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**Status of Unorganised Food
Processing Industry in Inida -
A Study on Key Performance
Indicators**

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STATUS OF UNORGANISED FOOD PROCESSING INDUSTRY IN INDIA- A STUDY ON KEY PERFORMANCE INDICATORS[#]

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Abstract

This paper examines the structure and composition of the food processing enterprises in the unorganised sector in India and explores the interstate disparities using two recent NSS rounds (67th and 73rd) data. The findings reiterate the fact that the unorganised food manufacturing enterprises are highly labour-intensive, as its share in the total unorganised manufacturing employment is sizable. The sector is undergoing a structural transformation, moving away from establishments to self-owned enterprises in urban India, which in turn, has helped in the attainment of a more rapid growth in labour productivity. A correlation analysis reveals a positive and significant association existing between GVA per worker and capital-labour ratio. A regional analysis reveals that bigger states, with a relatively larger share in enterprises and workers, have performed poorly with respect to GVA per worker and capital-labour ratio. The industry has the potential to eliminate poverty to a fair extent, however, the relatively low-income states (Assam, Bihar, Odisha and Madhya Pradesh) do not account for a substantial share in the workforce, which may erode non-farm employment opportunities that are crucial for poverty reduction. Therefore, the study calls for policy intervention and program incentives on the part of the government in order to lessen these interstate disparities.

Keywords: *Unorganized food processing industry, interstate disparities, GVA per worker and capital-labour ratio.*

Introduction

Agro-processing industry, particularly food processing industry, plays a major role in rural development given its backward linkages with agriculture and allied activities. It also facilitates the commercialisation of agriculture and enhancement of factor income through crop diversification (Bathla and Sharma, 2012). In this context, it is of interest to note that the 11th Plan. while noting the food processing sector as a sunrise sector with high labour absorption, proposed policies and programmes as part of ensuring the growth of the industry along with others in the manufacturing sector (Rao, 2009). Further, the total value of Indian food processing industry was expected to reach US$ 194 billion by the year 2015 as against the earlier value of US$ 121 billion in 2012 (ASSOCHAM, 2017). The Industry contributes around 8.80 percent to the total manufacturing GVA by absorbing around 18 percent of the labour force. Considering the enormous importance of the industry, Government of India, through a number of fiscal incentives, accorded high-priority status to the food processing industry in its National Manufacturing Policy, 2011 (*Ibid*).

The Indian food processing industry is characterised by a dualistic structure like any other manufacturing industry *i.e.*, the prevalence of both the organised and unorganised segments. These two segments of the industry are idiosyncratic in nature. While the organised segment is relatively small with fewer number of enterprises which are capital-intensive, the unorganised segment is large with a large number of highly labour-intensive enterprises, mostly located in rural areas. The use of labour

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intensive technology is probably a major contributor to a substantial employment generation.

The unorganised food processing industry caters to the employment needs, especially the rural population with a larger presence of enterprises spread across the states. These enterprises are highly-beneficial and critical to relieving the pressure on rural agriculture, linking agriculture to industry, increasing employment opportunities, enhancing real income and also mitigating rural outward migration. Although its contribution to employment generation has been widely recognised, the industry is not free of problems and challenges. The unorganised food processing industry is often blamed for operating at lower levels of efficiency, not utilising its full potential (Bathlaand Sharma, 2012; Goldar, 2014).

The issues and challenges of unorganised food processing industry vary significantly across states due to the quality of industrial activity that varies significantly across states depending on the composition in terms of the shares of registered and unregistered segments in the manufacturing sector. Regional disparities associated with economic activities can be traced to the modern economic theory which argues that different regions situated differently in terms of initial levels and capacities for development are subject to cumulative causation (Papola T S, 2011).

Regardless of its enormity, a few studies have addressed the challenges and issues facing the industry against the backdrop of inter-state disparities. Since the national policies have been oriented towards a balanced regional development, an inter-state comparison of the industry is the need of the hour.

Studies dealing with regional disparities in industrial development have focused mainly on the organised sector (Saikia, 2011). The studies available on inter-state analysis have considered the unorganised manufacturing sector as a whole and with food processing as one of its components at different time points (Trivedi, 2004; Papola *et al*, 2011; Burange and Ranadive, 2014; Goldar and Sadhukhan, 2015). Therefore, this study tries to assess the performance of the unorganised food processing industry based on certain key indicators, exclusively across the states in India. In this context, the present study attempts to address the state-level pattern with regard to the selected performance indicators of the unorganised food processing industry. Given the enormity of the unorganised food processing sector, the present paper seeks to answer the following questions:

1. Have there been any changes in the dualistic structure of the Food Processing industry (FPI) in recent years?
2. How is the unorganised food processing industry structured and composed at the All India level?
3. How does the structure of unorganised FPI differ across states?
4. Are there any significant regional disparities observed in the key performance indicators of the unorganised food processing industry?
5. Which of the states and enterprises have experienced a slowdown/growth in employment, GVA and other indicators?

These questions are addressed and the analysis presented in the following sections. The first section deals with the status of FPI in the Indian manufacturing sector with a comparison of FPI with the manufacturing sector based on some performance indicators at the all India level. The

second section unveils the structure of unorganised food processing Industry in India. The third section examines the structure and composition of the industry at the all India and inter-state levels. In the subsequent section, inter-linkages of performance indicators are analysed and further, the inter-temporal dynamics of the industry across the states are captured in the fifth section, followed by a discussion on the determinants of labour productivity in the subsequent section and the paper ends with concluding remarks in the last section.

Data and Methodology

Data: The NSSO of India conducts survey on the unorganised manufacturing sector once in five years (quinquennial) and the current study makes use of the unit-level records of two recent rounds i.e., 67th (2010-11) and 73rd (2015-16), both titled "Unincorporated Non-agricultural Enterprises (Excluding Construction) in India". These rounds follow NIC code 2008 wherein Food products and beverages belong to divisions 10 and 11, respectively. These two divisions are clubbed to represent the food processing industry for this study. In the 73rd round, the data for Telangana state is given separately. However, to bring concordance with the previous round and for a better comparison of the states and time period, it has been added up with Andhra Pradesh.

Sample size: 18,254 and 15,865 unorganised food processing enterprises have been surveyed in these rounds covering all the 18 sub-sectors of the industry for all the States and Union territories of the country in the 67th and 73rd rounds, respectively. However, the present study is confined to 15 major states covering 82.45 and 91.18 percent of the total sample, respectively in the 67th and 73rd rounds. The data on organised manufacturing industry has been drawn from Annual Survey of Industry (ASI) 2010-11 and 2015-16.

Methodology: The present study used both descriptive and inferential statistics. Descriptive statistics like percentage, ratio analysis along with correlation coefficients have been used to explain the status of the sector. The determinants of labour productivity are estimated using liner regression with robust standard errors. Data on GSDP, agriculture and manufacturing GVA has been obtained from RBI state finances database. The nominal GVA is converted to real terms with the help of WPI of processed food products, beverages and tobacco in 2015-16 prices by employing single deflation method[1]. The fixed assets include various components and adjustment to inflation is done using appropriate price indices for each component. The component land and building is adjusted using Construction price index of Price and quantum Index provided by National Account Statistics (NAS), plant and machinery, transportation and other values are adjusted using Wholesale Price Index (WPI) of food & Beverages Machinery, WPI of auto & Tempo and WPI of non-food articles, respectively, provided by Office of Economic Advisor, GoI.

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[1] We employed single deflation (SD) despite the Double Deflation (DD) method is considered to be more relevant due to the data constraints. Please refer to Balakrishnan and Pushpagandan, 1994 for more details on deflation methods.

Status of Food Processing Industry in India

The Indian food processing industry accounts for 32 percent of the country's food market. It contributes around 8.8 and 8.39 percent of the GVA in the total manufacturing and agriculture sectors, respectively. The industry also accounts for 13 percent of India's export trade and 6 percent of the total industrial investment, as reported by IBEF in Food Processing Industry, 2017. According to National Account Statistics, food sector (including tobacco) accounts for 1.6 percent of the economy's GVA for the year 2015-16. Indian food processing industry employs around 7 million people with ASSOCHAM (2017) reporting that the industry has the potential to attract $33 billion investment by generating employment for 9 million people by 2024. Thus, the industry is one of the highly labour-intensive industries of the manufacturing sector.

Dualism is a pervasive feature of the manufacturing sector, especially in the context of the less developed countries with policy distortions tending to perpetuate this phenomenon. The persistence of dualism has greater implications for efficiency and productivity, especially the possibility of causing income inequality in the economy (Kathuria, Raj, & Sen, 2013). The Indian food processing industry is also characterised by a dualistic structure like any other manufacturing industry *i.e.*, the prevalence of organised as well as unorganised segments. These two segments of the industry are idiosyncratic in nature in that while the organised segment is relatively small in terms of the number of enterprises which are capital-intensive, the unorganised segment is large with a number of highly labour-intensive enterprises, mostly located in rural areas. The duality exhibited by the industry is presented in Table 1.

Table 1: Structure of Food Processing Industry

Food Processing Industry	Year	Enterprises	Employment	GVA
		(no in Lakhs)	(no in Lakhs)	(Rs. in crore)
Unorganised sector	2010-11	22.41 (98.46)	47.84 (74.23)	29,300 (25.44)
	2015-16	24.64 (98.43)	52.08 (74.69)	39,720 (27.66)
Organised sector	2010-11	0.35 (1.54)	16.61 (25.77)	85,861 (74.56)
	2015-16	0.39 (1.57)	17.65 (25.31)	103878 (72.34)
Total	**2010-11**	**22.76 (100)**	**64.45 (100)**	**1,15,161.24 (100)**
	2015-16	**25.03 (100)**	**69.73 (100)**	**1,43,598 (100)**

Source: Authors' computation using NSS 73rd and 67th rounds Unit Level records and ASI.

Note: figures in Parentheses are percentages to the total

Organised Sector: The organised food processing sector comprises less than 2 percent of the enterprises and employs almost 26 percent of the industry's labour force and generates 72 percent of gross value added of the total food processing industry (2015-16). A similar trend is observed by Goldar (2014) that the organised sector forms a dominant part of Indian manufacturing in terms of value added. He observed in terms of an increase in the share of organised sector in the total manufacturing value added (in nominal terms) from about 52 percent in 1980-81 to around 70 percent in 2010-11, an indication of its significant contribution to the manufacturing GVA. There is also a marginal increase,

observed in the share of enterprises from 1.58 to 1.6 percent in the total food processing industry, over the period 2010-11 to 2015-16. However, there is a decline in the share of employment and GVA despite their increase in nominal terms over time.

Unorganised sector: The unorganised sector of the industry consists of 98.41 percent of enterprises, employs 74.24 percent of labour force and generates only 28 percent of value addition. Rao & Dasgupta (2009) agrue that the significance of the unorganised segment in terms of employment creation could be understood by the fact that one percent increase in employment in this segment creates 60,000 jobs as compared to mere 13,000 jobs created by the organised segment. Although, there is an increase in the number of unorganised enterprises and employment, their respective shares in the total food processing industry have remained more or less constant overtime. However, a significant increase has been observed in the sector's GVA from 25.43 to 28 percent over the period 2010-11 to 2015-16.

An inter-temporal analysis of the industry reveals an increased GVA share of the unorganised sector *vis-á-vis* the organised sector. At the same time, an increased share of employment in the organised sector over time seems an antithesis to the manufacturing dualism. The rise in the share of GVA of the unorganised sector could be the outcome of a more efficient use of resources, technological upgradation and positive spillover effects following from the organised sector. Hence, these observations indicate the gradual shrinking of manufacturing dualism in the case of food processing industry over time.

Structure of Unorganised Food Processing Industry in India

This section presents a glimpse of the Indian unorganised food processing industry in recent times, covering selected indicators based on the location and type of enterprises.

Table 2: Structure of the Unorganised Food Processing Industry

Indicator	Year	Rural			Urban			Combined		
		OAE	Est	Total	OAE	Est	Total	OAE	Est	Total
Enterprises (no. in lakhs)	2010-11	13.02 (84.22)	2.45 (15.79)	15.46 (68.98)	4.68 (67.24)	2.28 (32.77)	6.96 (31.03)	17.7 (78.95)	4.72 (21.06)	22.42 (100)
	2015-16	13.93 (85.79)	2.31 (14.22)	16.24 (65.88)	5.74 (68.21)	2.68 (31.8)	8.41 (34.13)	19.66 (79.79)	4.99 (20.22)	24.65 (100)
Workers (no. in lakhs)	2010-11	20.3 (65.83)	10.54 (34.18)	30.83 (64.43)	7.86 (46.15)	9.17 (53.86)	17.03 (35.58)	28.15 (58.83)	19.71 (41.18)	47.85 (100)
	2015-16	21.16 (69.13)	9.45 (30.88)	30.61 (58.76)	10 (46.52)	11.5 (53.49)	21.49 (41.25)	31.15 (59.8)	20.95 (40.21)	52.09 (100)
GVA (Rs. in crore)	2010-11	7,780 (55.26)	6,300 (44.74)	14,080 (48.05)	5,250 (34.47)	9,980 (65.53)	15,230 (51.98)	13,000 (44.37)	16,300 (55.63)	29,300 (100)
	2015-16	10,000 (58.45)	7,110 (41.56)	17,110 (43.08)	7,510 (33.22)	15,100 (66.79)	22,610 (56.93)	17,510 (44.09)	22,210 (55.92)	39,720 (100)
Capital (Rs. in crore)	2010-11	13,700 (50)	13,700 (50)	27,400 (40.77)	13,100 (32.59)	27,100 (67.41)	40,200 (59.82)	26,800 (39.88)	40,400 (60.12)	67,200 (100)
	2015-16	14,600 (60.99)	9,340 (39.02)	23,940 (38.22)	13,400 (34.63)	25,300 (65.38)	38,700 (61.79)	28,000 (44.7)	34,640 (55.31)	62,640 (100)

Source: Authors' computation using NSS 73rd and 67th rounds Unit Level records

Note: Figures in parentheses are percentage shares to their respective totals

A majority of the enterprises (65.88%) are located in rural areas as per 2015-16 data. However, a comparison of 2010-11 and 2015-16 reveals that enterprises are gradually moving from rural to urban areas. The industry is dominated by OAEs constituting around 80 percent of the total enterprises during 2010-11 and their dominance has continued to increase over time, as its share in the total enterprises shows an increase, albeit slightly. This pattern with regard to enterprises type is not only confined to all-India level but also both the rural and urban areas. Also the share of establishments in the total enterprises shows a decline from 21.06 percent to 20.22 percent over the period 2010-11 to 2015-16 (Table 2).

The industry employs more than 52 lakh workers that include fulltime male/female, part-time male/female, skilled male/female, and unskilled male/female (2015-16) (Table 3). A major chunk of this total workforce (around 59 percent) belongs to rural part of the country. However, a comparison of 2010-11 and 2015-16 clearly indicates that the rural part of India is gradually losing its dominance with respect to the share of enterprises, workforce and GVA. The data suggests that, there is a shift in the share of enterprises, workforce and value addition (GVA) to the tune of three (3), six (6) and five (5) percent (approximately), respectively from rural to urban enterprisesover the period 2010-11 to 2015-16. A segregation of the data by enterprises type reveals that around 60 percent of the total employees are from OAEs and workers of OAEs rural India alone constitute 40 percent of the total workforce for 2015-16. Although, the employment share of OAEs shows an increase over time, the pattern is more visible in respect of rural enterprises has compared to its urban counterparts. Therefore, self-owned enterprises in the industry are increasing more rapidly than their counterparts in rural India. These findings related to the workforce of the industry seem to affirm certain arguments reported in the literature (Bathla and Sharma, 2009) that the OAEs possibly are chosen by the rural people as an alternative option to agriculture as part of their survival strategy during seasonal unemployment. Further, Rao and Dasgupta (2009) argue that the food processing industry usually accommodates more illiterate and landless labourers especially from rural areas, while, Own Account Enterprise (OAEs) continue to tighten their grip over the industry over time, though their reduced share in value addition certainly accentuates concerns over their productivity.

While around two third of the total workforce of the industry is composed of male population, rural areas witnessing a slightly higher share of female workforce than urban India. Only ten (10) percent of the total workforce is characterised as part-time with the workforce mostly consisting of full-time workers (around 90 percent of the total workforce) as of 2015-16 (Table 3). Gender disparity is more prominent in respect of full-time employment with female workforce representing a mere 23 percent of its total full-time workers. This disparity is in the ratio of 43:57 for female and male with respect to part-time employment. A huge difference is observed between rural and urban areas with regard to the proportion of part-time workers, as around 3/4th (74.52 %) of the total part-time workforce is engaged in rural enterprises. Interestingly, rural female workers are more likely to be part-time workers as compare to their counterparts in urban areas. From Table 3, it is evident that the industry provides more employment to rural womenfolk.

Table 3: Composition of Workforce in the Unorganised Food Processing Industry as of 2015-16 (in lakhs)

Sector	Full Time	Part Time	Total
FEMALE			
Rural	6.34 (59.2)	1.62 (72.87)	7.96 (61.54)
Urban	4.37 (40.81)	0.60 (27.14)	4.97 (38.47)
Total[a]	10.71 (22.88)	2.22 (42.53)	12.94 (24.86)
MALE			
Rural	20.36 (56.99)	2.27 (74.45)	22.63 (57.83)
Urban	15.77 (43)	0.73 (25.54)	16.51 (42.18)
Total[a]	36.13 (77.13)	3.00 (57.48)	39.14 (75.15)
Grand Total	**46.85 (89.97)**	**5.22 (10.04)**	**52.09 (100)**

Source: Authors' computation using NSS 73rd round Unit Level records

Notes: Figures in parentheses are percentage share to their respective totals. [a] Percentage to grand total

The share of urban areas in the total GVA is significantly larger than that of rural areas. Further, it has significantly declined in the case of rural enterprises from 47.97 percent in 2010-11 to 43.08 percent in 2015-16. At the same time, the share of urban enterprises in the total GVA has increased from 52.04 to 58.93 percent. On the other hand, the share of OAEs in the total GVA is lesser than the establishments with a marginal decrease over time, despite a decrease in its share in the total number of enterprises and employment. A diametrically opposite pattern is observed in the case of establishments. Although, the share of establishments in the total GVA is higher, it's the self-owned enterprises that contribute more to value generation than the establishments in the rural areas.

At the all-India level, establishments account for a maximum share in the total capital with a decrease over time though. On the contrary, OAE's share in capital is larger than that of the establishments in rural areas with an increase from 50.83 percent to 60.99 percent over time. This is mainly because by nature, establishments are capital-oriented and also there is a reduction observed in the number of establishments in rural areas. At the same time, OAEs in the rural areas are becoming increasingly capital-oriented. The difference based on enterprises type when it comes to the share of fixed capital is increasing in rural areas due to an increased share of OAEs over the period. On the other hand, this gap is shrinking in urban India due to a reduced share of the establishments.

An interesting observation from the above analysis is that, urban enterprises hold more number of OAE units than establishments and are increasing over time. However, a large share of value addition and fixed assets comes mainly from the establishments for urban enterprises. Thus, the establishment are performing well as compared to their counterparts in urban as well as rural area because of the influence of the organised enterprises and the availability of infrastructure facilities in the urban area.

Spatial Disparities in the Unorganised Food Processing Industry

This section analyses the key performance indicators of the unorganised food processing industry such as spread of enterprises, employment pattern, value addition, capital investment, GVA per worker and capital-labour ratio across major states of the country. The selected 15 states represent around 90, 90.72 and 91.18 percent of enterprises, employment and value addition of the total unorganised food processing industry, respectively. This exercise is done by segregating the data based on the location of enterprises (Rural, Urban and Combined) and further disaggregation is also attempted with respect to rural/urban areas based on the type of enterprises. The major focus of this analysis is to throw light on regional disparities in the key performance indicators of the industry.

Among the states, Uttar Pradesh accounts for 14.24 percent of the total enterprises, followed by West Bengal and Andhra Pradesh for 13.09 and 9.53 percent, respectively in all of the counts (based on location and types of enterprises) and these are followed by Maharashtra and Tamil Nadu. States like Haryana, Assam and Kerala support relatively fewer numbers of enterprises. However, most of the enterprises in Tamil Nadu, Haryana, Maharashtra, Gujarat, Karnataka and Andhra Pradesh are located in urban areas compared to their counterparts with their respective group shares in the total enterprises (Table 4).

Table 4: Shares of Enterprises in the Unorganised Food Processing Industry (UFPI) across the States for 2015-16 (in Percent)

State	Rural			Urban			Combined			UFPI in UMS
	OAE	Est	Total[a]	OAE	Est	Total[a]	OAE	Est	Total	
AP	59.13	40.87	52.45	79.58	20.42	47.55	68.85	31.15	9.53	10.85
ASM	84.10	15.90	87.52	65.98	34.02	12.48	81.84	18.16	2.68	32.48
BHR	88.81	11.19	87.60	56.09	43.91	12.40	84.75	15.25	5.90	18.91
GUJ	88.82	11.18	49.85	61.21	38.79	50.15	74.97	25.03	3.90	7.73
HAR	82.02	17.98	45.27	55.31	44.69	54.73	67.40	32.60	1.00	13.45
KAR	84.48	15.52	50.35	66.60	33.40	49.65	75.61	24.39	5.17	10.21
KRL	63.12	36.88	51.69	59.17	40.83	48.31	61.21	38.79	3.13	14.14
MP	95.47	4.53	72.61	73.43	26.57	27.39	89.43	10.57	4.17	12.34
MAH	95.50	4.50	63.46	68.76	31.24	36.54	85.73	14.27	9.33	18.48
ODH	89.56	10.44	83.86	74.16	25.84	16.14	87.07	12.93	3.16	15.99
PNB	84.18	15.82	69.87	58.04	41.96	30.13	76.31	23.69	2.58	16.59
RAJ	94.76	5.24	56.92	82.37	17.63	43.08	89.42	10.58	4.13	13.54
TN	69.37	30.63	34.51	62.01	37.99	65.49	64.55	35.45	7.31	10.32
UP	86.67	13.33	72.11	77.50	22.50	27.89	84.12	15.88	14.24	15.88
WB	87.55	12.45	76.88	66.46	33.54	23.12	82.67	17.33	13.09	7.72
IND	**85.78**	**14.22**	**65.87**	**68.20**	**31.80**	**34.13**	**79.78**	**20.22**	**100**	**12.53**

Source: Authors' computation using NSS 73rd round Unit Level records

Notes: UMS- Unorganised Manufacturing Sector

[a]Percentage to combined total

With regards to inter-state comparison of workforce, Uttar Pradesh employs 13.62 percent followed by Andhra Pradesh and West Bengal, with a share of 12.67 percent and 12.58 percent, respectively. Tamil Nadu and Maharashtra occupy the next two places in terms of employment of a larger workforce. On the contrary, Punjab, Haryana, Assam and Odisha account for a lesser share in the total workforce. In the states of Punjab, Madhya Pradesh, Kerala, Haryana and Andhra Pradesh, more than 50 percent of workers belong to urban enterprises out of their respective total workforce. Similarly, states like Haryana, Madhya Pradesh, Maharashtra, Karnataka and Kerala show more than half the employment in the establishments out of the respective totals. A look at the percentage share of each state in the working age population reveals that states with a higher share in the working age population also account for a higher share in the total workforce and vice-versa. Especially, in the states of Andhra Pradesh, West Bengal, Tamil Nadu and Karnataka the percentage of workers in the unorganised food processing sector is higher than their percentage share in the total working-age group population. Thus, these states may be said to be performing better in terms of catering to the needs of employment. These findings strongly indicate that the supply of labour is one of the main reasons for the presence of more workers in these states and the results also corroborate other studies of similar nature (Trivedi, 2004).

Table 5: Share of Workers in the Unorganised Food Processing Industry across the States for 2015-16 (Percent)

State	Rural			Urban			Combined			UFPI in UMS
	OAE	Est	Total[a]	OAE	Est	Total[a]	OAE	Est	Total	
AP	28.44	71.56	61.08	65.55	34.45	38.92	42.88	57.12	12.67	19.17
ASM	75.65	24.35	85.92	38.06	61.94	14.08	70.36	29.64	2.05	27.66
BHR	82.37	17.63	84.04	39.94	60.06	15.96	75.60	24.40	4.55	19.46
GUJ	76.91	23.09	29.84	26.98	73.02	70.16	41.88	58.12	4.88	9.44
HAR	54.39	45.61	36.45	27.75	72.25	63.55	37.46	62.54	1.18	14.69
KAR	62.93	37.07	41.68	55.89	44.11	58.32	58.82	41.18	5.71	13.68
KRL	44.53	55.47	52.57	34.48	65.52	47.43	39.76	60.24	3.98	20.49
MP	91.35	8.65	62.56	53.59	46.41	37.44	77.21	22.79	3.10	11.12
MAH	87.51	12.49	52.06	42.41	57.59	47.94	65.89	34.11	8.43	17.53
ODH	78.47	21.53	78.95	61.45	38.55	21.05	74.89	25.11	2.75	16.89
PNB	68.89	31.11	55.66	39.76	60.24	44.34	55.98	44.02	2.12	16.09
RAJ	90.16	9.84	45.93	64.83	35.17	54.07	76.47	23.53	3.55	13.82
TN	36.98	63.02	38.01	36.13	63.87	61.99	36.45	63.55	9.56	14.47
UP	77.90	22.10	68.73	62.57	37.43	31.27	73.11	26.89	13.62	15.06
WB	77.23	22.77	72.05	42.00	58.00	27.95	67.39	32.61	12.58	9.42
IND	**69.12**	**30.88**	**58.75**	**46.51**	**53.49**	**41.25**	**59.80**	**40.20**	**100**	**14.42**

Source: Authors' computation using NSS 73rd round Unit Level records

Notes: UMS- Unorganised Manufacturing Sector

[a]Percentage to combined total

States with a high proportion of poor people (RBI, 2011-12) such as Assam, Bihar, Madhya Pradesh and Odisha do not account for a considerable worker share in the sector and thus reflect lack of opportunities for non-farm employment, critical to poverty reduction in these states. Thus, these findings assert to the need for urgent policy measures for improving the quality of employment in the unorganised food processing sector, as these non-farm jobs tightens the labour market (especially rural) and serve as a safety net for people and also help reduce poverty.

Table 6, classifies the states as per their share in the GVA generation. Tamil Nadu, Uttar Pradesh, Maharashtra and West Bengal hold a greater share in the industry's total value addition with 12.73, 10.76 and 9.98 percent, respectively. On the flip side, Odisha, Haryana and Assam find themselves as bottom three states, as their GVA share is meager as compared to other states. Although the state of Gujarat witnesses an even spread of enterprises across rural and urban areas, contribution to value addition almost (80%) comes from urban enterprises, which happens to be mainly establishments. Albeit Uttar Pradesh stands first in terms of its share of enterprises and workforce, its GVA contribution (per enterprise) remains low (10th place) because of a lesser per capita value generation on the part of OAE and preponderance of OAE in the state. From the above analysis, it is evident that states which derive their major share of GVA from rural and own-account enterprises account for the least share in the total industry's GVA. For example, three-fourth of GVA for the states of Assam, Bihar and Odisha comes from rural enterprises. On the contrary, a major share of GVA (around 70 per cent of their total GVA) comes from urban enterprises for states like Gujarat, Rajasthan and Maharashtra.

Table 6: Share of the Gross Value Added (GVA) in Unorganised Food Processing Industry across the States (Percent)

State	Rural			Urban			Combined			UFPI in UMS
	OAE	Est	Total[a]	OAE	Est	Total[a]	OAE	Est	Total	
AP	34.10	65.90	43.77	45.30	54.70	56.23	40.40	59.60	7.76	15.90
ASM	64.90	35.10	80.04	42.63	57.37	19.96	60.46	39.54	1.90	24.26
BHR	80.18	19.82	76.24	29.37	70.63	23.76	68.11	31.89	4.37	18.65
GUJ	69.56	30.44	20.18	17.23	82.77	79.82	27.79	72.21	7.05	7.99
HAR	48.25	51.75	35.21	27.48	72.52	64.79	34.79	65.21	1.84	14.75
KAR	38.01	61.99	39.04	41.05	58.95	60.96	39.86	60.14	7.64	15.69
KRL	22.61	77.39	49.72	18.54	81.46	50.28	20.56	79.44	5.89	22.64
MP	88.92	11.08	40.07	27.97	72.03	59.93	52.40	47.60	3.11	17.47
MAH	75.55	24.45	31.15	28.94	71.06	68.85	43.46	56.54	9.98	14.59
ODH	61.83	38.17	76.16	41.56	58.44	23.84	57.00	43.00	1.80	22.69
PNB	66.40	33.60	49.68	36.52	63.48	50.32	51.36	48.64	3.14	17.33
RAJ	79.53	20.47	29.62	50.79	49.21	70.38	59.30	40.70	3.61	11.84
TN	30.93	69.07	32.94	30.97	69.03	67.06	30.96	69.04	12.73	17.18
UP	68.90	31.10	51.60	55.58	44.42	48.40	62.46	37.54	10.76	16.13
WB	64.30	35.70	55.40	31.88	68.12	44.60	49.84	50.16	9.61	13.64
IND	**58.45**	**41.55**	**43.08**	**33.22**	**66.78**	**56.92**	**44.08**	**55.92**	**100**	**14.77**

Source: Authors' computation using NSS 73rd round Unit Level records

Notes: UMS- Unorganised Manufacturing Sector

[a]Percentage to grand total

Regional disparities related to capital investment are assessed based on per enterprise asset (Table 7). In this regard, the values of assets in the states like West Bengal. Odisha, Assam, Bihar, Andhra Pradesh, Madhya Pradesh and Uttar Pradesh happen to be lesser than all-India value (i.e. Rs. 2.54 lakh). Although, the remaining states possess a larger than all-India assets value, states like Gujarat, Haryana, Maharashtra and Tamil Nadu show significantly larger asset values at Rs. 7.18 lakh, Rs. 5.80 lakh, Rs. 4.34 lakh and Rs. 3.70 lakh, respectively. However, enterprises in rural Maharashtra possess lesser asset values than the national average. The states below the national-level performance have also underperformed in rural India, except Uttar Pradesh. So far as the urban areas are concerned, per enterprise asset value is lesser than the national average for many states, while only four states, namely, Haryana, Gujarat, Maharashtra, and Karnataka show a capital value higher than the national average. Thus, capital assets are highly concentrated in a few states in urban India and these states are highly-influential in determining the mean value of assets.

Table 7: Capital per Enterprises in the Unorganised Food Processing Industry across the States for 2015-16 (Rs. In Lakh)

State	Rural			Urban			Combined		
	OAE	Est	Total	OAE	Est	Total	OAE	Est	Total
AP	0.71	1.63	1.16	1.34	7.38	2.37	1.04	2.68	1.64
ASM	0.44	4.57	1.10	0.71	3.33	1.60	0.47	4.28	1.16
BHR	1.04	1.54	1.10	1.57	2.30	1.89	1.09	1.81	1.20
GUJ	1.76	5.83	2.21	5.02	23.29	12.11	3.09	19.40	7.18
HAR	3.30	10.09	4.52	3.41	11.13	6.86	3.35	10.87	5.80
KAR	1.57	6.21	2.29	2.51	8.85	4.63	1.98	8.00	3.45
KRL	1.48	6.26	3.24	1.68	6.49	3.64	1.57	6.38	3.44
MP	1.09	3.08	1.18	2.36	10.46	4.52	1.38	8.16	2.09
MAH	1.03	9.58	1.41	3.48	22.52	9.43	1.75	19.93	4.34
ODH	0.56	3.89	0.91	0.65	2.92	1.24	0.58	3.58	0.96
PNB	1.75	4.10	2.12	2.86	7.01	4.60	2.00	5.65	2.87
RAJ	1.18	6.36	1.45	2.49	14.11	4.54	1.70	11.93	2.78
TN	2.05	8.72	4.09	1.97	5.98	3.49	2.00	6.80	3.70
UP	1.40	3.50	1.68	2.79	7.45	3.84	1.76	5.06	2.28
WB	0.45	2.45	0.70	0.64	3.54	1.61	0.48	2.93	0.91
IND	**1.05**	**4.05**	**1.47**	**2.34**	**9.46**	**4.60**	**1.42**	**6.95**	**2.54**

Source: Authors' computation using NSS 73rd round Unit Level records

Establishments' asset value is higher than OAEs as expected. In this connection, for (with regard to the type of enterprises), the states of Assam, West Bengal, Odisha, Andhra Pradesh, Bihar and Madhya Pradesh the asset value with respect to OAEs is lesser than the national value. On the other hand, 9 states out of 15 select states (like Bihar, West Bengal, Andhra Pradesh, Odisha, Assam, Uttar Pradesh, Punjab, Kerala and Tamil Nadu) exhibit a lesser than the national value in the case of establishments. Bihar, Assam, West Bengal, Odisha and Andhra Pradesh are the states whose asset

value is lesser than the national value on almost all the counts (location, type of enterprises, etc.). Thus, the enterprises in these states are relatively less capital-intensive in nature. The analysis also reveals that capital assets are highly-concentrated in most industrially developed states, establishments and enterprises belonging to urban areas.

The performance of states (with regard to FPI) is also compared with the total unorganised manufacturing sector as a whole. For the above purpose, the share of FPI in the total manufacturing sector with regard to select indicators i.e., Enterprises, Workers and GVA is obtained.

With regard to the share of FPI, findings for the state of Assam indicate that FPI is highly-influential with the total unorganised manufacturing sector of the state consisting of 1/3 of enterprises, more than ¼ of workers and GVA that belongs to its FPI. On the contrary, the role of FPI is negligible because of its share with respect to all of the indicators considered is less than 10 percent as compared to the unorganised manufacturing sector, as a whole. Interestingly, FPI of Kerala and Tamil Nadu accounts for a lower share of enterprises, however, their shares of workforce and GVA are relatively higher in the total unorganised manufacturing sector.

Per Worker Value Added

The total GVA of the states alone cannot be considered as a good measure of the performance of the sector. Therefore, per worker value added for each of the selected states is computed. Following per worker value-added, states like Haryana, Kerala and Punjab find themselves at the top in the order while states of Andhra Pradesh, Odisha and West Bengal occupy the bottom three positions (Table 8). Along with these three states, Assam, Bihar and Uttar Pradesh exhibit labour productivity below the national average. Although states like Uttar Pradesh and West Bengal account for higher share in the total GVA generation, their respective GVA per worker is below the national average despite their higher shares of the workforce. In fact, higher shares of workforce of these states have brought down per worker GVA generation. In other words, their higher shares in GVA do not really come from more value addition but from higher shares in enterprises and workers. An opposite pattern can be observed in respect of the least share in GVA being accompanied by the highest per worker value-added.

Table 8: GVA per worker of the Unorganised Food Processing Industry across the States for 2015-16 (in Lakh)

State	Rural			Urban			Combined		
	OAE	Est	Total	OAE	Est	Total	OAE	Est	Total
AP	0.40	0.31	0.33	0.47	1.07	0.67	0.44	0.49	0.47
ASM	0.56	0.95	0.66	1.12	0.93	1.00	0.61	0.94	0.71
BHR	0.65	0.75	0.66	0.80	1.28	1.09	0.66	0.96	0.73
GUJ	0.67	0.98	0.75	0.80	1.42	1.25	0.73	1.37	1.10
HAR	1.02	1.30	1.15	1.20	1.22	1.21	1.11	1.24	1.19
KAR	0.58	1.60	0.96	0.78	1.42	1.07	0.69	1.49	1.02
KRL	0.54	1.49	1.07	0.64	1.49	1.20	0.58	1.49	1.13
MP	0.48	0.63	0.49	0.64	1.90	1.22	0.52	1.60	0.76
MAH	0.47	1.06	0.54	0.89	1.60	1.30	0.60	1.50	0.90
ODH	0.38	0.86	0.48	0.38	0.86	0.57	0.38	0.86	0.50
PNB	0.97	1.09	1.01	1.18	1.35	1.28	1.04	1.25	1.13
RAJ	0.44	1.04	0.50	0.79	1.41	1.01	0.60	1.34	0.78
TN	0.74	0.96	0.88	0.94	1.19	1.10	0.86	1.10	1.01
UP	0.40	0.64	0.45	0.83	1.11	0.93	0.51	0.84	0.60
WB	0.37	0.70	0.45	0.71	1.09	0.93	0.43	0.90	0.58
IND	**0.47**	**0.75**	**0.56**	**0.75**	**1.31**	**1.05**	**0.56**	**1.06**	**0.76**

Source: Authors' computation using NSS 73rd round Unit Level records

The enterprises belonging to rural areas demonstrate the same pattern as that of All-India with respect to per worker GVA to ranking of the states. However, the urban enterprises' order of ranking deviates minutely from that of All-India with the states of Maharashtra and Gujarat finding themselves as the best three performing states. Similarly, the pattern of GVA per worker of OAE enterprises is more or less in accordance with the All-India pattern, barring Kerala. However, the Establishments showcase a completely different picture of the states such as Madhya Pradesh, Maharashtra and Karnataka as the best-performing states (which otherwise do not figure in the list of best-performing states at the all-India level). The data segregation based on sector (rural/urban) and enterprises type (OAE/Establishments) indicate supremacy of rural and OAEs in determining the overall position of the states with respect to per worker GVA.

Capital –Labour Ratio

Capital-Labour ratio is considered as a proxy for technological upgradation and many studies argue that this is one of the crucial factors in determining the level of productivity of enterprises (Majumder, 2004). For the present analysis capital-labour ratio of enterprises is obtained by dividing the total fixed asset with the total workforce involved in those particular enterprises.

Based on the capital-labour ratio of the enterprises, states like Gujarat, Haryana and Maharashtra have performed best in their order of appearance, while West Bengal, Odisha and Assam occupy the bottom 3 positions. The performance of these states, along with that of states such as Andhra Pradesh, Bihar, Madhya Pradesh and Uttar Pradesh is lesser than the national average (Table 9). Per worker availability of capital in the state of West Bengal is lowest and it is significantly less than the national average with respect to every disaggregation considered. Gujarat is highly-capital intensive

as its per worker availability of capital is highest and is significantly larger than the national average. However, a wide gap is observed among enterprises with respect to capital possession based on the type and location of enterprises. All the best performing states have achieved higher capital intensity through their establishments situated in urban areas. This indicates that capital is highly-concentrated in urban establishments. On the contrary, rural and OAEs are less capital-intensive.

Table 9: Capital-Labour Ratio of the Unorganised Food Processing Industry across the States for 2015-16 (in Lakh)

State	Rural			Urban			Combined		
	OAE	Est	Total	OAE	Est	Total	OAE	Est	Total
AP	0.75	2.11	1.30	1.95	6.44	2.87	1.07	3.46	2.05
ASM	0.44	4.57	1.10	0.71	3.33	1.60	0.47	4.28	1.16
BHR	1.04	1.54	1.10	1.57	2.30	1.89	1.09	1.81	1.20
GUJ	1.76	5.83	2.21	5.02	23.29	12.11	3.09	19.40	7.18
HAR	3.30	10.09	4.52	3.41	11.13	6.86	3.35	10.87	5.80
KAR	1.57	6.21	2.29	2.51	8.85	4.63	1.98	8.00	3.45
KRL	1.48	6.26	3.24	1.68	6.49	3.64	1.57	6.38	3.44
MP	1.09	3.08	1.18	2.36	10.46	4.52	1.38	8.16	2.09
MHA	1.03	9.58	1.41	3.48	22.52	9.43	1.75	19.93	4.34
ODH	0.56	3.89	0.91	0.65	2.92	1.24	0.58	3.58	0.96
PNB	1.75	4.10	2.12	2.86	7.01	4.60	2.00	5.65	2.87
RAJ	1.18	6.36	1.45	2.49	14.11	4.54	1.70	11.93	2.78
TN	2.05	8.72	4.09	1.97	5.98	3.49	2.00	6.80	3.70
UP	1.40	3.50	1.68	2.79	7.45	3.84	1.76	5.06	2.28
WB	0.45	2.45	0.70	0.64	3.54	1.61	0.48	2.93	0.91
IND	**1.05**	**4.05**	**1.47**	**2.34**	**9.46**	**4.60**	**1.42**	**6.95**	**2.54**

Source: Authors' computation using NSS 73rd Unit level records**.**

Per Worker GVA, Capital-labour ratio and Capital Productivity – Inter-linkages

Another striking feature with respect to the performance of the unorganised food processing sector is the inter-linkage between various performance indicators. Interaction between Per Worker GVA, Capital-labour ratio and Capital Productivity is verified by correlation coefficients at the All-India level. The results are listed in the Table 10. Accordingly, Per Worker GVA is found to be positively and significantly associated with capital-labour ratio, whereas, capital productivity is negatively associated. It indicates that a capital-intensive production process enhances per worker contribution to GVA, as observed earlier (Sharma and Dash, 2006). Although the rural and urban enterprises separately depict the same association with these indicators, the positive association between Per Worker GVA and capital-labour ratio is more prominent with respect to the rural & OAE enterprises, whereas, the negative association between capital productivity and capital-labour ratio is more visible for the urban & Est. enterprises.

Table 10: Correlation Coefficients of Indicators

Indicators	All India			Rural India			Urban India		
	PWG	CP	CI	PWG	CP	CI	PWG	CP	CI
Per Worker GVA	1.000	....	....	1.000	....	....	1.000	....	....
Capital Productivity	0.312	1.000	....	0.329	1.000	....	0.310	1.000	....
Capital-labour ratio	0.350	-0.724	1.000	0.348	-0.714	1.000	0.287	-0.769	1.000
	Rural OAE			**Rural Est.**			**OAE**		
Per Worker GVA	1.000	....	....	1.000	....	....	1.000	....	....
Capital Productivity	0.346	1.000	....	0.270	1.000	....	0.331	1.000	....
Capital-labour ratio	0.339	-0.705	1.000	0.333	-0.771	1.000	0.353	-0.707	1.000
	Urban OAE			**Urban Est.**			**Est.**		
Per Worker GVA	1.000	....	....	1.000	....	....	1.000	....	....
Capital Productivity	0.326	1.000	....	0.274	1.000	....	0.262	1.000	....
Capital-labour ratio	0.325	-0.734	1.000	0.239	-0.827	1.000	0.309	-0.792	1.000

Source: Authors' computation using NSS 73rd round Unit Level records

Note: All the coefficients are significant @ 0.05 level.

The inter-linkage between these factors is assessed at the State level with the help of cross tabulation of performance indicators. Accordingly, it is seen from Table 11 that the states that have performed above the national average with respect to Per Worker GVA, have also performed above the national average in relation to the capital-labour ratio. On the other hand, five out of the above nine average performing states with respect to Per Worker GVA are found in a position below the average category in relation to capital productivity. The interaction between Per Worker GVA and capital-labour ratio indicates a positive relationship between them, whereas, the same between Per Worker GVA and capital productivity does not indicate any clear association between them. However, from Table 11 it is also observed that states like Karnataka, Kerala, Punjab and Tamil Nadu have performed equally better with regard to both Per Worker GVA and Capital Productivity. The association in these states exactly implies the substitution of labour for capital. These findings are consistent with those of Sharma and Dash (2006) that in the Small-Scale Industry sector, states with a higher capital-labour ratio tend to have a higher Per Worker GVA.

Table 11: Interaction between Selected Performance Indicators

Criterion	Per worker value added	Capital-Labour ratio	Capital Productivity
Above Average	Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Punjab, Tamil Nadu	Gujarat, Haryana,, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Punjab, Tamil Nadu	Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Odisha, Punjab, Tamil Nadu and West Bengal
Below Average	Andhra Pradesh, Assam, Bihar, Odisha, Uttar Pradesh, West Bengal	Andhra Pradesh, Assam, Bihar, Odisha, Uttar Pradesh, West Bengal	Gujarat, Haryana, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh

Source: Authors' computation using NSS 73rd Unit level records**.**

Disparities across the states:
Comparison of 67th and 73rd NSS Rounds

The unorganised food processing sector in the year 2010-11 operating with around 22 lakh enterprises and employing more than 47 lakh workers generated Rs. 27,000 crore of value addition to the economy with the help of Rs. 51,887 crore of fixed assets. The number of enterprises has increased to 24 lakh, followed by an increase in the employment to the tune of 52 lakh, Rs. 39,720 crore of value addition and Rs. 62,000 crore worth of fixed assets in the year 2015-16. Since the present analysis intended to understand the changing structure of the sector, a comparison is drawn with respect to two major aspects.

- Comparison with regard to the spread of enterprises, employment composition, gross value addition and fixed assets stock of the industry. Comparison on this account is examined separately for rural and urban area.

- Comparison with regard to basic performance indicators such as Per Worker GVA and capital-labour ratio for the major select states of India.

Dynamics underlying the regional disparities is assessed with the help of coefficient of variation (CV). Table12 depicts the estimates of regional disparities for select indicators of the industry over the period 2010-11 to 2015-16. The co-efficient of variation has increased with respect to the spread of enterprises and workers and is consistent across types of enterprises. The disparity in the spread of enterprises across select states shows an increase from 63.47 to 66.49 per cent. In the same way, it has increased from 67.61 to 69.99 per cent in the case of employment. In both the cases, inter-state disparities are mainly induced by establishments. With respect to, the spread of enterprises, the variation has increased from 63.28 to 71.56 per cent for establishments, while the same for OAEs is almost constant. At the same time, the inter-state difference of workforce has ranged from 81.68 to 83.40 for establishments, while a meagre change is observed in the case of OAEs.

However, the opposite pattern is evident in the case of GVA per worker. The inter-state disparities here actually have come down from 37.36 per cent in 2010-11 to 29.13 per cent in 2015-16. Although the contribution of both the types of enterprises is noticeable for a decline in the variation, it is establishments which are significantly responsible for a 11.69 percentage point decline from 2010-11 to 2015-16. On the other hand, the market value of fixed asset per worker (Capital-labour ratio) specify decrease in the inter-state variation across enterprises. In this case also, the decline in the variation is highly-induced by establishments despite the contribution of OAEs being sizable. Establishments, on the contrary, exhibit an increase in disparity more than the magnitude of OAEs.

Table 12: Co-efficient of variation concerning select indicators

Year	Enterprises			Workers		
	OAE	EST	Total	OAE	EST	Total
2010-11	68.28	63.28	63.57	74.25	81.68	67.61
2015-16	68.81	71.56	66.49	75.99	83.4	69.99
Year	Per Worker GVA			Capital-Labour Ratio		
	OAE	Est	Total	OAE	Est	Total
2010-11	37.34	39.21	37.36	51.01	66.87	58.32
2015-16	32.36	27.52	29.13	59.41	57.02	53.61

Source: Authors' computation using NSS 73rd Unit level records**.**

The increased CV value indicates that both the enterprises and workers are concentrated only in a few of the states rather than widespread across the country. Hence, the industry is becoming less representative over time with increasing regional disparities. A reduced disparity with regard to Per Worker GVA and Capital-labour ratio over time, signals a competitive environment prevailing among the enterprises.

Inter-state disparities overtime are also captured with the help of compound annual growth rates (CAGR) with respect to enterprises, workers, Per Worker GVA and capital-labour ratio. Table 14 classifies the states, based on their growth rates, as also the type of enterprises and location separately. The analysis reveals that there exist considerable variations in the growth rates of indicators. Hence, the states were grouped under four broad categories of growth rates in order to better capture the time dynamics (i.e. negative, 0-5 percent, 5-10 percent and above 10 percent)

As regards enterprises, negative growth is observed for the states of Haryana, Madhya Pradesh and Odisha, while a number of enterprises have grown by more than 10 per cent per year in the state of West Bengal. Most of the states have recorded a growth rate between 0 and 5 percent, while enterprises in the states of Karnataka and Punjab have increased with a growth rate between 5 and 10 percent. With respect to location of enterprises, the total enterprises have increased in the states of Andhra Pradesh, Gujarat, Kerala and Rajasthan despite a reduction in rural enterprises. In these states, the overall growth rates have been highly influenced by increased growth of urban enterprises. Gujarat and Uttar Pradesh have witnessed a negative growth of OAEs though their overall growth of enterprises has increased overtime. On the other hand, the number of establishments in the states such as Assam, Maharashtra and Rajasthan has diminished despite their positive growth at the overall enterprises level. The rate of growth is highest for West Bengal with respect to rural enterprises. Assam and Bihar have achieved the highest growth in the case of urban and establishments, respectively.

Growth of employment seems to have gone hand in hand with that of enterprises. The states exhibiting a negative growth in enterprises have also witnessed a decline in employment growth in respect of almost all of the disaggregation considered. On the contrary, states like Karnataka and West Bengal achieved growth more than 5 per cent with respect to both enterprises and employment. However, the state of Rajasthan has recorded a positive growth in employment despite negative growth in enterprises in rural areas (between 5-10 per cent). This indicates that the industry in the state has succeeded in enhancing employment opportunities for rural population despite a reduction in

enterprises over time. The analogy between enterprises and employment growth also suggests a reduction in the workforce in most of the states more than a decline in the number of enterprises.

Table 13: Per Worker GVA and Capital-labour Ratio in the Unorganised Food Processing Industry (in Rs.)

States	Per Worker GVA		Capital-labour ratio	
	2010-11	2015-16	2010-11	2015-16
Andhra Pradesh	48956	46718	92082	38335
Assam	50836	118976	50882	232410
Bihar	55932	101981	103686	148012
Gujarat	54740	77668	149184	153063
Haryana	96792	58248	332174	44747
Karnataka	81377	112825	155107	165253
Kerala	97350	60238	164653	112867
Madhya Pradesh	40029	112865	113818	127968
Maharashtra	73745	90320	204521	227315
Odisha	31727	70673	46197	71656
Punjab	91222	101498	278679	133765
Rajasthan	63760	76398	175565	133269
Tamil Nadu	83111	50032	179667	52402
Uttar Pradesh	44536	110245	108621	271243
West Bengal	47146	73208	63158	73503
All India	**57840**	**76256**	**128064**	**120259**

Source: Authors' computation using NSS 67th and 73rd round Unit Level records

Table 14: Classification of States Based on CAGR (nominal terms) of Selected Indicators

	Enterprises				
CAGR (%)	All	Rural	Urban	OAE	EST
Negative	HAR, MP, ODH	AP, GUJ, KRL, HAR, ODH, RAJ	HAR,MP,MAH,UNJ, UP	GUJ, HAR, ODH, UP	ASM, MP, MAH, ODH, RAJ
0-5	AP, ASM, BHR, GUJ, KRL, MAH, RAJ, TN, UP	ASM, BHR, MP, MAH, TN, UP	BHR, GUJ, ODH, WB	AP, ASM, BHR, KRL, MP, MAH, RAJ, TN	AP, GUJ, HAR, KAR, KRL, PNJ, UP, WB
5 to 10	KAR,PNJ	KAR	AP,KAR,KRL,RAJ,TN	KAR,PNJ	TN
> 10	WB	PNB, WB	ASM	WB	BHR
	Workers				
Negative	ASM, HAR, MP, MAH, ODH, UP	AP, ASM, GUJ, KRL, MP, ODH, RAJ	HAR, MP, MAH, PNJ, UP	GUJ, HAR, MP, MAH, ODH,UP	AP, ASM, MP, MAH, ODH, PNB, RAJ, UP
0-5	AP, BHR, GUJ, KRL, PNJ, RAJ	BHR, HAR, KAR, MAH, UP	ASM, BHR, ODH	AP, ASM, BHR, KRL, TN, RAJ	KAR, KRL, WB
5 to 10	KAR, TN, WB	RAJ, TN	AP, GUJ, KAR, RAJ, TN, WB	KAR, PNB	BHR, HAR
> 10	-	WB	KRL	WB	GUJ, TN
	Per Worker GVA				
Negative	-	-	-	-	-
0-5	-	MAH, RAJ	AP, KAR, ODH	AP, KAR, KRL	-
5 to 10	AP, HAR, KAR, KRL, MAH, PNB, RAJ, TN, UP	AP, GUJ, KRL, TN, UP	HAR, KRL, MAH, PNB, RNJ, TN	MAH, PNB, RAJ, TN	AP, GUJ, HAR, KRL, MAH, PNB, RAJ, TN, UP
> 10	ASM, BHR, GUJ, MP, ODH, WB	ASM, BHR, HAR, KAR, MP, ODH, PNB, WB	ASM, BHR, GUJ, MP, UP, WB	ASM, BHR, GUJ, HAR, MP, ODH, UP, WB	ASM, BHR, KAR, MP, ODH, WB
	Capital-Labour Ratio				
Negative	AP, BHR, HAR, KAR, KRL, ODH, PNB, RAJ, TN, WB	AP, BHR, GUJ, HAR, ODH, PNB, RAJ, WB	AP, BHR, HAR, KAR, KRL, ODH, PNB, RAJ, TN, WB	AP, ASM, BHR, KAR, KRL, MAH, PNB, RAJ, TN, WB	AP, HAR, KRL, ODH, PNB, RAJ, TN, UP, WB
0-5	UP, MAH	KAR, KRL, MAH, TN, UP	ASM, MAH, UP	MP, ODH, UP	GUJ, KAR, MAH
5 to 10	GUJ, MP	MP	GUJ, MP	HAR	BHR
> 10	ASM	BHR	-	GUJ	ASM, MP

Source: Authors' computation using NSS 67th and 73rd Unit level records**.**

Per Worker GVA at the all-India level accounting for Rs. 57,840 per annum for the year 2010-11, has increased to Rs. 76, 256 by 2015-16, an increase of around 32 percent in real terms. From Table 13, it can be observed that Per Worker GVA ranges from Rs.31, 727 to Rs. 97, 350 for 2010-11 and from Rs. 46,718 to Rs. 1,18,976 for the year 2015-16. Here, one can observe an increased range along with an overall increase in the average Per Worker GVA. On the contrary, per capita availability of capital in real terms has actually decreased over time. It Rs. 1,28,064 per worker in 2010-11, that has marginally reduced to Rs. 1,20,259 in the year 2015-16 for all India. Hence, on an average, the unorganised food processing industry in India has not added any addition to its fixed capital stock from 2010-11 to 2015-16. On the other hand, we can observe greater dynamics with respect of interstate disparity in per worker GVA for the same duration. In 2010-11, the state of Kerala reported highest GVA

per worker while Odisha registered the least followed by Madhya Pradesh. These positions have been completely altered, as Madhya Pradesh has secured the second highest position and Kerala figured in 4th place form the bottom in 2015-16. The real per worker GVA has absolutely decreased only in the state of Andhra Pradesh.

Further, CAGR (nominal terms) for the period 2010-11 to 2015-16 indicates that the growth of Per Worker GVA is positive across all states, locations and enterprises type. Enterprises belonging to states such as Maharashtra, Rajasthan in rural areas and Andhra Pradesh, Karnataka, Odisha in urban areas show relatively low growth rates as compared to other states in their respective groups. In a similar way, OAEs in Andhra Pradesh, Karnataka and Kerala are the least performers, while all of the states have registered growth of more than 5 per cent in the case of establishments.

Growth rates with respect to capital-labour ratio are negative for many of the states indicating that the industry is not significantly adding to the existing stock observed fixed assets instead there is a depreciation of fixed assets of many of the states. This pattern is consistent across location and type of enterprises. Although, most of the states exhibit negative growth rates in respect of capital-labour ratio none of the states has recorded negative Per Worker GVA growth in nominal terms. Positive growth is not evident in the case of capital-labour ratio for many states, as the capital has a longer gestation period and the time comparison here is confined to only for 5 years. Therefore, an appreciation if any, in the capital accumulation of the industry across states is not observed.

Conclusion

The food processing industry is termed as a sunrise industry in manufacturing given the synergy between agriculture and manufacturing sectors. It helps generate a larger employment both as a share of total unorganised manufacturing and the total food processing industry. However, the value generation of the industry is quite negligible. Hence, it mainly caters to the employment needs of the rural population, especially unskilled and illiterate population. It is interesting to note that in the context of jobless manufacturing growth, the unorganised food processing industry has succeeded where the manufacturing sector has failed. Therefore, our findings reiterate the fact that it is one of the highly labour-intensive industries. The manufacturing dualism is also evident in the case of the Indian Food Processing industry. However, the inter-temporal observation indicates shrinkage of duality overtime. The unorganised food processing industry is dominated by OAEs in terms of enterprises and workers. The dominance is persistent over time, as the OAEs are increasing in urban areas as well. OAEs are the major employment provider in the industry; however, their contribution towards value generation is less than the establishments and is even declining over time. Whereas, the establishments have improved their share in value generation, though, their share in enterprises and worker force are declining. Therefore, the duality in the industry is highly representative from the perspective of type of enterprise. Gender disparity is also evident in the workforce of the industry with the establishments employing more male workers than female workers. Given their accountability towards household and agricultural commitments, womenfolk in the rural areas tend to take up mostly part-time employment. The urban enterprises are more capital-oriented than the rural enterprises as the share of fixed capital of urban enterprises is increasing overtime. This calls for proper policy and program incentives focusing specially

on the rural enterprises in order to ensure credit and infrastructure facilities as part of improving the capital and technological upgradation.

Bigger states like UP, WB, AP and MP have a larger share in enterprises and workforce. However, their performance with respect to labour productivity and capital-labour ratio is not significant, implying that their performance is not proportionate to the share they hold in enterprises and workers. Rao and Dasgupta (2009) have argued that the industry provides employment mainly to illiterate and unskilled workers, especially the rural population and that the industry has the potential to eliminate poverty to an extent. However, poorer states such as Assam, Bihar, Odisha and MP do not account for a considerable share in the industry's workforce which may erode the non-farm employment opportunities, critical to poverty reduction. Hence, these states should focus on startup policies for opening up of more food processing units. The prevalence of self-owned enterprises also contribute to the inter-state disparities, as the states that derive their major share of GVA from these enterprises, especially from rural areas, have a relatively lower share in the total industry's value generation. This signifies that the OAEs are less remunerative than their counterparts. Therefore, OAEs should focus more on improving their productivity and efficient use of resources.

There exists a positive correlation between capital-labour ratio and GVA per worker, while the opposite is evident with respect to capital productivity and capital-labour ratio. This implies that a capital-intensive production process leads to a higher per worker GVA. Like the unorganised manufacturing sector, as reported by Goldar and Sadhukhan (2015), the unorganised food processing industry is also undergoing a structural transformation moving away from own account enterprises to establishments and this has helped attaining a more rapid per worker availability of GVA. The temporal analysis reveals that most of the states have performed above the national average with respect to labour productivity and capital-labour ratio during the year 2015-16, as compared to 2010-11. This implies that the industry is becoming more competitive over the years.

Many have observed that the growing regional inequality in the post-reform period is primarily because of differerent growth patterns followed high and less industrialised regions (Bhattacharya and Sakthivel, 2004; Kar and Sakthivel, 2007). This argument is substantiated even in the case of the unorganised food processing industry wherein, the industrially developed states like Gujarat, Maharashtra, Tamil Nadu, Kerala and Karnataka have performed better than the less industrially developed states like Assam, Bihar, Odisha and UP. The performance of Assam and Odisha is the least in respect of all the indicators considered for the study. However, Assam holds a huge potential in terms of creating employment for its growing labour force and the industry accounts for a lion's share in the overall unorganised manufacturing sector, as 1/3rd of the enterprises, workers and value generation is contributed to the food processing industry. As regards the decreased quality of employment, a fall in regular employment and the sharp increase in part-time workers are found to be the reasons for a poorer performance of Assam (Saikia & Das, 2013).

These findings are also corroborated by the studies on manufacturing, small-scale industries and unorganised manufacturing sector (Trivedi, 2004). Hence, an urgent need for policy intervention and program incentives like Scheme for technology upgradation, establishment and modernisation of food processing industries, credit flow to rural enterprises, infrastructure, etc. The industry provides an

avenue for diversification away from the farm workforce, especially in the agricultural off season. These non-farm jobs can help tighten the rural labour market and act as a safety net in preventing workers from falling into a poverty trap despite the residual nature of work. Further, increased employment opportunities in the industry can enhance significantly the prospects of India's low skilled and unskilled workforce getting suitable jobs.

Notes

AP- Andhra Pradesh, ASM-Assam, BHR-Bihar, GUJ-Gujarat, HAR-Haryana, KAR-Karnataka, KRL-Kerala, MP-Madhya Pradesh, MAH-Maharashtra, ODH-Odisha, PNB-Punjab, RAJ-Rajasthan, TN-Tamil Nadu, UP-Uttar Pradesh, WB-West Bengal, IND-All India.

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