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Performance of food processing industry in Bundelkhand region of Uttar Pradesh

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Abstract
Uttar Pradesh agricultural production is quite robust and it is growing day by day. But wastage of agriculture product is very high and food processing is very low. This paper aims to provide an overview of the performance of food processing industry in Bundelkhand region of Uttar Pradesh during the time period of 2004-05 to 2017-18. Analysis has been done over three time period that is TE-2007, TE-2013 and TE-2018. To calculate growth rate, Compound Annual Growth Rate technical ratios and structural ratios for the analysis the performance of food processing industry in study area required statistical tools are used. The findings of this study reveal that three districts Lalitpur, Hamirpur and Mahoba of this region do not have any food processing industry. Rest Bundelkhand region has slow positive growth in study period. The food processing industry in Bundelkhand has contributed to value addition, enabling farmers to fetch better prices for their produce. The sector has emerged as a vital source of employment especially for rural youth and entrepreneurship. But the industry still faces several challenges.
However, concerted efforts are required to address the existing challenges and further enhance the sector's growth. Policy interventions focusing on infrastructure development technology adoption and market access can play a vital role in unlocking the full potential of the food processing industry in the Bundelkhand region of U.P.

Keywords: Compound annual growth rate, structural ratio, food processing, productivity, growth

Introduction

Food processing industry is working like a bridge between agriculture and industry. It plays a pivotal role in enhancing agricultural productivity, reducing food wastage and driving economic growth of Uttar Pradesh. Due to soil, fertile land, abundant natural resources and water availability, Uttar Pradesh has potential to feed not only the entire state but also the country. Bundelkhand encompasses a semi-arid region characterized by limited rainfall and adverse condition. The region faces several socio-economic challenges, higher wastage of food products and limited employment opportunities.

In this context, the food processing industry has emerges as a promising sector capable of addressing these challenges by promoting value addition, facilitating market linkages and creating employment opportunities for the local population. After modernization of agriculture sector, consumers are demanding traditional food to high quality foods which show ample opportunity for processing food segment in the state. (Bhalla and hazel 1998, Chand 2003) The agriculture and food sector have been significantly modified in the way food is produced, processed, marketed and consumed. Consumers are more aware regarding health, nutrition and quality of food. So food processing industry has that power which work for collaboration among consumer, industry and agriculture.

This study evaluates the performance of food processing industry in Bundelkhand region of U.P. in terms of growth rate and structural ratio over the period 2004-05 to 2017-18 and tries to give some use full suggestions to reap the benefits from this industry.

Objectives: With this frame work, the main objectives of this study are as follows
1. To examine the performance of food Processing industry in Bundelkhand Region in term of CAGR.
2. To calculate the structural change in food processing industry in Bundelkhand Region

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3. To draw some conclusions and policy implications on the basis of the findings.

The study is divided in four section in total including the present one which is introductory in nature. Section-II discusses the data base and methodology used in the study. Section-III presents the main results and discussions from the analysis. Section-IV draw conclusions and policy implication.

Data base and Methodology: The study is based on secondary data from various reports published by Annual survey of Industries publish by the Government of Uttar Pradesh. There are seven districts in Bundelkhand region.
Total six variables of input and output have been used to evaluate the structural change and performance of food processing industry in Bundelkhand region. They are consumed martial, total output, gross value added, Registered industry, No of employees and Total Emoluments. The time period 2004-05 to 2017-18 has been analysis after dividing in to three periods that is TE-2007,

TE-2013, and TE-2018. To examine the performance of food processing industry in Bundelkhand region of U.P. various statistical tools are used for example growth rate, CAGR and structural ratio.

Results and Discussion
Performance of food processing in Bundelkhand region
Food processing is an arising sector of U.P. economy and is growing at a rate 14.31% per annum. The majorities of the food processing units in Bundelkhand region of U.P. are unorganized and are facing various kinds of challenges in the fast changing world. The percentage share of food processing industry in all industry of Bundelkhand region in items of registered industry, Number of employees and total emolument are shown in table 1. The percentage of registered industry has increased over time. But numbers of employees in these industries have decreased over time due to in favorable policy environment. Only Jalaun district of Bundelkhand region has shown positive growth 4.45% in TE-2007 to 7.60% in TE-2018 for generating employment.

Table 1: District Wise % Share of Bundelkhand Region Food Processing Industry in All Industry

Districts	Registered Industry			No. of Employees			Total Emolument (Salary & Wages etc.)		
	TE-2007	TE-2013	TE-2018	TE-2007	TE-2013	TE-2018	TE-2007	TE-2013	TE-2018
Jalaun	6.45	7.50	11.11	4.45	6.23	7.60	2.90	4.29	4.30
Jhansi	1.23	2.84	3.33	0.78	0.57	0.09	0.20	0.10	0.01
Lalitpur	*	*	*	*	*	*	*	*	*
Hamirpur	*	*	*	*	*	*	*	*	*
Mahoba	*	*	*	*	*	*	*	*	*
Banda & Chitrakoot	30.00	25.00	24.00	41.52	6.42	8.48	24.97	5.16	5.93
Bundelkhand	3.08	4.05	4.92	2.09	1.51	0.67	0.58	0.38	0.18

Source: Annual Survey of Industries, Uttar Pradesh

Banda & Chitrakoot districts in Bundelkhand region has decreased percentage share of number of employment in food processing industry in all industry. Further data shows that total emolument (Salary & wages etc.) is 2.90% in TE-2007. But it is increased in TE-2018 up to 4.30% in Jalaun district in comparison of Jhansi, Banda & Chitrakoot districts and overall Bundelkhand region. Overall Bundelkhand region are shown positive growth in

percentage share of registered industry. But there is a shapely decline in percentage share of number employees and their total emolument of food processing industry in all industry. Most of industries to reduce the cost of production cut down the jobs, wages and salaries of employees which is badly affecting the livelihood of labour and productivity of labour.

Table 2: District Wise % Share of Bundelkhand Region Food Processing Industry in All Industry

S. No.	District	Consumed Material			Total Output			Gross value added		
		TE-2007	TE-2013	TE-2018	TE-2007	TE-2013	TE-2018	TE-2007	TE-2013	TE-2018
1	Jalaun	5.79	18.90	8.25	3.56	19.88	18.93	0.81	5.40	5.23
2	Jhansi	1.08	0.12	0.02	0.85	0.11	0.02	0.21	0.11	0.01
3	Lalitpur	*	*	*	*	*	*	*	*	*
4	Hamirpur	*	*	*	*	*	*	*	*	*
5	Mahoba	*	*	*	*	*	*	*	*	*
6 &7	Banda & Chitrakoot	5.85	0.68	0.36	13.57	2.10	0.96	33.54	19.27	5.62
	Bundelkhand	2.11	2.38	0.37	1.46	2.47	0.83	1.03	1.07	0.11

Source: Annual Survey of Industries, Uttar Pradesh

The table 2 presents the district–wise percentage share of consumed material, total output and Gross value added of food processing industry in to all industry for Bundelkhand region. Consumed material indicates the amount of raw materials or input utilized by this industry was 2011% in TE-2007 but it decreased 0.37% in TE-2018. In Bundelkhand region Jalaun district contributed maximum share 8.25% in TE-2018. The percentage share of final processed product was 1.46% in TE-2007 and it was increased 2.47% during TE-2013 but in TE-2018 it

decreased till 0.83%. Jalaun district showed 3.56% share in total output in TE-2007 which increased 18.93% in TE-2018. The percentage share of gross value added of food processing industry in all industry was 1.03 percent during TE-2007 which has slightly increased in TE-2013 but is shapely decline in TE-2018. The growth trend in GVA for food processing industry suggest that there is massive scope for promoting high value segments in the first and second time period.

Table 3: District Wise Compound Annual Growth Rate of Bundelkhand Region Food Processing Industry

S. No.	Districts	Registered Industry			No. of Employees			Total Emolument (Salary & Wages etc.)		
		2004 -05 to 2010-11	2011 -12 to 2017-18	2004-05 to 2017 -18	2004 -05 to 2010-11	2011 -12 to 2017-18	2004-05 to 2017 -18	2004 -05 to 2010-11	2011 -12 to 2017-18	2004-05 to 2017 -18
1	Jalaun	0.00	0.00	0.00	9.18	-19.47	-1.06	16.73	-15.18	6.32
2	Jhansi	7.71	0.00	7.59	7.59	-36.71	-15.95	11.85	-47.39	-18.12
3	Lalitpur	*	*	*	*	*	*	*	*	*
4	Hamirpur	*	*	*	*	*	*	*	*	*
5	Mahoba	*	*	*	*	*	*	*	*	*
6 & 7	Banda& Chitrakoot	0.00	0.00	0.00	-2.25	-6.23	-19.27	9.69	3.20	-16.42
	Bundelkhand	1.97	0.00	1.94	4.85	-19.87	-8.02	13.91	-16.97	-0.67

Source: Annual Survey of Industries, Uttar Pradesh.

The analysis of table-3 shows the compound annual growth rate of food processing industry in Bundelkhand region with these districts during the period 2004-05 to 2017-18. The annual growth of registered food processing industry is growing with 1.94% rate in Bundelkhand region but Jhansi is only showing positive growth. The growth rate of number of employees and this total emolument is showing negative compound annual growth rate in all district of Bundelkhand region. It is not a good sign of food processing industry. During the study period, the compound annual growth rate of consumed material in food processing industry is 16.70% for time period 2004-05 to 2010-11 but there is negative growth rate in time period 2011-12 to 2017-18 in table -4.

Table 4: District Wise Compound Annual Growth Rate of Bundelkhand Region Food Processing Industry

S. No.	Districts	Consumed Material			Total Output			Gross value added		
		2004 -05 to 2010-11	2011 -12 to 2017-18	2004-05 to 2017 -18	2004 -05 to 2010-11	2011 -12 to 2017-18	2004-05 to 2017 -18	2004 -05 to 2010-11	2011 -12 to 2017-18	2004-05 to 2017 -18
1	Jalaun	25.95	-34.50	0.07	28.33	-24.77	10.06	22.76	-21.88	4.89
2	Jhansi	-18.39	-58.18	-33.75	-16.30	-59.68	-34.34	7.99	-43.25	-16.39
3	Lalitpur	*	*	*	*	*	*	*	*	*
4	Hamirpur	*	*	*	*	*	*	*	*	*
5	Mahoba	*	*	*	*	*	*	*	*	*
6 & 7	Banda& Chitrakoot	5.81	-43.35	-36.68	20.39	-24.00	-31.89	35.35	-24.80	-31.92
	Bundelkhand	16.70	-34.09	-3.62	19.81	-24.54	4.05	27.89	-24.60	-7.75

Source: Annual Survey of Industries, Uttar Pradesh

There has been positive growth rate in total output during period 2004-05 to 2010-11 as compared to negative growth during the period 2011-12 to 2017-18. Overall compound annual growth rate of total output in food processing industry are growing with rate 4.05% during study period. The rate of growth in the gross value added of these industries was 27.89% during 2004-05 to 2010-11 but is negative at -24.60% in 2011-12 to 2017-18. The lacks of infrastructural facilities are hindering the growth of this industry.

The performance of food processing industry in different districts of Bundelkhand region is also measured in terms of structural ratio. (Table-5) the ratio of no. of employed to factory is 26.20 in TE-2007 and 10.78 in TE-2018 which indicates that employment per unit factory is decreasing with time. The ratio between net values added to factory is 4317.78 in TE-2018 which helps to assess the efficiency of asset utilization in value creation.

Table 5: Structural Ratio of Food Processing Industry in Bundelkhand Uttar Pradesh (Value in thousand & others in number)

Districts	NE/FA			NVA/FA			NVA/NE			Salary & Wages/NE		
	TE-2007	TE-2013	TE-2018	TE-2007	TE-2013	TE-2018	TE-2007	TE-2013	TE-2018	TE-2007	TE-2013	TE-2018
Jalaun	23.00	37.50	25.83	5777.50	14819.50	12211.50	251.20	395.19	472.70	58.51	91.34	133.70
Jhansi	33.00	17.50	2.67	2327.00	2113.83	339.33	70.52	120.79	127.25	53.81	69.76	49.81
Lalitpur	*	*	*	*	*	*	*	*	*	*	*	*
Hamirpur	*	*	*	*	*	*	*	*	*	*	*	*
Mahoba	*	*	*	*	*	*	*	*	*	*	*	*
Banda & Chitrakoot	26.00	10.33	3.83	14592.33	12247.83	402.50	561.24	1185.27	105.00	32.44	45.77	55.74
Bundelkhand	26.20	21.78	10.78	8613.33	9727.06	4317.78	328.75	446.65	400.62	46.98	78.35	117.54

Source: Annual Survey of Industries, Uttar Pradesh.

A higher level of net value added to no. of employees is 400.62 in TE-2018 and 328.75 in TE-2007 which suggests a higher level of productivity and efficiency in Bundelkhand region. The last ratio between salary & wages to no. of employees indicates that it is increasing from 46.98 in TE-2007 to 117.54 in TE-2018. It is not a sigh for food processing industry in Bundelkhand region.

Conclusion and Policy Implications: The food processing industry is the most relevant sector for creating jobs for rural population and reduces the burden on agricultural sectors. But the level of food processing industry in Bundelkhand region of Uttar Pradesh is at its primary stage and only a small quantity of agricultural produce is used. On the basis of analysis number of employees per factory is highest in Jalaun district. In first phase of time period all variables are showing good growth but with time it is decreasing. The percentage share of registered food

processing industry in all industry has increased but employment generation is decreased. It can be unfavorable policy of government. Compound annual growth rate of total output in food processing industry in Bundelkhand region are growing with rate 4.05 percent which indicate that this industry has potential for better productivity and utilization of factor. The study provides empirical evidence that the food processing industry in Bundelkhand has higher efficiency and productivity if government may plan a relief package for inefficient industry to enhance their performance. Agriculture sector of this region is directly and indirectly related to food processing industry so improvement in these food processing industry will help in reducing many problems like disguised unemployment and wastage of raw food items. Government of Uttar Pradesh should be focus on providing infrastructural facilities like continuous power supply, better road connectivity and cold chain.

Finally the food processing industry in Bundelkhand region have fully leverage of growth potential if government properly addressed its bottlenecks problems.

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