-16. Out of twenty-one states/UTs only six states have shown job-less growth during the same period. These states/UTs are namely Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan and West Bengal. All other states/UTs have shown job-loss growth during the period. Das (2014) observed job-loss growth in the manufacturing sector during the period 2004-05 to 2007-08 and 2007-08 to 2009-10. Aggarwal and Goldar (2019) found job-less growth in the total manufacturing sector of India during the period from 2003 to 2015. Moreover, various studies found that organised manufacturing industries use more contract workers than earlier for production operations (Thomas, 2013).

Our regression estimated result confirms Kaldor's second hypothesis. We found the inverse and significant relationship between the growth of labour productivity and the growth of employment. In our regression analysis we found a positive and significant relationship between the growth of employment and the growth of GVA. Das (2014) found a negative and significant relationship between the growth rate of employment and the growth rate of labour productivity in the manufacturing sector. The study also showed a positive and significant relation between the growth rate of employment and the growth rate of output. Kumar and Pattanik (2020) showed significant and positive relationship between growth of industrial employment and growth of output for majority of the states except Uttar Pradesh, Madhya Pradesh and West Bengal. But Aggarwal and Goldar (2019) did not find any significant relationship between the growth rate of employment and the growth rate of GVA for the organised manufacturing sector. The growth of fixed assets, growth of contract enterprises and growth of expanding enterprises are inversely and significantly affecting the growth of employment. The possible reason for the negative relation between the growth of contract enterprises and the growth of employment is that contract enterprises use more machines for production. The possible reason behind the negative relation between the growth of expanding enterprises and the growth of employment is the higher rate of technological progress. Aggarwal and Goldar (2019) found significant and negative relationship between the growth rate of employment and the growth rate of the capital-labour ratio for the organised manufacturing sector. The growth of rural enterprises positively and significantly affected the growth of employment. The growth of rural enterprises generates more employment in the unorganised manufacturing enterprises may be since these rural enterprises are more labour-intensive as compared to urban areas.

## 6. Conclusions

The unorganised manufacturing sector in India is a vital source of employment and income for millions of people, especially in rural areas. However, this sector has faced many challenges in the past two decades, such as low productivity, poor quality, lack of access to markets and finance, and competition from organised and foreign firms. Our study has revealed that most of the states and union territories in India have witnessed job-loss growth in this sector, meaning that the growth of gross value added (GVA) has not been accompanied by a corresponding increase in employment. Only five states, namely Andhra Pradesh, Gujarat, Karnataka, Tamil Nadu and West Bengal, have shown job-full or job-less growth, indicating that they have been able to maintain or increase their share of employment and GVA in this

sector. These states have also performed better than others in terms of technological upgradation, subcontracting, and infrastructural development. Therefore, we suggest that the government should adopt a more proactive and supportive role in promoting the unorganised manufacturing sector in India, by providing incentives, linkages, training, and infrastructure to the entrepreneurs and workers in this sector.

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## Reference

Aggarwal, S. C., & Goldar, B. (2019). Structure and growth of employment: Evidence from India KLEMS data. Indian Growth and Development Review.

Bhavani, T. A., & Bhanumurthy, N. R. (2014). Financial access-measurement and determinants: A case study of unorganised manufacturing enterprises in India. Indian Economic Review, 85-108.

Chaudhuri, K., Schneider, F., & Chattopadhyay, S. (2006). The size and development of the shadow economy: An empirical investigation from states of India. Journal of Development Economics, 80(2), 428-443.

Cornia, G. A., & Stewart, F. (Eds.). (2014). Towards human development: New approaches to macroeconomics and inequality. OUP Oxford.

Dandapat, A., & Das, P. (2022). Role of Microfinance to Promote the Growth of Unorganized Manufacturing Enterprises in India: An Analysis. In Microfinance to Combat Global Recession and Social Exclusion: An Empirical Investigation (pp. 131-146). Singapore: Springer Nature Singapore.

Dandapat, A., Dasgupta, S., & Das, P. (2021). Productivity of Unorganised Manufacturing Enterprises in India.

Das, P. (2007). Economic Reform, Output and Employment Growth in Manufacturing: Testing Kaldor's Hypotheses. Economic and Political Weekly, 3978-3985.

Das, P. (2014). Productivity Nexus between Growth and Employment: Indian Experience during pre-and post-economic crisis. Artha Beekshan, 23(1), 160-174.

Das, P. (2014). Productivity nexus between growth and employment: Indian experience during pre and post economic crisis

Das, P., & Dandapat, A. (2021). Growth and Productivity of Unorganized Manufacturing Enterprises: An Analysis across States/UTs in India. In Productivity Growth in the Manufacturing Sector (pp. 167-182). Emerald Publishing Limited.

Das, R. C. (2022). Sectoral Compositions of Output and Employment in India: Are We Moving Towards Jobless, Job-loss or Job-enabled Growth?. Review of Market Integration, 13(2-3), 98-123.

European Investment Bank (2013), SME Report 2013

Ganguly, S. (2020). Informality and structural change: evidences from microenterprises in India's unorganised manufacturing sector. Journal of Small Business and Enterprise Development.

Ghosh, S., & Abraham, V. (2021). The Case of the 'Missing Middle'in the Indian Manufacturing Sector: A Firm Level Analysis. Journal of Quantitative Economics, 19(1), 161-179.

GoI(2023), Economic Survey 2022-23, New Delhi

Goldar, B. (2000). Employment growth in organised manufacturing in India. Economic and Political weekly, 1191-1195.

Goldar, B., & Mitra, A. (2013). Small versus large manufacturing units: how efficient are they?. Journal of the Asia Pacific Economy, 18(4), 634-653.

Hasan, R and Jandoc K R L (2010): "The Distribution of Firm Size in India: What can Survey Data Tell Us?" ADB Economics Working Paper No. 213.

ILO (2011), Global Employment Trends 2011: The Challenge of a Jobs Recovery, ILO, Geneva.

IMF (2022), World economic Outlook :Countering the Cost-of-Living Crisis, IMF, USA

Madi, M. A. C. (2013). Micro and small business in Brazil: asymmetries and financial fragility. International Journal of Globalisation and Small Business, 5(3), 136-147.

Majumdar, M., & Sengupta, S. (2010). Declining registration by small manufacturing units: A case study of Durgapur. Economic and Political Weekly, 64-72.

Mazumdar, D., & Sarkar, S. (2009). The employment problem in India and the phenomenon of the missing middle. Indian Journal of Labour Economics, 52(1), 43-55.

Mehrotra, S. (2021). Informality and the potential for South-South cooperation between BRICS.

Nagaraj, R. (2018). Of "Missing Middle" and Size-based Regulation: A New Frontier in the Labour Market Flexibility Debate. Centre for Sustainable Employment Working Paper, 7.

NITI Aayog (2021), SDG India Index & Dashboard 2020-21: Partnerships in the Decade of Action

NSSO (2017), NSS 73rd round (July 2015- June 2016), No. 73/2.34, Key Indicators of Unincorporated Non-Agricultural Enterprises (Excluding Construction) in India, Ministry of Statistics and Programme Implementation, Government of India

OECD 2019. OECD SME and Entrepreneurship Outlook 2019. OECD Publishing, Paris

Panagariya, A. (2008). India: The emerging giant. Oxford University Press.

Raj, R. S., & Sen, K. (2015). Finance constraints and firm transition in the informal sector: Evidence from Indian manufacturing. Oxford Development Studies, 43(1), 123-143.

Rakshit (2019), "Missing Middle" in Indian Manufacturing: An Analysis Using ASI and NSS Data: 2000 - 01 to 2015 - 16, Sarvekshana 107th Issue, Governemnt of India

Rani, U., & Unni, J. (2004). Unorganised and organised manufacturing in India: Potential for employment generating growth. Economic and Political Weekly, 4568-4580.

Saikia, D. (2015). Employment Pattern in the Unorganised Manufacturing Sector in Assam. Journal of Rural Development, 34(1), 1-16.

Saikia, D., & Das, K. (2013, September). Role of Unorganized Manufacturing in Expanding Employment Opportunities in Assam. In Problems of Industrial Labourers in Assam, Proceedings of UGC sponsored national seminar, ADP College, Nagaon, Assam (pp. 273-94).

Sakthivel, S., & Joddar, P. (2006). Unorganised sector workforce in India: trends, patterns and social security coverage. Economic and Political Weekly, 2107-2114.

Shaikh, Zeeshan. 2020. 'Safegaurds for Workforce Lost in Clatter of Powerlooms in Malegaon', Indian Express, Reports from the Field, June 7.

Smits, P., Sagoenie, Y., & Cuppen, H. (2018). Small and Medium-sized Enterprises in Brazil. Netherlands Enterprise Agency.

South Asia Regional Office International Bank for Reconstruction and Development. (2010). India's employment challenge: creating jobs, helping workers. Oxford University Press.

Thomas, J. J. (2013). Explaining the 'jobless' growth in Indian manufacturing. Journal of the Asia Pacific Economy, 18(4), 673-692.

Thomas, J. J. (2023). Employment Growth and Industrial Policy: The Challenge for Indian States. The Indian Journal of Labour Economics, 1-17.

Unni, J. (1998). Non-agricultural employment and poverty in rural India: A review of evidence. Economic and Political Weekly, A36-A44.

Unni, J. (2001). Gender and informality in labour market in South Asia. Economic and Political Weekly, 2360-2377.

Unni, J. (2020). Impact of COVID-19 on informal economy: The revival. The Indian Journal of Labour Economics, 63, 113-118.

Unni, J., & Lu, M. (2007). Informal employment in India and China. The Indian Journal of Labour Economics, 50(3), 531-540.

Unni, J., Lalitha, N., & Rani, U. (2001). Economic reforms and productivity trends in Indian manufacturing. Economic and Political Weekly, 3914-3922.

Uppal, A. (2016). Trends and structure of employment and productivity in unorganized manufacturing sector of India in post-reform period. In 34th IARIW General Conference, Dresden, Germany (Vol. 182).

Vaisman, E. D., & Podshivalova, M. V. (2017). Small industrial enterprises in Russia: survival in conditions of hypercompetition. In SHS Web of Conferences (Vol. 35, p. 01122). EDP Sciences.

Vidyarani, K., & Maheshkumar, T. (2022). Determinants of Access to Formal Credit for the Micro, Small and Medium Enterprises in India: An Inter-regional Analysis. SEDME (Small Enterprises Development, Management & Extension Journal), 49(3), 311-330.