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ANNUAL SURVEY OF INDUSTRIES 2021-22
VOLUME I

Directorate of Economics and Statistics
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Preface

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Annual Survey of Industries (ASI) is one of the major surveys conducted in the State to assess the industrial growth in organized manufacturing sector. It provides statistical information to assess the growth, composition, and structure of registered manufacturing industries. Department of Economics and Statistics conducts this survey with the assistance and technical guidance of Industrial Statistics Wing (IS Wing), Data Processing Division of the National Statistics Office (NSO), Kolkata.

The report titled 'Annual Survey of Industries 2021-22' 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 the irrespective jurisdiction. Fieldwork 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 782 state sample units (surveyed by DES), 782 Central Sample units (surveyed by NSO, FOD) and 1211 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., the then Deputy Director, NSO(FOD), Regional office, Thiruvananthapuram and Shri. K N Rajeev Kumar, SSO (FOD), 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 at the Directorate under the guidance and supervision of Shri. Manoj M, 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.


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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 2021-'22. The report is prepared by combining 782 state sample units (surveyed by DES), 782 central sample units (surveyed by NSO, FOD) and 1211 census sector units.

The Key results of the survey are summarized below:

- ❖ The survey estimated 7740 factories in the organized manufacturing sector of Kerala during the financial year 2021-22. Out of these factories about 87.07% (6739 factories) were operating factories.
- ❖ The district with highest number of factories is Ernakulam (1536) and the least is Wayanad (77). In Ernakulam 86.07% factories are operational whereas in Wayanad it is 93.50%.
- ❖ During the fiscal year 2021-22 the factories in urban areas outnumbered those in rural area. Out of 7740 factories, about 51.45% were located in urban area.
- ❖ All the factories **in operation** together have total fixed capital worth ₹ 56,91,247 lakhs and invested capital of ₹ 86,02,858 lakhs.
- ❖ The coke and refined petroleum products industry stands at the highest invested capital and fixed capital with an estimated value of ₹ 42,76,647 lakhs and ₹ 31,12,544 lakhs respectively. These accounts to about 49.71% and 54.69 % of state's aggregate value respectively.

- ❖ In 2021-22 the total input in organized manufacturing sector increased by 44.72% from 2020-21 (₹ 1,20,81,298 lakhs in 2020-21 and ₹ 1,74,84,032 lakhs in 2021-22).The total output in 2021-22 has also been increased by 40% from 2020-21 (₹ 2,01,93,873 lakhs in 2021-22 and ₹ 1,44,27,491 lakhs in 2020-21)
- ❖ The estimated Gross Fixed Capital Formation (GFCF) of the manufacturing sector of the state in 2021-22 stands at ₹3 , 1 8 , 8 6 2 lakhs which his 4 7 % drop from 2020-21 figure (₹5,99,633 lakhs in 2020-21)
- ❖ The Gross Value Added (GVA) of organized manufacturing sector in the state for the year 2021-22 shows an increase of 15.5% from 2020-21 (₹ 27,09,841 lakhs in 2021-22 and ₹23,46,193 lakhs in 2020-21). Among the districts, the highest GVA estimated from the industries in Ernakulam district (₹ 15,27,598),is,₹ 3,48,936lakhs more than the previous year (₹ 11,78,662 lakhs).
- ❖ In 2021-22, the average number of persons engaged in the factories has been increased by 0.93% from 2020-21(3,13,841 in 2021-22 and 3,10,958 in 2020-21).
- ❖ In 2021-22, out of 3,13,841 persons engaged 2,44,259 were workers and among these 1,96,795 were directly employed and 47,464 were employed through contractors. Among the directly employed workers in this sector, about 40.9 % represent the female work force (male workers at 1,16,290 and female at 80,505).
- ❖ Among the directly employed workers, women dominated industries were tobacco products manufacturing industries (94.5 %) followed by manufacture of food products(67.2%) and then by manufacture of wearing apparels (66.4 %)
- ❖ Regarding the industries under the organization type, Non-Government -Private industry was estimated with highest share of contract workers (37%).
- ❖ The estimated wages and salaries of workers increased by 7.8 % in 2021-22 from 2020-21 figure (₹ 5,32,187 lakhs in 2021-22 and ₹ 4,93,757 lakhs in 2020-21).
- ❖ In 2021-22 the value of the fuels consumed by the factories increased by 61.3 % (₹ 1064466 lakhs in 2021-22 against ₹ 6,59,938 lakhs in 2020-21).



Figures at a Glance-Kerala

Rates and Ratios

Estimates of some important rates and ratios as per ASI 2021-22 are given below. *(Figures for ASI 2020-21 are shown in the bracket)*

Rates

- Fixed Capital per factory in operation: 845 lakhs (836 lakhs)
- Average no. of persons engaged per factory in operation: 47 (45)
- Number of workers per factory in operation: 36 (35)
- Output per factory in operation: 2,997 lakhs (2,074 lakhs)
- Gross Value Added (GVA) per factory in operation: 402 lakhs (337 lakhs)
- Net Value Added (NVA) per factory in operation: 338 lakhs (283 lakhs)
- Output per person engaged: 64,34,427 (46,39,691)
- Gross Value Added (GVA) per person engaged: 8,63,443 (7,54,505)
- Net Value Added (NVA) per person engaged: 7,25,550 (7,54,505)
- Wages per worker: 2,17,878 (1,99,947)

Ratios

- Fixed Capital to Net Value Added (NVA): 2.5 (2.96)
- Fixed Capital to Output: 0.28 (0.40)
- Net Value Added (NVA) to Output: 0.11 (0.14)
- Gross Value Added (GVA) to Fixed Capital: 0.48 (0.40)
- Output to Input: 1.15 (1.19)
- Net Profit to Output: 0.05 (0.05)
- Contract Workers to Total Workers: 0.19 (0.1)

Top Industries based on estimates of some important characteristics of the survey					
Rank	Characteristics				
	Total Number of Factories	Fixed Capital	Total Persons engaged	Total Output	Gross Value Added (GVA)
1	Manufacture of food products (21.77%)	Manufacture of coke and refined petroleum products (54.69 %)	Manufactur e of food products (28..2 %)	Manufacture of coke and refined petroleum products (43.03 %)	Manufacture of coke and refined petroleum products (24.92%)
2	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials(10.80 %)	Manufacture of food products (9.14%)	Manufacture of rubber and plastics products (9.4 %)	Manufacture of food product (19.09 %)	Manufacture of food products (16.84 %)
3	Manufacture of other non-metallic mineral products (10.32%)	Manufacture of rubber and plastics products (5.22 %)	Manufacture of textiles (7.5%)	Manufacture of rubber and plastics products (7.69 %)	Manufacture of chemicals and chemical products (9.50 %)
4	Manufacture of rubber and plastics products (8.54%)	Manufacture of other non-metallic mineral products (4.29 %)	Manufacture of other non-metallic mineral products (6.1%)	Manufacture of chemicals and chemical products (5.95%)	Manufacture of rubber and plastics products (7.73 %)
5	Manufacture of tobacco products (6.05 %)	Manufacture of chemicals and chemical (4.11 %)	Manufacture of chemicals and chemical products (4.2 %)	Manufacture of basic metals (3.67 %)	Manufacture of other non-metallic mineral products (5.70 %)
Aggregate Total (all Kerala level) *	7740	5691247	313841	20193873	2709841
<i>*Estimates of Fixed Capital, Output and GVA are in ₹ lakhs</i>					

<u>Top Districts based on estimates of some important characteristics of the survey</u>					
Rank	Total number of Factories	Fixed Capital	Total Persons engaged	Total Output	Gross Value Added
1	Ernakulam (19.8 %)	Ernakulam (71.04 %)	Ernakulam (26.70 %)	Ernakulam (63.39 %)	Ernakulam (56.4 %)
2	Kollam (12.5%)	Thrissur (5.04 %)	Kollam (12.75 %)	Thrissur (6.21 %)	Thrissur (6.7%)
3	Thrissur (11.8%)	Alappuzha (3.79 %)	Alappuzha (11.21 %)	Palakkad (5.57%)	Alappuzha (5.5 %)
4	Kannur (9.5 %)	Kottayam (3.61 %)	Thrissur (8.99 %)	Alappuzha (4.91 %)	Kottayam (5.1 %)
5	Alappuzha (8.3%)	Palakkad (3.53%)	Palakkad (6.28 %)	Kottayam (4.76 %)	Kollam (5.0%)
Aggregate Total (all Kerala level) *	7740	5691247	313841	20193873	2709841
<i>*Estimates of Fixed Capital, Output and GVA are in ₹ lakhs</i>					



Contents

Preface	i
Acknowledgments	iii
Executive Summary	v-vi
Figures at a glance-Kerala	vii-ix
Chapter 1 : Introduction	
1.1 Scope and Coverage	1
1.2 Unit of Enumeration	2
1.3 ASI Frame	3
1.4 Reference Period	3
1.5 Methodology of the survey	3
1.6 Sample Design and Sample Allocation	3
1.7 Estimation Procedure	4
1.8 Schedule of Enquiry	5
1.9 Classification of Industries	5
1.10 Publications and Limitations	5
Chapter 2 : Analysis	
2.1 Manufacturing Sector of Kerala	7
2.2 Kerala's Organized Manufacturing Industries	7
2.3 Labour force and Capital	14
2.4 Gross Value Added (GVA)	41
2.5 Output to Input Ratio	45
2.6 Income and Profit	49

Chapter 3 : Fuel Consumption in organized manufacturing sector		
3.1	Coal	55
3.2	Electricity	58
3.3	Petroleum Products, Gas and Other fuels	61
Chapter 4 : Trend Analysis		
4.1	Factories in operation	67
4.2	Investment Behavior in organized manufacturing sector	68
4.3	Output and Input	71
4.4	Gross Value Added (GVA)	73
4.5	Employment and Wages	74
4.6	Income and Profit	80
4.7	Comparison of Principal characteristics of manufacturing sector	81
4.8	Trends of some structural ratios	84
4.9	Analysis of Various Characteristics during COVID period	85
Chapter 5 : Structural Ratios & Technical Coefficients		
5.1	Structural Ratios	103
5.2	Technical Coefficients	110
Annexures		
Annexure I	Concepts and Definitions	AI.1-AI.6
Annexure II	ASI Schedule of Enquiry	AII.1-AII-11
Annexure III	Estimation Procedure	AIII.1 – AIII.6
Annexure IV	Collection of Statistics Act and Rules	AIV.1 – AIV.20
Annexure V	Factories Act 1948	AV.1
Annexure VI	List of NIC-2008 4-digit Codes covered under ASI	AVI.1 – AVI.9



Tables and Figures

Table/ Figures	Title	Page No.
Chapter 2	Analysis	
Table 2.1	District wise distribution of factories, Kerala, 2021-22	9
Table 2.2	Distribution of total number of factories and percentage of factories in operation by NIC (2008)- 2-digit group of industries.	11-12
Table 2.3	Distribution of employees in the manufacturing industries of Kerala, 2021-22	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	18
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/ Figures	Title	Page No.
Table 2.14	Distribution of Daily salary of Supervisory and Managerial staff, 2021-22	27-28
Table 2.15	Distribution of Daily salary of Other employees, 2021-22	29-30
Table 2.16	District wise Labour Productivity (Output per unit labour) of the manufacturing industries	31
Table 2.17	Labour Productivity of the industries by NIC (2008) 2-digit group	32
Table 2.18	District wise distribution of Invested Capital of manufacturing industries, 2021-22	34
Table 2.19	Distribution of invested capital as per NIC (2008)-2-digit classification of industries	35
Table 2.20	Distribution of invested capital of factory sector by type of organization	36
Table 2.21	Distribution of Gross Fixed Capital Formation (GFCF) of manufacturing industries	38
Table 2.22	Gross Fixed Capital Formation (GFCF) as per NIC (2008)-2-digit group of industries	39
Table 2.23	Distribution of Gross Fixed Capital Formation (GFCF) of manufacturing industries by type of organization	40
Table 2.24	District-wise distribution of factories in operation, GVA and GVA per factory in operation (in ₹ lakhs)	42
Table 2.25	Distribution of GVA across manufacturing industries of Kerala by NIC-2-digit group of industries	44
Table 2.26	District wise distribution of output, input and output to input ratio	46
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	50-51
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	53
Figure 2.1	District wise Percentage of Factories in Organized Manufacturing Sector, 2021-22	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

Table/ Figures	Title	Page No.
Figure 2.5	Distribution of factories in rural-urban areas of Kerala, 2021-22	13
Figure 2.6	Distribution of persons engaged in organized manufacturing sector, Kerala, 2021-22	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	20
Figure 2.10	Percentage of contract workers and directly employed workers in rural & urban industries	21
Figure 2.11	Directly employed Female- Dominated Industries	23
Figure 2.12	Distribution of Daily salary (in ₹) of Supervisory & Managerial Staff by NIC (2008) 2-digit group of industries	27
Figure 2.13	Daily salary (in ₹) of Other employees by NIC (2008)-2 digit group of industries	29
Figure 2.14	District wise Labour Productivity (Output per unit labour) of the manufacturing industries	31
Figure 2.15	District wise share of Invested Capital, 2021-22	33
Figure 2.16	Share of invested capital of industries by NIC (2008)-2digit categorisation	34
Figure 2.17	Invested Capital of industries based on type of organization	36
Figure 2.18	Invested Capital (in ₹ lakhs) in the manufacturing industries in rural-urban Sector	37
Figure 2.19	Distribution of Gross Fixed Capital Formation (GFCF) (in ₹ lakhs) by NIC (2008) 2-digit classification	40
Figure 2.20	Distribution of Gross Fixed Capital Formation (GFCF) (in ₹ lakhs) by type of organisation	41
Figure 2.21	District wise distribution of factories in operation and GVA (in ₹ lakhs)	42
Figure 2.22	Distribution of GVA across manufacturing industries of Kerala by NIC (2008)-2-digit category of industries	43
Figure 2.23	Share of GVA of manufacturing industries in rural and urban areas, 2021-22	45
Figure 2.24	Distribution of GVA across manufacturing industries by type of organization	45
Figure 2.25	District wise Output-Input ratio of manufacturing industries of Kerala, 2021-22	46
Figure 2.26	Output-Input Ratio of Manufacturing industries by NIC-(2008) 2-digit of Kerala, 2021-22	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	51
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

Table/ Figures	Title	Page No.
Chapter 3	Fuel consumption in organized manufacturing sector	
Table 3.1	District wise distribution of Coal consumed and its value (in ₹ thousands)	56
Table 3.2	Consumption of Coal (in tons) and its value in NIC 2digit category of industries	57-58
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	60-61
Table 3.5	Value of petroleum products, gas & other fuels purchased by factory sector in the districts of Kerala	62
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	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	62
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	63
Figure 3.8	Value of Consumption of petroleum products, gas & other fuels purchased in factory sector by NIC 2-digit	65
Chapter 4	Trend Analysis	
Table 4.1	Total factories and factories in operation from 2015-16 to 2021-22, Kerala	67
Table 4.2	Percentage growth of operational factories, Kerala 2016-17 to 2021-22	68
Table 4.3	Capital invested in manufacturing sector from 2015-16 to 2021-22, Kerala	70
Table 4.4	Percentage growth of capital, Kerala 2016-17 to 2021-22	70

Table/ Figures	Title	Page No.
Table 4.5	Gross Fixed Capital Formation (GFCF) in manufacturing sector from 2015-16 to 2021-22	71
Table 4.6	Percentage growth of Gross Fixed Capital Formation (GFCF), Kerala 2016-17 to 2021-22	71
Table 4.7	Input and Output manufacturing sector from 2016-17 to 2021-22, Kerala	72
Table 4.8	Percentage growth of input and output, Kerala 2016-17 to 2021-22, Kerala	72
Table 4.9	Gross Value Added (GVA) manufacturing sector from 2016-17 to 2021-22, Kerala	74
Table 4.10	Percentage growth of Gross Value Added (GVA) Kerala 2016-17 to 2021-22,	74
Table 4.11	Number of workers in manufacturing sector from 2016-17 to 2021-22, Kerala	77
Table 4.12	Percentage growth of number of workers, Kerala 2016-17 to 2021-22	77
Table 4.13	Gender wise number of directly employed workers in manufacturing sector from 2016-17 to 2021-22, Kerala	78
Table 4.14	Gender wise percentage growth of directly employed workers, Kerala 2016-17 to 2021-22 Percentage growth	78
Table 4.15	Wages & Salaries of employees, Kerala 2015-16 to 2021-22	79
Table 4.16	Growth rate of wages & salaries of employees, Kerala 2016-17 to 2021-22	79
Table 4.17	Net income (₹ lakhs) in manufacturing sector from 2015-16 to 2021-22, Kerala	81
Table 4.18	Growth rate of Net income in manufacturing sector, Kerala 2016-17 to 2021-22	81
Table 4.19	Principal characteristics of manufacturing sector during 2021-22 and 2020-21 with percentage of change	82
Table 4.20	Employment and Emoluments of the employees engaged in manufacturing sector during 2021-22 and 2020-21 with percentage of change	83
Table 4.21	Fuel Consumption in manufacturing sector during 2021-22 and 2020-21 with percentage of change	84
Table 4.22	Structural ratios of the indicators from 2015-16 to 2021-22	84
Table 4.23	Various Characteristics during COVID period <u>(Values in lakhs)</u>	85
Table 4.24	Variation in Material Consumed for Manufacturing	88
Table 4.25	Variation in Working Capital	89
Table 4.26	Variation in Fuels Consumed	90
Table 4.27	Variation in Gross Fixed Capital Formation	91-94
Table 4.28	Factories in Rural and Urban area	95
Table 4.29	Percentage of Factories in Rural and Urban area	95
Table 4.30	Important characteristics in Rural area	96

Table/ Figures	Title	Page No.
Table 4.31	Important characteristics in Urban area	96
Table 4.32	Percentage variation of important characteristics in Rural area	97
Table 4.33	Percentage variation of important characteristics in Urban area	97
Table 4.34	Genderwise Distribution of workers	98
Table 4.35	Wages and Salaries for Workers	99
Figure 4.1	Manufacturing - Percentage Sectoral composition of GSVA at current price	67
Figure 4.2	Factories in operation & percentage growth rate over the previous year from 2016-17 to 2021-22	68
Figure 4.3	Physical capital (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22	68
Figure 4.4	Fixed capital (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22	69
Figure 4.5	Invested capital (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22	69
Figure 4.6	Gross Fixed Capital Formation (GFCF) percentage growth rate over the previous years from 2015-16 to 2021-22	70
Figure 4.7	Output (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22	71
Figure 4.8	Input (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22	72
Figure 4.9	Trend of input and output from 2015-16 to 2021-22	73
Figure 4.10	Gross Value Added (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22	73
Figure 4.11	Number of persons engaged in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22	74
Figure 4.12	Labour Productivity (Output per unit labour in ₹ lakhs), 2015-16 to 2021-22	75
Figure 4.13	Number of workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22	75
Figure 4.14	Number of Directly employed workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22	76
Figure 4.15	Number of contract workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22	76
Figure 4.16	Female participation in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22	77
Figure 4.17	Wages/Salaries of employees in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22	78

Table/ Figures	Title	Page No.
Figure 4.18	Wages of workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22	79
Figure 4.19	Wage per worker in manufacturing sector (in ₹ lakhs) from 2015-16 to 2021-22	80
Figure 4.20	Income (in ₹ lakhs) and its growth rate from 2015-16 to 2021-22	80
Figure 4.21	Profit (in ₹ lakhs) and growth rate from 2015-16 to 2021-22	81
Figure 4.22	Trends of structural ratios	85
Figure 4.23	Various Characteristics during COVID period	86
Figure 4.24	Percentage increase/decrease of the characteristics from 2019-'20 to 2020-'21 and then to 2021-'22.	87
Figure 4.25	Workers(Gender Based)	98
Figure 4.26	Percentage wise male and female participation	98
Chapter 5	Structural Ratios & Technical Coefficients	
Table 5.1	Structural ratios based on estimated characteristics of the state, 2021-22	103
Table 5.2	Structural Ratios by Districts, 2021-22	104
Table 5.3	Structural Ratios by NIC- 2 digit, 2021-22	107-109
Table 5.4	Technical Coefficients based on estimated characteristics of the state, 2021-22	110
Table 5.5	Technical Coefficients by Districts, 2021-22	111
Table 5.6	Technical Coefficients by NIC -2 digit, 2021-22	113-114
Figure 5.1	District wise pattern of structural ratios	105-106
Figure 5.2	Technical Coefficients based on estimated characteristics of the state, 2021-22	110
Figure 5.3	District wise Pattern of Technical Coefficients	112



Chapter-1 – Scope and coverage

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 2021-2022 was the accounting year of the factory, ending on any day during the financial year 2021-2022. Thus, in ASI 2021-2022, data collected from establishments relate to their respective accounting years that ended on any day between 1st May 2023 and 31st October 2023. Survey was conducted in the state in the time period 1st July 2023 to 1st January 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 2021-22, 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-08) 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 2021-22 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 2021-22 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 2021-22 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.



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 2020-21, service sector contributed 62.51 % 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 9.79%. 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 involved in the production of goods define the organized manufacturing industries of the state. **Annual Survey of Industries (ASI)** is one of the major industrial surveys conducted annually in the state for assessing the growth of the organized manufacturing sector and its contribution to the economy. The primary unit of enumeration in this 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 statistical data collected through the survey provides pertinent information on the composition and structure of organized manufacturing sector.

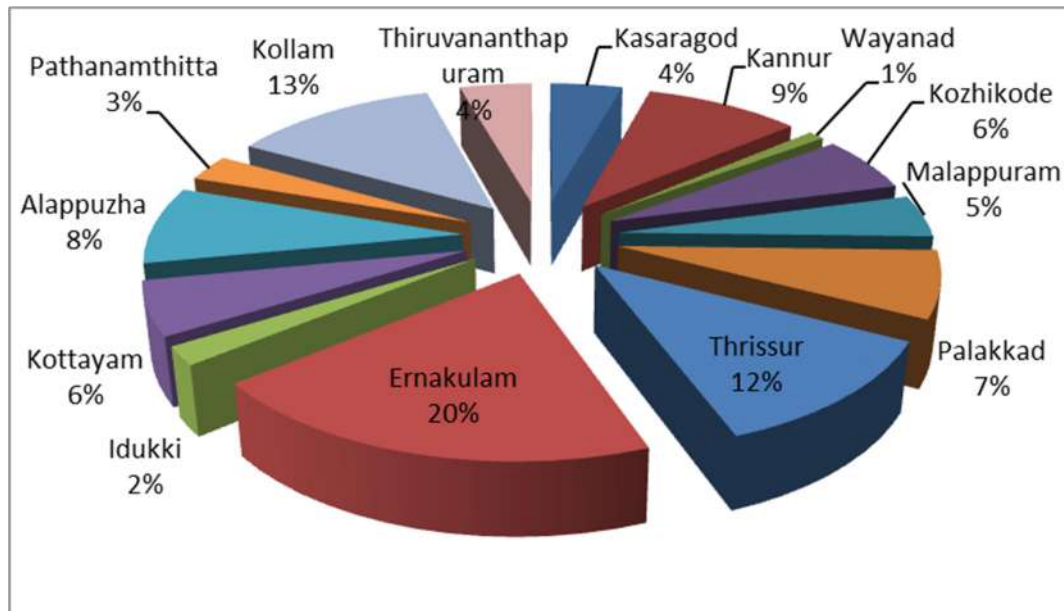
As per the economic perspective the four major factors of production are land, labor, capital and entrepreneurship. A manufacturing firm uses the land, labor of employees, the services of

the capital equipment and services of the entrepreneur in processing the raw material. The value addition of the production is the result of these elements. In this survey the value addition is estimated based on production approach. The information regarding the transactions of the manufacturing units such as sales, cash transactions, amount of cash and goods on hand, emoluments given to the employees, etc. are the major source of data of the survey. Thus, the survey estimates the major characteristic of the organized manufacturing sector which in turn helps the policy makers to reanalyze the existing industrial policy and its effect on the operation of the economy in terms of prices, input, output, value addition and employment and thereby its efficacy is monitored.

This chapter outlines the findings of Annual Survey of Industries 2021-22 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, labor supply, etc. are influencing the factors of industrial development.

The survey estimated 7740 factories with 6739 operating factories in the fiscal year 2021-22. The top district in terms of percentage share of aggregate number of factories is Ernakulam which accounts to about 19.8 % (1536) whereas Wayanad had the minimum with a share of 1.0 % (77).

Figure 2.1: District wise Percentage of Factories in Organized Manufacturing Sector, 2021-22



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

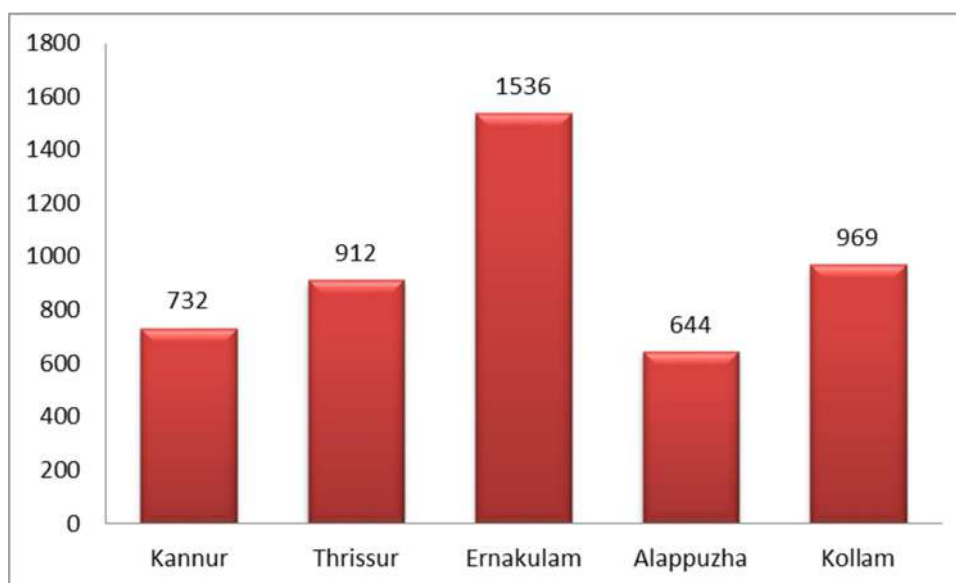
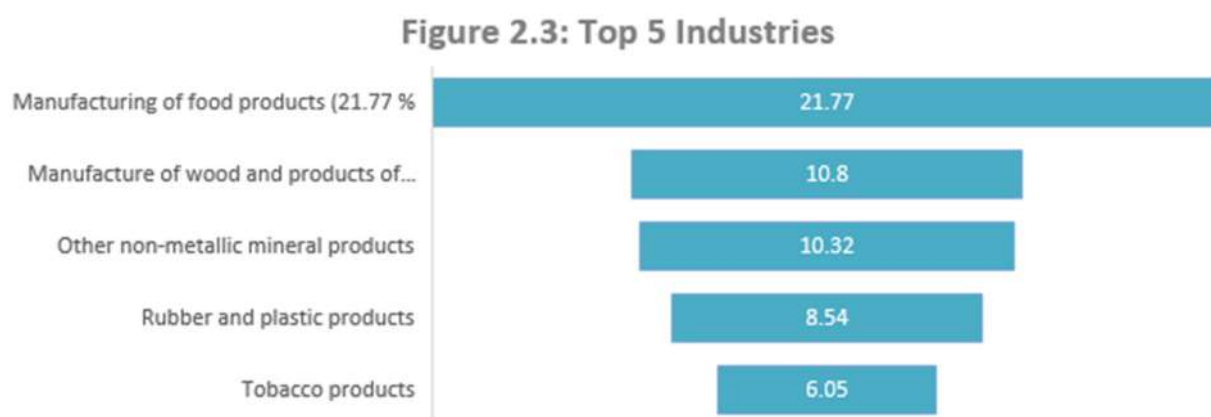


Table 2.1 District wise distribution of factories, Kerala, 2021-22

Table 2.1 District wise distribution of factories, Kerala, 2021-22		
District	No. of Factories(Nos.)	Percentage
Kasaragod	340	4.4
Kannur	732	9.5
Wayanad	77	1.0
Kozhikode	465	6.0
Malappuram	353	4.6
Palakkad	554	7.2
Thrissur	912	11.8
Ernakulam	1536	19.8
Idukki	153	2.0
Kottayam	444	5.7
Alappuzha	644	8.3
Pathanamthitta	221	2.9
Kollam	969	12.5
Thiruvananthapuram	340	4.4
Kerala	7740	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 (21.77 % 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 (21.77 %), Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials (10.8 %), Other non-metallic mineral products (10.32 %), Rubber and plastic products (8.54 %) and Tobacco products (6.05%). These industries together contribute 57.48 % 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 87.07% factories were in operation and among the various groups of industries (NIC 2-digit classification), food products manufacturing industry with highest number of factories had 86.05% operating factories whereas the other major industries such as, Wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials, Other Non-Metallic Mineral Products had 90.07% and 82.85% operating factories respectively (*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

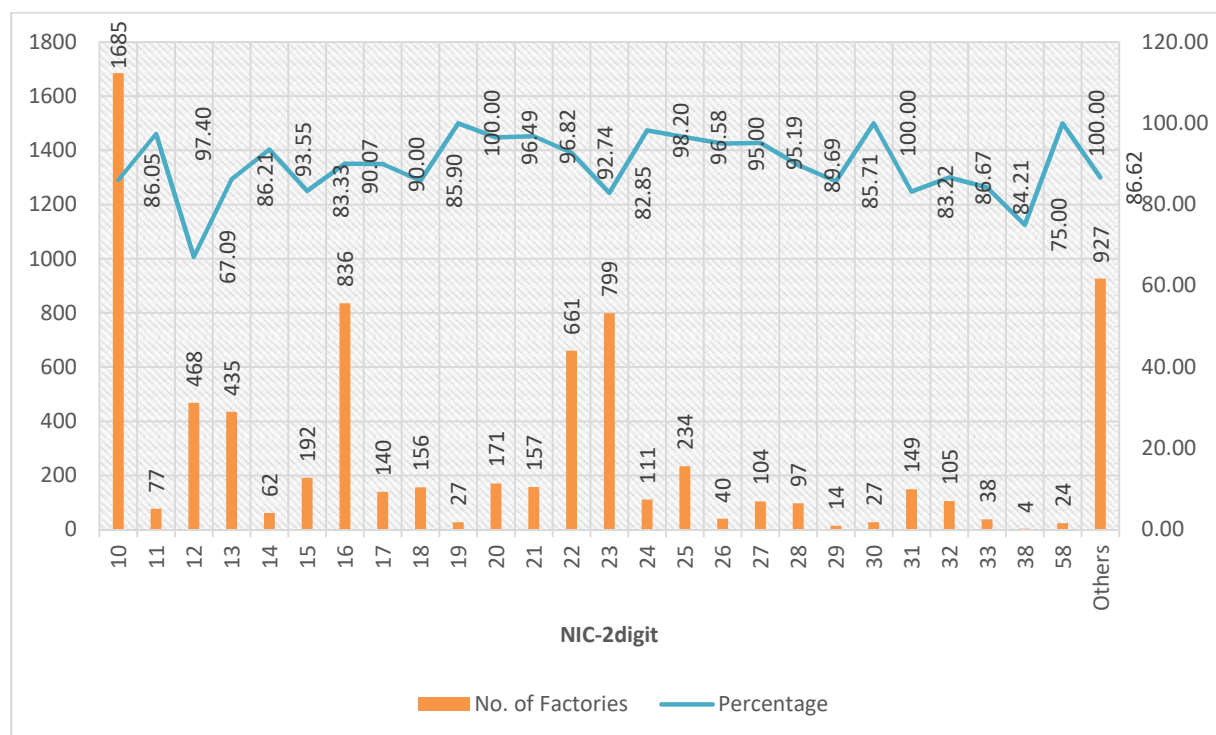


Table 2.2 Distribution of total number of factories and percentage of factories in operation by NIC (2008)-2-digit group of industries

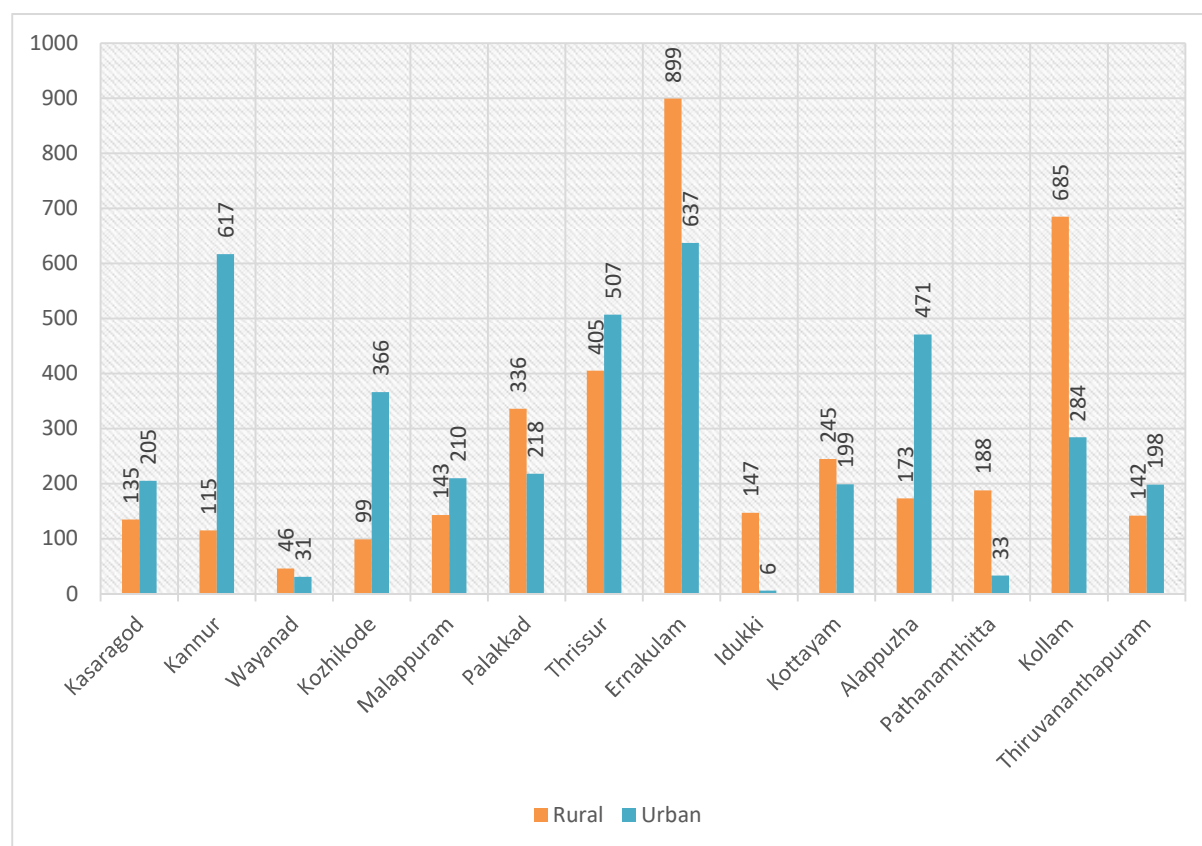
NIC 2-digit	Description	No. of Factories	Factories in Operation (Nos.)	Percentage
10	Manufacture of food products	1685	1450	86.05
11	Manufacture of beverages	77	75	97.40
12	Manufacture of tobacco products	468	314	67.09
13	Manufacture of textiles	435	375	86.21
14	Manufacture of wearing apparel	62	58	93.55
15	Manufacture of leather and related products	192	160	83.33
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	836	753	90.07
17	Manufacture of paper and paper products	140	126	90.00

NIC 2-digit	Description	No. of Factories	Factories in Operation (Nos.)	Percentage
18	Printing and reproduction of recorded media	156	134	85.90
19	Manufacture of coke and refined petroleum products	27	27	100.00
20	Manufacture of chemicals and chemical products	171	165	96.49
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	157	152	96.82
22	Manufacture of rubber and plastic products	661	613	92.74
23	Manufacture of other non-metallic mineral products	799	662	82.85
24	Manufacture of basic metals	111	109	98.20
25	Manufacture of fabricated metal products, except machinery and equipment	234	226	96.58
26	Manufacture of computer, electronic and optical products	40	38	95.00
27	Manufacture of electrical equipment	104	99	95.19
28	Manufacture of machinery and equipment n.e.c	97	87	89.69
29	Manufacture of motor vehicles, trailers and semitrailers	14	12	85.71
30	Manufacture of other transport equipment	27	27	100.00
31	Manufacture of furniture	149	124	83.22
32	Other manufacturing	105	91	86.67
33	Repair and installation of machinery and equipment	38	32	84.21
38	Waste collection, treatment and disposal activities; materials recovery	4	3	75.00
58	Publishing activities	24	24	100.00
	Others	927	803	86.62
	Total	7740	6739	87.07

The distribution of factories in rural and urban sectors across districts in Kerala has a nearly balanced distribution of factories in rural (3,758) and urban (3,982) sectors, with a slight dominance of the urban sector. Out of the total estimated factories, 3,982 (51%) were in urban areas, while 3,758 (49 %) were in rural areas. The factory distribution in Kerala is relatively balanced between rural and urban sectors, though urban areas have a slight edge. While cities dominate in several districts, rural industries remain strong, particularly in Ernakulam and Kollam. This shows there is scope for further development in rural regions to enhance industrial decentralization.

The top five districts viz; Ernakulam (19.8%), Kollam (12.5%), Thrissur (11.8 %), Kannur (9.5 %) and Alappuzha (8.3%) with highest number of factories together account to 61.9 % of the state aggregate and out of the total 4791 factories in these districts 2516 (52.5 %) were in urban areas and 2277 (47.5 %) were in rural areas. It is noticeable that Ernakulam district, the major industrial hub of Kerala had about 58.5 % of factories situated in rural areas (899 in rural as against 637 in urban) and remaining 41.5% 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, 2021-22



2.3 Labour force and Capital

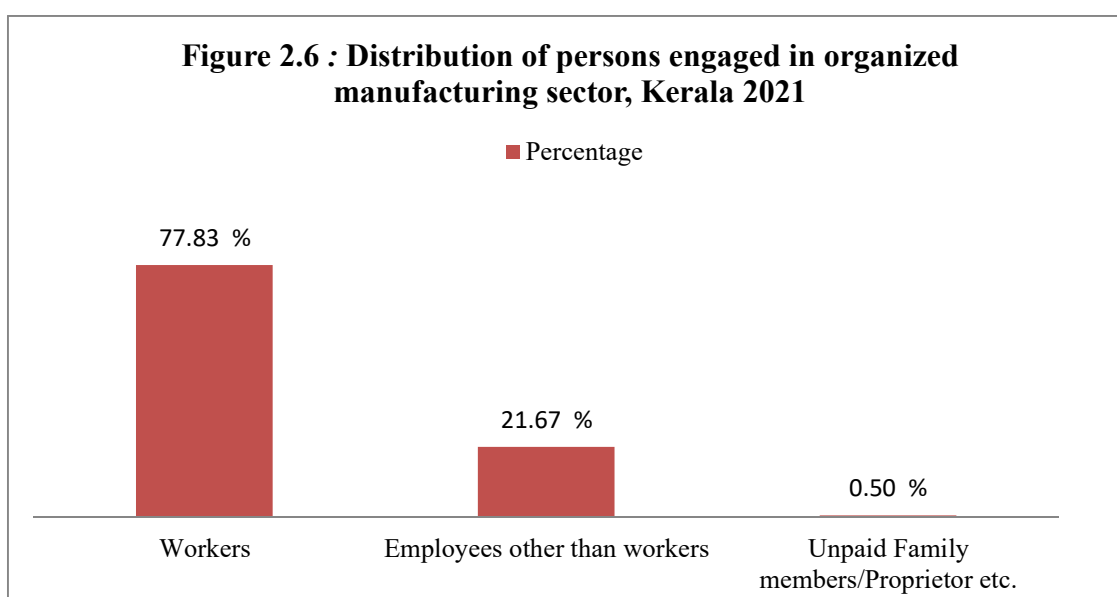
Labour force and capital are the essential economic resources available for the production of goods and services. The efficient utilization of these resources plays a significant role in increasing the output and thereby accelerating the development of the manufacturing sector. The detailed analysis 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, 6739 registered operating factories have provided employment to 3,13,841 persons and distributed ₹ 9,57,395 lakhs as emoluments to employees. Among these employees, 41.19% (1,29,271) were working in industries in rural area and the remaining 58.81% (1,84,570) 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”.



Out of the total manpower in the factories 77.83% (244259 nos.) were workers whereas 21.67 % and 0.5 % were employees other than workers and Unpaid Family members/Proprietor respectively.

Table 2.3: Distribution of employees in the manufacturing industries of Kerala, 2021-22

Sl.No	Characteristic	Number	Percentage
1	Workers	244259	77.83
2	Employees other than workers	68012	21.67
3	Unpaid Family members/Proprietor etc.	1570	0.50
Average Number of Persons Engaged		313841	100.00

The survey also categorizes workers as Directly employed and Employed through Contractors. Among the workers 80.6 % are directly employed and top five districts with highest proportion of directly employed workers were estimated in Kollam (98.6 %), Pathanamthitta (97.9 %), Kannur (97.2%), Malappuram (91.7 %) and Kottayam (91.1 %).

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

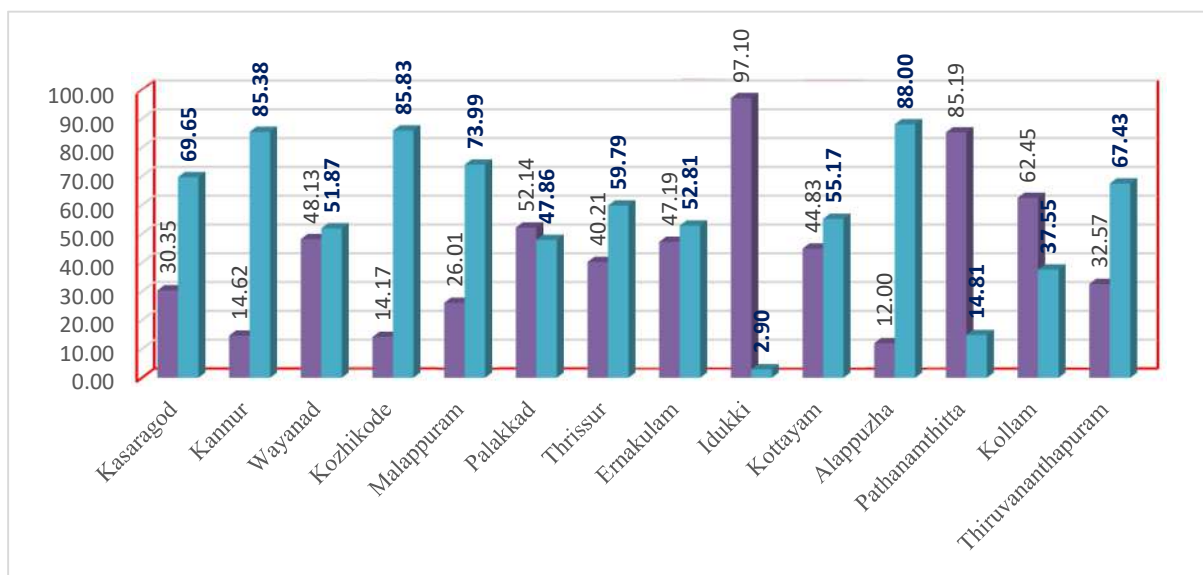
Districts	Average no. of Persons Engaged	Percentage
Kasargod	10735	3.4
Kannur	15935	5.1
Wayanad	2537	0.8
Kozhikode	17703	5.6
Malappuram	9885	3.1
Palakkad	19705	6.3
Thrissur	28200	9.0
Ernakulam	83802	26.7
Idukki	7303	2.3
Kottayam	18201	5.8
Alappuzha	35182	11.2
Pathanamthitta	7116	2.3
Kollam	40001	12.7
Thiruvananthapuram	17536	5.6
Kerala	313841	100.0

Among the 14 districts, top three districts with industries providing gainful employment were Ernakulam (26.7%), Kollam (12.7%) and Alappuzha (11.2%) and these constitutes a combined share of 50.6% of total employment. And these districts together share 53.18 % of employment in rural industries and 48.89 % of employment in urban industries. Ernakulam district with highest share of employment had 47% (39543) and 53% (44259) rural and urban employment respectively, whereas Wayanad, the least industrialized district with a share of 48.13 % (1221) of employment in rural industries and 51.87% (1316) in urban industries.

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

District	Rural	Urban	Total
Kasaragod	3258	7477	10735
Kannur	2330	13605	15935
Wayanad	1221	1316	2537
Kozhikode	2508	15195	17703
Malappuram	2571	7314	9885
Palakkad	10274	9431	19705
Thrissur	11339	16861	28200
Ernakulam	39543	44259	83802
Idukki	7091	212	7303
Kottayam	8160	10041	18201
Alappuzha	4221	30961	35182
Pathanamthitta	6062	1054	7116
Kollam	24982	15019	40001
Thiruvananthapuram	5711	11825	17536
Kerala	129271	184570	313841

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 72,297 workers (29.60% of the state aggregate). The major five employment providing industries were Food products (29.60%), Rubber and plastic products (9.70%), Textiles (7.18%), Other non-metallic mineral products (6.19%) and Tobacco products (4.51%) (*see Figure 2.8*).

Figure 2.8: Top five industries with highest share of workers

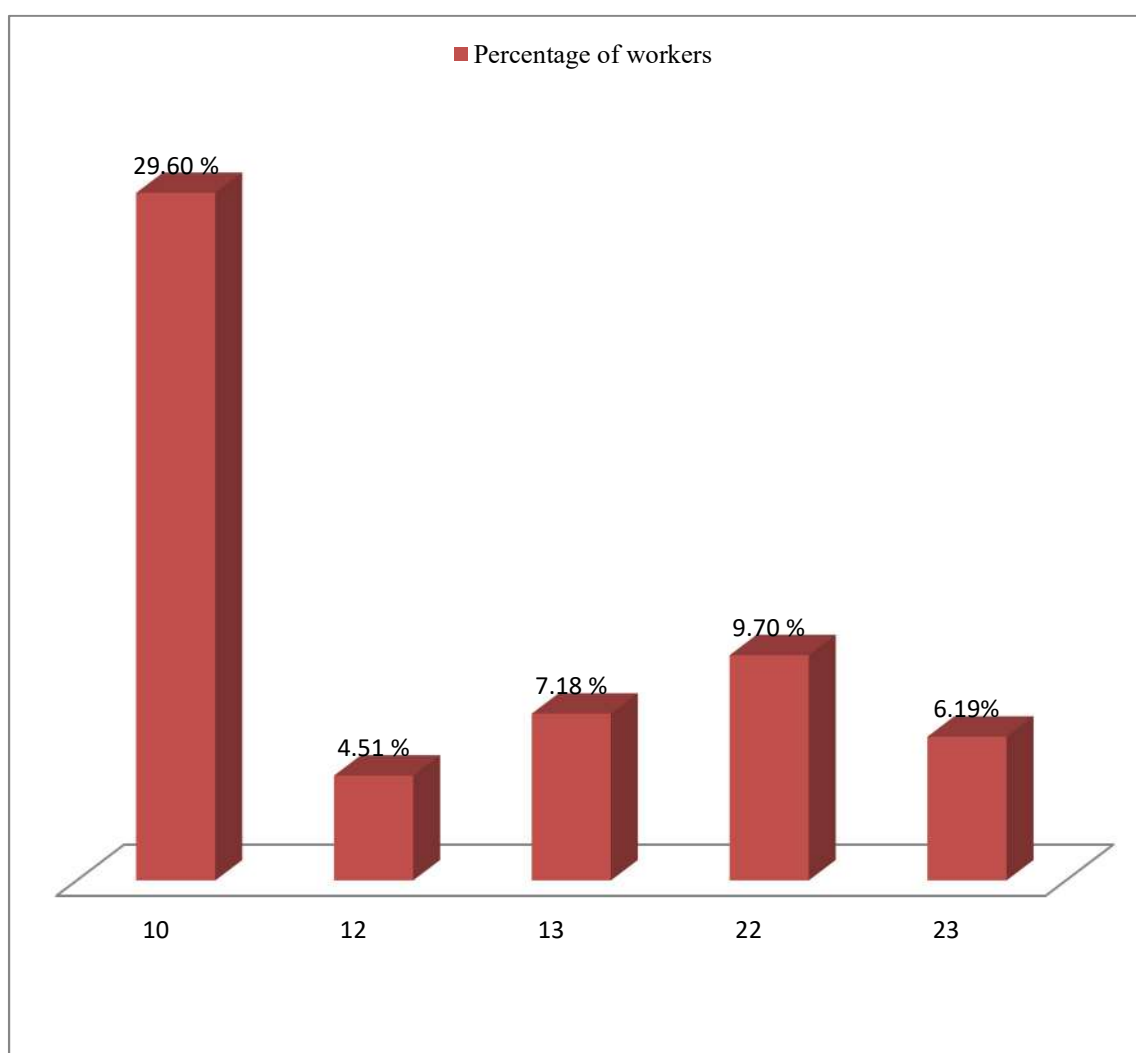


Table 2.6: Distribution of workers by NIC (2008)-2-digit group of industries

NIC 2-digit	Description	No. of workers	Percentage
10	Manufacture of food products	72297	29.60
11	Manufacture of beverages	2423	0.99
12	Manufacture of tobacco products	11027	4.51
13	Manufacture of textiles	17545	7.18
14	Manufacture of wearing apparel	9026	3.70
15	Manufacture of leather and related products	6173	2.53
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	7883	3.23
17	Manufacture of paper and paper products	2551	1.04
18	Printing and reproduction of recorded media	3184	1.30
19	Manufacture of coke and refined petroleum products	4267	1.75
20	Manufacture of chemicals and chemical products	9378	3.84
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	5928	2.43
22	Manufacture of rubber and plastic products	23693	9.70
23	Manufacture of other non-metallic mineral products	15119	6.19
24	Manufacture of basic metals	4338	1.78
25	Manufacture of fabricated metal products, except machinery and equipment	4642	1.90
26	Manufacture of computer, electronic and optical products	6895	2.82
27	Manufacture of electrical equipment	3794	1.55
28	Manufacture of machinery and equipment n.e.c	2757	1.13
29	Manufacture of motor vehicles, trailers and semitrailers	175	0.07
30	Manufacture of other transport equipment	6497	2.66
31	Manufacture of furniture	2037	0.83
32	Other manufacturing	4243	1.74
33	Repair and installation of machinery and equipment	809	0.33
38	Waste collection, treatment and disposal activities; materials recovery	40	0.02
58	Publishing activities	739	0.30
	Others	16799	6.88
	Total	244259	100

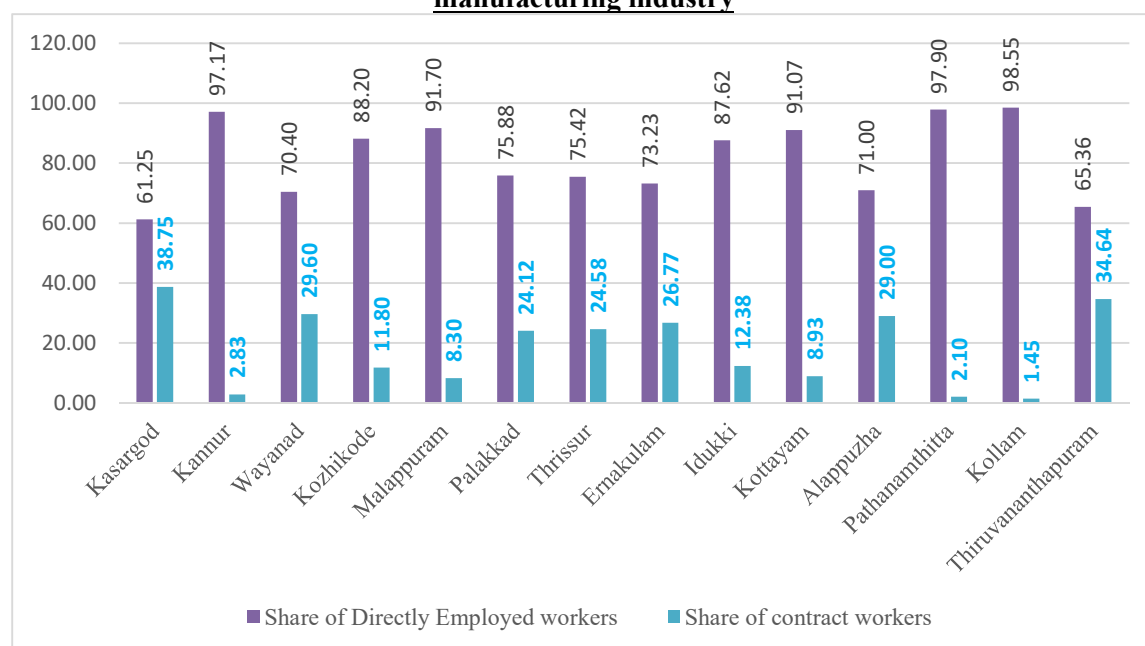
The survey also estimates the number of contract workers in various manufacturing industries. As per the result, out of 2,44,259 workers employed, 1,96,795 were directly employed by the factories and 47,464 were hired as ‘contract workers’. The number of contract workers varies widely across different 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 (92.50%) and manufacture of other transport equipment (72.56%). The top two industries with highest share of directly employed workers were Manufacture of motor vehicles, trailers and semitrailers (100%) and Manufacture of wearing apparel (99.77%). The other industries with larger proportion of directly employed workers include Manufacture of leather and related products (97.91%), Printing and reproduction of recorded media (95.26%), Other manufacturing (92.34%) and Wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials industry (90.24%) (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 employedworkers
10	Manufacture of food products	14.95	85.05
11	Manufacture of beverages	43.71	56.29
12	Manufacture of tobacco products	35.64	64.36
13	Manufacture of textiles	21.46	79.68
14	Manufacture of wearing apparel	0.23	99.77
15	Manufacture of leather and related products	2.09	97.91
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	9.76	90.24
17	Manufacture of paper and paper products	7.21	84.95
18	Printing and reproduction of recorded media	4.74	95.26
19	Manufacture of coke and refined petroleum products	63.49	36.51
20	Manufacture of chemicals and chemical products	22.17	77.83
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	27.61	72.39
22	Manufacture of rubber and plastic products	23.58	76.42
23	Manufacture of other non-metallic mineral products	12.14	87.86
24	Manufacture of basic metals	38.54	61.46
25	Manufacture of fabricated metal products, except machinery and equipment	13.85	86.15
26	Manufacture of computer, electronic and optical products	39.16	60.84
27	Manufacture of electrical equipment	24.75	75.25
28	Manufacture of machinery and equipment n.e.c	23.87	76.13
29	Manufacture of motor vehicles, trailers and semitrailers	0.00	100.00
30	Manufacture of other transport equipment	72.56	27.44
31	Manufacture of furniture	9.03	90.97
32	Other manufacturing	7.66	92.34
33	Repair and installation of machinery and equipment	28.68	71.32
38	Waste collection, treatment and disposal activities; materials recovery	92.50	7.50
58	Publishing activities	15.02	84.98
	Others	3.49	96.51
	Total	19.43	80.57

Analyzing the composition of the industrial workforce across the districts, in 2021-22, Kasargod leads in terms of hiring of contract workers, 38.75% whereas Kollam had just 1.45%. The Thiruvananthapuram district reported 34.64% contract workers whereas Wayanad, the least industrialized district of the state reported 29.60% contract workers in the manufacturing sector (Table 2.8 and Fig 2.9).

District	Directly Employed	Employed through Contractors	Total Workers	Share of contract workers
Kasargod	6107	3863	9970	38.75
Kannur	13115	382	13497	2.83
Wayanad	1351	568	1919	29.60
Kozhikode	11899	1592	13491	11.80
Malappuram	6817	617	7434	8.30
Palakkad	11395	3622	15017	24.12
Thrissur	16760	5462	22222	24.58
Ernakulam	46120	16863	62983	26.77
Idukki	4381	619	5000	12.38
Kottayam	10824	1061	11885	8.93
Alappuzha	18207	7438	25645	29.00
Pathanamthitta	5630	121	5751	2.10
Kollam	35247	517	35764	1.45
Thiruvananthapuram	8942	4739	13681	34.64
Kerala	196795	47464	244259	19.43

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

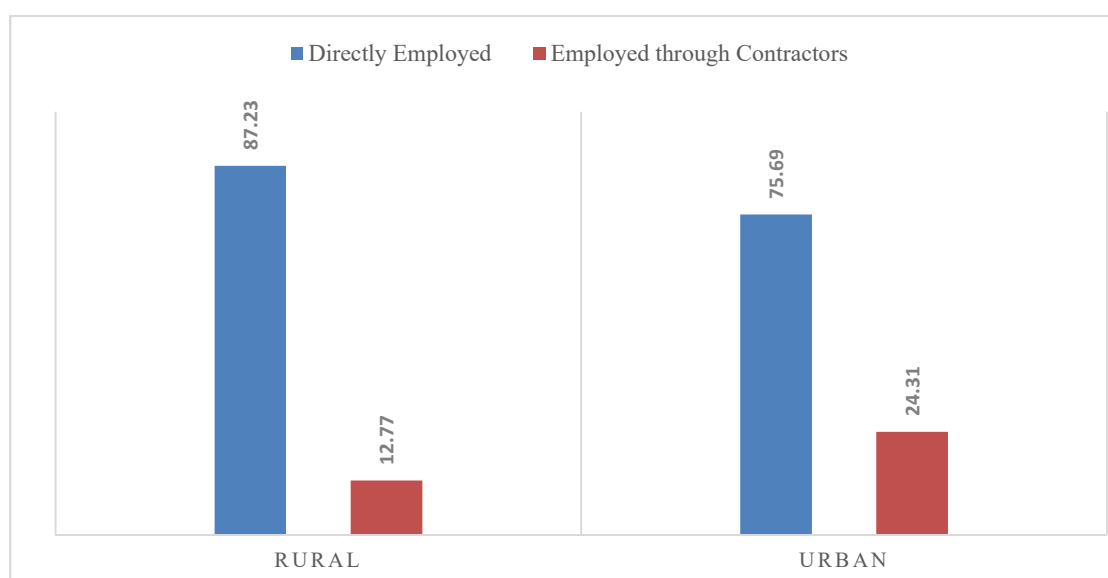


Considering the employment in rural and urban industries, during fiscal year 2021-22, The share of directly employed workers in urban industries was 87.22% whereas that of rural industries was 75.69%. The share of contract workers in urban industries was 24.31% whereas that of rural industries was 12.77%. 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	90071	106724	196795
Employed through Contractors	13189	34275	47464
Total Workers	103260	140999	244259

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



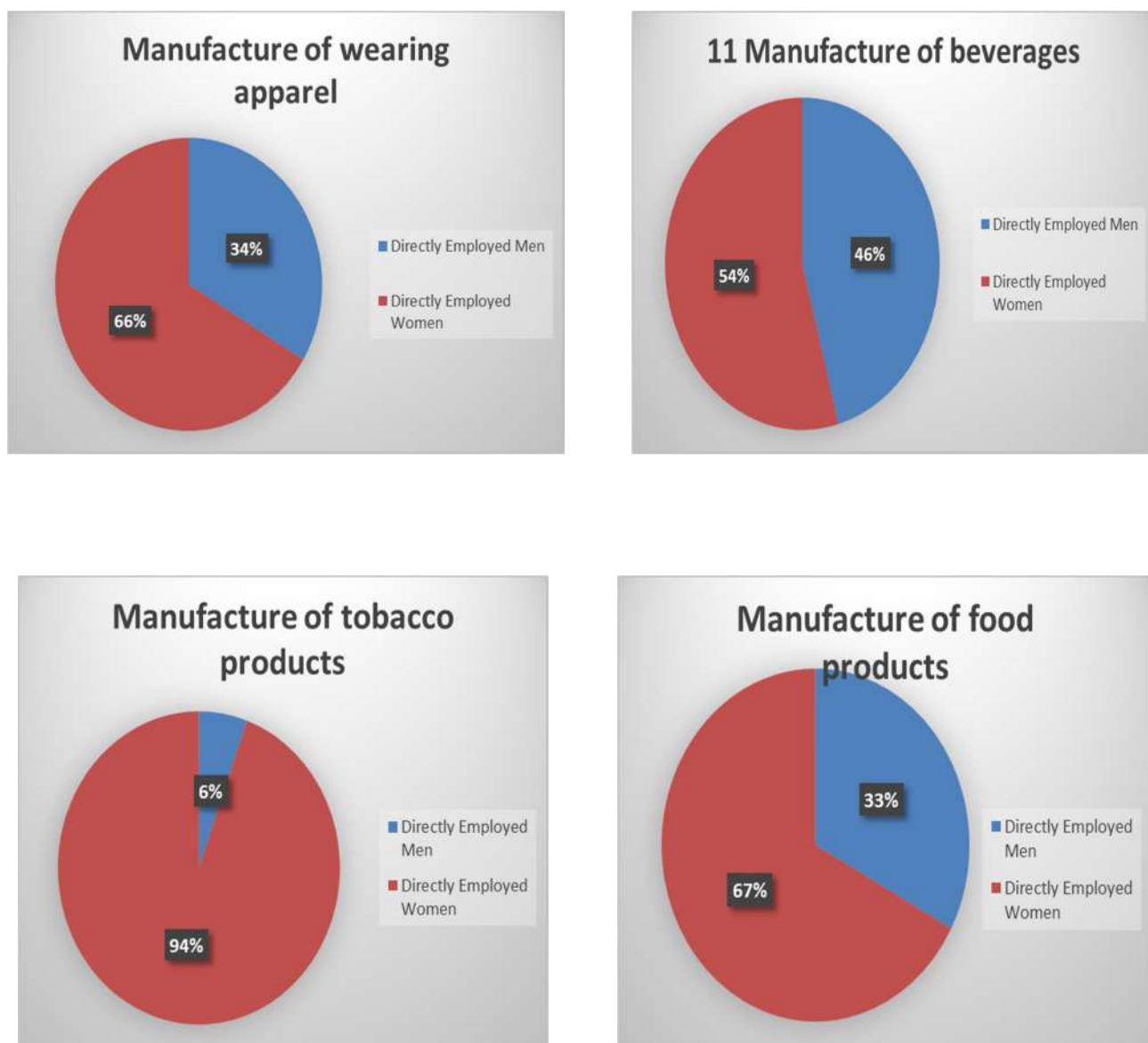
2.3.2. Status of Women in manufacturing sector

Among directly employed workers, *women* constitute approximately 40.9% (80,505) of the total work force in 2021-22. This share shows a decline when compared to previous year figure which was 42.2%. It was also revealed that in Tobacco Products manufacturing industries, the directly employed women representation stands at a striking figure of 94.48%. And the other women work force dominated industries were Food products (67.17 %) and Wearing apparels (66.39 %). 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

NIC (2 Digit)	Description	Directly Employed			
		Men	Women	Total	Percentage
10	Manufacture of food products	20188	41301	61489	67.17
11	Manufacture of beverages	624	740	1364	54.25
12	Manufacture of tobacco products	392	6705	7097	94.48
13	Manufacture of textiles	7725	6055	13780	43.94
14	Manufacture of wearing apparel	3027	5978	9005	66.39
15	Manufacture of leather and related products	5056	988	6044	16.35
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	5861	1253	7114	17.61
17	Manufacture of paper and paper products	1245	1122	2367	47.40
18	Printing and reproduction of recorded media	2598	435	3033	14.34
19	Manufacture of coke and refined petroleum products	1551	7	1558	0.45
20	Manufacture of chemicals and chemical products	6030	1269	7299	17.39
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	2316	1975	4291	46.03
22	Manufacture of rubber and plastic products	14431	3675	18106	20.30
23	Manufacture of other non-metallic mineral products	11531	1753	13284	13.20
24	Manufacture of basic metals	2405	261	2666	9.79
25	Manufacture of fabricated metal products, except machinery and equipment	3248	751	3999	18.78
26	Manufacture of computer, electronic and optical products	2608	1587	4195	37.83
27	Manufacture of electrical equipment	2006	849	2855	29.74
28	Manufacture of machinery and equipment n.e.c	1834	265	2099	12.63
29	Manufacture of motor vehicles, trailers and semitrailers	162	13	175	7.43
30	Manufacture of other transport equipment	1718	65	1783	3.65
31	Manufacture of furniture	1545	308	1853	16.62
32	Other manufacturing	1994	1924	3918	49.11
33	Repair and installation of machinery and equipment	518	59	577	10.23
38	Waste collection, treatment and disposal activities; materials recovery	3	0	3	0.00
58	Publishing activities	616	12	628	1.91
	Others	15058	1155	16213	7.12
	Total	116290	80505	196795	40.91

Figure 2.11: Directly employed Female- Dominated Industries



Rural-Urban sector wise estimates shows that among 90,071 directly employed workers in rural industries, about 45.47 % were women whereas out of 99174 workers in urban industries 37.06 % 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	49117 (54.53%)	67173 (62.94%)	116290 (59.09%)
Women	40954 (45.47%)	39551 (37.06%)	80505 (40.91%)
Total	90071	106724	196795

The estimates regarding the industries classified based on organization type shows among the directly employed workers, the women representation in industries under the management of Individual proprietorship and Co-operative societies were about 67.56 % and 63.19 % respectively. The remaining type of organizations were 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	11813	24601	36414	67.56
Partnership	20976	15602	36578	42.65
Limited Liability Partnership	1844	657	2501	26.27
Government Company – Public	7196	1662	8858	18.76
Government Company – Private	5578	1212	6790	17.85
Non-Government Company – Public	14623	8910	23533	37.86
Non-Government Company – Private	47584	17092	64676	26.43
Co-operative Society	5425	9314	14739	63.19
Others	1251	1455	2706	53.77
Total	116290	80505	196795	40.91

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 313841 persons engaged in factories during fiscal year 2021-22 accounts to ₹ 11,09,235 lakhs and out of the total emoluments, 37.45% (₹ 4,15,448 lakhs) was earned by employees in the rural industries and 62.55% by those in urban industries (₹ 6,93,787 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 ₹ 2.2 lakhs whereas the salary per Supervisory & Managerial Staff was ₹ 8.79 lakhs and that of other employees, ₹ 3.12 lakhs. On monthly basis the wage for each category of employees turns out to be ₹ 18,157, ₹ 73,213 and ₹ 25,970 respectively. Also, if on an average of 30 days is considered per month, a worker in state’s organized manufacturing sector earned ₹ 605 as daily wage in 2021-22. On the other hand, those working as Supervisors & Managerial Staff, earned ₹ 2,440 per and Other employees earned ₹ 864 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 ₹ 1697 followed by industries such as Chemicals and Chemical products, Publishing activities with an estimated daily wage of ₹ 1473 and ₹ 1402 respectively.

It may also be observed that the least daily wage was earned by workers engaged in Tobacco products manufacturing industry (₹ 184) which is followed by industry involved in the manufacture of Wood and Products of Wood and Cork, except furniture; manufacture of articles of straw and plating materials (₹ 364) and Wearing Apparel (₹ 374) (*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 workers	Wages per worker (in ₹ lakhs)	Daily wage (in ₹)
10	Manufacture of food products	113,942	72297	1.58	438
11	Manufacture of beverages	3897	2423	1.61	447
12	Manufacture of tobacco products	7299	11027	0.66	184
13	Manufacture of textiles	31240	17545	1.78	495
14	Manufacture of wearing apparel	12153	9026	1.35	374
15	Manufacture of leather and related products	11759	6173	1.90	529
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	10320	7883	1.31	364
17	Manufacture of paper and paper products	4411	2551	1.73	480
18	Printing and reproduction of recorded media	14187	3184	4.46	1238
19	Manufacture of coke and refined petroleum products	26065	4267	6.11	1697
20	Manufacture of chemicals and chemical products	49743	9378	5.30	1473
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	14081	5928	2.38	660
22	Manufacture of rubber and plastic products	68274	23693	2.88	800
23	Manufacture of other non-metallic mineral products	33478	15119	2.21	615
24	Manufacture of basic metals	9609	4338	2.22	615
25	Manufacture of fabricated metal products, except machinery and equipment	9498	4642	2.05	568
26	Manufacture of computer, electronic and optical products	19523	6895	2.83	787
27	Manufacture of electrical equipment	11029	3794	2.91	807
28	Manufacture of machinery and equipment n.e.c	7851	2757	2.85	791
29	Manufacture of motor vehicles, trailers and semitrailers	345	175	1.97	548
30	Manufacture of other transport equipment	20225	6497	3.11	865
31	Manufacture of furniture	4158	2037	2.04	567
32	Other manufacturing	7812	4243	1.84	511
33	Repair and installation of machinery and equipment	2795	809	3.45	960
38	Waste collection, treatment and disposal activities; materials recovery	186	40	4.65	1292
58	Publishing activities	3731	739	5.05	1402
	Others	34576	16799	2.06	572
	Total	532187	244259	2.18	605

In the state the Supervisory and Managerial Staff in the manufacturing sector earned an average daily salary of ₹ 2440 in the report year. Among this category of employees, the highest average daily salary (₹ 7974) was earned by those working in Coke and Refined Petroleum Products industry whereas the least (₹ 392) 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

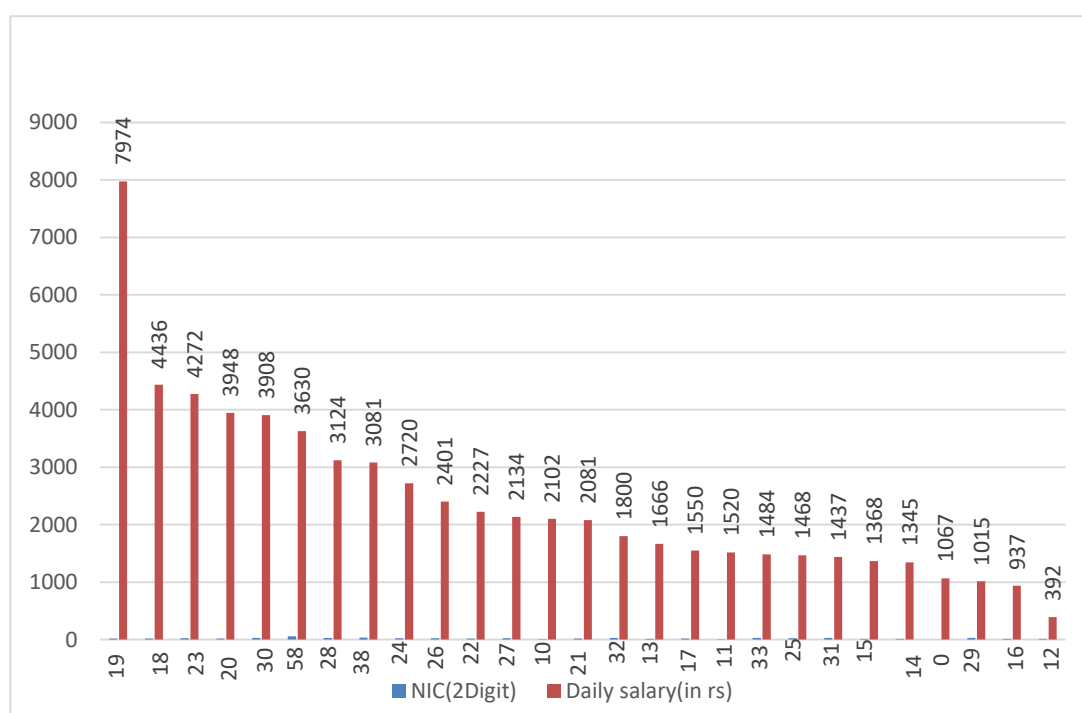


Table 2.14: Distribution of Daily salary of Supervisory and Managerial staff, 2021-22

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	6748	51073	7.57	2102
11	Manufacture of beverages	327	1789	5.47	1520
12	Manufacture of tobacco products	129	182	1.41	392
13	Manufacture of textiles	1257	7541	6.00	1666
14	Manufacture of wearing apparel	325	1574	4.84	1345
15	Manufacture of leather and related products	511	2517	4.93	1368
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	1285	4335	3.37	937

NIC (2 Digit)	Description	No.of Supervisory & Managerial Staff	Salary of Supervisory & Managerial Staff	Salary per Supervisory & Managerial Staff (in ₹ lakhs)	Daily salary (in ₹)
17	Manufacture of paper and paper products	292	1629	5.58	1550
18	Printing and reproduction of recorded media	792	12648	15.97	4436
19	Manufacture of coke and refined petroleum products	813	23338	28.71	7974
20	Manufacture of chemicals and chemical products	2012	28598	14.21	3948
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1003	7515	7.49	2081
22	Manufacture of rubber and plastic products	3071	24623	8.02	2227
23	Manufacture of other non-metallic mineral products	1974	30360	15.38	4272
24	Manufacture of basic metals	720	7049	9.79	2720
25	Manufacture of fabricated metal products, except machinery and equipment	823	4349	5.28	1468
26	Manufacture of computer, electronic and optical products	1584	13690	8.64	2401
27	Manufacture of electrical equipment	649	4987	7.68	2134
28	Manufacture of machinery and equipment n.e.c	388	4364	11.25	3124
29	Manufacture of motor vehicles, trailers and semitrailers	49	179	3.65	1015
30	Manufacture of other transport equipment	547	7696	14.07	3908
31	Manufacture of furniture	307	1588	5.17	1437
32	Other manufacturing	914	5922	6.48	1800
33	Repair and installation of machinery and equipment	76	406	5.34	1484
38	Waste collection, treatment and disposal activities; materials recovery	11	122	11.09	3081
58	Publishing activities	287	3751	13.07	3630
	Others	3145	12084	3.84	1067
	Total	30039	263909	8.79	2440

With respect to the ‘Other employees’ category in the manufacturing industries of the state, the estimated daily salary earned by the employees was ₹ 866. And among these employees the highest 4024 was earned by those working in the industry involved in Manufacture of coke and refined petroleum products and the least (₹ 280) 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

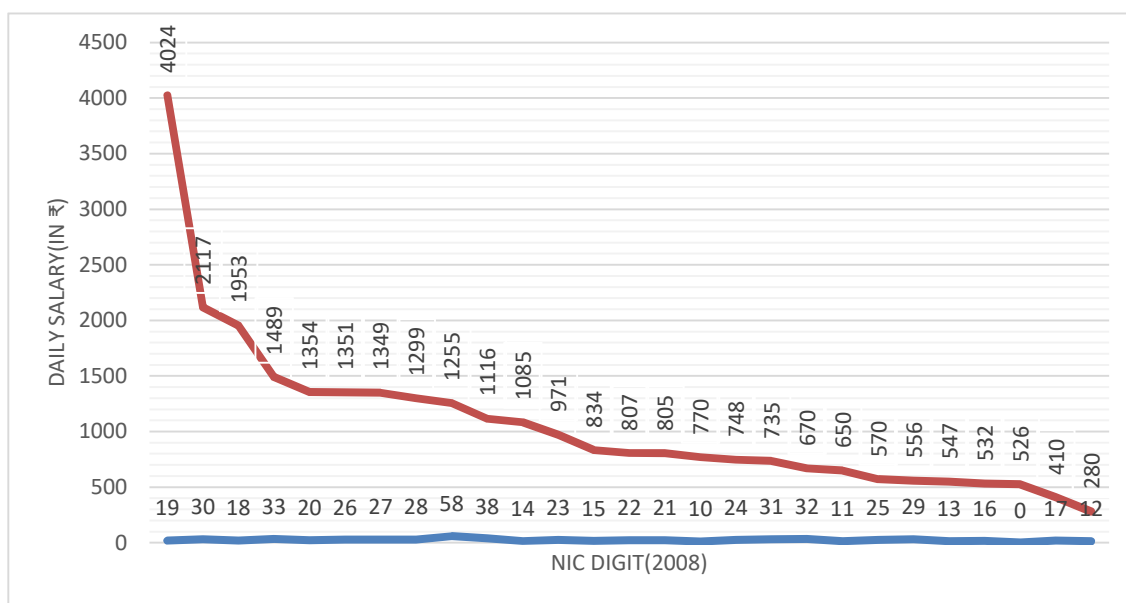


Table 2.15: Distribution of Daily salary of ‘Other employees’ category, 2021-22

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	9238	25608	2.77	770
11	Manufacture of beverages	254	594	2.34	650
12	Manufacture of tobacco products	258	260	1.01	280
13	Manufacture of textiles	4577	9009	1.97	547
14	Manufacture of wearing apparel	334	1305	3.91	1085
15	Manufacture of leather and related products	644	1934	3.00	834
16	Manufacture of wood and products of wood and cork, except furniture ;manufacture of articles of straw and plating materials	722	1384	1.92	532
17	Manufacture of paper and paper products	641	946	1.48	410
18	Printing and reproduction of recorded media	1799	12648	7.03	1953

NIC (2 Digit)	Description	No. of Other Employees	Salary of Other Employees (₹ lakhs)	Salary per other employee (in ₹ lakhs)	Daily salary (in ₹)
19	Manufacture of coke and refined petroleum products	262	3795	14.48	4024
20	Manufacture of chemicals and chemical products	1828	8912	4.88	1354
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1662	4815	2.90	805
22	Manufacture of rubber and plastic products	2561	7444	2.91	807
23	Manufacture of other non-metallic mineral products	1669	5834	3.50	971
24	Manufacture of basic metals	527	1420	2.69	748
25	Manufacture of fabricated metal products, except machinery and equipment	856	1755	2.05	570
26	Manufacture of computer, electronic and optical products	688	3345	4.86	1351
27	Manufacture of electrical equipment	485	2355	4.86	1349
28	Manufacture of machinery and equipment n.e.c	517	2418	4.68	1299
29	Manufacture of motor vehicles, trailers and semitrailers	31	62	2.00	556
30	Manufacture of other transport equipment	347	2644	7.62	2117
31	Manufacture of furniture	238	630	2.65	735
32	Other manufacturing	1360	3280	2.41	670
33	Repair and installation of machinery and equipment	78	418	5.36	1489
38	Waste collection, treatment and disposal activities; materials recovery	58	233	4.02	1116
58	Publishing activities	1250	5647	4.52	1255
	Others	5089	9643	1.89	526
	Total	37973	118338	3.12	866

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 2021-22 is 82.7 i.e., ₹ 82.7 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 (₹ 203.2 lakhs) and Kasaragod, the lowest (₹ 6.2 lakhs).

Figure 2.14: District wise Labour Productivity (Output per unit labour) of the manufacturing industries

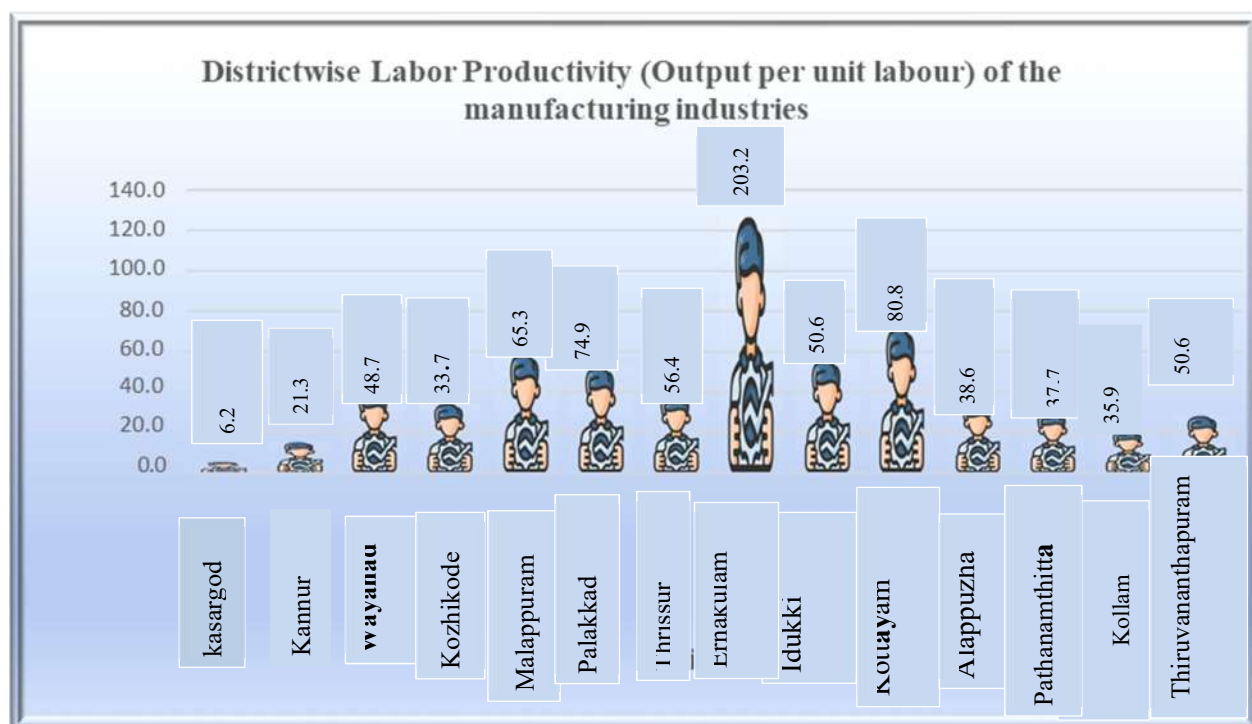


Table 2.16: District wise Labour Productivity (Output per unit labour) of the manufacturing industries

District	Total Output (In ₹ Lakhs)	No.of workers	Labour Productivity (Output per unit of labour in ₹ lakhs)
Kasaragod	61489	9970	6.2
Kannur	287964	13497	21.3
Wayanad	93523	1919	48.7
Kozhikode	455163	13491	33.7
Malappuram	485285	7434	65.3
Palakkad	1125182	15017	74.9
Thrissur	1253755	22222	56.4
Ernakulam	12799988	62983	203.2
Idukki	252969	5000	50.6
Kottayam	960257	11885	80.8
Alappuzha	990832	25645	38.6
Pathanamthitta	216953	5751	37.7
Kollam	719672	35764	20.1
Thiruvananthapuram	490841	13681	35.9
Kerala	20193873	244259	82.7

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 (₹ 2036.27 lakhs) and the lowest in Tobacco Products industry (₹ 1.04 lakhs).

Table 2.17: Labour Productivity of the industries by NIC (2008) 2-digit group

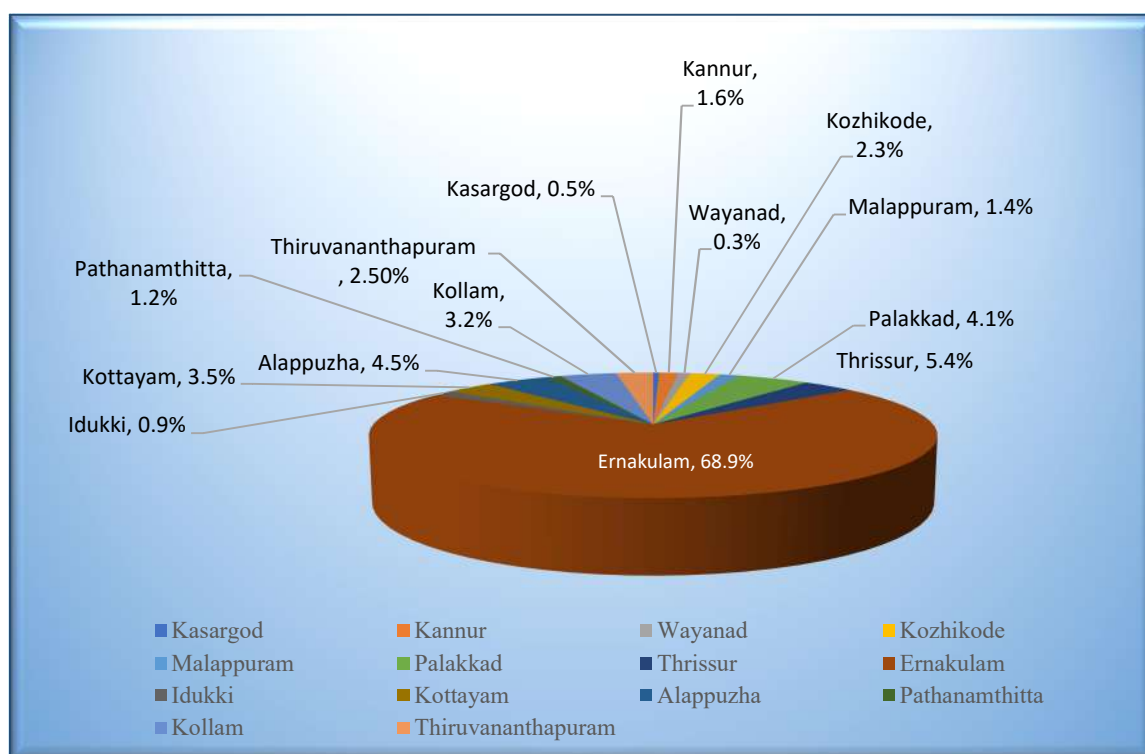
NIC (2 Digit)	Description	Total Output (in ₹ lakhs)	No.of workers	Labour Productivity (Output per unit labour in ₹ lakhs)
10	Manufacture of food products	3855691	72297	53.33
11	Manufacture of beverages	86091	2423	35.53
12	Manufacture of tobacco products	11494	11027	1.04
13	Manufacture of textiles	429383	17545	24.47
14	Manufacture of wearing apparel	129682	9026	14.37
15	Manufacture of leather and related products	199277	6173	32.28
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	306919	7883	38.93
17	Manufacture of paper and paper products	86737	2551	34
18	Printing and reproduction of recorded media	165761	3184	52.06
19	Manufacture of coke and refined petroleum products	8688784	4267	2036.27
20	Manufacture of chemicals and chemical products	1200527	9378	128.02
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	205235	5928	34.62
22	Manufacture of rubber and plastic products	1552788	23693	65.54
23	Manufacture of other non-metallic mineral products	470916	15119	31.15
24	Manufacture of basic metals	741857	4338	171.01
25	Manufacture of fabricated metal products, except machinery and equipment	303244	4642	65.33
26	Manufacture of computer, electronic and optical products	360252	6895	52.25
27	Manufacture of electrical equipment	139446	3794	36.75
28	Manufacture of machinery and equipment n.e.c	82655	2757	29.98
29	Manufacture of motor vehicles, trailers and semitrailers	4244	175	24.25
30	Manufacture of other transport equipment	355155	6497	54.66
31	Manufacture of furniture	42562	2037	20.89
32	Other manufacturing	272177	4243	64.15
33	Repair and installation of machinery and equipment	16497	809	20.39
38	Waste collection, treatment and disposal activities; materials recovery	6791	40	169.78
58	Publishing activities	50350	739	68.13
	Others	429358	16799	25.56
	Total	20193873	244259	82.67

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 2021-22 was ₹ 86,02,858 lakhs. Among all the District, Ernakulam with the highest number of factories had the highest invested capital (₹5925128lakhs) and it accounts to about 68.9% 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% -6% range. This reveals that major investment in the manufacturing sector of the state is made by the industries of Ernakulam district (see Figure 2.15, Table 2.18).

Figure 2.15: District wise share of Invested Capital, 2021-22



**Table 2.18: District wise distribution of Invested Capital of manufacturing industries,
2021-22**

District	Invested Capital (in ₹ Lakhs)	Percentage of Invested Capital
Kasaragod	41417	0.5
Kannur	134949	1.6
Wayanad	22047	0.3
Kozhikode	194724	2.3
Malappuram	117722	1.4
Palakkad	351068	4.1
Thrissur	467212	5.4
Ernakulam	5925128	68.9
Idukki	73406	0.9
Kottayam	303498	3.5
Alappuzha	385559	4.5
Pathanamthitta	98937	1.2
Kollam	271093	3.2
Thiruvananthapuram	216098	2.5
Kerala	8602858	100.0

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 ₹ 42,76,647 lakhs which accounts to about 49.71% of state's aggregate value. The least capital (₹ 2003 lakhs) was invested by industries attributed to the Manufacture of tobacco products contributing 0.02% to the aggregate.

Figure 2.16: Share of invested capital of industries by NIC (2008)-2digit categorisation

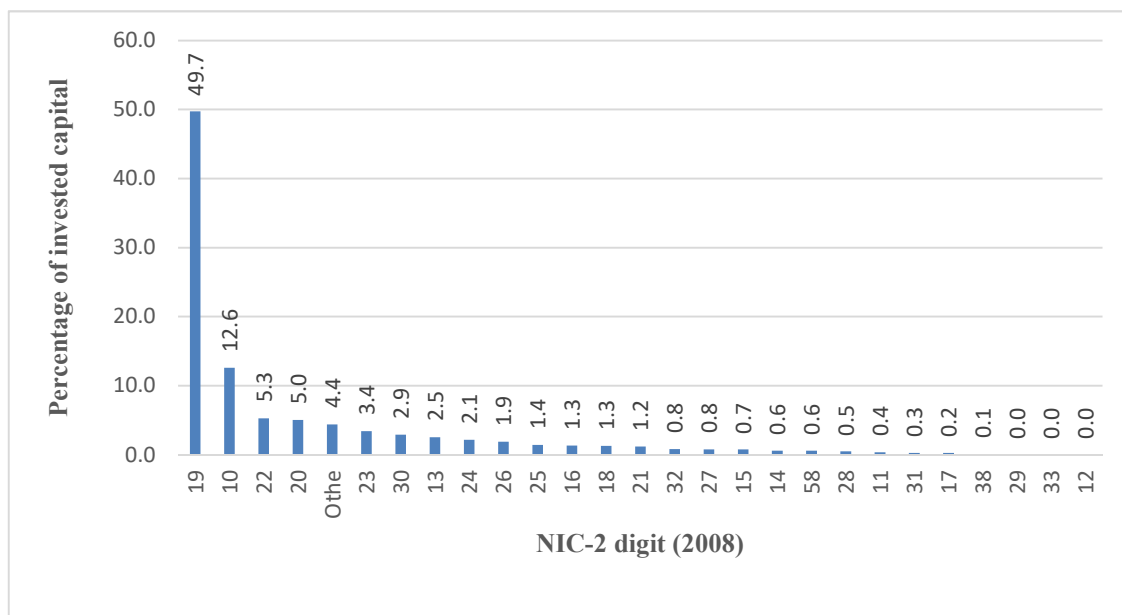


Table 2.19: Distribution of invested capital as per NIC (2008)-2-digit classification of industries

NIC (2 Digit)	Description	Invested Capital (in ₹ Lakhs)	Percentage of invested capital
10	Manufacture of food products	1084138	12.6
11	Manufacture of beverages	30661	0.36
12	Manufacture of tobacco products	2003	0.02
13	Manufacture of textiles	218655	2.54
14	Manufacture of wearing apparel	51302	0.6
15	Manufacture of leather and related products	63594	0.74
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	112536	1.31
17	Manufacture of paper and paper products	20421	0.24
18	Printing and reproduction of recorded media	109629	1.27
19	Manufacture of coke and refined petroleum products	4276647	49.71
20	Manufacture of chemicals and chemical products	431503	5.02
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	101670	1.18
22	Manufacture of rubber and plastic products	452850	5.26
23	Manufacture of other non-metallic mineral products	293871	3.42
24	Manufacture of basic metals	183348	2.13
25	Manufacture of fabricated metal products, except machinery and equipment	122418	1.42
26	Manufacture of computer, electronic and optical products	159953	1.86
27	Manufacture of electrical equipment	66454	0.77
28	Manufacture of machinery and equipment n.e.c	40326	0.47
29	Manufacture of motor vehicles, trailers and semitrailers	3538	0.04
30	Manufacture of other transport equipment	250234	2.91
31	Manufacture of furniture	22852	0.27
32	Other manufacturing	68991	0.8
33	Repair and installation of machinery and equipment	2685	0.03
38	Waste collection, treatment and disposal activities; materials recovery	5518	0.06
58	Publishing activities	49464	0.57
	Others	377597	4.39
	Total	8602858	100

Based on the organization type, industries under the category Government Company – Public shows highest invested capital (₹44,91,306 lakhs) in the fiscal year 2021-22 which covers 52.21% of the total investment in the manufacturing industries of the state.

And the least invested capital (₹46,434 lakhs, 0.54% 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 Co-operative society contributing just 1.31% of total capital invested on the manufacturing industries (₹112568 lakhs) of the state (see Figure 2.17, Table 2.20).

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

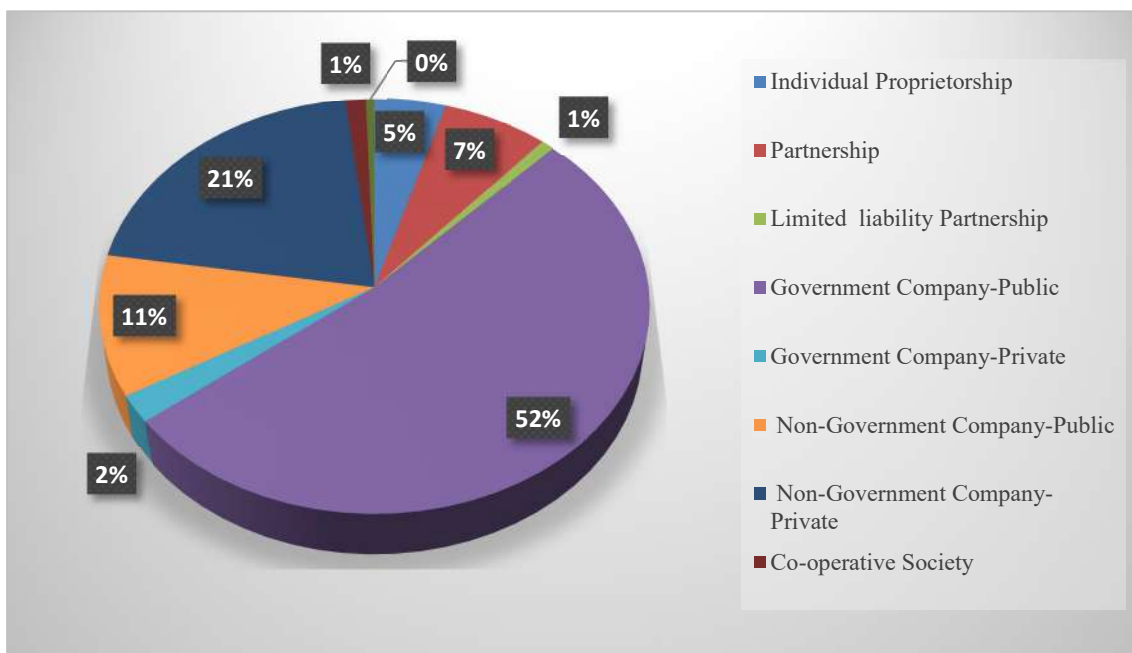
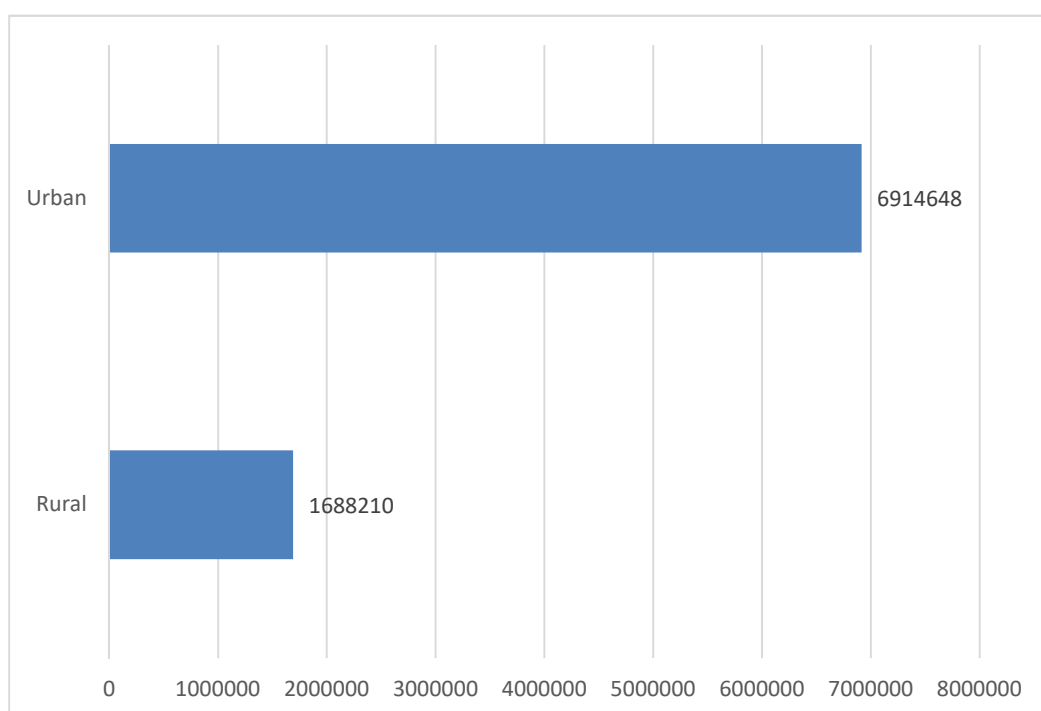


Table 2.20: Distribution of Invested capital of factory sector by type of organization

Type of Organization	Invested Capital (in ₹ Lakhs)	Percentage of invested capital
Individual Proprietorship	391106	4.55
Partnership	587942	6.83
Limited Liability Partnership	74524	0.87
Government Company - Public	4491306	52.21
Government Company - Private	184323	2.14
Non-Government Company - Public	940290	10.93
Non-Government Company - Private	1774365	20.63
Co-operative Society	112568	1.31
Others	46434	0.54
Total	8602858	100.00

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 3,234 factories in operation located in rural areas was 19.62% of the state aggregate (₹ 16,88,210 lakhs) and that of 3,505 factories located in urban areas was 80.38% (₹ 69,14,648 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 2021-22 stands at ₹ 3,18,862 lakhs which is 46.82 % decline from previous year figure (₹5,99,633 lakhs in 2020-21). Among the District the highest GFCF was recorded by factories in Ernakulam district and the least in Kasargod.

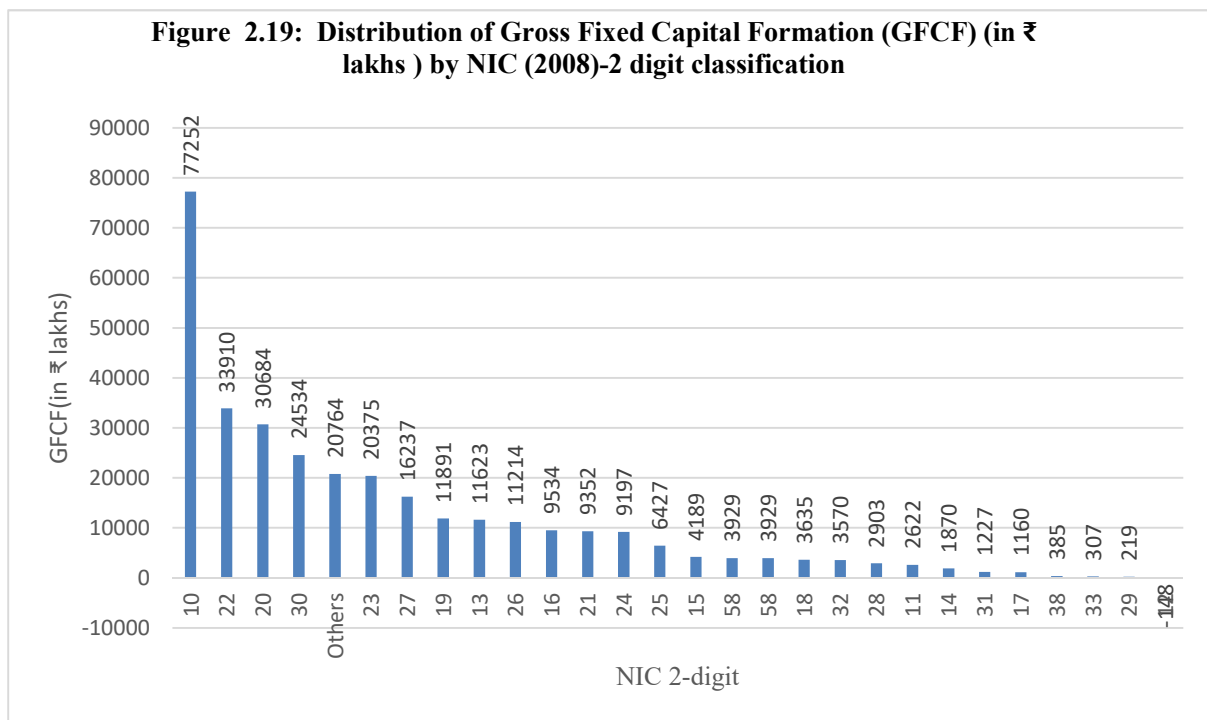
Table 2.21: District wise distribution of Gross Fixed Capital Formation (GFCF) of industries

District	Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	Percentage of GFCF
Kasargod	532	0.17
Kannur	18246	5.72
Wayanad	1973	0.62
Kozhikode	18374	5.76
Malappuram	10166	3.19
Palakkad	21527	6.75
Thrissur	22407	7.03
Ernakulam	148492	46.57
Idukki	4909	1.54
Kottayam	25826	8.10
Alappuzha	26387	8.28
Pathanamthitta	5118	1.61
Kollam	10158	3.19
Thiruvananthapuram	4747	1.49
Kerala	318862	100.00

Out of various types of industries, in 2021-22 food manufacturing industry leads with an estimated Gross Fixed Capital Formation of ₹ 77,252 lakhs. This industry had a significant increase to 2021-22, from 2020-21 when the GFCF was ₹ 58144 lakhs. Apart from this, state aggregate's 24.23 % is contributed by this industry.

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

NIC (2 Digit)	Description	GFCF (in ₹ lakhs)	Percentage of GFCF
10	Manufacture of food products	77252	24.23
11	Manufacture of beverages	2622	0.82
12	Manufacture of tobacco products	-148	-0.05
13	Manufacture of textiles	11623	3.65
14	Manufacture of wearing apparel	1870	0.59
15	Manufacture of leather and related products	4189	1.31
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	9534	2.99
17	Manufacture of paper and paper products	1160	0.36
18	Printing and reproduction of recorded media	3635	1.14
19	Manufacture of coke and refined petroleum products	11891	3.73
20	Manufacture of chemicals and chemical products	30684	9.62
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	9352	2.93
22	Manufacture of rubber and plastic products	33910	10.63
23	Manufacture of other non-metallic mineral products	20375	6.39
24	Manufacture of basic metals	9197	2.88
25	Manufacture of fabricated metal products, except machinery and equipment	6427	2.02
26	Manufacture of computer, electronic and optical products	11214	3.52
27	Manufacture of electrical equipment	16237	5.09
28	Manufacture of machinery and equipment n.e.c	2903	0.91
29	Manufacture of motor vehicles, trailers and semitrailers	219	0.07
30	Manufacture of other transport equipment	24534	7.69
31	Manufacture of furniture	1227	0.38
32	Other manufacturing	3570	1.12
33	Repair and installation of machinery and equipment	307	0.10
38	Waste collection, treatment and disposal activities; materials recovery	385	0.12
58	Publishing activities	3929	1.23
	Others	20764	6.51
	Total	318862	100.00

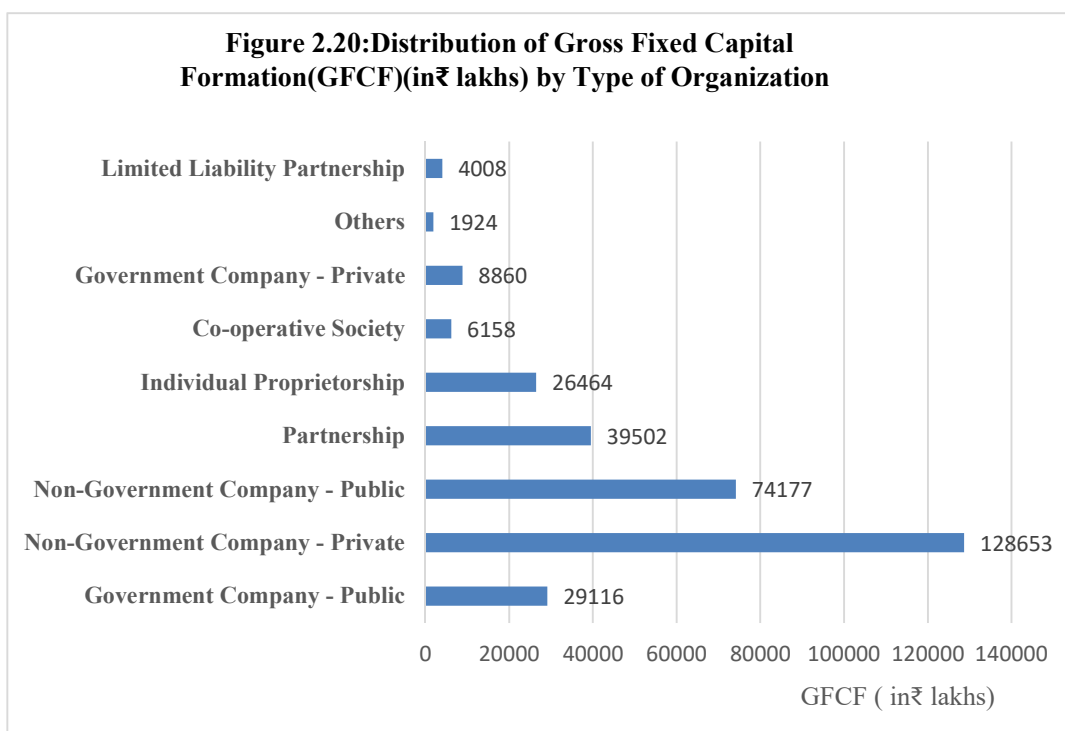


Considering the GFCF of different types of organization, the highest estimated value was attributed to 'Non-Government Company - Private' industries (₹1,28,653lakhs) which has a share of 40.35% of state aggregate. Limited Liability Partnership industries recorded the least with an estimated value of ₹ 4008 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
Government Company - Public	29116	9.13
Non-Government Company - Private	128653	40.35
Non-Government Company - Public	74177	23.26
Partnership	39502	12.39
Individual Proprietorship	26464	8.30
Co-operative Society	6158	1.93
Government Company - Private	8860	2.78
Others	1924	0.60
Limited Liability Partnership	4008	1.26
Total	318862	100

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

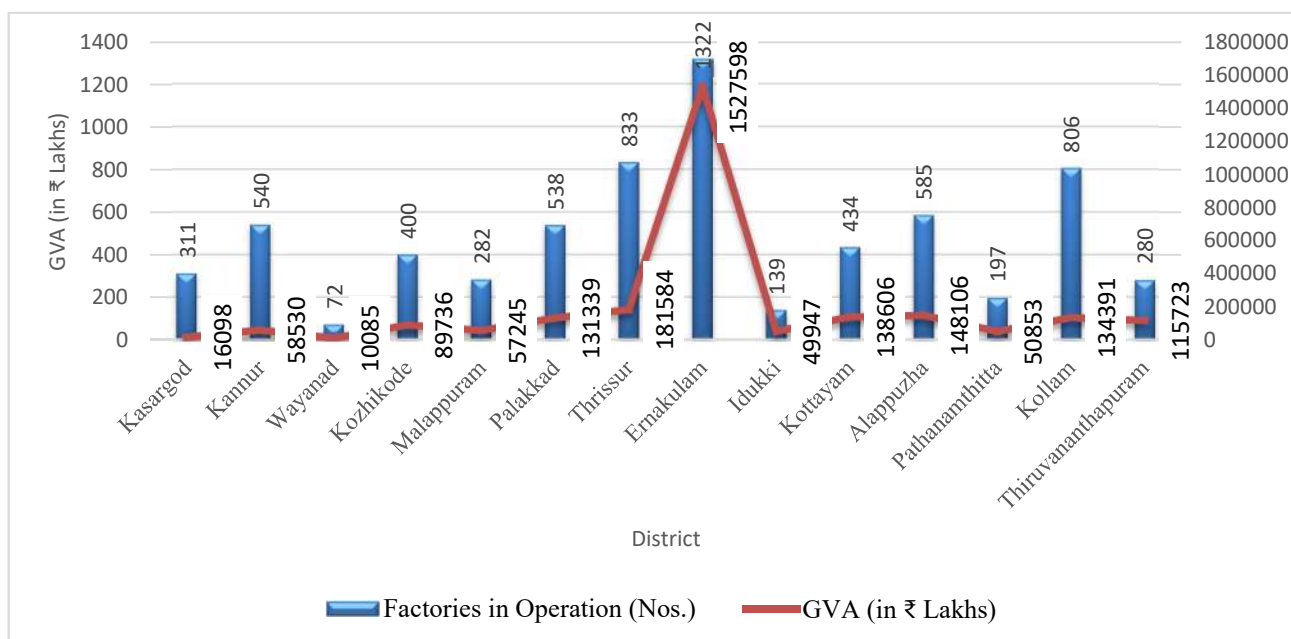


2.4 Gross Value Added (GVA)

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 6739 factories in operation, the estimated Gross Value Added in fiscal year 2021-22 at current prices was ₹ 27,09,841 lakhs which exhibits an increase of 15.5% from the previous year (₹23,46,193). That is GVA per factory in operation slightly increased to 402.1 from 337.2 (in ₹ lakhs). Also, the district wise estimates show that Ernakulam with highest number of factories created highest GVA of ₹ 15,27,598 lakhs and second highest by the industries in Thrissur (₹1,81,584lakhs). It is to be noted that while industries in Ernakulam contributes 56.4 % share of aggregate GVA industries in Thrissur contributes only 6.7%. 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 (₹ 1155.5 lakhs), Thiruvananthapuram (₹ 413.3 lakhs) and Idukki (₹ 359.3 lakhs). It's also worth notable that Wayanad with least number of factories in operation has a fair figure of GVA per factory in operation, ₹ 140.1 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	311	16098	0.6	51.8
Kannur	540	58530	2.2	108.4
Wayanad	72	10085	0.4	140.1
Kozhikode	400	89736	3.3	224.3
Malappuram	282	57245	2.1	203.0
Palakkad	538	131339	4.8	244.1
Thrissur	833	181584	6.7	218.0
Ernakulam	1322	1527598	56.4	1155.5
Idukki	139	49947	1.8	359.3
Kottayam	434	138606	5.1	319.4
Alappuzha	585	148106	5.5	253.2
Pathanamthitta	197	50853	1.9	258.1
Kollam	806	134391	5.0	166.7
Thiruvananthapuram	280	115723	4.3	413.3
Kerala	6739	2709841	100.0	402.1

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 (24.9 %), Food Products (16.8 %), Chemicals and chemical products (9.5 %) and had Rubber and Plastic Products (7.7 %).

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

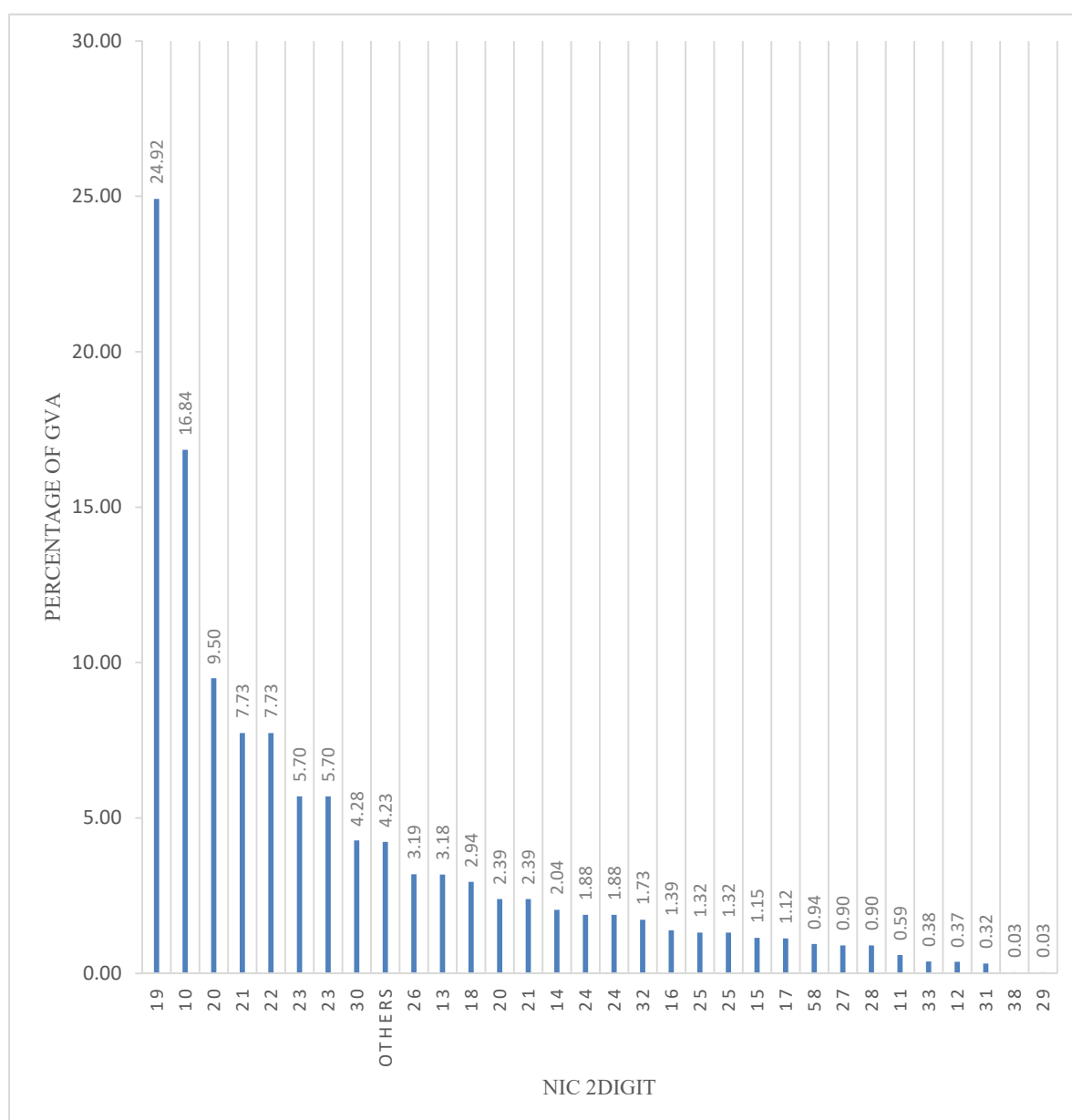


Table 2.25: Distribution of GVA across manufacturing industries of Kerala by NIC (2008)-**2-digit group of industries**

NIC (2-digit)	Description	GVA (in ₹ Lakhs)	Percentage
10	Manufacture of food products	456431	16.8
11	Manufacture of beverages	16049	0.6
12	Manufacture of tobacco products	10078	0.4
13	Manufacture of textiles	86160	3.2
14	Manufacture of wearing apparel	55380	2
15	Manufacture of leather and related products	31044	1.1
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	37685	1.4
17	Manufacture of paper and paper products	30392	1.1
18	Printing and reproduction of recorded media	79753	2.9
19	Manufacture of coke and refined petroleum products	675290	24.9
20	Manufacture of chemicals and chemical products	257301	9.5
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	64890	2.4
22	Manufacture of rubber and plastic products	209514	7.7
23	Manufacture of other non-metallic mineral products	154441	5.7
24	Manufacture of basic metals	51061	1.9
25	Manufacture of fabricated metal products, except machinery and equipment	35659	1.3
26	Manufacture of computer, electronic and optical products	86417	3.2
27	Manufacture of electrical equipment	24459	0.9
28	Manufacture of machinery and equipment n.e.c	24410	0.9
29	Manufacture of motor vehicles, trailers and - trailers	841	0
30	Manufacture of other transport equipment	115861	4.3
31	Manufacture of furniture	8631	0.3
32	Other manufacturing	46827	1.7
33	Repair and installation of machinery and equipment	10328	0.4
38	Waste collection, treatment and disposal activities; materials recovery	862	0
58	Publishing activities	25560	0.9
	Others	114517	4.2
	Total	2709841	100

Region wise, the major part of the GVA of the manufacturing sector is contributed by the industries in the urban area with 66.67 % share. In addition, while considering the industries based on organization type, the highest estimated value was attributed to 'Non-Government Company - Private' industries (₹7,90,132lakhs) which has a share of 45.71% of state aggregate

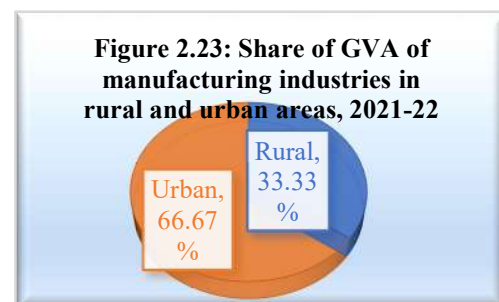
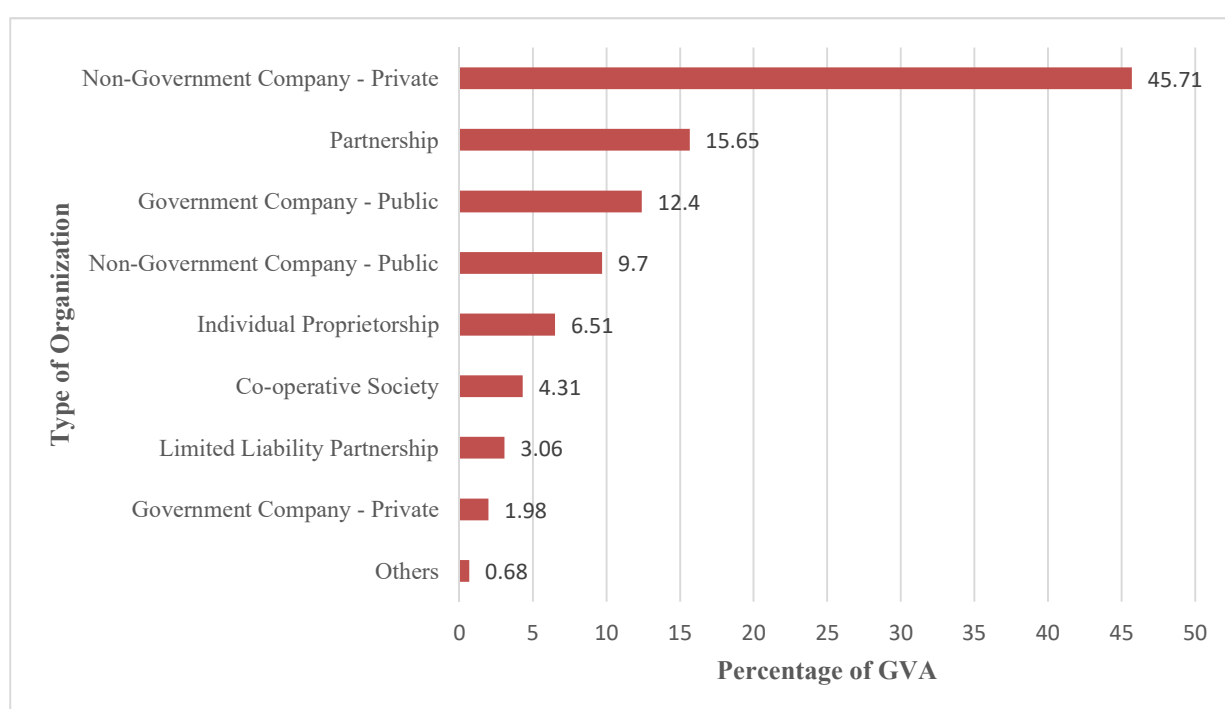


Figure 2.24: Distribution of GVA across manufacturing industries by type of Organization



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 6739 operating factories was ₹ 2,01,93,873 lakhs and these factories had an input worth ₹ 1,74,84,032 lakhs. Considering the state aggregate the estimated ratio of output to input was 1.15. Among the District the output-input ratio of industries is highest in Kasargod with an estimate of 1.35. 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, 2021-22

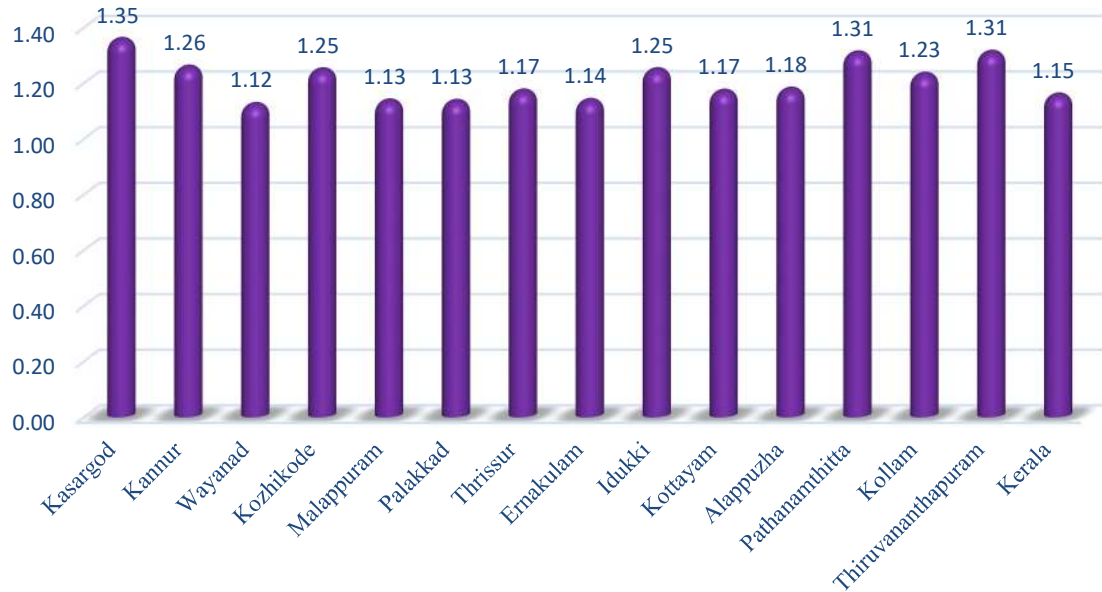


Table 2.26: District wise distribution of Output, Input and Output to Input Ratio

District	Total Output (in ₹ lakhs)	Total Input (in ₹ lakhs)	Output-Input Ratio
Kasargod	61489	45391	1.35
Kannur	287964	229434	1.26
Wayanad	93523	83438	1.12
Kozhikode	455163	365427	1.25
Malappuram	485285	428040	1.13
Palakkad	1125182	993843	1.13
Thrissur	1253755	1072171	1.17
Ernakulam	12799988	11272390	1.14
Idukki	252969	203022	1.25
Kottayam	960257	821651	1.17
Alappuzha	990832	842726	1.18
Pathanamthitta	216953	166100	1.31
Kollam	719672	585281	1.23
Thiruvananthapuram	490841	375118	1.31
Kerala	20193873	17484032	1.15

When different category of industries based on economic activities are considered, the output to input ratio of Tobacco products manufacturing industries accounts to 8.12 which implies that the value output created was eight times the input. The next highest ratio is recorded by industry attributed to Publishing Activities which has the ratio value of 2.67 which signifies that the value of output is double the input. 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

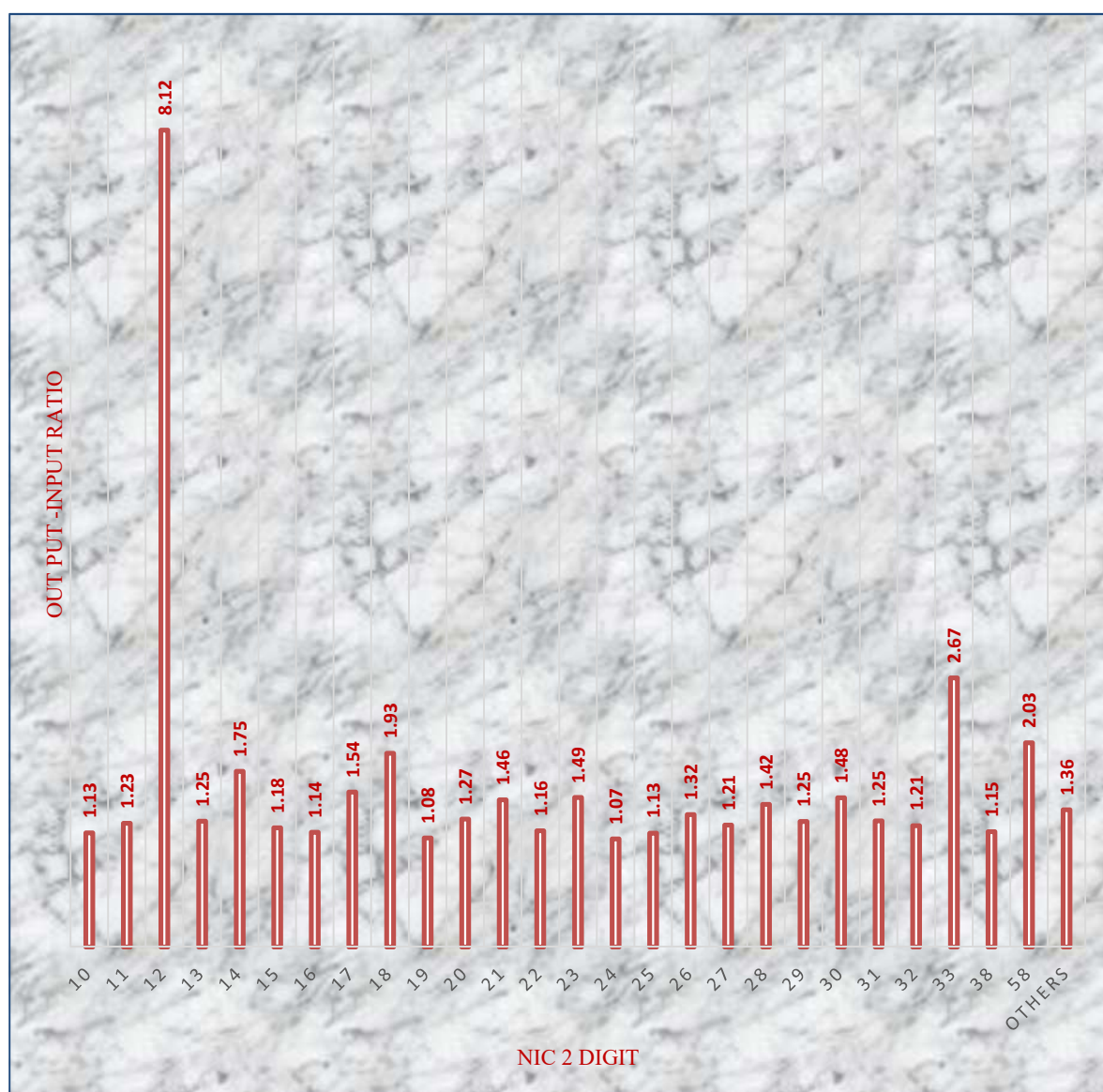


Table 2.27: Output to Input Ratio of factory sector by NIC (2008)-2-digit group of industries

NIC (2 Digit)	Description	Total Output (in ₹ lakhs)	Total Input (in ₹lakhs)	Output- Input ratio
10	Manufacture of food products	3855691	3399260	1.13
11	Manufacture of beverages	86091	70042	1.23
12	Manufacture of tobacco products	11494	1416	8.12
13	Manufacture of textiles	429383	343223	1.25
14	Manufacture of wearing apparel	129682	74302	1.75
15	Manufacture of leather and related products	199277	168233	1.18
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	306919	269234	1.14
17	Manufacture of paper and paper products	86737	56345	1.54
18	Printing and reproduction of recorded media	165761	86008	1.93
19	Manufacture of coke and refined petroleum products	8688784	8013494	1.08
20	Manufacture of chemicals and chemical products	1200527	943226	1.27
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	205235	140345	1.46
22	Manufacture of rubber and plastic products	1552788	1343274	1.16
23	Manufacture of other non-metallic mineral products	470916	316475	1.49
24	Manufacture of basic metals	741857	690796	1.07
25	Manufacture of fabricated metal products, except machinery and equipment	303244	267585	1.13
26	Manufacture of computer, electronic and optical products	360252	273835	1.32
27	Manufacture of electrical equipment	139446	114987	1.21
28	Manufacture of machinery and equipment n.e.c	82655	58245	1.42
29	Manufacture of motor vehicles, trailers and semitrailers	4244	3403	1.25
30	Manufacture of other transport equipment	355155	239294	1.48
31	Manufacture of furniture	42562	33931	1.25
32	Other manufacturing	272177	225350	1.21
33	Repair and installation of machinery and equipment	16497	6169	2.67
38	Waste collection, treatment and disposal activities; materials recovery	6791	5929	1.15
58	Publishing activities	50350	24790	2.03
	Others	429358	314841	1.36
	Total	20193873	17484032	1.15

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 2021-22 was ₹ 20,88,720 lakhs and the profit obtained was ₹ 9,79,373 lakhs. Region wise, rural industries share 35% of state's net income and 32.78 % of profit.

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

Characteristic	Rural	Urban
Net Income (in ₹ Lakhs)	736556(35%)	1352164(65%)
Profit (in ₹ Lakhs)	321074(32.78%)	658299(67.21)

The Ernakulam district with highest number of manufacturing industries share, the largest part of the state's net income (56.31 %) and profit (76.77 %).

Table 2.29: District wise distribution of Net income and Profit

District	Net Income (in ₹ lakhs)	Profit (in ₹ lakhs)
Kasaragod	12532(.60%)	2311(0.24%)
Kannur	42726(2.05%)	6309(0.64%)
Wayanad	7450(0.36)	1331(0.14%)
Kozhikode	70652(3.38)	14228(1.45%)
Malappuram	44632(2.14%)	13918(1.42%)
Palakkad	101208(4.85%)	38513(3.93%)
Thrissur	132666(6.35%)	43373(4.43%)
Ernakulam	1176162(56.31%)	751881(76.77%)
Idukki	43190(2.07%)	20279(2.07%)
Kottayam	101791(4.87%)	11112(1.13%)
Alappuzha	116535(5.58%)	29144(2.98%)
Pathanamthitta	38425(1.84%)	15884(1.62%)
Kollam	107497(5.15%)	27799(2.84%)
Thiruvananthapuram	93254(4.46%)	3291(0.34%)
Kerala	2088720	979373

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 (₹4,80,690 lakhs), Manufacture of food products and (₹3,62,743 lakhs), Manufacture of chemicals and chemical products (₹2,08,206 lakhs).

Figure 2.27: Top three industries with highest share of income

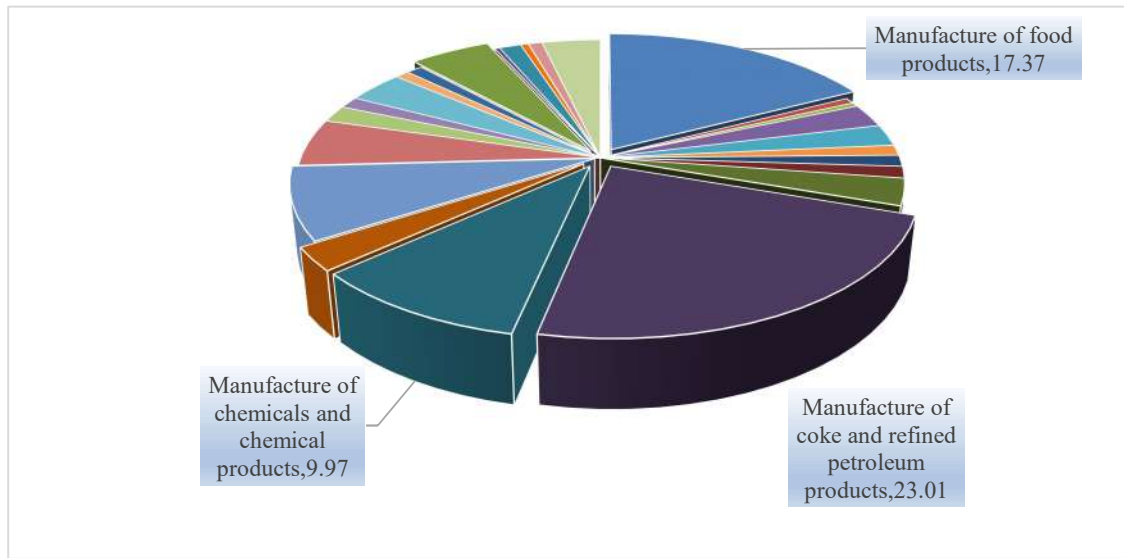


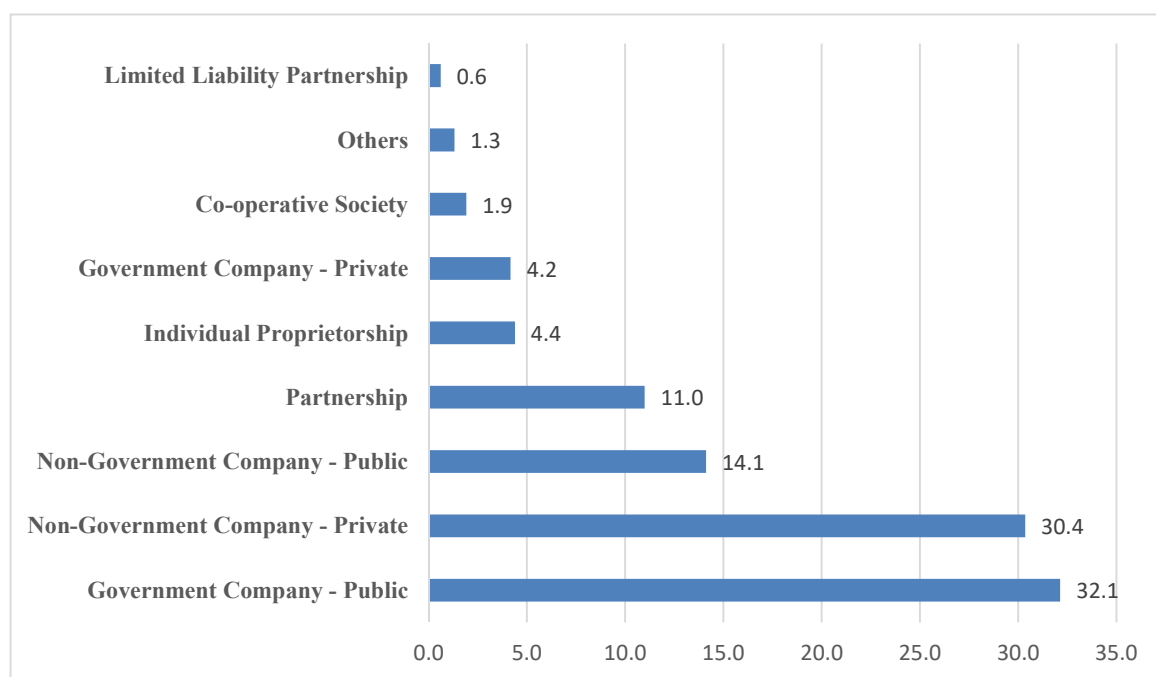
Table 2.30: Distribution of net income by NIC (2008) -2-digit group of industries

NIC (2 Digit)	Description	Net Income (in ₹ lakhs)	Percentage of income
10	Manufacture of food products	362743	17.4
11	Manufacture of beverages	13321	0.6
12	Manufacture of tobacco products	9789	0.5
13	Manufacture of textiles	54988	2.6
14	Manufacture of wearing apparel	50781	2.4
15	Manufacture of leather and related products	24513	1.2
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	26514	1.3
17	Manufacture of paper and paper products	27690	1.3
18	Printing and reproduction of recorded media	62677	3.0
19	Manufacture of coke and refined petroleum products	480690	23.0
20	Manufacture of chemicals and chemical products	208206	10.0
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	55594	2.7
22	Manufacture of rubber and plastic products	170710	8.2
23	Manufacture of other non-metallic mineral products	112032	5.4

NIC (2 Digit)	Description	Net Income (in ₹ lakhs)	Percentage of income
24	Manufacture of basic metals	39860	1.9
25	Manufacture of fabricated metal products, except machinery and equipment	27357	1.3
26	Manufacture of computer, electronic and optical products	74982	3.6
27	Manufacture of electrical equipment	18445	0.9
28	Manufacture of machinery and equipment n.e.c	21488	1.0
29	Manufacture of motor vehicles, trailers and semitrailers	545	0.0
30	Manufacture of other transport equipment	105915	5.1
31	Manufacture of furniture	6628	0.3
32	Other manufacturing	28430	1.4
33	Repair and installation of machinery and equipment	10003	0.5
38	Waste collection, treatment and disposal activities; materials recovery	280	0.0
58	Publishing activities	18182	0.9
	Others	76357	3.7
	Total	2088720	100.0

It may be observed that based on organization type the highest income was generated by Government Company - Public industries with net income ₹ 6,71,218 lakhs which marks a share of 32.14 % of the state's aggregate income. It's also noteworthy that about 77% 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

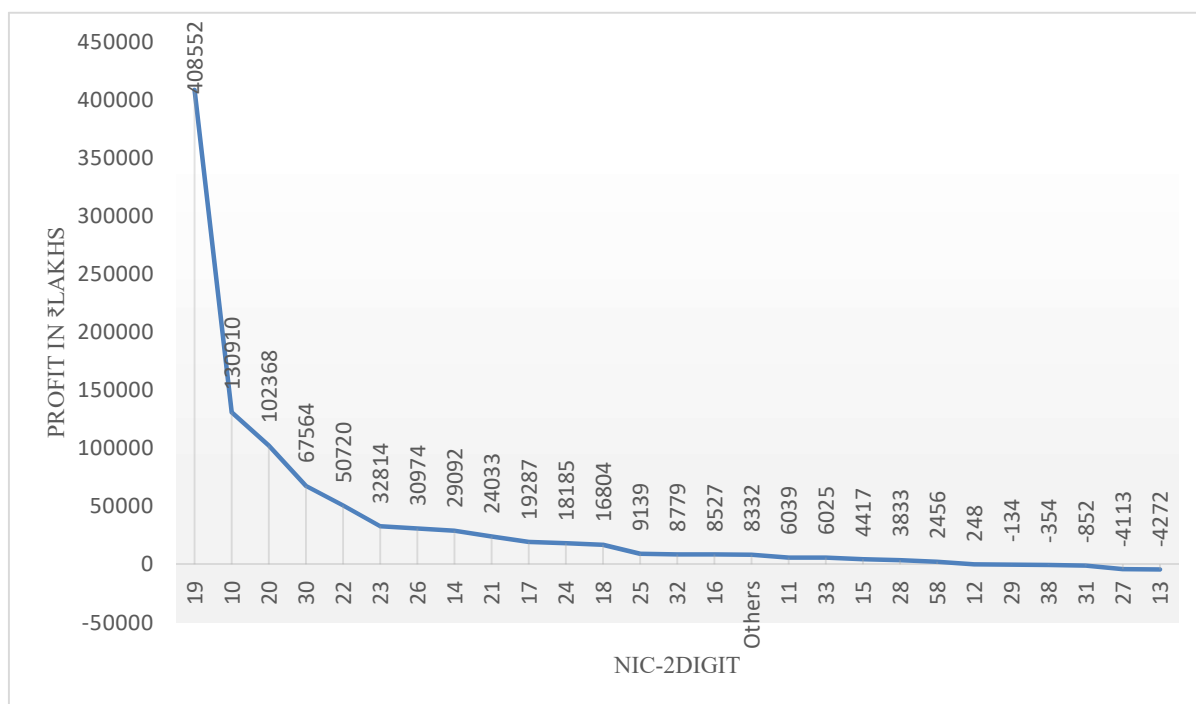


Analysing the profit earned by the industries in the report year, the survey findings reveal that out of the total profit of ₹ 9,79,373 lakhs earned by the manufacturing industries, the highest is earned by coke and refined petroleum products industries (₹4,08,552 lakhs) followed by Food Products industries (₹1,30,910 lakhs). Apart from that five industries 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	130910
11	Manufacture of beverages	6039
12	Manufacture of tobacco products	248
13	Manufacture of textiles	-4272
14	Manufacture of wearing apparel	29092
15	Manufacture of leather and related products	4417
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	8527
17	Manufacture of paper and paper products	19287
18	Printing and reproduction of recorded media	16804
19	Manufacture of coke and refined petroleum products	408552
20	Manufacture of chemicals and chemical products	102368
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	24033
22	Manufacture of rubber and plastic products	50720
23	Manufacture of other non-metallic mineral products	32814
24	Manufacture of basic metals	18185
25	Manufacture of fabricated metal products, except machinery and equipment	9139
26	Manufacture of computer, electronic and optical products	30974
27	Manufacture of electrical equipment	-4113
28	Manufacture of machinery and equipment n.e.c	3833
29	Manufacture of motor vehicles, trailers and semitrailers	-134
30	Manufacture of other transport equipment	67564
31	Manufacture of furniture	-852
32	Other manufacturing	8779
33	Repair and installation of machinery and equipment	6025
38	Waste collection, treatment and disposal activities; materials recovery	-354
58	Publishing activities	2456
	Others	8332
	Total	979373

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

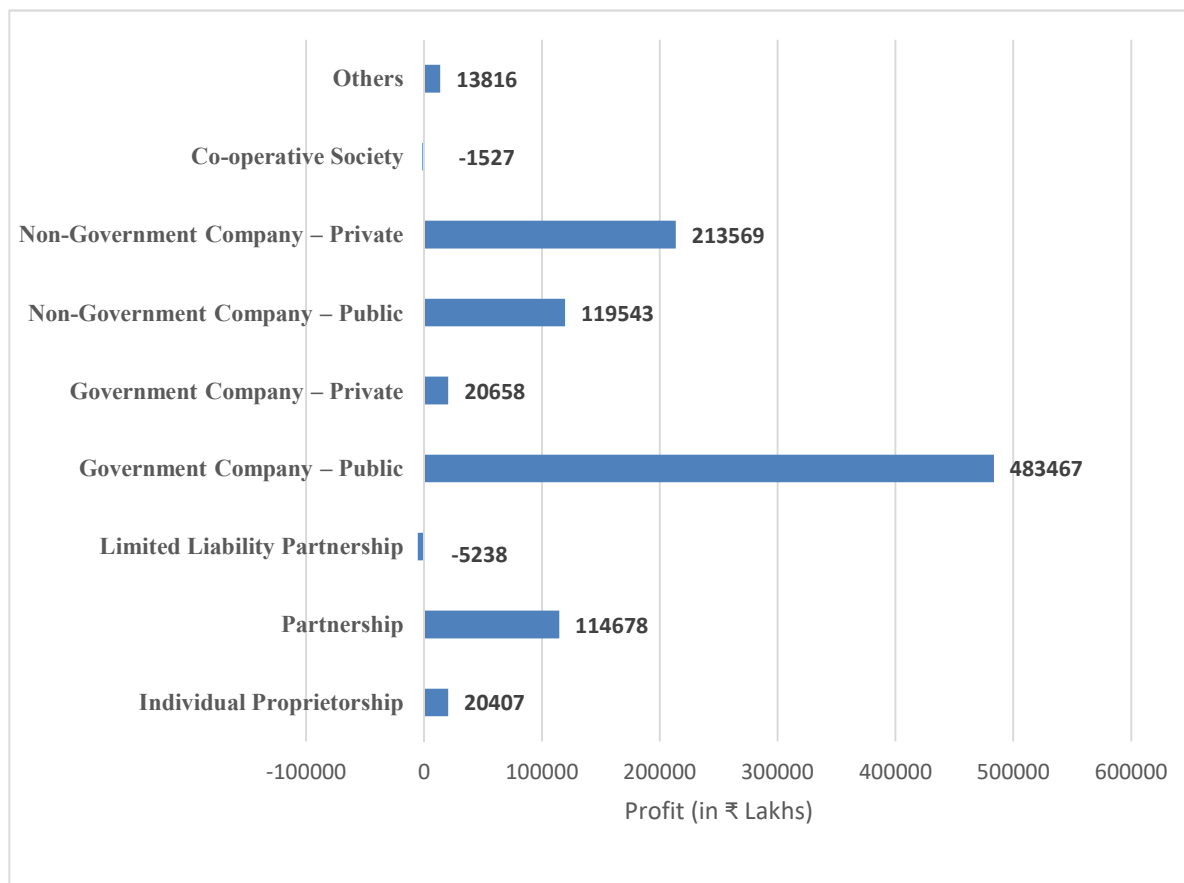


Organizational category wise, in the fiscal year 2021-22 the highest profit was recorded by Government Company – Public (₹4,83,467 lakhs) industries.

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

Type of Organization	Profit (in ₹ Lakhs)
Individual Proprietorship	20407
Partnership	114678
Limited Liability Partnership	-5238
Government Company – Public	483467
Government Company – Private	20658
Non-Government Company – Public	119543
Non-Government Company – Private	213569
Co-operative Society	-1527
Others	13816
Total	979373

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 ₹ 1064438 lakhs.

3.1 Coal

The total coal consumption in Kerala amounts to 209 tons, with a total value of ₹ 1,815,367 thousand. This represents the aggregate coal consumption in the state for the specified period .Out of the total coal consumption by industries in 2021-'22 only seven group of industries as per NIC(2008) 2-digit classification coal consumed .The major industries were chemical and chemical products (82 ton, Manufacture of other non metallic mineral products (64 tons), Manufacture of food products (23 tons), Manufacture of Rubber and plastic products (21 tones), Manufacture of basic metals (14 ton), Manufacture of



beverages (3 tons), Manufacture of fabricated metal products, except machinery and equipment(2 tons). These industries were located in-Kozhikkode, wayanad, Malappuram, Palakkad, Thrissur, Ernakulam, Alappuzha, Kollam.

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

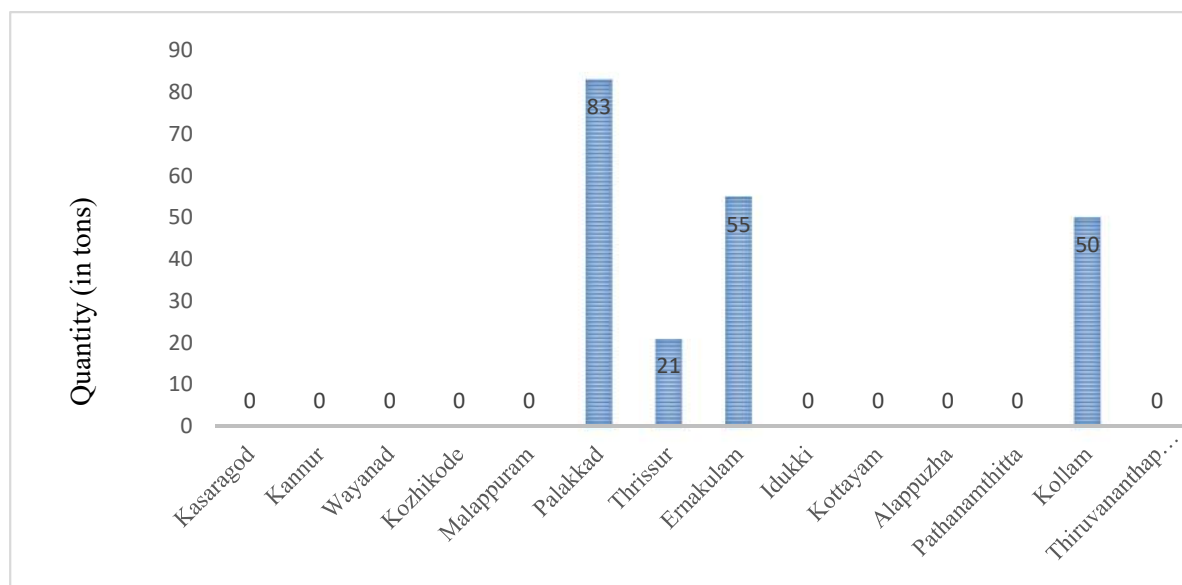


Table 3.1: District wise distribution of Coal consumed and its value (in ₹ thousands)

District	Coal Quantity (Tone)	Coal Consumed (Value)	Percentage of coal consumed
Kasaragod	0	0	0.00
Kannur	0	0	0.00
Wayanad	0	43	0.00
Kozhikode	0	4391	0.00
Malappuram	0	397	0.00
Palakkad	83	751766	39.71
Thrissur	21	205997	10.05
Ernakulam	55	400720	26.32
Idukki	0	0	0.00
Kottayam	0	0	0.00
Alappuzha	0	873	0.00
Pathanamthitta	0	0	0.00
Kollam	50	451180	23.92
Thiruvananthapuram	0	0	0.00
Kerala	209	1815367	100.00

Figure 3.2 consumption of Coal (in tons) in NIC- 2 digit category of industries during the FY 2021-`22

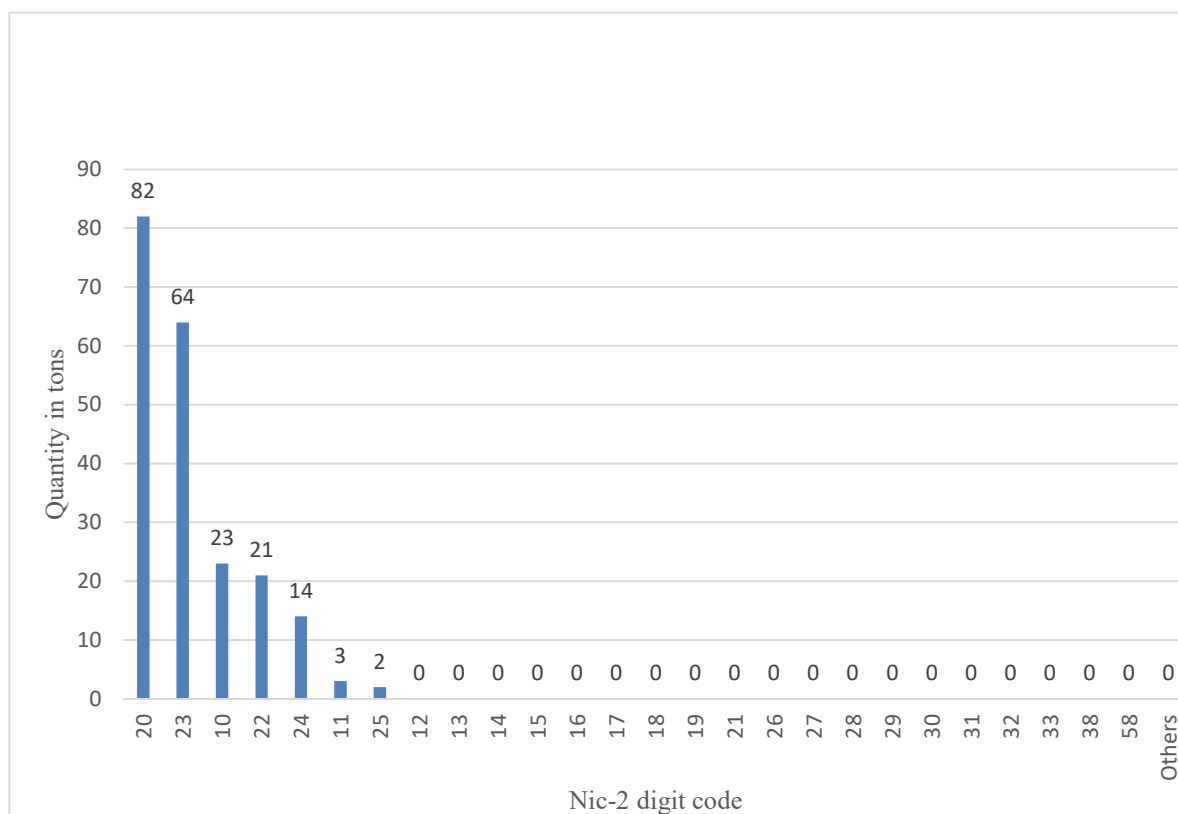


Table 3.2: Consumption of Coal (in tons) and its value in NIC- 2 digit category of industries during FY:2021-22

NIC (2 Digit)	Description	Coal		Percentage of Coal consumed
		Quantity (Tone)	Consumed (Value)	
10	Manufacture of food products	23	143542	11.00
11	Manufacture of beverages	3	30923	1.44
12	Manufacture of tobacco products	0	0	0.00
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

NIC (2 Digit)	Description	Coal		Percentage of Coal consumed
		Quantity (Tone)	Consumed (Value)	
19	Manufacture of coke and refined petroleum products	0	0	0.00
20	Manufacture of chemicals and chemical products	82	711257	39.23
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	0	0	0.00
22	Manufacture of rubber and plastic products	21	206347	10.05
23	Manufacture of other non-metallic mineral products	64	495068	30.62
24	Manufacture of basic metals	14	197987	6.70
25	Manufacture of fabricated metal products, except machinery and equipment	2	30243	0.96
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	0	0.00
29	Manufacture of motor vehicles, trailers and semitrailers	0	0	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	0	0.00
58	Publishing activities	0	0	0.00
	Others	0	0	0.00
	Total	209	1815367	100.00

3.2 Electricity

The total electricity consumption of the manufacturing industries of state is 32,15,614 KWH and its estimated value is ₹ 2,33,64,297(in thousands). Out of total consumption of electricity by the manufacturing industries in 2021-'22 industries sector in Ernakulam district accounted for the largest share (40.85%, 13,13,545 KWH), followed by Palakkad (19.11 % ,6,14,574 KWH).

Figure 3.3: District wise consumption of electricity (KWH) in manufacturing industries in Kerala during FY 2021-'22

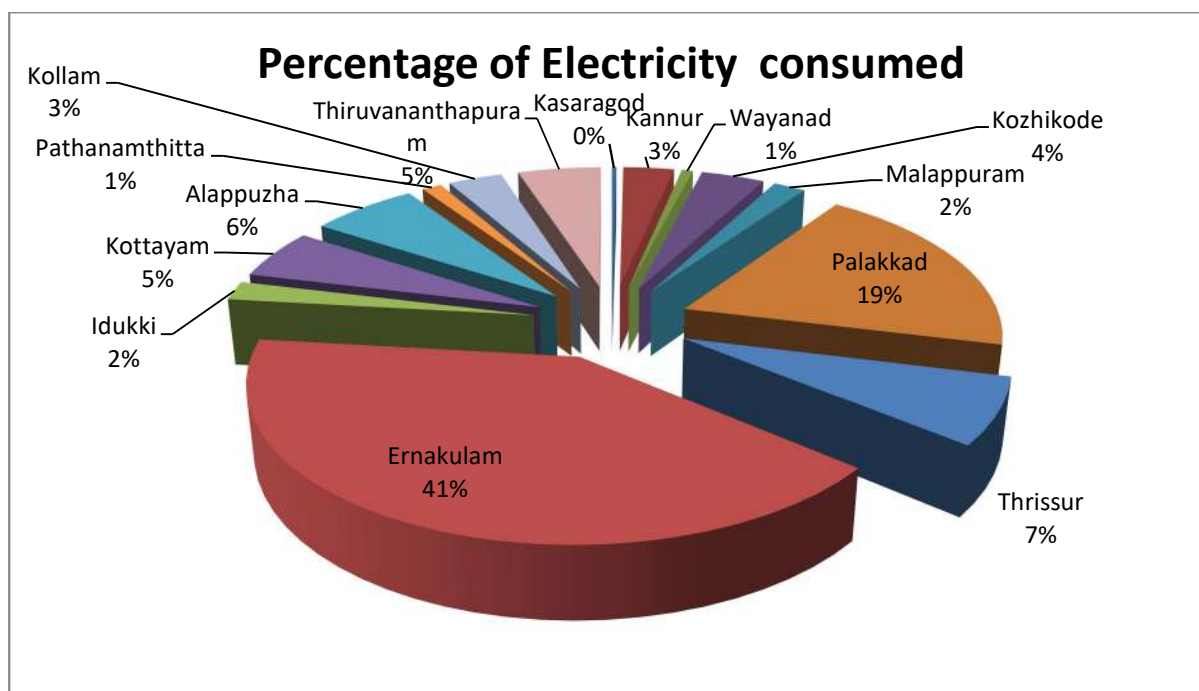


Table 3.3: District wise consumption of electricity (KWH) in manufacturing industries in Kerala during FY : 2021'22

District	Electricity Purchased Quantity (KWH)	Electricity Purchased (Value)	Percentage of Electricity consumed
Kasaragod	8680	63982	0.27
Kannur	98395	736943	3.06
Wayanad	21654	159606	0.67
Kozhikode	122537	872863	3.81
Malappuram	62411	468173	1.94
Palakkad	614574	4388176	19.11
Thrissur	227123	1562110	7.06
Ernakulam	1313545	9431827	40.85
Idukki	65109	480704	2.02
Kottayam	172319	1310044	5.36
Alappuzha	205753	1544266	6.40
Pathanamthitta	37902	317621	1.18
Kollam	104514	873402	3.25
Thiruvananthapuram	161098	1154580	5.01
Kerala	3215614	23364297	100.00

Analyzing the consumption of electricity in NIC-(2008)- 2 digit category of industries it was observed that manufacture of basic metals (18.10 %,5,82,148 KWH) is maximum followed by food product industry (16.47 %, 5,29,603 KWH) and the least is estimated in tobacco product industries (.01 %,207 KWH)

Figure 3.4: Consumption of Electricity (in KWH) NIC-(2008)- 2 digit category of industries in Kerala during the year 2021-22

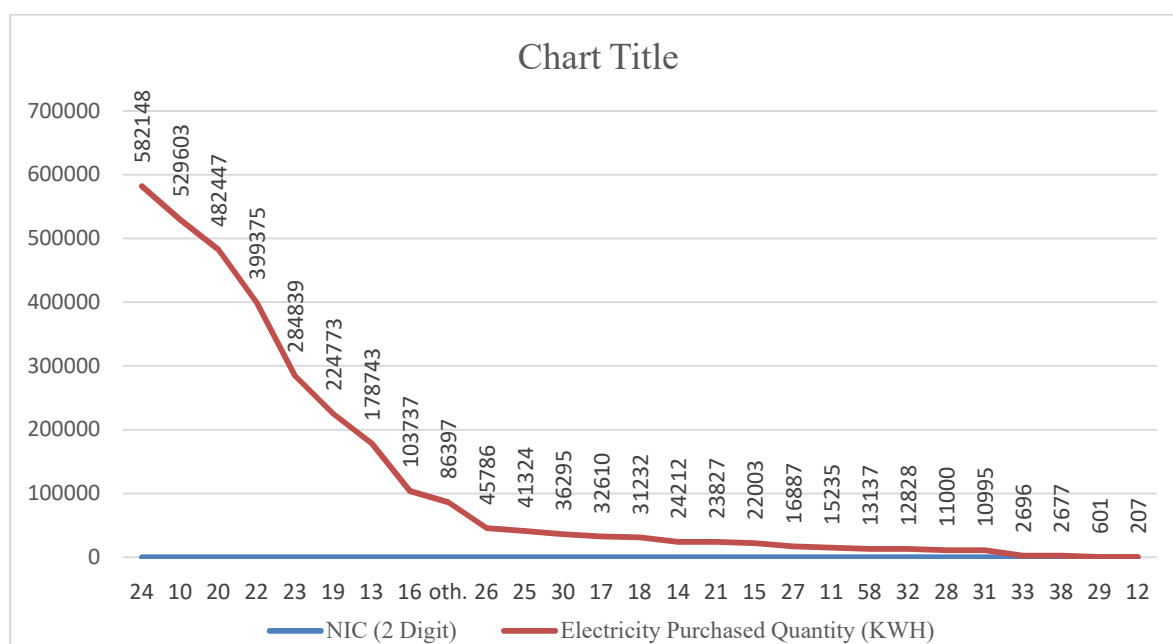


Table 3.4: Consumption and value of electricity purchased in factory sector by NIC(2008) 2 –digit group of industries of Kerala during FY :2021-22

NIC (2 Digit)	Description	Quantity (KWH)	(Value)	Percentage of consumption of electricity
10	Manufacture of food products	529603	4157604	16.47
11	Manufacture of beverages	15235	111305	0.47
12	Manufacture of tobacco products	207	1359	0.01
13	Manufacture of textiles	178743	1349506	5.56
14	Manufacture of wearing apparel	24212	174189	0.75
15	Manufacture of leather and related products	22003	163045	0.68
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	103737	889407	3.23
17	Manufacture of paper and paper products	32610	235367	1.01
18	Printing and reproduction of recorded media	31232	236434	0.97

NIC (2 Digit)	Description	Quantity (KWH)	(Value)	Percentage of consumption of electricity
19	Manufacture of coke and refined petroleum products	224773	1604086	6.99
20	Manufacture of chemicals and chemical products	482447	3230385	15.00
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	23827	194629	0.74
22	Manufacture of rubber and plastic products	399375	2856283	12.42
23	Manufacture of other non-metallic mineral products	284839	2096670	8.86
24	Manufacture of basic metals	582148	3966697	18.10
25	Manufacture of fabricated metal products, except machinery and equipment	41324	298282	1.29
26	Manufacture of computer, electronic and optical products	45786	329091	1.42
27	Manufacture of electrical equipment	16887	127507	0.53
28	Manufacture of machinery and equipment n.e.c	11000	79725	0.34
29	Manufacture of motor vehicles, trailers and semitrailers	601	4485	0.02
30	Manufacture of other transport equipment	36295	250248	1.13
31	Manufacture of furniture	10995	83178	0.34
32	Other manufacturing	12828	96438	0.40
33	Repair and installation of machinery and equipment	2696	21607	0.08
38	Waste collection, treatment and disposal activities; materials recovery	2677	20357	0.08
58	Publishing activities	13137	96750	0.41
	Others	86397	689663	2.69
	Total	3215614	23364297	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 81.68% product value (₹43,757,452 in `000). This indicates that Ernakulam has a highly industrialized or transport-heavy economy compared to other districts.

Wayanad (0.05% product value ₹ 28,039, 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 2021-'22 manufacturing industries consumed petroleum products ,Gas and Other fuels with ₹ 5,35,69,640 (in `000), ₹ 2,47,90,117 (in `000), ₹ 29,07,220 (in`000) respectively.

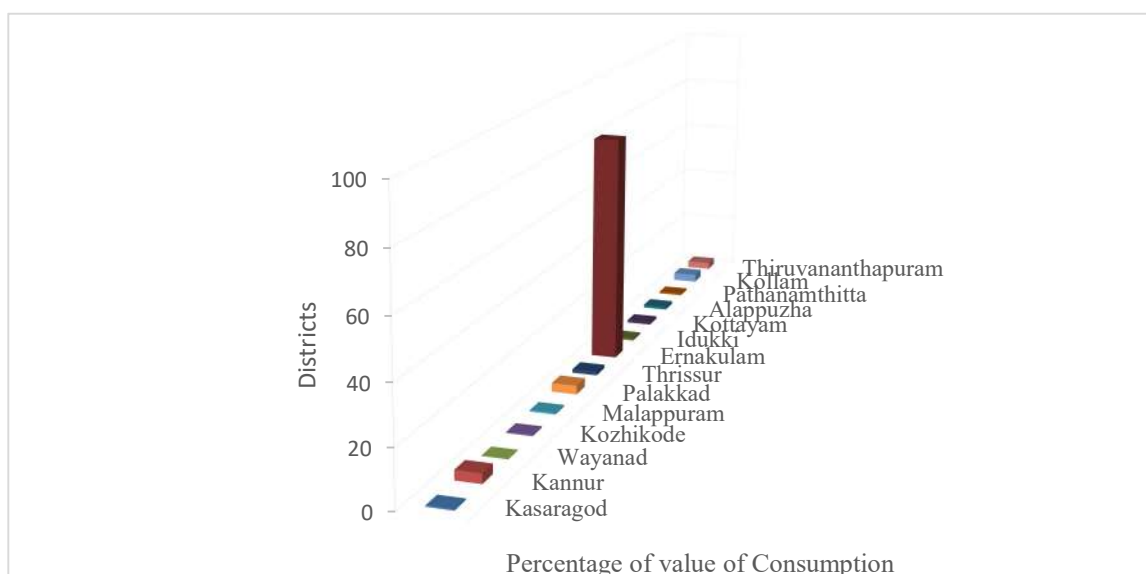


Table 3.5: Value of petroleum products ,gas and other fuels purchased by factory sector in the districts of Kerala 2021-`22

District	Petroleum Products (Value)	Gas Consumed (Value)	Other Fuels (Value)
Kasaragod	250173(0.47%)	27(0.00%)	14730(0.51%)
Kannur	1875526(3.50%)	2150(0.01%)	44266(1.52%)
Wayanad	28039(0.05%)	1156(0.00%)	57179(1.97%)
Kozhikode	228471(0.43%)	137692(0.56%)	29351(1.01%)
Malappuram	294863(0.55%)	18337(0.07%)	307272(10.57%)
Palakkad	1689825(3.15%)	26107(0.11%)	126044(4.34%)
Thrissur	689659(1.29%)	27549(0.11%)	239132(8.23%)
Ernakulam	43757452(81.68%)	24138995(97.37%)	1077855(37.08%)
Idukki	373776(0.70%)	2269(0.01%)	313933(10.80%)
Kottayam	487383(0.91%)	27028(0.11%)	577342(19.86%)
Alappuzha	594879(1.11%)	11021(0.04%)	53264(1.83%)
Pathanamthitta	322834(0.60%)	2051(0.01%)	24991(0.86%)
Kollam	1586765(2.96%)	277274(1.12%)	8876(0.31%)
Thiruvananthapuram	1389995(2.59%)	118461(0.48%)	32985(1.13%)
Kerala	53569640	24790117	2907220

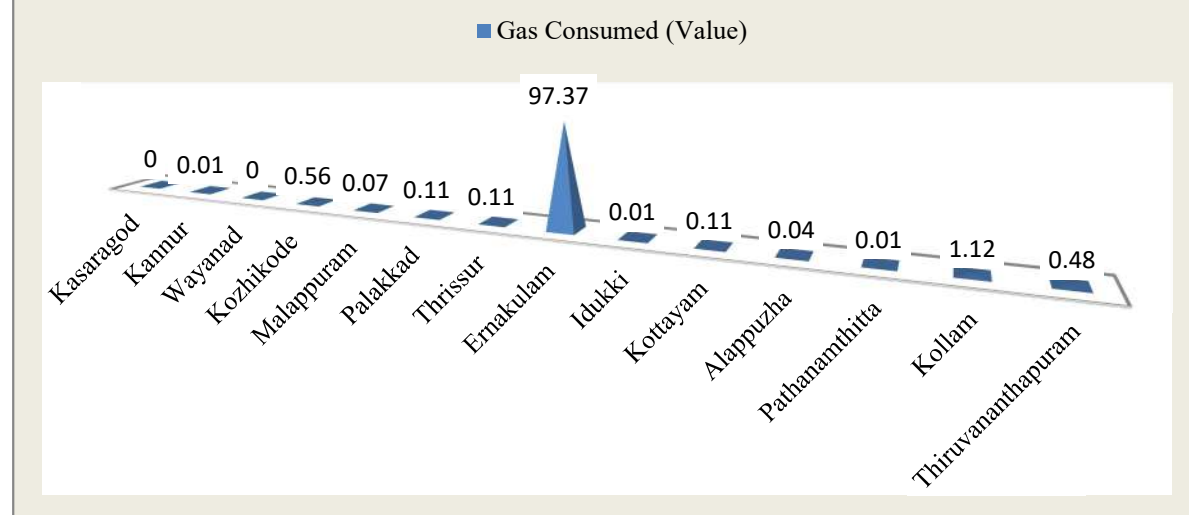
(The values in braces show the percentage of total value of fuel consumed by the industries.)

Figure 3.5: District wise Percentage of value(in ₹ thousand) of consumption of petroleum products during the FY:2021-`22



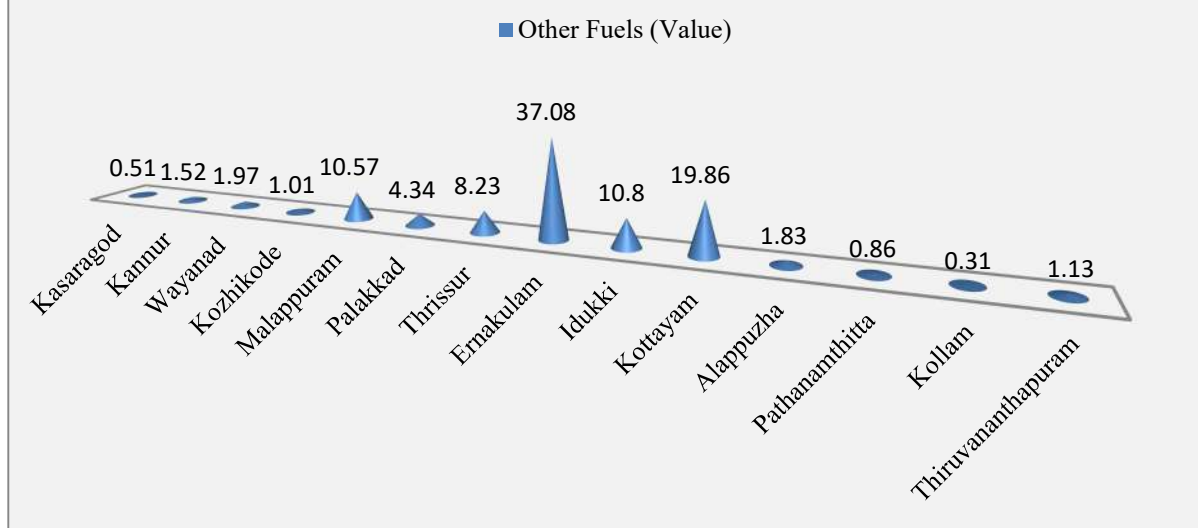
The estimated value of 'Gas consumed' in industries is highest in Ernakulam district (₹ 2,41,38,995 in '000) which covers 97.37% of the total value of Gas consumed by the manufacturing sector of the state. In all other district the share of value of gas consumption is negligible.

Figure 3.6 District wise percentage of value (in ₹ thousand)of consumption of Gas during the FY 2021-22



The estimated value of 'Other fuels consumed' in industries is highest in Ernakulam district (₹ 10,77,855 in '000) which covers 37.08% of the total value of Other fuels consumed by the manufacturing sector of state followed by Kottayam (₹ 5,77,342) with 19.86 % of state aggregate

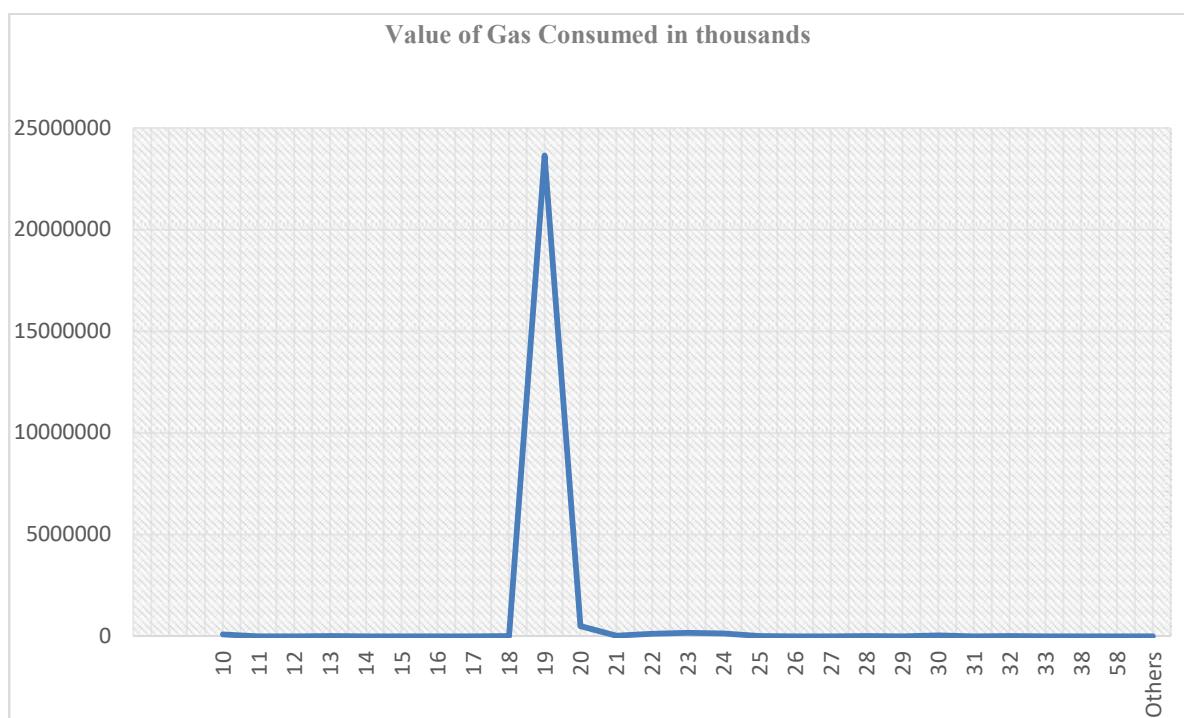
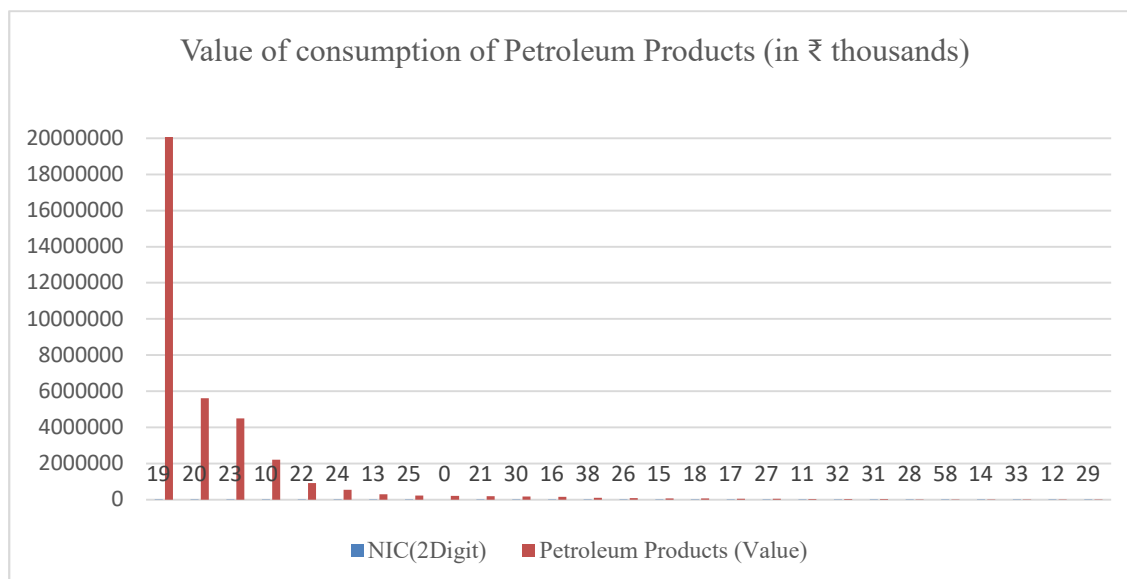
Figure 3.7: Districtwise percentage of value (in ₹ thousands) of consumption of Other Fuels during the FY: 2021- 22

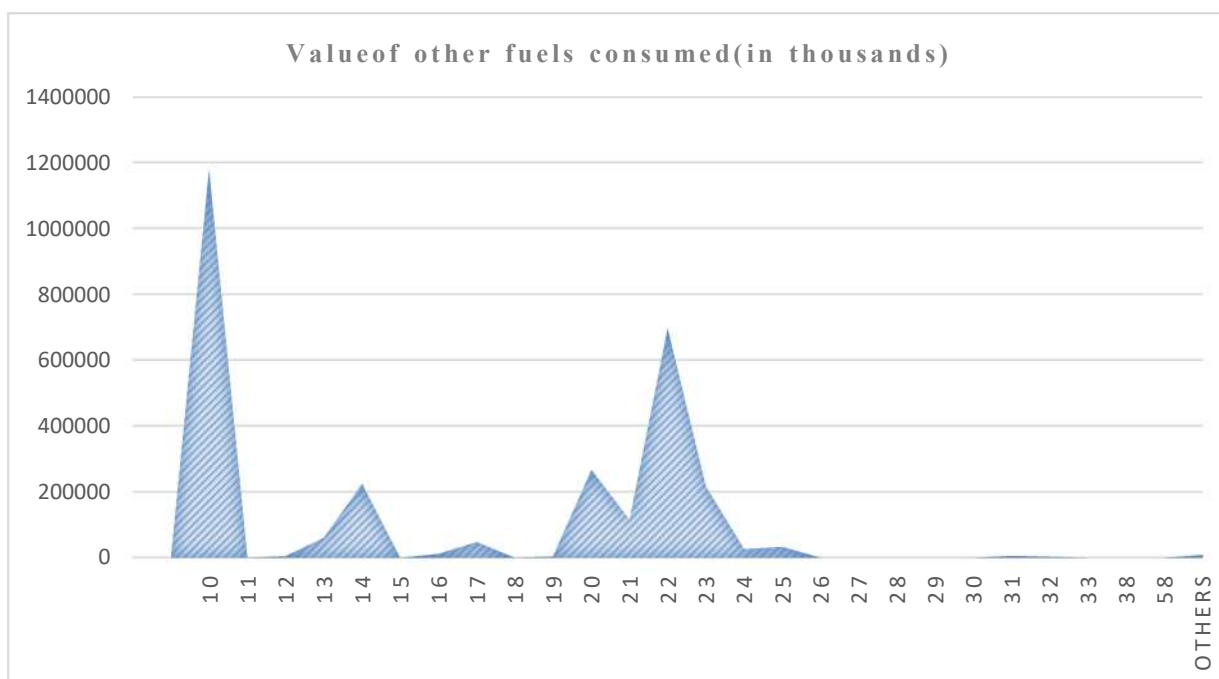


**Table 3.6: Value of consumption of petroleum products, gas and other fuels purchased in
factory sector by NIC(2008) 2-digit**

NIC (2Digit)	Description	Petroleum Products (Value)	Gas Consumed(Value)
10	Manufacture of food products	2221189(4.15%)	92081(0.37%)
11	Manufacture of beverages	38495(.07%)	316(.00%)
12	Manufacture of tobacco products	3333(.01%)	0(0.00%)
13	Manufacture of textiles	301445(.56%)	7633(0.03%)
14	Manufacture of wearing apparel	12138(.02%)	0(0.00%)
15	Manufacture of leather and related products	80896(.15%)	9(0.00%)
16	Manufacture of wood and products of wood and cork, except furniture ;manufacture of articles of straw and platiting materials	161394 (.30%)	2168(0.01%)
17	Manufacture of paper and paper products	55119(.10%)	716(0.00%)
18	Printing and reproduction of recorded media	72469(.14%)	11648(0.05%)
19	Manufacture of coke and refined petroleum products	37863023 (70.68%)	23650343 (95.40%)
20	Manufacture of chemicals and chemical products	5614637(10.48%)	504432(2.03%)
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	196941(.37%)	31771(0.13%)
22	Manufacture of rubber and plastic products	916048(1.71%)	126913(0.51%)
23	Manufacture of other non-metallic mineral products	4506779(8.41%)	163778(0.66%)
24	Manufacture of basic metals	557033(1.04%)	141941(0.57%)
25	Manufacture of fabricated metal products, except machinery and equipment	228456(0.43%)	3748(0.02%)
26	Manufacture of computer, electronic and optical products	88357(0.16%)	20(0.00%)
27	Manufacture of electrical equipment	47168(0.09%)	224(0.00%)
28	Manufacture of machinery and equipment n.e.c	26007(0.05%)	2765(0.01%)
29	Manufacture of motor vehicles, trailers and semitrailers	1922(0.00%)	630(0.00%)
30	Manufacture of other transport equipment	177266(0.33%)	43744(0.18%)
31	Manufacture of furniture	31339(0.06%)	623(0.00%)
32	Other manufacturing	37331(0.07%)	3543(0.01%)
33	Repair and installation of machinery and equipment	6546(0.01%)	12(0.00%)
38	Waste collection, treatment and disposal activities; materials recovery	102145(0.19%)	0(0.00%)
58	Publishing activities	14710(0.03%)	0(0.00%)
	Others	207454(0.39%)	1059(0.00%)
	Total	53569640	24790117

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 (82 tonnes) followed by Other Non-Metallic Mineral Products (64 tonnes).*
- *The maximum consumption of electricity was observed in manufacturing of Basic metals (18.10 %, 5,82,148 KWH).*
- *followed by manufacture of Food Products industry (16.47%, 5,29,603 KWH)*
- *Industry wise consumption value of petroleum products (₹ 3,78,63,023 thousand) and Gas (₹ 5,04,432 lakhs) was observed to be maximum in Coke and Refined Petroleum Products whereas the industry which depended mostly on Other Fuels was Food Products (₹11,78,455 thousand)*
- *By analysing the coal consumed value is more in state due to the import of that item from other countries (Especially from China)*



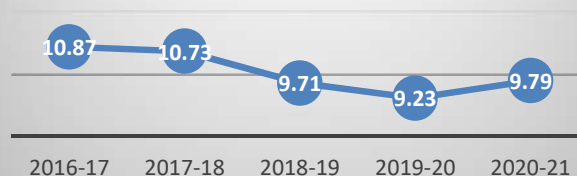
Chapter 4: Trend Analysis

Trend analysis of the characteristics of manufacturing sector is essential for understanding the growth structure and it has been done from 2016-17 to 2021-22. 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 2016-17 to 2020-21 reveals that sectoral composition of manufacturing had a downward trend during the period 2016-17 to 2020-21. And in the financial year 2016-17 the contribution was 10.87 % which declined in subsequent years to reach at a figure of 9.79 % in the financial year 2020-21.

Figure 4.1: Manufacturing-percent Sectoral composition of GSVA



4.1 Factories in operation

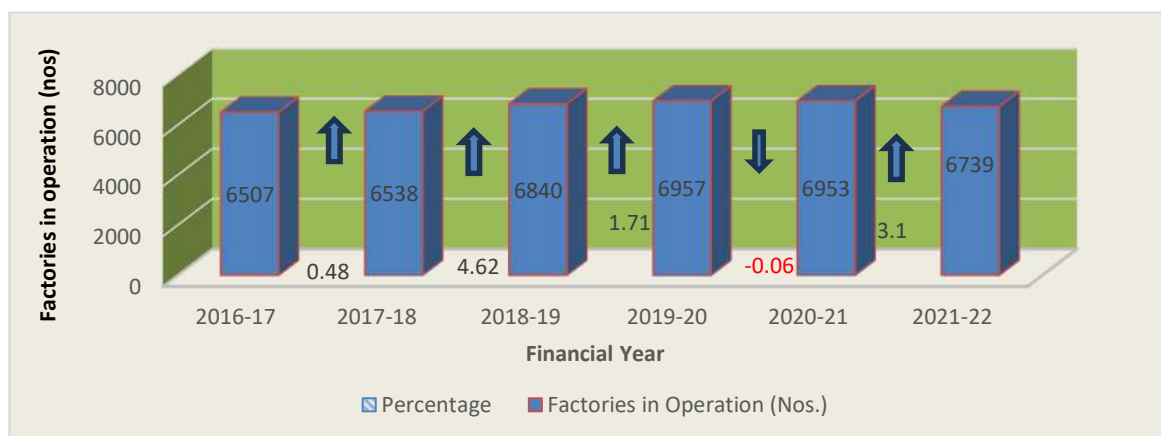
As per ASI survey results from 2016-17 to 2021-22, over the years, the estimated number of operating factories in the organized manufacturing sector showed an upward trend from 2016-17 to 2019-20. In the financial year 2021-22 the number of operating factories slightly declined at the rate of – 3.07 %.

Table 4.1: Total factories and factories in operation from 2016-17 to 2021-22, Kerala

Principal Characteristic	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Number of factories	7982	7596	7695	7793	7972	7740
Factories in Operation (Nos.)	6507	6538	6840	6957	6953	6739
Percentage of factories in operation	81.5	86.1	88.9	89.3	87.2	87.1

Table 4.2: Percentage growth of operational factories, Kerala 2016-17 to 2021-22					
Characteristic	2017-18 over 2016-17	2018-19 Over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Factories in Operation	0.48	4.62	1.71	-0.06	-3.07

Figure 4.2: Factories in operation & percentage growth rate over the previous year from 2016-17 to 2021-22



4.2 Investment behavior in organized manufacturing sector

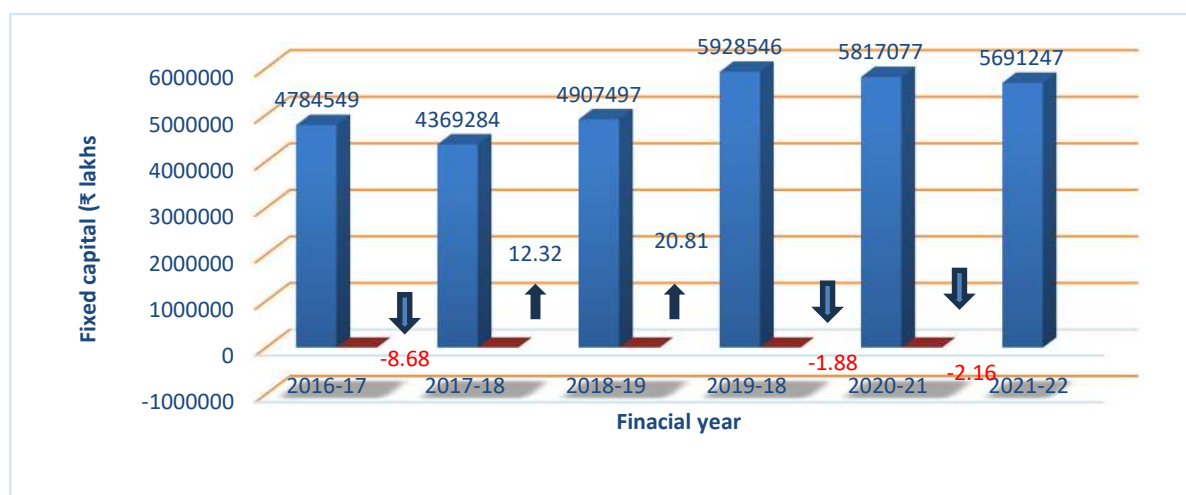
The capital invested in the industries consists of physical working capital and fixed capital. The physical working capital is the total inventory owned by the factory on the closing day of the accounting year. As per the time series data the physical working capital has maintained an upward trend from 2016-17 to 2018-19; which declined at the rate of 1.2% in the year 2019-20 compared to previous year. In 2020-21 to 2021-22, physical working capital i.e. the value of inventory controlled by the firms showed a growth rate of 5.58% to 31.41% (see Figure 4.3 and refer table 4.4)

Figure 4.3: Physical capital (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22



The change in fixed capital from 2016-17 to 2021-22 reveals a major fall in growth rate in 2017-18 recording a decline of 8.68 % over the previous year. The highest value was estimated in 2019-20 (₹ 5,92,826 lakhs) recording a growth rate of 20.81% over the previous year but in the subsequent years (2020-21 and 2021-22) it dropped by 1.88 % and 2.16 % (see Figure 4.4 and refer table 4.4).

Figure 4.4: Fixed capital (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22



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 an increasing trend except in 2017-18. The fixed capital showed a major drop of 8.68% and this has made an effect in the invested capital, declined by 5.38%. Apart from this, invested capital also recorded a marginal growth rate of 7.09 % in 2021-22 (see Figure 4.5).

Figure 4.5: Invested capital (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22

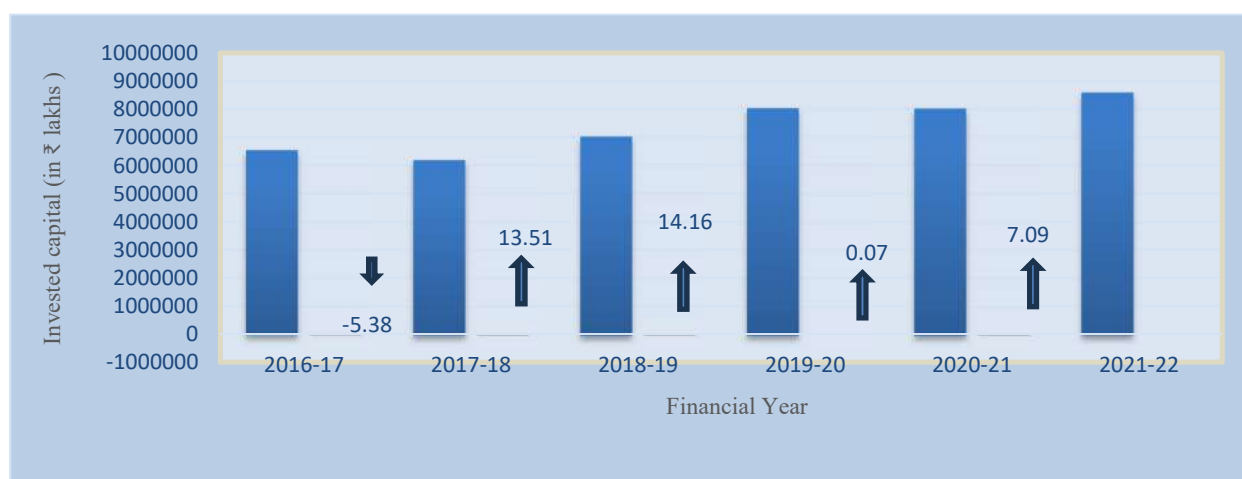


Table 4.3: Capital invested in manufacturing sector from 2016-17 to 2021-22						
Principal Characteristic	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Fixed Capital (in ₹ lakhs)	4784549	4369284	4907497	5928546	5817077	5691247
Physical working capital (in ₹ lakhs)	1762792	1825536	2124099	2098604	2215662	2911611
Invested Capital (in ₹ lakhs)	6547340	6194820	7031597	8027150	8032739	8602858

Table 4.4: Percentage growth of capital, Kerala 2017-18 to 2021-22					
Principal Characteristic	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Fixed Capital	-8.68	12.32	20.81	-1.88	-2.16
Physical working capital	3.56	16.35	-1.2	5.58	31.41
Invested Capital	-5.38	13.51	14.16	0.07	7.09

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 2019-20 and 2020-21 at the rate of 0.64 % and 0.48 % respectively compared to previous year.

Figure 4.6: Gross Fixed Capital Formation (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22

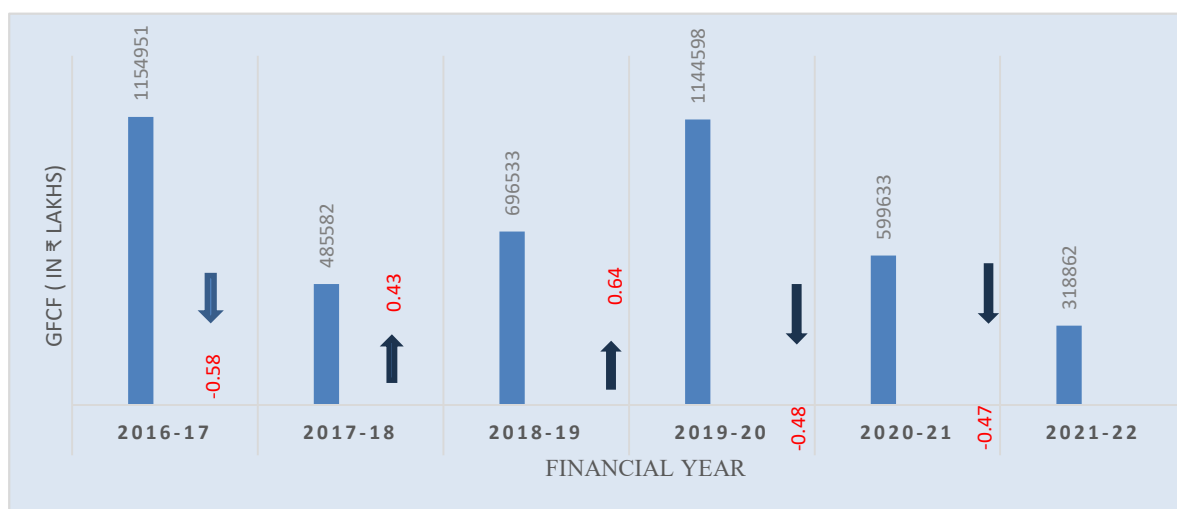


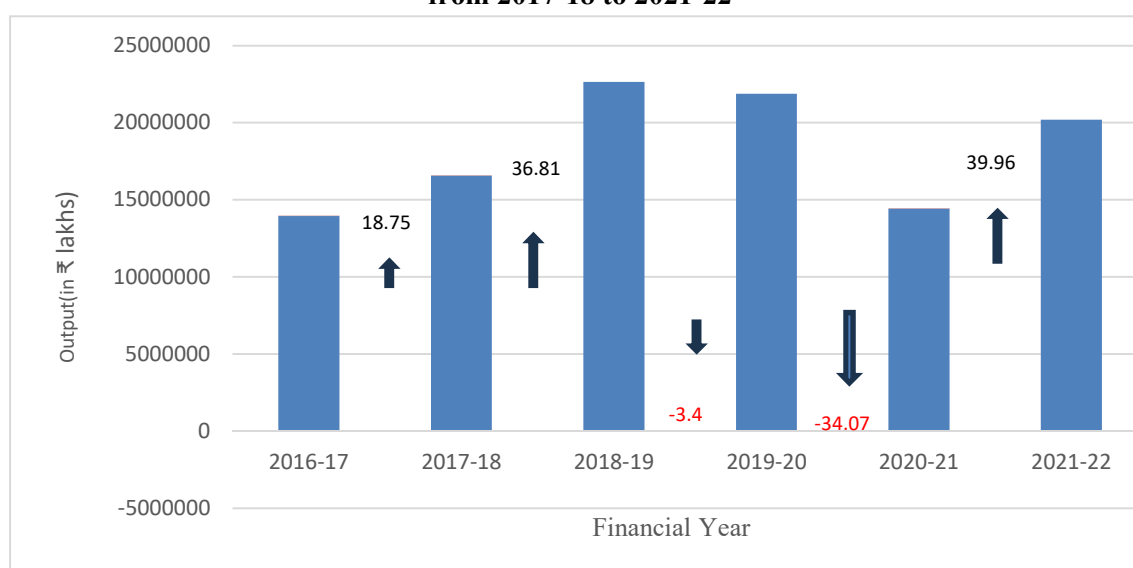
Table 4.5: Gross Fixed Capital Formation (GFCF) in manufacturing sector from 2016-17 to 2021-22						
Principal Characteristic	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	1154951	485582	696533	1144598	599633	318862

Table 4.6: Ratio of growth of Gross Fixed Capital Formation (GFCF), Kerala 2017-18 to 2021-22					
Principal Characteristic	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	-0.58	0.43	0.64	-0.48	-0.47

4.3 Output and Input

The output of the manufacturing industries showed upward trend from 2016-17 to 2018-19. The output growth was remarkably 36.81 % during 2018-19 (₹ 2,26,51,833 lakhs). It fell down to the rate of 3.40 % in 2019-20 ,and it upswing at the rate 39.96 % in 2021-22 (₹2,01,93,873) (Figure 4.7)

Figure 4.7: Output (in ₹ lakhs) & percentage growth rate over the previous year from 2017-18 to 2021-22



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%). Both input and output showed a major up trend in their values in 2021-22 (Figure 4.8).

Figure 4.8: Input (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22

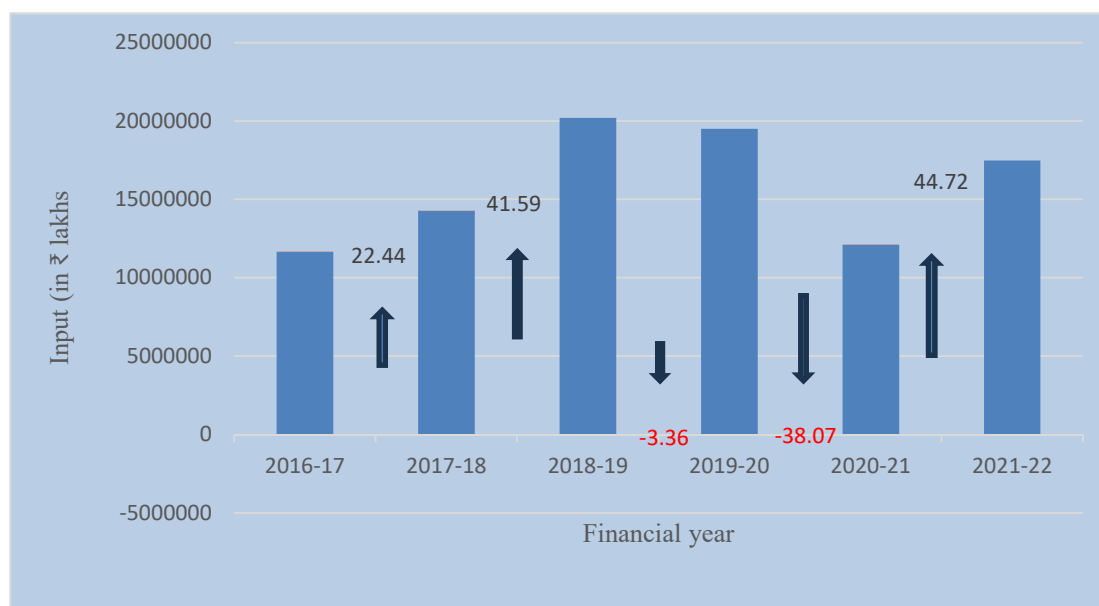
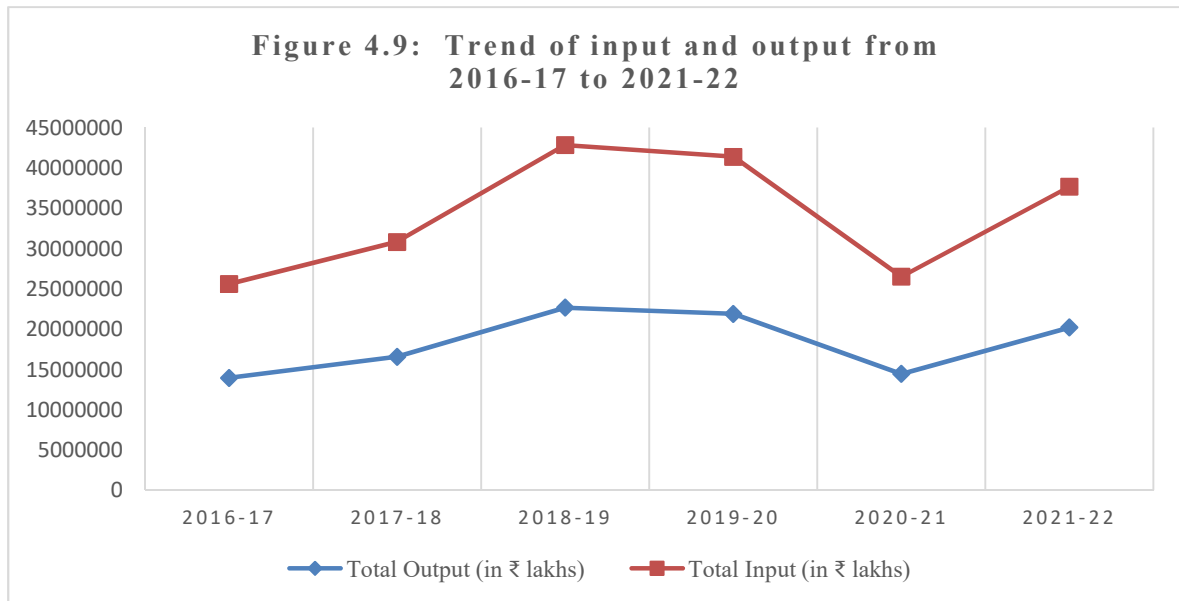


Table 4.7: Input and Output in manufacturing sector from 2016-17 to 2021-22, Kerala

Principal Characteristic	2016-17	2017-18	2018-19	2019-20	2020-21	2021-21
Total Output (in ₹ lakhs)	13942718	16556578	22651833	21881862	14427491	20193873
Total Input (in ₹ lakhs)	11643987	14256475	20185943	19508119	12081298	17484032

Table 4.8: Percentage growth of input and output, Kerala 2016-17 to 2021-22

Principal Characteristic	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Input	22.44	41.59	-3.36	-38.07	44.72
Output	18.75	36.81	-3.4	-34.07	39.96



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 2017-18 to 2019-20. With fluctuating growth rates in years 2020-21 and 2021-22. It showed a decline rating of 1.16 % in 2020-21 and a huge rise in rating 15.49 % respectively. 2021-22 the input and output value high compared to the previous year. So Gross Value Added showed a hike of rate of 15.49 % (see Figure 4.8).

Figure 4.10: Gross Value Added (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2021-22



Table 4.9: Gross Value Added (GVA) manufacturing sector from 2016-17 to 2021-22

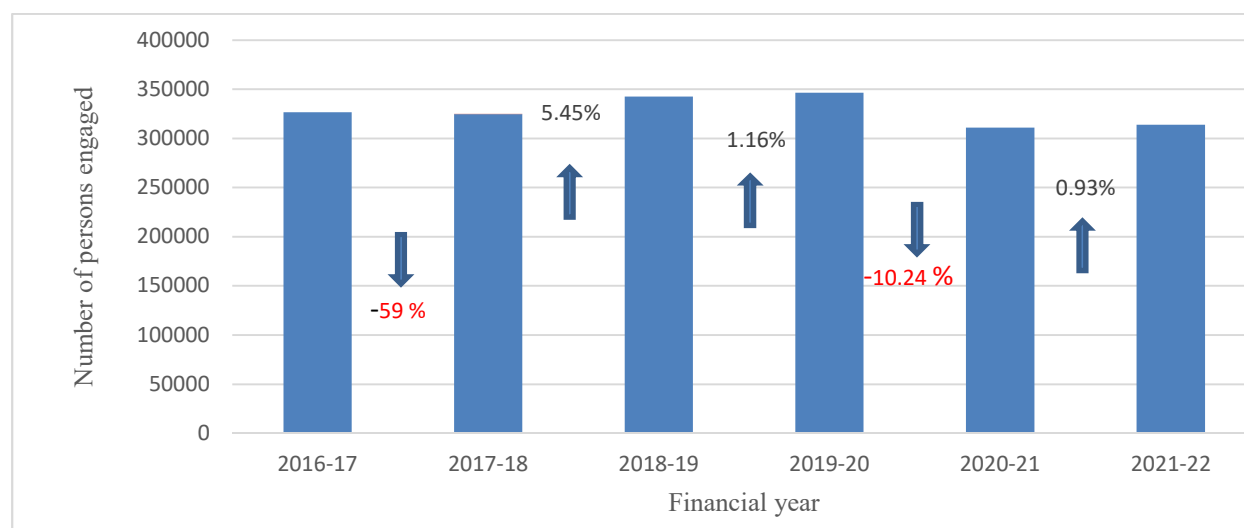
Principal Characteristic	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Gross Value Added (GVA) (in ₹ lakhs)	2298731	2279897	2465890	2373743	2346193	2709841

Table 4.10: Percentage growth of Gross Value Added (GVA) Kerala 2016-17 to 2021-22

Principal Characteristic	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Gross Value Added (GVA)	-0.82	8.16	-3.74	-1.16	15.49

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 0.57 % during 2017-18 and we can see a brief uptick of .93 % in 2021-22.

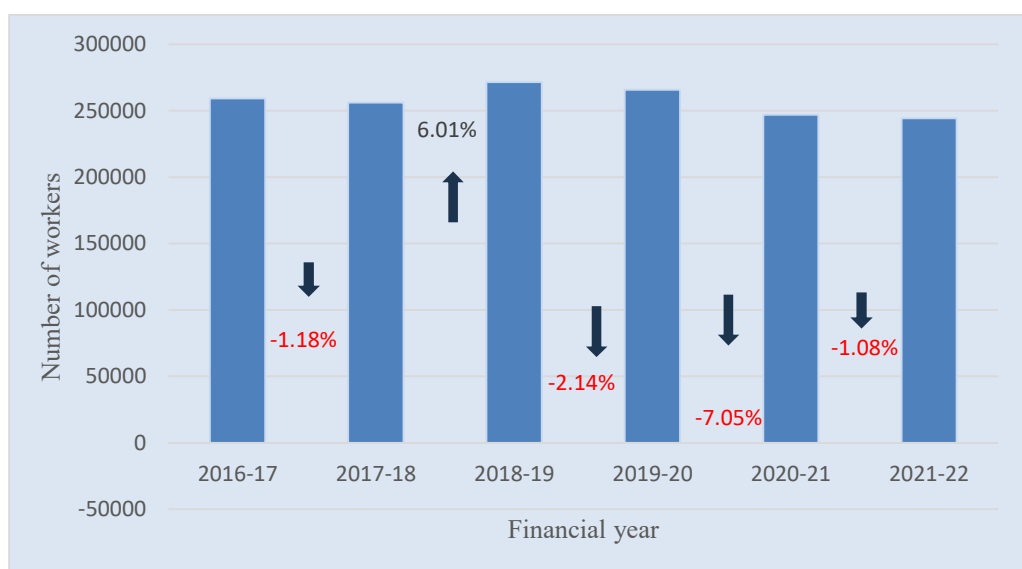
Figure 4.11: Number of persons engaged in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22

The labour productivity was measured in terms of Output per person engaged and the times series data reveals an upward trend during period from 2016 -17 to 2019-20. In the subsequent year the productivity showed a decline .By analysing 2021-22, out put generated turns out to be ₹ 82.67 lakhs per worker and it shows a hike .



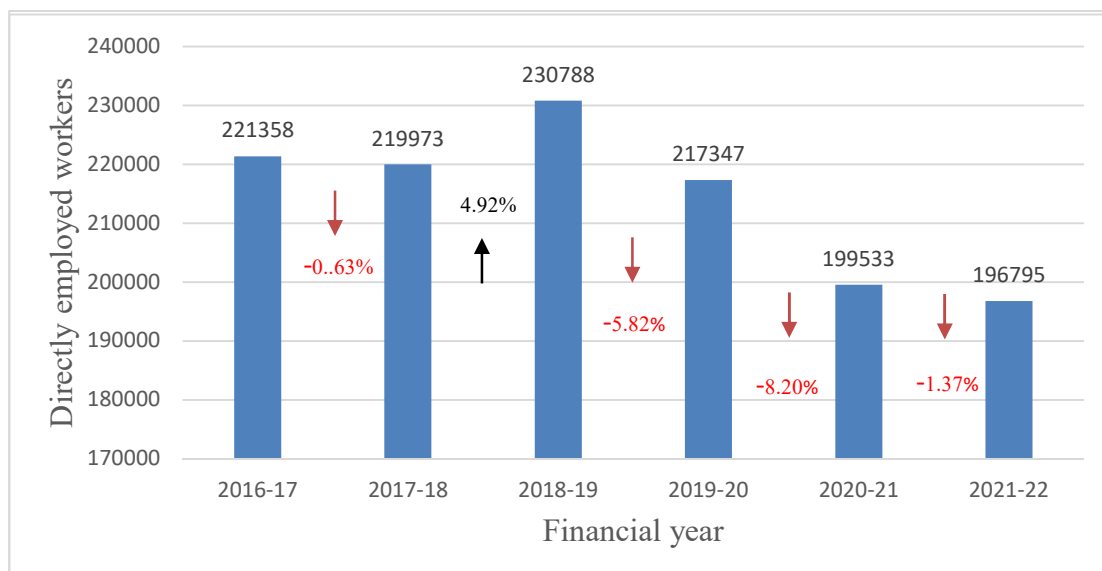
Analysing the number of workers, a growth was observed only in 2018-19 (6.01 %) compared to previous year whereas diminishing trend is seen while observing the number from 2016-17 to 2021-22 except 2018-19. During 2021-22 the number of workers declined by 1.08 % compared to 2020-21.

Figure 4.13: Number of workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22



Among the workers, considering the directly employed workers, in 2017-18 it shows a decline of 0.63 %. In the remaining years the only upward trend (4.92 %) was shown during 2018-19. In 2019-20 onwards the number of directly employed workers again declined with rates 5.82 %, 8.20% and 1.37 % respectively.

Figure 4.14: Number of Directly employed workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22



While in the case of contract workers it showed better growth rates compared to directly employed workers. The highest upward trend was observed in 2018-19 (12.68 %) and 2019-20 (18.78 %) respectively. In the subsequent year, 2020-21, a slight rate of decline of 1.92 % was recorded. But there is a slight step up in 2021-22 (0.11 %).

Figure 4.15: Number of contract workers in manufacturing & percentage growth rate over the previous year from 2017-18 to 2021-22

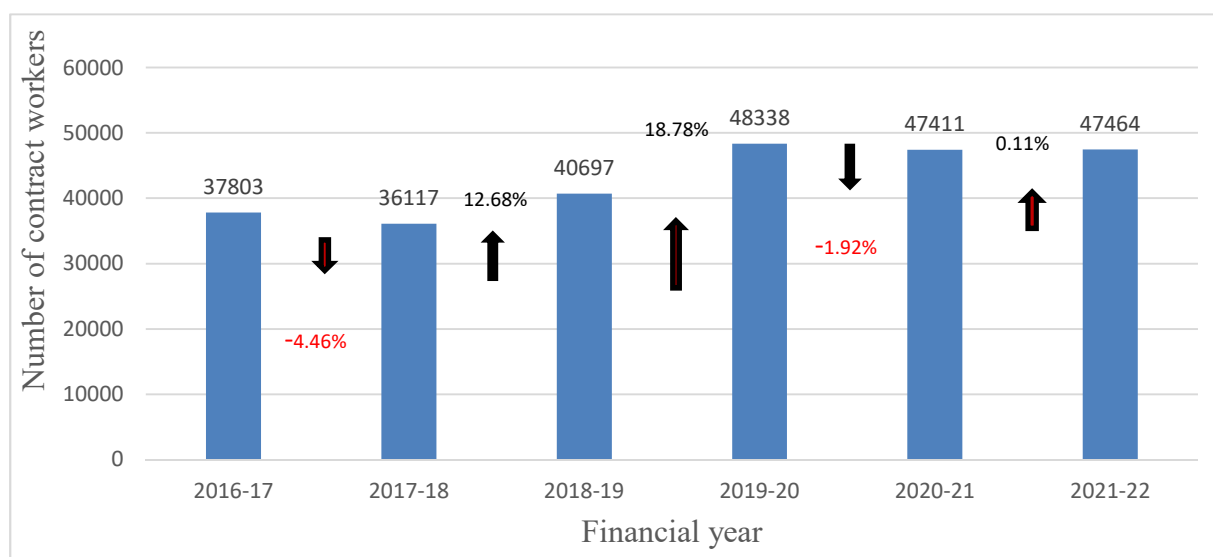


Table 4.11: Number of workers in manufacturing sector from 2017-18 to 2021-22, Kerala

Employees	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Workers	259160	256090	271485	265685	246944	244259
Directly Employed	221358	219973	230788	217347	199533	196795
Employed through Contractors	37803	36117	40697	48338	47411	47464

Table 4.12: Growth of number of workers, Kerala 2017-18 to 2021-22

Employees	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Workers	-1.18%	6.01%	-2.14%	-7.05%	-1.08%
Directly Employed	-0.63%	4.92%	-5.82%	-8.20%	-1.37%
Employed through Contractors	-4.46%	12.68%	18.78%	-1.92%	0.11%

4.5.1 Female participation in manufacturing

Analysing the directly employed female participation in manufacturing from 2016-17 to 2021-22, the statistics shows a continuous decline from 2016-17 onwards .

Figure 4.16: Female participation in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22

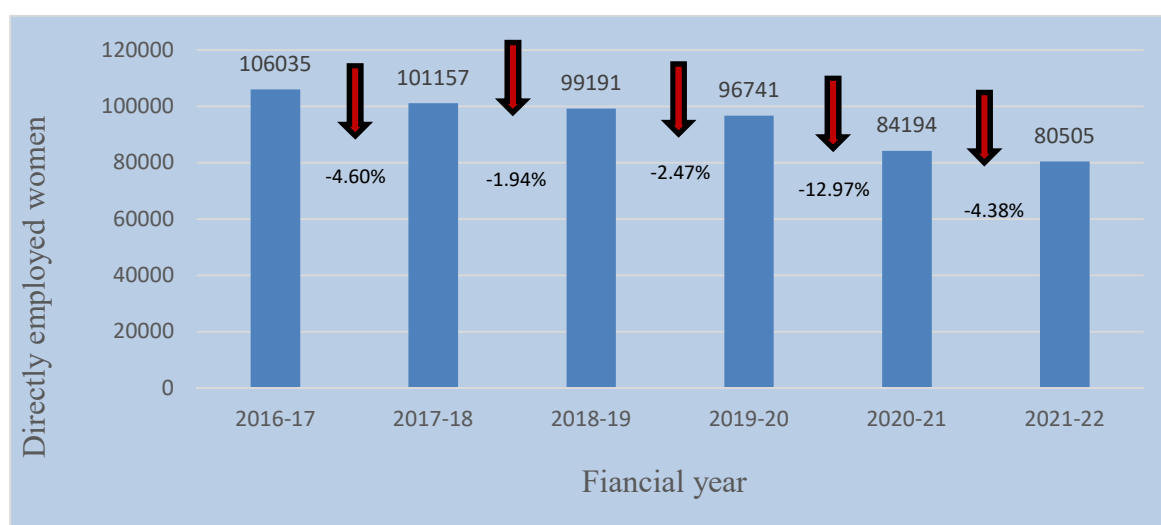


Table 4.13: Gender wise number of directly employed workers in manufacturing sector from 2017-18 to 2021-22

Directly employed workers	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Men	115322	118816	131597	120606	115339	116290
Women	106035	101157	99191	96741	84194	80505

Table 4.14: Gender wise growth of number of directly employed workers, 2017-18 to 2021-22

Directly employed workers	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Men	3.03%	10.76%	-8.35%	-4.37%	0.82%
Women	-4.60%	-1.94%	-2.47%	-12.97%	-4.38%

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 from 2017-18 to 2018-19, but during 2020-21 the same is declined at the rate of 4.77 %. It shows an up ward trend in 2021-22 at the rate of 8.17 % .

Figure 4.17: Wages/Salaries of employees in manufacturing & percentage growth rate over the previous year from 2017-18 to 2021-22

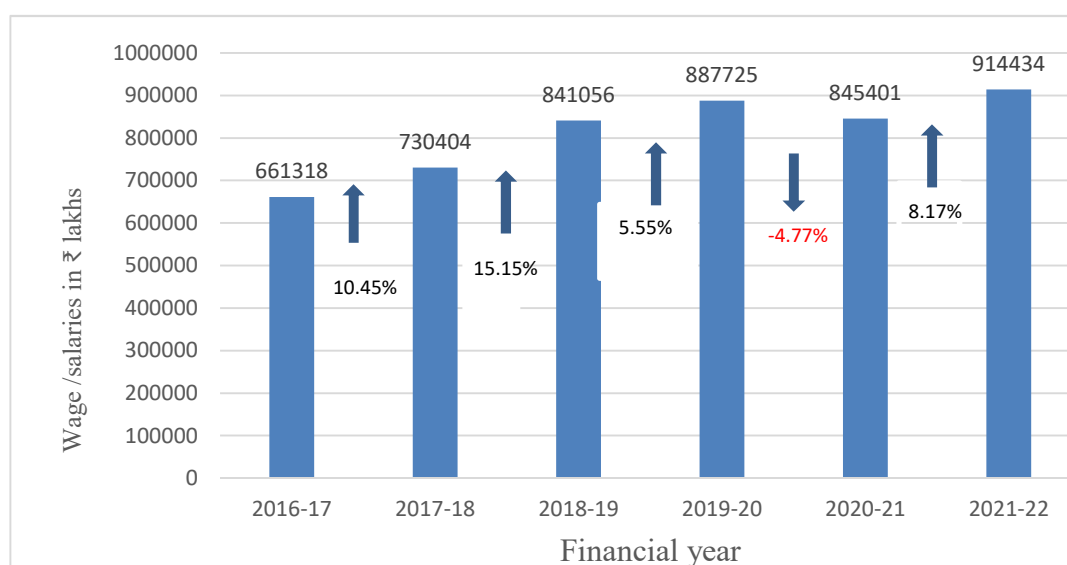


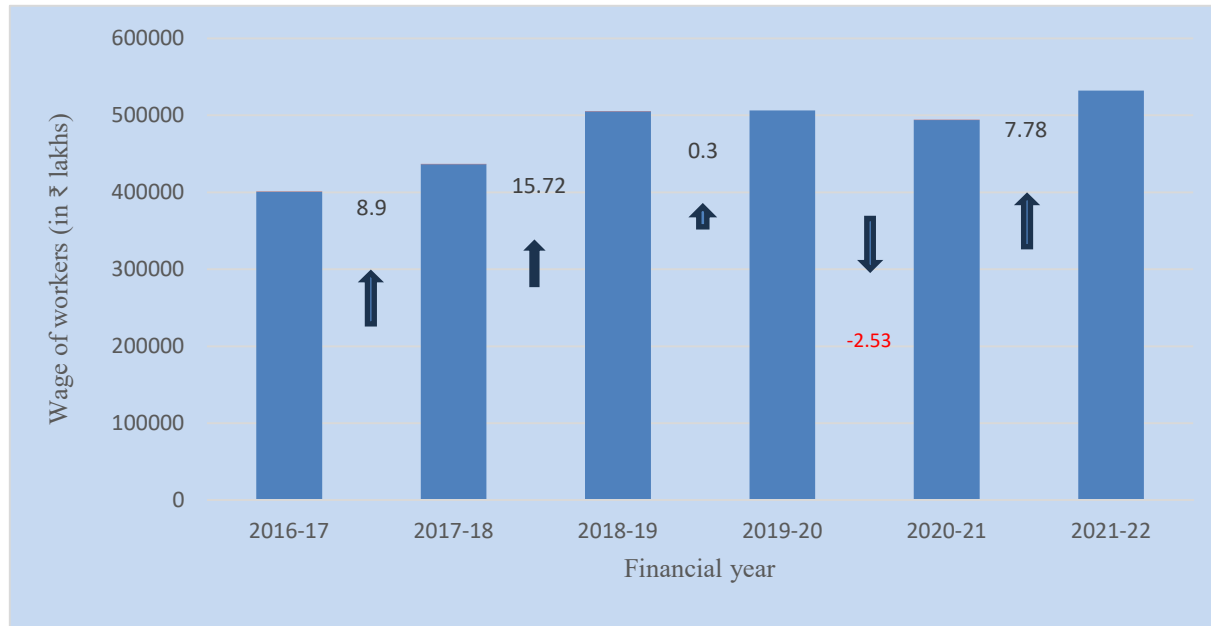
Table 4.15: Wages & Salaries of employees, 2016-17 to 2021-22

Characteristic	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Wages & Salaries (in ₹ lakhs)	661318	730404	841056	887725	845401	914434

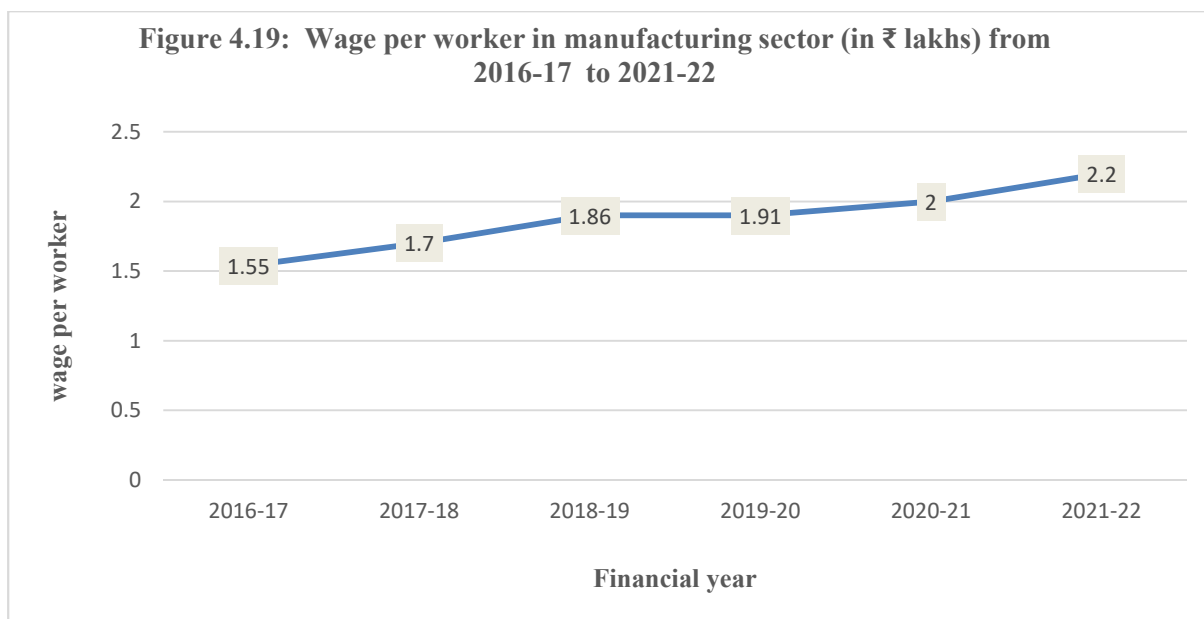
Table 4.16: Growth rate of wages & salaries of employees, Kerala 2017-18 to 2021-22

Wages & Salaries	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Employees	10.45%	15.15%	5.55%	-4.77%	8.17%

Figure 4.18: Wages of workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2021-22

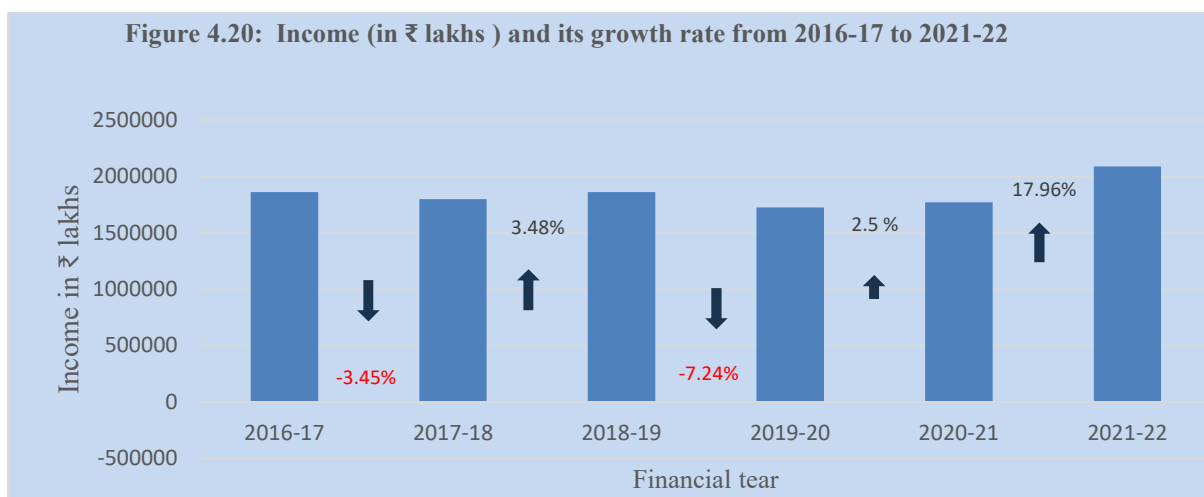


Even though the wages of all employees consisting of workers, supervisors/managers and other employees together shows a decreasing trend, the wage per worker shows an upward trend. In 2016-17, the annual wage earned by worker was ₹ 1.55 lakhs which increased over the subsequent years and in 2021-22 it was estimated as ₹ 2.2 lakhs annually.



4.6. Income and Profit

Income of the manufacturing sector is fluctuating with consecutive ups and downs. By analysing income through the years 2016-17 to 2021-22, the highest income was estimated in 2021-22 with a growth rate of 17.96 %. A steady growth is not witnessed in the case of income through these years.



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 2021-22 (31.26 %) 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 2016-17 to 2021-22

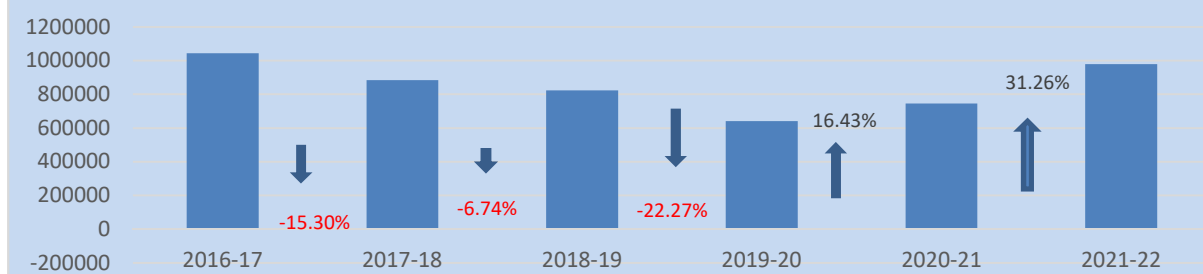


Table 4.17: Net income (₹ lakhs) in manufacturing sector from 2016-17 to 2021-22

Characteristic	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Net income (in ₹ lakhs)	1863677	1799319	1861860	1727064	1770743	2088720
Profit (in ₹ lakhs)	1043683	884010	824389	640827	746139	979373

Table 4.18: Growth rate of Net income in manufacturing sector, Kerala 2017-18 to 2021-22

Characteristic	Percentage growth				
	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20	2021-22 over 2020-21
Net income	-3.45%	3.48%	-7.24%	2.53%	17.96%
Profit	-15.30%	-6.74%	-22.27%	16.43%	31.26%

4.7. Comparison of Principal characteristic of Manufacturing sector

The industrial landscape in Kerala witnessed mixed trends in key characteristics during 2021-22 compared to the previous year (2020-21). The number of registered factories declined by **2.91%**, with the number of operational factories also showing **3.13%** drop. 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 2020-21 and 2021-22

Table 4.19: Principal characteristics of manufacturing sector during 2021-22 and 2020-21 with percentage of change

Sl. No.	Characteristic	2021-22	2020-21	Percentage change compared to 2020-21
1	No. of Factories	7740	7972	-2.91
2	Factories in Operation (Nos)	6739	6957	-3.13
3	Fixed Capital (in ₹ lakhs)	5691247	5817077	-2.16
4	Physical Working Capital (in ₹ lakhs)	2911611	2215662	31.41
5	Working Capital (in ₹ lakhs)	1748355	1529079	14.34
6	Invested Capital (in ₹ lakhs)	8602858	8032739	7.10
7	Gross Value of Additions to Fixed Capital (in ₹ lakhs)	885049	1109172	-20.21
8	Rent Paid (in ₹ lakhs)	7314	4993	46.49
9	Outstanding Loan (in ₹ lakhs)	1338246	1274259	5.02
10	Interest Paid (in ₹ lakhs)	181029	190198	-4.82
11	Rent received (in ₹ lakhs)	564	622	-9.32
12	Interest Received (in ₹ lakhs)	48233	47501	1.54
13	Gross Value of P&M (in ₹ lakhs)	3671897	3261600	12.58
14	Value of Products & By-products (in ₹ lakhs)	18545706	12888107	43.90
15	Other Output (in ₹ lakhs)	1649087	1539384	7.13
16	Total Output (in ₹ lakhs)	20193873	14427491	39.97
17	Fuels Consumed (in ₹ lakhs)	1064438	659942	61.29
18	Material Consumed for Manufacturing (in ₹ lakhs)	14692015	9708347	51.33
19	Other Input (in ₹ lakhs)	1728430	1713022	0.90
20	Total Input (in ₹ lakhs)	17484032	12081298	44.72
21	Gross Value Added (in ₹ lakhs)	2709841	2346193	15.50
22	Depreciation (in ₹ lakhs)	432766	380261	13.81
23	Net Value Added (in ₹ lakhs)	2277075	1965932	15.83
24	Net Fixed Capital Formation (in ₹ lakhs)	-113904	219372	-151.92
25	Gross Fixed Capital Formation (in ₹ lakhs)	318862	599633	-46.82
26	Gross Capital Formation (in ₹ lakhs)	999047	1023320	-2.37
27	Net Income (in ₹ lakhs)	2088720	1770743	17.96
28	Profit (in ₹ lakhs)	979373	746139	31.26

The employment and wage trends in Kerala's manufacturing sector during 2021-22 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 labor costs and better compensation. There is a trend of women's employment dropped, indicating potential gender-based challenges in industrial employment. (Refer table 4.20)

Table 4.20: Employment and Emoluments of the employees engaged in manufacturing sector during 2021-22 and 2020-21 with percentage of change

Sl. No	Characteristic	2021-22	2020-21	Percentage change compared to 2020-21
A	Average no. of Persons Engaged	313841	310958	0.93
1	Workers	244259	246944	-1.09
1.1	Directly Employed	196795	199533	-1.37
1.1.1	Men	116290	115339	0.82
1.1.2	Women	80505	84194	-4.38
1.2	Employed through Contractors	47464	47411	0.11
2	Employees other than Worker	68012	61911	9.85
2.1	Supervisory & Managerial Staff	30039	29607	1.46
2.2	Other Employees	37973	32304	17.55
3	Unpaid Family Members / Proprietor etc.	1570	2103	-25.34
B.	Man-days Employed , Total	90211	86266	4.57
C.	Wages & Salaries , Employer's Contribution	1109235	1024577	8.26
1	Wages & Salaries including Bonus (in ₹ lakhs)	957395	884296	8.27
1.1	Wages & Salaries	914434	845401	8.17
1.1.1	Workers	532187	493757	7.78
1.1.2	Supervisory & Managerial Staff	263909	240695	9.64
1.1.3	Other Employees	118338	110898	6.71
1.2	Bonus to all Staff	42961	38895	10.45
2	Employer's Contribution etc.	151840	140281	8.24

By analysing fuel consumption in Kerala, the rising fuel consumption and expenditure in Kerala's manufacturing sector indicate industrial recovery and expansion in 2021-22. However, the sharp rise in fuel costs suggests higher operational expenses, which could impact overall profitability.(Refer table 4.21)

Table 4.21: Fuel Consumption in manufacturing sector during 2021-22 and 2020-21 with percentage of change

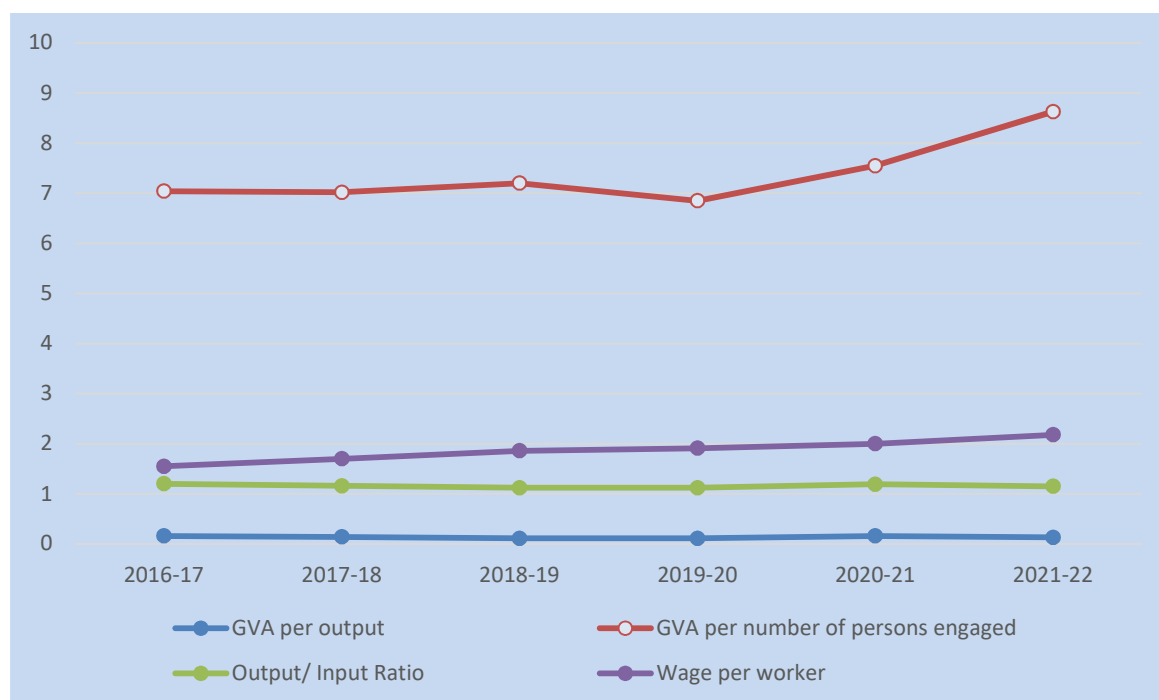
Fuel	2021-22	2020-21	Percentage change compared to 2020-21
Coal Quantity (Ton)	209	145	44.14
Coal Consumed (Value)	1815367	1149516	57.92
Electricity Purchased Quantity(KWH)	3215614	2747974	17.02
Electricity Purchased (Value)	23364297	19222945	21.54
Petroleum Products (Value)	53569640	26057929	105.58
Gas Consumed (Value)	24790117	17437961	42.16
Other Fuels (Value)	2907220	2125436	36.78

4.8. Trends of some structural ratios

Table 4.22: Structural ratios of the indicators from 2016-17 to 2021-22

Financial Year	GVA per output	GVA per number of persons engaged	Output/ Input Ratio	Wage per worker
2016-17	0.16	7.04	1.20	1.55
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
2020-21	0.16	7.55	1.19	2.00
2021-22	0.13	8.63	1.15	2.18

Figure 4.22: Trends of structural ratios



4.9. Analysis of Various Characteristics during COVID Period

In 2019-'20, the COVID-19 pandemic not affected, 89.2% factories are in operation, but it reduces to 87.3% in 2020-'21 and again a slight decrease also in post- COVID period 2021-'22 (87.1%). The pandemic not affected the investment capital of industries. An increase of 5589 lakhs from 2019-'20 to 2020-'21 and then a rapid increase of 570119 lakhs in the post COVID period.

Table 4.23 Various Characteristics during COVID Period						
(Values in lakhs)						
Year	No. of Factories	Factories in Operation	Invested Capital	Material Consumed for Manufacturing	Working Capital	Fuels Consumed
2019-'20	7793	6953	8027150	16753877	1908718	849833
2020-'21	7972	6957	8032739	9708347	1529079	659942
2021-'22	7740	6739	8602858	14692015	1748355	1064438

Year	Gross Fixed Capital Formation	Gross Capital Formation	Gross Value Added (GVA)	Net Income	Profit	Total Input	Total Output
2019-'20	1144598	1089844	2373743	1727064	640827	19508119	21881862
2020-'21	599633	1023320	2346193	1770743	746139	12081298	14427491
2021-'22	318862	999047	2709841	2088720	979373	17484032	20193873

Figure 4.23: Various Characteristics during COVID period

(Values in lakhs)

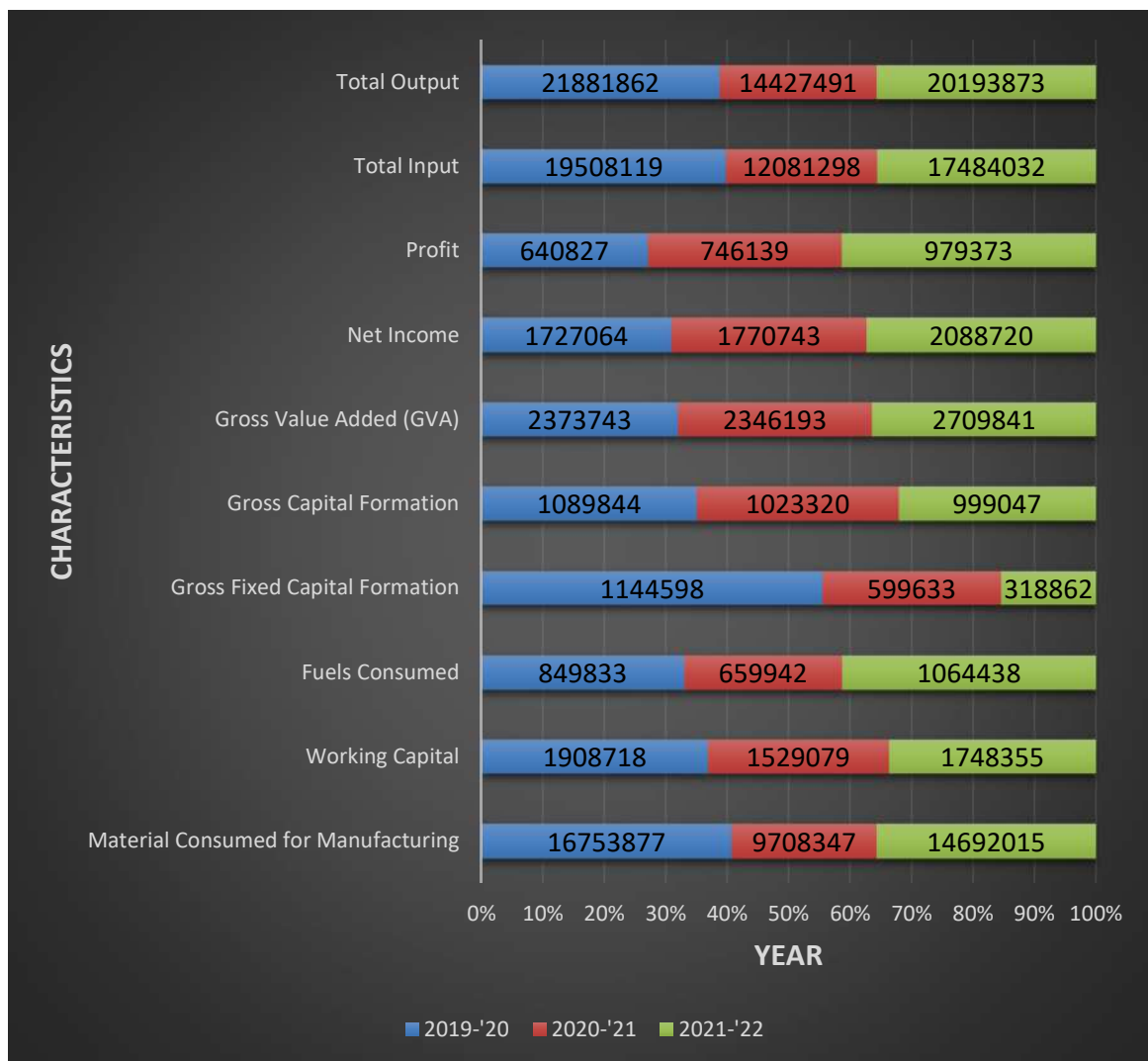


Figure 4.24: Percentage increase/decrease of the characteristics from 2019-20, 2020-21 and then to 2021-22.

	2019-20	2020-21	2021-22
• Material Consumed for Manufacturing	-42% ➡	➡ 51.3%	
• Working Capital	-19.9% ➡	➡ 14.3%	
• Fuels Consumed	- 22.3% ➡	➡ 61.3%	
• Gross Fixed Capital Formation	- 47.6% ➡	➡ -46.8%	
• Gross Capital Formation	- 6.1% ➡	➡ -2.4%	
• Gross Value Added (GVA)	-1.2% ➡	➡ 15.5%	
• Net Income	2.5% ➡	➡ 17.9%	
• Profit	16.4% ➡	➡ 31.2%	
• Total input	-38.1% ➡	➡ 44.7%	
• Total Output	34.1% ➡	➡ 39.9%	

It is clear that the pandemic affected majority of the characteristics in a drastic way. A decline of high percentage in many characteristics during the pandemic, and some of them recovered after the pandemic, and few continue the decline trend. During the COVID period, only the net income and profit shows a hike, that may be due to decrease of working days during lock down and the wages paid to the employees are low compared to other years.

Table 4.24 : Variation in Material Consumed for Manufacturing

NIC (2 digit)	Description	Variation (2019-20 to 2020- 21)	Variation (2020-21 to 2021- 22)
10	Manufacture of food products	1.28	14.99
11	Manufacture of beverages	3.37	-21.65
12	Manufacture of tobacco products	-26.43	-48.12
13	Manufacture of textiles	-22.56	35.7
14	Manufacture of wearing apparel	-33.84	33.76
15	Manufacture of leather and related products	-10.48	73.49
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	-13.26	30.85
17	Manufacture of paper and paper products	-57.18	105.02
18	Printing and reproduction of recorded media	-50.07	34.78
19	Manufacture of coke and refined petroleum products	-39.24	100.12
20	Manufacture of chemicals and chemical products	4.57	61.61
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	-6.02	-0.08
22	Manufacture of rubber and plastic products	5.95	39.52
23	Manufacture of other non-metallic mineral products	-23.13	-26.78
24	Manufacture of basic metals	27.63	60.75
25	Manufacture of fabricated metal products ,except machinery and equipment	51.56	32.38
26	Manufacture of computer, electronic and optical products	6.27	11.62
27	Manufacture of electrical equipment	-3.98	6.62
28	Manufacture of machinery and equipment n.e.c	-19.42	13.38
29	Manufacture of motor vehicles, trailers and semitrailers	-42.66	37.36
30	Manufacture of other transport equipment	-30.43	32.07
31	Manufacture of furniture	-51.63	34.59
32	Other manufacturing	-93.79	-28.07
33	Repair and installation of machinery and equipment	-35.31	-87.08
38	Waste collection, treatment and disposal activities; material recovery	5.56	678.95
58	Publishing activities	-36.88	13.04
	Others	-59.06	-29.64

Table 4.25 : Variation in Working Capital

NIC (2 digit)	Description	Variation (2019-20 to 2020- 21)	Variation (2020-21 to 2021- 22)
10	Manufacture of food products	-20.93	117.17
11	Manufacture of beverages	88.38	-43.36
12	Manufacture of tobacco products	-20.21	149.76
13	Manufacture of textiles	-197.79	3.46
14	Manufacture of wearing apparel	-1.53	29.26
15	Manufacture of leather and related products	-62.76	249.43
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	-318.28	-164.25
17	Manufacture of paper and paper products	-207.21	105.10
18	Printing and reproduction of recorded media	-0.93	20.43
19	Manufacture of coke and refined petroleum products	50.66	20.89
20	Manufacture of chemicals and chemical products	-61.63	-35.27
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	-17.42	40.91
22	Manufacture of rubber and plastic products	45.11	-6.01
23	Manufacture of other non-metallic mineral products	32.96	-1.39
24	Manufacture of basic metals	-41.74	185.69
25	Manufacture of fabricated metal products ,except machinery and equipment	45.60	204.28
26	Manufacture of computer, electronic and optical products	25.62	48.17
27	Manufacture of electrical equipment	-50.42	-95.26
28	Manufacture of machinery and equipment n.e.c	4.78	-38.42
29	Manufacture of motor vehicles, trailers and semitrailers	-217.94	-68.68
30	Manufacture of other transport equipment	-0.82	-3.78
31	Manufacture of furniture	-12.83	-245.99
32	Other manufacturing	12.37	14.26
33	Repair and installation of machinery and equipment	-1.14	-93.77
38	Waste collection, treatment and disposal activities; material recovery	1.70	36.53
58	Publishing activities	-77.39	-1174.33
	Others	-35.78	-263.11

Table 4.26: Variation in Fuels Consumed

NIC (2 digit)	Description	Variation (2019-20 to 2020- 21)	Variation (2020-21 to 2021- 22)
10	Manufacture of food products	-3.35	20.19
11	Manufacture of beverages	81.73	-47.37
12	Manufacture of tobacco products	-50.00	576.92
13	Manufacture of textiles	-24.91	33.51
14	Manufacture of wearing apparel	-22.78	51.25
15	Manufacture of leather and related products	20.33	-1.85
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	-29.09	14.09
17	Manufacture of paper and paper products	-77.91	57.14
18	Printing and reproduction of recorded media	-28.90	13.02
19	Manufacture of coke and refined petroleum products	-32.18	88.45
20	Manufacture of chemicals and chemical products	-2.00	50.75
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	-9.95	-5.58
22	Manufacture of rubber and plastic products	-2.02	14.92
23	Manufacture of other non-metallic mineral products	-3.95	62.15
24	Manufacture of basic metals	-6.92	47.39
25	Manufacture of fabricated metal products ,except machinery and equipment	8.27	26.22
26	Manufacture of computer, electronic and optical products	-6.44	41.64
27	Manufacture of electrical equipment	61.84	-49.22
28	Manufacture of machinery and equipment n.e.c	-31.85	-7.73
29	Manufacture of motor vehicles, trailers and semitrailers	-23.08	0.00
30	Manufacture of other transport equipment	20.14	18.42
31	Manufacture of furniture	-36.70	-1.14
32	Other manufacturing	-17.95	16.22
33	Repair and installation of machinery and equipment	164.44	-79.12
38	Waste collection, treatment and disposal activities; material recovery	26.39	1246.15
58	Publishing activities	-22.58	-3.95
	Others	-47.45	19.17

Table 4.27: Variation of Gross Fixed Capital Formation

NIC (2 digit)	Description	Variation (2019-20 to 2020- 21)	Variation (2020-21 to 2021- 22)
10	Manufacture of food products	-13.88	32.86
11	Manufacture of beverages	53.49	-58.14
12	Manufacture of tobacco products	-263.37	-10.30
13	Manufacture of textiles	-31.30	20.58
14	Manufacture of wearing apparel	-29.44	-2.60
15	Manufacture of leather and related products	43.75	90.58
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	31.60	-7.83
17	Manufacture of paper and paper products	5.08	-36.26
18	Printing and reproduction of recorded media	-78.07	23.10
19	Manufacture of coke and refined petroleum products	-55.93	-96.34
20	Manufacture of chemicals and chemical products	-13.77	57.31
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	-11.42	-12.11
22	Manufacture of rubber and plastic products	-33.43	-3.04
23	Manufacture of other non-metallic mineral products	54.59	-34.52
24	Manufacture of basic metals	-49.69	47.10
25	Manufacture of fabricated metal products ,except machinery and equipment	37.85	-35.62
26	Manufacture of computer ,electronic and optical products	-14.49	68.89
27	Manufacture of electrical equipment	44.39	129.63
28	Manufacture of machinery and equipment n.e.c	-16.36	69.47
29	Manufacture of motor vehicles, trailers and semitrailers	159.29	-39.67
30	Manufacture of other transport equipment	-59.52	-29.90
31	Manufacture of furniture	-84.75	228.95
32	Other manufacturing	-10.16	19.84
33	Repair and installation of machinery and equipment	541.53	-93.67
38	Waste collection, treatment and disposal activities; material recovery	100.92	-86.47
58	Publishing activities	-88.87	60.70
	Others	-86.39	320.41

	Material Consumed for Manufacturing			Working Capital			Fuels Consumed		
2-digit nic code	2019-'20	2020-'21	2021-'22	2019-'20	2020-'21	2021-'22	2019-'20	2020-'21	2021-'22
10	2347682	2377825	2734265	251652	198989	432144	67082	64833	77926
11	69479	71820	56274	8148	15349	8694	1905	3462	1822
12	1551	1141	592	-1816	-1449	-3619	26	13	88
13	225453	174587	236907	29683	-29026	-30029	17149	12877	17192
14	58935	38992	52155	49668	48910	63219	3517	2716	4108
15	92420	82738	143539	28097	10462	36557	2071	2492	2446
16	212850	184631	241586	31763	-69332	44548	13160	9332	10647
17	53922	23089	47338	-7242	7764	15924	9759	2156	3388
18	77051	38474	51855	90733	89887	108251	3996	2841	3211
19	5969843	3627353	7259192	45436	68452	82754	493889	334957	631213
20	448591	469092	758104	383699	147212	95284	69908	68510	103282
21	108090	101582	101500	77534	64025	90220	6343	5712	5393
22	784117	830766	1159097	187089	271485	255178	42642	41779	48013
23	297866	228963	167658	47438	63075	62198	48008	46113	74772
24	285480	364362	585717	38538	22454	64148	35639	33173	48894
25	118198	179138	237147	16582	24143	73462	4343	4702	5935
26	167014	177492	198113	68798	86421	128048	3152	2949	4177
27	96580	92734	98869	29421	14586	691	2133	3452	1753
28	52955	42671	48381	37102	38874	23938	1727	1177	1086
29	3333	1911	2625	379	-447	-140	91	70	70
30	184654	128471	169666	229619	227743	219139	3312	3979	4712
31	40969	19818	26674	10449	9108	-13297	1943	1230	1216
32	4702166	291869	209945	96891	108875	124405	1465	1202	1397
33	35774	23141	2989	19822	19597	1221	509	1346	281
38	18	19	148	2474	2516	3435	72	91	1225
58	23078	14567	16467	-3790	-857	9207	1506	1166	1120
Others	295808	121101	85212	140551	90263	-147225	14486	7612	9071

2-digit nic code	Gross Fixed Capital Formation			Gross Capital Formation			Gross Value Added (GVA)		
	2019-'20	2020-'21	2021-'22	2019-'20	2020-'21	2021-'22	2019-'20	2020-'21	2021-'22
10	67519	58144	77252	85019	136526	111209	445724	454213	456431
11	4081	6264	2622	5501	6618	1215	19302	20171	16049
12	101	-165	-148	104	168	-360	10433	8030	10078
13	14030	9639	11623	25352	13881	21822	72473	59530	86160
14	2721	1920	1870	3548	2707	4827	42031	36018	55380
15	1529	2198	4189	1174	7247	7491	53708	43614	31044
16	7860	10344	9534	13521	8749	14841	55415	35719	37685
17	1732	1820	1160	-9	2121	1825	20590	6475	30392
18	13468	2953	3635	11805	-1196	8269	83717	71623	79753
19	737072	3E+05	11891	709088	638377	461121	150154	303744	675290
20	22622	19506	30684	-6564	17965	89546	319983	310998	257301
21	12013	10641	9352	11815	18347	15460	54175	40420	64890
22	52537	34972	33910	40222	49994	61663	254370	244809	209514
23	20130	31118	20375	25519	34266	25247	147882	151027	154441
24	12427	6252	9197	15208	3549	25321	33833	52683	51061
25	7242	9983	6427	8919	12851	24260	22515	28228	35659
26	7765	6640	11214	27897	8122	45024	63420	66012	86417
27	4897	7071	16237	6455	9663	17880	41455	32352	24459
28	2048	1713	2903	3751	107	3634	22582	25442	24410
29	140	363	219	64	485	534	1625	778	841
30	86470	34999	24534	89938	46680	10902	130232	131889	115861
31	2446	373	1227	3150	-2121	1716	13630	8416	8631
32	3316	2979	3570	-4661	-12205	12607	87580	48503	46827
33	756	4850	307	-725	8591	452	18027	23252	10328
38	1416	2845	385	1342	2889	439	1260	1211	862
58	21959	2445	3929	15074	2448	3136	28048	27260	25560
Others	36301	4939	20764	-2663	6491	28966	179579	113776	114517

	Net Income			Profit		
2-digit nic code	2019-'20	2020-'21	2021-'22	2019-'20	2020-'21	2021-'22
10	346931	357251	362743	141537	139252	130910
11	15394	16459	13321	7194	8676	6039
12	10072	7735	9789	-248	-414	248
13	48887	34069	54988	-177	-9621	-4272
14	37526	31642	50781	13948	15411	29092
15	48064	38244	24513	33101	23993	4417
16	36340	24203	26514	20378	7740	8527
17	14761	4881	27690	-2939	-531	19287
18	59677	49963	62677	14450	7405	16804
19	-11953	146795	480690	-87513	73042	408552
20	268997	264972	208206	175395	162120	102368
21	45982	32475	55594	15312	1377	24033
22	215509	208938	170710	111134	101211	50720
23	101643	107616	112032	24342	42907	32814
24	16651	41276	39860	-1178	23501	18185
25	15694	17894	27357	-1075	1219	9139
26	50440	56489	74982	15634	17633	30974
27	34009	23805	18445	7104	-3595	-4113
28	18873	21794	21488	1878	4632	3833
29	1361	478	545	-157	-309	-134
30	120252	120467	105915	75825	77999	67564
31	9655	6336	6628	1241	-274	-852
32	62400	29799	28430	41253	13852	8779
33	17281	19233	10003	3332	9589	6025
38	1032	819	280	723	462	-354
58	20294	17710	18182	4476	2640	2456
Others	121292	89400	76357	25857	26222	8332

Table 4.28: Factories in Rural and Urban area

	2019-'20		2020-'21		2021-'22	
	No.of Factories	Factories in Operation	No.of Factories	Factories in Operation	No.of Factories	Factories in Operation
Rural	3963	3453	4114	3478	3758	3234
Urban	3830	3500	3858	3479	3982	3505

Given below the percentage of factories in operation. Clearly, the COVID period affected the industries of rural as well as urban areas. Number of factories in operation decreased by 2.6% in 2020-'21 in Rural area and 1.2% in urban area for the same.

Table 4.29: Percentage of Factories in Rural and Urban area

	2019-'20	2020-'21	2021-'22
Rural	87.1%	84.5%	86.1%
Urban	91.4%	90.2%	88%

Table 4.30: Important characteristics in Rural area

Rural Area			
Characteristics	2019-'20	2020-'21	2021-'22
Material Consumed for Manufacturing	2486377	2515881	3021155
Working Capital	685406	625039	793559
Fuels Consumed	166717	151438	194180
Gross Fixed Capital Formation	137296	130605	127930
Gross Capital Formation	123760	206997	205696
Gross Value Added (GVA)	867784	821622	903063
Net Income	691072	654930	736556
Profit	279420	265544	321074
Total input	3245027	3328352	3753588
Total Output	4112811	4149974	4656651
(In lakhs)			

Table 4.31: Important characteristics in Urban area

Urban Area			
Characteristics	2019-'20	2020-'21	2021-'22
Material Consumed for Manufacturing	14267500	7192466	11670860
Working Capital	1223312	904040	954796
Fuels Consumed	683116	508504	870258
Gross Fixed Capital Formation	1007302	469028	190932
Gross Capital Formation	966084	816323	793351
Gross Value Added (GVA)	1505959	1524571	1806778
Net Income	1035992	1115813	1352164
Profit	361407	480595	658299
Total input	16263092	8752946	13730444
Total Output	17769051	10277517	15537222
(In lakhs)			

Table 4.32: Percentage variation of important characteristics in Rural area

Rural Area		
	Variation (2019-20 to 2020- 21)	Variation (2020-21 to 2021- 22)
Material Consumed for Manufacturing	1.2%	20.1%
Working Capital	-8.8%	27%
Fuels Consumed	-9.2%	28.2%
Gross Fixed Capital Formation	-4.9%	-2%
Gross Capital Formation	67.3%	-0.6%
Gross Value Added (GVA)	-5.3%	9.9%
Net Income	-5.2%	12.5%
Profit	-5%	20.9%
Total input	2.6%	12.8%
Total Output	0.9%	12.2%

Table 4.33: Percentage variation of important characteristics in Urban area

Urban Area		
	Variation (2019-20 to 2020- 21)	Variation (2020-21 to 2021- 22)
Material Consumed for Manufacturing	-49.6%	62.3%
Working Capital	-26.1%	5.6%
Fuels Consumed	-25.6%	71.1%
Gross Fixed Capital Formation	-53.4%	-59.3%
Gross Capital Formation	-15.5%	-2.8%
Gross Value Added (GVA)	1.2%	18.5%
Net Income	7.7%	21.2%
Profit	33%	37%
Total input	-46.2%	56.9%
Total Output	-42.2%	51.2%

From the above data, the pandemic affected the characteristics both in rural and urban area. Majority of the characteristics shows a decline trend in 2020-'21

Table 4.34: Genderwise Distribution of workers

Year	Men	Women
2019-'20	120606	96741
2020-'21	115339	84194
2021-'22	116290	80505

In this section an attempt has been made to find the participation of male and female workers in industries during 2019-2022. It is observed that the participation of female workers are declined year by year. There is a decrease of 12547 female workers in 2020-'21 compared to 2019-'20 and again a decrease of 3689 in 2021-'22 over 2020-'21. Regarding male workers, a decrease of 5267 in 2020-'21 and an increase of 951 in 2021-'22. It concludes that the pandemic affected the workers badly, especially the female workers.

Figure 4.25: Workers(Gender Based)

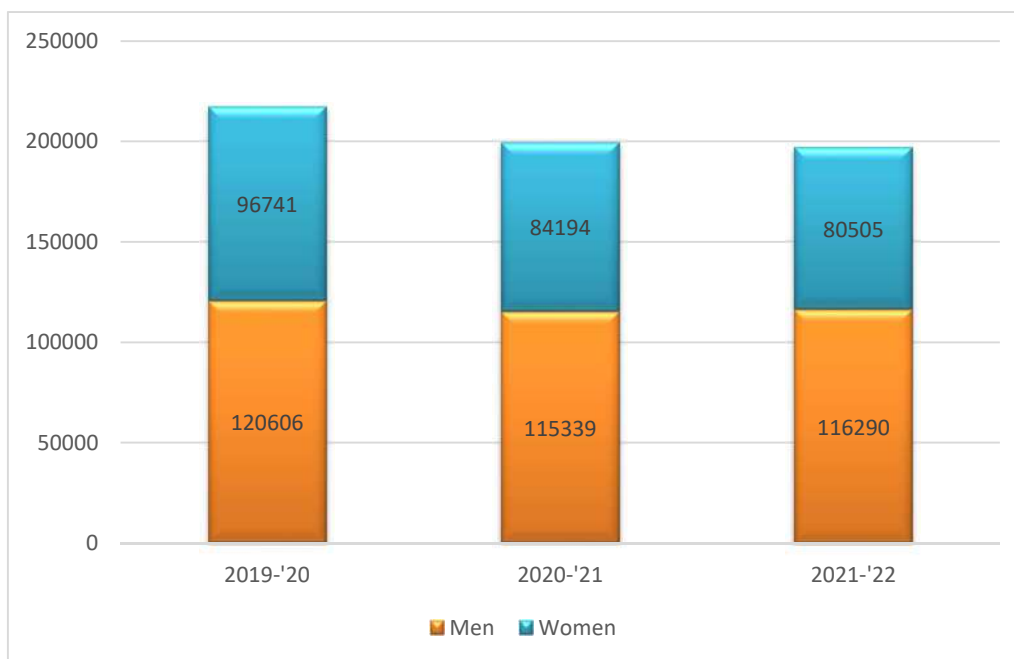


Figure 4.26:Percentage wise male and female participation

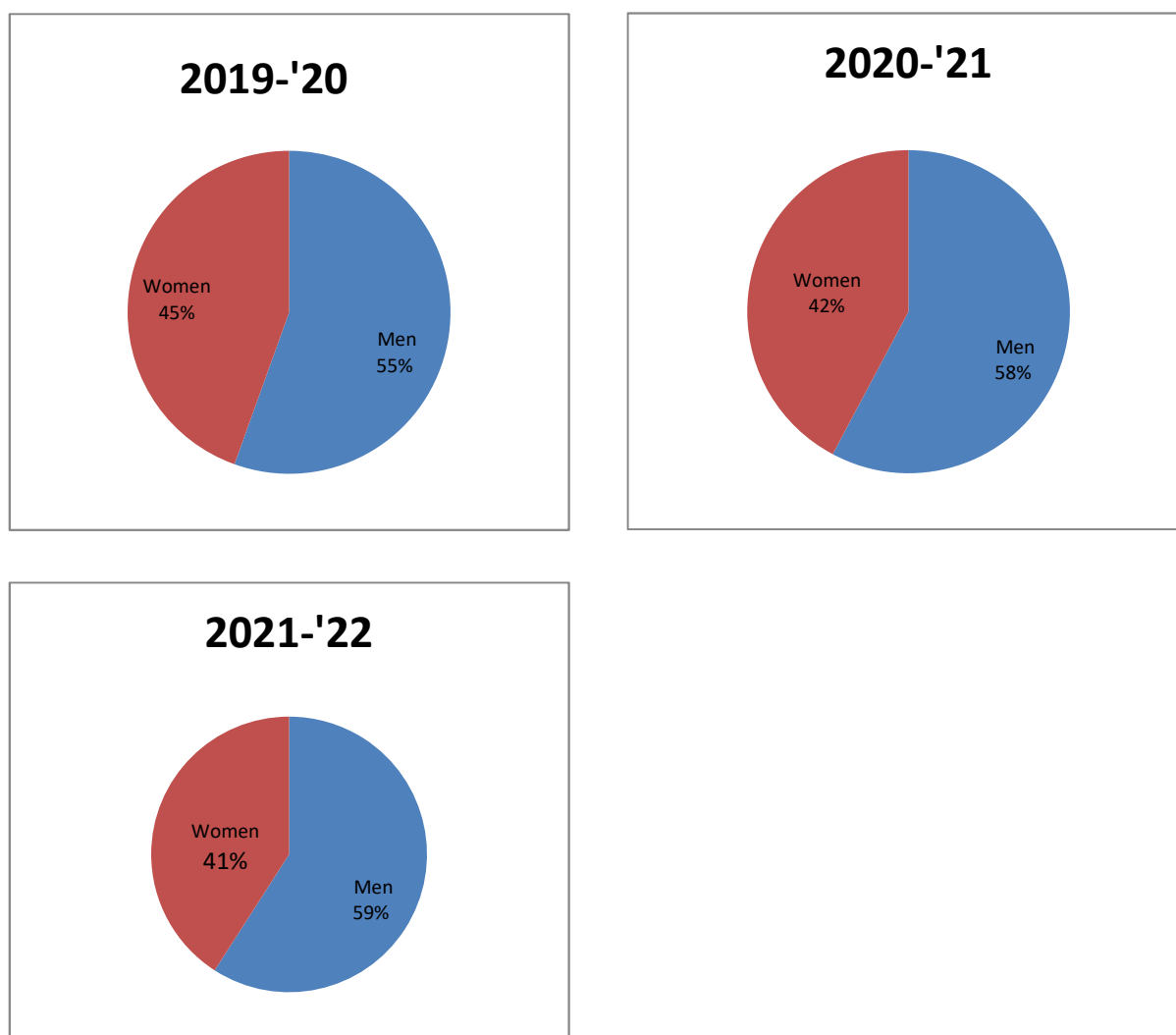
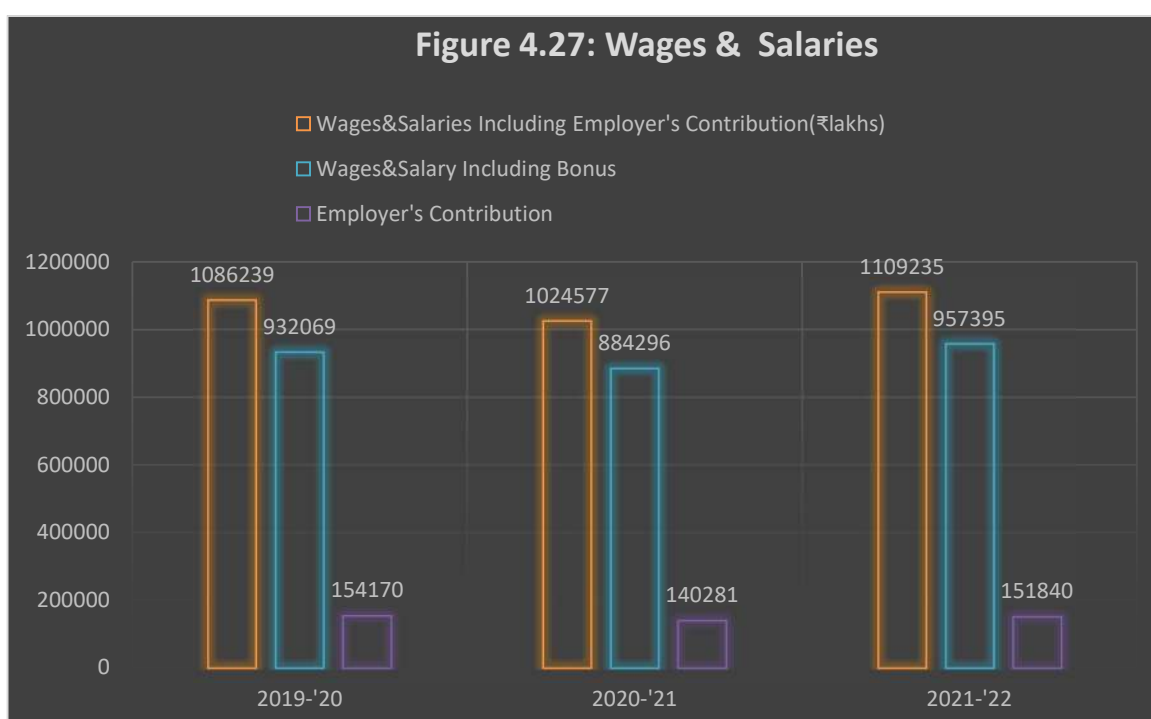


Table 4.35: Wages and Salaries for Workers

Year	Wages & Salaries Including Employer's Contribution	Wages & Salary Including Bonus	Employer's Contribution
2019-'20	1086239	932069	154170
2020-'21	1024577	884296	140281
2021-'22	1109235	957395	151840
(₹lakhs)			

In this section, an attempt has been made to analyze the wages and salaries of workers. The table shows that the pandemic affected the wages and salaries of workers badly. There is a decline of 5.7% in the Covid period over 2019-'20 and an increase of 8.3% after that. The same decline and an increasing trend is happened in wages and salaries including bonus and the employer's contribution. It conclude that the pandemic affected the workers rigorously.



**Some notable changes in the characteristics of manufacturing sector during the
the year 2021-22 compared to year 2020-21**

- ❖ Working Capital of industries increased by 14.34 %.
- ❖ Total Output up trend by 39.97 %.
- ❖ Fuel consumed increased by 61.29 %.
- ❖ Material Consumed for Manufacturing increased by 51.33 %.
- ❖ Total input increased by 44.72%.
- ❖ Gross Value Added had a hike of 15.50 %.
- ❖ Net Fixed Capital Formation declined by 151.92%.
- ❖ Gross Fixed Capital Formation dropped by 46.82 %.
- ❖ Profit increased by 31.26 %.
- ❖ Average no. of Persons Engaged rose by 0.93 %.
- ❖ Directly employed women participation declined by 4.38 %.
- ❖ Man-days employed increased by 4.57%.
- ❖ Wages & Salaries increased by 8.27 %.
- ❖ Shows an upward trend in fuel consumption.



Chapter -5 –Structural ratios and technical coefficients

The measures of structural ratios and technical coefficient are used to assess the overall productivity, resource efficiency, productivity of capital, productivity of labor, capital intensity etc. The following are the structural ratios and technical coefficients of the manufacturing sector in the fiscal year 2021-22.

5.1. Structural Ratios

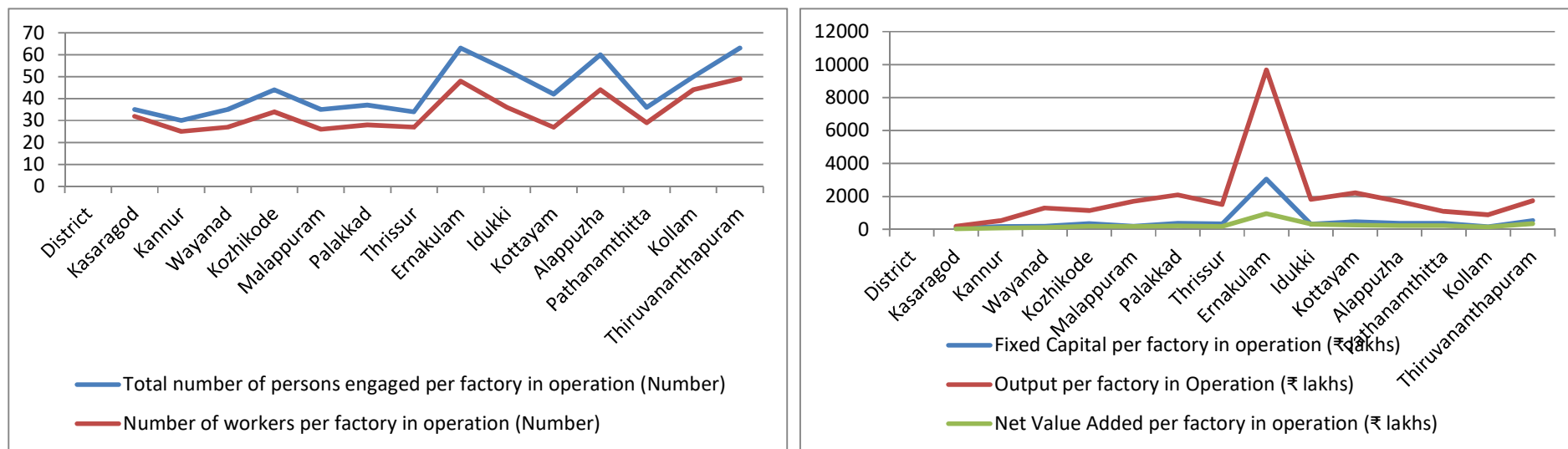
Table 5.1 Structural ratios based on estimated characteristics of the state, 2021-22

Structural Ratio	2021-22
Fixed Capital per factory in operation	845 lakhs
Total no. of persons engaged per factory in operation	47
Number of workers per factory in operation	36
Output per factory in operation	₹ 2997 lakhs
Net Value Added (NVA) per factory in operation	₹ 338 lakhs
Output per person engaged	₹ 64,34,427
Gross Value Added (GVA) per person engaged	8,63,443
Net Value Added (NVA) per person engaged	₹ 7,25,550
Wages per worker	₹ 2,17,878

Table 5.2 Structural Ratios by Districts, 2021-22

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	75	35	32	198	44	572790	149958	127527	72306
Kannur	182	30	25	533	89	1807116	367305	302366	171949
Wayanad	197	35	27	1299	114	3686362	397517	323729	183324
Kozhikode	351	44	34	1138	191	2571107	506897	431757	196427
Malappuram	198	35	26	1721	176	4909307	579110	503156	44131
Palakkad	373	37	28	2091	209	5710134	666526	570348	201724
Thrissur	345	34	27	1505	181	4445940	643915	533305	219291
Ernakulam	3058	63	48	9682	954	15274084	1822866	1504981	289582
Idukki	324	53	36	1820	323	3463905	683924	614556	193560
Kottayam	473	42	27	2213	260	5275847	761530	618884	318199
Alappuzha	368	60	44	1694	224	2816304	420971	371741	181895
Pathanamthitta	365	36	29	1101	225	3048806	714629	623286	214328
Kollam	172	50	44	893	156	1799135	335969	313647	136439
Thiruvananthapuram	542	63	49	1753	353	2799048	659917	562905	279439
Kerala	845	47	36	2997	338	6434427	863443	725550	217878

Figure 5.1: District wise pattern of structural ratios



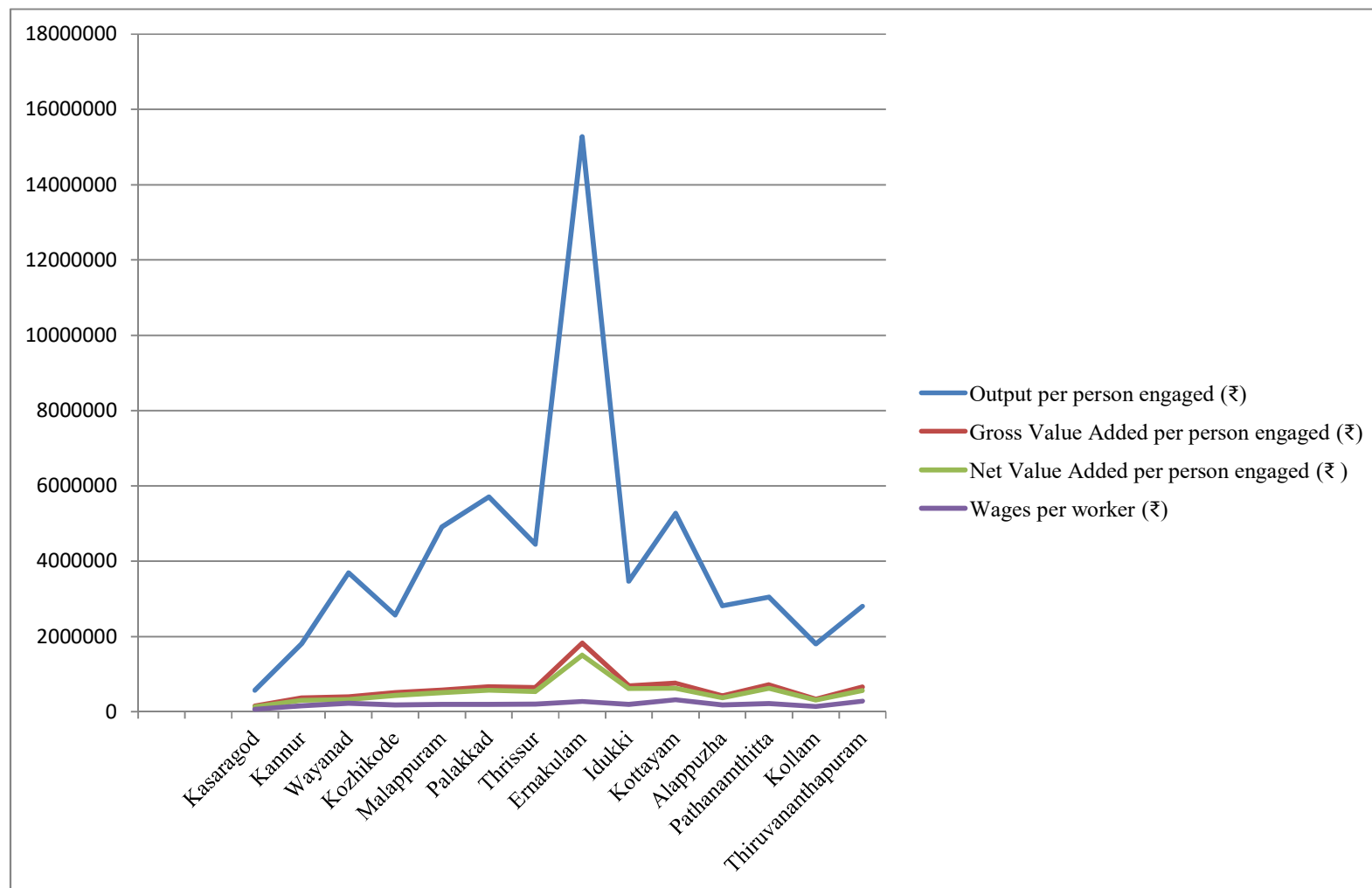


Table 5.3 Structural Ratios by NIC (2008)- 2 digit group of industries, 2021-22				
NIC-2 digit	Description	Fixed Capital per factory in operation (₹ lakhs)	Total no. of persons engaged per factory in operation (Number)	Number of workers per factory in operation (Number)
10	Manufacture of food products	359	61	50
11	Manufacture of beverages	325	40	32
12	Manufacture of tobacco products	6	37	35
13	Manufacture of textiles	371	63	47
14	Manufacture of wearing apparel	394	167	156
15	Manufacture of leather and related products	190	46	39
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	80	14	10
17	Manufacture of paper and paper products	113	28	20
18	Printing and reproduction of recorded media	699	43	24
19	Manufacture of coke and refined petroleum products	115279	198	158
20	Manufacture of chemicals and chemical products	1418	80	57
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	373	57	39
22	Manufacture of rubber and plastic products	484	48	39
23	Manufacture of other non-metallic mineral products	369	29	23
24	Manufacture of basic metals	725	51	40
25	Manufacture of fabricated metal products, except machinery and equipment	215	28	21
26	Manufacture of computer, electronic and optical products	1517	241	181
27	Manufacture of electrical equipment	308	50	38
28	Manufacture of machinery and equipment n.e.c	205	42	32
29	Manufacture of motor vehicles, trailers and semitrailers	128	22	15
30	Manufacture of other transport equipment	7822	274	241
31	Manufacture of furniture	83	21	16
32	Other manufacturing	327	72	47
33	Repair and installation of machinery and equipment	57	30	25
38	Waste collection, treatment and disposal activities; materials recovery	1606	37	13
58	Publishing activities	1847	95	31
	Others	377	31	21
	Total	845	47	36

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	2659	279	4350666
11	Manufacture of beverages	1148	187	2845043
12	Manufacture of tobacco products	37	32	99861
13	Manufacture of textiles	1145	202	1829263
14	Manufacture of wearing apparel	2236	903	1336514
15	Manufacture of leather and related products	1245	167	2711252
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	408	41	3011076
17	Manufacture of paper and paper products	688	229	2483166
18	Printing and reproduction of recorded media	1237	490	2864368
19	Manufacture of coke and refined petroleum products	321807	17862	162589521
20	Manufacture of chemicals and chemical products	7276	1472	9056480
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1350	392	2381745
22	Manufacture of rubber and plastic products	2533	297	5273878
23	Manufacture of other non-metallic mineral products	711	190	2479288
24	Manufacture of basic metals	6806	412	13245081
25	Manufacture of fabricated metal products, except machinery and equipment	1342	137	4747832
26	Manufacture of computer, electronic and optical products	9480	2070	3929879
27	Manufacture of electrical equipment	1409	225	2818230
28	Manufacture of machinery and equipment n.e.c	950	261	2250340
29	Manufacture of motor vehicles, trailers and semitrailers	354	54	1638610
30	Manufacture of other transport equipment	13154	4058	4800041
31	Manufacture of furniture	343	60	1620792
32	Other manufacturing	2991	433	4166187
33	Repair and installation of machinery and equipment	516	317	1709534
38	Waste collection, treatment and disposal activities; materials recovery	2264	109	6173636
58	Publishing activities	2098	851	2212214
	Others	535	108	1711613
	Total	2997	338	6434428

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	515025	457055	157603
11	Manufacture of beverages	530370	463880	160834
12	Manufacture of tobacco products	87559	86872	66192
13	Manufacture of textiles	367060	322439	78056
14	Manufacture of wearing apparel	570751	539555	134644
15	Manufacture of leather and related products	422367	364027	190491
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	369715	305916	130915
17	Manufacture of paper and paper products	870083	825021	172913
18	Printing and reproduction of recorded media	1378141	1134940	445572
19	Manufacture of coke and refined petroleum products	12636415	9024682	610851
20	Manufacture of chemicals and chemical products	1941015	1832725	530422
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	753046	691586	237534
22	Manufacture of rubber and plastic products	711592	619054	288161
23	Manufacture of other non-metallic mineral products	813104	663920	221430
24	Manufacture of basic metals	911641	802517	221508
25	Manufacture of fabricated metal products, except machinery and equipment	558306	483419	204610
26	Manufacture of computer, electronic and optical products	942697	858252	283278
27	Manufacture of electrical equipment	494321	449555	290696
28	Manufacture of machinery and equipment n.e.c	664579	618405	284766
29	Manufacture of motor vehicles, trailers and semitrailers	324710	249421	197143
30	Manufacture of other transport equipment	1565901	1480808	311298
31	Manufacture of furniture	328675	284120	204124
32	Other manufacturing	716776	603628	184115
33	Repair and installation of machinery and equipment	1070259	1050984	345488
38	Waste collection, treatment and disposal activities; materials recovery	783636	297273	465000
58	Publishing activities	1123023	897100	504871
	Others	456516	346279	205822
	Total	863444	725551	217878

5.1 Technical Coefficients

Table 5.4: Technical Coefficients based on estimated characteristics of the state, 2021-22	
Technical Coefficients	2021-22
Fixed Capital to Net Value Added (NVA)	2.5
Fixed Capital to Output	0.28
Net Value Added (NVA) to Output	0.11
Gross Value Added (GVA) to Fixed Capital	0.48
Output to Input	1.15
Profit to Output	0.05
Contract workers to total workers	0.19

Figure 5.2: Technical Coefficients based on estimated characteristics of the state, 2021-22

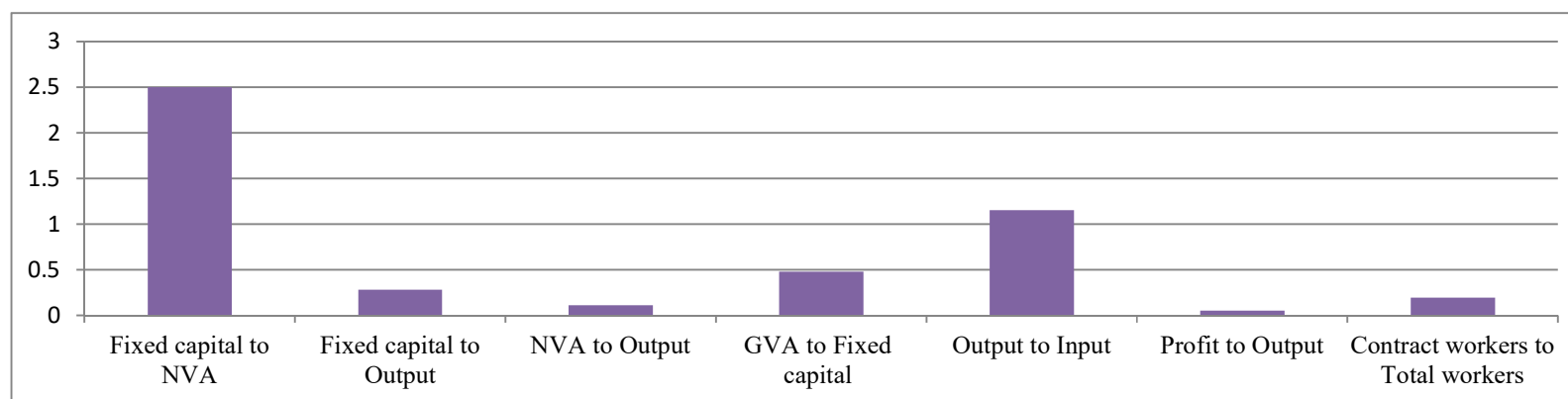


Table 5.5: Technical Coefficients by Districts, 2021-22

District	Fixed Capital to Net Value Added (NVA)	Fixed Capital to Output	Net Value Added (NVA) to Output	Gross Value Added (GVA) to Fixed Capital	Output to Input	Profit to Output	Contract workers to total workers
Kasargod	1.69	0.38	0.22	0.69	1.35	0.04	0.39
Kannur	2.04	0.34	0.17	0.59	1.26	0.02	0.03
Wayanad	1.73	0.15	0.09	0.71	1.12	0.01	0.3
Kozhikode	1.84	0.31	0.17	0.64	1.25	0.03	0.12
Malappuram	1.12	0.12	0.1	1.02	1.13	0.03	0.08
Palakkad	1.79	0.18	0.1	0.65	1.13	0.03	0.24
Thrissur	1.91	0.23	0.12	0.63	1.17	0.03	0.25
Ernakulam	3.21	0.32	0.1	0.38	1.14	0.06	0.27
Idukki	1	0.18	0.18	1.11	1.25	0.08	0.12
Kottayam	1.82	0.21	0.12	0.68	1.17	0.01	0.09
Alappuzha	1.65	0.22	0.13	0.69	1.18	0.03	0.29
Pathanamthitta	1.62	0.33	0.2	0.71	1.31	0.07	0.02
Kollam	1.11	0.19	0.17	0.97	1.23	0.04	0.01
Thiruvananthapuram	1.54	0.31	0.2	0.76	1.31	0.01	0.35
Kerala	2.5	0.28	0.11	0.48	1.15	0.05	0.19

Figure 5.3.: District wise Pattern of Technical Coefficients

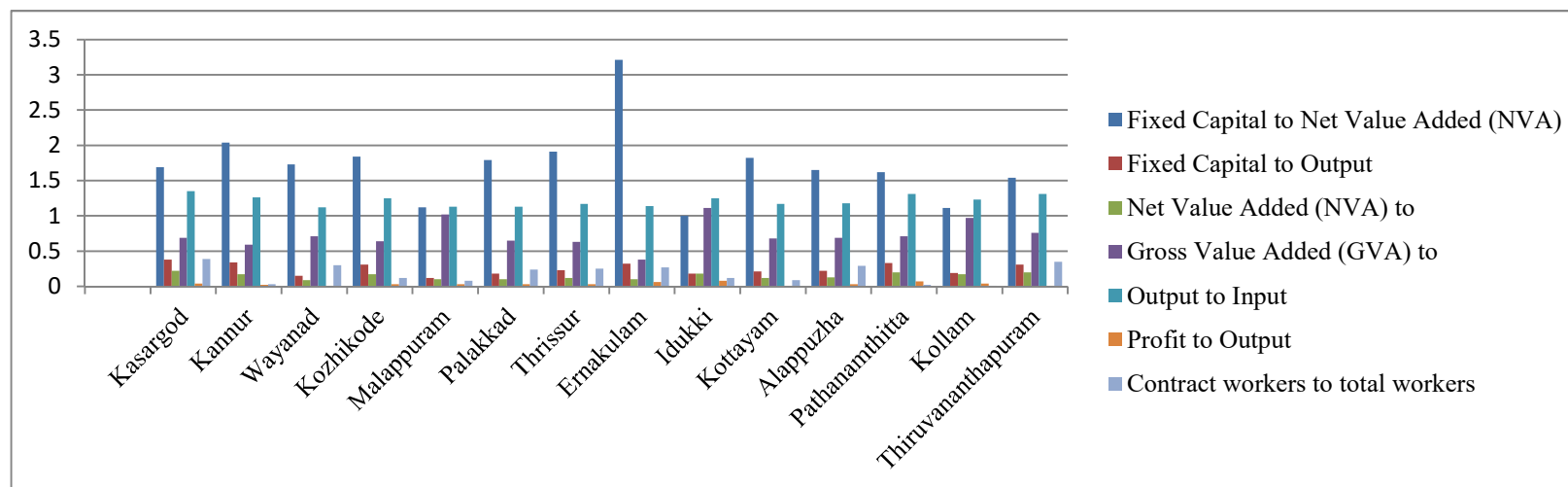
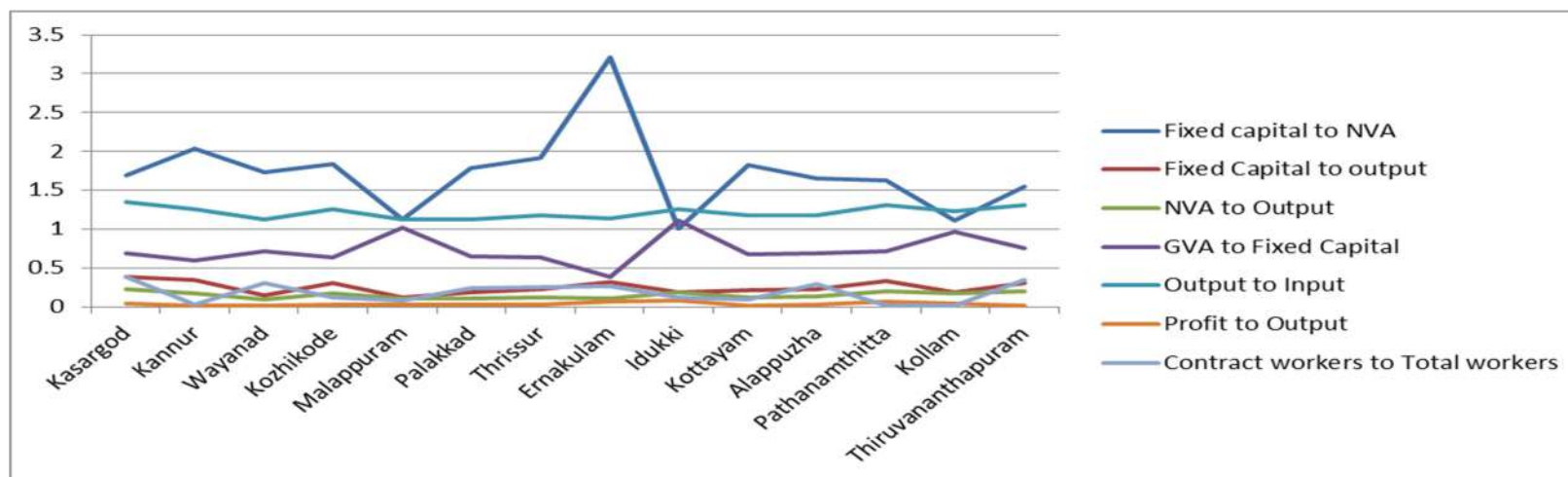


Table 5.6: Technical Coefficients by NIC (2008) -2-digit group of industries, 2021-22

NIC-2 digit	Description	Fixed Capital to NVA	Fixed Capital to Output	NVA to output
10	Manufacture of food products	1.28	0.13	0.11
11	Manufacture of beverages	1.74	0.28	0.16
12	Manufacture of tobacco products	0.18	0.16	0.87
13	Manufacture of textiles	1.84	0.32	0.18
14	Manufacture of wearing apparel	0.44	0.18	0.4
15	Manufacture of leather and related products	1.13	0.15	0.13
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1.92	0.2	0.1
17	Manufacture of paper and paper products	0.49	0.16	0.33
18	Printing and reproduction of recorded media	1.43	0.57	0.4
19	Manufacture of coke and refined petroleum products	6.45	0.36	0.06
20	Manufacture of chemicals and chemical products	0.96	0.19	0.2
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.95	0.28	0.29
22	Manufacture of rubber and plastic products	1.63	0.19	0.12
23	Manufacture of other non-metallic mineral products	1.94	0.52	0.27
24	Manufacture of basic metals	1.76	0.11	0.06
25	Manufacture of fabricated metal products, except machinery and equipment	1.58	0.16	0.1
26	Manufacture of computer, electronic and optical products	0.73	0.16	0.22
27	Manufacture of electrical equipment	1.37	0.22	0.16
28	Manufacture of machinery and equipment n.e.c	0.78	0.22	0.27
29	Manufacture of motor vehicles, trailers and semitrailers	2.37	0.36	0.15
30	Manufacture of other transport equipment	1.93	0.59	0.31
31	Manufacture of furniture	1.39	0.24	0.18
32	Other manufacturing	0.75	0.11	0.14
33	Repair and installation of machinery and equipment	0.18	0.11	0.61
38	Waste collection, treatment and disposal activities; materials recovery	14.74	0.71	0.05
58	Publishing activities	2.17	0.88	0.41
	Others	3.49	0.71	0.2
	Total	2.5	0.28	0.11

NIC-2 digit	Description	GVA to Fixed Capital	Output to input	Contract workers to total Workers
10	Manufacture of food products	0.88	1.13	0.15
11	Manufacture of beverages	0.66	1.23	0.44
12	Manufacture of tobacco products	5.53	8.12	0.36
13	Manufacture of textiles	0.62	1.25	0.21
14	Manufacture of wearing apparel	2.42	1.75	0.002
15	Manufacture of leather and related products	1.02	1.18	0.02
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.63	1.14	0.1
17	Manufacture of paper and paper products	2.14	1.54	0.07
18	Printing and reproduction of recorded media	0.85	1.93	0.05
19	Manufacture of coke and refined petroleum products	0.22	1.08	0.63
20	Manufacture of chemicals and chemical products	1.1	1.27	0.22
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1.14	1.46	0.28
22	Manufacture of rubber and plastic products	0.71	1.16	0.24
23	Manufacture of other non-metallic mineral products	0.63	1.49	0.12
24	Manufacture of basic metals	0.65	1.07	0.39
25	Manufacture of fabricated metal products, except machinery and equipment	0.73	1.13	0.14
26	Manufacture of computer, electronic and optical products	1.5	1.32	0.39
27	Manufacture of electrical equipment	0.8	1.21	0.25
28	Manufacture of machinery and equipment n.e.c	1.37	1.42	0.24
29	Manufacture of motor vehicles, trailers and semitrailers	0.55	1.25	0
30	Manufacture of other transport equipment	0.55	1.48	0.73
31	Manufacture of furniture	0.83	1.25	0.09
32	Other manufacturing	1.57	1.21	0.08
33	Repair and installation of machinery and equipment	5.66	2.67	0.29
38	Waste collection, treatment and disposal activities; materials recovery	0.18	1.15	0.93
58	Publishing activities	0.58	2.03	0.15
	Others	0.38	1.36	0.03
	Total	0.48	1.15	0.19

CONCEPTS AND DEFINITIONS

Important concepts and definitions used in ASI are explained below.

1. A number of accounting, economic and other terms related to the factories are used in conduct of Annual Survey of Industries. For proper assessment and interpretation of ASI data, those are given below.

2. **Accounting Year:** For the purpose of ASI, the accounting year is the period on which the factory closes its books of account. With the enactment of Income Tax Act, by and large, the accounting year of all factories is from April to March.

3. **Reference Period:** It corresponds to the financial year. For example, for ASI 2021-2022 the reference period is the financial year commencing from 1st April 2021 and ending on 31st March 2022 or the accounting year of the factory ending on any date between 01.04.2021 to 31.03.2022.

4. **Survey Period:** Survey period is a period during which work of any Annual Survey of Industries is undertaken. The survey period for ASI 2020-2021 is from May 2022 to October 2022.

5. **Factory (as per the Factory 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. Closed factories with fixed assets on site are also considered as registered factories till they are de-registered and removed from the live-register maintained by the Chief Inspector of Factories (CIF) in the State.

6. **Manufacturing Process:** This is as per Section 2(k) of the Factories Act, 1948.

'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.*

7. **Gross Value of Plant and Machinery:** Gross value of plant and machinery represents the total original (un-depreciated) value of installed plant and machinery as at the end of the accounting year. It includes the book value of own constructed plant and machinery, if installed, and the approximate value of rented-in plant and machinery as at the time of renting in but excludes the value of rented-out plant and machinery. 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.

8. **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 and assets solely used for post-manufacturing activities such as, sale, storage, distribution, etc.

9. **Depreciation:** Depreciation is consumption of fixed capital 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.

10. **Finished Goods:** Finished Goods are those, which are manufactured by the factory for sale. Finished goods should conform to a prescribed standard.

11. **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.

12. **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, land, 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, fixed deposits irrespective of duration, advances for acquisition of fixed assets, long-term loans including interest thereon and investment.

13. **Invested Capital:** Invested capital is the total of fixed capital and physical working capital.

14. **Productive Capital:** This is the total of fixed capital and working capital.

AI.2

15. **Outstanding Loans:** Outstanding loans represent all loans, whether short-term or long-term, whether interest bearing or not, outstanding according to the books of the factory as on the closing day of accounting year.

16. **Contract Worker:** All persons who are not employed directly by an employer but through the third agency, i.e. contractor, are termed as contract workers. Those workers may be employed with or without the knowledge of the principal employer.

17. **Employees:** Employees relate 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. Persons in the head office connected with the manufacturing activity of the factory are also included in this item.

18. **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.

19. **Wages:** Wages are defined to include all remuneration capable of being expressed in monetary terms and also payable/paid more or less regularly in each pay period to workers (defined above) 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 both at regular and less frequent intervals (i.e., incentive bonuses and good attendance bonuses, production bonuses, profit sharing bonuses, festival or yearend bonuses etc.).

It **excludes** layoff payments and compensation for employment 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 creches 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**.

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20. **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.
21. **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.
22. **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.
23. **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.
24. **Compensation of Employees:** Compensation of employees is the total of emoluments and supplement to emoluments.
25. **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.
26. **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.
27. **Working Day:** Working day means the days on which a manufacturing process and/ or repair or maintenance work was carried on.
28. **Non-working Day:** Apart from manufacturing day and repair and maintenance days there may be some non-working days. Nonworking 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.
29. **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. Such material is not lost through the process of production but only changes its forms.

AI.4

30. **Consumable Stores:** All such materials which assist the manufacturing process and lose their identity without entering the products are called consumable stores, e.g., cotton waste.

31. **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.

32. **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. It also includes the cost of all the materials used in the production of fixed assets, including construction work for factory's own use. 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.

33. **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).

34. **Intermediate Product:** Intermediate Product is a product which is obtained during a manufacturing process, which may or may not be saleable and is not the intended final product.

35. **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.

36. **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 books. Also include fixed assets produced by the factory for its own use.

37. **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.

38. 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.

39. 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.

40. Net Value Added: This is the increment to the value of goods and services that is contributed by the factory and is obtained by deducting the value of total inputs and depreciation from gross value of output.

41. Net Income: It is obtained by deducting the value of rent paid & interest paid from the NVA.

42. Net Profit: It is obtained by deducting compensation of employees from net income.

CONFIDENTIAL

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 2021-2022 (Part –I)
(Please read the instructions before filling the return)

Block A: Identification particulars (for official use)									
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>)									

Block B: Particulars of the factory (to be filled by owner of the factory)									
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.....)								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 & registered with DST/DBT-1, yes & 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)

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Block C: FIXED ASSETS												
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	Provided during the year	Adjustment for sold/ discarded during the year	Up to year end (cols. 8+9 -10)	Opening as on ----- (cols. 3-8)	Closing as on ----- (cols. 7-11)
			Due to revaluation	Actual additions								
(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.	Sub-total (items 2 to 7)											
9.	Capital work in progress											
10.	Total (items 1+8+9)											

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Block D: WORKING CAPITAL AND LOANS			
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.	Sub-total (items 1 to 3)		
5.	Semi-finished goods/work in progress		
6.	Finished goods		
7.	Total inventory (items 4 to 6)		
8.	Cash in Hand & at Bank		
9.	Sundry Debtors		
10.	Other current assets		
11.	Total current assets (items 7 to 10)		
12.	Sundry Creditors		
13.	Over draft, cash credit, other short term loan from banks & other financial institutions		
14.	Other current liabilities		
15.	Total current liabilities (items 12 to 14)		
16.	Working Capital (item 11-item 15)*		
17.	Outstanding loans (excluding interest but including deposits)**		
Note: * 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			

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Block E: EMPLOYMENT AND LABOUR COST							
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
Part A: Details for each category of staff							
1.	Male workers employed directly						
2.	Female workers employed directly						
3.	Sub-total (items 1 + 2)						
4.	Workers employed through contractors						
5.	Total workers (items 3 + 4)						
6.	Supervisory & managerial staff						
7.	Other employees						
8.	Unpaid family members/ proprietor/ coop. members						
9.	Total employees (items 5+6+7+8)						
Part B: Some details for all categories of staff combined							
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					
		(iii) Total (i+ ii)					
14.	Total cost of production (in Rs.) [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]						

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	Block F : OTHER EXPENSES		
	Sl. No.	Items	Expenditure (in Rs.)
	(1)	(2)	(3)
O T H E R I N P U T	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	

	Block G : OTHER OUTPUT/RECEIPTS		
	Sl. No.	Items	Receipts (in Rs.)
	(1)	(2)	(3)
O T H E R O U T P U T	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	

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Block H: Indigenous input items consumed (if needed, additional sheets may be used for recording input items with serial nos. starting from 25)						
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.	Total basic items (items 1 to 11)	9990100				
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.	Total inputs (items 12+ 22)	9993000				
24.	Any additional requirement of electricity (unmet demand)	9999999	KWH			
* Full description of items not in NPC-MS 2011 (Revised):						

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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.	Total imports (consumed) (items 1 to 6)	9994000				

DSL No

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 PSL No

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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.	Total (items 1 to 11)	9995000										
13.	Share (%) of products/by-products directly exported											

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

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Block K: Information and Communication technology (ICT) usage		
Sl. No.	ICT indicator	yes-1, no-2
1.	Did the factory use computer/s during FY 2021-22?	
2.	Did the factory use the internet during FY 2021-22?	
3.	Did the factory have a website as on the date of survey?	
4.	Did the factory receive orders via the internet during FY 2021-22?	
5.	Did the factory place orders for business purpose via the internet during FY 2021-22?	
6.	Did the factory connect to the internet either by a. Narrowband or b. Fixed broadband or c. Mobile broadband during FY 2021-22?	
7.	Does the factory have a local area network (LAN) as on the date of survey?	

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

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Block M: Particulars of field operations					
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	

Block N: Comments of Superintending Officer/Scrutinising Officer	
<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><i>Please refer to detailed instructions also for further guidance.</i></p>	

Annual Survey of Industries 2021-2022

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	X	X	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 (2021-22)	Previous year (2020-21)	Reasons for significant variation, if any.
	1) Average salaries/wages per manday worked (Rs.) ($E_{5,8} / E_{5,5}$)			
	2) Total worker (number) ($E_{5,6}$)			
	3) Total employees (number) ($E_{9,6}$)			
	4) Total emoluments ($E_{9,8} + E_{10,8} + E_{11,8} + E_{12,8}$)			
	5) Variation in finished goods ($D_{6,4} - D_{6,3}$)			
	6) Working Capital ($D_{16,4}$)			
	7) Total input ($F_{1,3} + F_{2(i),3} + F_{2(iii),3} + F_{3,3} + F_{4,3} + F_{6,3} + F_{7,3} + F_{8,3} + F_{11,3}$) (+) ($H_{23,6}$) (+) ($I_{7,6}$)			
	8) Total output ($J_{12,7}$) (-) ($J_{12,8} + J_{12,9} + J_{12,10} - J_{12,11}$) + ($D_{6,4} - D_{6,3}$) + ($G_{1,3} + G_{2,3} + G_{3,3} + G_{4,3} + G_{6,3} + G_{7,3} + G_{8,3} + G_{11,3} + F_{7,3}$)			
	9) Gross value added (GVA) (Item 8-Item 7 as above)			

	Item	Current year (2021-22)	Previous year (2020-21)	Reasons for significant variation, if any.
	10) Net value added (Item 9 as above) - Depreciation ($C_{10,9}$)			
	11) Net Income (Item 10 as above) (-) ($F_{9,3}+F_{10,3}$)			
	12) Profit (Item 11 as above) (-) ($E_{9,8}+E_{10,8}+E_{11,8}+E_{12,8}$)			
	13) Actual addition to fixed assets ($C_{10,5}$)			
	14) GVA (through Ex-factory Value) ($J_{12,13}$) (+) ($G_{1,3}+G_{2,3}+G_{3,3}+G_{4,3}+G_{6,3}+G_{7,3}+G_{8,3}+G_{11,3}+F_{7,3}$) (-) ($F_{1,3}+F_{2(i),3}+F_{2(ii),3}+F_{3,3}+F_{4,3}+F_{6,3}+F_{7,3}+F_{8,3}+F_{11,3}$) (-) ($H_{23,6}$) (-) ($I_{7,6}$)			

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

PART-B (To be filled in by Scrutinizing officer) Impose check on the following and give observations against each item		
Sl. No.	Check points	Observations (Yes-1/No-2)
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

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Name of Scrutinizing officer

Estimation Procedure

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:

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

is the simple average of sub-sample estimates of the s-th stratum in the i-th State, \hat{Y}_{ism} , m=1,3 i.e., $\hat{Y}_{is} = \frac{1}{2} \sum_{m=1,3} \hat{Y}_{ism}$.

Thus, the estimator for any characteristic of the unit **in the sample sector** of the ith state is:

$$\hat{Y}_i = \sum_s \hat{Y}_{is} \quad (1.2)$$

Now, if \hat{Y}_i^c 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, \hat{Y}_i^c , 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 ith State **as a whole** based on the central sample is given by:

$$\text{Central } \hat{Y} = \sum_i \hat{Y}_i + \hat{Y}_i^c \quad \text{AIII-1}$$

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

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

(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**¹ for m-th sub-sample of the i-th state is:

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

\hat{Y}_{ism} indicates that the estimate of Characteristic Y generated from state sample for mth sub-sample of sth stratum in ith State. Now, the Estimation formula for a characteristic y of the unit **for the sample sector** in s-th stratum of the i-th state **based on state sample** is the simple average of sub-sample estimates of the s-th stratum in the i-th State, \hat{Y}_{ism} , m=2,4 i.e., $\hat{Y}_{is} = \frac{1}{2} (\hat{Y}_{ism} + \hat{Y}_{ism})$, where \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 ith state is based on **the state sample** is:

$$\hat{Y}_i = \sum_s \hat{Y}_{is} \quad (4.2)$$

Using \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:

$$\hat{Y}_i = \hat{Y}_{is} + \hat{Y}_i$$

(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 \hat{Y}_{ism} . Then

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

¹ 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.

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 $\hat{Y}_{is}^{Pooled} = \frac{1}{4} \sum_{m=1}^4 \hat{Y}_{ism}$. 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 $\hat{Y}_{is}^{Pooled} = \frac{1}{t} \sum_{m=1}^t \hat{Y}_{ism}$, where t (≤ 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 ith state based on **pooled sample** is:

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

Using \hat{Y}_i^c 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:

$$\hat{Y}_i^{Pooled} = \hat{Y}_i^{Pooled} + \hat{Y}_i^c \quad (7)$$

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.

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

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

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:

$$Var(\hat{Y}_i) = \sum_s Var(\hat{Y}_{is}) \quad (8)$$

The sampling variance based on central Samples is:

$$Var(\hat{Y}_i) = \sum_s \{(\hat{Y}_{is1} - \hat{Y}_{is3})/2\}^2 \quad (9.1)$$

The sampling variance based on state Samples is:

$$Var(\hat{Y}_i) = \sum_s \{(Y_{is2} - Y_{is4}) / 2\}^2 \dots (9.2)$$

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:

$$Var(\hat{Y}_i) = \frac{1}{t(t-1)} \sum_{s=1}^t \sum_{m=1}^m (Y_{ism} - Y_{is})^2 \dots (9.3)$$

where $\hat{Y}_{is} = \frac{1}{t} \sum_{m=1}^t Y_{ism}$ 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:

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

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 of \hat{R} is

$$MSE(\hat{R}) = \frac{1}{\hat{X}^2} \{ V(\hat{Y}) + 2\hat{R}Cov(\hat{X}, \hat{Y}) + \hat{R}^2 V(\hat{X}) \} \dots (11)$$

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

$$MSE(\hat{R}) = \frac{1}{\hat{X}^2} \{ V(\hat{Y}) + 2\hat{R}Cov(\hat{X}, \hat{Y}) + \hat{R}^2 V(\hat{X}) \} \dots (11.1)$$

where $\hat{Y}_s = \frac{1}{2} \sum_{m=1,3} Y_{ism}$, $\hat{X}_s = \frac{1}{2} \sum_{m=1,3} X_{ism}$, $\hat{R} = \frac{\hat{Y}_s}{\hat{X}_s}$, and \hat{Y}_s and \hat{X}_s 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 \hat{Y}_s and \hat{X}_s will be obtained using eq. (3) for the characteristics x and y respectively.

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

$$MSE(\hat{R}_i) = \frac{1}{\hat{X}_i^2} \{ V(\hat{Y}_i) + 2\hat{R}_i Cov(\hat{X}_i, \hat{Y}_i) + \hat{R}_i^2 V(\hat{X}_i) \} \dots (11.2)$$

where $\hat{Y}_i = \frac{1}{2} \sum_{m=1,3} Y_{ism}$, $\hat{X}_i = \frac{1}{2} \sum_{m=1,3} X_{ism}$, $\hat{R}_i = \frac{\hat{Y}_i}{\hat{X}_i}$, and \hat{Y}_i and \hat{X}_i 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 \hat{Y}_i and \hat{X}_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),

$$MSE(\hat{R}) = \frac{1}{2} \left[\frac{1}{m_{2,4}} \sum_{s=1}^m (\hat{Y}_{is} - \hat{Y}_{ism})^2 + 2\hat{R} \left(\hat{Y}_{is} - \hat{Y}_{ism} \right) (\hat{X}_{is} - \hat{X}_{ism}) + \hat{R}^2 (\hat{X}_{is} - \hat{X}_{ism})^2 \right] \dots (12)$$

where \hat{Y}_{is} and \hat{X}_{is} 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 \hat{Y}_{ism} and \hat{X}_{ism} 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,

$$MSE(\hat{R}) = \frac{1}{12} \left[\frac{1}{X^2} \sum_{s=1}^m (Y_{sm} - Y_s)^2 + \frac{2}{R} \sum_{s=1}^m (Y_{sm} - Y_s)(X_{sm} - X_s) + \sum_{s=1}^m (X_{sm} - X_s)^2 \right] \dots (13)$$

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, $\hat{Y}_s = \frac{1}{4} \sum_{m=1}^4 \hat{Y}_{sm}$ and $\hat{X}_s = \frac{1}{4} \sum_{m=1}^4 \hat{X}_{sm}$ and $R = \hat{Y} / \hat{X}$. Here, \hat{Y} , \hat{X} and R are pooled all-India estimate

$$\hat{Y}_s = \frac{1}{4} \sum_{m=1}^4 \hat{Y}_{sm} \quad \hat{X}_s = \frac{1}{4} \sum_{m=1}^4 \hat{X}_{sm}$$

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 :

$$MSE(\hat{R}_i) = \frac{1}{12} \left[\frac{1}{\hat{X}_i^2} \sum_{s=1}^m (\hat{Y}_{ism} - \hat{Y}_{is})^2 + 2\hat{R}_i \sum_{s=1}^m (\hat{Y}_{ism} - \hat{Y}_{is})(\hat{X}_{ism} - \hat{X}_{is}) + \sum_{s=1}^m (\hat{X}_{ism} - \hat{X}_{is})^2 \right] \dots (13.1)$$

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, $\hat{Y}_{is} = \frac{1}{4} \sum_{m=1}^4 \hat{Y}_{ism}$ and $\hat{X}_{is} = \frac{1}{4} \sum_{m=1}^4 \hat{X}_{ism}$ and $\hat{R}_i = \hat{Y}_{is} / \hat{X}_{is}$.

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.

5. Estimates of RSE:

$$RSE(\hat{Y}) = \frac{\sqrt{Var(\hat{Y})}}{\hat{Y}} \times 100 \dots (14)$$

$$RSE(\hat{R}) = \frac{\sqrt{MSE(\hat{R})}}{\hat{R}} \times 100 \dots (15)$$

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
$\frac{E_{is}}{e_{ism}}, m = 1, 2, 3 \text{ or } 4.$	$e_{is}, e_{ism} = \frac{1}{m_{2,4}} \sum_{m=1}^m e_{ism}$

7. Treatment for surveyed cases and casualty cases:

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.

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.

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).

8. Treatment in cases of void strata

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:

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.

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 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 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 date¹ 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 para-military and the armed forces shall provide such assistance as would be required by the concerned statistics officer.

1736 GI/11-5

6

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]

AIV.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.

AIV.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]

3-digit NIC-2008	4-digit NIC-2008	Description
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

3-digit NIC-2008	4-digit NIC-2008	Description
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

3-digit NIC-2008	4-digit NIC-2008	Description
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

3-digit NIC-2008	4-digit NIC-2008	Description
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

3-digit NIC-2008	4-digit NIC-2008	Description
	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

3-digit NIC-2008	4-digit NIC-2008	Description
	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.

3-digit NIC-2008	4-digit NIC-2008	Description
	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

3-digit NIC-2008	4-digit NIC-2008	Description
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

3-digit NIC-2008	4-digit NIC-2008	Description
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