



*Government of Kerala*



**ANNUAL SURVEY OF INDUSTRIES 2022-23**  
**VOLUME - I**

*Directorate of Economics and Statistics  
Thiruvananthapuram*



**RESMI C.P**  
**DIRECTOR**



**Department of Economics & Statistics**  
**Vikas Bhavan P.O., Thiruvananthapuram**  
**Kerala-695 033**

Phone { Office : 0471-2305318  
Mobile : 9447115318

e-mail. [ecostatdir@gmail.com](mailto:ecostatdir@gmail.com)  
website: [www.ecostat.kerala.gov.in](http://www.ecostat.kerala.gov.in)

Dated ..... 25.02.2026 .....

### **Preface**

The Annual Survey of Industries (ASI) is a major statistical survey conducted in the state to evaluate the performance and growth of the organized manufacturing sector. It generates vital information on the growth trends, composition, and structural characteristics of registered manufacturing industries. The survey is carried out by the Department of Economics and Statistics with the technical support of the Industrial Statistics Wing (IS Wing), Data Processing Division of the National Statistics Office (NSO), Kolkata.

The report titled 'Annual Survey of Industries 2022-23' highlights the key characteristics of the factory sector, detailed results of the survey at 2/3/4 - digit level of National Industrial Classification (NIC), district level, rural-urban and type of organization. An attempt has also been made in this report to analyze the major characteristics such as capital, employment and emoluments, Gross Value Added (GVA), input, output, profit, income etc.

The survey is conducted annually under the statutory provisions of Collection of Statistics Act, 2008 as amended in 2017 and rules framed there under in 2011. Deputy Directors of the district offices are designated as Statistics Officers for conducting the survey in their respective jurisdiction. Field work and data entry work have been done by investigators and scrutinized by the Research officers. Data entry is done using MS-Access based 'e-schedule package' provided by IS Wing of National Statistics Office and process including preparation of report have been done in ASI Wing of DES. The present report is prepared by combining 662 state sample units (surveyed by DES), 662 Central Sample units (surveyed by NSO, FOD) and 1242 Census sector units.

I would like to express my sincere gratitude to Smt. Sunitha Bhaskar, ISS, the then Deputy Director General, NSO, and Shri.Vineesh P.P., Deputy Director, NSO (FOD), Regional office, Thiruvananthapuram and Shri. K N Rajeev Kumar, SSO (FOD), Regional office, Kollam for their timely intervention and technical guidance. I also acknowledge the vigorous work done by survey team constituting district level officers, statistical investigators and officers of ASI division in the Directorate under the guidance and supervision of Smt. Salini P K, Additional Director (State Income) in bringing out this report.

I hope this publication will serve as a reference book and research material in Industrial Statistics, particularly in organized manufacturing sector.

**RESMI C.P.**  
Director



## ***ACKNOWLEDGEMENTS***

1	Smt. Salini P K	Additional Director (State Income)	<b>Report editing</b>
2	Shri. Premarajan E V	Deputy Director (Vital Statistics Division)	<b>Data Analysis &amp; Report writing</b>
3	Smt. Naseera M	Assistant Director (ASI Division)	
4	Shri. Abhilash KV	Research Officer (ASI Division)	
5	Deputy Directors	Deputy Directors (District Offices)	<b>District Level supervisors and scrutiny officers</b>
6	Research Officers	Research Officers (District Offices)	
7	Smt. Beena R	Research Assistant (ASI Division)	<b>Directorate Level Scrutiny and Validation</b>
8	Smt. Manju Sankar C S	Research Assistant (ASI Division)	
9	Smt. Aswathy Ammal	Statistical Assistant Grade II (ASI Division)	
10	Smt. Neethu S S	Statistical Assistant Grade II (ASI Division)	
11	Statistical Investigators	District Offices	<b>Data collection &amp; data entry</b>
12	Shri. Kiran Surendran	U.D.Typist	<b>Cover page Design</b>
13	Shri. Gopalakrishnan E G	Typist	<b>Layout</b>





## *Executive Summary*

Annual Survey of Industries (ASI) is a comprehensive and detailed survey conducted by the state to collect statistical information about organized manufacturing units in the industrial sector. The primary objective of the survey is to provide reliable and detailed data on the performance and structure of the industrial sector, which is crucial for policy formulation, economic planning and research.



The present report contains data on principal characteristics such as number of factories, invested capital, total Output, total Input, Gross Value Added (GVA), Profit, Gross Capital Formation etc. and information on labour such as employment, man-days worked and emoluments paid to employees etc of organized manufacturing sector in the state and district level for the financial year 2022-23. The report is prepared by combining 662 state sample units (surveyed by DES), 662 central sample units (surveyed by NSO, FOD) and 1242 census sector units.

### **The Key results of the survey are summarized below:**

- ❖ The survey estimated 7624 factories in the organized manufacturing sector of Kerala during the financial year 2022-23. Out of these factories about 89.02% (6787 factories) were operating factories.
- ❖ The district with highest number of factories is Ernakulam (1591) and the least is Wayanad (80). In Ernakulam 86.49 % factories are operational whereas in Wayanad it is 100%.
- ❖ During the fiscal year 2022-23 the factories in rural areas outnumbered those in urban area. Out of 7624 factories, about 50.7% were located in rural area.
- ❖ All the factories in operation together have total fixed capital worth ₹ 56,37,290 lakhs and invested capital of ₹ 83,55,506 lakhs.
- ❖ The coke and refined petroleum products industry stands at the highest invested capital and fixed capital with an estimated value of ₹ 34,24,340 lakhs and ₹ 27,47,021 lakhs respectively. These accounts to about 49.71% and 54.69 % of state's aggregate value respectively.



- ❖ In 2022-23 the total input in organized manufacturing sector increased by 24.32% from 2021-22 (₹ 1,74,84,032 lakhs in 2021-22 and ₹ 2,17,35,672 lakhs in 2022-23). The total output in 2022-23 has also been increased by 25.08% from 2021-22 (₹2,52,59,429 lakhs in 2022-23 and ₹ 2,01,93,873 lakhs in 2021-22)
- ❖ The estimated Gross Fixed Capital Formation (GFCF) of the manufacturing sector of the state in 2022-23 stands at ₹5,45,346 lakhs which is 71% increase from 2021-22 (₹3,18,862 lakhs in 2021-22)
- ❖ The Gross Value Added (GVA) of organized manufacturing sector in the state for the year 2022-23 shows an increase of 30% from 2021-22 (₹ 35,23,757 lakhs in 2022-23 and ₹ 27,09,841 lakhs in 2021-22). Among the districts, the highest GVA estimated from the industries in Ernakulam district (₹22,24,475) is ₹ 6,96,877 lakhs more than the previous year (₹15,27,598 lakhs).
- ❖ In 2022-23, the average number of persons engaged in the factories has been increased by 0.15% from 2021-22 (3,14,316 in 2022-23 and 3,13,841 in 2021-22).
- ❖ In 2022-23, out of 3,14,316 persons engaged 2,43,820 were workers and among these 1,89,589 were directly employed and 54,231 were employed through contractors. Among the directly employed workers in this sector, about 38.07% represent the female workforce (male workers at 1,17,409 and female at 72,180).
- ❖ Among the directly employed workers, women dominated industries were tobacco products manufacturing industries (96.98%) followed by manufacture of wearing apparels (71.72%) and then by manufacture of food products (65.73%)
- ❖ Regarding the industries under the organization type, Non-Government company - Private industry was estimated with highest share of contract workers (40.2%).
- ❖ The estimated wages and salaries of workers increased by 7.6% in 2022-23 from 2021-22 figure (₹ 5,72,620 lakhs in 2022-23 and ₹ 5,32,187 lakhs in 2021-22).





*Figures at a Glance-Kerala*

### **Rates and Ratios**

Estimates of some important rates and ratios as per ASI 2022-23 are given below.

*(Figures for ASI 2021-22 are shown in the bracket)*

#### **Rates**

- Fixed Capital per factory in operation: ₹ 831 lakhs (845 lakhs)
- Average no. of persons engaged per factory in operation: 46 (47)
- Number of workers per factory in operation: 36(36)
- Output per factory in operation: ₹ 3,722 lakhs (2,997 lakhs)
- Gross Value Added (GVA) per factory in operation: ₹ 519 lakhs (402 lakhs)
- Net Value Added(NVA)per factory in operation: ₹ 455 lakhs (338lakhs)
- Output per person engaged: ₹ 80,36,317(64,34,427)
- Gross Value Added (GVA) per person engaged: ₹ 11,21,087 (8,63,443)
- Net Value Added (NVA) per person engaged: ₹ 9,81,713 (7,25,550)
- Wages per worker: ₹ 2,34,854 (2,17,878)

#### **Ratios**

- Fixed Capital to Net Value Added (NVA): 1.83 (2.5)
- Fixed Capital to Output: 0.22(0.28)
- Net Value Added (NVA) to Output: 0.12 (0.11)
- Gross Value Added (GVA) to Fixed Capital: 0.63 (0.48)
- Output to Input: 1.16 (1.15)
- Net Profit to Output: 0.07(0.05)
- Contract Workers to Total Workers: 0.22 (0.19)





<b>Top Industries based on estimates of some important characteristics of the survey</b>					
<b>Rank</b>	<b>Characteristics</b>				
	<b>Total Number of Factories</b>	<b>Fixed Capital</b>	<b>Total Persons engaged</b>	<b>Total Output</b>	<b>Gross Value Added (GVA)</b>
<b>1</b>	Manufacture of food products (21.97%)	Manufacture of coke and refined petroleum products (48.73%)	Manufacture of food products (27.3%)	Manufacture of coke and refined petroleum products (46.6 %)	Manufacture of coke and refined petroleum products (38.1%)
<b>2</b>	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (11.06%)	Manufacture of food products (10.02%)	Manufacture of rubber and plastics products (8.6%)	Manufacture of food product (17.4%)	Manufacture of food products (12.8 %)
<b>3</b>	Manufacture of other non- metallic mineral products (10.03%)	Manufacture of rubber and plastics products (5.3%)	Manufacture of other non- metallic mineral products (6.8%)	Manufacture of chemicals and chemical products (6%)	Manufacture of chemicals and chemical products (9.2%)
<b>4</b>	Manufacture of rubber and plastics products (8.58%)	Manufacture of chemicals and chemical Products (5.1%)	Manufacture of textiles (6 %)	Manufacture of rubber and plastic products (5.7%)	Manufacture of rubber and plastics products (5.15%)
<b>5</b>	Manufacture of textiles (5.5 %)	Manufacture of other non- metallic mineral products(4.29%)	Manufacture of chemicals and chemical products (4.5%)	Manufacture of basic metals (3.6 %)	Manufacture of other non- metallic mineral products (5.08%)
<b>Aggregate Total (all Kerala level)*</b>	<b>7624</b>	<b>5637290</b>	<b>314316</b>	<b>25259429</b>	<b>3523757</b>
<i>*Estimates of Fixed Capital, Output and GVA are in ₹ lakhs</i>					



**Top Districts based on estimates of some important characteristics of the survey**

<b>Rank</b>	<b>Total number of Factories</b>	<b>Fixed Capital</b>	<b>Total Persons engaged</b>	<b>Total Output</b>	<b>Gross Value Added</b>
1	Ernakulam (20.9 %)	Ernakulam (70.44 %)	Ernakulam (29.2 %)	Ernakulam (67.26 %)	Ernakulam (63.13 %)
2	Kollam (12.4%)	Palakkad (4.47%)	Kollam (11.65%)	Palakkad (5.64%)	Alappuzha (6%)
3	Thrissur (11.7%)	Alappuzha (3.82 %)	Alappuzha (10.42 %)	Thrissur (4.96%)	Thrissur (4.78 %)
4	Kannur (8.9 %)	Kottayam (3.75%)	Thrissur (9.09%)	Alappuzha (4.44 %)	Palakkad (4.47 %)
5	Alappuzha (8.1 %)	Thrissur (3.72%)	Palakkad (7.06%)	Kottayam (3.98 %)	Kottayam (4.2%)
<b>Aggregate Total (all Kerala level) *</b>	<b>7624</b>	<b>5637290</b>	<b>314316</b>	<b>25259429</b>	<b>3523757</b>

*\*Estimates of Fixed Capital, Output and GVA are in ₹ lakhs*





## *Contents*

<b>Preface</b>		
<b>Acknowledgments</b>		
<b>Executive Summary</b>		
<b>Figures at a glance-Kerala</b>		
<b>Chapter 1 : Introduction</b>		
<b>1.1</b>	Scope and Coverage	1
<b>1.2</b>	Unit of Enumeration	2
<b>1.3</b>	ASI Frame	3
<b>1.4</b>	Reference Period	3
<b>1.5</b>	Methodology of the survey	3
<b>1.6</b>	Sample Design and Sample Allocation	3
<b>1.7</b>	Estimation Procedure	4
<b>1.8</b>	Schedule of Enquiry	5
<b>1.9</b>	Classification of Industries	5
<b>1.10</b>	Publications and Limitations	5
<b>Chapter 2 : Analysis</b>		
<b>2.1</b>	Manufacturing Sector of Kerala	7
<b>2.2</b>	Kerala's Organized Manufacturing Industries	7
<b>2.3</b>	Labour force and Capital	14
<b>2.4</b>	Gross Value Added (GVA)	42
<b>2.5</b>	Output to Input Ratio	46
<b>2.6</b>	Income and Profit	49



<b>Chapter 3 : Fuel Consumption in organized manufacturing sector</b>		
<b>3.1</b>	Coal	55
<b>3.2</b>	Electricity	58
<b>3.3</b>	Petroleum Products, Gas and Other fuels	62
<b>Chapter 4 : Trend Analysis</b>		
<b>4.1</b>	Factories in operation	69
<b>4.2</b>	Investment Behavior in organized manufacturing sector	70
<b>4.3</b>	Output and Input	73
<b>4.4</b>	Gross Value Added (GVA)	75
<b>4.5</b>	Employment and Wages	75
<b>4.6</b>	Income and Profit	82
<b>4.7</b>	Comparison of Principal characteristics of manufacturing sector	83
<b>4.8</b>	Trends of some structural ratios	86
<b>Chapter 5 : Structural Ratios &amp; Technical Coefficients</b>		
<b>5.1</b>	Structural Ratios	89
<b>5.2</b>	Technical Coefficients	97
<b>Annexures</b>		
<b>Annexure I</b>	Concepts and Definitions	AI.1 - AI.7
<b>Annexure II</b>	ASI Schedule of Enquiry	AII.1 - AII.11
<b>Annexure III</b>	Estimation Procedure	AIII.1 - AIII.8
<b>Annexure IV</b>	Collection of Statistics Act and Rules	AIV.1 – AIV.20
<b>Annexure V</b>	Factories Act 1948	AV
<b>Annexure VI</b>	List of NIC-2008 4-digit Codes covered under ASI	AVI.1 - AVI.9





## *Tables and Figures*

<b>Table/Figures</b>	<b>Title</b>	<b>Page No.</b>
<b>Chapter 2</b>	<b>Analysis</b>	
Table 2.1	District wise distribution of factories, Kerala, 2022-23	9
Table 2.2	Distribution of total number of factories and percentage of factories in operation by NIC (2008)- 2-digit group of industries.	11
Table 2.3	Distribution of employees in the manufacturing industries of Kerala, 2022-23	15
Table 2.4	District wise distribution of employees in the manufacturing industries	15
Table 2.5	District wise distribution of persons engaged in manufacturing industries of rural-urban sector	16
Table 2.6	Distribution of workers by NIC (2008)-2-digit group of industries	17
Table 2.7	Distribution of Directly employed and contract workers by NIC (2008) 2-digit group of industries	19
Table 2.8	District wise distribution of Directly employed and contract workers, Kerala	20
Table 2.9	Sector wise distribution of Directly employed and contract workers	21
Table 2.10	Gender wise distribution of Directly employed workers in manufacturing industries	22
Table 2.11	Gender and sector wise participation of workers in manufacturing industries	24
Table 2.12	Gender wise distribution of Directly employed workers in manufacturing industries by type of organization	24
Table 2.13	Distribution of daily wage of worker in manufacturing industries by NIC (2008) 2-digit group	26
Table 2.14	Distribution of Daily salary of Supervisory and Managerial staff, 2022-23	28
Table 2.15	Distribution of Daily salary of Other employees, 2022-23	30
Table 2.16	District wise Labour Productivity (Output per unit labour) of the manufacturing industries	32
Table 2.17	Labour Productivity of the industries by NIC (2008) 2-digit group	33



<b>Table/Figures</b>	<b>Title</b>	<b>Page No.</b>
Table 2.18	District wise distribution of Invested Capital of manufacturing industries, 2022-23	36
Table 2.19	Distribution of invested capital as per NIC (2008)-2-digit classification of industries	37
Table 2.20	Distribution of invested capital of factory sector by type of organization	38
Table 2.21	District wise Distribution of Gross Fixed Capital Formation (GFCF) of manufacturing industries	39
Table 2.22	Gross Fixed Capital Formation (GFCF) as per NIC (2008)-2-digit group of industries	40
Table 2.23	Distribution of Gross Fixed Capital Formation (GFCF) of manufacturing industries by type of organization	41
Table 2.24	District-wise distribution of factories in operation, GVA and GVA per factory in operation (in ₹ lakhs)	43
Table 2.25	Distribution of GVA across manufacturing industries of Kerala by NIC-2-digit group of industries	45
Table 2.26	District wise distribution of output, input and output to input ratio	47
Table 2.27	Output to Input ratio of factory sector by NIC (2008) -2-digit group of industries	48
Table 2.28	Rural -Urban share of Net income and Profit	49
Table 2.29	District wise distribution of Net income and Profit	49
Table 2.30	Distribution of Net income by NIC (2008)-2-digit group of industries	50
Table 2.31	Distribution of Profit (in ₹ lakhs) by NIC (2008) 2- digit group of industries	52
Table 2.32	Distribution of profit of industries by type of organization	54
Figure 2.1	District wise Percentage of Factories in Organized Manufacturing Sector, 2022-23	8
Figure 2.2	Top Five Districts with highest number of factories	9
Figure 2.3	Top 5 Industries	10
Figure 2.4	Distribution of total number of factories and percentage of factories in operation by NIC (2008) 2-digit group of industries	11
Figure 2.5	Distribution of factories in rural-urban areas of Kerala, 2022-23	13
Figure 2.6	Distribution of persons engaged in organized manufacturing sector, Kerala, 2022-	14
Figure 2.7	District wise distribution of persons engaged in manufacturing industries of rural-urban sector	16
Figure 2.8	Top five industries with highest share of workers	17
Figure 2.9	District wise percentage share of Directly employed and Contract Workers in manufacturing industry	21
Figure 2.10	Percentage of contract workers and directly employed workers in rural & urban industries	22
Figure 2.11	Directly employed Female- Dominated Industries	23



<b>Table/Figures</b>	<b>Title</b>	<b>Page No.</b>
Figure 2.12	Distribution of Daily salary (in ₹) of Supervisory & Managerial Staff by NIC (2008) 2-digit group of industries	28
Figure 2.13	Daily salary (in ₹) of Other employees by NIC (2008)-2 digit group of industries	30
Figure 2.14	District wise Labour Productivity (Output per unit labour) of the manufacturing industries	32
Figure 2.15	District wise share of Invested Capital, 2022-23	35
Figure 2.16	Share of invested capital of industries by NIC (2008)-2digit categorisation	36
Figure 2.17	Invested Capital of industries based on type of organization	38
Figure 2.18	Invested Capital (in ₹ lakhs) in the manufacturing industries in rural-urban Sector	39
Figure 2.19	Distribution of Gross Fixed Capital Formation (GFCF) (in ₹ lakhs) by NIC (2008) 2-digit classification	41
Figure 2.20	Distribution of Gross Fixed Capital Formation (GFCF) (in ₹ lakhs) by type of organisation	42
Figure 2.21	District wise distribution of factories in operation and GVA (in ₹ lakhs)	43
Figure 2.22	Distribution of GVA across manufacturing industries of Kerala by NIC (2008)-2-digit category of industries	44
Figure 2.23	Share of GVA of manufacturing industries in rural and urban areas, 2022-23	46
Figure 2.24	Distribution of GVA across manufacturing industries by type of organization	46
Figure 2.25	District wise Output-Input ratio of manufacturing industries of Kerala, 2022-23	46
Figure 2.26	Output-Input Ratio of Manufacturing industries by NIC-(2008) 2-digit group of industries	47
Figure 2.27	Top three industries with highest share of income	50
Figure 2.28	Share of income generated by industries by type of organization	52
Figure 2.29	Distribution of profit of the industries by NIC (2008)- 2-digit classification	53
Figure 2.30	Distribution of profit of industries by type of organization	54
<b>Chapter 3</b>	<b>Fuel consumption in organized manufacturing sector</b>	
Table 3.1	District wise distribution of Coal consumption	56
Table 3.2	Consumption of Coal (in tons) and its value in NIC 2digit category of industries	57
Table 3.3	District wise consumption of electricity (KWH) in manufacturing industries in Kerala	59
Table 3.4	Consumption (in KWH) and value of electricity purchased in factory sector by NIC (2008) 2-digit category of industries of Kerala	60
Table 3.5	Value of petroleum products, gas & other fuels purchased by factory sector in the districts of Kerala	62



<b>Table/Figures</b>	<b>Title</b>	<b>Page No.</b>
Table 3.6	Value of Consumption of petroleum products, gas & other fuels purchased in factory sector by NIC 2-digit	64
Figure 3.1	Consumption of coal (in tonnes) in manufacturing industries in districts of Kerala	56
Figure 3.2	Consumption of coal (in tonnes) in NIC 2-digit category of industries	57
Figure 3.3	District wise consumption of electricity (KWH) in manufacturing industries in Kerala, 2022-23	59
Figure 3.4	Consumption of electricity purchased in factory sector (in KWH) by NIC (2008) 2-digit category of industries of Kerala	60
Figure 3.5	District wise percentage of value (in ₹ thousand) of consumption of petroleum products	63
Figure 3.6	District wise percentage of value (in ₹ thousand) of consumption of Gas	63
Figure 3.7	District wise percentage of value (in ₹ thousand) of consumption of Other Fuels	64
Figure 3.8	Value of Consumption of petroleum products, gas & other fuels purchased in factory sector by NIC 2-digit	66
<b>Chapter 4</b>	<b>Trend Analysis</b>	
Table 4.1	Total factories and factories in operation from 2017-18 to 2022-23, Kerala	69
Table 4.2	Percentage growth of operational factories, Kerala 2017-18 to 2022-23	70
Table 4.3	Capital invested in manufacturing sector from 2017-18 to 2022-23, Kerala	72
Table 4.4	Percentage growth of capital, Kerala 2017-18 to 2022-23	72
Table 4.5	Gross Fixed Capital Formation (GFCF) in manufacturing sector from 2017-18 to 2022-23 Kerala	73
Table 4.6	Percentage growth of Gross Fixed Capital Formation (GFCF), Kerala 2017-18 to 2022-23 Kerala	73
Table 4.7	Input and Output manufacturing sector from 2017-18 to 2022-23, Kerala	74
Table 4.8	Percentage growth of input and output, 2017-18 to 2022-23, Kerala	74
Table 4.9	Gross Value Added (GVA) manufacturing sector from 2017-18 to 2022-23, Kerala	75
Table 4.10	Percentage growth of Gross Value Added (GVA)2017-18 to 2022-23,Kerala	75
Table 4.11	Number of workers in manufacturing sector from 2017-18 to 2022-23, Kerala	78
Table 4.12	Percentage growth of number of workers, 2017-18 to 2022-23, Kerala	78
Table 4.13	Gender wise number of directly employed workers in manufacturing sector from 2017-18 to 2022-23, Kerala	79
Table 4.14	Gender wise percentage growth of directly employed workers, 2017-18 to 2022-23, Kerala	79



<b>Table/Figures</b>	<b>Title</b>	<b>Page No.</b>
Table 4.15	Wages & Salaries of employees, 2017-18 to 2022-23, Kerala	80
Table 4.16	Growth rate of wages & salaries of employees, 2017-18 to 2022-23, Kerala	80
Table 4.17	Net income (₹ lakhs) in manufacturing sector from 2017-18 to 2022-23, Kerala	83
Table 4.18	Growth rate of Net income in manufacturing sector, 2017-18 to 2022-23, Kerala	83
Table 4.19	Principal characteristics of manufacturing sector during 2022-23 and 2021-22 with percentage of change	84
Table 4.20	Employment and Emoluments of the employees engaged in manufacturing sector during 2022-23 and 2021-22 with percentage of change	85
Table 4.21	Fuel Consumption in manufacturing sector during 2022-23 and 2021-22 with percentage of change	86
Table 4.22	Structural ratios of the indicators from 2017-18 to 2022-23	86
Figure 4.1	Manufacturing - Percentage Sectoral composition of GSV A at current price	69
Figure 4.2	Factories in operation & percentage growth rate over the previous year from 2017-18 to 2022-23	70
Figure 4.3	Physical capital (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23	70
Figure 4.4	Fixed capital (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23	71
Figure 4.5	Invested capital (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23	71
Figure 4.6	Gross Fixed Capital Formation (GFCF) percentage growth rate over the previous years from 2017-18 to 2022-23	72
Figure 4.7	Output (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23 Kerala	73
Figure 4.8	Input (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23 Kerala	74
Figure 4.9	Trend of input and output from 2017-18 to 2022-23	74
Figure 4.10	Gross Value Added (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23	75
Figure 4.11	Number of persons engaged in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23	76
Figure 4.12	Labour Productivity (Output per unit labour in ₹ lakhs), 2017-18 to 2022-23	76
Figure 4.13	Number of workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23	77
Figure 4.14	Number of Directly employed workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23	77



<b>Table/Figures</b>	<b>Title</b>	<b>Page No.</b>
Figure 4.15	Number of contract workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23	78
Figure 4.16	Female participation in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23	79
Figure 4.17	Wages/Salaries of employees in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23	80
Figure 4.18	Wages of workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23	81
Figure 4.19	Wage per worker in manufacturing sector (in ₹ lakhs) from 2017-18 to 2022-23	81
Figure 4.20	Income (in ₹ lakhs) and its growth rate from 2017-18 to 2022-23	82
Figure 4.21	Profit (in ₹ lakhs) and growth rate from 2017-18 to 2022-23	82
Figure 4.22	Trends of structural ratios	87
<b>Chapter 5</b>	<b>Structural Ratios &amp; Technical Coefficients</b>	
Table 5.1	Structural ratios based on estimated characteristics of the state, 2022-23	89
Table 5.2	Structural Ratios- minimum, maximum and average value of all Kerala by Districts, 2022-23	90
Table 5.3	Structural Ratios by District, 2022-23	91
Table 5.4	Structural Ratios- minimum, maximum and average values of all Kerala by NIC (2008) 2 digit	93
Table 5.5	Structural Ratios by NIC (2008) 2-digit group of industries 2022-23	94
Table 5.6	Technical Coefficients based on estimated characteristics of the state, 2022-23	97
Table 5.7	Technical Coefficients by Districts, 2022-23	98
Table 5.8	Technical Coefficients by NIC (2008) 2- digit group of industries, 2022-23	100
Figure 5.1	District wise pattern of structural ratios	92
Figure 5.2	Technical Coefficients based on estimated characteristics of the state, 2022-23	97
Figure 5.3	District wise Pattern of Technical Coefficients	99





## Chapter1: Introduction

### 1.1 Scope and Coverage

**1.1.1** Annual Survey of Industries is the main source of industrial statistics in Kerala. From 2010-11 onwards, the survey is being conducted under the Collection of Statistics Act, 2008 and Rules framed there under in 2011. The Survey is designed to obtain comprehensive and detailed industrial data with the objective of estimating the contribution of registered manufacturing industries as a whole to the State's GDP. It gives a broad view of the structure of the industry in economy, various factors influencing industries in the state etc. which form the bases for formulation of industrial policies.

**1.1.2** Coverage of the Annual Survey of Industries extends to the entire Factory Sector comprising industrial units (called factories) registered under the Sections 2(m) (i) and 2(m)(ii) of the Factories Act, 1948, wherein a 'Factory', which is the primary statistical unit of enumeration for the ASI, is defined as: *'Any premises' including the precincts thereof: -*

(i) *Wherein ten or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power or is ordinarily so carried on, or,*

(ii) *Wherein twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power or is ordinarily so carried on, but does not include a mine subject to the operation of the Mines Act, 1952, or a railway running shed.*

*The 'manufacturing process' referred to above has been defined [vide Section 2(k)] in the Factories Act, 1948 as: 'Any process' for:*

(i) *making, altering, ornamenting, finishing, packing, oiling, washing, cleaning, breaking up, demolishing or otherwise treating or adapting any article or substance with a view to its use, sale, transport, delivery or disposal; or,*

(ii) *pumping oil, water or sewage; or,*

(iii) *generating, transforming or transmitting power; or,*

- (iv) *composing types for printing by letter press, lithography, photogravure or other similar process or book binding; or,*
- (v) *constructing, reconstructing, repairing, refitting, finishing or breaking up ships or vessels; or,*
- (vi) *Preserving or storing any article in cold storage*

**1.1.3** In addition to Sections 2(m)(i) & 2(m)(ii) of the Factories Act, 1948, bidi & cigar units, employing 10 or more workers with the aid of power and 20 or more workers without the aid of power and registered under the Bidi & Cigar Workers (Conditions of Employment) Act, 1966, all the electricity undertakings engaged in generation, transmission and distribution of electricity, not registered with the Central Electricity Authority(CEA) are also covered under ASI.

**1.1.4** Starting from ASI 2014-15, the coverage of ASI has been extended beyond the Section 2m (i) and 2m (ii) of the Factories Act, 1948. To start with, the units with 100 or more employees, not registered under Section 2m(i) and 2m(ii) of the Factories Act, 1948 but registered under any of the seven Acts/Board/Authority viz., Companies Act 1956, Factories Act, 1948, Shops and Commercial Establishment Act, Societies Registration Act, Cooperative Societies Act, Khadi and Village Industries Board, Directorate of Industries (District Industries Centre) in the Business Register of Establishments (BRE) as prepared by the State Government and available with National Accounts Division, Central Statistics Office and verified by Field Operations Division (FOD), NSSO are also considered for selection.

**1.1.5** Although the scope of the ASI was extended to all registered manufacturing establishments in the country, defence establishments, oil storage and distribution depots, restaurants, hotels, cafe and computer services, departmental units such as railway workshops, RTC workshops, Govt. Mints, sanitary, water supply, gas storage units etc. are excluded from the purview of the Survey.

## **1.2. Unit of Enumeration**

1.2.1 The primary unit of enumeration in the survey is a factory in the case of manufacturing industries, a workshop in the case of repair services, an undertaking or a licensee in the case of electricity, gas and water supply undertakings and an establishment in the case of Bidi and Cigar industries. The owner of two or more establishments located in the same state and pertaining to the same industry group, is permitted to furnish a single consolidated return, termed as 'Joint Return'. Such consolidated returns are a common feature in case of some of the factories in ASI.

### **1.3 ASI Frame**

1.3.1 The ASI frame is based on the lists of registered factories / units maintained by the Chief Inspector of Factories (CIF) in the State and those maintained by registration authorities in respect of Bidi and Cigar establishments and electricity undertakings. The frame is being revised and updated periodically by the Regional Offices of the Field Operations Division (FOD) of NSSO in consultation with the Chief Inspector of Factories in each State. At the time of revision, the names of the de-registered factories are removed from the ASI frame and those of the newly registered factories are added. While updating the frame, only newly registered units are added to the existing frame. In spite of regular updating of the frame, quite a number of factories selected for the survey are getting deleted during the survey owing to various reasons like non-existence, de-registration, out of coverage etc.

1.3.2 It is to be noted that apart from the factories in operation, the ASI frame comprises factories which are categorized as 'Existing with fixed assets and maintaining staff but not having production' and 'Existing with fixed assets but not maintaining staff and not having production'.

### **1.4. Reference Period**

1.4.1 Reference period for ASI 2022-2023 was the accounting year of the factory, ending on any day during the financial year 2022-2023. Thus in ASI 2022-23, data collected from establishments relate to their respective *accounting years that ended on any day between 1st April 2022 to 31st March 2023. The survey was conducted in the state in the time period 1st February 2024 to 31st July 2024.*

### **1.5. Methodology of the survey**

1.5.1 In the state the survey is conducted as per the guidelines of Industrial Statistics Wing (IS wing) of Central Statistics Office. The following methodology is adopted by the IS wing for the survey.

### **1.6. Sample Design and Sample Allocation**

1.6.1 As per sampling design adopted in ASI 2022-23, ASI sample comprises two parts - Central Sample and State Sample. The Central Sample consists of two schemes: Census and Sample. Under Census scheme, all the units are surveyed.

#### **1.6.2 Census scheme:**

- a) All industrial units belonging to the seven less industrially developed states/ UT's viz. Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Sikkim, Tripura and Andaman & Nicobar Islands.
- b) For the States/UTs other than those mentioned in (a), Units having 75 or more

employees from Kerala, and All units covered under 'Joint Return' (JR), where JR is allowed when the two or more units located in the same State/UT belonging to the same industry (3-digit level of NIC) under the same management.

- c) After excluding the Census Sector units, as defined in paragraphs (a) and (b) above, the strata are formed at **State x District x Sector x 3digit NIC-2008 level**. Here, 'sector' is very broad economic activity group consisting of manufacturing, electricity generation activity and bidi producing activity. Thus, in short, sectors are (i) Bidi, (ii) Manufacturing and (iii) Electricity. All units belonging to the strata (i.e., formed on the basis of units in State by District by Sector by 3-digit of NIC-2008) having less than or equal to 4 units are completely enumerated and are thus considered as 'census sector' units
- d) **Sample Scheme:**  
All the remaining units in the frame are considered under **Sample Scheme**. For all the states, **strata are formed for each State x District x Sector x 3-digit NIC-2008 factories**. The units in each stratum are arranged in descending order of their number of employees. Samples are drawn as per Circular Systematic Sampling technique. An even number of units with a minimum of 4 units are selected and distributed in four sub-samples. It may be noted that all the 4 sub-samples from a particular stratum may not have equal number of units.
- e) Out of these 4 sub-samples, two pre-assigned sub-samples are given to NSSO (FOD) and the other two-sub samples are given to State/UT for data collection.
- f) The entire census units *plus* all the units belonging to the two sub-samples given to NSSO (FOD) are treated as the **Central Sample**.
- g) The units belonging to the two sub-samples allocated to State/UTs are to be canvassed by the respective States/UTs. Hence, State/UT has to use the data collected by NSSO (FOD) and processed by IS Wing, DPD, and NSSO along with the state sample data while deriving the district level estimates for their respective State/UT.
- h) The entire census scheme units plus all the units belonging to the two sub-samples given to NSSO (FOD) plus all the units belonging to the two sub-samples given to State / UT are required for pooling of Central and State Samples.

## 1.7. Estimation Procedure

1.7.1 The procedures for estimation of the characteristics are shown in Annexure-III.

1.7.2 The results presented in the publication are based on the unit level data of central and state samples. The estimated value figures given in this publication are reported in current prices. The value figures are generally rounded off to lakhs of rupees. All Kerala figures are

rounded off separately and may not tally with the sum of district figures. Similarly, all-Industry figures may not tally with the sum of individual industry figures. Also, the industry-wise totals at lower level may not tally with the next higher level due to merging of industries carried out at different levels.

### **1.8. Schedule of Enquiry**

1.8.1 The schedule for ASI 2022-23 aims to collect data on assets and liabilities, employment and labour cost, receipts, expenses, input items - indigenous and imported, products and by-products, distributive expenses, etc.

A copy of the ASI 2022-23 schedule is given as Annexure-II. The different concepts and definitions used in ASI survey are given in Annexure-I.

### **1.9. Classification of Industries**

1.9.1 From ASI 2008-09, NIC- 2008 has been the base of industry classification. It classifies all the factories in the ASI frame in their appropriate industry groups on the basis of the principal product manufactured. This way a unit gets classified in one and only one industry group even though it might be manufacturing products belonging to different industries. The estimates for different aggregates presented in this report at two- or three-digit level of industry correspond to the NIC-2008 classification.

### **1.10. Publications and Limitations**

1.10.1 The results of ASI 2022-23 are released at 2-digit/3-digit level of NIC-2008 for the State. The list of 2/3-digit level of NIC-2008 codes along with descriptions is given in Annexure VI. This report contains tables related to capitals and value added, employment and labour cost, fuels consumed etc.

1.10.2 The Collection of Statistics Act prohibits disclosure of data relating to individual factories. Therefore, if the number of factories under any industry (2-digit/3-digit level of NIC-2008) in the state is less than three, the data have been combined to a similar industry in order to conceal the identity of all such units belonging to the concerned stratum.

1.10.3 All the estimates, especially for quantity and value figures for any particular item consumed and produced, are subject to Statistical Error as these are estimated on the basis of a selected Sample. The consumptions and productions are not estimated separately for those items for which the number of observations is insufficient. They have been reported under 'others' as the estimates for those items may not be efficient.

1.10.4. As per tabulation policy, it has been decided to report the detailed information corresponding to industry codes 10 to 33 and 58 following NIC-2008. For all other industry codes, the units have been clubbed and shown under a common industry '**Others**' in different tables.

# ASI





## Chapter 2: Analysis

### 2.1 Manufacturing sector of Kerala

Kerala's economy, over the years has experienced significant growth, driven primarily by the service sector. In 2021-22, service sector contributed 63.65% of the state's Gross State Value Added (GSVA) at current prices. While the service sector dominates in terms of share, the manufacturing sector acts as a catalyst in accelerating the state's economic growth by contributing a share of 9.16%. As the whole nation is on the trajectory of technological advancement, manufacturing sector plays a prominent role in economic development. By leveraging industrialization, protecting and encouraging new industrial ventures, reducing the geographical disparities in levels of development and by infrastructural advancement, state can achieve sustainable development in this sector.



### 2.2 Kerala's Organized Manufacturing industries

Registered industries engaged in the production of goods from the organized manufacturing sector of the state. The **Annual Survey of Industries (ASI)** is one of the major industrial surveys conducted every year to assess the growth and economic contribution of this sector. In the survey, the primary unit of enumeration varies by activity: a factory for manufacturing industries, a workshop for repair services, an undertaking or licensee for electricity, gas, and water supply operations, and an establishment for bidi and cigar industries. The statistical data collected through ASI provides valuable insights into the composition and structure of the organized manufacturing sector.

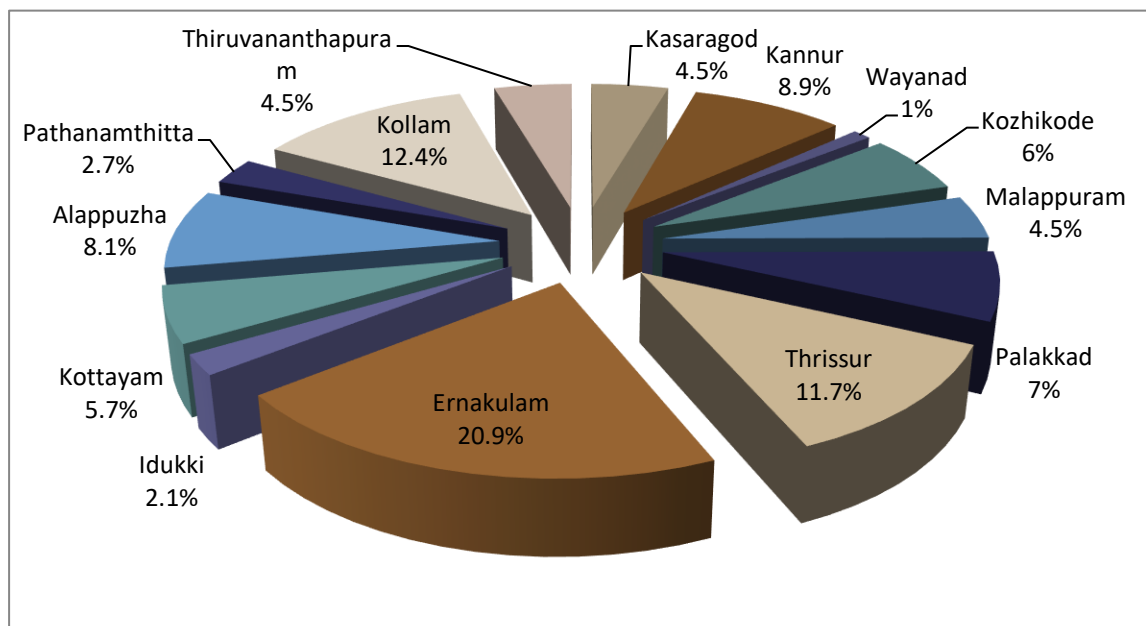


From an economic perspective, the four major factors of production are land, labour, capital, and entrepreneurship. A manufacturing firm relies on land, the labour of its employees, capital equipment, and entrepreneurial services to process raw materials. The value added in production is the outcome of these combined inputs. In this survey, value addition is estimated using the production approach. Information on various transactions of manufacturing units—such as sales, cash transactions, stock of cash and goods, and employee emoluments—forms the primary source of data. The survey thus captures key characteristics of the organized manufacturing sector, enabling policy makers to reassess existing industrial policies and evaluate their impact on the economy in terms of prices, inputs, outputs, value addition, and employment. This, in turn, supports continuous monitoring of policy effectiveness

This chapter outlines the findings of Annual Survey of Industries 2022-23 which gives a critical insight into industrial productivity, resource utilization, sectoral performance, regional variation and other parameters estimated from the survey. The region wise industrial disparity also gives us deep insight on how the geographical structure, access to raw materials, transportation, labour supply, etc. are influencing the factors of industrial development.

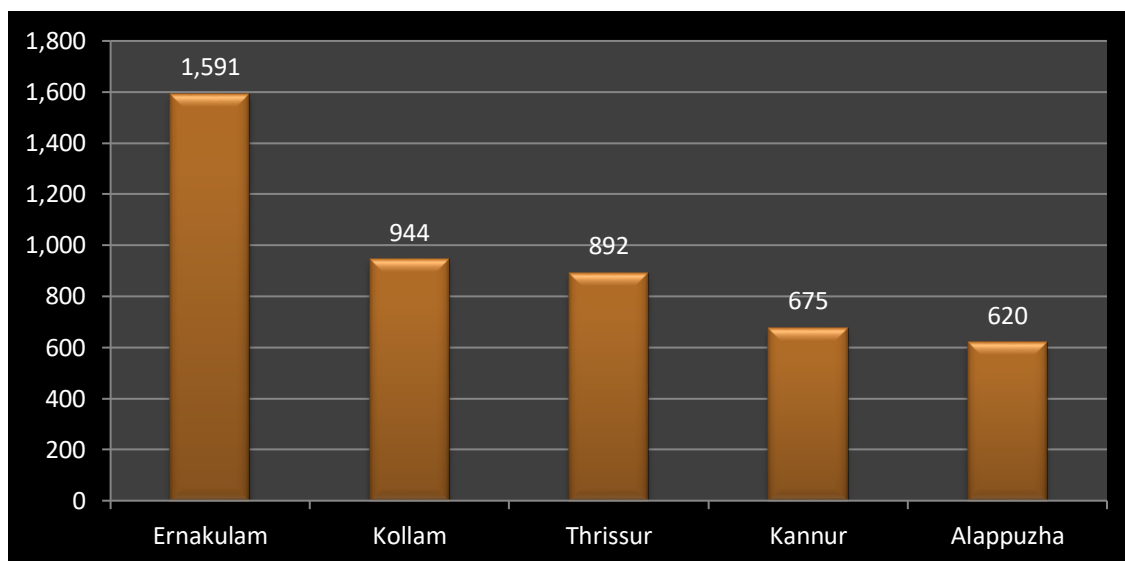
The survey estimated 7624 factories with 6787 operating factories in the fiscal year 2022-23. The top district in terms of percentage share of aggregate number of factories is Ernakulam which accounts to about 20.9% (1591) whereas Wayanad had the minimum with a share of 1.0 % (80).

**Figure 2.1: District wise Percentage of Factories in Organized Manufacturing Sector, 2022-23**



Top five districts with highest number of factories were Ernakulam (1536), Kollam (969), Thrissur (912), Kannur (732) and Alappuzha (644).

**Figure 2.2: Top Five Districts with highest number of factories**

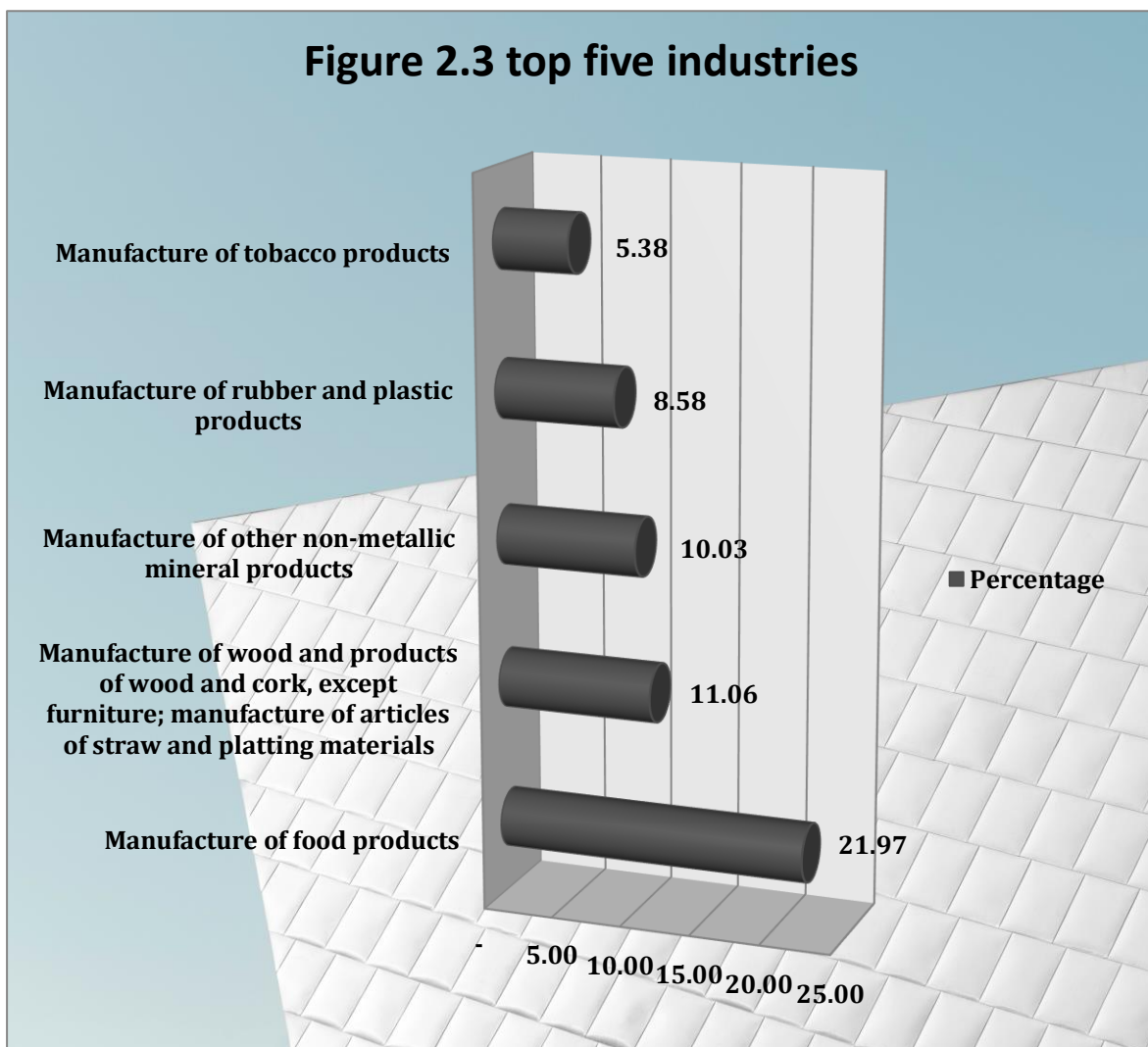


**Table 2.1 District wise distribution of factories, Kerala, 2022-23**

District	No. of Factories (Nos.)	Percentage
Kasaragod	340	4.5
Kannur	675	8.9
Wayanad	80	1.0
Kozhikode	461	6.0
Malappuram	342	4.5
Palakkad	532	7.0
Thrissur	892	11.7
Ernakulam	1,591	20.9
Idukki	159	2.1
Kottayam	437	5.7
Alappuzha	620	8.1
Pathanamthitta	209	2.7
Kollam	944	12.4
Thiruvananthapuram	342	4.5
Kerala	7,624	100.0

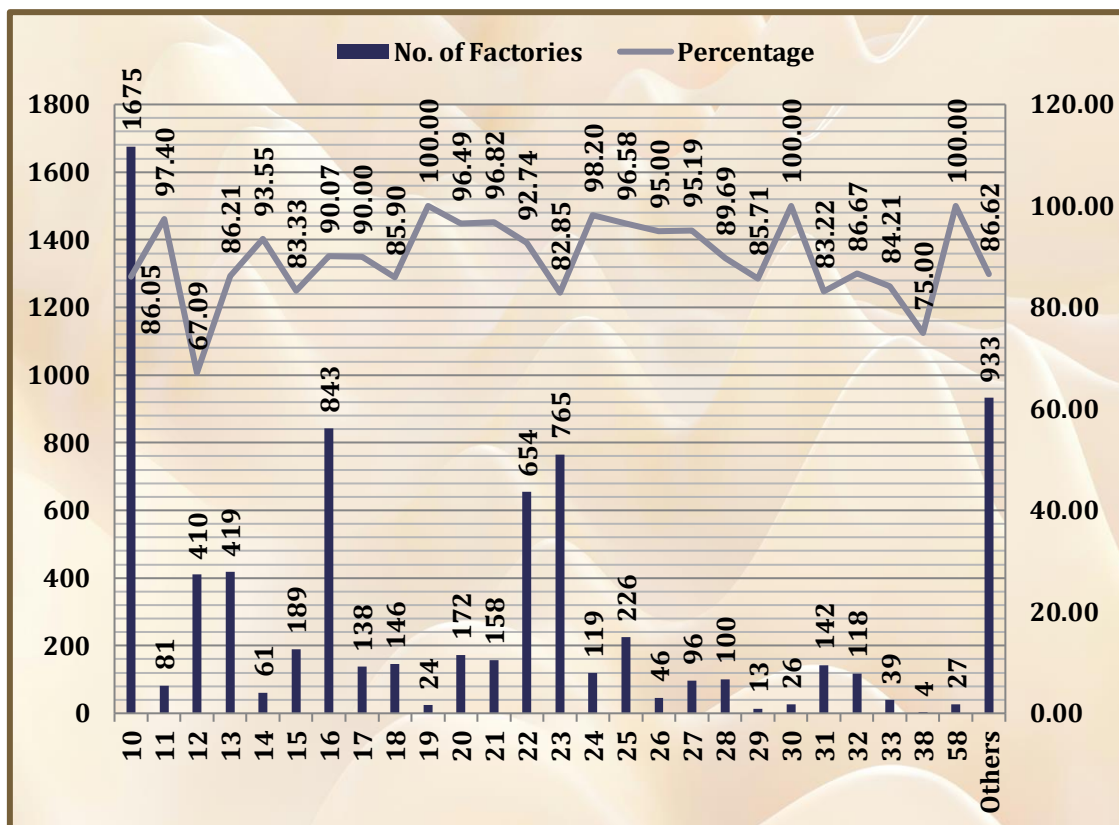
Activities pursued by various establishments were categorized using National Industrial Classification (NIC-2008) and the survey also estimates the characteristic based on this classification. Out of the different categories of industries in terms of NIC(2008) 2-digit codes under the coverage of the survey, the highest estimated number of factories is attributed to the manufacturing of food products (21.97 % of the aggregate) and the

least in the category of Waste collection, treatment and disposal activities; materials recovery (0.05 % of the aggregate and 4 in number). The major top five industries with maximum number of factories were Food Products (21.97 %), Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials (11.06 %), other non-metallic mineral products (10.03 %), Rubber and plastic products (8.58 %) and Tobacco products (5.38%). These industries together contribute 57.02 % of the estimated number of factories in the state. The distribution of factories based on the economic activity is presented below (*Figure 2.3*).



Considering the operational status of factories, about 89.02% of factories were in operation. Among the various groups of industries (NIC 2-digit classification), the food products manufacturing industry which had the highest number of factories had 88.78% in operation (*refer Table 2.2, Figure 2.4*).

**Figure 2.4: Distribution of total number of factories and percentage of factories in operation by NIC (2008) 2-digit group of industries**



**Table 2.2: Distribution of total number of factories and percentage of factories in operation by NIC (2008) 2-digit group of industries**

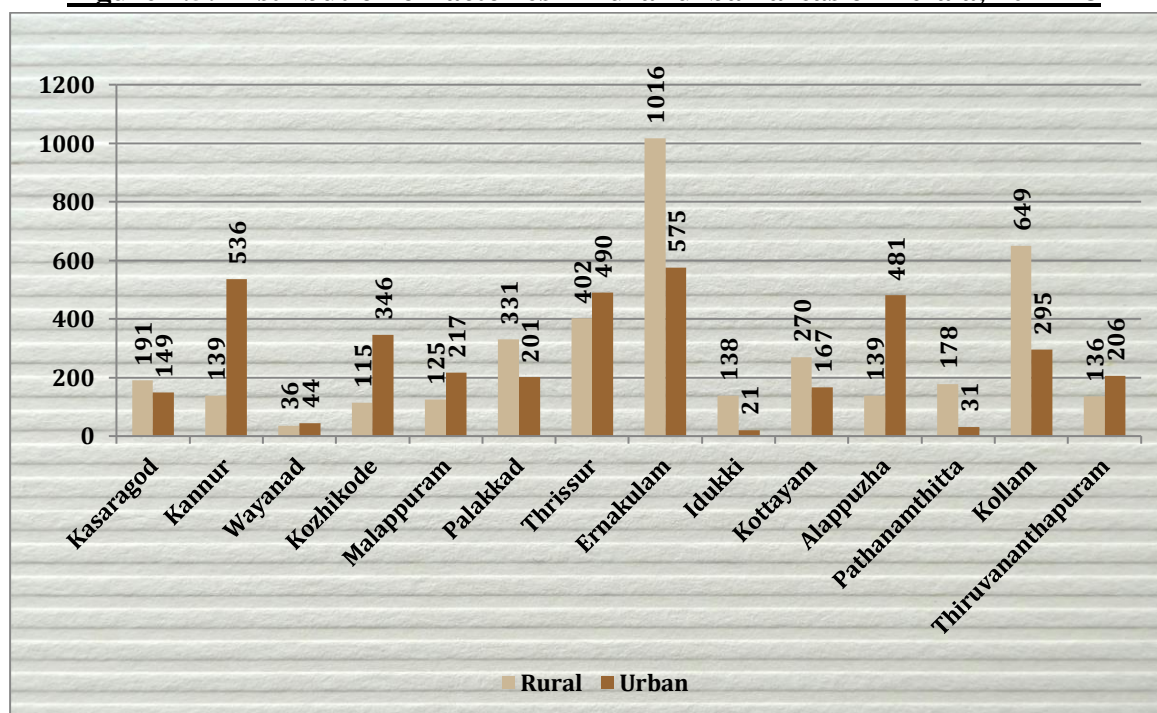
NIC 2-digit	Description	No. of Factories	Factories in Operation (Nos.)	Percentage
10	Manufacture of food products	1,675	1,487	88.78
11	Manufacture of beverages	81	78	96.30
12	Manufacture of tobacco products	410	292	71.22
13	Manufacture of textiles	419	369	88.07
14	Manufacture of wearing apparel	61	61	100.00
15	Manufacture of leather and related products	189	149	78.84
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	843	745	88.37

<b>NIC 2-digit</b>	<b>Description</b>	<b>No. of Factories</b>	<b>Factories in Operation (Nos.)</b>	<b>Percentage</b>
17	Manufacture of paper and paper products	138	132	95.65
18	Printing and reproduction of recorded media	146	135	92.47
19	Manufacture of coke and refined petroleum products	24	22	91.67
20	Manufacture of chemicals and chemical products	172	172	100.00
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	158	156	98.73
22	Manufacture of rubber and plastic products	654	609	93.12
23	Manufacture of other non-metallic mineral products	765	671	87.71
24	Manufacture of basic metals	119	118	99.16
25	Manufacture of fabricated metal products, except machinery and equipment	226	201	88.94
26	Manufacture of computer, electronic and optical products	46	46	100.00
27	Manufacture of electrical equipment	96	94	97.92
28	Manufacture of machinery and equipment n.e.c	100	97	97.00
29	Manufacture of motor vehicles, trailers and semitrailers	13	11	84.62
30	Manufacture of other transport equipment	26	26	100.00
31	Manufacture of furniture	142	134	94.37
32	Other manufacturing	118	107	90.68
33	Repair and installation of machinery and equipment	39	33	84.62
38	Waste collection, treatment and disposal activities; materials recovery	4	4	100.00
58	Publishing activities	27	26	96.30
	Others	933	812	87.03
	Total	7,624	6,787	89.02



The movement of manufacturing towards rural areas i.e., rural industrialization is a major factor leading to rural development resulting in increase of rural income. The results reveal that the manufacturing factories located in rural areas outnumbered those in urban areas. Out of the total estimated factories, 3865 (50.7%) were in rural areas, while 3759 (49.3%) were in urban areas. The top five districts viz; Ernakulam (20.87%), Kollam (12.38%), Thrissur (11.7%), Kannur (8.85%) and Alappuzha (8.83%) with highest number of factories together account to 61.93 % of the state aggregate and out of the total 4722 factories in these districts 2377 (50.3%) were in urban areas and 2345 (49.7 %) were in rural areas. It is noticeable that Ernakulam district, the major industrial hub of Kerala had about 63.8% of factories situated in rural areas (1016 in rural as against 575 in urban) and remaining 36.2% in urban areas. Examining the district wise industries in rural-urban sectors the data shows that in 7 districts the number of factories in the rural areas outnumbered the urban areas (*see Figure 2.5*).

**Figure 2.5: Distribution of factories in rural-urban areas of Kerala, 2022-23**



## 2.3 Labour force and Capital

Labour force and capital are the essential economic resources available for the production of goods and services. The efficient utilization of these resources plays a significant role in increasing the output and thereby accelerating the development of the manufacturing sector. The detailed analysis of the results of the survey on labour and capital is illustrated in the following sections.

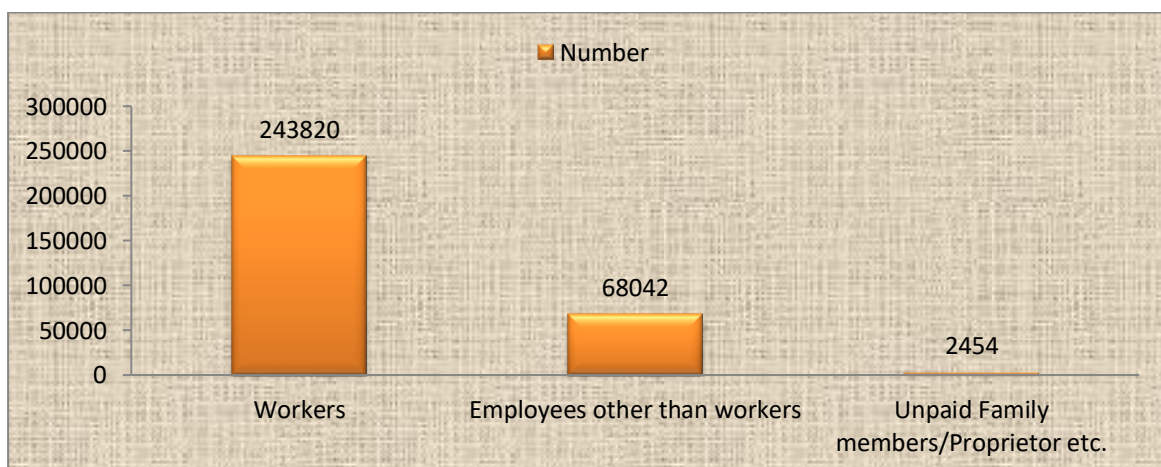


### 2.3.1 Labour/Employment

As per human capital theory businesses should invest in their employees the same way they invest in their equipment and supplies. So analyzing the trends in employment and wages is imperative since it is serious concern affecting the economy of the state. Introspecting the estimates of the survey 6787 registered operating factories have provided employment to 314316 persons and distributed ₹ 11,75,640 lakhs as emoluments to employees. Among these employees 45.86 % (144148) were working in industries in rural area and the remaining 54.14 % (170168) in urban area.

The persons engaged in the industries are classified as (1) Workers (2) Employees other than workers and (3) Unpaid Family members/Proprietor. In the above categories as per the definition “Worker includes all persons employed directly informally or formally or through contractor on payment of wages or salaries and engaged in any manufacturing process or its ancillary activities like cleaning any part of the machinery or any premises used for manufacturing or storing materials or any kind of work incidental to or connected with the manufacturing process”.

**Figure 2.6: Distribution of persons engaged in organized manufacturing sector**



Out of the total manpower in the factories 77.57 % (243820 nos.) were workers whereas 21.65 % and 0.78% were employees other than workers and Unpaid Family members/Proprietor respectively.

**Table 2.3: Distribution of employees in the manufacturing industries of Kerala 2022-23**

Sl.No	Characteristic	Number	Percentage
1	Workers	243820	77.57
2	Employees other than workers	68042	21.65
3	Unpaid Family members/Proprietor etc.	2454	0.78
<b>Average Number of Persons Engaged</b>		314316	100.00

The survey also categorizes workers as Directly employed and Employed through Contractors. Among the workers 77.76 % are directly employed and top five districts with highest proportion of directly employed workers were estimated in Kollam (99.55 %), Idukki (95.21 %), Pathanamthitta (94.39 %), Malappuram (92.97 %) and Kannur (92.47 %).

**Table 2.4: District wise distribution of employees in the manufacturing industries**

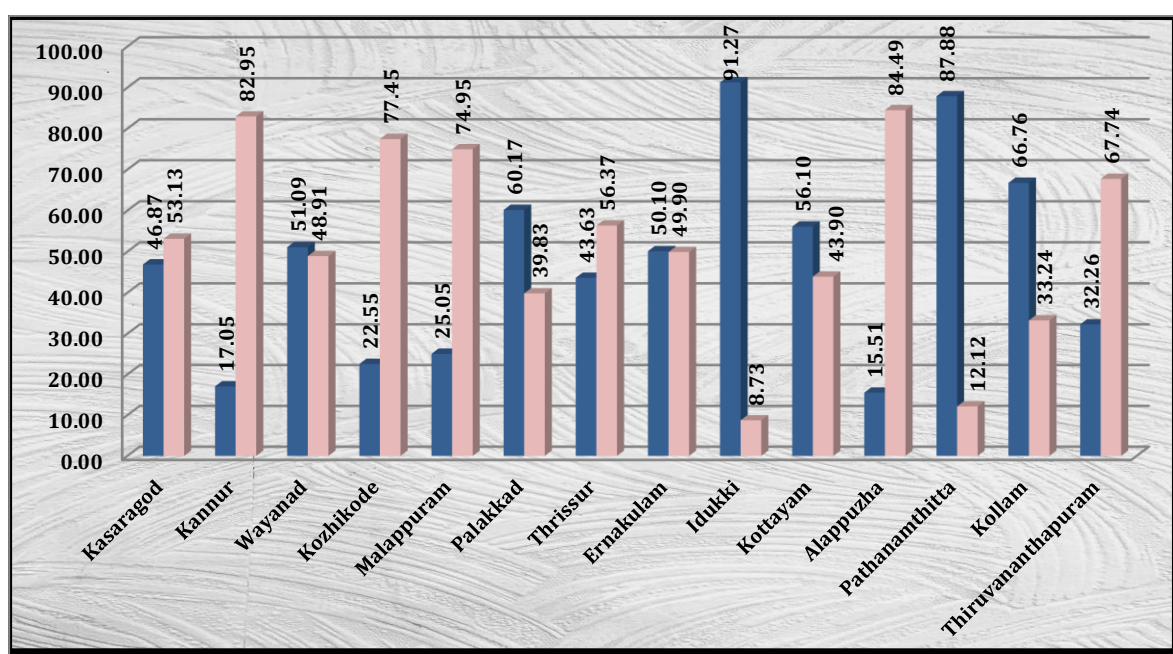
Districts	Average no. of Persons Engaged	Percentage
Kasargod	7732	2.46
Kannur	13689	4.36
Wayanad	2613	0.83
Kozhikode	15706	5.00
Malappuram	10504	3.34
Palakkad	22197	7.06
Thrissur	28560	9.09
Ernakulam	91773	29.20
Idukki	6702	2.13
Kottayam	19705	6.27
Alappuzha	32743	10.42
Pathanamthitta	6979	2.22
Kollam	36606	11.65
Thiruvananthapuram	18807	5.98
Kerala	314316	100.00

Among the 14 districts top three districts with industries providing gainful employment were Ernakulam (29.2 %) Kollam (11.65 %) and Alappuzha (10.42 %) and these constitutes a combined share of 51.27% of total employment. And these districts together share 45.86% of employment in rural industries and 54.14 % of employment in urban industries. Ernakulam district with highest share of employment had 50.1% (45979) and 49.9% (45794) rural and urban employment respectively whereas Wayanad the least industrialized district with a share of 51.1 % (1335) of employment in rural industries and 48.9% (1278) in urban industries.

**Table 2.5: District wise distribution of persons engaged in manufacturing industries of rural-urban sector**

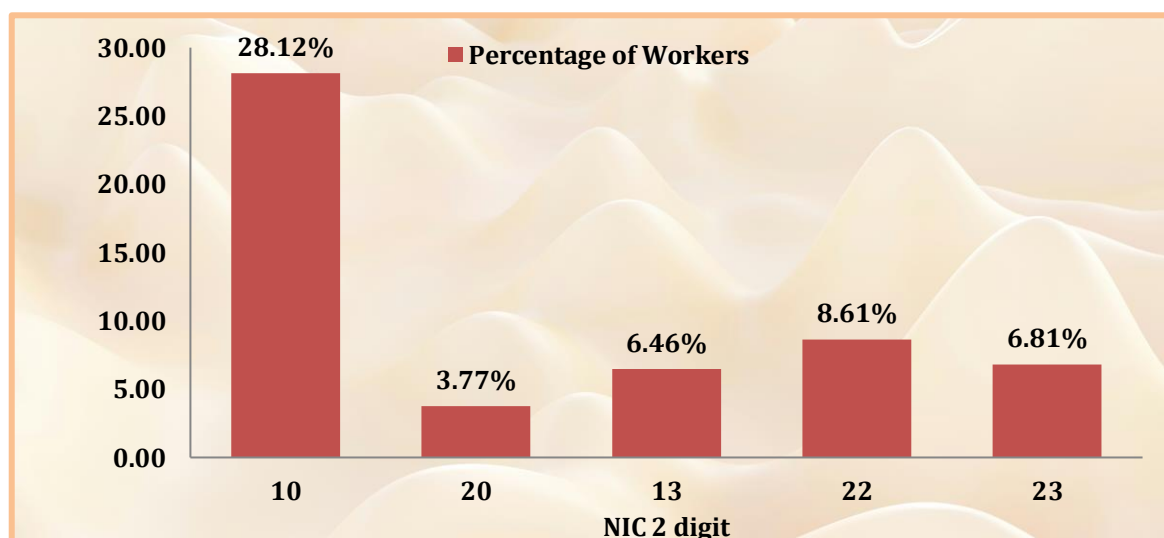
District	Rural	Urban	Total
Kasaragod	3624	4108	7732
Kannur	2334	11355	13689
Wayanad	1335	1278	2613
Kozhikode	3542	12164	15706
Malappuram	2631	7873	10504
Palakkad	13356	8841	22197
Thrissur	12460	16100	28560
Ernakulam	45979	45794	91773
Idukki	6117	585	6702
Kottayam	11054	8651	19705
Alappuzha	5078	27665	32743
Pathanamthitta	6133	846	6979
Kollam	24438	12168	36606
Thiruvananthapuram	6067	12740	18807
Kerala	144148	170168	314316

**Figure 2.7: District wise distribution of persons engaged in manufacturing industries of rural-urban sector**



On examining the workforce in industries involved in various economic activities the Food products manufacturing industry employed the maximum number of workers with an estimate of 68569 workers (28.12% of the state aggregate). The major five employment providing industries were Food products (28.12%) Rubber and plastic products (8.61%) Other non-metallic mineral products (6.81%) Textiles (6.46%) and Manufacture of chemicals and chemical products (3.77%) (see Figure 2.8).

**Figure 2.8: Top five industries with highest share of workers**



**Table 2.6: Distribution of workers by NIC (2008) 2-digit group of industries**

NIC 2-digit	Description	No. of workers	Percentage
10	Manufacture of food products	68569	28.12
11	Manufacture of beverages	2636	1.08
12	Manufacture of tobacco products	6510	2.67
13	Manufacture of textiles	15762	6.46
14	Manufacture of wearing apparel	8960	3.67
15	Manufacture of leather and related products	6312	2.59
16	Manufacture of wood and products of wood and cork except furniture; manufacture of articles of straw and plating materials	9124	3.74
17	Manufacture of paper and paper products	2790	1.14
18	Printing and reproduction of recorded media	3743	1.54
19	Manufacture of coke and refined petroleum products	3614	1.48
20	Manufacture of chemicals and chemical products	9187	3.77

21	Manufacture of pharmaceuticals medicinal chemical and botanical products	5341	2.19
22	Manufacture of rubber and plastic products	21002	8.61
23	Manufacture of other non-metallic mineral products	16606	6.81
24	Manufacture of basic metals	5397	2.21
25	Manufacture of fabricated metal products except machinery and equipment	4281	1.76
26	Manufacture of computer electronic and optical products	8131	3.33
27	Manufacture of electrical equipment	5217	2.14
28	Manufacture of machinery and equipment n.e.c	3267	1.34
29	Manufacture of motor vehicles trailers and semitrailers	713	0.29
30	Manufacture of other transport equipment	6416	2.63
31	Manufacture of furniture	2596	1.06
32	Other manufacturing	7674	3.15
33	Repair and installation of machinery and equipment	577	0.24
38	Waste collection treatment and disposal activities; materials recovery	66	0.03
58	Publishing activities	833	0.34
	Others	18496	7.59
	<b>Total</b>	243820	100

The survey also estimates the number of contract workers in various manufacturing industries. As per the result out of 243820 workers employed 189589 were directly employed by the factories and 54231 were hired as ‘contract workers’. The number of contract workers varies widely across different industries with varied economic activities. The top two industries with highest share of contract workers were Waste collection treatment and disposal activities; materials recovery industry (74.24%) and manufacture of other transport equipment (70.39%). The top two industries with highest share of directly employed workers were Manufacture of wearing apparel (99.74%) and Manufacture of motor vehicles trailers and semitrailers (99.44%). The other industries with larger proportion of directly employed workers include Manufacture of leather and

related products (99.30%), Printing and reproduction of recorded media (93.53%), Manufacture of furniture (91.87%) and Publishing activities (90.88%) (See Table 2.7)

**Table 2.7: Distribution of Directly employed and Contract workers by NIC (2008) 2-digit group of industries**

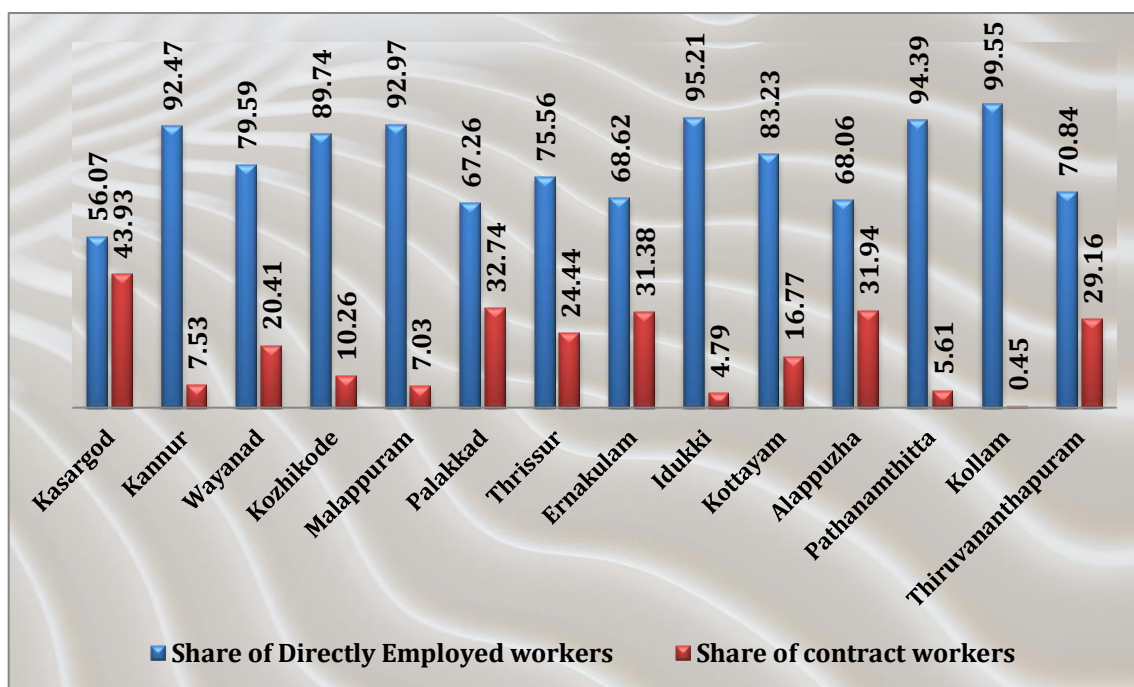
NIC (2 Digit)	Description	Share of contract workers	Share of Directly employed workers
10	Manufacture of food products	16.04	83.96
11	Manufacture of beverages	50.53	49.47
12	Manufacture of tobacco products	44.98	55.02
13	Manufacture of textiles	25.73	74.27
14	Manufacture of wearing apparel	0.26	99.74
15	Manufacture of leather and related products	0.70	99.30
16	Manufacture of wood and products of wood and cork except furniture; manufacture of articles of straw and plating materials	23.19	76.81
17	Manufacture of paper and paper products	18.32	81.68
18	Printing and reproduction of recorded media	6.47	93.53
19	Manufacture of coke and refined petroleum products	66.16	33.84
20	Manufacture of chemicals and chemical products	22.38	77.62
21	Manufacture of pharmaceuticals medicinal chemical and botanical products	24.27	75.73
22	Manufacture of rubber and plastic products	22.25	77.75
23	Manufacture of other non-metallic mineral products	18.32	81.68
24	Manufacture of basic metals	49.60	50.40
25	Manufacture of fabricated metal products except machinery and equipment	33.01	66.99
26	Manufacture of computer electronic and optical products	50.87	49.13
27	Manufacture of electrical equipment	53.13	46.87
28	Manufacture of machinery and equipment n.e.c	23.32	76.68
29	Manufacture of motor vehicles trailers and semitrailers	0.56	99.44
30	Manufacture of other transport equipment	70.39	29.61
31	Manufacture of furniture	8.13	91.87
32	Other manufacturing	14.11	85.89
33	Repair and installation of machinery and equipment	33.45	66.55
38	Waste collection treatment and disposal activities; materials recovery	74.24	25.76
58	Publishing activities	9.12	90.88
	Others	3.41	96.59
	Total	22.24	77.76

Analyzing the composition of the industrial workforce across the districts in 2022-23 Kasargod leads in terms of hiring of contract workers 43.93% whereas Kollam had just 0.45%. Ernakulam the most industrialized district reported 31.38% contract workers whereas Wayanad the least industrialized district of the state reported 20.41% contract workers in the manufacturing sector (*Table 2.8 and Fig 2.10*).

**Table 2.8: District wise distribution of Directly employed and contract workers**  
**Kerala**

District	Directly Employed	Employed through Contractors	Total Workers	Share of Directly Employed workers	Share of contract workers
Kasargod	3893	3050	6943	56.07	43.93
Kannur	10113	823	10936	92.47	7.53
Wayanad	1646	422	2068	79.59	20.41
Kozhikode	10115	1157	11272	89.74	10.26
Malappuram	7312	553	7865	92.97	7.03
Palakkad	11035	5372	16407	67.26	32.74
Thrissur	17186	5559	22745	75.56	24.44
Ernakulam	46709	21361	68070	68.62	31.38
Idukki	4096	206	4302	95.21	4.79
Kottayam	11173	2251	13424	83.23	16.77
Alappuzha	18718	8786	27504	68.06	31.94
Pathanamthitta	5397	321	5718	94.39	5.61
Kollam	31930	145	32075	99.55	0.45
Thiruvananthapuram	10266	4225	14491	70.84	29.16
<b>Kerala</b>	<b>189589</b>	<b>54231</b>	<b>243820</b>	<b>77.76</b>	<b>22.24</b>

**Figure 2.9: District wise Percentage share of Directly employed and Contract Workers in manufacturing industry**

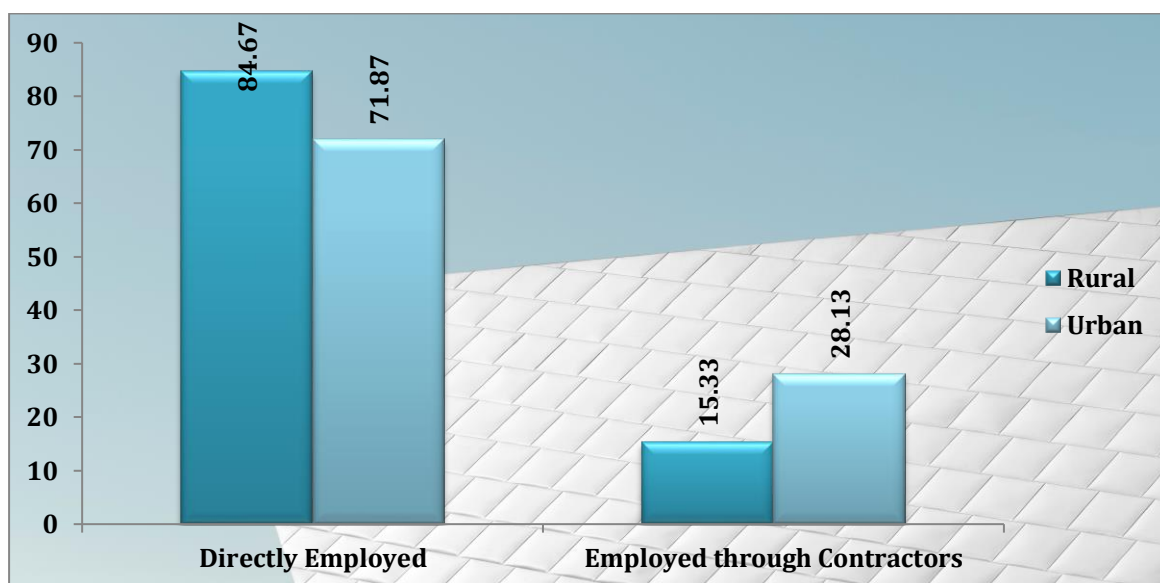


Considering the employment in rural and urban industries during fiscal year 2022-23 the share of directly employed workers in rural industries was 84.67% whereas that of urban industries was 71.87%. The share of contract workers in urban industries was 28.13% whereas that of rural industries was 15.33%. Results of the survey also shows that factories located in urban areas are likely to have a higher share of contract workers than their rural counterpart.

**Table 2.9: Sector wise distribution of Directly employed and Contract workers**

Employees	Rural	Urban	Total
Directly Employed	94986	94603	189589
Employed through Contractors	17198	37033	54231
<b>Total Workers</b>	<b>112184</b>	<b>131636</b>	<b>243820</b>

**Figure 2.10: Percentage of Contract workers and Directly employed workers in Rural and Urban industries**



### 2.3.2. Status of Women in manufacturing sector

Among directly employed workers *women* constitute approximately 38.07% (72180) of the total work force in 2022-23. This share shows a decline when compared to previous year figure which was 40.90%. It was also revealed that in Tobacco Products manufacturing industries, the directly employed women representation stands at a striking figure of 96.98%. And the other women work force dominated industries were Wearing apparels (71.72%) and Food products (65.73 %). Also, an absolute zero representation of women was found in the industries involved in Waste collection, treatment and disposal activities; materials recovery.

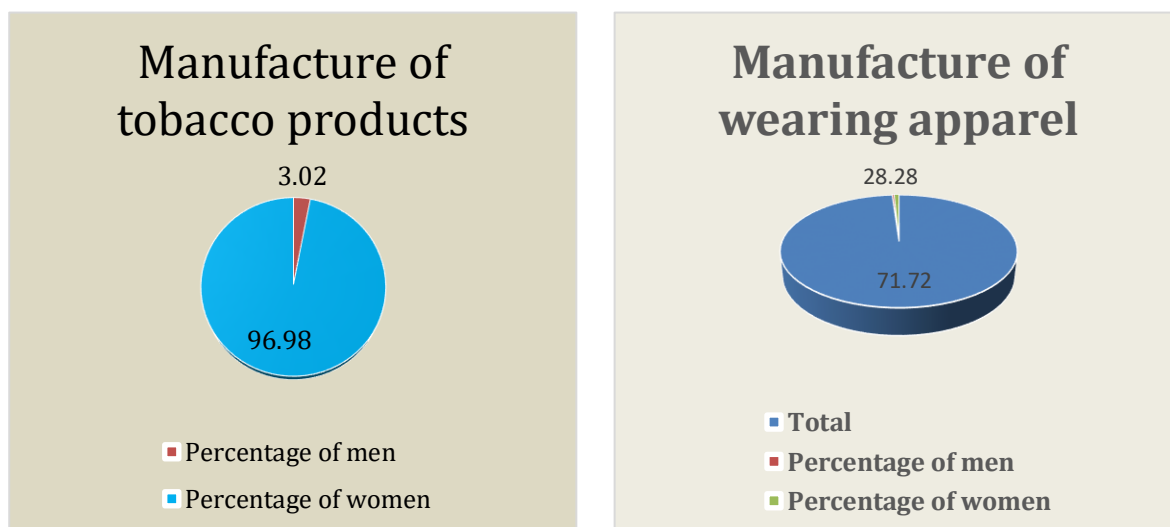


**Table 2.10: Gender wise distribution of Directly employed workers in manufacturing industries by NIC (2008) 2-digit group of industries**

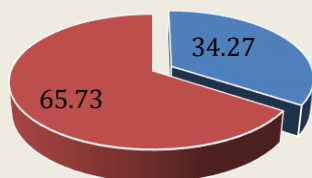
NIC (2 digit)	Description	Directly Employed			
		Men	Women	Total	Percentage of women
10	Manufacture of food products	19728	37843	57571	65.73
11	Manufacture of beverages	641	663	1304	50.84
12	Manufacture of tobacco products	108	3474	3582	96.98
13	Manufacture of textiles	7112	4594	11706	39.24
14	Manufacture of wearing apparel	2527	6410	8937	71.72
15	Manufacture of leather and related products	5171	1097	6268	17.50
16	Manufacture of wood and products of wood and cork except furniture; manufacture of articles of straw and plaiting materials	5909	1099	7008	15.68

17	Manufacture of paper and paper products	1495	784	2279	34.40
18	Printing and reproduction of recorded media	2772	729	3501	20.82
19	Manufacture of coke and refined petroleum products	1217	6	1223	0.49
20	Manufacture of chemicals and chemical products	6306	825	7131	11.57
21	Manufacture of pharmaceuticals medicinal chemical and botanical products	2334	1711	4045	42.30
22	Manufacture of rubber and plastic products	13612	2718	16330	16.64
23	Manufacture of other non-metallic mineral products	11856	1707	13563	12.59
24	Manufacture of basic metals	2611	109	2720	4.01
25	Manufacture of fabricated metal products except machinery and equipment	2371	497	2868	17.33
26	Manufacture of computer electronic and optical products	2652	1343	3995	33.62
27	Manufacture of electrical equipment	1679	766	2445	31.33
28	Manufacture of machinery and equipment n.e.c	2281	224	2505	8.94
29	Manufacture of motor vehicles trailers and semitrailers	476	233	709	32.86
30	Manufacture of other transport equipment	1754	146	1900	7.68
31	Manufacture of furniture	1951	434	2385	18.20
32	Other manufacturing	3285	3306	6591	50.16
33	Repair and installation of machinery and equipment	381	3	384	0.78
38	Waste collection treatment and disposal activities; materials recovery	17	0	17	0.00
58	Publishing activities	706	51	757	6.74
	Others	16457	1408	17865	7.88
	<b>Total</b>	117409	72180	189589	38.07

**Figure 2.11: Directly employed Female- Dominated Industries**

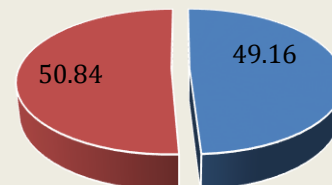


### Manufacture of food products



■ Percentage of men  
■ Percentage of women

### Manufacture of beverages



■ Percentage of men  
■ Percentage of women

Rural-Urban sector wise estimates shows that among 94986 directly employed workers in rural industries about 43.77 % were women whereas out of 94603 workers in urban industries 32.35 % were women. This shows that women representation is comparatively higher in industries in rural area (*see Table 2.11*).

**Table 2.11: Gender and Sector wise Participation of Workers in Manufacturing Industries**

Directly Employed Workers	Rural	Urban	Total
Men	53407 (56.23%)	64002 (67.65%)	117409 (61.93%)
Women	41579 (43.77%)	30601 (32.35%)	72180 (38.07%)
Total	94986	94603	189589

The estimate based on industry classification by Type of organization indicates that among directly employed workers, women accounted for about 63.40% in industries managed by individual proprietorship and 59% in co-operative societies. In contrast industries under remaining type of organization were pre-dominantly male dominated. (*refer Table 2.12* ).

**Table 2.12: Gender wise distribution of Directly employed workers in manufacturing industries by type of organization**

Type of Organization	Directly Employed Workers			
	Men	Women	Total	Percentage of women
Individual Proprietorship	12573	21782	34355	63.40
Partnership	21769	13956	35725	39.07

<b>Limited Liability Partnership</b>	2875	957	3832	24.97
<b>Government Company – Public</b>	6712	1172	7884	14.87
<b>Government Company – Private</b>	4685	476	5161	9.22
<b>Non-Government Company – Public</b>	12314	7881	20195	39.02
<b>Non-Government Company – Private</b>	50364	18364	68728	26.72
<b>Co-operative Society</b>	4321	6219	10540	59.00
<b>Others</b>	1796	1373	3169	43.33
<b>Total</b>	117409	72180	189589	38.07

### 2.3.3 Wages/Salary Structure

In economic concept “Efficiency Wage Theory (EWT) theorizes that higher wages can lead to increased productivity and efficiency among the workers”. The wages of the employees are a significant factor that is linked with labour productivity. An attempt has been made in this respect to analyze the daily wage and labour productivity.

As per ASI survey the wage is defined to “include all remuneration capable of being expressed in monetary terms and also paid more or less regularly in each pay period to workers as compensation for work done during the accounting year”. It includes direct wages and salary, payment of overtime, dearness, compensatory, house rent and other allowances; remuneration for period not worked (i.e. basic wages) salaries and allowances payable for leave period, paid holidays, lay-off and compensation for unemployment (if not paid from source other than employers); Bonus and ex-gratia payment paid more or less regularly.

The technological advancement in the industries might have created a severe impact on the wage distribution in industries involved in varied economic activities. The survey estimates the wage/salary structure of the employees in different categories.

The estimated wages and salaries including bonus and employer’s contribution of 314316 persons



engaged in factories during fiscal year 2022-23 accounts to ₹ 11,75,640 lakhs and out of the total emoluments, 40.96% (₹ 4,81,568 lakhs) was earned by employees in the rural industries and 59.04% by those in urban industries (₹ 6,94,072 lakhs).

Taking in to account the wages and salaries of different categories of employees, the estimated wage per worker in manufacturing industries during report year was ₹ 2.35 lakhs whereas the salary per Supervisory & Managerial Staff was ₹ 8.83 lakhs and that of other employees, ₹ 3.46 lakhs. On monthly basis the wage for each category of employees turns out to be ₹ 19,571, ₹ 73,565 and ₹ 28,796 respectively. Also, if on an average of 30 days is considered per month, a worker in state's organized manufacturing sector earned ₹ 653 as daily wage in 2022-23. On the other hand, those working as Supervisors & Managerial Staff, earned ₹ 2,258 per day and other employees earned ₹ 960 per day.

Among all the workers in various categories of industries the highest daily wage was earned by the worker employed in Coke and Refined Petroleum Products industry with an estimated value of ₹ 1,908 followed by industries such as Chemicals and Chemical products, Publishing activities with an estimated daily wage of ₹ 1,444 and ₹ 1,178 respectively.

It may also be observed that the least daily wage was earned by workers engaged in Tobacco products manufacturing industry (₹ 211) which is followed by industry involved in the manufacture of Wearing Apparel (₹ 403) and manufacture of Wood and Products of Wood and Cork, except furniture; manufacture of articles of straw and plating materials (₹ 411) (Refer Table 2.13).

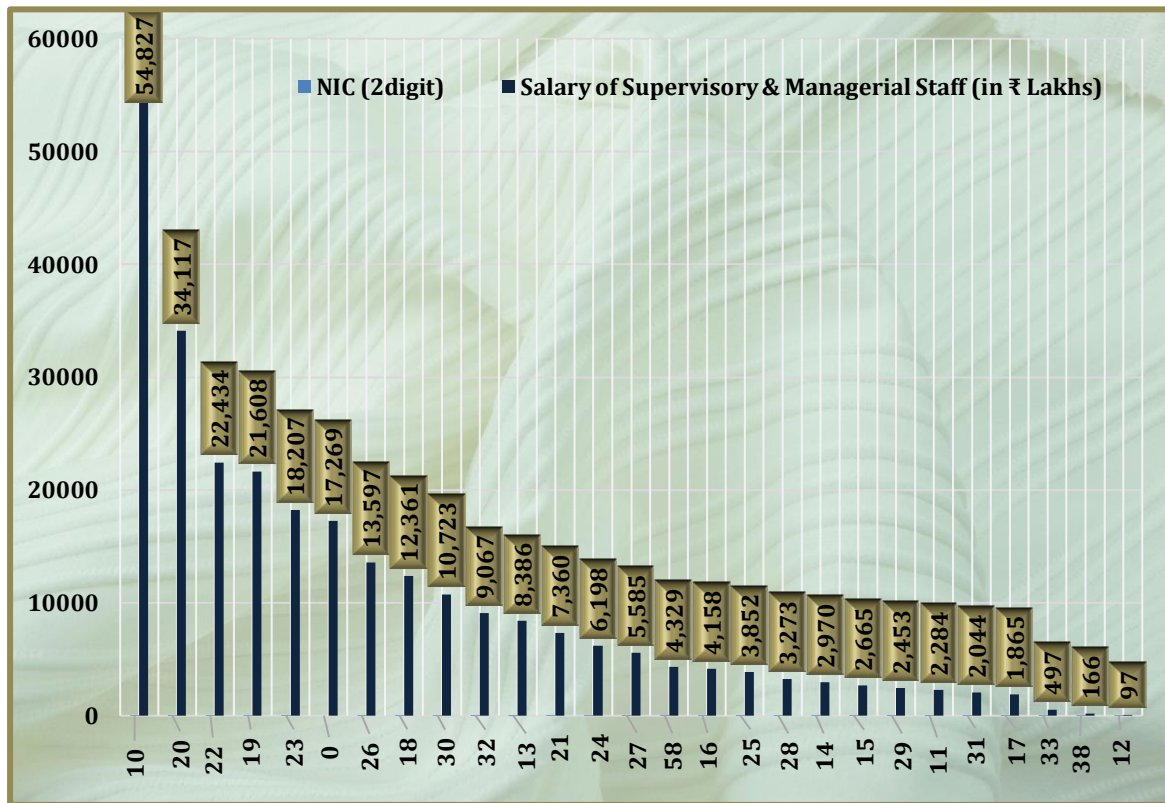
**Table 2.13: Distribution of Daily Wage of Workers (in ₹) in Factory Sector by NIC (2008) 2-Digit Group**

NIC (2 Digit)	Description	Wages of workers	No. of worker s	Wages per worker (in ₹ lakhs)	Dail y wage (in ₹)
10	Manufacture of food products	118846	68569	1.73	481
11	Manufacture of beverages	5391	2636	2.05	569
12	Manufacture of tobacco products	4919	6510	0.76	211
13	Manufacture of textiles	29357	15762	1.86	517
14	Manufacture of wearing apparel	12971	8960	1.45	403
15	Manufacture of leather and related products	14993	6312	2.38	661

<b>16</b>	Manufacture of wood and products of wood and cork except furniture; manufacture of articles of straw and plating materials	13473	9124	1.48	411
<b>17</b>	Manufacture of paper and paper products	6138	2790	2.2	611
<b>18</b>	Printing and reproduction of recorded media	15732	3743	4.2	1167
<b>19</b>	Manufacture of coke and refined petroleum products	24811	3614	6.87	1908
<b>20</b>	Manufacture of chemicals and chemical products	47797	9187	5.2	1444
<b>21</b>	Manufacture of pharmaceuticals medicinal chemical and botanical products	13545	5341	2.54	706
<b>22</b>	Manufacture of rubber and plastic products	67086	21002	3.19	886
<b>23</b>	Manufacture of other non-metallic mineral products	40505	16606	2.44	678
<b>24</b>	Manufacture of basic metals	11961	5397	2.22	617
<b>25</b>	Manufacture of fabricated metal products except machinery and equipment	8807	4281	2.06	572
<b>26</b>	Manufacture of computer electronic and optical products	22906	8131	2.82	783
<b>27</b>	Manufacture of electrical equipment	14689	5217	2.82	783
<b>28</b>	Manufacture of machinery and equipment n.e.c	9310	3267	2.85	792
<b>29</b>	Manufacture of motor vehicles trailers and semitrailers	2457	713	3.45	958
<b>30</b>	Manufacture of other transport equipment	17121	6416	2.67	742
<b>31</b>	Manufacture of furniture	5109	2596	1.97	547
<b>32</b>	Other manufacturing	16944	7674	2.21	614
<b>33</b>	Repair and installation of machinery and equipment	2400	577	4.16	1156
<b>38</b>	Waste collection treatment and disposal activities; materials recovery	280	66	4.24	1178
<b>58</b>	Publishing activities	3528	833	4.24	1178
	Others	41544	18496	2.25	625
	Total	572620	243820	2.35	653

In the state the Supervisory and Managerial Staff in the manufacturing sector earned an average daily salary of ₹ 2,452 in the report year. Among this category of employees the highest average daily salary (₹ 8,177) was earned by those working in Coke and Refined Petroleum Products industry whereas the least (₹ 364) in the Tobacco Products industry

**Figure 2.12: Distribution of Daily salary (in ₹ ) of Supervisory & Managerial Staff by NIC (2008) 2-digit group of industries**



**Table 2.14: Distribution of Daily Salary of Supervisory and Managerial Staff 2022-23 by NIC (2008) 2-Digit Group of Industries**

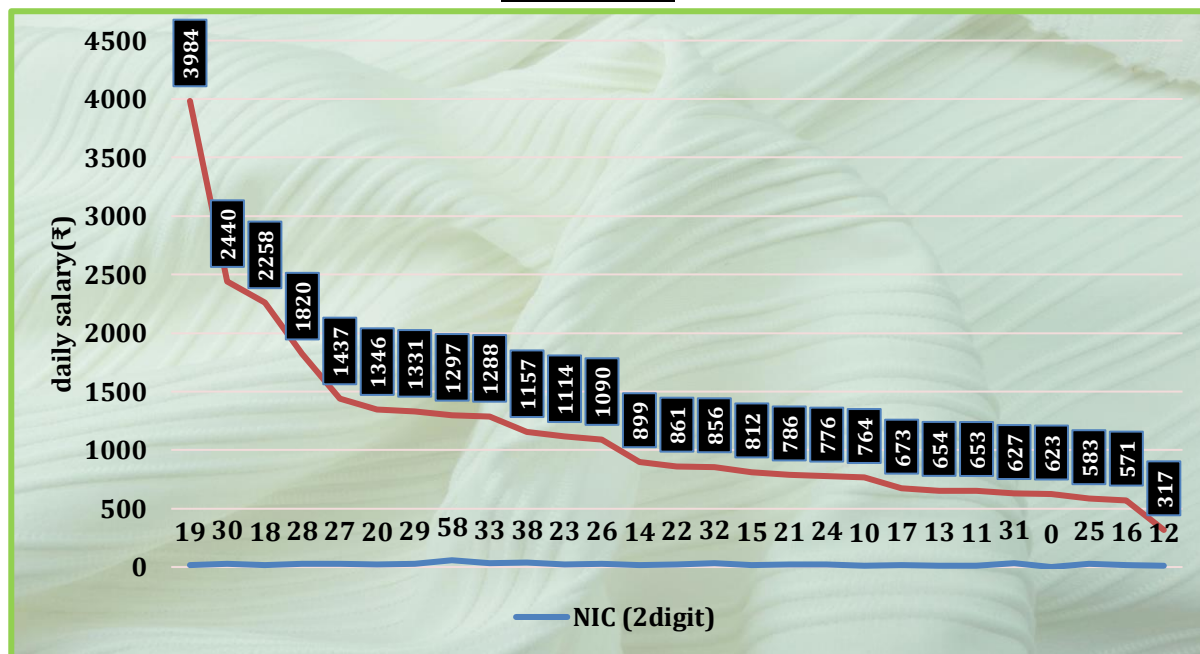
NIC (2 Digit)	Description	No. of Supervisory & Managerial Staff	Salary of Supervisory & Managerial Staff	Salary per Supervisory & Managerial Staff (in ₹ lakhs)	Daily salary (in ₹ )
10	Manufacture of food products	6857	54827	8	2221
11	Manufacture of beverages	340	2284	6.72	1866
12	Manufacture of tobacco products	74	97	1.31	364
13	Manufacture of textiles	1253	8386	6.69	1859
14	Manufacture of wearing apparel	445	2970	6.67	1854
15	Manufacture of leather and related products	646	2665	4.13	1146

16	Manufacture of wood and products of wood and cork except furniture; manufacture of articles of straw and plaiting materials	1150	4158	3.62	1004
17	Manufacture of paper and paper products	331	1865	5.63	1565
18	Printing and reproduction of recorded media	690	12361	17.91	4976
19	Manufacture of coke and refined petroleum products	734	21608	29.44	8177
20	Manufacture of chemicals and chemical products	2866	34117	11.9	3307
21	Manufacture of pharmaceuticals medicinal chemical and botanical products	884	7360	8.33	2313
22	Manufacture of rubber and plastic products	2801	22434	8.01	2225
23	Manufacture of other non-metallic mineral products	2155	18207	8.45	2347
24	Manufacture of basic metals	788	6198	7.87	2185
25	Manufacture of fabricated metal products except machinery and equipment	531	3852	7.25	2015
26	Manufacture of computer electronic and optical products	1658	13597	8.2	2278
27	Manufacture of electrical equipment	630	5585	8.87	2463
28	Manufacture of machinery and equipment n.e.c	415	3273	7.89	2191
29	Manufacture of motor vehicles trailers and semitrailers	230	2453	10.67	2963
30	Manufacture of other transport equipment	503	10723	21.32	5922
31	Manufacture of furniture	329	2044	6.21	1726
32	Other manufacturing	1025	9067	8.85	2457
33	Repair and installation of machinery and equipment	101	497	4.92	1367
38	Waste collection treatment and disposal activities; materials recovery	12	166	13.83	3843
58	Publishing activities	326	4329	13.28	3689
	Others	3082	17269	5.6	1556
	Total	30856	272392	8.83	2452

With respect to the 'Other employees' category in the manufacturing industries of the state, the estimated daily salary earned by the employees was ₹ 960. And among these employees the highest 3984 was earned by those working in the industry involved in

Manufacture of coke and refined petroleum products and the least (₹ 317) by those working in the Tobacco Products industry.

**Figure 2.13: Daily Salary (in ₹ ) of Other Employees by NIC (2008) 2-Digit Group of Industries**



**Table 2.15: Distribution of Daily salary of 'Other employees' Category 2022-23 by NIC (2008) 2-Digit Group of Industries**

NIC (2 Digit)	Description	No. of Other Employees	Salary of Other Employees (₹ lakhs)	Salary per other employee (in ₹ lakhs)	Daily salary (in ₹)
10	Manufacture of food products	9883	27191	2.75	764
11	Manufacture of beverages	171	402	2.35	653
12	Manufacture of tobacco products	99	113	1.14	317
13	Manufacture of textiles	1804	4245	2.35	654
14	Manufacture of wearing apparel	523	1692	3.24	899
15	Manufacture of leather and related products	1157	3384	2.92	812
16	Manufacture of wood and products of wood and cork except furniture; manufacture of articles of straw and plating materials	659	1355	2.06	571
17	Manufacture of paper and paper products	408	989	2.42	673
18	Printing and reproduction of recorded media	1681	13664	8.13	2258
19	Manufacture of coke and refined petroleum products	252	3614	14.34	3984

20	Manufacture of chemicals and chemical products	2113	10236	4.84	1346
21	Manufacture of pharmaceuticals medicinal chemical and botanical products	1890	5348	2.83	786
22	Manufacture of rubber and plastic products	3059	9479	3.1	861
23	Manufacture of other non-metallic mineral products	2396	9609	4.01	1114
24	Manufacture of basic metals	789	2205	2.79	776
25	Manufacture of fabricated metal products except machinery and equipment	614	1289	2.1	583
26	Manufacture of computer electronic and optical products	835	3276	3.92	1090
27	Manufacture of electrical equipment	463	2395	5.17	1437
28	Manufacture of machinery and equipment n.e.c	569	3728	6.55	1820
29	Manufacture of motor vehicles trailers and semitrailers	87	417	4.79	1331
30	Manufacture of other transport equipment	283	2486	8.78	2440
31	Manufacture of furniture	391	882	2.26	627
32	Other manufacturing	1415	4358	3.08	856
33	Repair and installation of machinery and equipment	130	603	4.64	1288
38	Waste collection treatment and disposal activities; materials recovery	60	250	4.17	1157
58	Publishing activities	1260	5883	4.67	1297
	Others	4195	9403	2.24	623
	Total	37186	128496	3.46	960

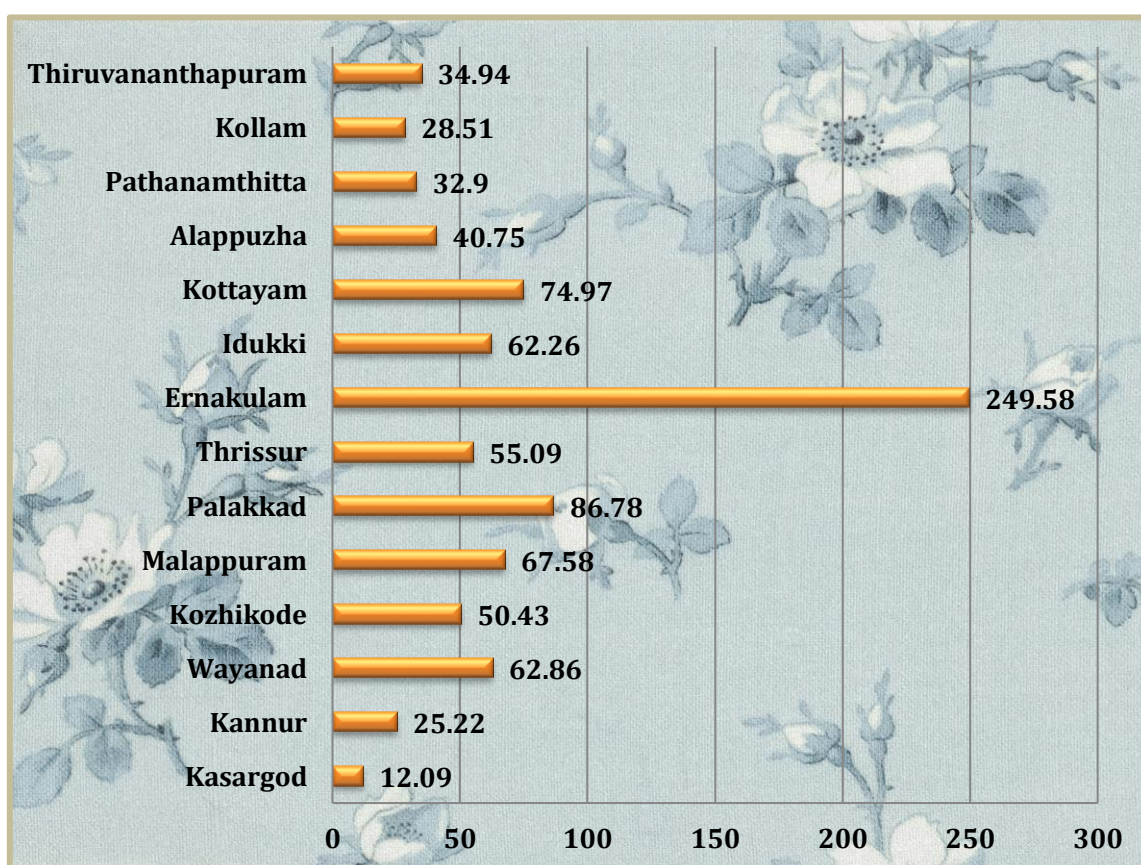
#### 2.3.4. Labour Productivity

Productivity is a measure of economic performance with which resources, both human and material, are converted into goods and services. The labour productivity is a significant factor which plays a pertinent role in the growth of value addition in the manufacturing sector. An attempt has been made to analyze the same by estimating the output per worker in the industries.

In this section attempt has been made to figure out the regional and economic activity wise variation in the labour productivity of registered manufacturing industries in

the state. As per the survey findings, aggregate level labour productivity (measured by output labour ratio) during fiscal year 2022-23 is 103.6 i.e. ₹ 103.6 lakhs output was generated by an individual worker. And it is found that among the districts Ernakulam with largest number of factories had the highest productivity (₹ 249.58 lakhs) and Kasaragod the lowest (₹ 12.09 lakhs).

**Figure 2.14: District wise Labour Productivity (Output per unit labour) of the Manufacturing Industries**



**Table 2.16: District wise Labour Productivity (Output per unit labour) of the Manufacturing Industries**

District	Total Output ( In ₹ Lakhs )	No. of workers	Labour Productivity (Output per unit of labour in ₹ lakhs )
Kasaragod	83,929	6943	12.09
Kannur	2,75,778	10936	25.22
Wayanad	1,29,987	2068	62.86
Kozhikode	5,68,394	11272	50.43

<b>Malappuram</b>	5,31,517	7865	67.58
<b>Palakkad</b>	14,23,859	16407	86.78
<b>Thrissur</b>	12,52,939	22745	55.09
<b>Ernakulam</b>	1,69,89,188	68070	249.58
<b>Idukki</b>	2,67,839	4302	62.26
<b>Kottayam</b>	10,06,392	13424	74.97
<b>Alappuzha</b>	11,20,743	27504	40.75
<b>Pathanamthitta</b>	1,88,140	5718	32.9
<b>Kollam</b>	9,14,402	32075	28.51
<b>Thiruvananthapuram</b>	5,06,322	14491	34.94
<b>Kerala</b>	2,52,59,429	243820	103.6

Analyzing the labour productivity of industries as per NIC (2008) 2-digit classification, the highest productivity was found in Coke and Refined Petroleum Products manufacturing industries (₹ 3,258.16 lakhs) and the lowest in Tobacco Products industry (₹ 1.41 lakhs).

**Table 2.17: Labour Productivity of the Industries by NIC (2008) 2-Digit Group**

<b>NIC (2 Digit)</b>	<b>Description</b>	<b>Total Output (in ₹ lakhs)</b>	<b>No.of workers</b>	<b>Labour Productivity (Output per unit labour in ₹ lakhs)</b>
<b>10</b>	Manufacture of food products	43,86,864	68569	63.98
<b>11</b>	Manufacture of beverages	1,52,334	2636	57.79
<b>12</b>	Manufacture of tobacco products	9,147	6510	1.41
<b>13</b>	Manufacture of textiles	4,11,033	15762	26.08
<b>14</b>	Manufacture of wearing apparel	1,12,781	8960	12.59
<b>15</b>	Manufacture of leather and related products	2,86,280	6312	45.35
<b>16</b>	Manufacture of wood and products of wood and cork except furniture; manufacture of articles of straw and plating materials	4,05,880	9124	44.48
<b>17</b>	Manufacture of paper and paper products	98,954	2790	35.47
<b>18</b>	Printing and reproduction of recorded media	2,08,554	3743	55.72

19	Manufacture of coke and refined petroleum products	1,17,74,997	3614	3258.16
20	Manufacture of chemicals and chemical products	15,24,972	9187	165.99
21	Manufacture of pharmaceuticals medicinal chemical and botanical products	1,84,017	5341	34.45
22	Manufacture of rubber and plastic products	14,34,222	21002	68.29
23	Manufacture of other non-metallic mineral products	5,86,982	16606	35.35
24	Manufacture of basic metals	9,09,817	5397	168.58
25	Manufacture of fabricated metal products except machinery and equipment	3,90,417	4281	91.2
26	Manufacture of computer electronic and optical products	3,12,284	8131	38.41
27	Manufacture of electrical equipment	1,79,496	5217	34.41
28	Manufacture of machinery and equipment n.e.c	92,613	3267	28.35
29	Manufacture of motor vehicles trailers and semitrailers	86,810	713	121.75
30	Manufacture of other transport equipment	2,40,084	6416	37.42
31	Manufacture of furniture	96,583	2596	37.2
32	Other manufacturing	2,59,562	7674	33.82
33	Repair and installation of machinery and equipment	18,324	577	31.76
38	Waste collection treatment and disposal activities; materials recovery	7,883	66	119.44
58	Publishing activities	61,346	833	73.64
	Others	10,27,193	18496	55.54
	Total	2,52,59,429	243820	103.6

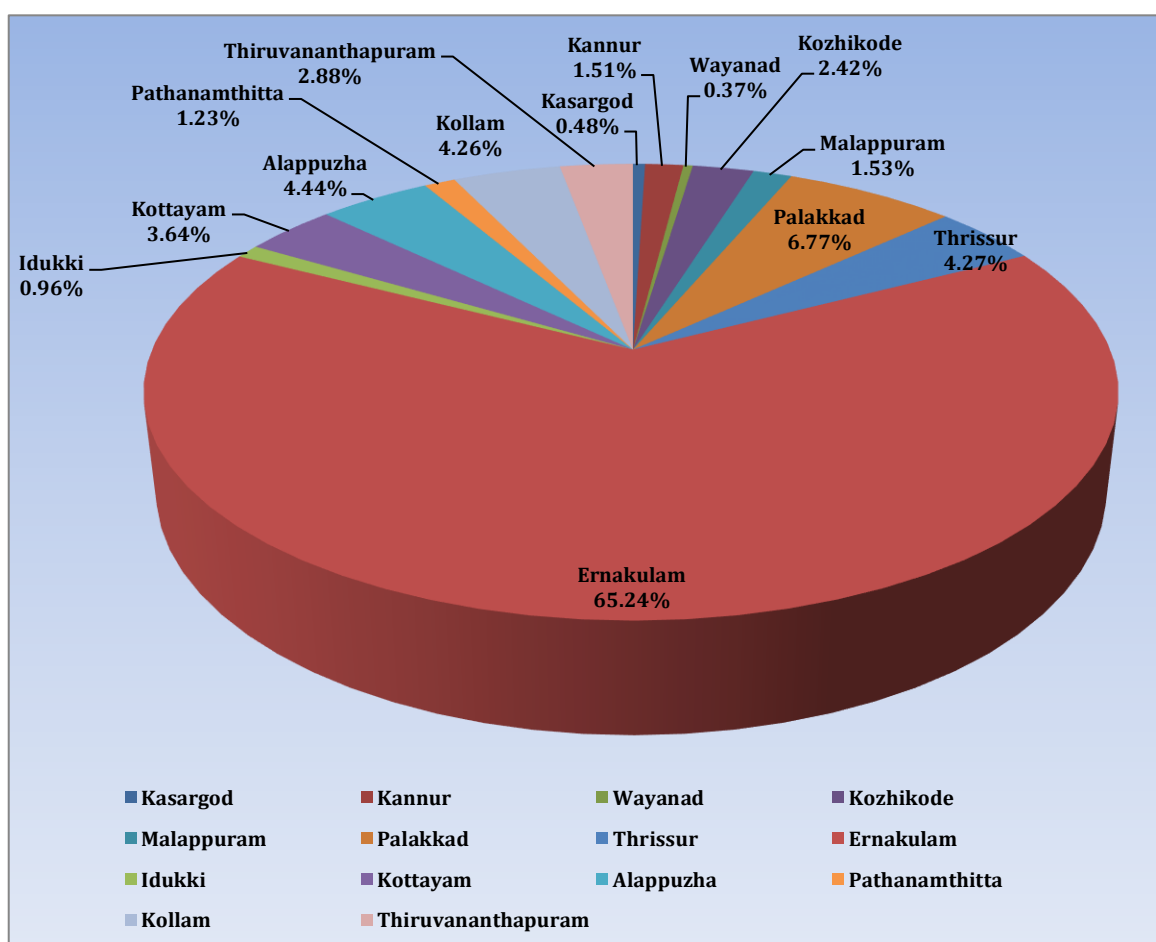
An intensive analysis of inter-regional and inter-industry variation in the labour productivity is of great importance in understanding the deficiencies of under developed areas, problems of growth, availability of human resource and market potential. Further, this may be helpful in formulating integrated developmental plans for industrial developments.



### 2.3.5 Capital Investment

Understanding the investment level in the industrial sector provides an insight into the factors that results in the state's economic development. The growth of the industrial output depends on the capital investment which includes addition to its assets and new investment on the plant and machinery. The survey estimates invested capital as the total of fixed capital and physical working of the industries. From the survey, the estimated invested capital of the manufacturing sector in the state for the fiscal year 2022-23 was ₹ 83,55,506 lakhs. Among all the districts, Ernakulam with the highest number of factories had the highest invested capital (₹ 54,51,446 lakhs) and it accounts to about 65.24% of the total capital invested in the manufacturing sector of the state. It's worth notable that capital invested by industries of the remaining district lies in 0% -7% range. This reveals that major investment in the manufacturing sector of the state is made by the industries of Ernakulam district (*see Figure 2.20, Table 2.18*).

**Figure 2.15: District wise Share of Invested Capital, 2022-23**

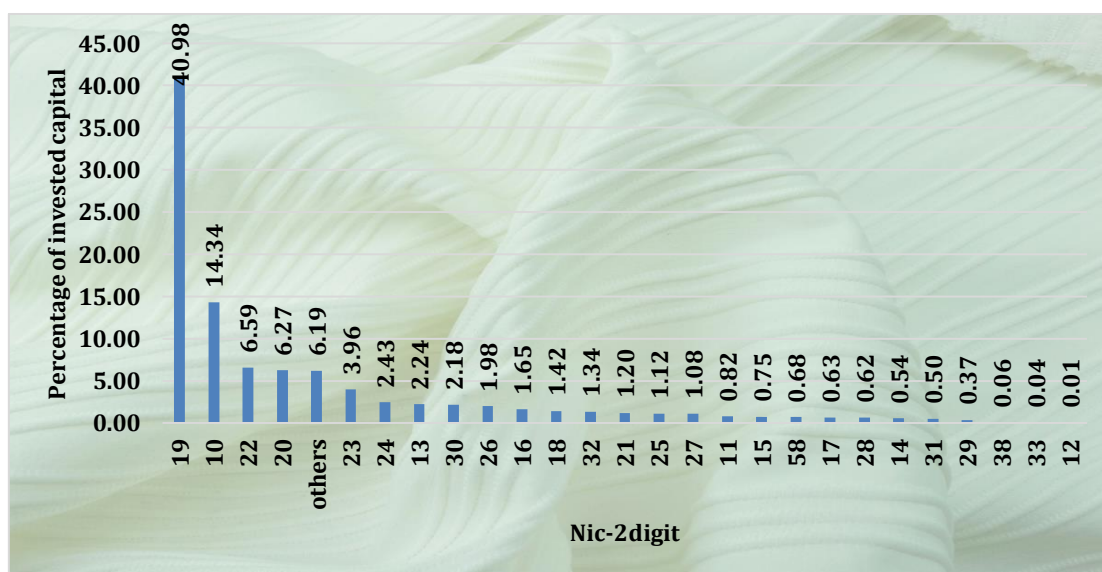


**Table 2.18: District wise Distribution of Invested Capital of Manufacturing Industries, 2022-23**

District	Invested Capital (in ₹ Lakhs)	Percentage of Invested Capital
Kasaragod	40,236	0.48
Kannur	1,26,215	1.51
Wayanad	31,127	0.37
Kozhikode	2,02,176	2.42
Malappuram	1,27,580	1.53
Palakkad	5,65,708	6.77
Thrissur	3,56,553	4.27
Ernakulam	54,51,446	65.24
Idukki	80,093	0.96
Kottayam	3,04,405	3.64
Alappuzha	3,70,781	4.44
Pathanamthitta	1,02,802	1.23
Kollam	3,55,725	4.26
Thiruvananthapuram	2,40,659	2.88
Kerala	83,55,506	100

In addition to this, considering the different industries involved in varied economic activities, the coke and refined petroleum products industry shows the highest invested capital with an estimated value of ₹ 34,24,340 lakhs which accounts to about 38.59% of state's aggregate value. The least capital (₹ 1,252 lakhs) was invested by industries attributed to the Manufacture of tobacco products contributing 0.01% to the aggregate.

**Figure 2.16: Share of Invested Capital of Industries by NIC (2008) 2-Digit Categorisation**



**Table 2.19: Distribution of Invested Capital as per NIC (2008) 2-Digit Classification of Industries**

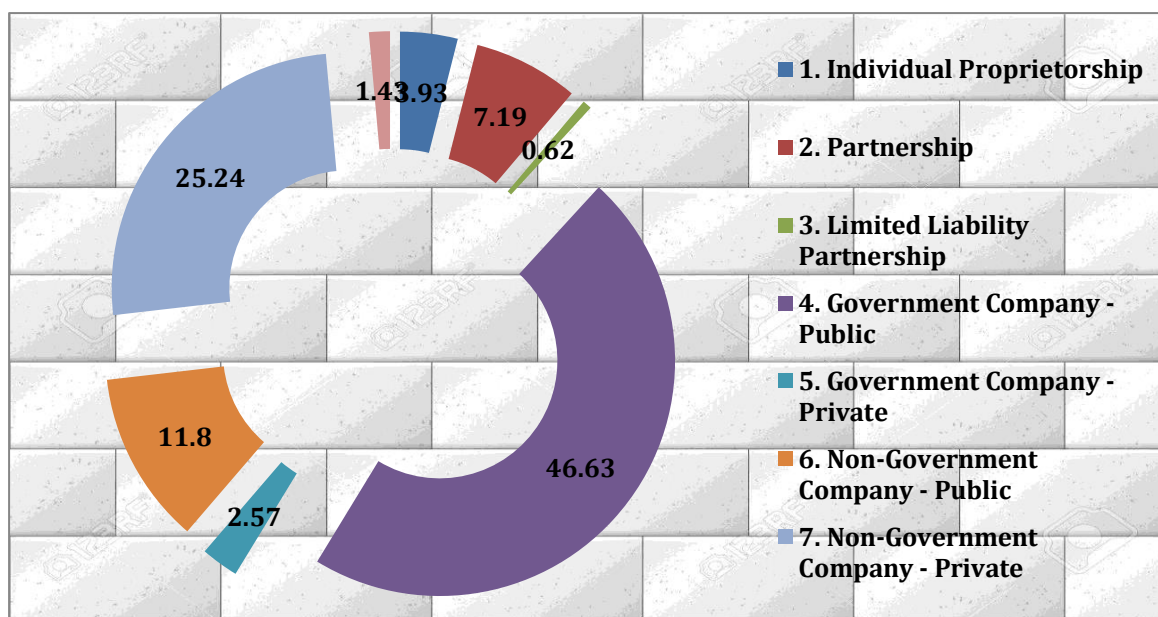
NIC (2 Digit)	Description	Invested Capital (in ₹ Lakhs)	Percentage of invested capital
10	Manufacture of food products	1,197,816	14.34
11	Manufacture of beverages	68,300	0.82
12	Manufacture of tobacco products	1,252	0.01
13	Manufacture of textiles	187,250	2.24
14	Manufacture of wearing apparel	44,755	0.54
15	Manufacture of leather and related products	62,479	0.75
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	137,592	1.65
17	Manufacture of paper and paper products	52,670	0.63
18	Printing and reproduction of recorded media	118,863	1.42
19	Manufacture of coke and refined petroleum products	3,424,340	40.98
20	Manufacture of chemicals and chemical products	523,822	6.27
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	100,536	1.20
22	Manufacture of rubber and plastic products	551,018	6.59
23	Manufacture of other non-metallic mineral products	331,157	3.96
24	Manufacture of basic metals	203,022	2.43
25	Manufacture of fabricated metal products, except machinery and equipment	93,919	1.12
26	Manufacture of computer, electronic and optical products	165,698	1.98
27	Manufacture of electrical equipment	90,057	1.08
28	Manufacture of machinery and equipment n.e.c	51,586	0.62
29	Manufacture of motor vehicles, trailers and semitrailers	30,622	0.37
30	Manufacture of other transport equipment	181,770	2.18
31	Manufacture of furniture	41,690	0.50
32	Other manufacturing	112,226	1.34
33	Repair and installation of machinery and equipment	3,287	0.04
38	Waste collection, treatment and disposal activities; materials recovery	5,401	0.06
58	Publishing activities	56,826	0.68
	Others	517,552	6.19
	Total	8,355,506	100.00

Based on the organization type, industries under the category Government Company – Public shows highest invested capital (₹ 38,95,866 lakhs) in the fiscal year 2022-23 which covers 46.63% of the total investment in the manufacturing industries of the state.

And the least invested capital (₹ 49,877 lakhs, 0.60% of aggregate) was estimated in the ‘Others category’ which includes a group of industries under Joint Family Trusts (HUF), Wakf Boards, Handlooms, KVIC etc. which is followed by Limited Liability

Partnership contributing just 0.62% of total capital invested on the manufacturing industries (₹ 51,713 lakhs) of the state (see Figure 2.22, Table 2.20).

**Figure 2.17: Invested Capital of industries based on type of Organization**



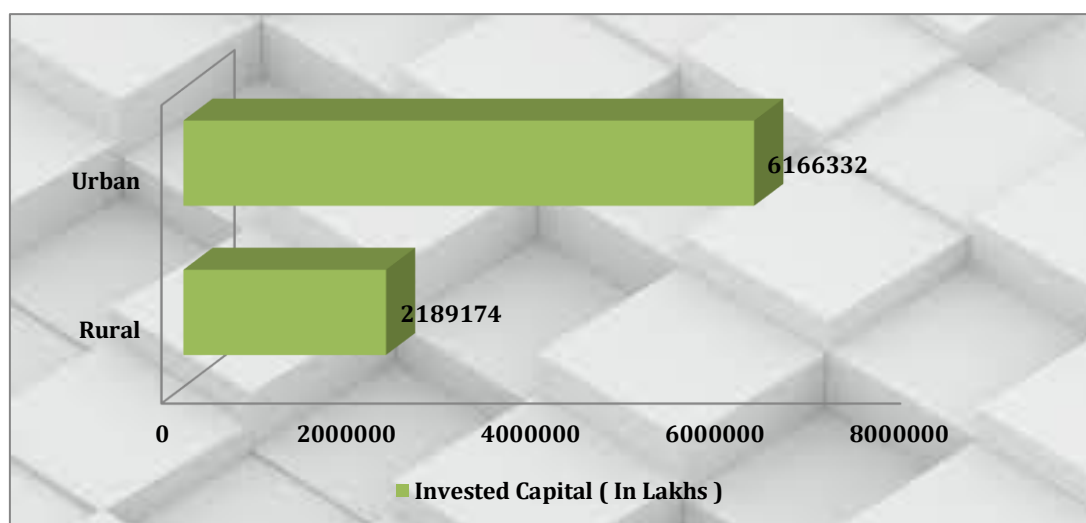
**Table 2.20: Distribution of Invested capital of factory sector by type of organization**

Type of Organization	Invested Capital (in ₹ Lakhs)	Percentage of invested capital
Individual Proprietorship	3,28,218	3.93
Partnership	6,00,804	7.19
Limited Liability Partnership	51,713	0.62
Government Company - Public	3,895,866	46.63
Government Company - Private	2,14,602	2.57
Non-Government Company - Public	9,86,344	11.80
Non-Government Company - Private	2,108,514	25.24
Co-operative Society	1,19,568	1.43
Others	49,877	0.60
<b>Total</b>	<b>8,355,506</b>	<b>100.00</b>

Capital investment in the rural-urban sectors also plays a significant role in boosting the manufacturing sector in the under developed areas. As per the survey results, the invested capital of 3,383 factories in operation located in rural areas was 26.2% of the

state aggregate (₹ 21,89,174 lakhs) and that of 3404 factories located in urban areas was 73.80% (₹ 61,66,332 lakhs).

**Figure 2.18: Invested Capital (in ₹ lakhs) in the Manufacturing industries in rural-urban sector**



### 2.3.6. Gross Fixed Capital Formation (GFCF)

Capital Formation is a key indicator which assess the magnitude of growth of productive potential of an economy. The survey estimates the Gross Fixed Capital Formation (GFCF) which builds an important segment of Gross Domestic Product (GDP) of the state. GFCF is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditure on services that adds to the value of non-produced assets.

As per survey results, the estimated GFCF of the manufacturing in the state in 2022-23 stands at ₹ 5,45,346 lakhs which is 41.53 % decline from previous year figure (₹ 3,18,862 lakhs in 2022-23). Among the district the highest GFCF was recorded by factories in Ernakulam district and the least in Kasargod.

**Table 2.21: District wise distribution of Gross Fixed Capital Formation (GFCF) of industries**

District	Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	Percentage of GFCF
Kasargod	2,411	0.44
Kannur	18,268	3.35
Wayanad	2,885	0.53
Kozhikode	15,242	2.79
Malappuram	12,582	2.31
Palakkad	30,999	5.68
Thrissur	52,428	9.61
Ernakulam	2,74,193	50.28
Idukki	8,122	1.49
Kottayam	44,055	8.08
Alappuzha	33,702	6.18

<b>Pathanamthitta</b>	22,852	4.19
<b>Kollam</b>	12,407	2.28
<b>Thiruvananthapuram</b>	15,200	2.79
<b>Kerala</b>	5,45,346	100.00

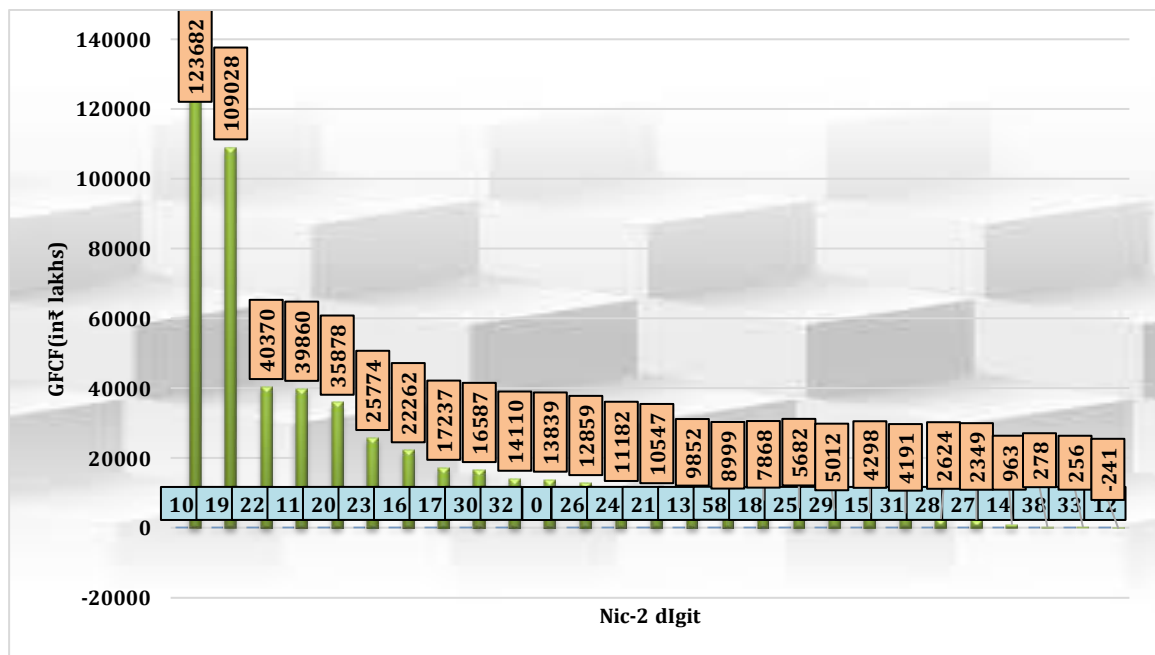
Out of various types of industries, in 2022-23 food manufacturing industry leads with an estimated Gross Fixed Capital Formation of ₹ 1,23,682 lakhs. This industry had a significant increase to 2022-23, from 2021-22 when the GFCF was ₹ 77,252 lakhs. Apart from this, state aggregate's 22.68 % is contributed by this industry.

**Table 2.22: Gross Fixed Capital Formation (GFCF) of industries as per NIC (2008)  
2-digit group of industries**

<b>NIC (2 Digit)</b>	<b>Description</b>	<b>GFCF (in ₹ lakhs)</b>	<b>Percentage of GFCF</b>
10	Manufacture of food products	1,23,682	22.68
11	Manufacture of beverages	39,860	7.31
12	Manufacture of tobacco products	-241	-0.04
13	Manufacture of textiles	9,852	1.81
14	Manufacture of wearing apparel	963	0.18
15	Manufacture of leather and related products	4,298	0.79
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	22,262	4.08
17	Manufacture of paper and paper products	17,237	3.16
18	Printing and reproduction of recorded media	7,868	1.44
19	Manufacture of coke and refined petroleum products	1,09,028	19.99
20	Manufacture of chemicals and chemical products	35,878	6.58
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	10,547	1.93
22	Manufacture of rubber and plastic products	40,370	7.40
23	Manufacture of other non-metallic mineral products	25,774	4.73
24	Manufacture of basic metals	11,182	2.05
25	Manufacture of fabricated metal products, except machinery and equipment	5,682	1.04
26	Manufacture of computer, electronic and optical products	12,859	2.36
27	Manufacture of electrical equipment	2,349	0.43
28	Manufacture of machinery and equipment n.e.c	2,624	0.48
29	Manufacture of motor vehicles, trailers and semitrailers	5,012	0.92
30	Manufacture of other transport equipment	16,587	3.04
31	Manufacture of furniture	4,191	0.77

32	Other manufacturing	14,110	2.59
33	Repair and installation of machinery and equipment	256	0.05
38	Waste collection, treatment and disposal activities; materials recovery	278	0.05
58	Publishing activities	8,999	1.65
	Others	13,839	2.54
	Total	5,45,346	100.00

**Figure 2.19: Distribution of Gross Fixed Capital Formation (GFCF) (in ₹ lakhs) by NIC (2008) 2 digit classification**



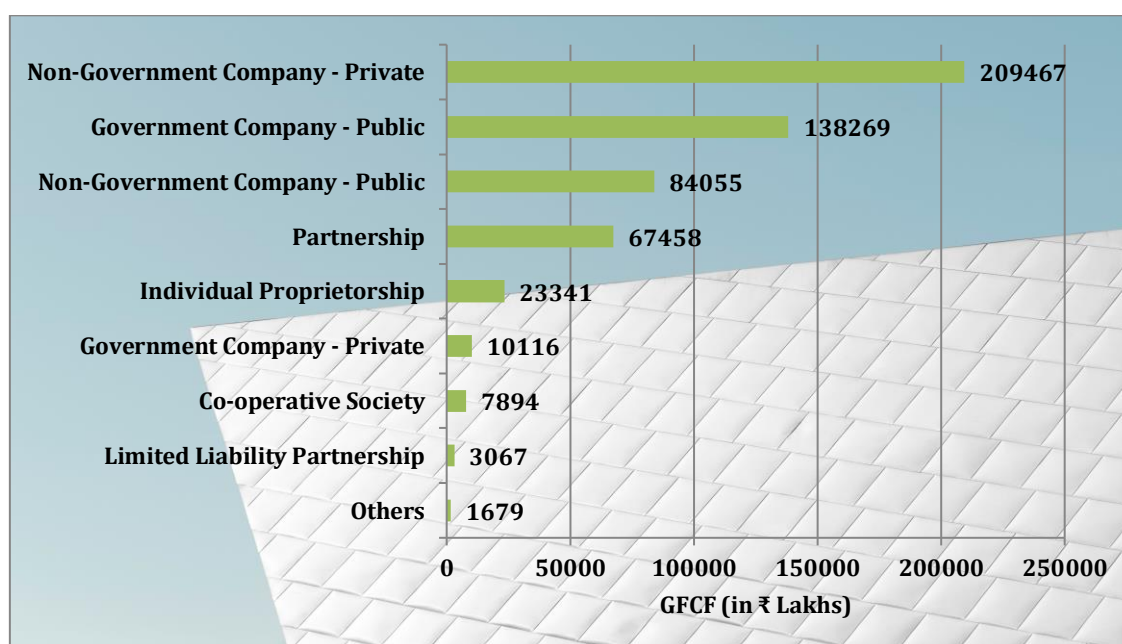
Considering the GFCF of different types of organization, the highest estimated value was attributed to ‘Non-Government Company - Private’ industries (₹ 2,09,467 lakhs) which has a share of 38.41 % of state aggregate. Others recorded the least with an estimated value of ₹ 1,679 lakhs.

**Table 2.23: Distribution of Gross Fixed Capital Formation (GFCF) of manufacturing industries by type of organization**

Type of Organization	Gross Fixed Capital Formation (in ₹ lakhs)	Percentage of GFCF
1. Individual Proprietorship	23,341	4.28
2. Partnership	67,458	12.37
3. Limited Liability Partnership	3,067	0.56
4. Government Company - Public	1,38,269	25.35

<b>5. Government Company - Private</b>	10,116	1.85
<b>6. Non-Government Company - Public</b>	84,055	15.41
<b>7. Non-Government Company - Private</b>	2,09,467	38.41
<b>8. Co-operative Society</b>	7,894	1.45
<b>9. Others</b>	1,679	0.31
<b>Total</b>	<b>5,45,346</b>	<b>100</b>

**Figure 2.20: Distribution of Gross Fixed Capital Formation (GFCF) (in ₹ lakhs) by Type of Organization**



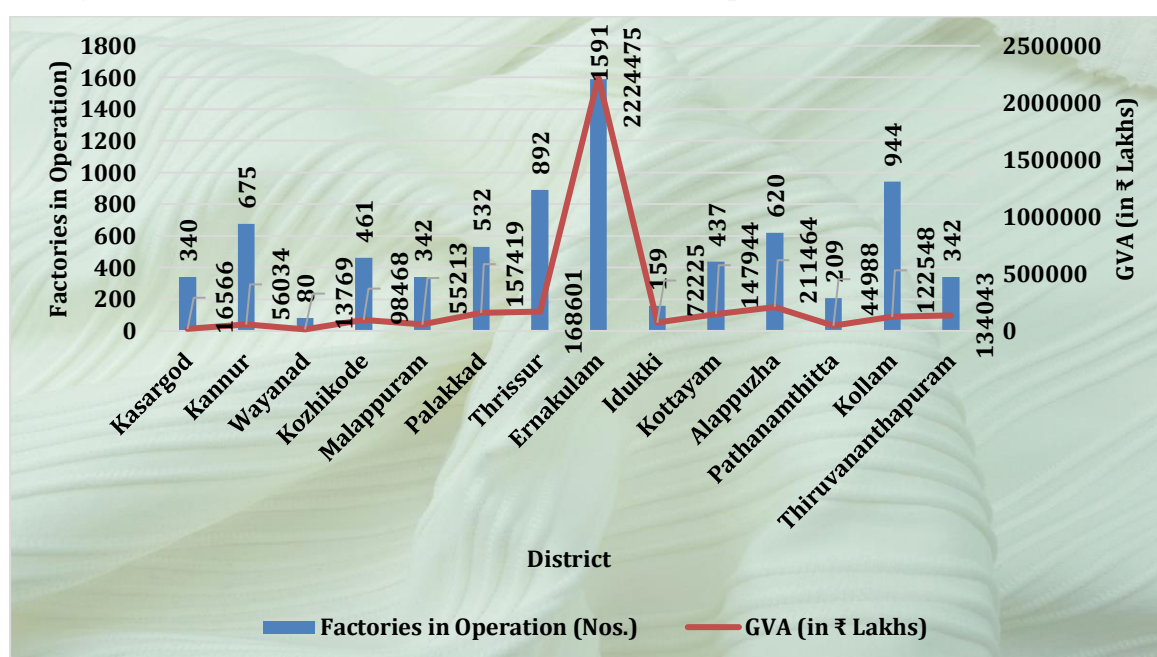
## 2.4 Gross Value Added (GVA)

The economy is erected by the productive units that combine the factors of production to create value. By analyzing the financial transactions of these productive units, state income accounts can be more accurately maintained and hence reveals the beats of economic activity. The survey estimates the Gross Value Added (GVA) of the manufacturing units which is a significant measure of contribution to the Gross State Value Added (GSVA). The GVA is the increment to the value of goods and services contributed by the factory which is obtained by deducting the value of total input cost from total output at current prices, in monetary terms.

It may be observed that from 6787 factories in operation, the estimated Gross Value Added in fiscal year 2022-23 at current prices was ₹ 35,23,757 lakhs which

exhibits an increase of 23.10% from the previous year (₹ 27,09,841). That is GVA per factory in operation slightly increased to 519.2 from 402.1 (in ₹ lakhs). Also, the district wise estimates show that Ernakulam with highest number of factories created highest GVA of ₹ 22,24,475 lakhs and second highest by the industries in Alappuzha (₹ 2,11,464 lakhs). It is to be noted that while industries in Ernakulam contributes 63.13 % share of aggregate GVA industries in Alappuzha contributes only 6%. Thus, Ernakulam is the only district in the state which had made the major contribution to boost the GVA of the manufacturing sector in the state.

**Figure 2.21: District wise distribution of factories in operation and GVA (in ₹ lakhs)**



Considering GVA per factory in operation, the top three districts are Ernakulam (₹ 1,616.5 lakhs), Idukki (₹ 5,472 lakhs) and Thiruvananthapuram (₹ 421.5.lakhs). It's also worth notable that Kasargode with least number of factories in operation has a fair figure of GVA per factory in operation, 56.9 lakhs.

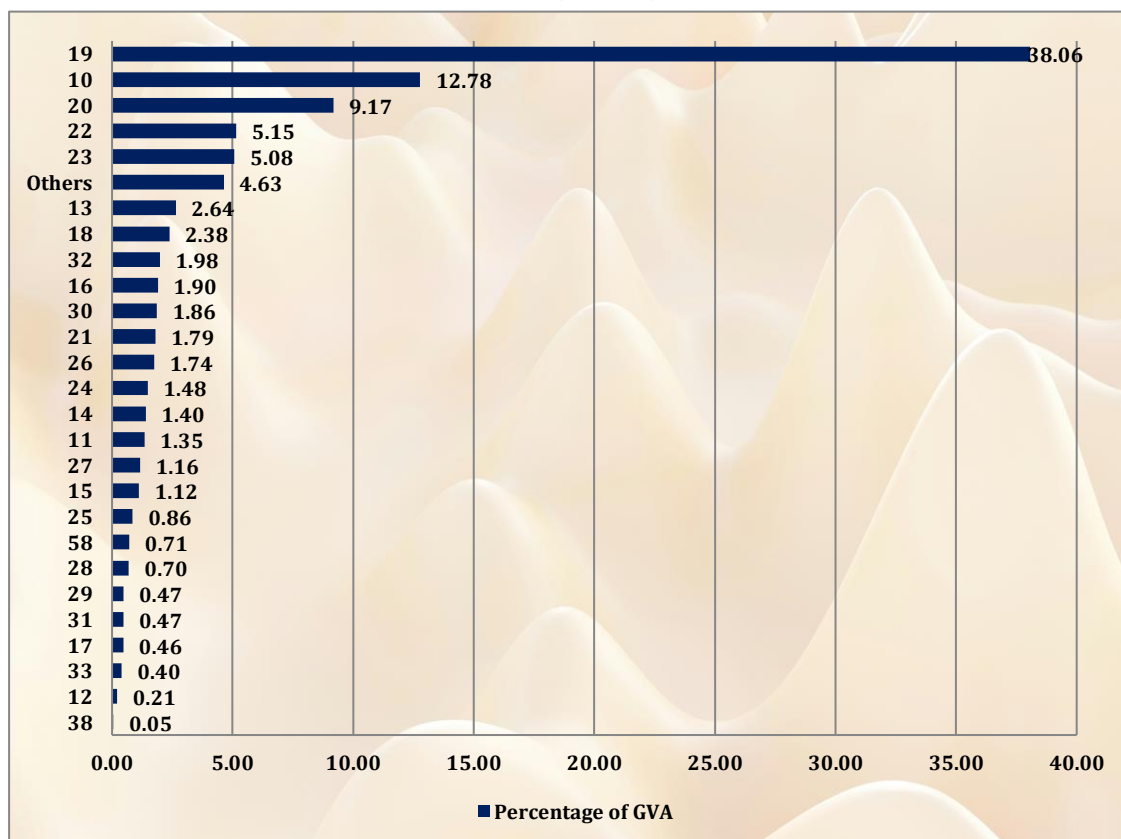
**Table 2.24: District-wise distribution of factories in operation, GVA and GVA per factory in operation (in ₹ lakhs)**

District	Factories in Operation (Nos.)	GVA (in ₹ Lakhs)	Percentage of GVA	GVA per factory in operation
Kasargod	291	16566	0.47	56.9
Kannur	523	56034	1.59	107.1
Wayanad	80	13769	0.39	172.1
Kozhikode	379	98468	2.79	259.8
Malappuram	307	55213	1.57	179.8

<b>Palakkad</b>	522	157419	4.47	301.6
<b>Thrissur</b>	866	168601	4.78	194.7
<b>Ernakulam</b>	1376	2224475	63.13	1616.6
<b>Idukki</b>	132	72225	2.05	547.2
<b>Kottayam</b>	422	147944	4.20	350.6
<b>Alappuzha</b>	578	211464	6.00	365.9
<b>Pathanamthitta</b>	206	44988	1.28	218.4
<b>Kollam</b>	787	122548	3.48	155.7
<b>Thiruvananthapuram</b>	318	134043	3.80	421.5
<b>Kerala</b>	6787	3523757	100.0	519.2

Out of the industries in terms of NIC (2008)–2-digit classification under the coverage of the survey, the major four industries with highest share of GVA were Coke and refined petroleum products (38.1 %), Food Products (12.8 %), Chemicals and chemical products (9.2 %) and Rubber and Plastic Products, other non-metallic mineral products had (5.1 %) each.

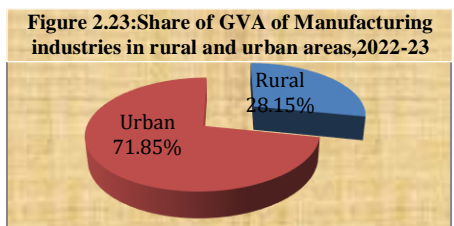
**Figure 2.22: Distribution of GVA across manufacturing industries of Kerala by NIC (2008) 2-digit category of industries**



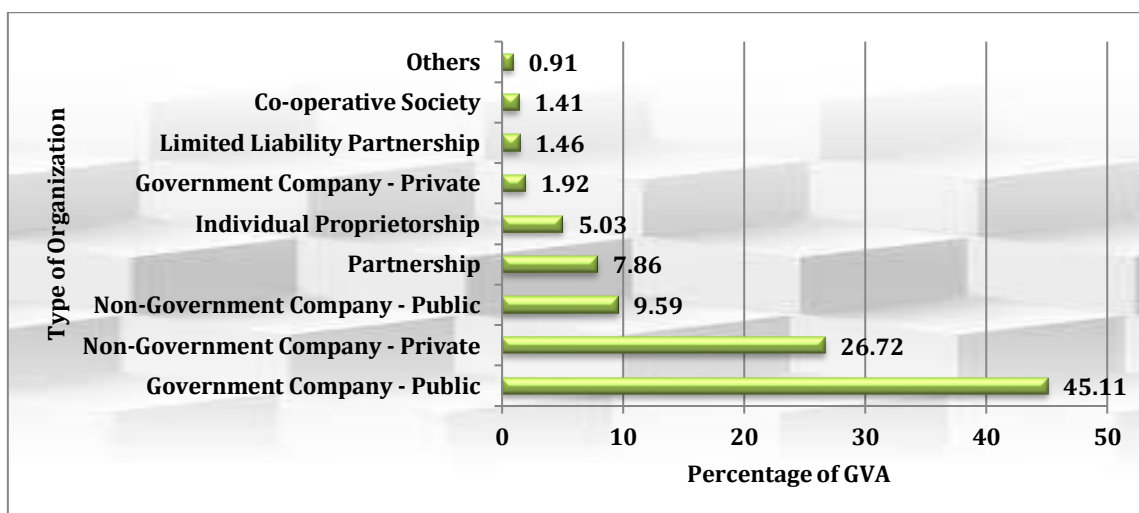
**Table 2.25: Distribution of GVA across manufacturing industries of Kerala by NIC (2008) 2-digit group of industries**

NIC (2-digit)	Description	GVA (in ₹ Lakhs)	Percent age
10	Manufacture of food products	4,50,487	12.8
11	Manufacture of beverages	47,459	1.3
12	Manufacture of tobacco products	7,359	0.2
13	Manufacture of textiles	93,017	2.6
14	Manufacture of wearing apparel	49,283	1.4
15	Manufacture of leather and related products	39,522	1.1
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	66,869	1.9
17	Manufacture of paper and paper products	16,312	0.5
18	Printing and reproduction of recorded media	83,816	2.4
19	Manufacture of coke and refined petroleum products	13,41,242	38.1
20	Manufacture of chemicals and chemical products	3,23,147	9.2
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	63,230	1.8
22	Manufacture of rubber and plastic products	1,81,380	5.1
23	Manufacture of other non-metallic mineral products	1,78,843	5.1
24	Manufacture of basic metals	52,179	1.5
25	Manufacture of fabricated metal products, except machinery and equipment	30,256	0.9
26	Manufacture of computer, electronic and optical products	61,250	1.7
27	Manufacture of electrical equipment	40,764	1.2
28	Manufacture of machinery and equipment n.e.c	24,610	0.7
29	Manufacture of motor vehicles, trailers and - trailers	16,677	0.5
30	Manufacture of other transport equipment	65,635	1.9
31	Manufacture of furniture	16,436	0.5
32	Other manufacturing	69,803	2.0
33	Repair and installation of machinery and equipment	14,101	0.4
38	Waste collection, treatment and disposal activities; materials recovery	1,902	0.1
58	Publishing activities	24,972	0.7
	Others	1,63,206	4.6
	Total	35,23,757	100.0

Region wise, the major part of the GVA of the manufacturing sector is contributed by the industries in the urban area with 71.85 % share. In addition, while considering the industries based on organization type, the highest estimated value was attributed to ‘Government Company - Public’ industries (₹ 15,89,503 lakhs) which has a share of 45.11% of state aggregate.



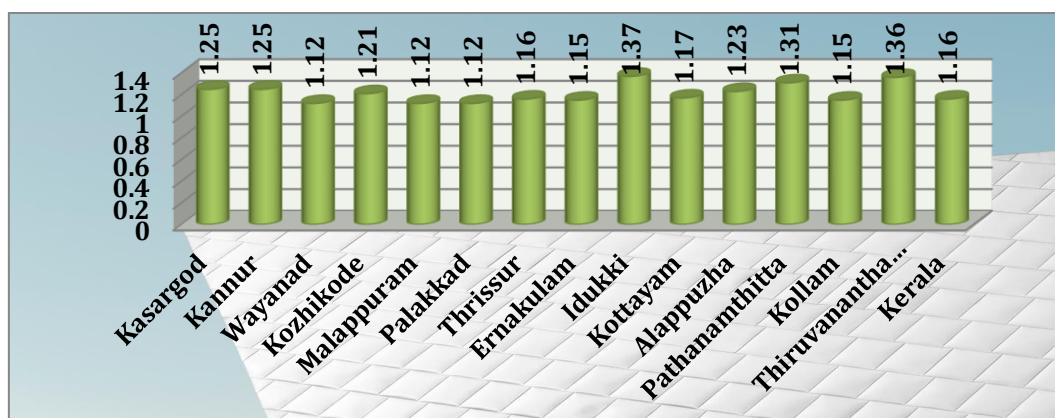
**Figure 2.24: Distribution of GVA across manufacturing industries by type of Organization**



### 2.5. Output to Input Ratio

Output to input ratio is a measure which determines how efficiently a system or process can utilize the available resources. During the report year the value of total output generated by 6787 operating factories was ₹ 2,52,59,429 lakhs and these factories had an input worth ₹ 2,17,35,672 lakhs. Considering the state aggregate the estimated ratio of output to input was 1.16. Among the District the output-input ratio of industries is highest in Thiruvananthapuram with an estimate of 1.36. This measure shows how the resources are efficiently used to increase the output. The figures do not vary significantly much across the districts.

**Figure 2.25: District wise output to Input Ratio of Manufacturing industries of Kerala, 2022-23**

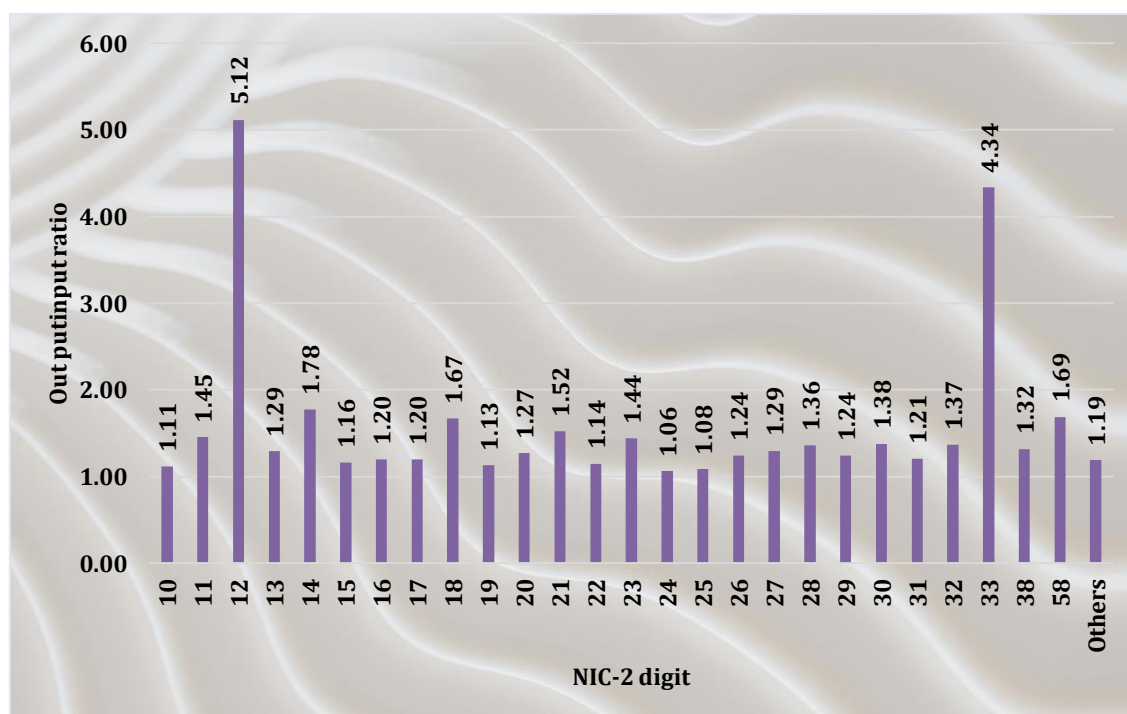


**Table 2.26: District wise distribution of Output, Input and Output to Input Ratio**

District	Total Output (in ₹ lakhs )	Total Input (in ₹ lakhs )	Output-Input Ratio
Kasargod	83,929	67,363	1.25
Kannur	2,75,778	2,19,744	1.25
Wayanad	1,29,987	1,16,218	1.12
Kozhikode	5,68,394	4,69,926	1.21
Malappuram	5,31,517	4,76,304	1.12
Palakkad	14,23,859	12,66,440	1.12
Thrissur	12,52,939	10,84,338	1.16
Ernakulam	1,69,89,188	1,47,64,713	1.15
Idukki	2,67,839	1,95,614	1.37
Kottayam	10,06,392	8,58,448	1.17
Alappuzha	11,20,743	9,09,279	1.23
Pathanamthitta	1,88,140	1,43,152	1.31
Kollam	9,14,402	7,91,854	1.15
Thiruvananthapuram	5,06,322	3,72,279	1.36
Kerala	2,52,59,429	2,17,35,672	1.16

When different category of industries based on economic activities are considered, the output to input ratio of tobacco products manufacturing industries accounts to 5.12 which implies that the value output created was five times the input. The next highest ratio is recorded by industry repair and installation of machinery and equipment which has the ratio value of 4.34 and which signifies that the value of output is double the input. The next highest Publishing activities shows 2.03%. While the other industries do not show significant difference.

**Figure 2.26: Output to Input Ratio of factory sector by NIC (2008) 2-digit group of industries**



**Table 2.27: Output to Input Ratio of factory sector by NIC (2008) 2-digit group of industries**

NIC (2 Digit)	Description	Total Output (in ₹ lakhs)	Total Input (in ₹ lakhs)	Output-Input ratio
10	Manufacture of food products	4,386,864	3,936,377	1.11
11	Manufacture of beverages	152,334	104,875	1.45
12	Manufacture of tobacco products	9,147	1,788	5.12
13	Manufacture of textiles	411,033	318,016	1.29
14	Manufacture of wearing apparel	112,781	63,498	1.78
15	Manufacture of leather and related products	286,280	246,758	1.16
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	405,880	339,011	1.20
17	Manufacture of paper and paper products	98,954	82,642	1.20
18	Printing and reproduction of recorded media	208,554	124,738	1.67
19	Manufacture of coke and refined petroleum products	11,774,997	10,433,755	1.13
20	Manufacture of chemicals and chemical products	15,24,972	1,201,825	1.27
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	184,017	120,787	1.52
22	Manufacture of rubber and plastic products	1,434,222	1,252,842	1.14
23	Manufacture of other non-metallic mineral products	5,86,982	408,139	1.44
24	Manufacture of basic metals	9,09,817	857,638	1.06
25	Manufacture of fabricated metal products, except machinery and equipment	3,90,417	360,161	1.08
26	Manufacture of computer, electronic and optical products	3,12,284	251,034	1.24
27	Manufacture of electrical equipment	1,79,496	138,732	1.29
28	Manufacture of machinery and equipment n.e.c	92,613	68,003	1.36
29	Manufacture of motor vehicles, trailers and semitrailers	86,810	70,133	1.24
30	Manufacture of other transport equipment	2,40,084	174,449	1.38
31	Manufacture of furniture	96,583	80,147	1.21

32	Other manufacturing	2,59,562	189,759	1.37
33	Repair and installation of machinery and equipment	18,324	4,223	4.34
38	Waste collection, treatment and disposal activities; materials recovery	7,883	5,981	1.32
58	Publishing activities	61,346	36,374	1.69
	Others	1,027,193	863,987	1.19
	Total	25,259,429	21,735,672	1.16

## 2.6. Income and Profit

The survey estimates the net income by deducting the value of rent paid & interest paid from Net Value Added (NVA=GVA-depreciation) and profit is obtained by deducting compensation of employees from net income. As per the survey results the estimated income generated by the manufacturing industries of the state in the fiscal year 2022-23 was ₹ 28,74,007 lakhs and the profit obtained was ₹ 16,98,354 lakhs. Region wise, rural industries share 27% of state's net income and 17.34 % of profit.

**Table 2.28: Rural -Urban share of Net income and Profit**

Characteristic	Rural	Urban
Net Income (in ₹ Lakhs)	7,75,996 (27%)	20,98,011 (73%)
Profit (in ₹ Lakhs)	2,94,420 (17.34%)	14,03,934 (82.66%)

**Table 2.29: District wise distribution of Net income and Profit**

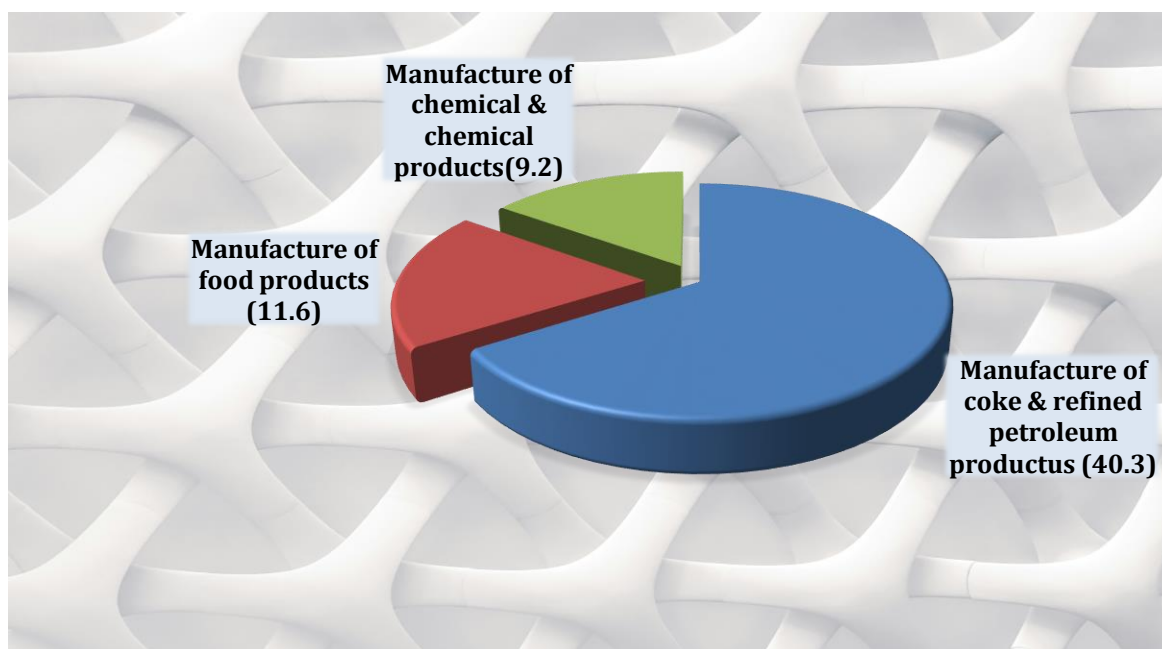
District	Net Income (in ₹ lakhs)	Profit (in ₹ lakhs)
Kasaragod	13,089 (0.46%)	2,866 (0.17%)
Kannur	42,269 (1.47%)	7,074 (0.42%)
Wayanad	11,221 (0.39%)	4,248 (0.25%)
Kozhikode	77,777 (2.71%)	21,395 (1.26%)
Malappuram	42,868 (1.49%)	9,974 (0.59%)
Palakkad	1,09,191 (3.8%)	27,085 (1.59%)
Thrissur	1,37,585 (4.79 %)	39,978 (2.35%)
Ernakulam	18,57,221 (64.62%)	1,40,49,81 (82.73%)

<b>Idukki</b>	66,370 (2.31%)	42,816 (2.52%)
<b>Kottayam</b>	1,14,944 (4%)	11,674 (0.69%)
<b>Alappuzha</b>	1,71,148 (5.96%)	84,999 (5%)
<b>Pathanamthitta</b>	29,010 (1.01%)	7,672 (0.45%)
<b>Kollam</b>	89,712 (3.12%)	7,841 (0.46%)
<b>Thiruvananthapuram</b>	1,11,602 (3.88%)	25,751 (1.52%)
<b>Kerala</b>	28,74,007	16,98,354

*Percent in braces shows the share of the aggregate value*

While considering the different groups of industries, the three major industries which has made highest contribution to the aggregate income of the manufacturing industries of state were Manufacture of coke and refined petroleum products (₹ 11,57,770 lakhs), Manufacture of food products (₹ 3,33,832 lakhs) and Manufacture of chemicals and chemical products (₹ 2,65,562 lakhs).

**Figure 2.27: Top three industries with highest share of income**



**Table 2.30: Distribution of net income by NIC (2008) 2-digit group of industries**

NIC (2 Digit)	Description	Net Income (in ₹ lakhs)	Percentage of income
10	Manufacture of food products	3,33,832	11.6
11	Manufacture of beverages	43,712	1.5

12	Manufacture of tobacco products	7,302	0.3
13	Manufacture of textiles	67,259	2.3
14	Manufacture of wearing apparel	44,730	1.6
15	Manufacture of leather and related products	32,743	1.1
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	54,005	1.9
17	Manufacture of paper and paper products	11,641	0.4
18	Printing and reproduction of recorded media	65,227	2.3
19	Manufacture of coke and refined petroleum products	11,57,770	40.3
20	Manufacture of chemicals and chemical products	2,65,562	9.2
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	55,611	1.9
22	Manufacture of rubber and plastic products	1,42,872	5.0
23	Manufacture of other non-metallic mineral products	1,36,096	4.7
24	Manufacture of basic metals	34,452	1.2
25	Manufacture of fabricated metal products, except machinery and equipment	20,303	0.7
26	Manufacture of computer, electronic and optical products	45,294	1.6
27	Manufacture of electrical equipment	34,652	1.2
28	Manufacture of machinery and equipment n.e.c	20,957	0.7
29	Manufacture of motor vehicles, trailers and semitrailers	12,653	0.4
30	Manufacture of other transport equipment	59,259	2.1
31	Manufacture of furniture	12,990	0.5
32	Other manufacturing	60,270	2.1
33	Repair and installation of machinery and equipment	13,848	0.5
38	Waste collection, treatment and disposal activities; materials recovery	1,196	0.0
58	Publishing activities	18,035	0.6
	Others	1,21,736	4.2
	Total	28,74,007	100.0

It may be observed that based on organization type the highest income was generated by Government Company – Public industries with net income ₹ 13,52,858 lakhs which marks a share of 47.07 % of the state’s aggregate income. It’s also note worthy that about 81.87% of the aggregate income is contributed by those industries

under the organizational category Non Government Company-Private, Government Company-Public and Non-Government Company-Public.

**Figure 2.28: Share of income generated by industries by type of organization**



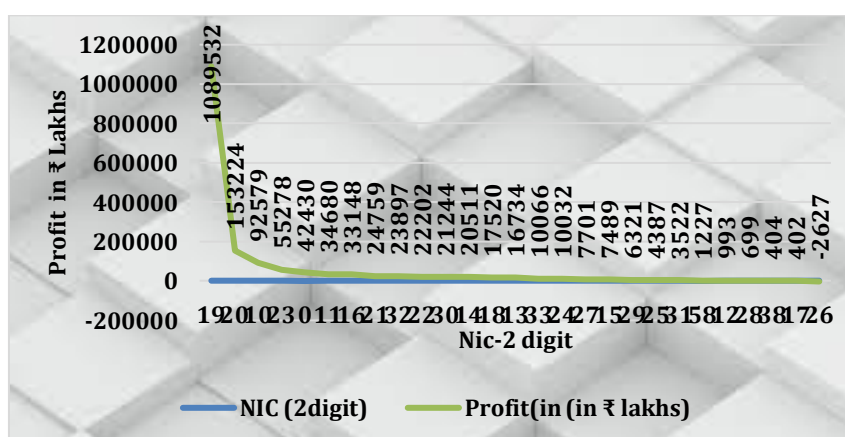
Analysing the profit earned by the industries in the report year, the survey findings reveal that out of the total profit of ₹ 1,698,354 lakhs earned by the manufacturing industries, the highest is earned by coke and refined petroleum products industries (₹ 10,89,532 lakhs) followed by chemicals and chemical products industries (₹ 1,53,224 lakhs). Apart from that computer, electronic and optical products shows negative profit (*see Table 2.31*).

**Table 2.31: Distribution of Profit (in ₹ lakhs) by NIC (2008) 2- digit group of industries**

NIC (2 Digit)	Description	Profit (in ₹ lakhs)
10	Manufacture of food products	92,579
11	Manufacture of beverages	34,680
12	Manufacture of tobacco products	993
13	Manufacture of textiles	16,734
14	Manufacture of wearing apparel	20,511
15	Manufacture of leather and related products	7,489
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	33,148
17	Manufacture of paper and paper products	402
18	Printing and reproduction of recorded media	17,520

19	Manufacture of coke and refined petroleum products	10,89,532
20	Manufacture of chemicals and chemical products	1,53,224
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	24,759
22	Manufacture of rubber and plastic products	22,202
23	Manufacture of other non-metallic mineral products	55,278
24	Manufacture of basic metals	10,032
25	Manufacture of fabricated metal products, except machinery and equipment	4,387
26	Manufacture of computer, electronic and optical products	-2,627
27	Manufacture of electrical equipment	7,701
28	Manufacture of machinery and equipment n.e.c	699
29	Manufacture of motor vehicles, trailers and semitrailers	6,321
30	Manufacture of other transport equipment	21,244
31	Manufacture of furniture	3,522
32	Other manufacturing	23,897
33	Repair and installation of machinery and equipment	10,066
38	Waste collection, treatment and disposal activities; materials recovery	404
58	Publishing activities	1,227
	Others	42,430
	Total	16,98,354

**Figure 2.29: Distribution of profit of the industries by NIC (2008) 2-digit classification**

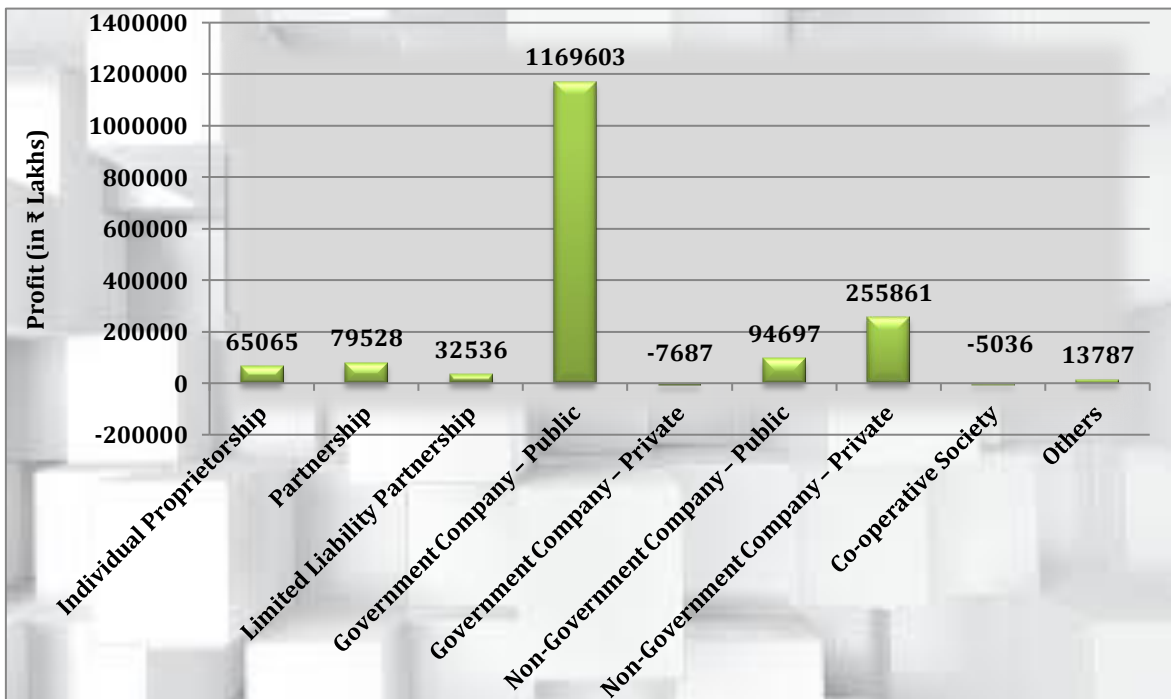


Organizational category wise, in the fiscal year 2022-23 the highest profit was recorded by Government Company – Public (₹ 11,69,603 lakhs) industries.

**Table 2.32: Distribution of profit of industries by type of organization**

Type of Organization	Profit (in ₹ Lakhs)
Individual Proprietorship	65,065
Partnership	79,528
Limited Liability Partnership	32,536
Government Company – Public	1,169,603
Government Company – Private	-7,687
Non-Government Company – Public	94,697
Non-Government Company – Private	2,55,861
Co-operative Society	-5,036
Others	13,787
<b>Total</b>	<b>1,698,354</b>

**Figure 2.30: Distribution of profit of industries by type of organization**





## Chapter 3: Fuel Consumption in organized manufacturing sector

### Fuel Consumption in organized manufacturing sector

The organized manufacturing sector in Kerala plays a pivotal role in the state's economy, contributing significantly to employment, industrial output, and economic development. As the sector continues to grow, fuel consumption emerges as a critical factor in its sustainability and efficiency. The use of energy, particularly through fuels such as fossil fuel coal, electricity, petroleum products, gas and others (fire wood) is central to manufacturing processes across industries, including food processing, textiles, chemicals and machinery.

Kerala's strategic location, well-established infrastructure, and focus on industrial growth have positioned it as a key player in the manufacturing landscape of India. However, the state faces challenges related to fuel efficiency, environmental sustainability, and the rising costs of fuel. In recent years, there has been an increased focus on optimizing fuel consumption, improving energy efficiency, and adopting cleaner technologies within the manufacturing units.

As per the ASI survey consumption of coal, electricity, petroleum products, gas and others (fire wood) estimated .The value of the fuels consumed by the industries of state ₹ 143,795,950 lakhs.

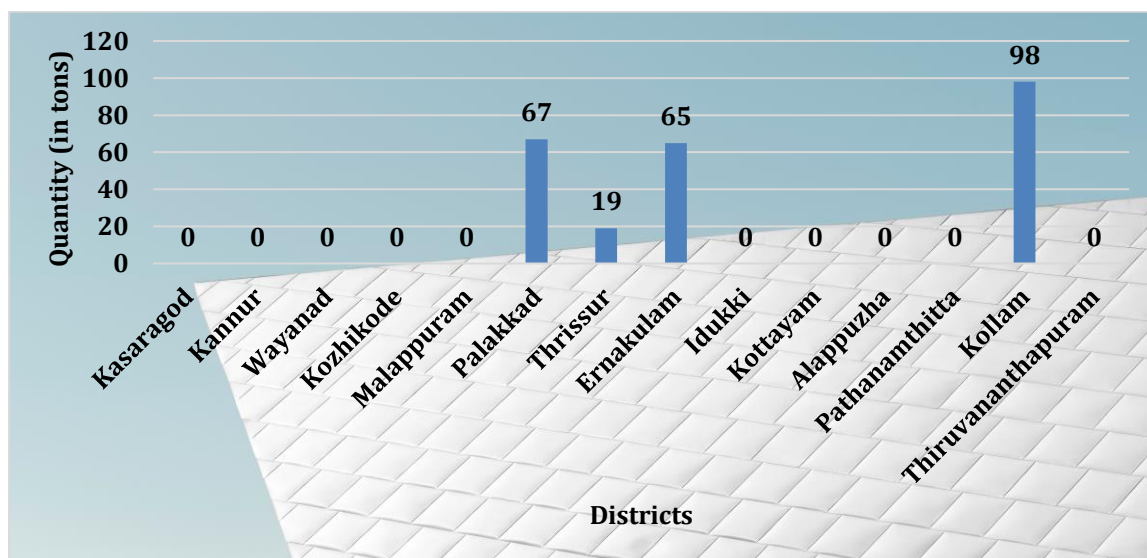
#### 3.1 Coal

The total coal consumption in Kerala amounts to **249 tons**, with a total value of ₹ 2,123,796 thousands. This represents the aggregate coal consumption in the state for the specified period .Out of the total coal consumption by industries in 2022-'23 only nine group of industries as per NIC (2008) 2-digit classification coal consumed.



The major industries were chemical and chemical products (133 tons), Manufacture of other non metallic mineral products (67 tons), Manufacture of Rubber and plastic products (19 tons), Manufacture of food products (30 tons). These industries were located in – Kasaragod, Kannur, Kozhikkode, Malappuram, Palakkad, Thrissur, Ernakulam, Kollam.

**Figure 3.1: Consumption of coal (in tons) in manufacturing industries in districts of Kerala**

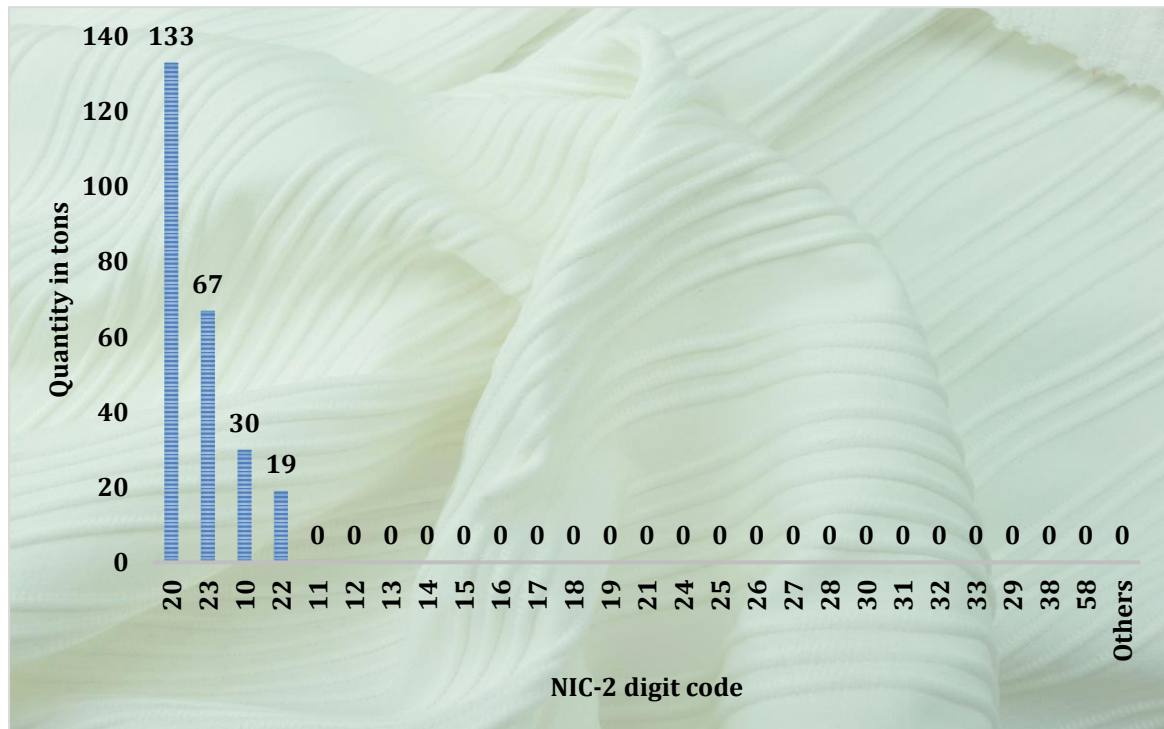


**Table 3.1: District wise Coal consumption**

District	Coal Quantity (Tonnes)	Coal Consumes (Value)	Percentage of coal consumed
Kasaragod	0	286	0
Kannur	0	2736	0
Wayanad	0	0	0
Kozhikkode	0	2140	0
Malappuram	0	33	0
Palakkad	67	570594	26.91
Thrissur	19	232944	7.63
Ernakulam	65	485463	26.10
Idukki	0	0	0
Kottayam	0	0	0
Alappuzha	0	0	0
Pathanamthitta	0	0	0
Kollam	98	829600	39.36
Thiruvananthapuram	0	0	0
Kerala	249	2123796	100.0

On analysing NIC (2008) 2-digit industries consumption of coal was maximum in manufacture of chemical and chemical products industries (133 tons , ₹ 1,126,775 thousands ) which is followed by Manufacture of other non metallic mineral products.

**Figure 3.2: Coal consumption (in tons) in NIC (2008) 2- digit category of industries during FY 2022-23**



**Table 3.2: Consumption of Coal (in tons) and its value in NIC (2008) 2- digit category of industries during FY:2022-23**

NIC 2-digit	Description	Quantity (Tonne)	Consumed (Value)	Percentage of coal consumed
10	Manufacture of food products	30	187122	12.05
11	Manufacture of beverages	0	2179	0.10
12	Manufacture of tobacco products	0	471	0.02
13	Manufacture of textiles	0	0	0.00
14	Manufacture of wearing apparel	0	0	0.00
15	Manufacture of leather and related products	0	0	0.00
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	0	0	0.00
17	Manufacture of paper and paper products	0	0	0.00
18	Printing and reproduction of recorded media	0	0	0.00

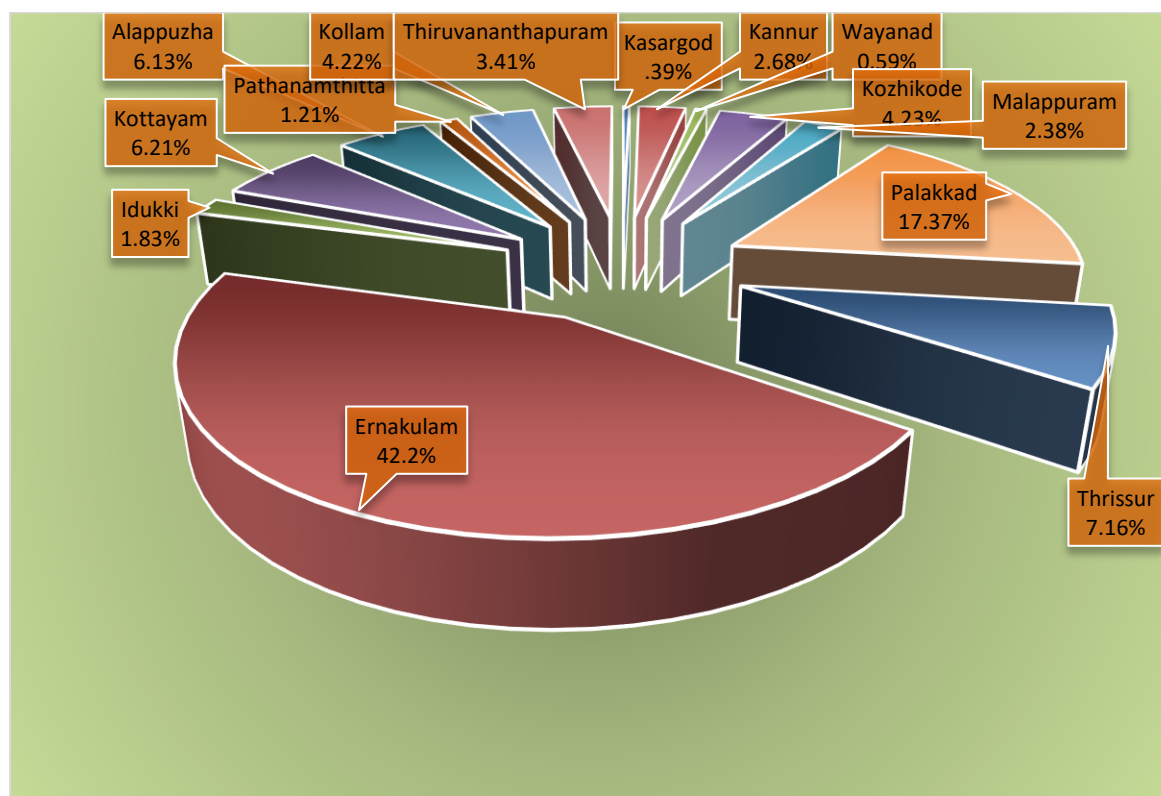
19	Manufacture of coke and refined petroleum products	0	0	0.00
20	Manufacture of chemicals and chemical products	133	1126775	53.05
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	0	0	0.00
22	Manufacture of rubber and plastic products	19	232944	10.97
23	Manufacture of other non-metallic mineral products	67	569321	26.81
24	Manufacture of basic metals	0	2957	0.14
25	Manufacture of fabricated metal products, except machinery and equipment	0	1135	0.05
26	Manufacture of computer, electronic and optical products	0	0	0.00
27	Manufacture of electrical equipment	0	0	0.00
28	Manufacture of machinery and equipment n.e.c	0	892	0.04
29	Manufacture of motor vehicles, trailers and semitrailers			0.00
30	Manufacture of other transport equipment	0	0	0.00
31	Manufacture of furniture	0	0	0.00
32	Other manufacturing	0	0	0.00
33	Repair and installation of machinery and equipment	0	0	0.00
38	Waste collection, treatment and disposal activities; materials recovery			0.00
58	Publishing activities			0.00
	Others	0	0	0.00
	Total	249	2123796	100.00

### 3.2 Electricity

The total electricity consumption of the manufacturing industries of state is 3454380 KWH and its estimated value is ₹ 25,685,771 (in thousands). Out of total consumption of electricity by the manufacturing industries in 2022-23 industries sector in Ernakulam district accounted for the largest share (44.64%, 1542037 KWH), followed by Palakkad (17.14 % ,592,124 KWH).



**Figure 3.3: District wise consumption of electricity (KWH) in manufacturing industries in Kerala during 2022-23**

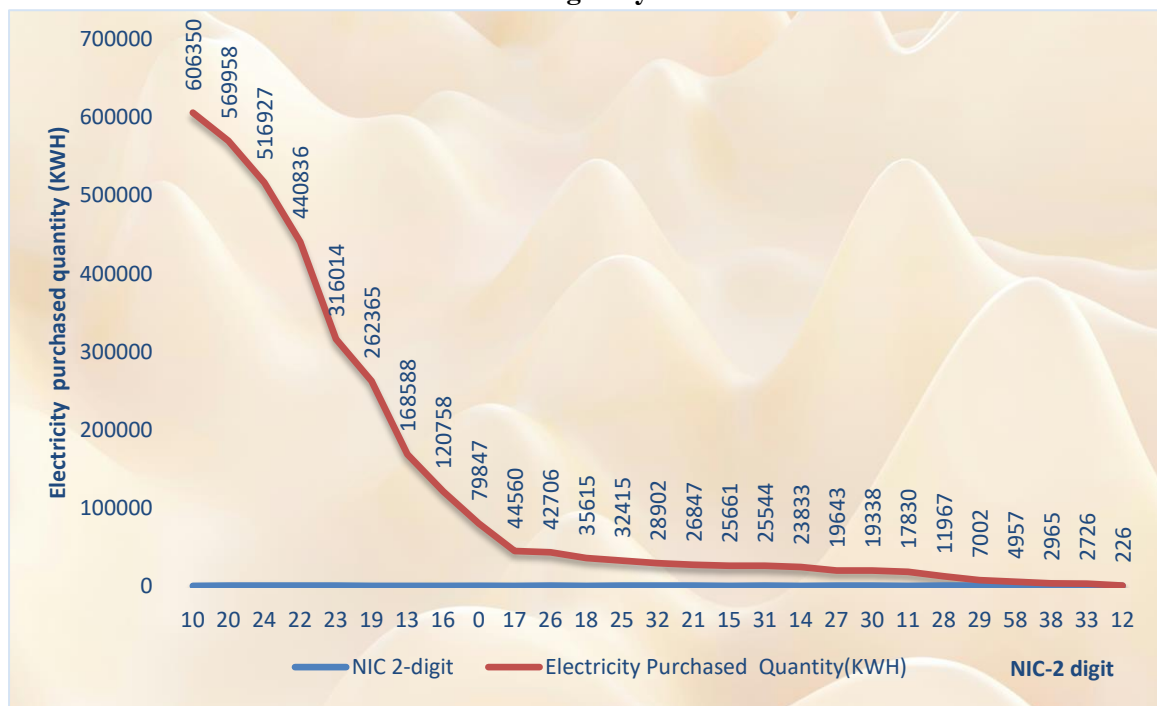


**Table 3.3: District wise consumption of electricity (KWH) in manufacturing industries in Kerala during 2022-23**

Districts	Electricity Purchased Quantity(KWH)	Electricity Purchased (Value)	Percentage of Electricity consumed
Kasargod	12380	99506	0.39
Kannur	92880	687447	2.68
Wayanad	21362	151325	0.59
Kozhikode	135236	1085320	4.23
Malappuram	76744	611866	2.38
Palakkad	592124	4460692	17.37
Thrissur	267793	1839047	7.16
Ernakulam	1542037	10839479	42.20
Idukki	58700	471017	1.83
Kottayam	203276	1594889	6.21
Alappuzha	177304	1574891	6.13
Pathanamthitta	34367	310244	1.21
Kollam	125099	1083935	4.22
Thiruvananthapuram	115078	876113	3.41
Kerala	3454380	25685771	100.00

Analyzing the consumption of electricity in NIC (2008) 2-digit category of industries it was observed that Manufacture of food products (17.55 %, 606350 KWH) is maximum followed by Manufacture of chemicals and chemical products (16.50%, 569958 KWH) and the least is estimated in tobacco product industries (0.01 %, 226 KWH)

**Figure 3.4: Consumption of Electricity (in KWH ) NIC (2008) 2-digit category of industries in Kerala during the year 2022-23**



**Table 3.4: Consumption and value of electricity purchased in factory sector by NIC (2008) 2- digit category of Industries during FY 2022-23**

NIC 2- digit	Description	Electricity Purchased Quantity(KWH)	Electricity Purchased (Value)	Percentage of consumption of Electricity
10	Manufacture of food products	606350	4747966	17.55
11	Manufacture of beverages	17830	136610	0.52
12	Manufacture of tobacco products	226	2186	0.01
13	Manufacture of textiles	168588	1258666	4.90
14	Manufacture of wearing apparel	23833	181082	0.69
15	Manufacture of leather and related products	25661	188574	0.74
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	120758	1014185	3.50

17	Manufacture of paper and paper products	44560	347651	1.30
18	Printing and reproduction of recorded media	35615	279453	1.03
19	Manufacture of coke and refined petroleum products	262365	1768959	7.60
20	Manufacture of chemicals and chemical products	569958	4072084	16.50
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	26847	189586	0.78
22	Manufacture of rubber and plastic products	440836	3289861	12.76
23	Manufacture of other non-metallic mineral products	316014	2510157	9.15
24	Manufacture of basic metals	516927	3530773	15.00
25	Manufacture of fabricated metal products, except machinery and equipment	32415	242402	0.94
26	Manufacture of computer, electronic and optical products	42706	310912	1.24
27	Manufacture of electrical equipment	19643	149085	0.57
28	Manufacture of machinery and equipment n.e.c	11967	97966	0.35
29	Manufacture of motor vehicles, trailers and semitrailers	7002	50995	0.20
30	Manufacture of other transport equipment	19338	156143	0.56
31	Manufacture of furniture	25544	195671	0.74
32	Other manufacturing	28902	219779	0.84
33	Repair and installation of machinery and equipment	2726	20431	0.08
38	Waste collection, treatment and disposal activities; materials recovery	2965	22192	0.09
58	Publishing activities	4957	32954	0.14
	Others	79847	669448	2.31
	Total	3454380	25685771	100.00

### 3.3: Petroleum Products, Gas and Other Fuels

The table presents the district-wise value of petroleum products consumed, along with gas and other fuel consumption. **Ernakulam** accounts for **88.69%** product value (₹ 69,973,437 in `000). This indicates that Ernakulam has a highly industrialized or transport-heavy economy compared to other districts.

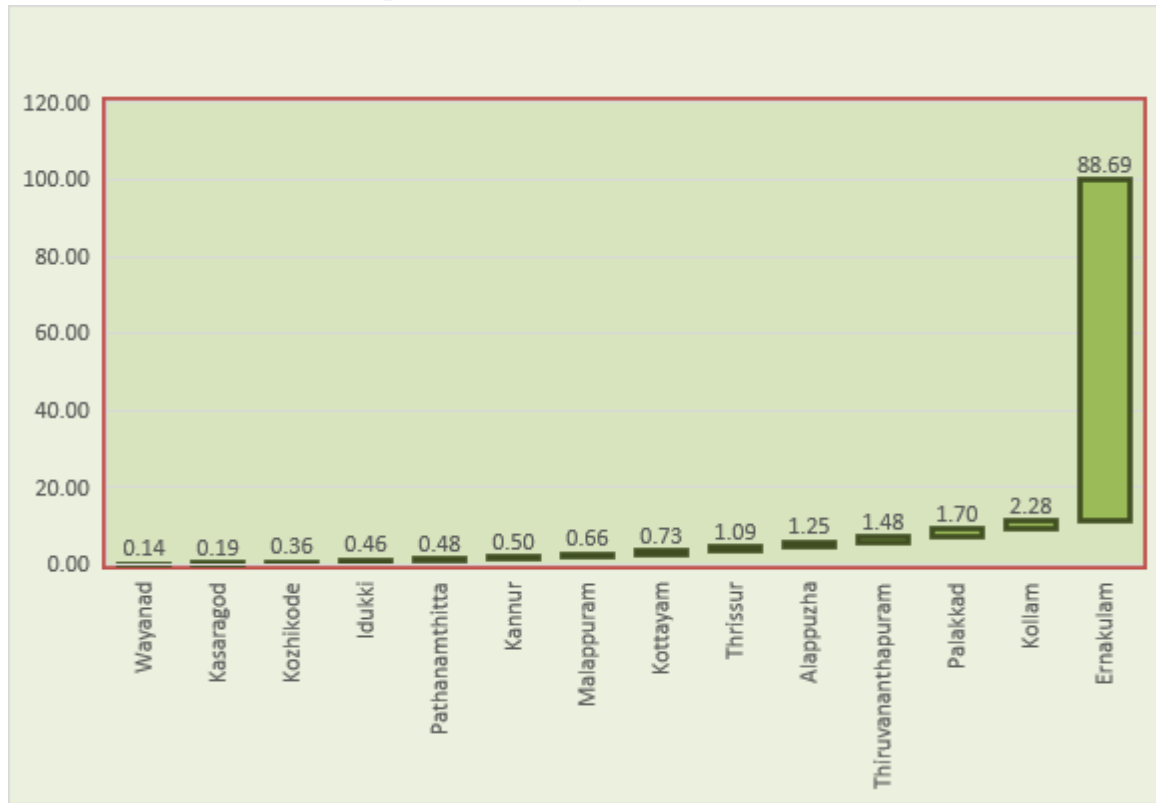


**Wayanad (0.14%) (product value ₹ 109,454 in `000)** has the lowest petroleum consumption, likely due to its lower industrial activities and a more agrarian economy. As per the survey findings in 2022-`23 manufacturing industries consumed petroleum products, Gas and Other fuels with ₹ 78,899,632 (in `000), ₹ 29,778,808 (in `000), ₹ 3,853,314 (in `000) respectively. *The values in braces show the percentage of total value of fuel consumed by the industries.*

**Table 3.5: Value of petroleum products, gas and other fuels purchased by factory sector in the districts of Kerala 2022-23 (Value in ₹ thousands)**

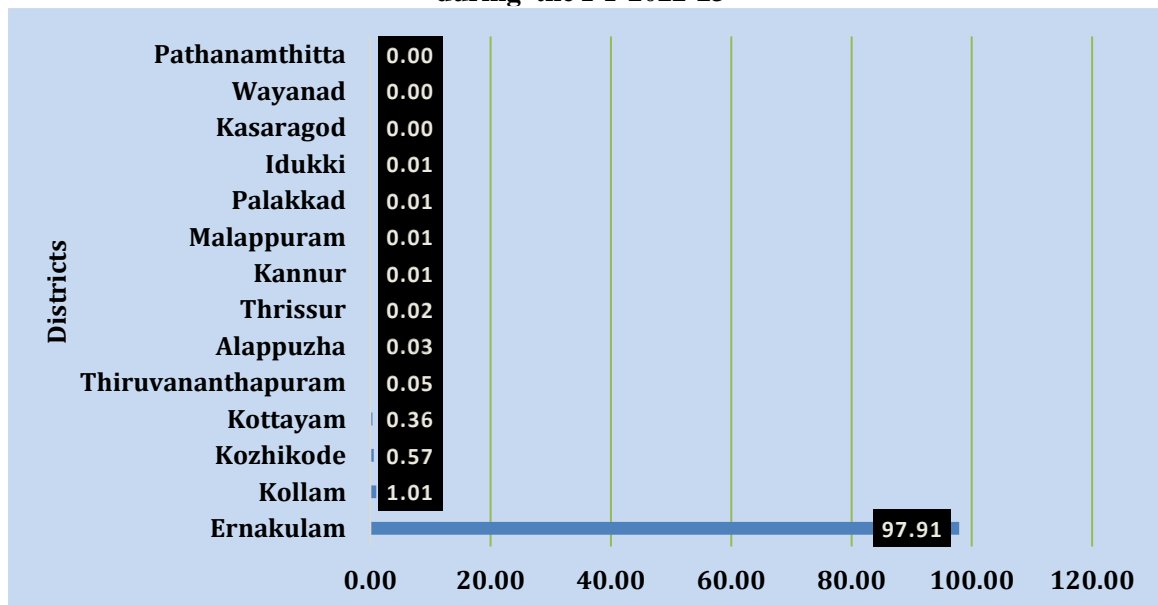
District	Petroleum products (Petrol, diesel, oil, lubricants)	Percentage of Petroleum products	Gas consumed	Percentage of Gas consumed	Other Fuels	Percentage of Other Fuels
Kasaragod	151898	0.19	133	0.00	10168	0.26
Kannur	395821	0.50	3110	0.01	74629	1.94
Wayanad	109454	0.14	1146	0.00	62713	1.63
Kozhikode	286325	0.36	171922	0.57	42237	1.10
Malappuram	520601	0.66	3388	0.01	316455	8.21
Palakkad	1342607	1.70	3396	0.01	457542	11.87
Thrissur	856820	1.09	5224	0.02	289334	7.51
Ernakulam	69973437	88.69	29156377	97.91	828019	21.49
Idukki	359549	0.46	4046	0.01	341382	8.86
Kottayam	573897	0.73	107866	0.36	658427	17.09
Alappuzha	985892	1.25	8462	0.03	328334	8.52
Pathanamthitta	378590	0.48	109	0.00	95177	2.47
Kollam	1795739	2.28	299451	1.01	19485	0.51
Thiruvananthapuram	1169002	1.48	14178	0.05	329412	8.55
Kerala	78899632		29778808		3853314	

**Figure 3.5: District wise Percentage of value (in ₹ thousand) of consumption of petroleum products during the FY:2022-23**



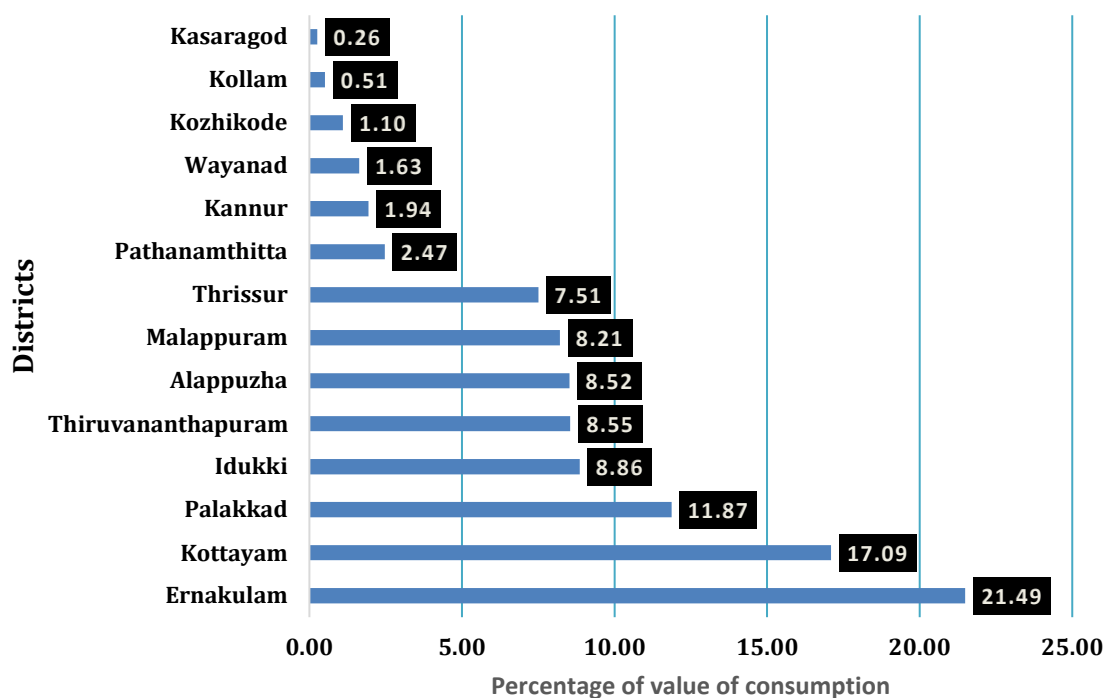
The estimated value of 'Gas consumed' in industries is highest in Ernakulam district (₹ 29,156,377 in `000) which covers 97.91% of the total value of Gas consumed by the manufacturing sector of the state. In all other district the share of value of gas consumption is eligible other than Kollam district.

**Figure 3.6 District wise percentage of value (in ₹ thousand ) of consumption of Gas during the FY 2022-23**



The estimated value of `Other fuels consumed` in industries is highest in Ernakulam district (₹ 828,019 in `000) which covers 21.49 % of the total value of Other fuels consumed by the manufacturing sector of state followed by Kottayam (₹ 6,58,427) with 17.09 % of state aggregate.

**Figure 3.7: District wise percentage of value (in ₹ thousands) of consumption of Other Fuels during the FY: 2022-23**

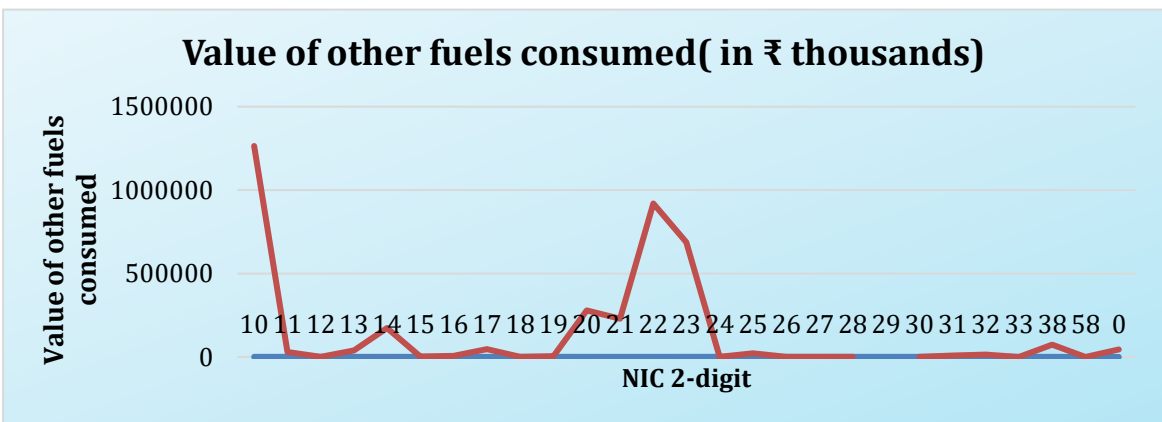
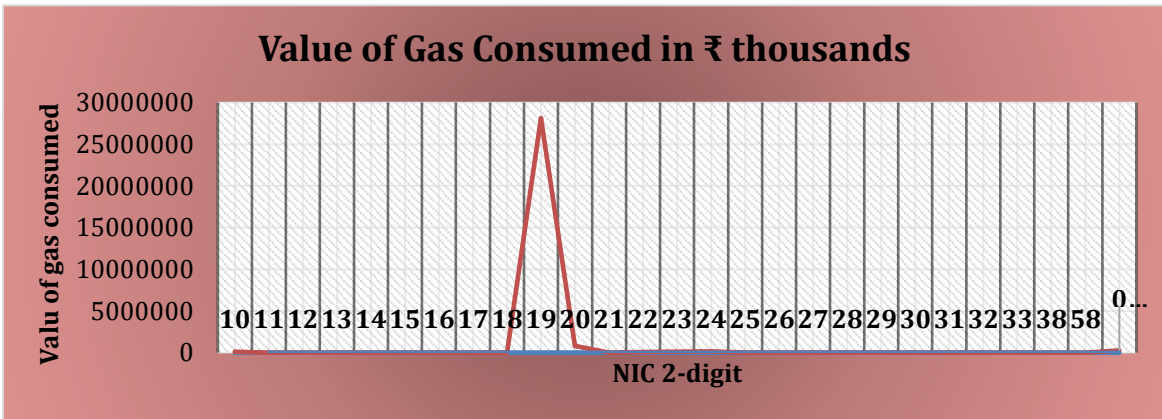
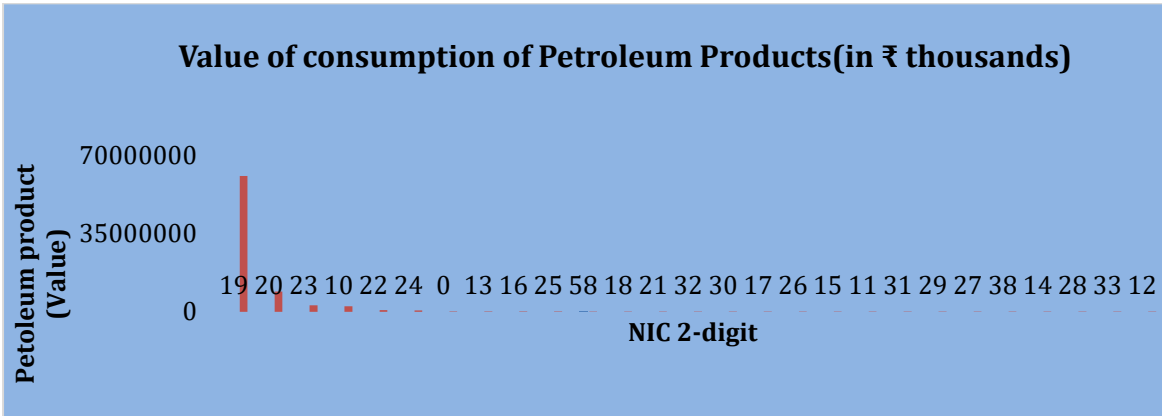


**Table 3.6: Value of Consumption of Petroleum products, gas and other fuels purchased in factory sector by NIC (2008) 2-digit during FY 2022-23**

NIC 2-digit	Description	Petroleum Products (Value)	Gas Consumed (Value)	Other Fuels consumed (Value)
10	Manufacture of food products	25,39,796 (3.22%)	1,37,265 (0.46%)	12,64,545 (32.82%)
11	Manufacture of beverages	53,419 (0.07%)	0(0)	29,155 (0.76%)
12	Manufacture of tobacco products	2,222(0)	0(0)	1 (0%)
13	Manufacture of textiles	2,47,222 (0.31)	5,646 (0.02)	39,342 (1.02%)
14	Manufacture of wearing apparel	26,791(0.03)	5(0)	1,73,018 (4.49%)
15	Manufacture of leather and related products	54,500 (0.07)	0(0)	2,393 (0.06%)

16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	2,46,311 (0.31)	710(0)	7,497 (0.19%)
17	Manufacture of paper and paper products	68,086 (0.09)	294(0)	47,163 (1.22%)
18	Printing and reproduction of recorded media	1,04,063 (0.13)	13,459(0.05)	1,690 (0.04%)
19	Manufacture of coke and refined petroleum products	6,08,36,422 (77.11)	2,81,31,194 (94.47)	4,464 (0.12%)
20	Manufacture of chemicals and chemical products	91,28,051 (11.57)	8,14,918(2.74)	2,79,294 (7.25%)
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	91,442 (0.12)	9,402 (0.03)	2,29,310 (5.95%)
22	Manufacture of rubber and plastic products	8,27,552 (1.05)	75,655(0.25)	9,20,841 (23.90%)
23	Manufacture of other non-metallic mineral products	29,84,617 (3.78)	1,25,714(0.42)	6,87,744 (17.85%)
24	Manufacture of basic metals	6,88,173 (0.87)	167319 (0.56)	1,158 (0.03%)
25	Manufacture of fabricated metal products, except machinery and equipment	2,30,874 (0.29)	1,762(0.01)	22,090 (0.57%)
26	Manufacture of computer, electronic and optical products	56,292 (0.07)	686(0)	225 (0.01%)
27	Manufacture of electrical equipment	36,479 (0.05)	593(0)	1,134 (0.03%)
28	Manufacture of machinery and equipment n.e.c	26,429 (0.03)	865(0)	400 (0.01%)
29	Manufacture of motor vehicles, trailers and semitrailers	39,361 (0.05)	293(0)	0 (0%)
30	Manufacture of other transport equipment	77,818 (0.1)	23,053 (0.08)	1,133 (0.03%)
31	Manufacture of furniture	52,821 (0.07)	6,284 (0.02)	8,752 (0.23%)
32	Other manufacturing	81,815 (0.1)	1,900 (0.01)	13,466 (0.35%)
33	Repair and installation of machinery and equipment	9,583 (0.01)	52(0)	0 (0%)
38	Waste collection, treatment and disposal activities; materials recovery	27,350 (0.03)	0	74,162 (1.92%)
58	Publishing activities	1,07,024 (0.14)	(0)	0 (0%)
	Others	2,55,119 (0.32)	2,61,739 (0.88)	44,337 (1.15%)
	<b>Total</b>	<b>7,88,99,632 (100%)</b>	<b>2,97,78,808 (100%)</b>	<b>38,53,314 (100%)</b>

**Figure 3.8: Value of Consumption of Petroleum products, gas and other fuels purchased in factory sector by NIC (2008) 2 -digit**



### Key Findings

- ❖ *Industry with highest consumption of coal is Chemicals and chemical products (133 tonnes) followed by Other Non-Metallic Mineral Products (67 tonnes).*
- ❖ *The maximum consumption of electricity was observed in Food Products industry (17.55% ,606350 KWH) followed by Chemicals and chemical products(16.50 %, 569958 KWH).*
- ❖ *Industry wise consumption value of petroleum products (₹ 78,899,632 thousands ) and Gas (₹ 29,778,808 lakhs) was observed to be maximum in Coke and Refined Petroleum Products (₹ 60,836,422 thousands ) whereas the industry which depended mostly on Other Fuels was Food Products (₹ 1,264,545 thousand)*





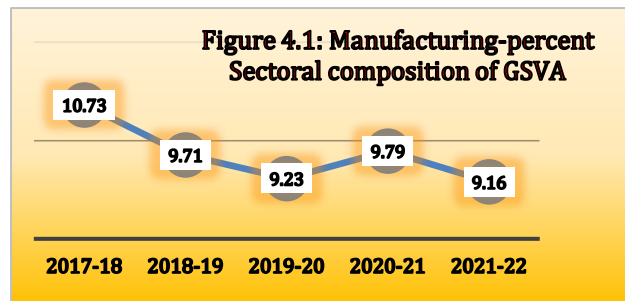


## Chapter 4: Trend Analysis

Trend analysis of the characteristics of manufacturing sector is essential for understanding the growth structure and it has been done from 2017-18 to 2022-23. Here an attempt has been made to explore the trend behavior of the time series of principal characteristics of the registered manufacturing sector of the state.

The major purpose of the survey is to assess the performance of the organized manufacturing units and its contribution to the over-all economy. The survey also seeks solutions to the problems regarding the capability of current industrial policy in achieving the goals that leads to economic development.

A quick reference of the contribution of whole manufacturing sector to the Gross State Value Added (GSVA) from 2017-18 to 2021-22 reveals that sectoral composition of manufacturing had a downward trend during the period 2017-



18 to 2019-20. And in the financial year 2017-18 the contribution was 10.73 % which declined in subsequent years to reach at a figure of 9.16 % in the financial year 2021-22.

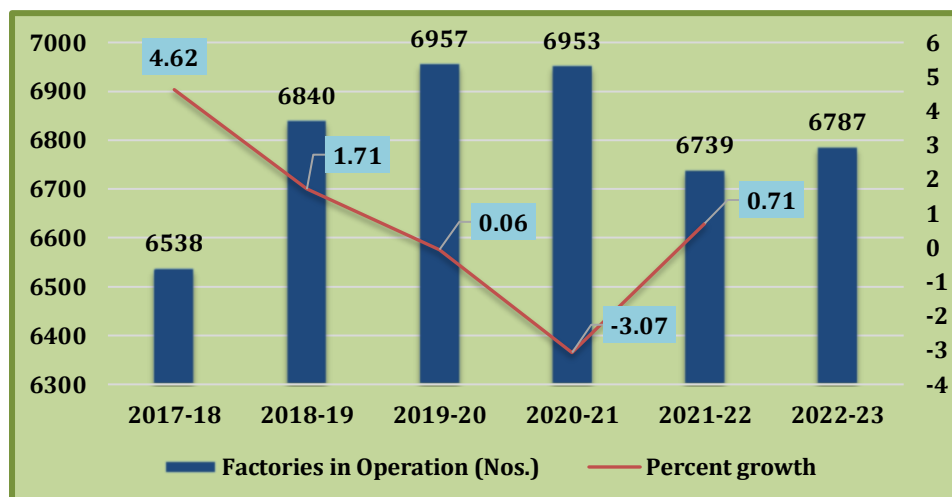
### 4.1 Factories in operation

As per ASI survey results from 2017-18 to 2022-23, over the years, the estimated number of operating factories in the organized manufacturing sector showed an upward trend from 2017-18 to 2020-21. In the financial year 2021-22 the number of operating factories slightly declined at the rate of 3.07 % and then a slight increase in the financial year 2022-23.

Table 4.1: Total factories and factories in operation from 2017-18 to 2022-23, Kerala						
Principal Characteristic	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Number of factories	7596	7695	7793	7972	7740	7624
Factories in Operation (Nos.)	6538	6840	6953	6957	6739	6787
Percentage of factories in operation	86.1	88.9	89.2	87.3	87.1	89

Table 4.2: Percentage growth of operational factories, Kerala 2017-18 to 2022-23					
Characteristic	2018-19 Over 2017-18	2019-20 Over 2018-19	2020-21 Over 2019-20	2021-22 Over 2020-21	2022-23 Over 2021-22
Factories in Operation	4.62	1.71	0.06	-3.07	0.71

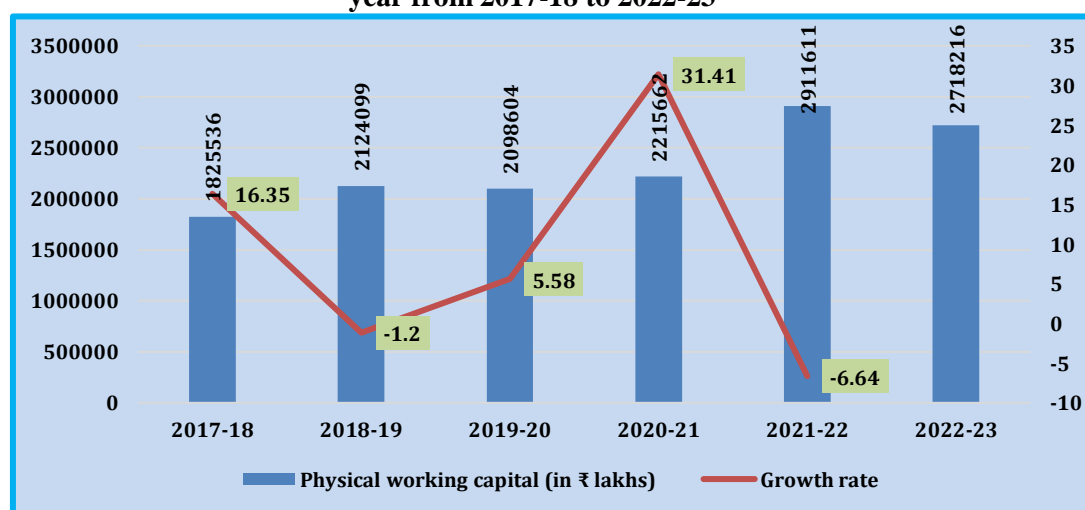
Figure 4.2: Factories in operation & percentage growth rate over the previous year from 2017-18 to 2022-23



#### 4.2. Investment behaviour in organized manufacturing sector

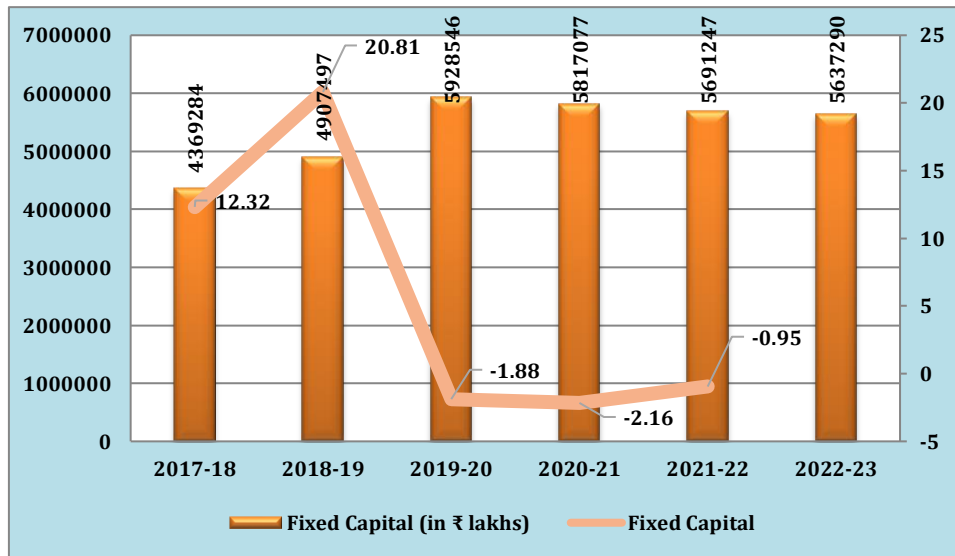
The capital invested in the industries consists of physical working capital and fixed capital. The physical working capital is the total inventory owned by the factory on the closing day of the accounting year. As per the time series data the physical working capital oscillating between the years 2017-18 to 2022-23, which declined at the rate of 1.2% in the year 2019-20 compared to previous year. Then it showed a slight hike of 5.58 %. In 2020-21 to 2022-23, physical working capital i.e. the value of inventory controlled by the firms showed a decline of 6.64 % (see Figure 4.3 and refer table 4.4)

Figure 4.3: Physical capital (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23



The change in fixed capital from 2018-19 to 2019-20 reveals a major increase in growth rate of 20.81% over the previous year. But in successive years it shows decline. The highest value was estimated in 2019-20 (₹ 59,28,546 lakhs). But in the subsequent years (2020-21, 2021-22 and 2022-23) it dropped by 1.88 % , 2.16 % and 0.95% respectively. (see Figure 4.4 and refer table 4.4).

**Figure 4.4: Fixed capital (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23**



Invested capital is the sum of fixed capital and physical working capital. The fluctuations in the values of these two reflects in the total capital invested. Over the years the invested capital showed positive trend except in 2022-23 (-0.95 %). The fixed capital showed a drop of -1.88%, -2.16 % and -0.95% in consecutive years from 2020-21 to 2022-23. (See figure 4.5).

**Figure 4.5: Invested capital (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23**



Table 4.3: Capital invested in manufacturing sector from 2017-18 to 2022-23						
Principal Characteristic	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Fixed Capital (in ₹ lakhs)	4369284	4907497	5928546	5817077	5691247	5637290
Physical working capital (in ₹ lakhs)	1825536	2124099	2098604	2215662	2911611	2718216
Invested Capital (in ₹ lakhs)	6194820	7031597	8027150	8032739	8602858	8355506

Table 4.4: Percentage growth of capital, Kerala 2017-18 to 2022-23					
Principal Characteristic	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Fixed Capital	12.32	20.81	-1.88	-2.16	-0.95
Physical working capital	16.35	-1.2	5.58	31.41	-6.64
Invested Capital	13.51	14.16	0.07	7.09	-2.88

The concept of Capital formation is highly significant as it helps to concentrate on the physical process of forming good that are to be used in the production of other goods. Higher the growth rate of Capital Formation, higher would be productivity capacity of the economy. Analyzing the Gross Fixed Capital Formation of manufacturing over the years, the values are fluctuating in upward and downward trend. The highest decline in GFCF was observed in 2020-21 at the rate of 47.61% .

**Figure 4.6: Gross Fixed Capital Formation (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23**

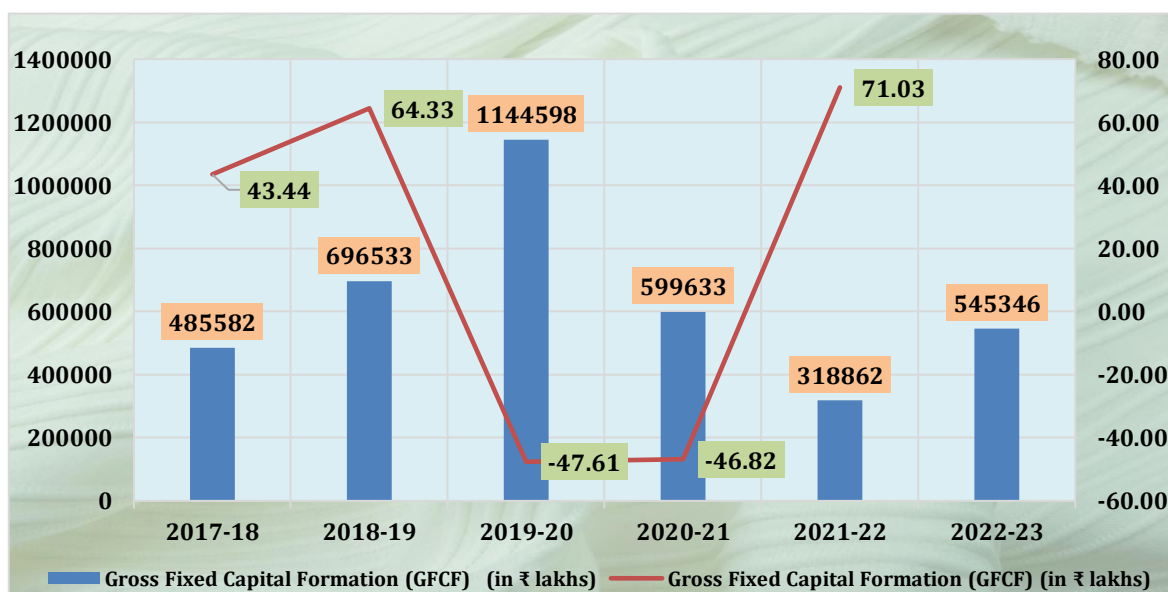


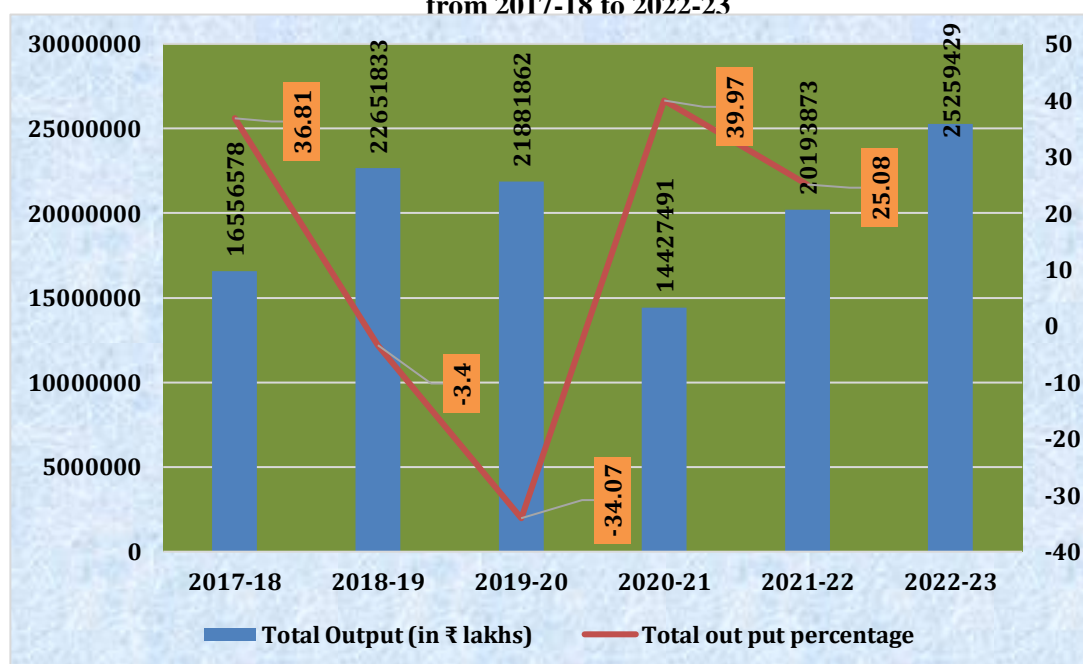
Table 4.5: Gross Fixed Capital Formation (GFCF) in manufacturing sector from 2017-18 to 2022-23						
Principal Characteristic	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	4,85,582	6,96,533	11,44,598	5,99,633	3,18,862	5,45,346

Table 4.6: Ratio of growth of Gross Fixed Capital Formation (GFCF), Kerala 2017-18 to 2022-23					
Principal Characteristic	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	43.44	64.33	-47.61	-46.82	71.03

### 4.3: Output and Input

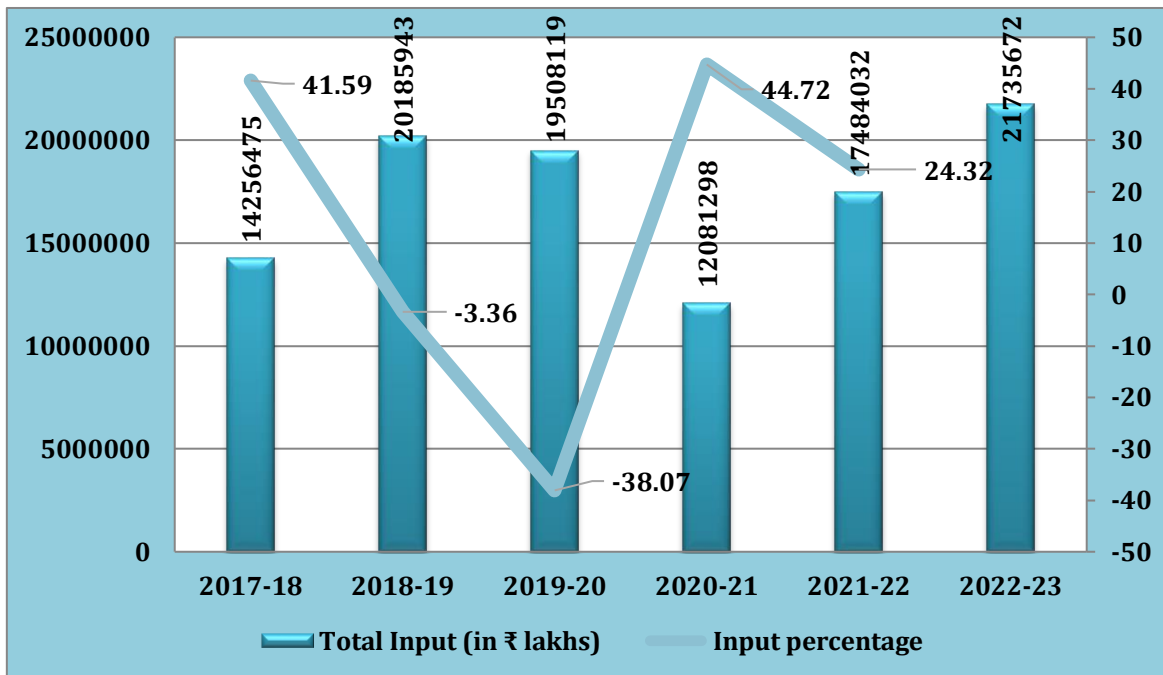
The output of the manufacturing industries showed an upward trend in 2018-19 and shows a slight down in 2019-20. There is precipitous fell down to the rate of 34.07 % in 2020-21, and it shows an upswing at the rate 39.97 % in 2021-22 (₹ 2,01,93,873) and 2022-23 (₹ 2,52,59,429) (Figure 4.7)

Figure 4.7: Output (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23



A same trend is visible in the case of input also. A similar spike at the rate of 41.59 % is observed in the input in 2018-19 as well as a major drop rate of 38.07 % is observed in 2020-21. But there is a jump in 2021- 22 (44.72%) then shows slight positive down in 2022-23. Both input and output showed an uptrend in their values in 2022-23 (Figure 4.8).

**Figure 4.8: Input (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23**

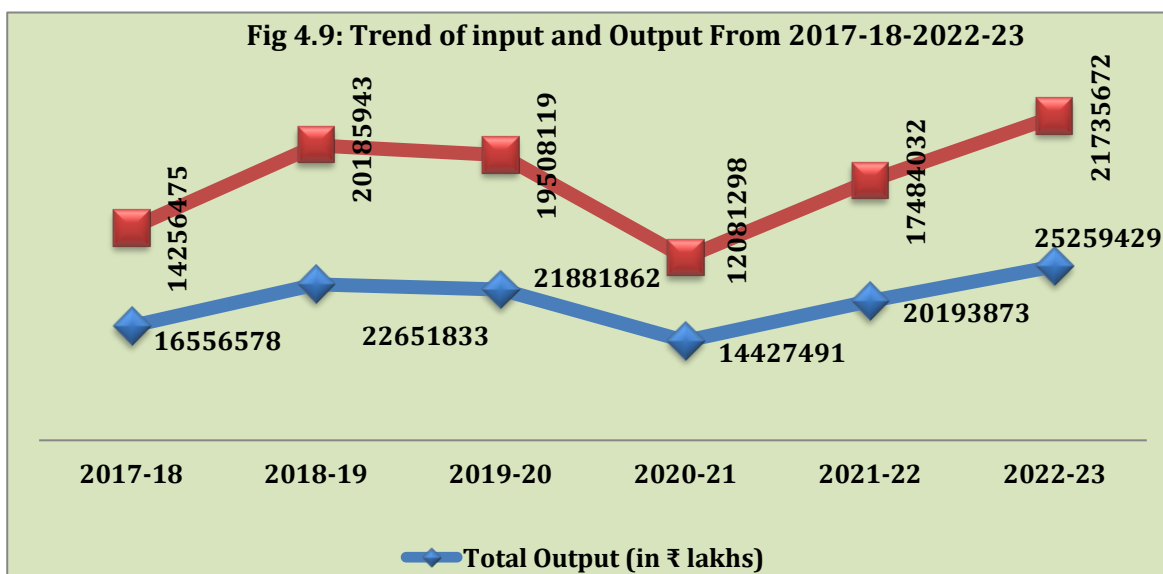


**Table 4.7: Input and Output manufacturing sector from 2017-18 to 2022-23, Kerala**

Principal Characteristic	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Total Output (in ₹ lakhs)	1,65,56,578	2,26,51,833	2,18,81,862	1,44,27,491	2,01,93,873	2,52,59,429
Total Input (in ₹ lakhs)	1,42,56,475	2,01,85,943	1,95,08,119	1,20,81,298	1,74,84,032	2,17,35,672

**Table 4.8: Percentage growth of input and output, Kerala 2017-18 to 2022-23**

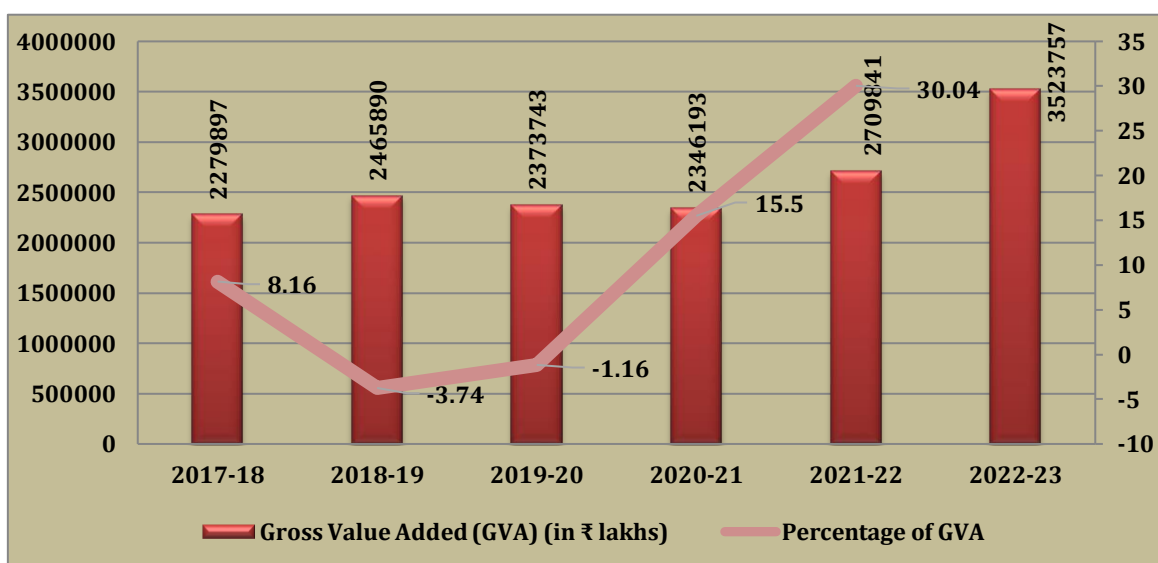
Principal Characteristic	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Input	41.59	-3.36	-38.07	44.72	24.32
Output	36.81	-3.4	-34.07	39.97	25.08



#### 4.4. Gross Value Added (GVA)

Gross value added is the value additions in the production of manufacturing units and is obtained by deducting input from output. The time series data shows consecutive ups and downs in the value of indicator from 2018-19 to 2020-21. In 2022-23 the input and output values are high compared to the previous year. So Gross Valued Added showed a hike at a rate of 30.04% (see Figure 4.8).

**Figure 4.10: Gross Value Added (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2022-23**



**Table 4.9: Gross Value Added (GVA) manufacturing sector from 2017-18 to 2022-23**

Principal Characteristic	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Gross Value Added (GVA) (in ₹ lakhs)	22,79,897	24,65,890	23,73,743	23,46,193	27,09,841	35,23,757

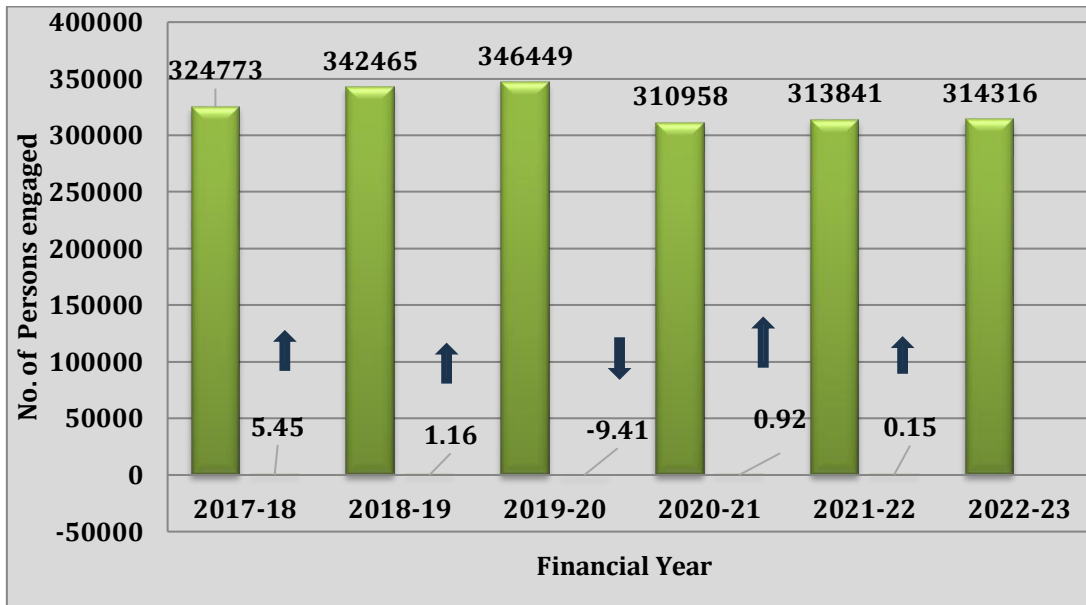
**Table 4.10: Percentage growth of Gross Value Added (GVA) Kerala 2017-18 to 2022-23**

Principal Characteristic	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Gross Value Added (GVA)	8.16	-3.74	-1.16	15.49	30.04

#### 4.5 Employment and Wages

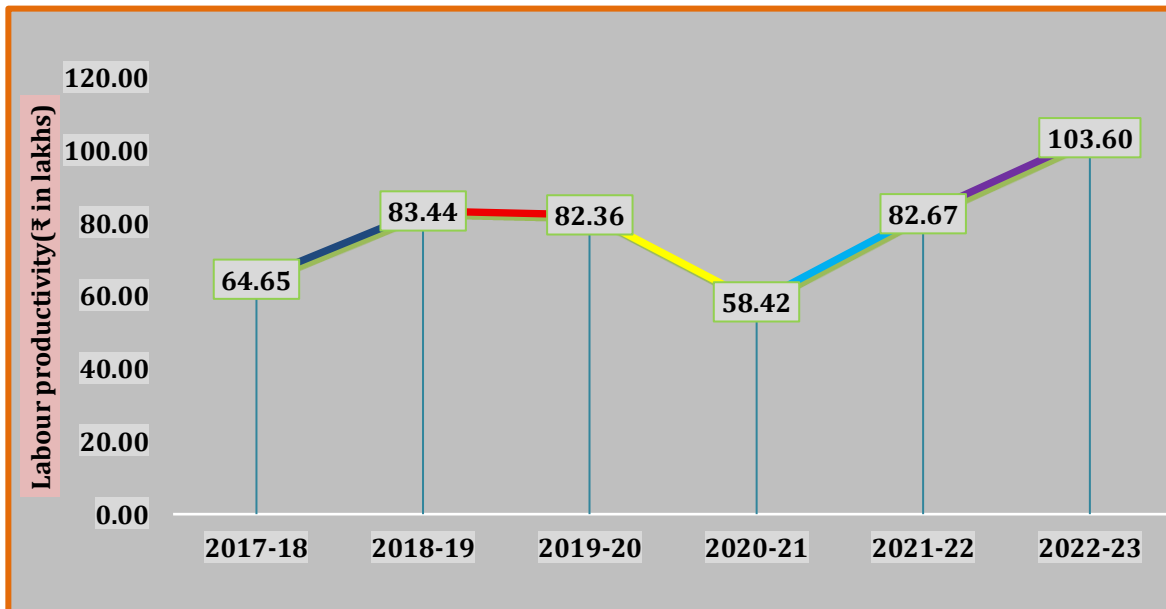
In this section an attempt has been made to analyse the behaviour of labour employment, wage per worker and labour productivity. Over the years, the number of persons engaged in factories declined by 9.41 % during 2020-21 and we can see an upstick of 0.92 % in 2021-22 and 0.15 % in 2022-23.

**Figure 4.11: Number of persons engaged in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23**



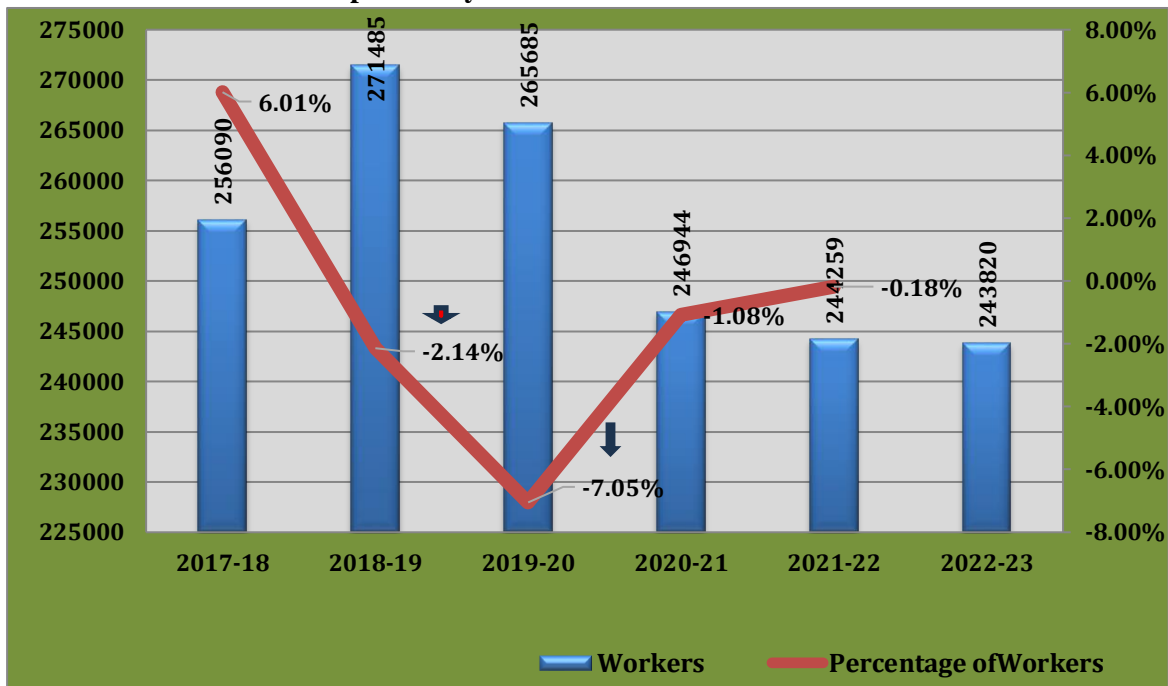
The labour productivity was measured in terms of Output per person engaged and the time series data reveals an upward trend during the period from 2017-18 to 2019-20. In the subsequent year the productivity showed a decline. By analysing 2021-22, 2022-23 output generated turns out to be ₹ 82.67 lakhs, ₹ 103.60 lakhs per worker and it shows a hike.

**Figure: 4.12: Labour Productivity (Out put per unit labour in ₹ lakhs), 2017-18 to 2022-23**



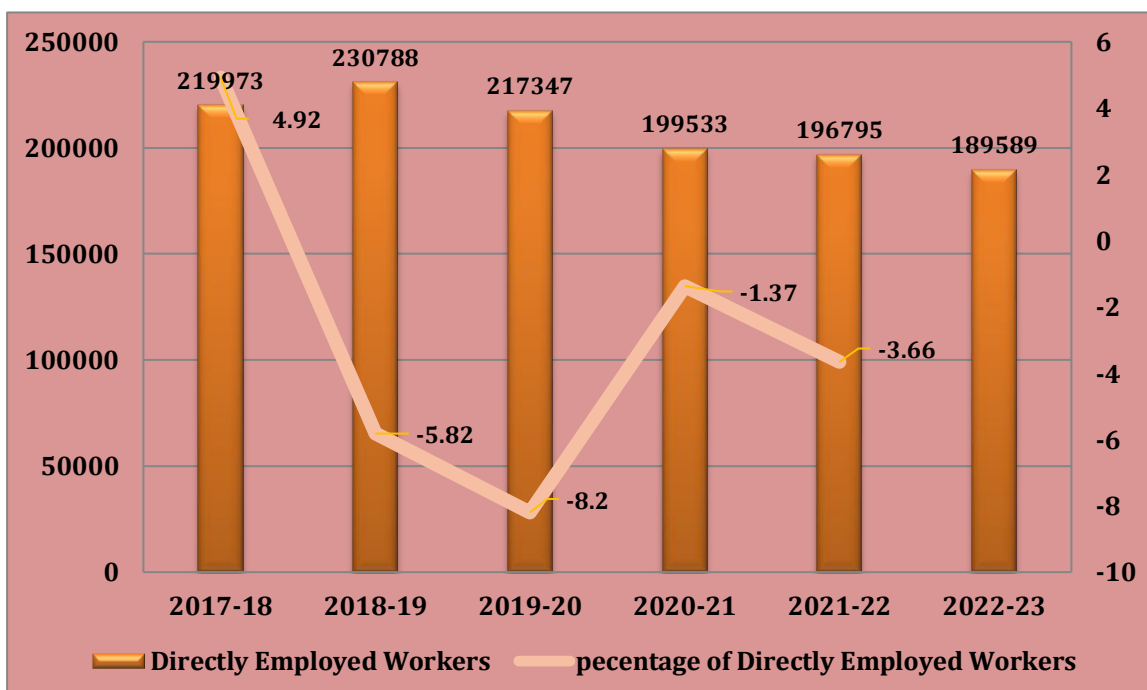
Analysing the number of workers, a growth was observed only in 2018-19 (6.01 %) compared to previous year whereas diminishing trend is seen while observing the number from 2017-18 to 2022-23 except 2018-19. During 2022-23 the number of workers declined by 0.18 % compared to 2021-22.

**Figure 4.13: Number of workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23**



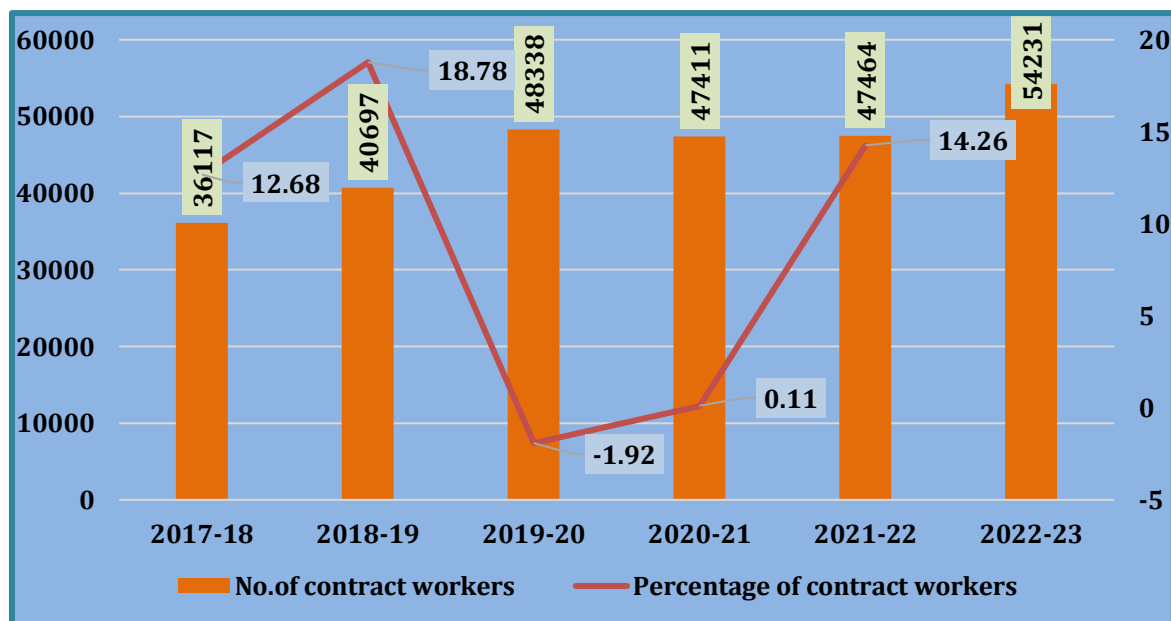
Among the workers, considering the directly employed workers, in 2018-19 it shows an uptrend of 4.92%. In the remaining years it followed a downward trend. In 2019-20 onwards the number of directly employed workers again declined with rates 5.82 %, 8.20%, 1.37 % and 3.66% respectively.

**Figure 4.14: Number of Directly employed workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23**



While analysing in the case of contract workers it showed better growth rates compared to directly employed workers. The highest upward trend was observed in 2019-20 (18.78 %). In the subsequent year, 2020-21 there is a drop of 1.92 % was recorded. In 2021-22 onwards the number of contract workers again raised with rates 0.11% and 14.26% respectively.

**Figure 4.15: Number of contract workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23**



**Table 4.11: Number of workers in manufacturing sector from 2017-18 to 2022-23**

Employees	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Workers	256090	271485	265685	246944	244259	243820
Directly Employed	219973	230788	217347	199533	196795	189589
Employed through Contractors	36117	40697	48338	47411	47464	54231

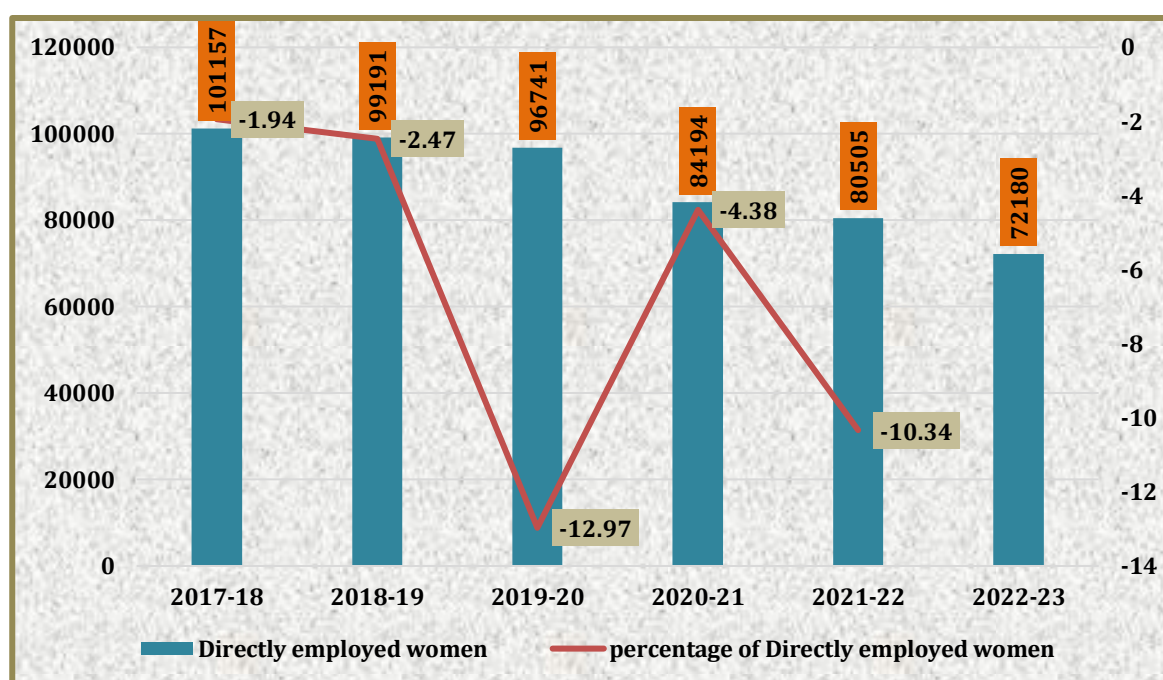
**Table 4.12: Growth of number of workers, from 2017-18 to 2022-23**

Employees	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Workers	6.01%	-2.14%	-7.05%	-1.08%	-0.18%
Directly Employed	4.92%	-5.82%	-8.2%	-1.37%	-3.66%
Employed through Contractors	12.68%	18.78%	-1.92%	0.11%	14.26%

#### 4.5.1: Female participation in manufacturing

Analysing the directly employed female participation in manufacturing from 2017-18 to 2022-23, the statistics shows a continuous decline from 2017-18 onwards. (Refer figure 4.16)

**Figure 4.16: Female participation in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23**



**Table 4.13: Gender wise number of directly employed workers in manufacturing sector from 2017-18 to 2022-23**

Directly employed workers	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Men	118816	131597	120606	115339	116290	117409
Women	101157	99191	96741	84194	80505	72180

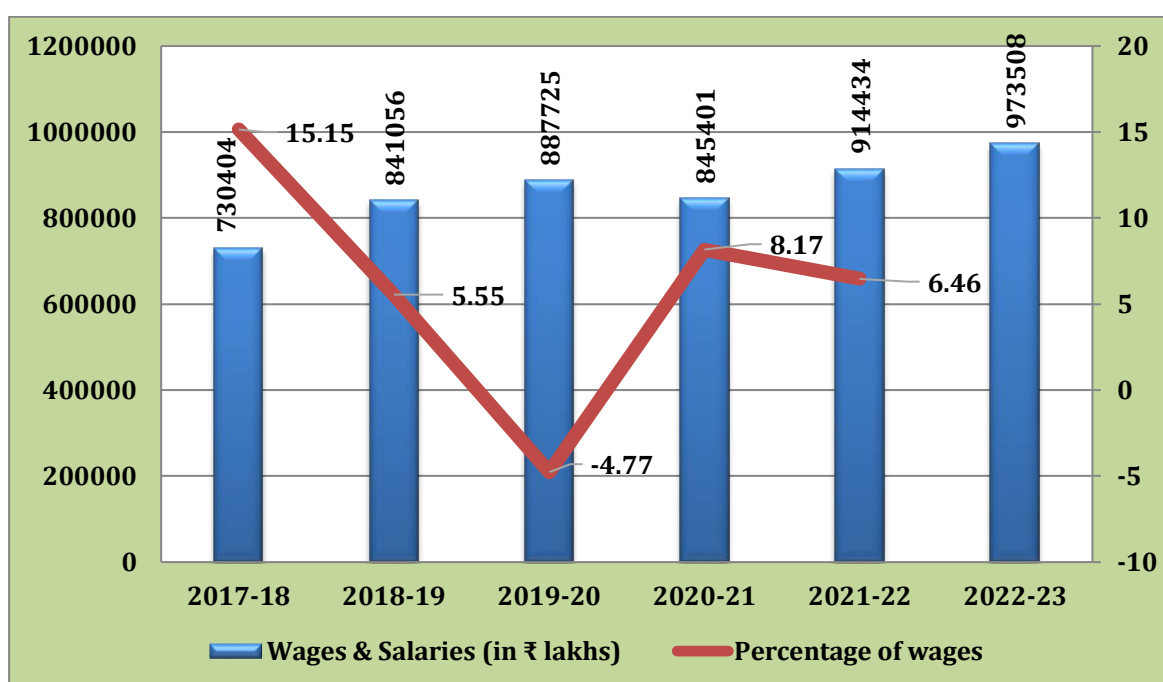
**Table 4.14: Gender wise growth of number of directly employed workers, 2017-18 to 2022-23**

Directly employed workers	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Men	10.76%	-8.35%	-4.37%	0.82%	0.96%
Women	-1.94%	-2.47%	-12.97%	-4.38%	-10.34%

#### 4.5.2 Wages / Salary of employees

Wage is having a closer relationship with the output and labour productivity. As per ASI survey results, wages and salaries of the employees showed an upward trend in 2018-19, but during 2020-21 the same is declined at the rate of 4.77 %. It shows an upward trend in following two consecutive years at the rate of 8.17%, 6.46% respectively. This trend underscore our state's commitment to ensuring fair wages and better working conditions.

**Figure 4.17: Wages/Salaries of employees in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23**



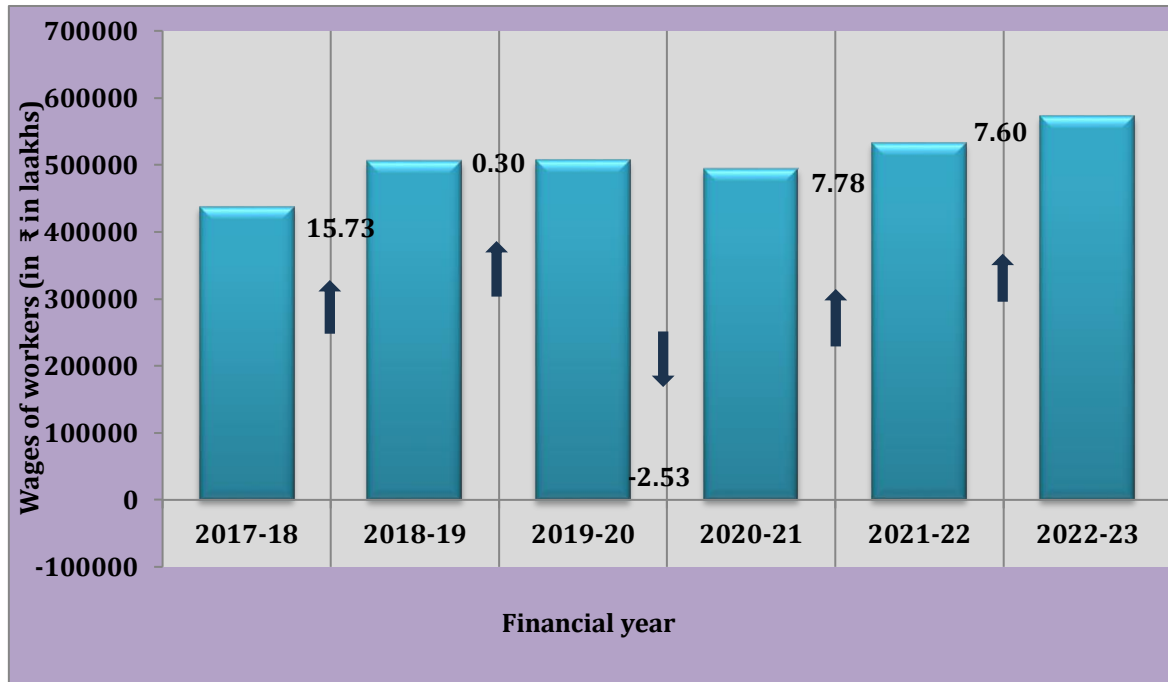
**Table 4.15: Wages & Salaries of employees, 2017-18 to 2022-23**

Characteristic	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Wages & Salaries (in ₹ lakhs)	7,30,404	8,41,056	8,87,725	8,45,401	9,14,434	9,73,508

**Table 4.16: Growth rate of wages & salaries of employees, from 2017-18 to 2022-23**

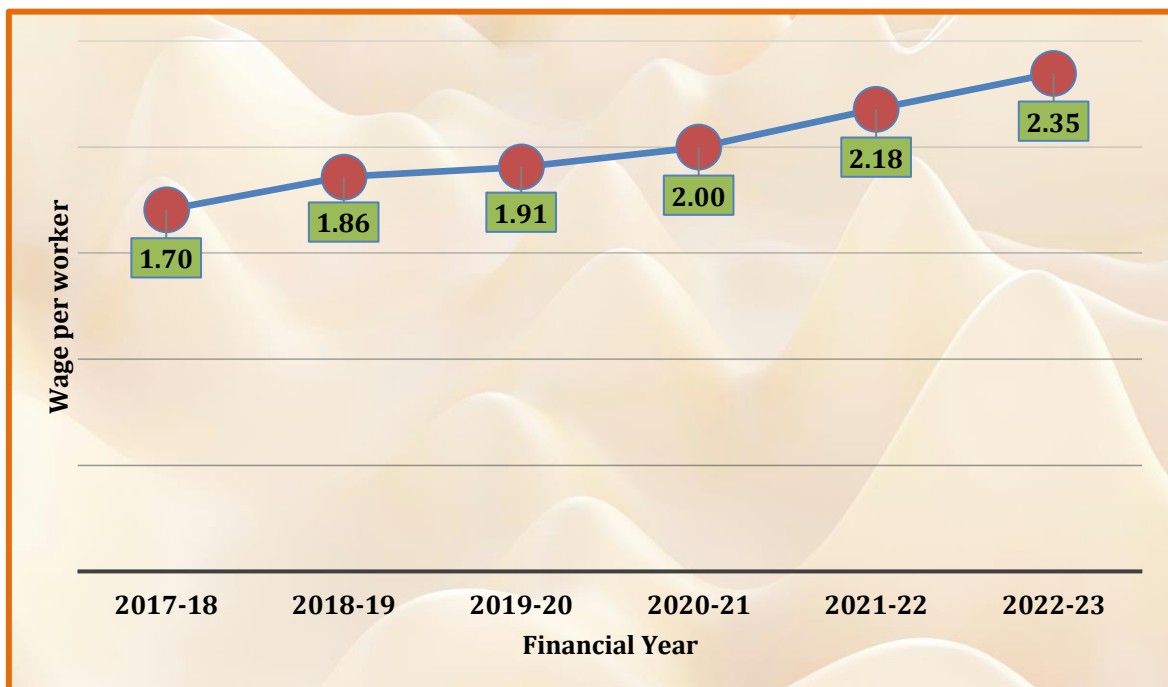
Wages & Salaries	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Employees	15.15%	5.55%	-4.77%	8.17%	6.46%

**Figure 4.18: Wages of workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2022-23**



Even though the wages of all employees consisting of workers, supervisors/managers and other employees together shows a decreasing trend, the wage per worker shows an upward trend. In 2017-18, the annual wage earned by worker was ₹ 1.70 lakhs which increased over the subsequent years and in 2022-23 it was estimated as ₹ 2.35 lakhs annually.

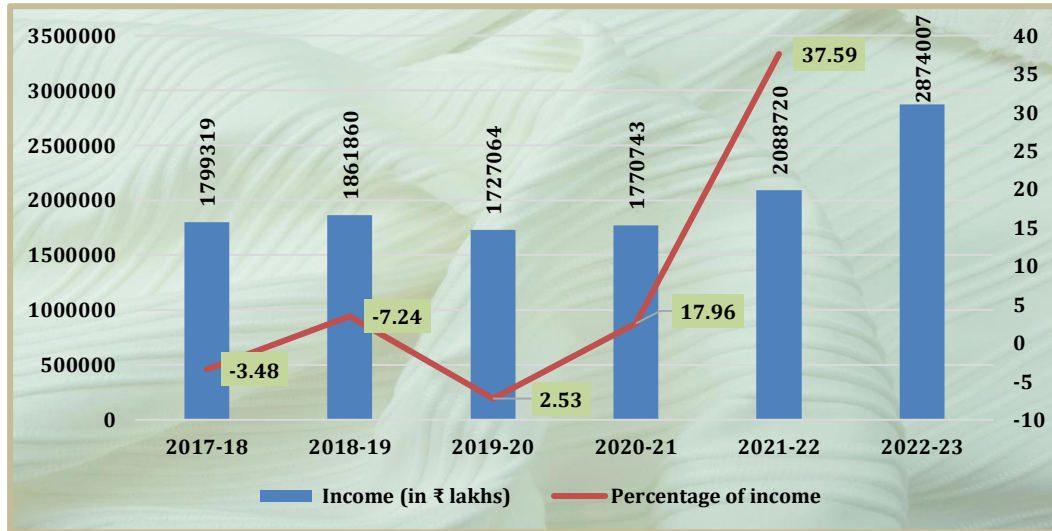
**Figure 4.19: Wage per worker in manufacturing sector (in ₹ lakhs) from 2017-18 to 2022-23**



#### 4.6. Income and Profit

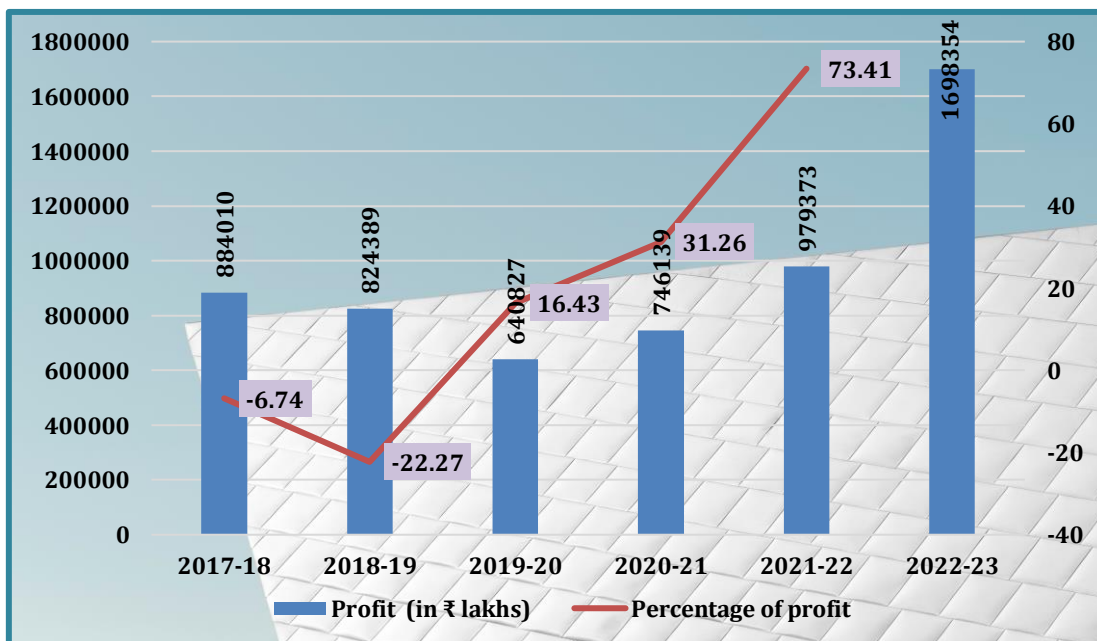
By analysing income through the years 2017-18 to 2022-23, the highest income was estimated in 2022-23 with a growth rate of 37.59 %. A steady growth is not witnessed in the case of income through these years.

**Figure 4.20: Income (in ₹ lakhs) and its growth rate from 2017-18 to 2022-23**



Considering the profit of the manufacturing sector, the statistics of ASI surveys, continuous decline in the profit was witnessed from 2017-18 to 2019-20. The highest growth rate was recorded in 2022-23 (73.41 %) and also witnessed an upward trend from 2020-21 at a growth rate of 16.43 % compared to previous years.

**Figure 4.21: Profit (in lakhs) and growth rate from 2017-18 to 2022-23**



**Table 4.17: Net income (₹ lakhs) in manufacturing sector from 2017-18 to 2022-23**

Characteristic	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Net income (in ₹ lakhs)	17,99,319	18,61,860	17,27,064	17,70,743	20,88,720	28,74,007
Profit (in ₹ lakhs)	8,84,010	8,24,389	6,40,827	7,46,139	9,79,373	16,98,354

**Table 4.18: Growth rate of Net income in manufacturing sector, from 2017-18 to 2022-23**

Characteristic	Percentage growth				
	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21	2022-23 over 2021-22
Net income	3.48%	-7.24%	2.53%	17.96%	37.59%
Profit	-6.74%	-22.27%	16.43%	31.26%	73.41%

#### 4.7. Comparison of Principal characteristic of manufacturing sector

The industrial landscape in Kerala witnessed mixed trends in key characteristics during 2022-23 compared to the previous year . The number of registered factories declined by **1.5 %**, with the number of operational factories shows an increase by **0.71 %**. This indicates a contraction in the industrial base, possibly due to economic or regulatory challenges .The overall trend indicates that while the number of factories declined, production and financial indicators improved. However, concerns remain regarding declining fixed capital formation and increasing dependency on working capital. The surge in industrial output and profits is a positive sign, reflecting recovery and expansion in key sectors.

The following tables represent percentage change in the value of characteristics estimated in 2021-22 and 2022-23.

**Table 4.19: Principal characteristics of manufacturing sector during 2022-23 and 2021-22 with percentage of change**

Sl. No.	Characteristic	2022-23	2021-22	Percentage change compared to 2021-22
1	No. of Factories	7624	7740	-1.50
2	Factories in Operation (Nos)	6787	6739	0.71
3	Fixed Capital (in ₹ lakhs)	56,37,290	56,91,247	-0.95
4	Physical Working Capital (in ₹ lakhs)	27,18,216	29,11,611	-6.64
5	Working Capital (in ₹ lakhs)	20,86,223	17,48,355	19.32
6	Invested Capital (in ₹ lakhs)	83,55,506	86,02,858	-2.88
7	Gross Value of Additions to Fixed Capital (in ₹ lakhs)	6,02,382	8,85,049	-31.94
8	Rent Paid (in ₹ lakhs)	11,522	7,314	57.53
9	Outstanding Loan (in ₹ lakhs)	12,33,451	13,38,246	-7.83
10	Interest Paid (in ₹ lakhs)	2,00,154	1,81,029	10.56
11	Rent received (in ₹ lakhs)	364	564	-35.46
12	Interest Received (in ₹ lakhs)	57,110	48,233	18.40
13	Gross Value of P&M (in ₹ lakhs)	37,84,240	36,71,897	3.06
14	Value of Products & By-products (in ₹ lakhs)	2,35,10,280	185,45,706	26.77
15	Other Output (in ₹ lakhs)	17,49,293	16,49,087	6.08
16	Total Output (in ₹ lakhs)	2,52,59,429	201,93,873	25.08
17	Fuels Consumed (in ₹ lakhs)	14,03,381	10,64,438	31.84
18	Material Consumed for Manufacturing (in ₹ lakhs)	1,84,58,493	146,92,015	25.64
19	Other Input (in ₹ lakhs)	18,73,922	17,28,430	8.42
20	Total Input (in ₹ lakhs)	2,17,35,672	174,84,032	24.32
21	Gross Value Added (in ₹ lakhs)	35,23,757	27,09,841	30.04
22	Depreciation (in ₹ lakhs)	4,38,076	4,32,766	1.23
23	Net Value Added (in ₹ lakhs)	30,85,681	22,77,075	35.51
24	Net Fixed Capital Formation (in ₹ lakhs)	1,07,270	-1,13,904	-194.18
25	Gross Fixed Capital Formation (in ₹ lakhs)	5,45,346	3,18,862	71.03
26	Gross Capital Formation (in ₹ lakhs)	3,47,429	9,99,047	-65.22
27	Net Income (in ₹ lakhs)	28,74,007	20,88,720	37.60
28	Profit (in ₹ lakhs)	16,98,354	9,79,373	73.41

The employment and wage trends in Kerala's manufacturing sector during 2022-23 reflect mixed dynamics in workforce engagement and compensation. Despite a slight decline in worker numbers, employment opportunities expanded for supervisory and non-worker roles. Earnings improved, with notable wage growth across all categories, suggesting rising labour costs and better compensation. There is a trend of women's employment dropped, indicating potential gender-based challenges in industrial employment. Overall, the period shows a move towards higher wage expenditure, greater use of contract labour, declining female participation, and more intensive use of available manpower. (Refer table 4.20)

**Table 4.20: Employment and Emoluments of the employees engaged in manufacturing sector during 2022-23 and 2021-22 with percentage of change**

Sl. No	Characteristic	2022-23	2021-22	Percentage change compared to 2021-22
A	Average no. of Persons Engaged	314316	313841	0.15
1	Workers	243820	244259	-0.18
1.1	Directly Employed	189589	196795	-3.66
1.1.1	Men	117409	116290	0.96
1.1.2	Women	72180	80505	-10.34
1.2	Employed through Contractors	54231	47464	14.26
2	Employees other than Worker	68042	68012	0.04
2.1	Supervisory & Managerial Staff	30856	30039	2.72
2.2	Other Employees	37186	37973	-2.07
3	Unpaid Family Members / Proprietor etc.	2454	1570	56.31
B.	Man-days Employed , Total	93464	90211	3.61
C.	Wages & Salaries , Employer's Contribution	1175640	1109235	5.99
1	Wages & Salaries including Bonus (in ₹ lakhs)	1017803	957395	6.31
1.1	Wages & Salaries	973508	914434	6.46
1.1.1	Workers	572620	532187	7.60
1.1.2	Supervisory & Managerial Staff	272392	263909	3.21
1.1.3	Other Employees	128496	118338	8.58
1.2	Bonus to all Staff	44295	42961	3.11
2	Employer's Contribution etc.	157837	151840	3.95

By analysing fuel consumption in Kerala, the rising fuel consumption and expenditure in Kerala's manufacturing sector indicate industrial recovery and expansion in 2022-23. Fuel consumption in the manufacturing sector shows a clear upward trend across all major fuel categories in 2022-23 compared to 2021-22. However, the sharp rise in fuel costs suggests higher operational expenses, which could impact overall profitability.

Overall, the data indicates higher energy usage and increased fuel-related expenditures during 2022–23, driven by expanded industrial operations and rising fuel prices across categories. (Refer table 4.21)

**Table 4.21: Fuel Consumption in manufacturing sector during 2022-23 and 2021-22 with percentage of change**

Fuel	2022-23	2021-22	Percentage change compared to 2021-22
Coal Quantity (Ton)	249	209	19.14
Coal Consumed (Value)	2123796	1815367	16.99
Electricity Purchased Quantity(KWH)	3454380	3215614	7.43
Electricity Purchased (Value)	25685771	23364297	9.94
Petroleum Products (Value)	78899632	53569640	47.28
Gas Consumed (Value)	29778808	24790117	20.12
Other Fuels (Value)	3853314	2907220	32.54

#### 4.8. Trends of some structural ratios

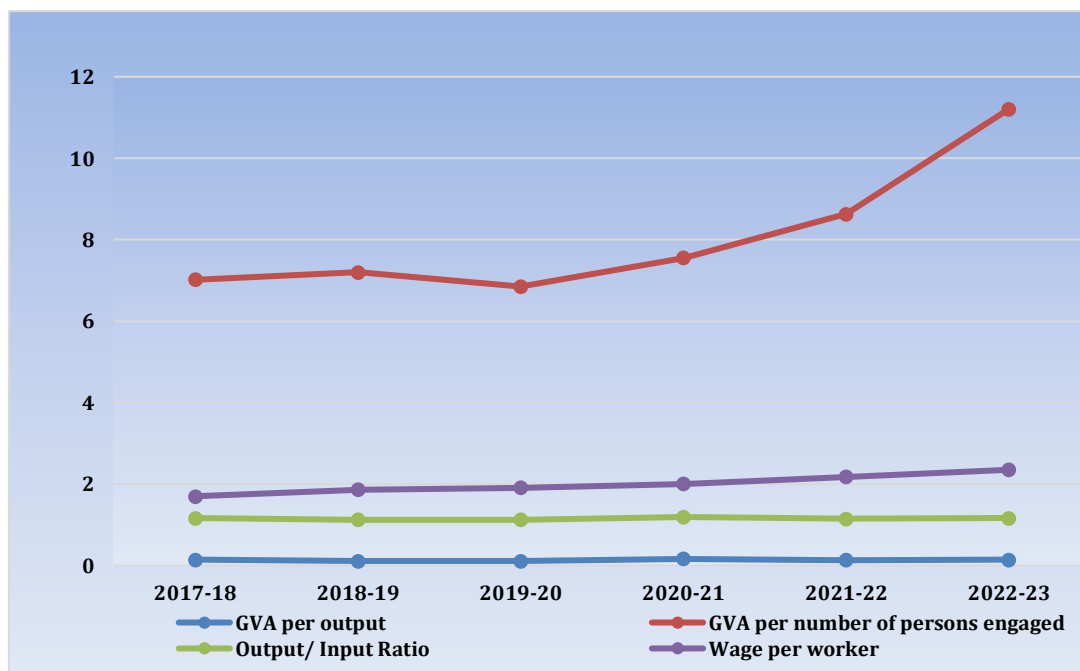
By analysing the data reflects a gradual improvement in productivity and wage levels over the six-year period. GVA per output shows moderate fluctuations, hovering between 0.11 and 0.16, with notable improvement in 2020–21 and stabilisation thereafter. GVA per person engaged displays a consistent upward trend, rising sharply from 7.02 in 2017–18 to 11.21 in 2022–23, indicating increased labour productivity and better value generation per worker. The Output–Input Ratio remains relatively stable, ranging from 1.12 to 1.19, suggesting steady efficiency in converting inputs into outputs, with a slight peak in 2020–21. The wage per worker shows continuous growth from 1.70 to 2.35, reflecting rising labour costs and improved earnings over time. This shows the trend of the indicators point toward enhanced productivity, increasing labour efficiency, and better wage compensation, especially in recent years.

**Table 4.22: Structural ratios of the indicators from 2017-18 to 2022-23**

Financial Year	GVA per output	GVA per number of persons engaged	Output/ Input Ratio	Wage per worker
2017-18	0.14	7.02	1.16	1.70
2018-19	0.11	7.20	1.12	1.86
2019-20	0.11	6.85	1.12	1.91

<b>2020-21</b>	0.16	7.55	1.19	2.00
<b>2021-22</b>	0.13	8.63	1.15	2.18
<b>2022-23</b>	0.14	11.21	1.16	2.35

**Figure 4.22: Trends of structural ratios**



**Some notable changes in the characteristics of manufacturing sector during the year 2022-23 compared to year 2021-22**

- ❖ Working Capital of industries increased by 19.32 %.
- ❖ Total Output up trend by 25.08 %.
- ❖ Fuel consumed increased by 31.84%.
- ❖ Material Consumed for Manufacturing increased by 25.64 %.
- ❖ Total output increased by 25.08%.
- ❖ Gross Value Added had a hike of 30.04 %.
- ❖ Net Fixed Capital Formation declined by 194.18%.
- ❖ Gross Fixed Capital Formation increased by 71.03 %.
- ❖ Profit increased by 73.41 %.
- ❖ Average no. of Persons Engaged rose by 0.15 %.
- ❖ Directly employed women participation declined by 10.34 %.
- ❖ Man-days employed increased by 3.61 %.
- ❖ Wages & Salaries increased by 6.31 %.





## Chapter 5: Structural Ratios & Technical Coefficients

The measures of structural ratios and technical coefficient are used to assess the overall productivity, resource efficiency, productivity of capital, productivity of labour, capital intensity etc. The following are the structural ratios and technical coefficients of the manufacturing sector in the fiscal year 2022-23.

### 5.1 Structural Ratios

**Table 5.1: Structural ratios based on estimated characteristics of the state, 2022-23**

<b>Structural Ratio</b>	<b>2022-23</b>
Fixed Capital per factory in operation	831 lakhs
Total no. of persons engaged per factory in operation	46
Number of workers per factory in operation	36
Output per factory in operation	₹ 3,722 lakhs
Net Value Added (NVA) per factory in operation	₹ 455 lakhs
Output per person engaged	₹ 80,36,317
Gross Value Added (GVA) per person engaged	11,21,087
Net Value Added (NVA) per person engaged	₹9,81,713
Wages per worker	₹ 2,34,854

**Table 5.2 Structural Ratios: Minimum, Maximum and Average Values: All Kerala**

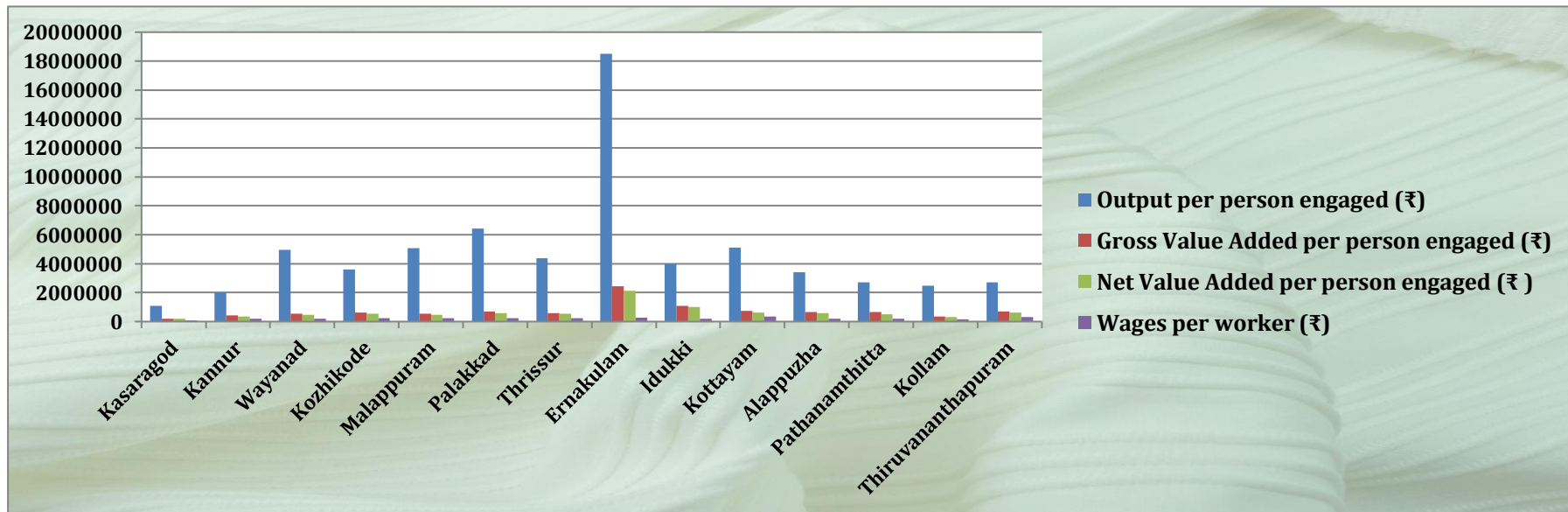
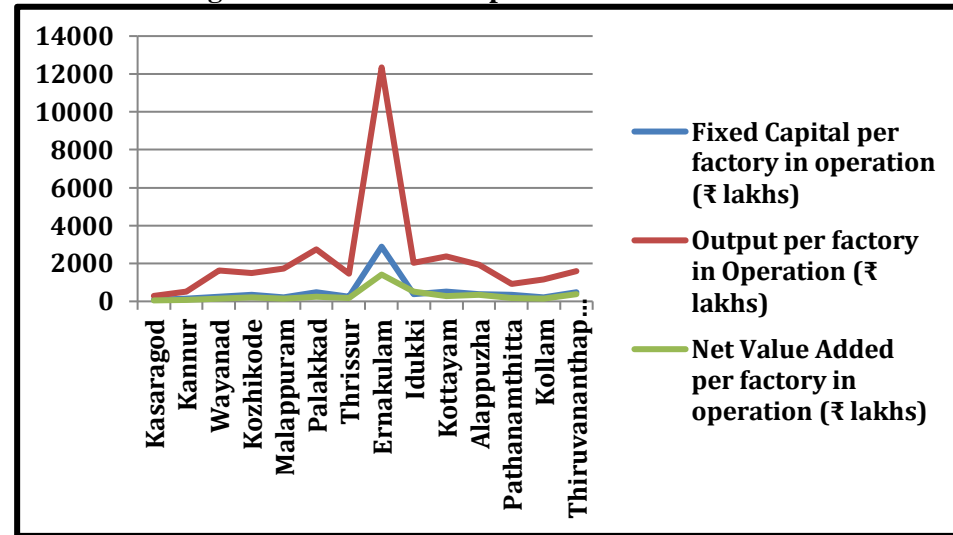
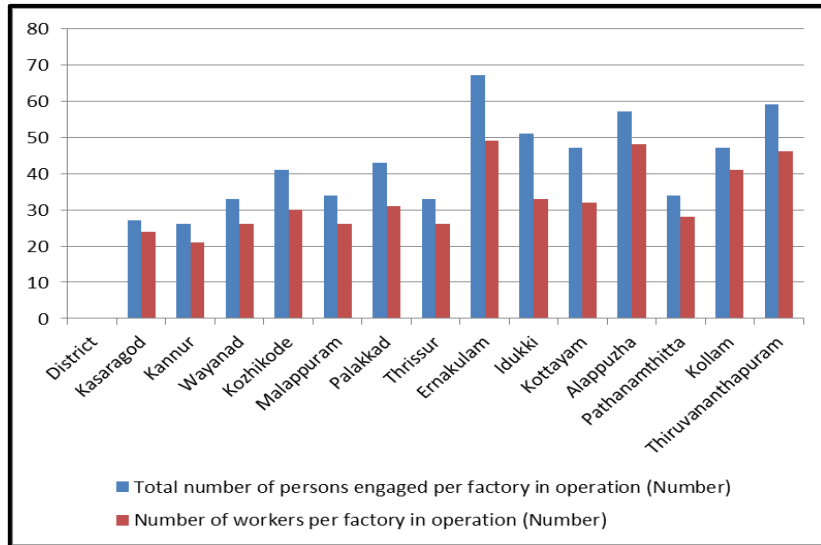
<b>Structural Ratio</b>	<b>Minimum Value</b>	<b>Maximum Value</b>	<b>Average Value</b>
<b>Fixed Capital per factory in operation (₹ Lakhs)</b>	<b>78 (Kasaragod)</b>	<b>28,86 (Ernakulam)</b>	<b>831</b>
<b>Gross Output per Factory in Operation (₹ Lakhs)</b>	<b>288 (Kasaragod)</b>	<b>12,347 (Ernakulam)</b>	<b>3,772</b>
<b>Net Value Added per Factory in Operation (₹ Lakhs)</b>	<b>50 (Kasaragod)</b>	<b>1,414 (Ernakulam)</b>	<b>455</b>
<b>Workers per Factory in Operation (Number)</b>	<b>21 (Kannur)</b>	<b>49 (Ernakulam)</b>	<b>36</b>
<b>Total Persons Engaged per Factory in Operation (Number)</b>	<b>26 (Kannur)</b>	<b>67 (Ernakulam)</b>	<b>46</b>
<b>Net Value Added per Person Engaged (₹ )</b>	<b>1,87,869 (Kasaragod)</b>	<b>21,19,839 (Ernakulam)</b>	<b>9,81,713</b>
<b>Wages per worker (₹)</b>	<b>92,165 (Kasaragod)</b>	<b>3,41,083 (Kottayam)</b>	<b>2,34,854</b>



Table 5.3 Structural Ratios by Districts, 2022-23

District	Fixed Capital per factory in operation (₹ lakhs)	Total number of persons engaged per factory in operation (Number)	Number of workers per factory in operation (Number)	Output per factory in Operation (₹ lakhs)	Net Value Added per factory in operation (₹ lakhs)	Output per person engaged (₹)	Gross Value Added per person engaged (₹)	Net Value Added per person engaged (₹)	Wages per worker (₹)
Kasaragod	78	27	24	288	50	1085476	214252	187869	92165
Kannur	154	26	21	527	90	2014596	409336	344108	194120
Wayanad	229	33	26	1625	151	4974627	526942	461577	200097
Kozhikode	360	41	30	1500	227	3618961	626945	547370	240303
Malappuram	199	34	26	1731	156	5060139	525638	455103	234037
Palakkad	483	43	31	2728	253	6414646	709190	593963	228073
Thrissur	242	33	26	1447	174	4387041	590340	526870	230068
Ernakulam	2886	67	49	12347	1414	18512186	2423888	2119839	284560
Idukki	393	51	33	2029	514	3996404	1077663	1012981	207183
Kottayam	501	47	32	2385	294	5107293	750794	629734	341083
Alappuzha	373	57	48	1939	333	3422848	645830	587829	195710
Pathanamthitta	356	34	28	913	169	2695802	644620	498195	213204
Kollam	227	47	41	1162	141	2497957	334776	303278	151601
Thiruvananthapuram	485	59	46	1592	378	2692200	712729	639230	293741
Kerala	831	46	36	3722	455	8036317	1121087	981713	234854

Figure 5.1: District wise pattern of structural ratios



**Table 5.4 Structural Ratios: Minimum, Maximum and Average Values: All Kerala**

Structural Ratio	Minimum Value	Maximum Value	Average Value
Fixed Capital per factory in operation (₹ Lakhs)	3 (NIC 12 -Tobacco Products)	1,24,865 (NIC 19 - Coke and Refined Petroleum Products)	831
Gross Output per Factory in Operation (₹ Lakhs)	31 (NIC 12 -Tobacco Products)	5,35,227 (NIC 19 - Coke and Refined Petroleum Products)	3,722
Net Value Added per Factory in Operation (₹ Lakhs)	25 (NIC 12 -Tobacco Products)	52,729 (NIC 19 - Coke and Refined Petroleum Products)	455
Workers per Factory in Operation (Number)	12 (NIC16 - Wood and Products of Wood and cork, except Furniture)	247 (NIC 30 - Manufacture of other transport equipment)	36
Total Persons Engaged per Factory in Operation (Number)	15 (NIC16 - Wood and Products of Wood and cork, except Furniture)	277 (NIC 30 - Manufacture of other transport equipment)	46
Net Value Added per Person Engaged (₹ )	1,05,826 (NIC 12 -Tobacco Products)	2,52,18,217 (NIC 19 - Coke and Refined Petroleum Products)	9,81,713
Wages per worker (₹)	75,561 (NIC 12 -Tobacco Products)	6,86,525 (NIC 19 - Coke and Refined Petroleum Products)	2,34,854



**Table 5.5: Structural Ratios by NIC (2008)-2 digit group of industries, 2022-23**

NIC-2 digit	Description	Fixed Capital per factory in operation (₹ lakhs)	Total no. of persons engaged per factory in operation (Number)	Number of workers per factory in operation (Number)
10	Manufacture of food products	380	58	46
11	Manufacture of beverages	734	41	34
12	Manufacture of tobacco products	3	24	22
13	Manufacture of textiles	337	51	43
14	Manufacture of wearing apparel	336	163	147
15	Manufacture of leather and related products	172	55	42
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	109	15	12
17	Manufacture of paper and paper products	331	27	21
18	Printing and reproduction of recorded media	658	45	28
19	Manufacture of coke and refined petroleum products	1,24,865	209	164
20	Manufacture of chemicals and chemical products	1,671	83	53
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	342	52	34
22	Manufacture of rubber and plastic products	491	44	34
23	Manufacture of other non-metallic mineral products	361	32	25
24	Manufacture of basic metals	878	59	46
25	Manufacture of fabricated metal products, except machinery and equipment	195	27	21
26	Manufacture of computer, electronic and optical products	1,328	231	177
27	Manufacture of electrical equipment	358	67	56
28	Manufacture of machinery and equipment n.e.c	182	44	34
29	Manufacture of motor vehicles, trailers and semi trailers	1,058	94	65
30	Manufacture of other transport equipment	5,518	277	247
31	Manufacture of furniture	185	25	19
32	Other manufacturing	642	95	72
33	Repair and installation of machinery and equipment	30	25	17
38	Waste collection, treatment and disposal activities; materials recovery	1,154	35	17
58	Publishing activities	1,891	93	32
	Others	544	32	23
	<b>Kerala</b>	831	46	36

Contd.....

NIC-2 digit	Description	Output per factory in operation (₹ lakhs)	Net Value Added (NVA) per factory in operation (in ₹ lakhs)	Output per person engaged (₹)
10	Manufacture of food products	2,950	263	51,13,431
11	Manufacture of beverages	1,953	578	47,78,356
12	Manufacture of tobacco products	31	25	1,32,565
13	Manufacture of textiles	1,114	223	21,66,981
14	Manufacture of wearing apparel	1,849	758	11,32,908
15	Manufacture of leather and related products	1,921	238	35,08,763
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	545	79	35,82,980
17	Manufacture of paper and paper products	750	98	27,76,487
18	Printing and reproduction of recorded media	1,545	524	34,04,407
19	Manufacture of coke and refined petroleum products	5,35,227	52,729	25,59,78,196
20	Manufacture of chemicals and chemical products	8,866	1,763	1,07,39,996
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1,180	378	22,53,453
22	Manufacture of rubber and plastic products	2,355	257	53,10,360
23	Manufacture of other non-metallic mineral products	875	229	27,29,895
24	Manufacture of basic metals	7,710	378	1,29,93,673
25	Manufacture of fabricated metal products, except machinery and equipment	1,942	126	70,85,608
26	Manufacture of computer, electronic and optical products	6,789	1,150	29,39,144
27	Manufacture of electrical equipment	1,910	409	28,34,744
28	Manufacture of machinery and equipment n.e.c	955	231	21,62,339
29	Manufacture of motor vehicles, trailers and semi trailers	7,892	1,326	83,95,551
30	Manufacture of other transport equipment	9,234	2,330	33,29,875
31	Manufacture of furniture	721	106	28,34,008
32	Other manufacturing	2,426	591	25,60,288
33	Repair and installation of machinery and equipment	555	421	22,45,588
38	Waste collection, treatment and disposal activities; materials recovery	1,971	332	56,30,714
58	Publishing activities	2,359	777	25,36,007
	Others	1,265	163	39,59,117
	<b>Kerala</b>	<b>3,722</b>	<b>455</b>	<b>80,36,317</b>



Contd.....

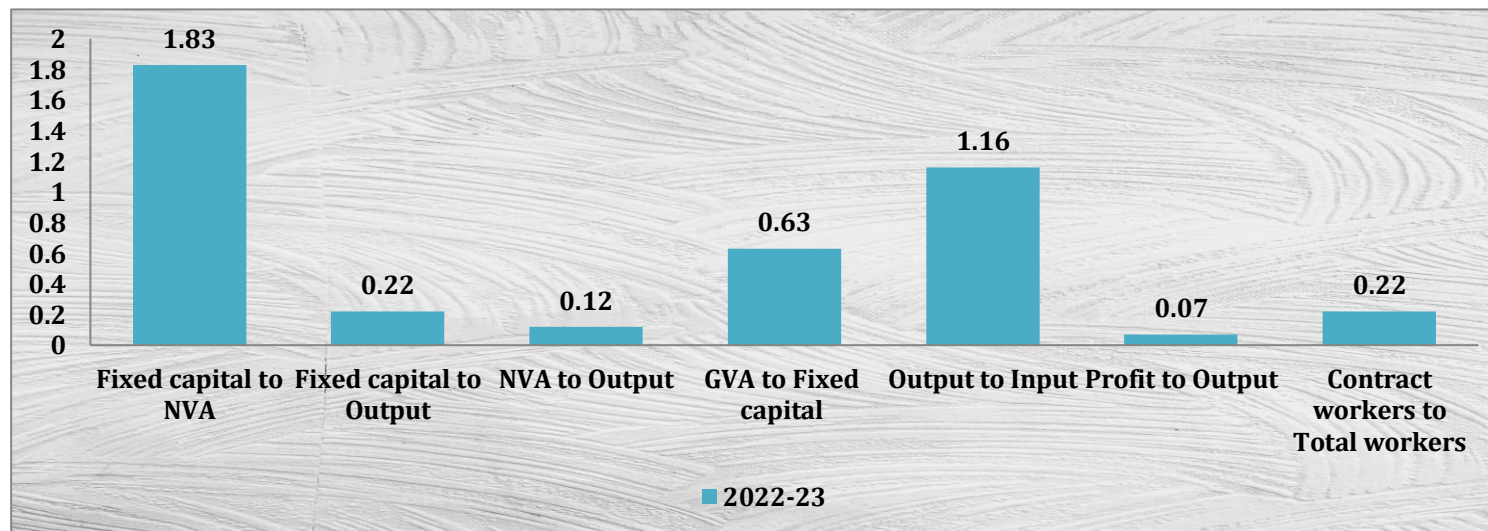
NIC-2 digit	Description	Gross Value Added (GVA) per Person engaged (₹)	Net Value Added (NVA) per person engaged (₹)	Wages per worker (₹)
10	Manufacture of food products	5,25,098	4,55,020	1,73,323
11	Manufacture of beverages	14,88,676	14,15,182	2,04,514
12	Manufacture of tobacco products	1,06,652	1,05,826	75,561
13	Manufacture of textiles	4,90,389	4,33,298	1,86,252
14	Manufacture of wearing apparel	4,95,058	4,64,279	1,44,766
15	Manufacture of leather and related products	4,84,398	4,34,342	2,37,532
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	5,90,298	5,22,272	1,47,665
17	Manufacture of paper and paper products	4,57,688	3,63,103	2,20,000
18	Printing and reproduction of recorded media	13,68,201	11,55,517	4,20,305
19	Manufacture of coke and refined petroleum products	2,91,57,435	2,52,18,217	6,86,525
20	Manufacture of chemicals and chemical products	22,75,843	21,35,932	5,20,268
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	7,74,308	7,21,185	2,53,604
22	Manufacture of rubber and plastic products	6,71,579	5,79,365	3,19,427
23	Manufacture of other non-metallic mineral products	8,31,751	7,14,543	2,43,918
24	Manufacture of basic metals	7,45,201	6,36,218	2,21,623
25	Manufacture of fabricated metal products, except machinery and equipment	5,49,111	4,59,619	2,05,723
26	Manufacture of computer, electronic and optical products	5,76,471	4,97,741	2,81,712
27	Manufacture of electrical equipment	6,43,778	6,06,791	281,560
28	Manufacture of machinery and equipment n.e.c	5,74,597	5,23,908	2,84,971
29	Manufacture of motor vehicles, trailers and semi trailers	16,12,863	14,11,025	3,44,600
30	Manufacture of other transport equipment	9,10,333	8,40,208	2,66,849
31	Manufacture of furniture	4,82,277	4,16,872	1,96,803
32	Other manufacturing	6,88,528	6,24,196	2,20,797
33	Repair and installation of machinery and equipment	17,28,064	17,04,412	4,15,945
38	Waste collection, treatment and disposal activities; materials recovery	13,58,571	9,49,286	4,24,242
58	Publishing activities	10,32,327	8,35,304	4,23,529
	Others	6,29,046	5,09,212	2,24,611
	<b>Kerala</b>	<b>11,21,087</b>	<b>9,81,713</b>	<b>2,34,854</b>

## 5.2 Technical Coefficients

Table 5.6 Technical Coefficients based on estimated characteristics of the state, 2022-23

Technical Coefficients	2022-23
Fixed Capital to Net Value Added (NVA)	1.84
Fixed Capital to Output	0.22
Net Value Added (NVA) to Output	0.12
Gross Value Added (GVA) to Fixed Capital	0.63
Output to Input	1.16
Profit to Output	0.07
Contract workers to total workers	0.22

Figure 5.2: Technical Coefficients based on estimated characteristics of the state, 2022-23

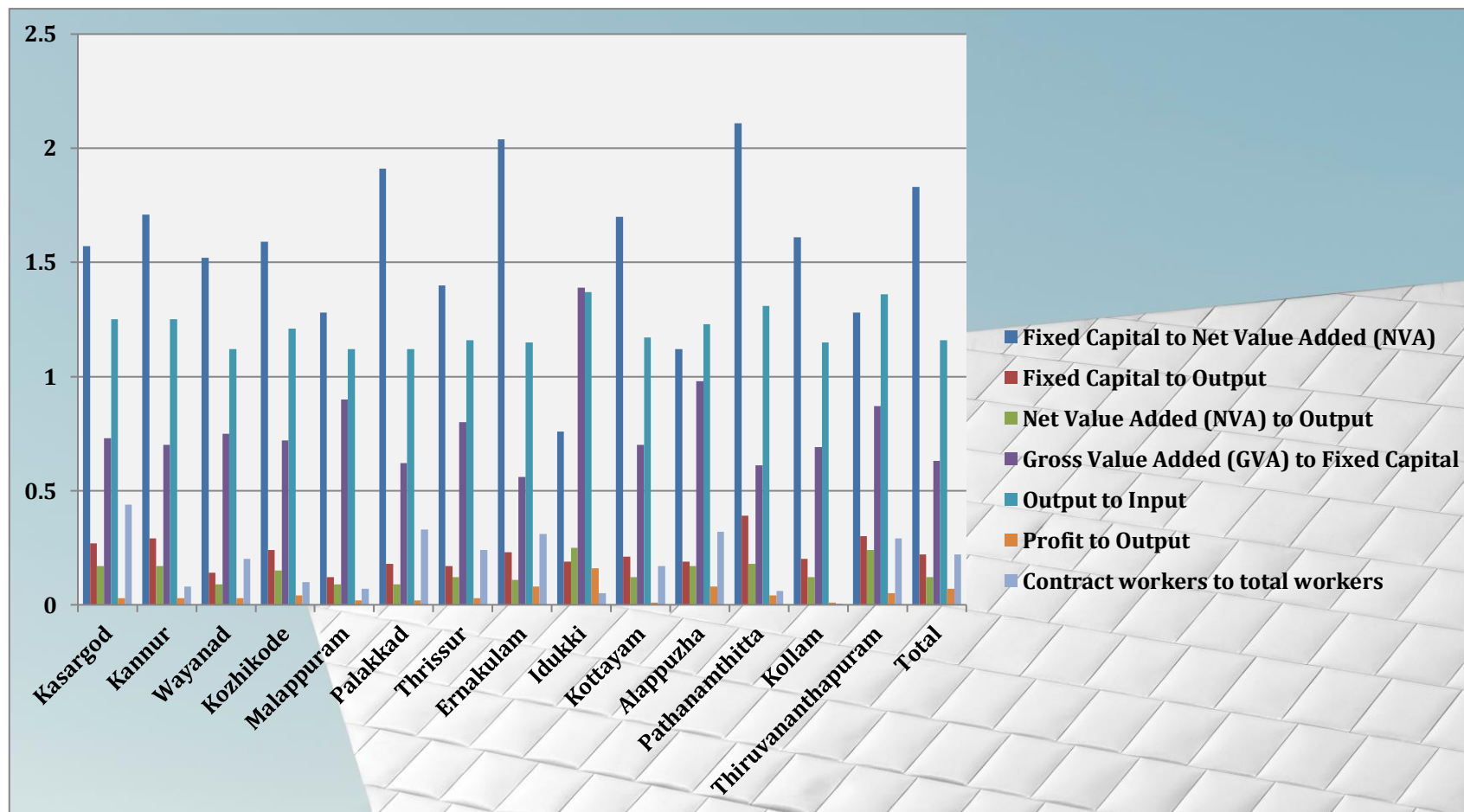


**Table 5.7 Technical Coefficients by Districts, 2022-23**

<b>District</b>	<b>Fixed Capital to Net Value Added (NVA)</b>	<b>Fixed Capital to Output</b>	<b>Net Value Added (NVA) to Output</b>	<b>Gross Value Added (GVA) to Fixed Capital</b>	<b>Output to Input</b>	<b>Profit to Output</b>	<b>Contract workers to total workers</b>
<b>Kasaragod</b>	1.57	0.27	0.17	0.73	1.25	0.03	0.44
<b>Kannur</b>	1.71	0.29	0.17	0.7	1.25	0.03	0.08
<b>Wayanad</b>	1.52	0.14	0.09	0.75	1.12	0.03	0.2
<b>Kozhikode</b>	1.59	0.24	0.15	0.72	1.21	0.04	0.1
<b>Malappuram</b>	1.28	0.12	0.09	0.9	1.12	0.02	0.07
<b>Palakkad</b>	1.91	0.18	0.09	0.62	1.12	0.02	0.33
<b>Thrissur</b>	1.4	0.17	0.12	0.8	1.16	0.03	0.24
<b>Ernakulam</b>	2.04	0.23	0.11	0.56	1.15	0.08	0.31
<b>Idukki</b>	0.76	0.19	0.25	1.39	1.37	0.16	0.05
<b>Kottayam</b>	1.7	0.21	0.12	0.7	1.17	0.01	0.17
<b>Alappuzha</b>	1.12	0.19	0.17	0.98	1.23	0.08	0.32
<b>Pathanamthitta</b>	2.11	0.39	0.18	0.61	1.31	0.04	0.06
<b>Kollam</b>	1.61	0.2	0.12	0.69	1.15	0.01	0.01
<b>Thiruvananthapuram</b>	1.28	0.3	0.24	0.87	1.36	0.05	0.29
<b>Kerala</b>	1.83	0.22	0.12	0.63	1.16	0.07	0.22



Figure 5.3.: District wise Pattern of Technical Coefficients



**Table 5.8 Technical Coefficients by NIC (2008) 2- digit group of industries, 2022-23**

NIC-2 digit	Description	Fixed Capital to NVA	Fixed Capital to Output	NVA to output
10	Manufacture of food products	1.45	0.13	0.09
11	Manufacture of beverages	1.27	0.38	0.3
12	Manufacture of tobacco products	0.13	0.1	0.8
13	Manufacture of textiles	1.52	0.3	0.2
14	Manufacture of wearing apparel	0.44	0.18	0.41
15	Manufacture of leather and related products	0.72	0.09	0.12
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1.38	0.2	0.15
17	Manufacture of paper and paper products	3.38	0.44	0.13
18	Printing and reproduction of recorded media	1.25	0.43	0.34
19	Manufacture of coke and refined petroleum products	2.37	0.23	0.1
20	Manufacture of chemicals and chemical products	0.95	0.19	0.2
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.91	0.29	0.32
22	Manufacture of rubber and plastic products	1.91	0.21	0.11
23	Manufacture of other non-metallic mineral products	1.58	0.41	0.26
24	Manufacture of basic metals	2.32	0.11	0.05
25	Manufacture of fabricated metal products, except machinery and equipment	1.55	0.1	0.06
26	Manufacture of computer, electronic and optical products	1.16	0.2	0.17
27	Manufacture of electrical equipment	0.88	0.19	0.21
28	Manufacture of machinery and equipment n.e.c	0.79	0.19	0.24
29	Manufacture of motor vehicles, trailers and semi trailers	0.8	0.13	0.17
30	Manufacture of other transport equipment	2.37	0.6	0.25
31	Manufacture of furniture	1.75	0.26	0.15
32	Other manufacturing	1.09	0.26	0.24
33	Repair and installation of machinery and equipment	0.07	0.05	0.76
38	Waste collection, treatment and disposal activities; materials recovery	3.47	0.59	0.17
58	Publishing activities	2.43	0.8	0.33
	Others	3.35	0.43	0.13
	<b>Kerala</b>	1.83	0.22	0.12

Contd.....

NIC 2-digit	Description	GVA to Fixed Capital	Output to input	Contract workers to total workers
10	Manufacture of food products	0.8	1.11	0.16
11	Manufacture of beverages	0.83	1.45	0.51
12	Manufacture of tobacco products	8.01	5.12	0.45
13	Manufacture of textiles	0.75	1.29	0.26
14	Manufacture of wearing apparel	2.4	1.78	0.003
15	Manufacture of leather and related products	1.54	1.16	0.01
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.82	1.2	0.23
17	Manufacture of paper and paper products	0.37	1.2	0.18
18	Printing and reproduction of recorded media	0.94	1.67	0.06
19	Manufacture of coke and refined petroleum products	0.49	1.13	0.66
20	Manufacture of chemicals and chemical products	1.12	1.27	0.22
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1.18	1.52	0.24
22	Manufacture of rubber and plastic products	0.61	1.14	0.22
23	Manufacture of other non-metallic mineral products	0.74	1.44	0.18
24	Manufacture of basic metals	0.5	1.06	0.5
25	Manufacture of fabricated metal products, except machinery and equipment	0.77	1.08	0.33
26	Manufacture of computer, electronic and optical products	1	1.24	0.51
27	Manufacture of electrical equipment	1.21	1.29	0.53
28	Manufacture of machinery and equipment n.e.c	1.4	1.36	0.23
29	Manufacture of motor vehicles, trailers and semi trailers	1.43	1.24	0.01
30	Manufacture of other transport equipment	0.46	1.38	0.7
31	Manufacture of furniture	0.66	1.21	0.08
32	Other manufacturing	1.02	1.37	0.14
33	Repair and installation of machinery and equipment	14.4	4.34	0.33
38	Waste collection, treatment and disposal activities; materials recovery	0.41	1.32	0.74
58	Publishing activities	0.51	1.69	0.09
	Others	0.37	1.19	0.03
	<b>Kerala</b>	<b>0.63</b>	<b>1.16</b>	<b>0.22</b>





## Chapter Two Concepts, Definitions and Procedures

1. A number of accounting, economic, statistical and other terms related to the factories are used in Annual Survey of Industries. For proper compilation/verification of ASI return, it is essential that the officials engaged in the conduct of ASI properly understand the terminology used in ASI. It is in this context that the concepts and definitions of some of the important terms are given below.
2. **Accounting Year:** For the purpose of ASI, the accounting year is the period for which the factory finalizes its books of account. With the enactment of Income Tax Act, by and large, the accounting year of all factories is from 1<sup>st</sup> April of the preceding year to 31<sup>st</sup> March of the current year.
3. **Factory (as per the Factories Act 1948):** Factory is one, which is registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948. The Sections 2m(i) and 2m(ii) refer to any premises including the precinct thereof (i) wherein ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or (ii) wherein twenty or more workers are working, or were working on any day of the preceding twelve months and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on. 'Power' means 'any motive power used to drive the plant and machinery of the factory except animal and human power' as per Factories Act, 1948. The above definition is slightly modified due to the amendment of the Factories Act, 1948 for the States of Rajasthan & Maharashtra, which is applicable from ASI 2015-16 onwards and for Goa, which is applicable from ASI 2022-23 onwards, as noted below:  
  
“Section 2m(i) has been modified, i.e., from *10 or more workers with power* to **20 or more workers with power** and also Section 2m(ii), i.e., from *20 or more workers without power* to **40 or more workers without power.**”
4. **Manufacturing Process:** This is as per Section 2(k) of the Factories Act, 1948,  
  
[Annexure IV].
5. **Gross Value of Plant and Machinery:** Gross value of plant and machinery represents the total book value of installed plant and machinery at the end of the accounting year. It includes the book value of own constructed plant and machinery, if installed. Total value of all the plant and machinery acquired on hire-purchase basis is also included. Thus, it represents the gross value of plant and machinery engaged in production process.
6. **Fixed Capital:** Fixed Capital represents the depreciated value of fixed assets owned by the factory as on the closing day of the accounting year. Fixed assets are those, which have normal productive life of more than one year. Fixed capital covers all

type of assets, new or used or own constructed, deployed for productions, transportation, living or recreational facilities, hospitals, schools, etc. for factory personnel. It would include land, building, plant and machinery, transport equipment etc. It includes the fixed assets of the head office allocable to the factory and also the full value of assets taken on hire-purchase basis (whether fully paid or not) **excluding** interest element. It excludes intangible assets except computer software.

7. **Depreciation:** Depreciation is consumption of fixed capital (CFC) by the factory due to wear and tear and obsolescence during the accounting year and is taken as provided by the factory owner, or if not provided by the factory this is estimated on the basis of cost of installation and working life of the fixed assets. Detailed illustrations are given in Chapter Three.
8. **Gross Value of Additions to Fixed Capital:** It represents the actual (un-depreciated) additions to the fixed capital during the reference year.
9. **Gross Fixed Capital Formation (GFCF):** Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditure on services that adds to the value of non- produced assets. For calculation of GFCF from ASI, please refer to Annexure-VIII.
10. **Net Fixed Capital Formation (NFCF):** It is defined as the GFCF less depreciation (i.e. consumption of fixed capital). For calculation of NFCF from ASI, please refer to Annexure-VIII.
11. **Finished Goods:** Finished Goods are those, which are manufactured by the factory for sale. Finished goods should conform to a prescribed standard.
12. **Physical Working Capital:** This is defined to include all physical inventories owned, held or controlled by the factory as on the closing day of the accounting year such as the materials, fuels and lubricants, stores, etc. that enter into products manufactured by the factory itself or supplied by the factory to others for processing. Physical working capital also includes the value of stock of materials, fuels and stores etc. purchased expressly for re-sale, semi-finished goods and goods-in-process on account of others and goods made by the factory which are ready for sale at the end of the accounting year. However, it does not include the stock of the materials, fuels, stores, etc. supplied by others to the factory for processing. Finished goods processed by others from raw materials supplied by the factory and held by them are included and finished goods processed by the factory from raw materials supplied by others, are excluded.
13. **Working Capital:** Working Capital is the sum total of the physical working capital as already defined above and the cash deposits in hand and at bank, the net balance of amounts receivable over amounts payable at the end of the accounting year. Amounts receivable include value of credit items on revenue account, such as sums

due to the factory for goods sold, amounts advanced in connection with normal factory work, bills of exchange payable to the factory, payments made in advance such as for fire insurance, telephone charges, rates and taxes, call deposits and security deposits having a normal life of less than one year, etc. It excludes unused overdraft facility, advances for acquisition of fixed assets, long-term loans including interest thereon and investment.

14. **Invested Capital:** Invested capital is the total of fixed capital and physical working capital.
15. **Productive Capital:** This is the total of fixed capital and working capital.
16. **Outstanding Loans:** Outstanding loans represent all long-term liabilities of the unit for the purpose of ASI. It includes all long-term loans, whether interest bearing or not, outstanding according to the books of the factory as on the closing day of accounting year. **But, in context of ASI, this represents loans, which have duration of more than one year (i.e. long-term) only.**
17. **Gross Capital Formation (GCF):** Gross capital formation is measured by the total value of the gross fixed capital formation plus changes in inventories and acquisitions less disposals of valuables.
18. **Worker:** Worker includes all persons employed directly, informally or formally or through contractor on payment of wages or salaries and engaged in any manufacturing process or its ancillary activities like cleaning any part of the machinery or any premises used for manufacturing or storing materials or any kind of work incidental to or connected with the manufacturing process.
19. **Contract Worker:** All persons who are not employed directly by a factory owner/employer but engaged through a third party i.e. agency/ contractor, are termed as contract workers. Such agency charges from the factory for this job.
20. **Total Persons Engaged:** It relates to all persons engaged by the factory whether for wages or not, in work connected directly or indirectly with the manufacturing process and include all administrative, technical and clerical staff as also labour in production of capital assets for factory's own use. This is inclusive of persons holding position of supervision or management or engaged in administrative office, store-keeping section and welfare section, watch and ward staff, sales department as also those engaged in the purchase of raw materials etc. and production of fixed assets for the factory. It also includes all working proprietors and their family members who are actively engaged in the work of the factory even without any pay and the unpaid members of the co-operative societies who work in or for the factory in any direct and productive capacity.
21. **Labour Turnover:** Labour turnover measures the extent of change in the working force due to accession and separation during a given period. The term 'accession' was defined as the total number of workers added to employment during the period,

whether new or re-employed or transferred from other establishments or units under the same management. Inter-departmental transfers within the same establishment are, however ignored. The term 'separation' implies termination of employment at the instance of worker or employers. It includes termination of services due to death or retirement. As in the case of accession, transfers to other establishments are included but transfers within the same establishment are ignored. Retrenchment as a result of rationalization or modernization or any other cause, is also treated as separation.

22. **Wages:** Wages are defined to include all remuneration capable of being expressed in monetary terms and also paid more or less regularly in each pay period to workers as compensation for work done during the accounting year. It **includes:**

(i) Direct wages and salary (i.e. basic wages/salaries), payment of overtime, dearness, compensatory, house rent and other allowances;

(ii) Remuneration for period not worked (i.e. basic wages), salaries and allowances payable for leave period, paid holidays, lay-off payments and compensation for unemployment (if not paid from source other than employers);

(iii) Bonus and ex-gratia payment paid more or less regularly (i.e., incentive bonuses and good attendance bonuses, production bonuses etc.).

22.1 It **excludes** layoff payments and compensation for unemployment except where such payments are for this purpose, i.e., payments not made by the employer. It excludes employer's contribution to old age benefits and other social security charges, direct expenditure on maternity benefits and crèches and other group benefit in kind and travelling and other expenditure incurred for business purposes and reimbursed by the employer. The wages are expressed in terms of gross value, i.e., before deductions for fines, damages, taxes, provident fund, employee's state insurance contribution etc. Benefits in kind (perquisites) of individual nature are only included.

23. **Bonus:** Profit sharing bonus, festival bonus, year-end bonus, and all other bonuses and ex-gratia payments paid at less frequent intervals are covered by this term.

24. **Workmen and Staff Welfare Expenses:** These include expenditure incurred by the employer on the maternity benefits and crèches and other benefits such as supply of food, beverages, tobacco, clothing and group lodging at concessional rates and educational, cultural and recreational facilities and services and grants to trade unions and cooperative stores meant for employees. All group benefits are included.

25. **Emoluments:** These are defined in the same way as wages but paid to all employees plus imputed value of benefits in kind i.e. the net cost to the employers on those goods and services provided to employees free of charge or at markedly reduced cost which are clearly and primarily of benefit to the employees as consumers. It includes profit sharing, festival and other bonuses and ex-gratia payments paid at less

frequent intervals (i.e. other than bonus paid more or less regularly for each period). Benefits in kind include supplies or services rendered such as housing, medical, education and recreation facilities. Personal insurance, income tax, house rent allowance, conveyance etc. for payment by the factory also is included in the emoluments.

26. **Supplements to Emoluments:** These include: (i) Employer's contribution to old age benefits, i.e., provident fund, pension, gratuity, etc.; (ii) Employer's contribution towards other social security charges such as Employees' State Insurance, compensation for work injuries, occupational diseases, maternity benefits, retrenchment and lay-off benefits etc.; and (iii) Group benefits like direct expenditure on maternity, crèches, canteen facilities, educational, cultural and recreational facilities and grant to trade unions, co-operative stores etc. meant for employees.
27. **Compensation of Employees:** Compensation of employees is the total of emoluments and supplement to emoluments.
28. **Mandays Worked:** These are obtained by summing up the number of mandays worked by persons working in each shift over all the shifts on all days, i.e. both manufacturing and non-manufacturing days. This figure excludes persons who are paid but remain on leave, strike, etc. Manufacturing days will mean and include number of days on which actual manufacturing process was carried out by the unit where as Non-manufacturing days will mean and include number of days on which only repair/maintenance and construction work were undertaken.
29. **Mandays Paid For:** The number of mandays paid for is arrived at by summing up the number of employees paid for in each shift. This also includes mandays on weekly schedule holidays if paid for and those absences with pay as also mandays lost through lay off/ strike for which compensation was payable.
30. **Working Day:** Working day means the days on which a manufacturing process and/or repair or maintenance work was carried on.
31. **Non-working Day:** Apart from manufacturing day and repair and maintenance days, there may be some non-working days. Non-working days are those days on which the workers give their attendance but due to non-availability of raw materials, power etc., no effective work is done. As the workers are paid for these days, such days are also taken into account for the purpose of labour statistics.
32. **Basic Materials:** Basic materials are the materials which are important and of key nature to the industry, on which the manufacturing process is based, viz. metal for machine, leather for shoe, wood for furniture. Such material is not lost through the process of production but only changes its forms.

33. **Consumable Stores:** All such materials which assist in the manufacturing process and lose their identity without entering the products are called consumable stores, e.g., cotton waste.
34. **Fuel Consumed:** Fuel Consumed represent total purchase value of all items of fuels, lubricants, electricity, water (purchased to make steam) etc. consumed by the factory during the accounting year except those which directly enter into products as materials consumed. It excludes that part of fuels, which is produced and consumed by the factory in manufacture i.e., all intermediate products and also fuels consumed by employees as part of amenities. It includes quantities acquired and consumed from allied concerns, their book value being taken as their purchase value and also the quantities consumed in production of machinery or other capital items for factory's own use.
35. **Materials Consumed:** Materials consumed represent the total delivered value of all items of raw materials, components, chemicals, packing materials and stores which actually entered into the production process of the factory during the accounting year. Components and accessories fitted as purchased with the finished product during the accounting year are also to be included. It excludes intermediate products. Intermediate products in the above context mean all those products which are produced by the factory and consumed for further manufacturing process.
36. **Total Input:** This comprises gross value of fuels, materials etc. consumed (as defined above) and also other inputs viz. (a) cost of non-industrial services received from others, (b) cost of materials consumed for repair and maintenance of factory's fixed assets including cost of work done by others to the factory's fixed assets, (c) cost of contract and commission work done by others on materials supplied by the factory, (d) cost of office supplies and products reported for sale during last year & used for further manufacture during the accounting year and (e) rent paid for buildings and plant & machinery and other fixed assets, (f) expenses on Research & Development (R&D).
37. **Intermediate Product:** Intermediate Product is a product which is obtained and consumed during a manufacturing process, which may or may not be saleable and is not the intended final product.
38. **Net Value of Semi-finished Goods:** It represents the excess/deficit of value of semi-finished goods and/or goods-in-process at the end of the accounting year over that at the beginning of year.
39. **Products:** These are defined to include the ex-factory value (i.e. exclusive of taxes, duties etc. on sale and inclusive of subsidies etc., if any) of all products and by-products, excluding intermediate products, that have been completed during the accounting year for sale whether actually sold during the accounting year or entered into inventory. Products also include fixed assets produced by the factory for its own use.

40. **Gross Output:** Gross output is defined to include the ex-factory value, (i.e., exclusive of taxes, duties, etc. on sale and inclusive of subsidies etc., if any) of products and by-products manufactured during the accounting year, and the net value of the semi-finished goods, value of own construction and also the receipts for industrial and non-industrial services rendered to others, rent received for building, plant & machinery and other fixed assets, net balance of goods sold in the same condition as purchased, value of electricity generated and sold and an amount equal to expenses on research & development (R&D). Value of gross output and total output has been used in the text inter-changeably to mean the same thing.
41. **Industrial Services:** Any services taken or rendered from one to another unit resulting in increase in the value of material during the manufacturing process are industrial services.
42. **Non-industrial Services:** All such services which do not have a direct bearing on the manufacturing process but are needed by any manufacturing unit are called non-industrial services, say, transport services.
43. **Gross Value Added (GVA):** Gross value added is defined as additional value created by the process of production. This is calculated by deducting the value of total input from gross value of output.
44. **Net Value Added (NVA):** This is obtained by deducting the value of total input and depreciation from gross output.
45. **Net Income:** It is obtained by deducting the value of rent paid & interest paid from the combined values of NVA.
46. **Profit:** It is obtained by deducting compensation of employees (see 2.27) from net income

Government of India  
 Ministry of Statistics and Programme Implementation  
 Return under Collection of Statistics Act, 2008 as amended in 2017 and rules framed there under in 2011  
 Annual Survey of Industries 2022-2023 (Part –I)  
(Please read the instructions before filling the return)

<b>Block A: Identification particulars (for official use)</b>					
1. Schedule Despatch (DSL) No.					
2. PSL No.					
3. Scheme code ( <i>Census-1, Sample-2</i> )					
4. Industry code as per frame (4-digit level of NIC-2008)					
5. Industry code as per return (5-digit level of NIC-2008)					
6. Description of Industry:					
7. State Code					
8. District Code					
9. Sector ( <i>Rural-1, Urban-2</i> )					
10. RO /SRO code					
11. No. of Units					
12. Status of Unit ( <i>Code</i> )					

<b>Block B: Particulars of the factory (to be filled by owner of the factory)</b>	
1. Name and address of the Industrial undertaking:	1.1 Vill./Town:
	1.2 District name:
	1.3 State name:
	1.4 PIN Code
2. Type of organisation ( <i>code</i> )	
3. Corporate Identification Number (CIN)	
4. Whether the unit has ISO Certification, 14000 Series ( <i>yes-1, no-2</i> )	
5. Year of initial production	
6. Accounting year (..... to .....)	
7. Number of months of operation	
8. Whether the share capital of the company includes share of foreign entities ( <i>yes-1, no-2</i> )	
9. Any R&D unit in your factory? ( <i>yes &amp; registered with DST/DBT-1, yes &amp; registered with others-2, no-3</i> )	
10. Details of contact person	i) Name & designation:
	ii) Tele (with STD code)
	iii) FAX no.
	iv) E-mail
11. Whether the unit offered any formal training ( <i>yes-1, no-2</i> )	

**DECLARATION**

I hereby declare that information furnished in this return is correct and complete to the best of my knowledge and belief.

Date :

Place :

(Name and Signature of owner with stamp)

<b>Block C: FIXED ASSETS</b>												
Sl. No.	Type of Assets	Gross value (Rs.)					Depreciation (Rs.)				Net value (Rs.)	
		Opening as on ----	Addition during the year		Deduction & adjustment during the year	Closing as on ----  (cols. 3+4+5-6)	Up to year beginning	Provi- ded during the year	Adjustment for sold/ discarded during the year	Up to year end  (cols. 8+9 -10)	Opening as on	Closing as on
		Due to revaluation	Actual additions	----- (cols. 3-8)							----- (cols. 7-11)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.	Land											
2.	Building											
3.	Plant & Machinery											
4.	Transport equipment											
5.	Computer equipment including software											
6.	Pollution control equipment/ Environment improvement equipment											
7.	Others											
8.	<b>Sub-total (items 2 to 7)</b>											
9.	Capital work in progress											
10.	<b>Total (items 1+8+9)</b>											

DSL No       PSL No

<b>Block D: WORKING CAPITAL AND LOANS</b>			
Sl. No.	Items	Opening (Rs.)	Closing (Rs.)
(1)	(2)	(3)	(4)
1.	Raw Materials & Components and Packing materials		
2.	Fuels & Lubricants		
3.	Spares, Stores & others		
4.	<b>Sub-total (items 1 to 3)</b>		
5.	Semi-finished goods/work in progress		
6.	Finished goods		
7.	<b>Total inventory ( items 4 to 6)</b>		
8.	Cash in Hand & at Bank		
9.	Sundry Debtors		
10.	Other current assets		
11.	<b>Total current assets (items 7 to 10)</b>		
12.	Sundry Creditors		
13.	Over draft, cash credit, other short term loan from banks & other financial institutions		
14.	Other current liabilities		
15.	<b>Total current liabilities (items 12 to 14)</b>		
16.	<b>Working Capital (item 11-item 15)*</b>		
17.	Outstanding loans (excluding interest but including deposits)**		
<p><i>Note:</i>                      * Give reasons in the footnote for negative values and abnormal verification in opening and closing values.                      ** If outstanding loans include interest, a footnote may be given</p>			

<b>Block E: EMPLOYMENT AND LABOUR COST</b>							
Sl. No.	Category of staff	Man-days worked			Average number of persons worked	No. of mandays paid for	Wages/ salaries (in Rs.)
		Manu- facturing	Non Manufacturing	Total			
1	2	3	4	5	6	7	8
<b>Part A: Details for each category of staff</b>							
1.	Male workers employed directly						
2.	Female workers employed directly						
3.	<b>Sub-total (items 1 + 2)</b>						
4.	Workers employed through contractors						
5.	<b>Total workers (items 3 + 4)</b>						
6.	Supervisory & managerial staff						
7.	Other employees						
8.	Unpaid family members/ proprietor/ coop. members						
9.	<b>Total employees (items 5+6+7+8)</b>						
<b>Part B: Some details for all categories of staff combined</b>							
10.	Bonus (in Rs.)						
11.	Contribution to provident & other funds (in Rs.)						
12.	Workmen & staff welfare expenses (in Rs.)						
13.	Number of working days	(i) Manufacturing days					
		(ii) Non-manufacturing days					
		<b>(iii) Total ( i+ ii)</b>					
14.	<b>Total cost of production (in Rs.)</b> [entry in col. 8 of item 9, 10, 11, and 12, block E + entry in col. 3 of item 1, 2(i), 2(ii), 3, 4, 5, 6, 7, 8, 9 & 10, block F + entry in col. 6 of item 23 of block H + entry in col. 6 of item 7, block I]						

<b>Block F : OTHER EXPENSES</b>		
Sl. No.	Items	Expenditure (in Rs.)
(1)	(2)	(3)
<b>O T H E R  I N P U T</b>	1.	Work done by others on materials supplied by the industrial undertaking
	2.	Repair & maintenance of
		(i) Buildings and other construction
		(ii) Other fixed assets
	3.	Operating expenses
	4.	Expenses on raw materials and other components for own construction
	5.	Insurance charges
	6.	Rent paid for plant & machinery and other fixed assets
	7.	Expenses on Research & Development (R&D)
	8.	Rent paid for buildings
	9.	Rent paid for land on lease or royalties on mines, quarries and similar assets
	10.	Interest paid
	11.	Purchase value of goods sold in the same condition as purchased
12.	Inward transportation cost	
13.	Outward transportation cost	

<b>Block G : OTHER OUTPUT/RECEIPTS</b>		
Sl. No.	Items	Receipts (in Rs.)
(1)	(2)	(3)
<b>O T H E R  O U T P U T</b>	1.	Receipts from manufacturing services (including work done for others on materials supplied by them and sale value of waste left by the party)
	2.	Receipts from non-manufacturing services (including non-industrial services)
	3.	Value of electricity generated and sold
	4.	Value of own construction
	5.	Net balance of goods sold in the same condition as purchased. (item 11 of block G <i>minus</i> item 11 of block F)
	6.	Rent received for plant & machinery and other fixed assets
	7.	Variation in stock of semi-finished goods (col.4 <i>minus</i> col 3 against item 5 in block D)
	8.	Rent received for buildings
	9.	Rent received for land on lease or royalties on mines, quarries and similar assets
	10.	Interest received
	11.	Sale value of goods sold in the same condition as purchased
	12.	Other production subsidies

DSL No       PSL No

<b>Block H: Indigenous input items consumed (if needed, additional sheets may be used for recording input items with serial nos. starting from 25)</b>						
Sl. No.	Item description	Item code (NPC-MS)	Unit of quantity	Quantity consumed	Purchase value (in Rs.)	Rate per unit (in Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Major ten basic items (indigenous)					
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.	Other basic items (indigenous)*	9920100				
12.	<b>Total basic items (items 1 to 11)</b>	<b>9990100</b>				
13.	Non-basic chemicals – all kinds	9920300				
14.	Packing items	9990800				
15.	Electricity own generated	9990400	KWH			
16.	Electricity purchased & consumed	9990500	KWH			
17.	Petrol, diesel, oil, lubricants consumed	9990600				
18.	Coal consumed	9990700	Tonne			
19.	Gas consumed	9990900	KG			
20.	Other fuel consumed	9920400				
21.	Consumable store	9922000				
22.	Total non-basic items (items 13 to 21)	9992000				
23.	<b>Total inputs (items 12+ 22)</b>	<b>9993000</b>				
24.	Any additional requirement of electricity (unmet demand)	<b>9999999</b>	KWH			

\* Full description of items not in NPC-MS 2011 (Revised):

DSL No       PSL No

Block I: Imported input items consumed - directly only (if needed, additional sheets may be used for recording input items with serial nos. starting from 8)						
Sl. No.	Item description (Major five imported items)	Item code (NPC-MS)	Unit of quantity	Quantity consumed	Purchase value (in Rs.)	Rate per unit (in Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.						
2.						
3.						
4.						
5.						
6.	Other imported items	9922100				
7.	<b>Total imports (consumed) (items 1 to 6)</b>	<b>9994000</b>				

DSL No       PSL No

Block J: Products and by-products manufactured by the unit (if needed, additional sheets may be used for recording output items with serial nos. starting from 14)												
Sl. No.	Products/By-products description (First ten major items as per value - no brand name)	Item code (NPCMS)	Unit of quantity	Quantity manufactured	Quantity sold	Gross sale value (Rs)	Distributive expenses (Rs.)				Per unit net sale value (Rs. 0.00) (col. 7-[col. 8+col. 9+col.10-col.11]) ÷ col. 6	Ex-factory value of quantity manufactured (Rs.) (col.12× col.5)
							Goods and Services Tax (GST)	Excise Duty/Sales Tax/VAT/Other Taxes, if any	Other Distributive Expenses	Subsidy (-)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.	Other products/by-products*	9921100										
12.	<b>Total ( items 1 to 11)</b>	<b>9995000</b>										
13.	Share (%) of products/by-products directly exported											

\* Full description of items not in NPC-MS 2011 (Revised):

DSL No      PSL No

<b>Block K: Information and Communication technology (ICT) usage</b>		
Sl. No.	ICT indicator	yes-1, no-2
1.	Did the factory use computer/s during FY 2022-23?	
2.	Did the factory use the internet during FY 2022-23?	
3.	Did the factory have a website as on the date of survey?	
4.	Did the factory receive orders via the internet during FY 2022-23?	
5.	Did the factory place orders for business purpose via the internet during FY 2022-23?	
6.	Did the factory connect to the internet either by a. Narrowband or b. Fixed broadband or c. Mobile broadband during FY 2022-23?	
7.	Does the factory have a local area network (LAN) as on the date of survey?	

<b>Block L: Energy Conservation (EC) measures</b>		
Sl. No.	EC indicator	yes-1, no-2
<b>Have any measures been taken during last financial year with regard to:</b>		
1.	Electrical saving?	
2.	Coal saving?	
3.	Oil saving?	
4.	Gas saving?	

**FOR OFFICIAL USE ONLY**

<b>Block M: Particulars of field operations</b>					
1.	Name of Superintending Officer		5.	Date of receipt from factory	
2.	Signature of Superintending Officer		6.	Date of verification/compilation	
3.	Name & Designation of Scrutinising Officer		7.	Date(s) of scrutiny	
4.	Signature of Scrutinising Officer		8.	Date of despatch	

<b>Block N: Comments of Superintending Officer/Scrutinising Officer</b>
<p><i>Note: Reasons for negative working capital and for any abnormal values or entries (high or low) in respect to important characteristics (Such as GVA, working capital, wage rate, number of workers, distributive expenses, depreciation etc.) should be given invariably. For instance the reasons for high GVA could be increased demand/production, profit, govt. subsidy; or for low GVA, the reasons could be decreased demand/production, capacity under-utilization, high input cost etc. similarly reasons for any abnormal values of certain important ratios eg. Ratio of output to input, ratio of depreciation/distributive expenses to output etc should be given.</i></p> <p><b>Please refer to detailed instructions also for further guidance.</b></p>

**Annual Survey of Industries 2022-23**

**Part A**

Report of scrutiny on Part-I of the return

State (code) \_\_\_\_\_ Distt. (code) \_\_\_\_\_ DSL No./PSL No. \_\_\_\_\_  
 Ind. code (5-digit NIC 2008) as per return \_\_\_\_\_ Scheme Code \_\_\_\_\_

Sl. No.	Bl. no.	Item	Unit	Average rate per unit*	If high or low, reasons to be furnished by	
1	H	Input items (Indigenous) Major Ten basic items consumed	<b>X</b>	<b>X</b>	Superintending Officer	Scrutinising Officer
		1)				
		2)				
		3)				
		4)				
		5)				
		6)				
		7)				
		8)				
		9)				
		10)				
		11) Electricity purchased				
		12) Coal				
2	I	Directly imported items consumed (major five items)				
		1)				
		2)				
		3)				
		4)				
		5)				

\*Average value per unit in nearest whole rupee is to be reported.

3. Percentage yield of product from the basic materials consumed (in case the quantity are common or directly convertible in whole number)

4	Item	Current year (2022-23)	Previous year (2021-22)	Reasons for significant variation, if any.
	1) Average salaries/wages per manday worked (Rs.) (E <sub>5,8</sub> / E <sub>5,5</sub> )			
	2) Total worker (number) (E <sub>5,6</sub> )			
	3) Total employees (number) (E <sub>9,6</sub> )			
	4) Total emoluments (E <sub>9,8</sub> + E <sub>10,8</sub> + E <sub>11,8</sub> + E <sub>12,8</sub> )			
	5) Variation in finished goods (D <sub>6,4</sub> - D <sub>6,3</sub> )			
	6) Working Capital (D <sub>16,4</sub> )			
	7) <b>Total input</b> (F <sub>1,3</sub> +F <sub>2(i),3</sub> +F <sub>2(ii),3</sub> +F <sub>3,3</sub> +F <sub>4,3</sub> +F <sub>6,3</sub> +F <sub>7,3</sub> +F <sub>8,3</sub> +F <sub>11,3</sub> ) (+) (H <sub>23,6</sub> ) (+) (I <sub>7,6</sub> )			
	8) <b>Total output</b> (J <sub>12,7</sub> ) (-) (J <sub>12,8</sub> +J <sub>12,9</sub> +J <sub>12,10</sub> -J <sub>12,11</sub> ) + (D <sub>6,4</sub> - D <sub>6,3</sub> ) + (G <sub>1,3</sub> +G <sub>2,3</sub> +G <sub>3,3</sub> +G <sub>4,3</sub> +G <sub>6,3</sub> +G <sub>7,3</sub> +G <sub>8,3</sub> +G <sub>11,3</sub> +F <sub>7,3</sub> )			
	9) Gross value added (GVA) (Item 8-Item 7 as above)			

Item	Current year (2022-23)	Previous year (2021-22)	Reasons for significant variation, if any.
10) Net value added (Item 9 as above) - Depreciation (C <sub>10,9</sub> )			
11) Net Income (Item 10 as above) (-) (F <sub>9,3</sub> +F <sub>10,3</sub> )			
12) Profit (Item 11 as above) (-) (E <sub>9,8</sub> +E <sub>10,8</sub> +E <sub>11,8</sub> +E <sub>12,8</sub> )			
13) Actual addition to fixed assets (C <sub>10,5</sub> )			
14) <b>GVA (through Ex-factory Value) (J<sub>12,13</sub>)</b> (+) (G <sub>1,3</sub> +G <sub>2,3</sub> +G <sub>3,3</sub> +G <sub>4,3</sub> +G <sub>6,3</sub> +G <sub>7,3</sub> +G <sub>8,3</sub> +G <sub>11,3</sub> +F <sub>7,3</sub> ) (-) (F <sub>1,3</sub> +F <sub>2(i),3</sub> +F <sub>2(ii),3</sub> +F <sub>3,3</sub> +F <sub>4,3</sub> +F <sub>6,3</sub> +F <sub>7,3</sub> +F <sub>8,3</sub> +F <sub>11,3</sub> ) (-) (H <sub>23,6</sub> ) (-) (I <sub>7,6</sub> )			

**5. Impose check on the following and give observations against each item**

Sl. No.	Check points	Observations (Yes-1/No-2)
1.	Whether codes and identification particulars have been correctly furnished in Block A?	
2.	Whether information for all the items in Block B have been correctly furnished?	
3.	If the working capital in item 16 of Block D is negative whether reasons furnished in the footnote of Block D of the Return and also in Block N along with code.	
4.	Whether the return has been duly signed by owner with stamp?	
5.	If wide variation is noticed between Opening & Closing value of Working Capital, whether reasons furnished in the footnote of Block D and also in Block N along with code	
6.	Whether special check has been made in case of negative GVA?	
7.	Whether basic entries have been thoroughly rechecked where output/input ratio is less than 0.5	
8.	Whether ratio of Distributive expenses to gross sales is reasonable? If no, whether the relevant entries have been rechecked particularly where this ratio exceeds 20%.	
9.	If the total Bonus is more than 20% of total wages/salaries whether suitable remarks given in the Return?	
10.	If sale value of goods sold in same condition as purchased (Item-11 of Block G) is less than the purchase value of the same (Item-11 of Block F), whether reasons furnished in the return ?	
11.	Whether Balance Sheet, Profit & Loss Account and Working Sheet are attached with the O/C of the Return ?	
12.	Whether, the ex-factory value of output in column-13 of Block J have been calculated correctly for each of the 10 major items of product and by-product and also for item 11 ?	
13.	Whether the entries in Blocks H & I are reported independently ?	

Signature of the Superintending Officer

( )  
Name of the Superintending Officer

<b>PART-B</b> <b>(To be filled in by Scrutinizing officer)</b>		
Impose check on the following and give observations against each item		
<b>Sl. No.</b>	<b>Check points</b>	<b>Observations (Yes-1/No-2)</b>
1.	Examine the Industry Code with reference to Production/Process and state whether Industry Code is reported in 5 digit NIC 2008 against item 5 of Block A.	
2.	Whether valid new State Code has been entered against item 7 of Block 'A'?	
3.	Whether Schedule Despatch no. has been correctly filled in against item 1 of Block A ?	
4.	State whether proper remarks in Block N for all important parameters such as GVA, working capital, wage rate, number of workers, distributive expenses, depreciation etc. are given.	
5.	Whether average salaries/wages per manday worked (worker) has been checked calculated correctly and are within the reasonable limits?	
6.	Whether special check has been made in case of negative GVA?	
7.	Whether basic entries have been rechecked where output/Input ratio is less than 0.5	
8.	Whether ratio of distributive expenses to gross sales is reasonable? If no, whether the relevant entries have been rechecked particularly where this ratio exceeds 20%.	
9.	If total bonus exceeds 20% of total salaries & wages, whether suitable remarks furnished ?	
10.	Whether yield ratio of products from basic materials consumed (in case the units of quantity are common or directly convertible) are correctly calculated and are within prescribed limits ?	
11.	Whether data reported in the return have been checked with Balance Sheet and Profit & Loss Account ?	

Signature of Scrutinizing officer

( )  
Name of Scrutinizing officer

### Estimation Procedure

AIII.1 As stated in Chapter One of the instructions, FOD, NSO collects the data for central sample units, and the data so collected are validated, processed and published by IS Wing, DPD. For selection of central sample units, all the factories in the frame are divided into two categories, viz., Census Sector and Sample Sector.

AIII.2 **Census Sector:** Census Sector consists of the following units:

- a) All industrial units belonging to the nine less industrially developed states/ UT's viz. Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Ladakh and Andaman & Nicobar Islands.
- b) All industrial units with Frame NIC = 0893(Salt Extraction).
- c) For the States/ UTs other than those mentioned in (a),
  - (i) units having 75 or more employees from six States/UTs, namely, Jammu & Kashmir, Himachal Pradesh, Rajasthan, Bihar, Chhattisgarh and Kerala;
  - (ii) units having 50 or more employees from three States/UTs, namely, Chandigarh, Delhi and Puducherry;
  - (iii) units having 100 or more employees for rest of the States/UTs, not mentioned in (i) and (ii) above and;
  - (iv) all units covered under 'Joint Return' (JR), where JR should be allowed when the two or more units located in the same State/UT belonging to the same industry (3-digit level of NIC) under the same management. It may be noted that the principle of JR is applicable only before the selection of units before the survey and unit(s) belonging to the "Census Sector" will not be joint with unit(s) of "Sample Sector" (see paragraph AIII.3) at the field stage or all units belonging to the "Sample Sector" should not be joint among themselves at the field stage even if the conditions of JR are satisfied.
- d) After excluding the Census Sector units as defined in paragraphs a) and b) above, the strata will be formed at State × District × Sector × 3-digit of NIC-2008 level. Here, 'sector' is very broad economic activity group consisting of manufacturing, electricity generation activity and *bidi* producing activity. Thus, in short, sectors are (i) Bidi, (ii) Manufacturing and (iii) Electricity. All units belonging to the strata (i.e., formed on the basis of units in *State by District by Sector by 3-digit of NIC-08*) having less than or equal to 4 units are completely enumerated and are thus considered as 'census sector' units.

AIII.3 **Sample Sector** All the units not listed under census sector are covered in Sample sector.

- a) The factories, in each stratum, are arranged in order of their number of employees. The sample will be drawn circular systematically in the form of four independent sub-samples considering an overall sampling fraction, say, about 16% to 22%, depending

---

<sup>1</sup> This Sampling Design is based on the recommendation of the "Sub-Group of SCIS on Sampling Design of ASI" under the Chairmanship of Dr. G. C. Manna.

upon the availability of resources of FOD and State DES in each State. An even number of units, with a minimum of four (4) units, are selected and evenly distributed in four sub-samples. It may be noted that in the formation of stratum, the sectors are taken as (i) Bidi, (ii) Manufacturing and (iii) Electricity as was mentioned in paragraph c) of AIII.2. Moreover, each of the four (4) sub-samples from a particular stratum may not have equal number of units.

- b) Out of these four sub-samples, two, preferably the odd ones, will be given to FOD of NSO and the remaining two will be given to State/UT for data collection. Thus if four sub-samples  $SS_1, SS_2, SS_3$  and  $SS_4$  are formed in each stratum, the sub-samples  $SS_1$  and  $SS_3$  will be surveyed by NSO, FOD, and the sub-samples  $SS_2$  and  $SS_4$  will be surveyed by State/ UT.
- c) The entire units under the Census scheme *plus* all the units belonging to the two sub-samples meant for FOD (i.e., sub-samples  $SS_1$  and  $SS_3$  in this case) may be treated as the **Central sample**.
- d) All the units belonging to the two sub-samples meant for State/UT (i.e., sub-samples  $SS_2$  and  $SS_4$ ) may be treated as the **State sample**. However, State/UT will have to use Census units, surveyed by central agency, along with their State sample while deriving the estimates at different levels for their State/UT.
- e) So, there will not be any provision of drawing state sample separately in the new sampling design for ASI. In fact, in the new design, the stratification will be “State  $\times$  District  $\times$  Sector  $\times$  3-digit of NIC”, and the samples will be drawn from the sample sector in the form of four (4) independent sub-samples.

#### AIII.4 Estimation Procedure

##### AIII.4.1 Notations:

$i$  = subscript for  $i$ -th state.

$s$  = subscript for  $s$ -th stratum in the  $i$ -th state.

$m$  = subscript for sub-sample ( $m = 1, 2, 3, 4$ ) [ $m=1$  and  $3$  for central and  $2$  and  $4$  for state].

$k$  = subscript for  $k$ -th sample enterprise under a particular stratum.

$E$  = total number of factories **in the sample sector** in a stratum.

$e$  = number of factories surveyed out of total number of factories **in the sample sector** in a stratum.

$x, y$  = observed value of characteristics  $x, y$  under estimation.

$\hat{X}, \hat{Y}$  = estimate of population total  $X, Y$  for the characteristics  $x, y$ .

Under the above symbols,

$Y_{ismk}$  = observed value of the characteristic  $y$  for the  $k$ -th unit belonging to the  $m$ -th sub-sample for the  $s$ -th stratum in the  $i$ -th state.

##### (a) Formulae for estimation of aggregates for a state based on central sample:

The central sample consists of two parts: i) **Census Sector** where complete enumeration of units was done and ii) **Sample Sector** where units are selected from two sub-samples (sub-sample numbers being '1' and '3') from each stratum. Please note that the sub-samples '2' and '4' in each stratum are to be surveyed by State governments and those are considered as **State Sample**.

The estimation formula for any characteristic of the unit **in the sample sector** for m-th sub-sample in s-th strata of the i-th state is:

$${}^s\hat{Y}'_{ism} = \frac{E_{is}}{e_{ism}} \sum_{k=1}^{e_{ism}} y_{ismk}, \quad m=1,3. \quad \dots\dots\dots (1.1)$$

Now the estimate of the parameter pertaining to sample sector of s-th stratum in the i-th State ( ${}^s\hat{Y}'_{is}$ ) is the simple average of sub-sample estimates of the s-th stratum in the i-th State,  ${}^s\hat{Y}'_{ism}$ , m=1,3 i.e.,  ${}^s\hat{Y}'_{is} = \frac{1}{2} \sum_{m=1,3} {}^s\hat{Y}'_{ism}$ .

Thus, the estimator for any characteristic of the unit **in the sample sector** of the i<sup>th</sup> state is:

$${}^s\hat{Y}'_i = \sum_s {}^s\hat{Y}'_{is} \quad \dots\dots\dots (1.2)$$

Now, if  ${}^c\hat{Y}''_i$  be the corresponding estimator for that characteristic of the unit **for the census sector** of the i-th state, then the estimate for the census sector,  ${}^c\hat{Y}''_i$ , will be simple addition of value of the characteristic y under the domain since the multiplier associated with each unit of the census sector is equal to 1. Thus, the estimate for that characteristic of the unit for i<sup>th</sup> State **as a whole** based on the central sample is given by:

$${}^{Central}\hat{Y}_i = {}^s\hat{Y}'_i + {}^c\hat{Y}''_i \quad \dots\dots\dots (2)$$

The estimate of the characteristic of the unit for all-India will be:

$${}^{Central}\hat{Y} = \sum_i {}^{Central}\hat{Y}_i \quad \dots\dots\dots (3)$$

**(b) Formulae for estimation of aggregates for a state based on state sample:**

As mentioned before the sub-samples '2' and '4' pertain to State Sample. The estimation formula for any characteristics of the unit **in the sample sector of the State sample**<sup>2</sup> for m-th sub-sample of the i-th state is:

$${}^{State}\hat{Y}'_{ism} = \frac{E_{is}}{e_{ism}} \sum_{k=1}^{e_{ism}} y_{ismk}, \quad m=2,4. \quad \dots\dots\dots (4.1)$$

where superscript 'State' in  ${}^{State}\hat{Y}'_{ism}$  in  ${}^{State}\hat{Y}'_{ism}$  is the estimate of Characteristic Y generated from state sample for m<sup>th</sup> sub-sample of s<sup>th</sup> stratum in i<sup>th</sup> State. Now, the Estimation formula for a characteristic y of the unit **for the sample sector** in s-th stratum of the i-th

<sup>2</sup> The State sample comprises of two sub-samples, viz., sub-samples 2 and 4 and census sector is covered in central sample. Hence, the state sample has only the sample sector.

state based on state sample is the simple average of sub-sample estimates of the s-th stratum in the i-th State,  ${}^{State}\hat{Y}'_{ism}$ ,  $m=2,4$  i.e.,  ${}^{State}\hat{Y}'_{is} = \frac{1}{2} \sum_{m=2,4} {}^{State}\hat{Y}'_{ism}$ , where  ${}^{State}\hat{Y}'_{is}$  is the state sample estimate of the s-th stratum for the sample sector.

Thus, the estimator for any characteristic of the unit in the sample sector of the i<sup>th</sup> state is based on the state sample is:

$${}^{State}\hat{Y}'_i = \sum_s {}^{State}\hat{Y}'_{is} \dots\dots\dots(4.2)$$

Using  ${}^c\hat{Y}''_i$  as the corresponding estimate for that characteristic of the unit for the census sector of the i-th state, then the estimate for that characteristic of the unit for the i-th state as a whole based on the state sample is given by:

$${}^{State}\hat{Y}_i = {}^{State}\hat{Y}'_i + {}^c\hat{Y}''_i \dots\dots\dots (5)$$

**(c) Formulae for estimation of aggregates for a state based on pooled sample:**

Estimation formula for any characteristic of the unit for the sample sector of the i-th state based on pooled sample (i.e., central and state combined) will be as follows:

Let sub-sample estimate of a characteristic Y for m-th sub-sample in s-th stratum in i-th State is  ${}^s\hat{Y}'_{ism}$ . Then

$${}^s\hat{Y}'_{ism} = \frac{E_{is}}{e_{ism}} \sum_{k=1}^{e_{ism}} y_{ismk}, m=1,2,3,4\dots\dots\dots (6.1)$$

The stratum level estimate for the pooled sample will be the simple average of the sub-sample estimate of Y in that stratum. Mathematically, if  $\hat{Y}'_{is}$  be the stratum-level estimate for s-th stratum for i-th State, then  ${}^{Pooled}\hat{Y}'_{is} = \frac{1}{4} \sum_{m=1}^4 {}^s\hat{Y}'_{ism}$ . In some cases, in a particular stratum one or more sub-samples may be void. Then stratum-level estimate will be generated from the simple average of the non-void sub-samples in that stratum. Thus, general form of stratum-level estimate may be  ${}^{Pooled}\hat{Y}'_{is} = \frac{1}{t} \sum_{m=1}^t {}^s\hat{Y}'_{ism}$ , where t ( $\leq 4$ ) is the number of non-void sub-sample available with the stratum s.

Thus, the estimator for any characteristic Y of the unit the sample sector of the i<sup>th</sup> state based on pooled sample is:

$${}^{Pooled}\hat{Y}'_i = \sum_s {}^{Pooled}\hat{Y}'_{is} \dots\dots\dots(6.2)$$

Using  ${}^c\hat{Y}''_i$  as the corresponding estimate for that characteristic of the unit for the census sector of the i-th state, then the estimate for that characteristic of the enterprise for the i-th state as a whole based on the pooled sample is given by:

$$\text{Pooled } \hat{Y}_i = \text{Pooled } \hat{Y}_i^1 + {}^C \hat{Y}_i^2 \dots \dots \dots (7)$$

The above equations are given for generating the estimates for the State. However, similar treatment may be given or same equations may be used in generating the estimates at district level.

#### AIII.4.2 Estimates of Ratios:

Let  $\hat{Y}$  and  $\hat{X}$  be the overall estimate of the aggregates Y and X for two characteristics y and x, respectively at the State/ UT/ all-India level.

Then the combined ratio estimate ( $\hat{R}$ ) of the ratio ( $R = \frac{Y}{X}$ ) will be obtained as

$$\hat{R} = \frac{\hat{Y}}{\hat{X}} .$$

**AIII.4.3 Estimates of Error for Aggregate  $\hat{Y}$ :** The variance is to be obtained for the sample sector units only. The estimated variances of the estimates at state level will be as follows:

$$V\hat{a}r(\hat{Y}_i) = \sum_s V\hat{a}r(\hat{Y}_{is}) \dots \dots \dots (8)$$

The sampling variance based on central Samples is:

$$V\hat{a}r(\hat{Y}_i) = \sum_s \{(\hat{Y}_{is1} - \hat{Y}_{is3}) / 2\}^2 \dots \dots \dots (9.1)$$

The sampling variance based on state Samples is:

$$V\hat{a}r(\hat{Y}_i) = \sum_s \{(\hat{Y}_{is2} - \hat{Y}_{is4}) / 2\}^2 \dots \dots \dots (9.2)$$

In case only one sub-sample is available in a stratum out of two sub-samples 1 and 3 in central sample, the estimate of variance of central sample estimate in that stratum needs to be adjusted. The adjustment may be made by considering all the surveyed units in the non-void sub-sample as SRSWOR samples provided number of surveyed units in the sub-sample is greater than one. Similar treatment may be given in case only one sub-sample is available in a stratum out of two sub-samples 2 and 4 in state sample as well as in a stratum out of four sub-samples in pooled data.

For generating estimates of variance for the pooled sample is:

$$V\hat{a}r(\hat{Y}_i) = \frac{1}{t(t-1)} \sum_s \sum_{m=1}^t (\hat{Y}_{ism} - \hat{Y}_{is})^2, \dots \dots \dots (9.3)$$

where  $\hat{Y}_{is} = \frac{1}{t} \sum_{m=1}^t \hat{Y}_{ism}$  and t is the number of non-void sub-samples in s-th stratum. Note that equations (9.1) and (9.2) are special cases of equation (9.3) when t=2.

For all-India, the estimated variances of the estimates of different types will be as follows:

$$\widehat{Var}(\hat{Y}) = \sum_i \widehat{Var}(\hat{Y}_i) \dots\dots\dots (10)$$

**AIII.4.4 For ratio  $\hat{R}$  :**

The ratio estimators are biased estimators. Thus, instead of variance, we'll try to estimate Mean Square Error (MSE). The general formula of estimate of MSE  $\hat{R}$  is of

$$M\hat{S}E(\hat{R}) = \frac{1}{\hat{X}^2} [\widehat{V}(\hat{Y}) - 2\hat{R}Cov(\hat{X}, \hat{Y}) + \hat{R}^2\widehat{V}(\hat{X})] \dots\dots\dots (11)$$

Now, the MSE of  $\hat{R}$  at all-India level based on central sample (i.e. sub-samples 1 and 3) is,

$$M\hat{S}E(\hat{R}) = \frac{1}{2} \times \frac{1}{\widehat{X}_s^2} \sum_s \left[ \sum_{m=1,3} (\hat{Y}_{sm} - {}^c\hat{Y}_s)^2 - 2\hat{R} \sum_{m=1,3} (\hat{Y}_{sm} - {}^c\hat{Y}_s)(\hat{X}_{sm} - {}^c\hat{X}_s) + \hat{R}^2 \sum_{m=1,3} (\hat{X}_{sm} - {}^c\hat{X}_s)^2 \right] \dots(11.1) \text{ where}$$

$${}^c\hat{Y}_s = \frac{1}{2} \sum_{m=1,3} \hat{Y}_{sm}, \quad {}^c\hat{X}_s = \frac{1}{2} \sum_{m=1,3} \hat{X}_{sm}, \quad \hat{R} = \text{Central } \hat{Y} / \text{Central } \hat{X}, \text{ and } \hat{Y}_{sm} \text{ and } \hat{X}_{sm} \text{ are estimates of}$$

characteristics x and y based on m-th sub-sample of s-th stratum from the sample sector of central sample, and  ${}^{Central}\hat{X}$  and  ${}^{Central}\hat{Y}$  will be obtained using eq. (3) for the characteristics x and y respectively.

For  $\hat{R}$  at state level (i.e., for i-th state, say  $\hat{R}_i$ ) based on sub-samples 1 and 3 of central sample,

$$M\hat{S}E(\hat{R}_i) = \frac{1}{2} \times \frac{1}{\widehat{X}_i^2} \sum_s \left[ \sum_{m=1,3} (\hat{Y}_{ism} - {}^c\hat{Y}_{is})^2 - 2\hat{R}_i \sum_{m=1,3} (\hat{Y}_{ism} - {}^c\hat{Y}_{is})(\hat{X}_{ism} - {}^c\hat{X}_{is}) + \hat{R}_i^2 \sum_{m=1,3} (\hat{X}_{ism} - {}^c\hat{X}_{is})^2 \right] \dots(11.2)$$

$$\text{where } {}^c\hat{Y}_{is} = \frac{1}{2} \sum_{m=1,3} \hat{Y}_{ism}, \quad {}^c\hat{X}_{is} = \frac{1}{2} \sum_{m=1,3} \hat{X}_{ism}, \quad \hat{R}_i = \text{Central } \hat{Y}_i / \text{Central } \hat{X}_i, \text{ and } \hat{Y}_{ism} \text{ and } \hat{X}_{ism} \text{ are estimates of}$$

characteristics x and y based on m-th sub-sample of s-th stratum in i-th State from the sample sector of central sample, and  ${}^{Central}\hat{X}_i$  and  ${}^{Central}\hat{Y}_i$  will be obtained using eq. (2) for i-th state for the characteristics x and y respectively.

For  $\hat{R}$  at state level (say  $\hat{R}_i$ ) from state sample (i.e. based on sub-samples 2 and 4),

$$M\hat{S}E(\hat{R}_i) = \frac{1}{2} \times \frac{1}{\widehat{X}_i^2} \sum_s \left[ \sum_{m=2,4} (\hat{Y}_{ism} - {}^s\hat{Y}_{is})^2 - 2{}^s\hat{R}_i \sum_{m=2,4} (\hat{Y}_{ism} - {}^s\hat{Y}_{is})(\hat{X}_{ism} - {}^s\hat{X}_{is}) + {}^s\hat{R}_i^2 \sum_{m=2,4} (\hat{X}_{ism} - {}^s\hat{X}_{is})^2 \right] \dots (12)$$

$$\text{where } {}^s\hat{Y}_{is} = \frac{1}{2} \sum_{m=2,4} \hat{Y}_{ism}, \quad {}^s\hat{X}_{is} = \frac{1}{2} \sum_{m=2,4} \hat{X}_{ism}, \quad {}^s\hat{R}_i = \text{State } \hat{Y}_i / \text{State } \hat{X}_i; \hat{Y}_{ism} \text{ and } \hat{X}_{ism} \text{ are estimates of}$$

characteristics x and y based on m-th sub-sample (sub-sample 2 and 4) of s-th stratum in i-th State from the state sample, and  ${}^{State}\hat{X}_i$  and  ${}^{State}\hat{Y}_i$  will be obtained using eq. (5) for i-th state for the characteristics x and y respectively.

For  $\hat{R}$  at all-India based on pooled sample (i.e. sub-samples 1, 2, 3 and 4) is,

$$M\hat{S}E(\hat{R}) = \frac{1}{12} \times \frac{1}{\hat{X}^2} \sum_s \left[ \sum_{m=1}^4 (\hat{Y}_{sm} - \hat{Y}_s)^2 - 2\hat{R} \sum_{m=1}^4 (\hat{Y}_{sm} - \hat{Y}_s)(\hat{X}_{sm} - \hat{X}_s) + \hat{R}^2 \sum_{m=1}^4 (\hat{X}_{sm} - \hat{X}_s)^2 \right] \dots(13)$$

where  $\hat{Y}_{sm}$  and  $\hat{X}_{sm}$  are estimates of characteristics x and y based on all sub-samples 1, 2, 3 and 4 of s-th stratum,  $\hat{Y}_s = \frac{1}{4} \sum_{m=1}^4 \hat{Y}_{sm}$ ,  $\hat{X}_s = \frac{1}{4} \sum_{m=1}^4 \hat{X}_{sm}$  and  $\hat{R} = \hat{Y}/\hat{X}$ . Here,  $\hat{Y}$ ,  $\hat{X}$  and  $\hat{R}$  are pooled all-India estimate of the characteristics Y, X and R (i.e., ratio Y/X) respectively. In case, pooling at any State level is attempted, the corresponding pooled estimate of characteristics y, x and R may be used for that State using eq. (7). In short, formula for MSE ( $\hat{R}_i$ ) based on pooled sample is :

$$M\hat{S}E(\hat{R}_i) = \frac{1}{12} \times \frac{1}{\text{Pooled } \hat{X}_i^2} \sum_s \left[ \sum_{m=1}^4 (\hat{Y}_{ism} - \hat{Y}_{is})^2 - 2\hat{R}_i \sum_{m=1}^4 (\hat{Y}_{ism} - \hat{Y}_{is})(\hat{X}_{ism} - \hat{X}_{is}) + \hat{R}_i^2 \sum_{m=1}^4 (\hat{X}_{ism} - \hat{X}_{is})^2 \right] \dots(13.1)$$

where  $\hat{Y}_{ism}$  and  $\hat{X}_{ism}$  are estimates of characteristics x and y based on all sub-samples 1, 2, 3 and 4 of s-th stratum for the i-th state,  $\hat{Y}_{is} = \frac{1}{4} \sum_{m=1}^4 \hat{Y}_{ism}$ ,  $\hat{X}_{is} = \frac{1}{4} \sum_{m=1}^4 \hat{X}_{ism}$  and  $\hat{R}_i = \text{Pooled } \hat{Y}_i / \text{Pooled } \hat{X}_i$ .

Please note that, in case one or more sub-sample is void in a stratum, the estimate MSE of  $\hat{R}$  will be estimated using the equations (13) based on only non-void sub-samples.

#### AIII.4.5 Estimates of RSE:

$$R\hat{S}E(\hat{Y}) = \frac{\sqrt{\text{Var}(\hat{Y})}}{\hat{Y}} \times 100 \dots\dots\dots (14)$$

$$R\hat{S}E(\hat{R}) = \frac{\sqrt{M\hat{S}E(\hat{R})}}{\hat{R}} \times 100 \dots\dots\dots (15)$$

#### AIII.4.6 Multipliers for enterprises:

The formulae for multipliers for a stratum are given below:

formula for sub-sample wise multiplier	formula for combined sample multiplier
$\frac{E_{is}}{e_{ism}}$ , m = 1, 2, 3 or 4.	$\frac{E_{is}}{e_{is}}$ , $e_{is} = \sum_{m=1}^4 e_{ism}$

#### AIII.4.7 Treatment for surveyed cases and casualty cases:

AIII.4.7.1 *Casualty cases*: The casualty case may occur in cases where the unit is existing but non-response due to closure and owner/occupier is not traceable (code 5), non-response due to production not yet started or accounting year not closed during the year (code 7) or non-response due to other reasons [incl. relevant records are with court/Income tax or recalcitrant/refuse to submit the return department, etc, or factory under prosecution in respect of earlier ASI] (code 8). Thus, the units with survey codes 5, 7 and 8 as per Item 12, Block A are treated as casualties.

AIII.4.7.2 *Imputation of data from past survey for casualty units:* In case any units in the census sector becomes casualty, information in respect of all the characteristics may be borrowed from the previous year, if available, for the census sector units belonging to that post-survey stratum of 'State  $\times$  District  $\times$  Sector  $\times$  3-Digit of NIC'. This is also followed in case of units pertaining to sample sector which are casualty but information on various characteristics for previous year of those units is available. All such units, for which previous year's information is available, are treated as if 'open' and status code '1' is given against these units.

AIII.4.7.3 While counting the number of units surveyed ( $e_{ism}$ ) in the m-th sub-sample of a stratum, all the units with survey codes 1 to 4 in Item 12, Block A will be considered excluding the casualty cases (i.e., those casualty cases where even previous year's information is not available).

#### AIII.4.8 Treatment in cases of void strata

AIII.4.8.1 A stratum may be void because of the casualty of all the units belonging to the stratum. This may occur in one sub-sample or more sub-samples. If it happens to only one sub-sample, then estimate for the stratum with one void sub-sample may be based on a single available sub-sample. Since the estimate of the sample sector within a stratum is the simple average of the two sub-samples (assuming samples are selected in the form of two sub-samples), by considering only one sub-sample, the stratum level estimate will be same as the single available sub-sample estimate. This situation where at least one sub-samples is available, we will not treat this stratum as 'void'. The situation where none of the sub-sample is available in a stratum, we will treat that stratum as 'void'. However, the various cases of void sub-samples are discussed below:

AIII.4.8.2 When a stratum is void i.e., none of the sub-samples 1 and 3 is available, then in order to generate estimate pertaining to sample sector based on central sample, the 'void' stratum may be merged with the nearest stratum looking into the description of the 3-digit NIC activity within the district, or else it could be merged with the 3-digit NIC activity 'others' within that 3-digit NIC Group in the district of the respective State. This will ensure the generation of district level estimates within a State.

AIII.4.8.3 The treatment will be similar if the stratum is void in both the sub-samples 2 and 4 to generate estimates from the state sample. In this case merging of stratum may be required in generating state sample estimates. If only one sub-sample (out of sub-sample 2 and 4) is void, then estimate for that stratum may be generated on the basis of single sub-sample as is mentioned in earlier paragraph AIII.4.8.1. It may be possible that in a particular stratum, sub-samples 1 and 3 are void but sub-samples 2 and 4 are not void or conversely sub-samples 1 and 3 are not void but sub-samples 2 and 4 are void. In the later case merging of stratum is required in generating state sample estimate while merging is not required in generating estimates from central sample. In such cases for generating pooled estimate, merging is also not required. The stratum merging in generating pooled estimate is required only when all the four sub-samples in a stratum are void. The same merging principle, which is mentioned in earlier paragraph AIII 4.8.2, is to be followed in such cases.

## THE COLLECTION OF STATISTICS ACT, 2008

### ARRANGEMENT OF SECTIONS

#### CHAPTER I

##### PRELIMINARY

#### SECTIONS

1. Short title, extent and commencement.
2. Definitions.

#### CHAPTER II

##### COLLECTION OF STATISTICS

3. Collection of statistics.
4. Powers of appropriate Government to appoint statistics officer, etc.
5. Power of statistics officer to call for information.
6. Duty of informants.
7. All agencies to assist.
8. Right of access to records or documents.

#### CHAPTER III

##### DISCLOSURE OF INFORMATION IN CERTAIN CASES AND RESTRICTIONS OF THEIR USE

9. Security of information.
10. Appropriate Government authorised to disclose certain information.
11. Disclosure of information schedules for *bona fide* research or statistical purposes.
12. Disclosure of historical documents.
13. Security of recorded information.
14. Restrictions on use of information.

#### CHAPTER IV

##### OFFENCES AND PENALTIES

15. Penalty for neglect or refusal to supply particulars.
16. Penalty for making false statement.
17. Penalty for mutilation or defacement of information schedule.
18. Penalty for obstruction of employees.
19. Penalty for other offences.
20. Penalty for failure to carry out duties and functions by employees.
21. Penalty for impersonation of employee.
22. General penalty.
23. Offences by companies.
24. Cognizance of offences.
25. Sanction for prosecution for offence.
26. Power of court to try cases summarily.

CHAPTER V

POWER IN RESPECT OF CORE STATISTICS

SECTIONS

27. Power in respect of core statistics.

CHAPTER VI

MISCELLANEOUS

28. Power to give directions.
29. Public servants.
30. Bar of jurisdiction.
31. Protection of action taken in good faith.
32. Overriding effect.
33. Power to make rules.
34. Repeal and savings.

THE COLLECTION OF STATISTICS ACT, 2008

ACT No. 7 OF 2009

[7th January, 2009.]

An Act to facilitate the collection of statistics on economic, demographic, social, scientific and environmental aspects, and for matters connected therewith or incidental thereto.

BE it enacted by Parliament in the Fifty-ninth Year of the Republic of India as follows:—

CHAPTER I

PRELIMINARY

**1. Short title, extent and commencement.**—(1) This Act may be called the Collection of Statistics Act, 2008.

(2) It extends to the whole of India except the State of Jammu and Kashmir.

(3) It shall come into force on such date<sup>1</sup> as the Central Government may, by notification in the Official Gazette, appoint.

**2. Definitions.**—In this Act, unless the context otherwise requires,—

(a) "agency" includes a person or persons engaged by the appropriate Government, directly or by outsourcing, for collection of statistics;

(b) "appropriate Government" means—

(i) any Ministry or Department in the Central Government; or

(ii) any Ministry or Department in a State Government or Union territory Administration; or

(iii) any local government that is to say, Panchayats or Municipalities, as the case may be,

in relation to the collection of statistics under a direction issued by it under section 3;

(c) "informant" means any person, who supplies or is required to supply statistical information and includes a owner or occupier or person in-charge or his authorised representative in respect of persons or a firm registered under the Indian Partnership Act, 1932 (9 of 1932) or a co-operative society registered under any Co-operative Societies Act or a company registered under the Companies Act, 1956 (1 of 1956) or a society registered under the Societies Registration Act, 1860 (21 of 1860) or any association recognised or registered under any law for the time being in force;

(d) "information schedule" means any book, document, form, card, tape, disc or any storage media on which information required is entered or recorded or is required to be entered or recorded for statistical purposes under this Act;

(e) "prescribed" means prescribed by rules made under this Act;

(f) "sampling" means a statistical procedure by which information relating to a particular field of inquiry is derived by applying statistical techniques to information obtained in respect of a proportion of the total number of persons or units concerned relevant to the field of inquiry;

(g) "statistical survey" means a census or a survey, whereby information is collected from all the informants in the field of inquiry or from a sample thereof, by an appropriate Government under this Act or any other relevant Act, wholly or primarily for the purposes of processing and summarising by appropriate statistical procedures;

(h) "statistics" means statistics derived by collecting, classifying and using statistics, specially in or for large quantities or numbers by appropriate Government from statistical surveys, administrative and registration records, and other forms and papers, the statistical analysis of which are, whether in a published or unpublished form;

1. 11th June, 2010, *vide* notification No. S.O. 1416(E), dated 9th June, 2010, *see* Gazette of India, Extraordinary, Part II, sec. 3(ii).

(i) "statistics officer" means any officer appointed under section 4 for the purposes of any direction issued under section 3 of this Act.

## CHAPTER II

### COLLECTION OF STATISTICS

**3. Collection of statistics.**—The appropriate Government may, by notification in the Official Gazette, direct that the statistics on economic, demographic, social, scientific and environmental aspects shall be collected through a statistical survey or otherwise, and thereupon the provisions of this Act shall apply in relation to those statistics:

Provided that—

(a) nothing contained in this section shall be deemed to authorise a State Government or Union territory Administration or any local government to issue any direction with respect to the collection of statistics relating to any matter falling under any of the entries specified in List I (Union List) in the Seventh Schedule to the Constitution; or

(b) where the Central Government has issued any direction under this section for the collection of statistics relating to any matter, no State Government or Union territory Administration or any local government shall, except with the previous approval of the Central Government, issue any similar direction for so long as the collection of such statistics by the Central Government remain to be completed; or

(c) where a State Government or Union territory Administration or any local government has issued a direction under this section for the collection of statistics relating to any matter, the Central Government shall not issue any similar direction for so long as the collection of such statistics by the State Government remain to be completed, except in cases where such statistics have to be collected with reference to two or more States or Union territories.

**4. Powers of appropriate Government to appoint statistics officer, etc.**—(1) The appropriate Government may appoint or cause to appoint an officer to be the statistics officer for any geographical unit for the purpose of collecting any statistics directed by it.

(2) The appropriate Government may appoint any agency or persons working in such agencies to take, or aid in, or supervise the collection of the statistics within any specified geographical unit and such agencies or persons, when so appointed, shall be bound to serve accordingly.

(3) The appropriate Government may employ on contract basis any agency or company or organisation or association or person, on such terms and conditions and on such safeguards as may be prescribed, for the purpose of collecting the statistics directed by it.

(4) The appropriate Government may delegate to any statistics officer, as it thinks fit, the power of appointing agencies or persons working in such agencies or employing on contract basis any agency or company or organisation or association of persons, conferred on it by sub-sections (2) and (3) within the geographical unit for which such statistics officer is appointed.

(5) The appropriate Government may, by order specify the form, the particulars required or the interval within which, and the statistics officer to whom, the statistical information by the informants shall be furnished.

(6) The appropriate Government may, by order published in the Official Gazette, delegate to any statistics officer, as it thinks fit, any power conferred under sub-section (5) for the purpose of the collection of statistics under a direction issued by it under section 3.

**5. Power of statistics officer to call for information.**—The statistics officer may, for the purpose of collection of statistics on any specified subject in any geographical unit for which the said officer was appointed—

(a) serve or cause to be served on any informant a notice in writing asking him to furnish the information specified under sub-section (5) of section 4 or cause a information schedule to be given to any informant for the purpose of its being filled up; or

(b) cause all questions relating to the subject to be asked from any informant; or

(c) seek information through tele fax or telephone or e-mail or in any other electronic mode or in a combination of different modes for different sets of information so specified.

**6. Duty of informants.**—The informants who are asked to furnish any information under the provisions of this Act shall be bound to furnish the information so asked in the prescribed manner to the best of knowledge or belief; and in cases where only a portion of a particular class or group of persons or units is asked to furnish information because of any sampling procedure, it shall not be a defence in failure on the part of any informant to furnish that information, if so asked.

**7. All agencies to assist.**—Every agency shall render such help and assistance and furnish such information to the statistics officer or a person or an agency authorised by him in writing, as he may require for the discharge of his functions, and shall make available for inspection and examination of such records, plans and other documents, as may be necessary.

**8. Right of access to records or documents.**—The statistics officer or any person authorised by him in writing in this behalf shall, for the purposes of collection of any statistics under this Act, have access to any relevant record or document in the possession of any informant required to furnish any information under this Act, and may enter at any reasonable time any premises where he believes such record or document is kept and may inspect or take copies of relevant records or documents or ask any question necessary for obtaining any information required to be furnished under this Act.

### CHAPTER III

#### DISCLOSURE OF INFORMATION IN CERTAIN CASES AND RESTRICTIONS OF THEIR USE

**9. Security of information.**—(1) Any information furnished to the statistics officer or to any person or agencies authorised under this Act shall only be used for statistical purposes.

(2) No person other than a person engaged in the work of collection of statistics under this Act or preparation of statistics resultant to such collection shall be permitted to see any information schedule or any answer to a question asked, except for the purposes of a prosecution under this Act.

(3) No information contained in any information schedule and no answer to any question asked shall, except for the purposes of a prosecution under this Act, be separately published, or disclosed without suppressing the identification of informants to any agency.

(4) All statistical information published by any agency shall be arranged in such a manner so as to prevent any particulars becoming identifiable by any person (other than the informant by whom those particulars were supplied) as the particulars relating to the informant who supplied it, even through the process of elimination, unless—

(a) that informant has consented to their publication in that manner; or

(b) their publication in that manner could not reasonably have been foreseen by the concerned agency or any employee thereof.

(5) For the purposes of sub-section (4), the Central Government may make such rules or make such arrangement, as it may consider necessary.

**10. Appropriate Government authorised to disclose certain information.**—Notwithstanding the provisions contained in section 9 of this Act, the appropriate Government may disclose the following information, namely:—

(a) information supplied by informant in respect of which disclosure is consented to in writing by the informant or by any person authorised by the said informant;

(b) information otherwise available to the public under any Act or as a public document;

(c) information in the form of an index or list of the names and addresses of informants together with the classification, if any, allotted to them and the number of persons engaged.

**11. Disclosure of information schedules for *bona fide* research or statistical purposes.**—(1) Notwithstanding the provisions contained in section 9 of this Act, the appropriate Government may

disclose individual returns or formats or information schedules to other agency or person or institutions or universities solely for *bona fide* research or statistical purposes pursuant to their functions and duties.

(2) No individual return or information schedule shall be disclosed pursuant to this section unless—

(a) the name and address of the informant by whom the schedule or related information was supplied is deleted;

(b) every agency or person or institutions or Universities involved in the research or statistical project makes a declaration to use the schedules disclosed to them only for *bona fide* research or statistical purposes; and

(c) the appropriate Government, making such disclosure is satisfied that the security of the schedules and any information contained therein shall not be impaired.

(3) The published results of any research or statistical project shall not divulge any more information than what the agency authorised for collection of statistics could publish under this Act.

(4) Every agency or person or institutions or universities to whom any individual return or information schedule is disclosed under this section shall comply with directions given by the agency authorised for collection of statistics making the disclosure relating to the schedules and any information contained therein.

**12. Disclosure of historical documents.**—Notwithstanding anything contained in section 9 of this Act, the appropriate Government may release such documents relating to information schedules, which in its opinion have attained historical importance.

**13. Security of recorded information.**—The statistics officer or any person or agency authorised for collection of statistics shall, while copying or recording any statistical information collected pursuant to this Act from individual returns, information schedules, worksheets or any other confidential source by means of cards, tapes, discs, film or any other method, whether using encoded or plain language symbols for processing, storage or reproduction of particulars, take and cause to take such steps as are necessary to ensure that the security provisions of this Act are complied with.

**14. Restrictions on use of information.**—Save as otherwise provided under this Act,—

(a) no information obtained pursuant to this Act and no copy of the information in the possession of any informant shall be disclosed or used as evidence in any proceedings whatsoever; and

(b) no person who has access to any information because of his official position in the collection of any statistics shall be compelled in any proceedings whatsoever to give oral testimony regarding the information or to produce any schedule, document, or record with respect to any information obtained in the course of administering this Act,

except in the manner provided under this Act.

## CHAPTER IV

### OFFENCES AND PENALTIES

**15. Penalty for neglect or refusal to supply particulars.**—(1) Whoever, fails to produce any books of accounts, vouchers, documents or other business records or whoever neglects or refuses to fill in and supply the particulars required in any information schedule or return given or sent to him or whoever neglects or refuses to answer any question or inquiry addressed to him as may be required under or for the purposes of any provision of this Act and the rules made thereunder, shall be punishable with a fine which may extend to one thousand rupees or, in the case of a company, with a fine which may extend to five thousand rupees.

(2) The conviction of a person or company for an offence shall not relieve him or it of the obligations under sub-section (1) and if after the expiry of fourteen days from the date of conviction, he or it still fails to give the required particulars or continues to neglect or refuses to fill in and supply the particulars or to answer the question or inquiry, then he or it shall be punishable with a further fine

which may extend to one thousand rupees or, in the case of a company, with a fine which may extend to five thousand rupees, for each day after the first during which the failure continues.

**16. Penalty for making false statement.**—Whoever, wilfully makes any false or misleading statement or material omission in any information schedule or return filled in or supplied, or in answer to any question asked to him under this Act or the rules made thereunder, shall be punishable with simple imprisonment for a term which may extend to six months or with a fine which may extend to one thousand rupees or, in the case of a company, with a fine which may extend to five thousand rupees or with both.

**17. Penalty for mutilation or defacement of information schedule.**—Whoever, destroys, defaces, removes, or mutilates any information schedule, form, or other document containing particulars collected under this Act or requesting any such particulars, shall be punishable with simple imprisonment for a term which may extend to six months or with a fine which may extend to two thousand rupees or, in the case of a company with a fine which may extend to ten thousand rupees or with both.

**18. Penalty for obstruction of employees.**—Whoever, interferes with, hinders, or obstructs any employee in the exercise of any power or duty conferred by this Act, shall be punishable with simple imprisonment for a term which may extend to six months or with a fine which may extend to two thousand rupees or, in the case of a company with a fine which may extend to ten thousand rupees or with both.

**19. Penalty for other offences.**—Whoever—

(a) acts in contravention of or fails to comply with any provision of this Act or any requirement imposed under this Act; or

(b) wilfully deceives or attempts to deceive any statistics officer or any agency or any employee thereof,

shall be punishable with simple imprisonment for a term which may extend to six months or with a fine which may extend to two thousand rupees or, in the case of a company, with a fine which may extend to ten thousand rupees or with both.

**20. Penalty for failure to carry out duties and functions by employees.**—If any person employed in the execution of any duty or functions under this Act,—

(a) omits without lawful excuse to carry out his duty, or knowingly makes any false declaration, statement or return; or

(b) pretends performance of his duties or obtains or seeks to obtain information which he is not authorised to obtain; or

(c) fails to keep inviolate the secrecy of the information gathered or entered in the information schedules collected pursuant to this Act and, except as permitted under this Act, divulges the contents of any schedule filled in or any information furnished by any informant under this Act,

shall be punishable with simple imprisonment for a term which may extend to six months or with a fine which may extend to two thousand rupees or, in the case of a company, with a fine which may extend to ten thousand rupees or with both.

**21. Penalty for impersonation of employee.**—Whoever, not being authorised to collect statistics under the provisions of this Act, by words, conduct or demeanor pretends that he is authorised to do so, shall be punishable with simple imprisonment for a term which may extend to six months or with a fine which may extend to two thousand rupees or, in the case of a company, with a fine which may extend to ten thousand rupees or with both.

**22. General penalty.**—Whoever, commits an offence under this Act for which no penalty is prescribed elsewhere than in this section, shall be punishable with simple imprisonment for a term which may extend to six months or with a fine which may extend to two thousand rupees or, in the case of a company, with a fine which may extend to ten thousand rupees or with both.

**23. Offences by companies.**—(1) Where an offence under this Act has been committed by a company, every person who at the time the offence was committed was in charge of, and was responsible to, the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:

Provided that nothing contained in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributable to, any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly.

*Explanation.*—For the purpose of this section—

(a) "company" means any body corporate and includes a firm or other association of individuals; and

(b) "Director", in relation to a firm, means a partner in the firm.

**24. Cognizance of offences.**—No court shall take cognizance of any offence under this Act except on a complaint made by the appropriate Government or an officer authorised in this behalf by such appropriate Government or, as the case may be, the statistics officer, and no court inferior to that of a Metropolitan Magistrate or a Judicial Magistrate of the first class shall try any offence punishable under this Act.

**25. Sanction for prosecution for offence.**—No prosecution for an offence committed by any informant shall be instituted except by or with the sanction of the statistics officer, and no prosecution for an offence committed by persons other than informants shall be instituted except by or with the consent of the appropriate Government.

**26. Power of court to try cases summarily.**—Notwithstanding anything contained in the Code of Criminal Procedure, 1973 (2 of 1974), all offences under this Act shall be tried in a summary way by a Judicial Magistrate of the first class or by a Metropolitan Magistrate and the provisions of sections 262 to 265 (both inclusive) of the said Code shall, as far as may be, apply to such trial:

Provided that when in the course of, a summary trial under this section it appears to the Magistrate that the nature of the case is such that it is, for any reason, undesirable to try the case summarily, the Magistrate shall after hearing the parties, record an order to that effect and thereafter recall any witness who may have been examined and proceed to hear or rehear the case in the manner provided by the said Code.

## CHAPTER V

### POWER IN RESPECT OF CORE STATISTICS

**27. Power in respect of core statistics.**—Without prejudice to the provisions contained in this Act, the Central Government may, by notification in the Official Gazette, declare from time to time any subject for the collection of statistics of national importance as 'core statistics' and make such arrangement, as it may consider necessary, for regulating the collection and dissemination of statistics on the subject so declared.

## CHAPTER VI

### MISCELLANEOUS

**28. Power to give directions.**—The Central Government may give directions to any State Government or Union territory Administration or to any local government that is to say Panchayats or

Municipalities, as to the carrying into execution of this Act in the State or Union territory or Panchayats or Municipalities, as the case may be.

**29. Public servants.**—Any statistics officer and any person authorised for the collection of statistics or preparation of official statistics under the provisions of this Act shall be deemed to be a public servant within the meaning of section 21 of the Indian Penal Code, 1860 (45 of 1860).

**30. Bar of jurisdiction.**—No civil court shall have jurisdiction to entertain any suit or proceeding in respect of any matter which the appropriate Government or the statistics officer or the agency is empowered by or under this Act to determine, and no injunction shall be granted by any court or other authority in respect of any action taken or to be taken in pursuance of any power conferred by or under this Act.

**31. Protection of action taken in good faith.**—No suit or other legal proceedings shall lie against the appropriate Government or agency or any statistics officer or other officers or employees in respect of anything which is in good faith done or intended to be done in pursuance of this Act or the rules or directions issued thereunder.

**32. Overriding effect.**—The provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any other law for the time being in force except in relation to the conduct of human population census as per the directions, if any, issued under the Census Act, 1948 (37 of 1948).

**33. Power to make rules.**—(1) The Central Government may, by notification in the Official Gazette, make rules for carrying out the provisions of this Act.

(2) In particular, and without prejudice to the generality of the foregoing power, the Central Government may make rules under this section for all or any of the following matters, namely:—

(a) principles for coordinating as effectively as possible to achieve the objectives of section 3 including nomination and registration of statistics officers by the Central Government and also to avoid unnecessary duplication in the collection of statistics;

(b) the terms, conditions and safeguards under which any person or agency or company or organisation or association may be engaged by the appropriate Government for the purpose of collection of statistics under sub-section (3) of section 4;

(c) principles for prescribing the form and manner in which the information may be required to be furnished;

(d) principles for prescribing the manner in which the right of access to documents and the right of entry conferred by section 8 may be exercised; and

(e) any other matter which is to be or may be prescribed under this Act.

(3) Every rule made by the Central Government under this Act shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule or both Houses agree that the rule should not be made, the rule shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

**34. Repeal and savings.**—(1) The Collection of Statistics Act, 1953 (32 of 1953) is hereby repealed.

(2) Notwithstanding such repeal, anything done or any action taken under the said Act shall be deemed to have been done or taken under the corresponding provisions of this Act.

(3) All rules made under the said Act shall continue to be in force and operate till new rules are made under this Act.

**MINISTRY OF STATISTICS AND PROGRAMME IMPLEMENTATION****NOTIFICATION**

New Delhi, the 16th May, 2011

**G.S.R. 387(E).**— In exercise of the powers conferred by section 33 of the Collection of Statistics Act, 2008 (7 of 2009), the Central Government hereby makes the following rules, namely:-

**COLLECTION OF STATISTICS RULES, 2011**

**1. Short title and commencement:** (1) These rules may be called the Collection of Statistics Rules, 2011.

(2) They shall come into force on the date of their publication in the Official Gazette.

**2. Definitions:** (1) In these rules, unless the context otherwise requires –

- (a) 'Act' means the Collection of Statistics Act, 2008;
- (b) "Form" means a form appended to these rules;
- (c) 'nodal officer' means an officer designated as nodal officer under rule 3 of these rules;
- (d) "personal information" means any information, whether true or not, and whether recorded in a material form or not, about an informant whose identity can reasonably be ascertained from such information;
- (e) "reference period" means the time period over which the data collected reflects the characteristics of the units of enumeration;
- (f) "State Government", in relation to a Union territory, means the Administration thereof; and
- (g) "outsourcing" means making use of the services of a private service provider for the purposes of these rules.

(2) Words and expressions used but not defined herein shall have the meanings respectively assigned to them in the Act.

**3. Nodal officer.** – (1) The Central Government shall designate an officer not below the rank of a Joint Secretary to the Government of India in a nodal Department dealing with statistical matters, as the nodal officer for exercising powers and performing duties under these rules.

(2) Every State Government shall designate an officer not below the rank of a Deputy Secretary to the State Government in a nodal Department dealing with statistical matters, as the nodal officer for exercising powers and performing duties under these rules.

**4. Powers and duties of nodal officer.** - (1) The nodal officer designated by the Central Government under sub-rule (1) of rule 3 shall –

- (a) maintain and update register of statistics officers appointed by the Central Government;
- (b) obtain and maintain, from time to time, information on availability of statistics including unit-level data, whether collected under the provisions of the Act or not, with different Departments of the Central Government and nodal officers in the States;
- (c) advise the Departments of the Central Government and the nodal officers in the States on steps to improve the statistical potential of administrative records to avoid conducting separate statistical surveys to collect statistics contained or purported to be contained in such administrative records;
- (d) issue instructions from time to time on promoting the sharing of statistical information including unit-level data among different Departments of the Central Government and States to avoid unnecessary duplication of programmes of collection of statistics and resolve disputes or differences of opinion, if any, among them on the issue; and
- (e) submit annual report to the Central Government on the working.

(2) The nodal officer designated by the State Government under sub-rule (2) of rule 3 shall –

- (a) maintain and update a register of statistics officers appointed from time to time in the State;
- (b) obtain and maintain from time to time information on availability of statistics including unit-level data, whether collected under the provisions of the Act or not, with different Government Departments and local governments in the State;
- (c) advise the Departments of the State Government and local governments in the State on steps to improve the statistical potential of administrative records to avoid conducting separate statistical surveys to collect statistics contained or purported to be contained in such administrative records;

1736 GI/11-4

- (d) issue instructions from time to time on promoting the sharing of statistical information including unit-level data among Departments of the State Government and local governments in the State to avoid unnecessary duplication of programmes of collection of statistics and resolve disputes or differences of opinion, if any, among them on the issue; and
- (e) obtain reports, as may be required, on the working of this Act from Government Departments and local governments in the State and submit annual reports on the working of this Act in the State to the nodal officer appointed by the Central Government.

**5. Direction on collection of statistics.-** (1) Any Department in a State Government or any local government in a State shall, before making a direction under section 3 of the Act for collection of statistics on any subject for any reference period in any geographical unit under its jurisdiction, consult the nodal officer in the State to avoid unnecessary duplication in collection of statistics.

(2) Any Department of the Central Government shall, before making a direction under section 3 of the Act for collection of statistics on any subject for any reference period in any geographical unit under its jurisdiction, consult the nodal officer of the Central Government to avoid unnecessary duplication in collection of statistics.

(3) The nodal officer shall, on receipt of any request under sub-rule (1) or sub-rule (2), as the case may be, within a period of one month render such advice as may be necessary to the concerned office to avoid unnecessary duplication in collection of statistics.

(4) The appropriate Government on receipt of advice under sub-rule (3) shall communicate to the nodal officer, the reasons in all cases of disagreement with such advice, at least fifteen days prior to issuing notification under section 3 of the Act.

(5) Every notification under section 3 of the Act shall contain the following particulars, namely: -

- (a) subject and purpose for collection of statistics;
- (b) geographical area for collection of statistics;
- (c) method of data collection;
- (d) nature of informants from whom data may be collected;
- (e) period during which collection of statistics may be completed;
- (f) reference period;
- (g) nature of information to be collected;
- (h) language in which information is to be furnished by informant;
- (i) obligation of informant;

- (j) nature of business records and other records which may be inspected; and
- (k) the manner of inspection.

(6) A copy of every notification referred in sub-rule (5) shall be forwarded to the nodal officer of the Central Government and the nodal officer of the State concerned.

**6. Principles for prescribing information schedules.** - In respect of prescribing any information schedule for collection of statistics on any subject, the appropriate Government or a statistics officer, as the case may be, shall satisfy itself that -

- (i) it has authority to direct collection of statistics on the subject under the Act subject to the restrictions given in the proviso to section 3 of the Act;
- (ii) it has, for the purpose of finalising items on which information is to be collected, consulted the nodal officer to include the requirements of other Government Departments;
- (iii) excessive demands would not be placed on the informants by making the direction and for the purpose field testing of information schedules has been carried out where necessary;
- (iv) the range and detail in the information schedules specified for collection of statistics on any subject shall be limited to what is absolutely necessary;
- (v) the reporting burden shall be spread as widely as possible over informant populations through appropriate sampling;
- (vi) the information sought from business shall, as far as possible, be readily available from their accounts and electronic means are used where possible to facilitate their collection;
- (vii) best estimates and approximations on any item of information sought shall be accepted when exact details are not readily available with any informant;
- (viii) each information schedule used for collecting statistics from any informant has, where necessary, a provision for particulars on which information may be furnished at the discretion of the informant;
- (ix) provision is made in each information schedule for filling up the details and appending the signature of the person concerned who would be engaged in the collection of statistics;
- (x) indicate in each information schedule, for general information of informants prior to collection of statistics from them under the Act, its plan, if any, to disclose any information collected from them which in the opinion of the appropriate Government is otherwise available to the public under any other Act or as a public document or which is in the form of an index or list of the names and addresses of informants together with the classification, if any, allotted to them and the number of persons engaged; and

- (xi) make a provision in each information schedule to obtain written consent from each informant whose information other than the information covered in clause (x), it proposes to disclose.

**7. Appointment of statistics officers.** - (1) Every notification under section 4 of the Act appointing the statistics officer shall contain the following particulars, namely: -

- (a) name, designation and address of the officer appointed as statistics officer for each geographical unit for collection of statistics;
- (b) details of any agency or company or organisation or association or person engaged for collection of statistics, and, terms and conditions of engagement and safeguards laid down for the purpose;
- (c) the form and the particulars required or the interval within which, and the statistics officer to whom, the statistical information by the informants shall be furnished; and
- (d) the powers, if any, delegated under sub-sections (4) or (6) of section 4 the Act to any statistics officer.

(2) Every statistics officer, immediately on his appointment, shall submit an undertaking in Form-I to the appropriate Government.

**8. Registration of statistics officers.** - The appropriate Government shall maintain a record of statistics officers in respect of their appointment, their terms and geographical areas for which they have been appointed, in Form-II.

**9. Powers and functions of a statistics officer.** - A statistics officer, appointed for the purposes of collection of statistics on any subject in any geographical unit, shall -

- (i) take, aid in and supervise the collection of statistics;
- (ii) cause agencies to be appointed or engaged for collection of statistics;
- (iii) obtain undertaking from all the persons engaged in the collection of statistics in Form-I and forward them to the appropriate Government or to an officer authorised for the purpose by that Government;
- (iv) devise or cause to devise relevant information schedules and the mode or modes of collection of statistics;
- (v) allot or cause to allot work of collection of statistics in his jurisdiction to different persons and agencies engaged for the purpose;
- (vi) provide all the relevant material to be distributed to agencies engaged and arrange for their training for facilitating collection of statistics;
- (vii) cause to provide necessary publicity for collection of statistics at an appropriate time;
- (viii) coordinate the work of all agencies during the period of collection of statistics and maintain liaison with local authorities for smooth conduct of the collection of statistics;

- (ix) cause notices to informants for furnishing information issued under his signature, where necessary and cause acknowledgements received from such informants, to be kept in safe custody;
- (x) take steps, in case of statistical surveys having the same set of informants with different reference periods, to issue only one notice to each informant indicating therein the information required to be furnished and the reference periods for which the information is required;
- (xi) cause entry of persons authorised by him in writing and carrying a photo-identity card issued by him into any premises of any informant for collection of statistics;
- (xii) cause necessary assistance provided to informants requiring such assistance for furnishing the information sought;
- (xiii) cause access to any informant to the information collected from that informant for facilitating intimation of corrections or amendments on any inaccurate information;
- (xiv) cause verification of information furnished by any informant;
- (xv) based on complaints or otherwise, take action against erring persons and others in accordance with the provisions of the Act and these rules;
- (xvi) obtain from the agencies engaged in the collection of statistics, all the information schedules, all the undertakings obtained from persons engaged in collection of statistics, all other relevant records and documents on completion of their work and forward them with a certificate to that effect to the appropriate Government or to any officer authorised by that Government;
- (xvii) carry out such other tasks as may be necessary for the successful collection of statistics; and
- (xviii) submit periodical reports as may be specified by the appropriate Government.

**10. Assistance in collection of statistics.** - (1) Every Department of the Central Government or the State Government or the local governments shall furnish within such time and in such form as required, the list of informants and other information which is available with them, relevant for conducting any statistical survey under these rules to a statistics officer or any agency or person authorised by the appropriate Government upon receipt of a notice to that effect.

(2) The appropriate Government or a statistics officer, as the case may be, may write to any Department of the Central Government or the State Government or any local government specifying the nature of assistance required for collection of statistics under the Act and upon receipt of such communication, the latter shall comply with the requirement to the extent feasible.

(3) In cases of collection of statistics in disturbed areas, the police, the paramilitary and the armed forces shall provide such assistance as would be required by the concerned statistics officer.

1736 GI/11-5

**11. Duty to furnish information.** - Subject to the provisions of section 6 of the Act,

(1) every informant shall, on demand, produce or give a copy of any books of accounts, vouchers, documents, or other business records or personal records or documents in his possession relevant to collection of statistics under the Act to any statistics officer or any person authorised by him in writing and carrying a photo-identity card issued by him, and the statistics officer or the authorised person, as the case may be, may take a copy or extract of such record or document; and

(2) the head of every family shall be responsible to furnish or cause to furnish the correct details of name and number of members, other particulars, records and documents, as may be required, of the family of which he is the head including dependants:

provided that in so far as inmates of institutions, such as orphanages, old age homes, and mental asylums are concerned, the responsibility for providing or causing to provide the requisite details, records and documents shall lie with the head of the Institution.

**12. General terms, conditions and safeguards for outsourcing.** - Every contract or arrangement for collection of statistics under the Act by any person or agency or company or organisation or association shall be subject to the following terms, conditions, and safeguards, namely: -

- (a) outsourcing arrangements shall be subject to a formal and comprehensive written contract;
- (b) functions which are to be decided and enforced by the appropriate government under the Act shall not be outsourced;
- (c) appropriate Government or a statistics officer authorised for the purpose by that Government shall have a right, of information and conduct or order on-site inspections in an outsourcing service provider's premises or place of work and right to cancel contract in case of unsatisfactory performance;
- (d) every agency, engaged in collection of statistics, shall render such help and assistance and furnish such information to the statistics officer or a person or an agency authorised by him in writing, as he may require for the discharge of his functions, and shall make available for inspection and examination such records, plans and other documents, as may be necessary;
- (e) persons engaged by any agency for collection of statistics, are made aware of the agency's obligations, and they shall submit a written undertaking in Form-I to the concerned statistics officer not to access, use, disclose or retain personal information except in performing their duties of employment or contractual obligations; and are informed that failure to comply with the provisions of the Act and these rules may be an offence rendering themselves for punishment as per the provisions of the Act;

- (f) each person engaged in any activity relating to the collection of statistics shall be bound by the provisions of the Act and these rules, the violation of which shall render him punishable as per the provisions of the Act;
- (g) provisions relating to disclosure of information and restrictions of their use under sections 9, 10, 11, 12, 13 and 14 of the Act and these rules shall have effect during the period of collection of statistics provided in the contract and shall continue to have effect even after the termination or completion of the contract, as the case may be;
- (h) the appropriate Government or any statistics officer on receipt of any complaint shall immediately communicate the agency engaged in collection of statistics of only those details of the complaint, as may be necessary to minimize any breach or prevent further breaches of the agreement or failure to comply with any of the provisions of the Act or these rules;
- (i) if any agency engaged in collection of statistics receives any complaint from any informant, it shall immediately communicate the complaint to the appropriate Government or the concerned statistics officer, as may be required;
- (j) the appropriate Government or the statistics officer may, on receipt of any communication under clauses (h) or (i), give directions, as may be necessary, to the agency; and
- (k) the statistics officer and every person engaged in the collection of statistics shall, on completion of their work, handover all the records and documents and furnish a certificate to that effect to the appropriate Government or to an officer authorised for the purpose by that Government.

**13. Restrictions on use of personal information.** - Each agency engaged in collection of statistics shall take all reasonable measures to ensure that -

- (a) personal information is protected against unauthorised access, disclosure or other misuse;
- (b) the agency uses personal information only for the purpose of fulfilling its obligations under a specified contract;
- (c) in case of repetitive statistical surveys with a common set of informants, the agency uses the personal information earlier collected only for the purpose of setting up interviews with or otherwise contacting informants; and
- (d) the agency uses personal information for data processing only with adequate security checks.

**14. Right of entry into any premises of informants.** - A statistics officer or any person authorised by him in writing and carrying a photo-identity card issued by the statistics officer, shall, during the period of collection of statistics for the purpose of collection of statistics under the Act or for inspection and examination of records, and documents in connection with it, during 10.00 hrs to 17.00 hrs on any day or at a time mutually convenient to both the parties have the right to enter the premises of any informant in the portion of the premises normally entered by visitors or guests or as suggested by the informant.

1736 GI/11-6

**15. Processing of complaints -** (1) In cases of alleged offences committed by any informant as per provisions of the Act, any statistics officer, after making such inquiries as deemed fit, may cause a notice issued to the informant in writing to show cause within a reasonable period to be specified in the notice as to why prosecution under the Act shall not be sanctioned for committing the alleged offence.

(2) A statistics officer shall consider the explanation, if any, furnished by the informant in pursuance to the notice issued under sub-rule (1), and after satisfying himself, for reasons to be recorded in writing, sanction for institution of prosecution of the informant.

(3) In case of any alleged offences committed by any person other than an informant, the appropriate Government may, after making such inquiries as deemed fit, cause a notice issued to the person in writing to show cause within a reasonable period to be specified in the notice as to why prosecution under the Act shall not be sanctioned for committing the alleged offence.

(4) The appropriate Government may, if it considers necessary, send a copy of the show-cause notice issued under sub-rule (3) of this rule and the explanation, if any, received from the alleged offender to the concerned statistics officer and obtain his recommendation on it, and after considering the explanation of the alleged offender and recommendation of statistics.

**16. Storage of data and records. -** Subject to the provisions of section 13 of the Act, the appropriate Government or an officer authorised by that Government shall, provide details by which any informant could access his own information for facilitating intimation of corrections or amendments on any inaccurate information, store the statistics collected under the provisions of the Act in such a manner as would facilitate easy retrieval of information collected from any informant so as to provide access to the informant, if necessary and keep all the undertakings and other material obtained from the statistics officers and other persons or agencies engaged in collection of statistics in safe custody.

**Form-I**

[See rules 7 (2), 9 (iii), 12 (e)]

Undertaking by statistics officer and other persons to be engaged in any capacity for collection of statistics under the provisions of the Collection of Statistics Act, 2008 (7 of 2009)

I, \_\_\_\_\_ (Full Name), born on \_\_\_\_ (Date of birth), son/ daughter/ wife of \_\_\_\_\_ (Name of person) resident of \_\_\_\_\_ (address) do hereby solemnly affirm, that I accept the responsibility \_\_\_\_\_ (nature of work) assigned to me for collection of statistics in respect of \_\_\_\_\_ (direction under section 3 of the Act) under the Collection of Statistics Act, 2008 (7 of 2009) and the Collection of Statistics Rules, 2011, that I shall not access, use, disclose or retain personal information of any informant except in performing my duties of employment or contractual obligations in respect of collection of statistics, and that in case of any violation on my part to comply with the provisions of the Act and the rules made thereunder, and I shall render myself punishable as per the provisions of the Act.

Place: \_\_\_\_

Date: \_\_\_\_

Signature of statistics officer or the person engaged in any capacity for collection of statistics

**Form-II**  
(See rule 8)

**Register of statistics officers to be maintained by the appropriate Government**

1. Details of the direction issued under section 3 of the Collection of Statistics Act, 2008:
2. Name and address of the appropriate Government making direction:
3. Details of statistics officers appointed for collection of statistics under the aforesaid direction:

S. No.	Name of statistics officer	Permanent address	Educational qualifications and experience, if any, in collection of statistics	Geographical unit for which appointed and period of appointment	Powers, if any, delegated under section 4 (4) and (6) of the Act
(1)	(2)	(3)	(4)	(5)	(6)

Date of appointment	Date of termination of appointment
(7)	(8)

Place: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature with office seal of the officer  
responsible for maintaining  
the record of statistics officers

[F. No. M-15011/1/2007-Admn. III]  
Prof. T.C.A. ANANT, Secy.

**The Factories Act, 1948**

[63 of 1948]

AV.1 "**Factory**" means any premises including the precincts thereof

(i) Wherein ten or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power or is ordinarily so carried on, or,

(ii) Wherein twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power or is ordinarily so carried on, but does not include a mine subject to the operation of the Mines Act, 1952, or a railway running shed.

AV.2 The "**Manufacturing Process**" referred to above has been defined [vide section 2(k)] in the Factories Act, 1948 as:

"Any process for-

- (i) making, altering, ornamenting, finishing, packing, oiling, washing, cleaning, breaking up, demolishing or otherwise treating or adapting any article or substance with a view to its use, sale, transport, delivery or disposal; or,
- (ii) pumping oil, water or sewage; or,
- (iii) generating, transforming or transmitting power; or,
- (iv) composing types for printing by letter press, lithography, photogravure or other similar process or book binding; or,
- (v) constructing, reconstructing, repairing, refitting, finishing or breaking up ships or vessels.
- (vi) preserving or storing any article in cold storage"

[Abstract from Factories Act 1948 for ASI]

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
016	0163	Post-harvest crop activities
	0164	Seed processing for propagation
089	0893	Extraction of salt
101	1010	Processing and preserving of meat
102	1020	Processing and preserving of fish, crustaceans and molluscs and products thereof
103	1030	Processing and preserving of fruit and vegetables
104	1040	Manufacture of vegetable and animal oils and fats
105	1050	Manufacture of dairy products
106		Manufacture of grain mill products, starches and starch products
	1061	Manufacture of grain mill products
	1062	Manufacture of starches and starch products
107		Manufacture of other food products
	1071	Manufacture of bakery products
	1072	Manufacture of sugar
	1073	Manufacture of cocoa, chocolate and sugar confectionery
	1074	Manufacture of macaroni, noodles, couscous and similar farinaceous products
	1075	Manufacture of prepared meals and dishes
	1079	Manufacture of other food products n.e.c.
108	1080	Manufacture of prepared animal feeds
110		Manufacture of beverages
	1101	Distilling, rectifying and blending of spirits; ethyl alcohol production from fermented materials
	1102	Manufacture of wines
	1103	Manufacture of malt liquors and malt
	1104	Manufacture of soft drinks; production of mineral waters and other bottled waters

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
120	1200	Manufacture of tobacco products
131		Spinning, weaving and finishing of textiles
	1311	Preparation and spinning of textile fibres
	1312	Weaving of textiles
	1313	Finishing of textiles
139		Manufacture of other textiles
	1391	Manufacture of knitted and crocheted fabrics
	1392	Manufacture of made-up textile articles, except apparel
	1393	Manufacture of carpets and rugs
	1394	Manufacture of cordage, rope, twine and netting
	1399	Manufacture of other textiles n.e.c.
141	1410	Manufacture of wearing apparel, except fur apparel
142	1420	Manufacture of articles of fur
143	1430	Manufacture of knitted and crocheted apparel
151		Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur
	1511	Tanning and dressing of leather; dressing and dyeing of fur
	1512	Manufacture of luggage, handbags and the like, saddlery and harness
152	1520	Manufacture of footwear
161	1610	Saw milling and planing of wood
162		Manufacture of products of wood, cork, straw and plaiting materials
	1621	Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board and other panels and board
	1622	Manufacture of builders' carpentry and joinery
	1623	Manufacture of wooden containers
	1629	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
170		Manufacture of paper and paper products
	1701	Manufacture of pulp, paper and paperboard
	1702	Manufacture of corrugated paper and paperboard and containers of paper and paperboard
	1709	Manufacture of other articles of paper and paperboard
181		Printing and service activities related to printing
	1811	Printing
	1812	Service activities related to printing
182	1820	Reproduction of recorded media
191	1910	Manufacture of coke oven products
192	1920	Manufacture of refined petroleum products
201		Manufacture of basic chemicals, fertilizer and nitrogen compounds, plastics and synthetic rubber in primary forms
	2011	Manufacture of basic chemicals
	2012	Manufacture of fertilizers and nitrogen compounds
	2013	Manufacture of plastics and synthetic rubber in primary forms
202		Manufacture of other chemical products
	2021	Manufacture of pesticides and other agrochemical products
	2022	Manufacture of paints, varnishes and similar coatings, printing ink and mastics
	2023	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
	2029	Manufacture of other chemical products n.e.c.
203	2030	Manufacture of man-made fibres
210	2100	Manufacture of pharmaceuticals, medicinal chemical and botanical products
221		Manufacture of rubber products
	2211	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres
	2219	Manufacture of other rubber products

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
222	2220	Manufacture of plastics products
231	2310	Manufacture of glass and glass products
239		Manufacture of non-metallic mineral products n.e.c.
	2391	Manufacture of refractory products
	2392	Manufacture of clay building materials
	2393	Manufacture of other porcelain and ceramic products
	2394	Manufacture of cement, lime and plaster
	2395	Manufacture of articles of concrete, cement and plaster
	2396	Cutting, shaping and finishing of stone
	2399	Manufacture of other non-metallic mineral products n.e.c.
241	2410	Manufacture of basic iron and steel
242	2420	Manufacture of basic precious and other non-ferrous metals
243		Casting of metals
	2431	Casting of iron and steel
	2432	Casting of non-ferrous metals
251		Manufacture of structural metal products, tanks, reservoirs and steam generators
	2511	Manufacture of structural metal products
	2512	Manufacture of tanks, reservoirs and containers of metal
	2513	Manufacture of steam generators, except central heating hot water boilers
252	2520	Manufacture of weapons and ammunition
259		Manufacture of other fabricated metal products; metalworking service activities
	2591	Forging, pressing, stamping and roll-forming of metal; powder metallurgy
	2592	Machining; treatment and coating of metals
	2593	Manufacture of cutlery, hand tools and general hardware

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
	2599	Manufacture of other fabricated metal products n.e.c.
261	2610	Manufacture of electronic components
262	2620	Manufacture of computers and peripheral equipment
263	2630	Manufacture of communication equipment
264	2640	Manufacture of consumer electronics
265		Manufacture of measuring, testing, navigating and control equipment; watches and clocks
	2651	Manufacture of measuring, testing, navigating and control equipment
	2652	Manufacture of watches and clocks
266	2660	Manufacture of irradiation, electromedical and electrotherapeutic equipment
267	2670	Manufacture of optical instruments and equipment
268	2680	Manufacture of magnetic and optical media
271	2710	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus
272	2720	Manufacture of batteries and accumulators
273		Manufacture of wiring and wiring devices
	2731	Manufacture of fibre optic cables for data transmission or live transmission of images
	2732	Manufacture of other electronic and electric wires and cables
	2733	Manufacture of wiring devices
274	2740	Manufacture of electric lighting equipment
275	2750	Manufacture of domestic appliances
279	2790	Manufacture of other electrical equipment
281		Manufacture of general purpose machinery
	2811	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
	2812	Manufacture of fluid power equipment
	2813	Manufacture of other pumps, compressors, taps and valves

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
	2814	Manufacture of bearings, gears, gearing and driving elements
	2815	Manufacture of ovens, furnaces and furnace burners
	2816	Manufacture of lifting and handling equipment
	2817	Manufacture of office machinery and equipment
	2818	Manufacture of power-driven hand tools
	2819	Manufacture of other general-purpose machinery
282		Manufacture of special-purpose machinery
	2821	Manufacture of agricultural and forestry machinery
	2822	Manufacture of metal-forming machinery and machine tools
	2823	Manufacture of machinery for metallurgy
	2824	Manufacture of machinery for mining, quarrying and construction
	2825	Manufacture of machinery for food, beverage and tobacco processing
	2826	Manufacture of machinery for textile, apparel and leather production
	2829	Manufacture of other special-purpose machinery
291	2910	Manufacture of motor vehicles
292	2920	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
293	2930	Manufacture of parts and accessories for motor vehicles
301		Building of ships and boats
	3011	Building of ships and floating structures
	3012	Building of pleasure and sporting boats
302	3020	Manufacture of railway locomotives and rolling stock
303	3030	Manufacture of air and spacecraft and related machinery
304	3040	Manufacture of weapons and ammunition
309		Manufacture of transport equipment n.e.c.

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
	3091	Manufacture of motorcycles
	3092	Manufacture of bicycles and invalid carriages
	3099	Manufacture of other transport equipment n.e.c.
310	3100	Manufacture of furniture
321		Manufacture of jewellery, bijouterie and related articles
	3211	Manufacture of jewellery and related articles
	3212	Manufacture of imitation jewellery and related articles
322	3220	Manufacture of musical instruments
323	3230	Manufacture of sports goods
324	3240	Manufacture of games and toys
325	3250	Manufacture of medical and dental instruments and supplies
329	3290	Other manufacturing n.e.c.
331		Repair of fabricated metal products, machinery and equipment
	3311	Repair of fabricated metal products
	3312	Repair of machinery
	3313	Repair of electronic and optical equipment
	3314	Repair of electrical equipment
	3315	Repair of transport equipment, except motor vehicles
	3319	Repair of other equipment
332	3320	Installation of industrial machinery and equipment
351	3510	Electric power generation, transmission and distribution
352	3520	Manufacture of gas; distribution of gaseous fuels through mains
353	3530	Steam and air conditioning supply
360	3600	Water collection, treatment and supply

<b>3-digit NIC-2008</b>	<b>4-digit NIC-2008</b>	<b>Description</b>
370	3700	Sewerage
381		Waste collection
	3811	Collection of non-hazardous waste
	3812	Collection of hazardous waste
382		Waste treatment and disposal
	3821	Treatment and disposal of non-hazardous waste
	3822	Treatment and disposal of hazardous waste
383	3830	Materials recovery
452	4520	Maintenance and repair of motor vehicles
454	4540	Sale, maintenance and repair of motorcycles and related parts and Accessories
521	5210	Warehousing and storage
581		Publishing of books, periodicals and other publishing activities
	5811	Book publishing
	5812	Publishing of directories and mailing lists
	5813	Publishing of newspapers, journals and periodicals
	5819	Other publishing activities
591		Motion picture, video and television programme activities
	5911	Motion picture, video and television programme production activities
	5912	Motion picture, video and television programme post-production activities
	5913	Motion picture, video and television programme distribution activities
592	5920	Sound recording and music publishing activities
742	7420	Photographic activities
829		Business support service activities n.e.c.
	8292	Packaging activities

<b><i>3-digit NIC-2008</i></b>	<b><i>4-digit NIC-2008</i></b>	<b><i>Description</i></b>
951		Repair of computers and communication equipment
	9511	Repair of computers and peripheral equipment
	9512	Repair of communication equipment
952		Repair of personal and household goods
	9521	Repair of consumer electronics
	9522	Repair of household appliances and home and garden equipment
	9523	Repair of footwear and leather goods
	9524	Repair of furniture and home furnishings
	9529	Repair of personal and household goods, n.e.c.
960		Other personal service activities
	9601	Washing and (dry-) cleaning of textile and fur products