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ANNUAL SURVEY OF INDUSTRIES 2020-21
VOLUME I

Directorate of Economics and Statistics
Thiruvananthapuram

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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 2020-21' highlights the key characteristics of the factory sector, detailed results of the survey at 2/3/4 – digit level of National Industrial Classification (NIC), district level, rural-urban and type of organization. An attempt has also been made in this report to analyze the major characteristics such as capital, employment and emoluments, Gross Value Added (GVA), input, output, profit, income, etc.

The survey is conducted annually under the statutory provisions of Collection of Statistics Act, 2008 as amended in 2017 and rules framed there under in 2011. Deputy Directors of the district offices are designated as Statistics Officers for conducting the survey in their respective jurisdiction. Field work and data entry work have been done by investigators and scrutinized by the Research officers. Data entry is done using MS-Access based 'e-schedule package' provided by IS Wing of National Statistics Office and process including preparation of report have been done in ASI Wing of DES. The present report is prepared by combining 785 state sample units (surveyed by DES), 785 Central Sample units (surveyed by NSO, FOD) and 1237 Census sector units.

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

Even though the considerable part of the reference period of the survey was affected by Covid -19 pandemic, the co-operation extended by the selected industrial units of the survey is commendable and technical assistance rendered by IS Wing of National Statistics Office, Kolkata and NSO (FOD), Thiruvananthapuram is also acknowledged.

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 2020-21. The report is prepared by combining 785 state sample units (surveyed by DES), 785 central sample units (surveyed by NSO, FOD) and 1237 census sector units.

The Key results of the survey are summarized below:

- ❖ The survey estimated 7972 factories in the organized manufacturing sector of Kerala during the financial year 2020-21. Out of these factories about 87.27% (6957 factories) were operating factories.
- ❖ The district with highest number of factories is Ernakulam (1590) and the least is Wayanad (70). In Ernakulam 86.54 % factories are operational whereas in Wayanad it is 95.71 %.
- ❖ During the fiscal year 2020-21 the factories in rural areas outnumbered those in urban area. Out of 7972 factories, about 51.6% were located in rural area.
- ❖ All the factories **in operation** together have total fixed capital worth ₹ 58,17,077 lakhs and invested capital of ₹ 80,32,739 lakhs.

- ❖ The coke and refined petroleum products industry stands at the highest invested capital and fixed capital with an estimated value of ₹ 40,69,285 lakhs and ₹ 33,55,316 lakhs respectively. These accounts to about 50.66% and 57.68 % of state's aggregate value respectively.
- ❖ In 2020-21 the total input in organized manufacturing sector declined by 38% from 2019-20 (₹ 1,20,81,298 lakhs in 2020-21 and ₹ 1,95,08,119 lakhs in 2019-20). The total output in 2020-21 has also been declined by 34% from 2019-20 (₹ 1,44,27,491 lakhs in 2020-21 and ₹ 2,18,81,862 lakhs in 2019-20).
- ❖ The estimated Gross Fixed Capital Formation (GFCF) of the manufacturing sector of the state in 2020-21 stands at ₹ 5,99,633 lakhs which is 47.61 % drop from 2019-20 figure (₹ 11,44,598 lakhs in 2019-20)
- ❖ The Gross Value Added (GVA) of organized manufacturing sector in the state for the year 2020-21 shows a decline of 1.16% from 2019-20 (₹ 23,46,193 lakhs in 2020-21 and ₹ 23,73,743 lakhs in 2019-20). Among the districts, the highest GVA estimated from the industries in Ernakulam district (₹ 11,78,662) is ₹ 85, 584 lakhs more than the previous year (₹ 10,93,078 lakhs).
- ❖ In 2020-21, the average number of persons engaged in the factories has been declined by 10.24 % from 2019-20 (310958 in 2020-21 and 346449 in 2019-20).
- ❖ In 2020-21, out of 310958 persons engaged 246944 were workers and among these 1,99,533 were directly employed and 47,411 were employed through contractors. Among the directly employed workers in this sector, about 42.2% represent the female workforce (male workers at 115339 and female at 84194).
- ❖ Among the directly employed workers, women dominated industries were tobacco products manufacturing industries (96.5 %) followed by manufacture of wearing apparels (72.4 %) and then food products (68.8 %).
- ❖ Regarding the industries under the organization type, Government Company-Public industry was estimated with highest share of contract workers (56.44%).
- ❖ The estimated wages and salaries of workers dropped by 2.5% in 2020-21 from 2019-20 figure (₹ 4,93,757 lakhs in 2020-21 and ₹ 5,06,560 lakhs in 2019-20).
- ❖ In 2020-21 the value of the fuels consumed by the factories declined by 22.3% (₹ 6,59,942 lakhs in 2020-21 against ₹ 8,49,833 lakhs in 2019-20).

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Figures at a Glance -Kerala

Rates and Ratios

Estimates of some important rates and ratios as per ASI 2020-21 are given below.

(Figures for ASI 2019-20 are shown in the bracket)

Rates

- Fixed Capital per factory in operation: 836 lakhs (853 lakhs)
 - Total no. of persons engaged per factory in operation: 45 (50)
- Number of workers per factory in operation: 35 (38)
- Output per factory in operation: 2,074 lakhs (3,147 lakhs)
- Gross Value Added (GVA) per factory in operation: 337 lakhs (341 lakhs)
- Net Value Added (NVA) per factory in operation: 283 lakhs (283 lakhs)
- Output per person engaged: 46,39,691 (63,16,041)
- Gross Value Added (GVA) per person engaged: 7,54,505 (6,85,164)
- Net Value Added (NVA) per person engaged: 6,32,218 (5,67,632)
- Wages per worker: 1,99,947 (1,90,655)

Ratios

- Fixed Capital to Net Value Added (NVA): 2.96 (3.01)
- Fixed Capital to Output: 0.40 (0.27)
- Net Value Added (NVA) to Output: 0.14 (0.09)
- Gross Value Added (GVA) to Fixed Capital: 0.40 (0.04)
- Output to Input: 1.19 (1.12)
- Net Profit to Output: 0.05 (0.03)
- Contract Workers to Total Workers: 0.19 (0.18)

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 (21.51%)	Manufacture of coke and refined petroleum products (57.68 %)	Manufacture of food products (30.2 %)	Manufacture of coke and refined petroleum products (30.38 %)	Manufacture of food products (19.36 %)
2	Manufacture of other non-metallic mineral products (11.88%)	Manufacture of food products (9.58%)	Manufacture of rubber and plastics products (8.7 %)	Manufacture of food product (23.61 %)	Manufacture of chemicals and chemical products (13.26 %)
3	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (10.85 %)	Manufacture of rubber and plastics products (5.18 %)	Manufacture of other non-metallic mineral products (6.5 %)	Manufacture of rubber and plastics products (8.90 %)	Manufacture of coke and refined petroleum products (12.95 %)
4	Manufacture of rubber and plastics products (8.54 %)	Manufacture of other non-metallic mineral products (4.13 %)	Manufacture of textiles (6.2 %)	Manufacture of chemicals and chemical products (6.56 %)	Manufacture of rubber and plastics products (10.43 %)
5	Manufacture of tobacco products (6.06 %)	Manufacture of other transport equipment (3.25 %)	Manufacture of chemicals and chemical products (4.1 %)	Manufacture of other non-metallic mineral products (3.54 %)	Manufacture of other non-metallic mineral products (6.44 %)
Aggregate Total (all Kerala level) *	7972	5817077	310958	14427491	2346193
<i>*Estimates of Fixed Capital, Output and GVA are in ₹ lakhs</i>					

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

Rank	Total number of Factories	Fixed Capital	Total Persons engaged	Total Output	Gross Value Added
1	Ernakulam (19.9 %)	Ernakulam (73.70 %)	Ernakulam (26.89 %)	Ernakulam (56.36 %)	Ernakulam (50.24 %)
2	Kollam (13.7 %)	Palakkad (4.44 %)	Kollam (14.05 %)	Thrissur (6.81 %)	Kottayam (7.95 %)
3	Thrissur (11.5 %)	Alappuzha (3.22 %)	Thrissur (9.79 %)	Alappuzha (5.96 %)	Thrissur (6.96 %)
4	Kannur (9.2 %)	Kottayam (3.12 %)	Alappuzha (9.18 %)	Palakkad (5.95 %)	Palakkad (5.54 %)
5	Alappuzha (8.1 %)	Thrissur (3.03 %)	Palakkad (6.67 %)	Kottayam (5.81 %)	Kollam (5.46 %)
Aggregate Total (all Kerala level) *	7972	5817077	310958	14427491	2346193
<i>*Estimates of Fixed Capital, Output and GVA are in ₹ lakhs</i>					



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Chapter 1: Introduction

1.1 Scope and Coverage

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

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

'Any premises' including the precincts thereof: -

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

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

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

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

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

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

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

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

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

1.2. Unit of Enumeration

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

1.3 ASI Frame

1.3.1 The ASI frame is based on the lists of registered factories / units maintained by the Chief

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

1.3.2 It is to be noted that apart from the factories in operation, the ASI frame comprises factories which are categorised 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 2020-21 was the accounting year of the factory, ending on any day during the financial year 2020-2021. Thus, in ASI 2020-2021, data collected from establishments relate to their respective accounting years that ended on any day between 1st April 2020 and 31st March 2021. Survey was conducted in the state in the time period 1st January 2022 to 30th November 2022. The reference period of the survey coincided with Covid-19 pandemic period in Kerala which witnessed nation- wide lockdown and disruption.

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 2020-21, 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 2020-21 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 2020-21 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 2020-21 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 2019-20, service sector contributed 65.20 % 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 9.23%. 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

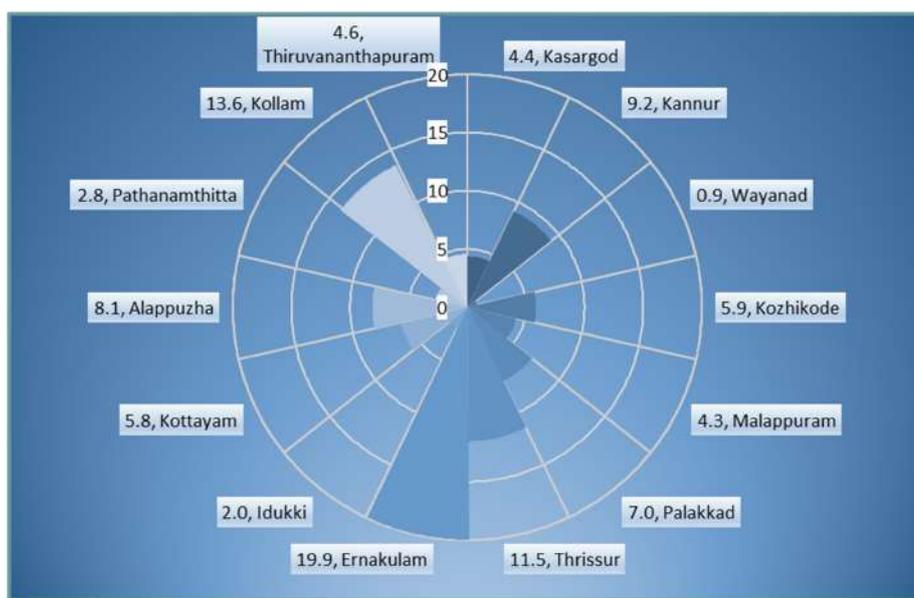
Registered industries involved in the production of goods define the organized manufacturing industries of the state. **Annual Survey of Industries (ASI)** is one of the major industrial surveys conducted annually in the state for assessing the growth of the organized manufacturing sector and its contribution 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, labour, capital and entrepreneurship. A manufacturing firm uses the land, labour 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 2020-21 which gives a critical insight into industrial productivity, resource utilization, sectoral performance, regional variation and other parameters estimated from the survey. The region wise industrial disparity also gives us deep insight on how the geographical structure, access to raw materials, transportation, labour supply, etc. are influencing the factors of industrial development.

The survey estimated 7972 factories with 6957 operating factories in the fiscal year 2020-21. The top district in terms of percentage share of aggregate number of factories is Ernakulam which accounts to about 19.9 % (1590) whereas Wayanad had the minimum with a share of 0.9 % (70).

Figure 2.1: District wise Percentage of Factories in Organized Manufacturing Sector, 2020-21



Top five districts with highest number of factories were Ernakulam (1590), Kollam (1088), Thrissur (917), Kannur (730) and Alappuzha (646).

Figure 2.2: Top Five Districts with highest number of factories

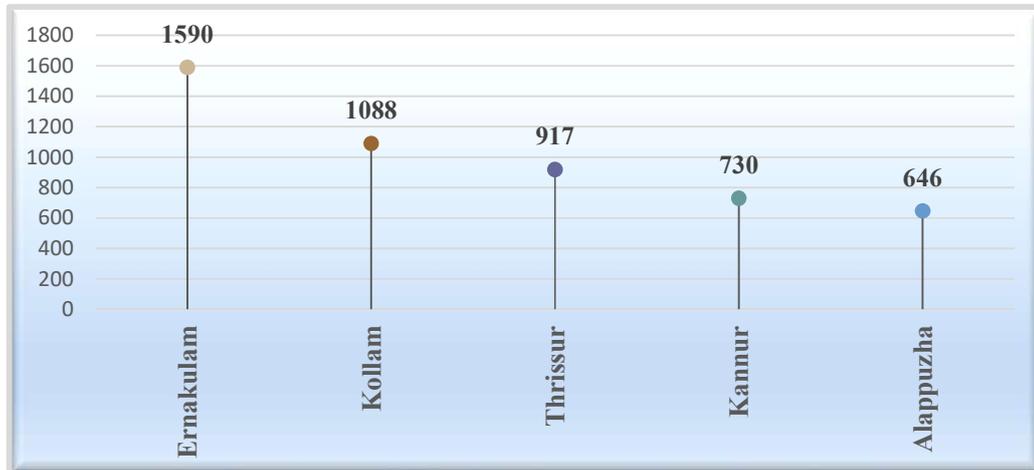
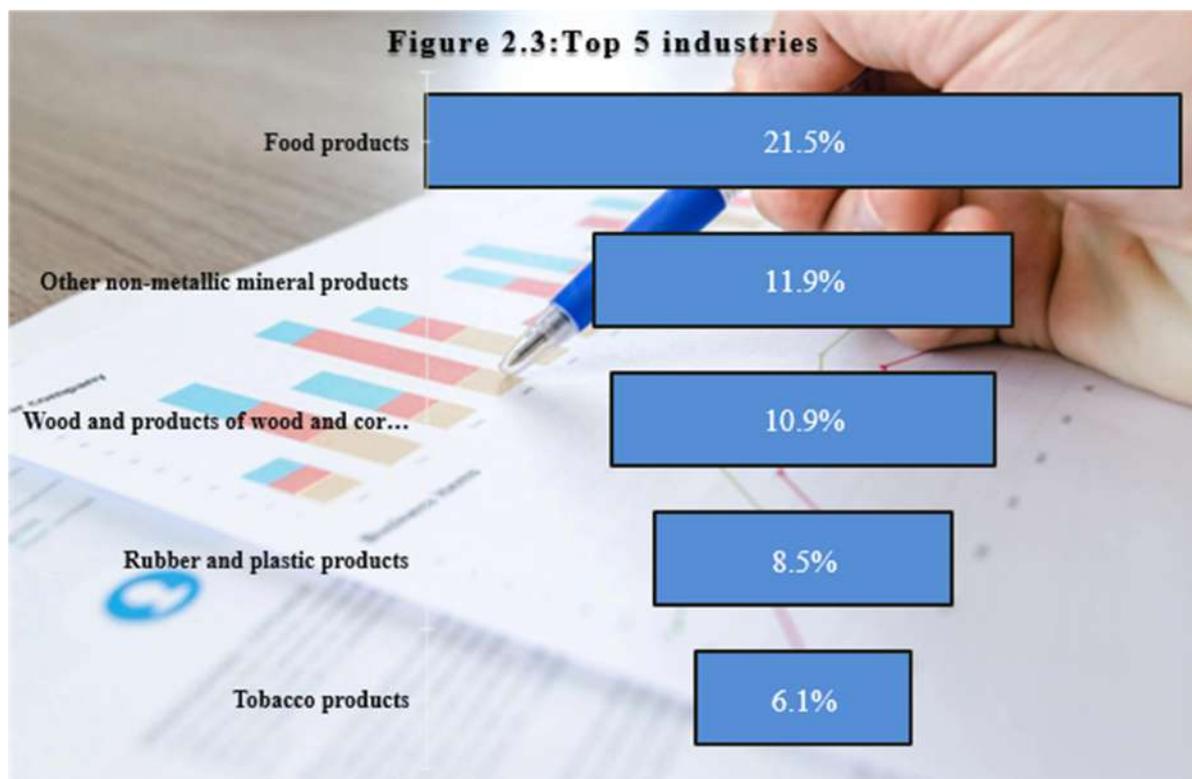


Table 2.1 District wise distribution of factories, Kerala, 2020-21

District	No. of Factories (Nos.)	Percentage
Kasaragod	349	4.4
Kannur	730	9.2
Wayanad	70	0.9
Kozhikode	468	5.9
Malappuram	340	4.3
Palakkad	560	7.0
Thrissur	917	11.5
Ernakulam	1590	19.9
Idukki	162	2.0
Kottayam	466	5.8
Alappuzha	646	8.1
Pathanamthitta	221	2.8
Kollam	1088	13.6
Thiruvananthapuram	365	4.6
Kerala	7972	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 (21.51% 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 (21.5 %), Other non-metallic mineral products (11.9 %), Wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials (10.9 %), Rubber and plastic products (8.5 %) and Tobacco products (6.1 %). These industries together contribute 58.84 % 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 87.27% 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 89.62% operating factories whereas the other major industries such as, Other Non-Metallic Mineral Products, Wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials had 79.41% and 87.75% 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

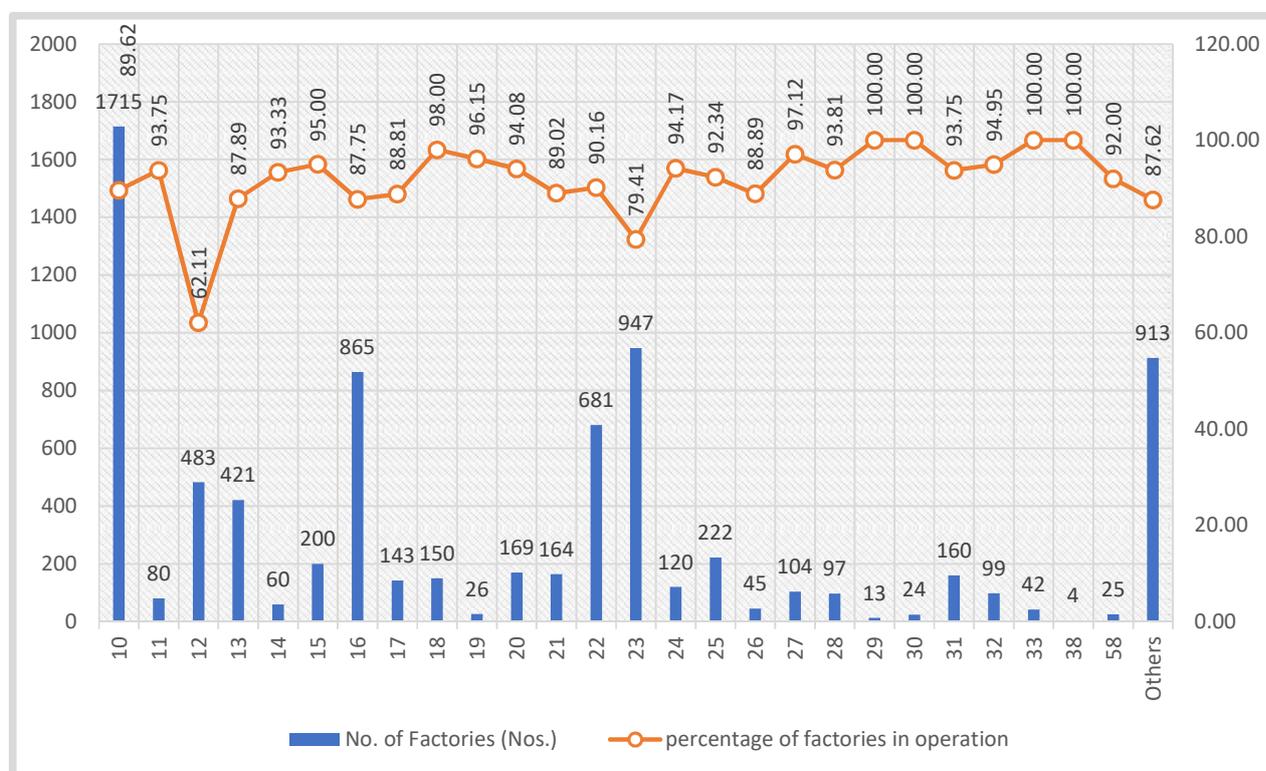


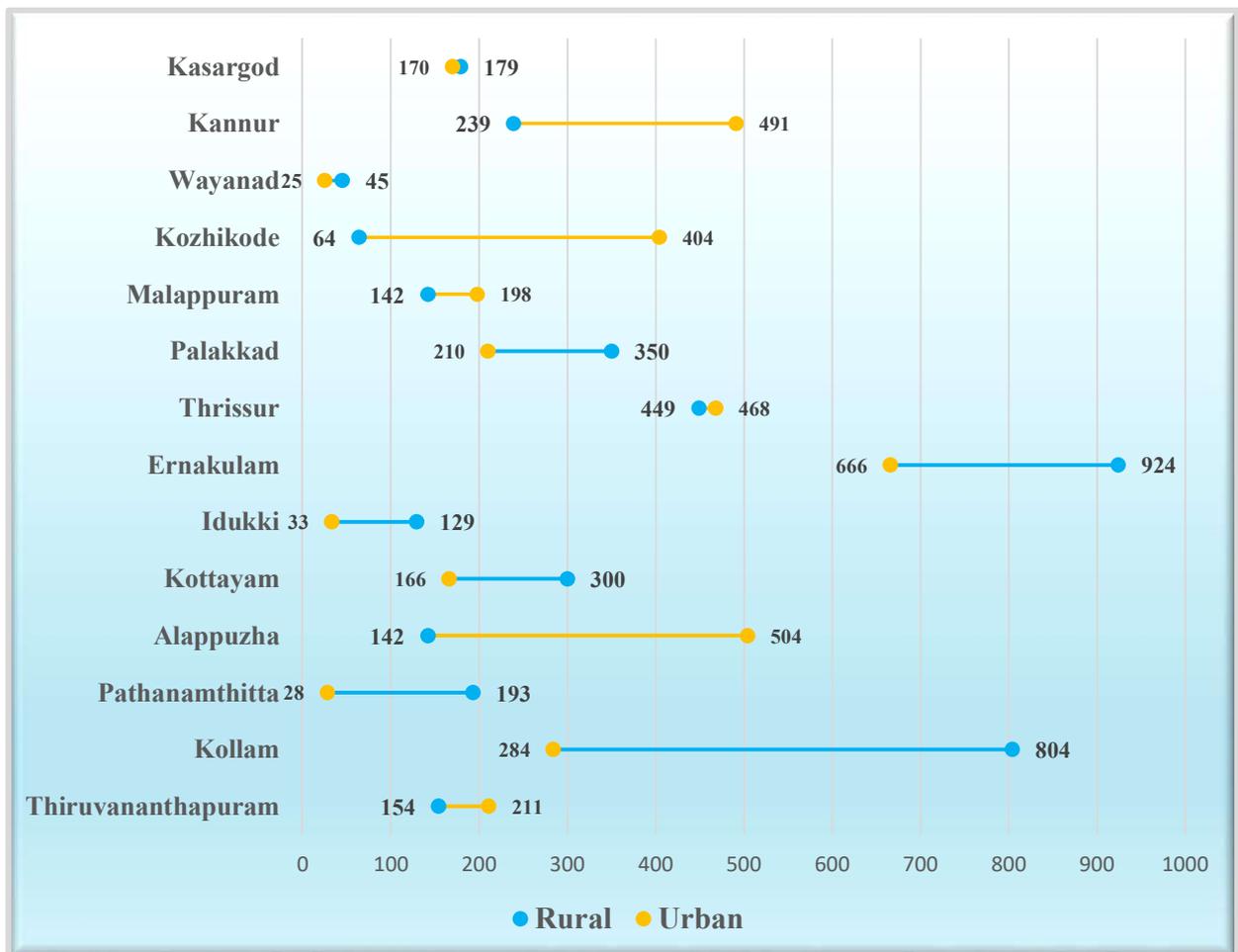
Table 2.2 Distribution of total number of factories and percentage of factories in operation by NIC (2008)-2-digit group of industries

NIC 2-digit	Description	No. of Factories	Factories in Operation (Nos.)	Percentage
10	Manufacture of food products	1715	1537	89.62
11	Manufacture of beverages	80	75	93.75
12	Manufacture of tobacco products	483	300	62.11
13	Manufacture of textiles	421	370	87.89
14	Manufacture of wearing apparel	60	56	93.33
15	Manufacture of leather and related products	200	190	95
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	865	759	87.75
17	Manufacture of paper and paper products	143	127	88.81

NIC 2-digit	Description	No. of Factories	Factories in Operation (Nos.)	Percentage
18	Printing and reproduction of recorded media	150	147	98
19	Manufacture of coke and refined petroleum products	26	25	96.15
20	Manufacture of chemicals and chemical products	169	159	94.08
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	164	146	89.02
22	Manufacture of rubber and plastic products	681	614	90.16
23	Manufacture of other non-metallic mineral products	947	752	79.41
24	Manufacture of basic metals	120	113	94.17
25	Manufacture of fabricated metal products, except machinery and equipment	222	205	92.34
26	Manufacture of computer, electronic and optical products	45	40	88.89
27	Manufacture of electrical equipment	104	101	97.12
28	Manufacture of machinery and equipment n.e.c	97	91	93.81
29	Manufacture of motor vehicles, trailers and semitrailers	13	13	100
30	Manufacture of other transport equipment	24	24	100
31	Manufacture of furniture	160	150	93.75
32	Other manufacturing	99	94	94.95
33	Repair and installation of machinery and equipment	42	42	100
38	Waste collection, treatment and disposal activities; materials recovery	4	4	100
58	Publishing activities	25	23	92
	Others	913	800	87.62
	Total	7972	6957	87.27

The movement of manufacturing towards rural areas i.e., rural industrialization is a major factor leading to rural development resulting in increase of rural income. The results reveal that the manufacturing factories located in rural areas outnumbered those in urban areas. Out of the total estimated factories, 4114 (51.6%) were in rural areas, while 3858 (48.4%) were in urban areas. The top five districts viz; Ernakulam (19.9%), Kollam (13.6%), Thrissur (11.5%), Kannur (9.2%) and Alappuzha (8.1%) with highest number of factories together account to 62% of the state aggregate and out of the total 4971 factories in these districts 2558 (51.5%) were in rural areas and 2413 (48.5 %) were in urban areas. It is also worth noticeable that Ernakulam district, the major industrial hub of Kerala had about 58% of factories situated in rural areas (924 in rural as against 666 in urban) and remaining 42% in urban areas. Examining the district wise industries in rural-urban sectors the data shows that in 8 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, 2020-21



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, 6957 registered operating factories have provided employment to 3,10,958 persons and distributed ₹ 8,84,296 lakhs as emoluments to employees. Among these employees, 45.15% (1,40,383) were working in industries in rural area and the remaining 54.85% (1,70,575) 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 79.4% (246944 nos.) were workers whereas 19.91 % and 0.68% were employees other than workers and Unpaid Family members/Proprietor respectively.



Table 2.3: Distribution of employees in the manufacturing industries of Kerala, 2020-21

Sl.No.	Characteristic	Number	Percentage
1	Workers	246944	79.41
2	Employees other than workers	61911	19.91
3	Unpaid Family members/Proprietor etc.	2103	0.68
Average Number of Persons Engaged		310958	100.00

The survey also categorizes workers as Directly employed and Employed through Contractors. Among the workers 80.8 % are directly employed and top five districts with highest proportion of directly employed workers were estimated in Idukki (98.3 %), Kollam (98.2 %), Pathanamthitta (97.2 %), Malappuram (92.5 %) and Kottayam (90.7 %).

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

Districts	Average no. of Persons Engaged	Percentage
Kasargod	10355	3.3
Kannur	15455	5.0
Wayanad	3402	1.1
Kozhikode	14186	4.6
Malappuram	9143	2.9
Palakkad	20733	6.7
Thrissur	30436	9.8
Ernakulam	83614	26.9
Idukki	7538	2.4
Kottayam	18665	6.0
Alappuzha	28549	9.2
Pathanamthitta	7245	2.3
Kollam	43684	14.0
Thiruvananthapuram	17953	5.8
Kerala	310958	100.0

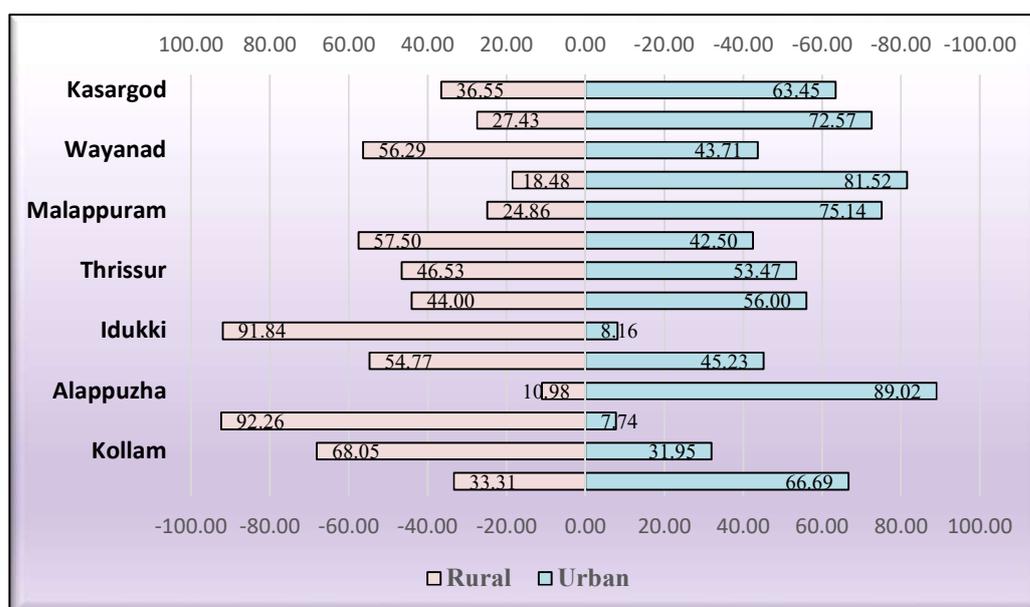
Among the 14 districts, top three districts with industries providing gainful employment were Ernakulam (26.9 %), Kollam (14.0%) and Thrissur (9.8%) and these constitutes a combined share of 50.7% of total employment. And these districts together share 57.47% of employment in rural industries and 45.17 % of employment in urban industries. Ernakulam district with highest share of employment

had 44% (36792) and 56% (46822) rural and urban employment respectively, whereas Wayanad, the least industrialized district with a share of 56.29 % (1915) of employment in rural industries and 43.71% (1487) in urban industries.

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

District	Rural	Urban	Total
Kasaragod	3785	6570	10355
Kannur	4239	11216	15455
Wayanad	1915	1487	3402
Kozhikode	2622	11564	14186
Malappuram	2273	6870	9143
Palakkad	11922	8811	20733
Thrissur	14162	16274	30436
Ernakulam	36792	46822	83614
Idukki	6923	615	7538
Kottayam	10222	8443	18665
Alappuzha	3135	25414	28549
Pathanamthitta	6684	561	7245
Kollam	29729	13955	43684
Thiruvananthapuram	5980	11973	17953
Kerala	140383	170575	310958

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 78,670 workers (31.86% of the state aggregate). The major five employment providing industries were Food products (31.86%), Rubber and plastic products (8.54%), Textiles (6.73%), Other non-metallic mineral products (6.34%) and Tobacco products (4.27%) (see Figure 2.8).

Figure 2.8: Top five industries with highest share of workers

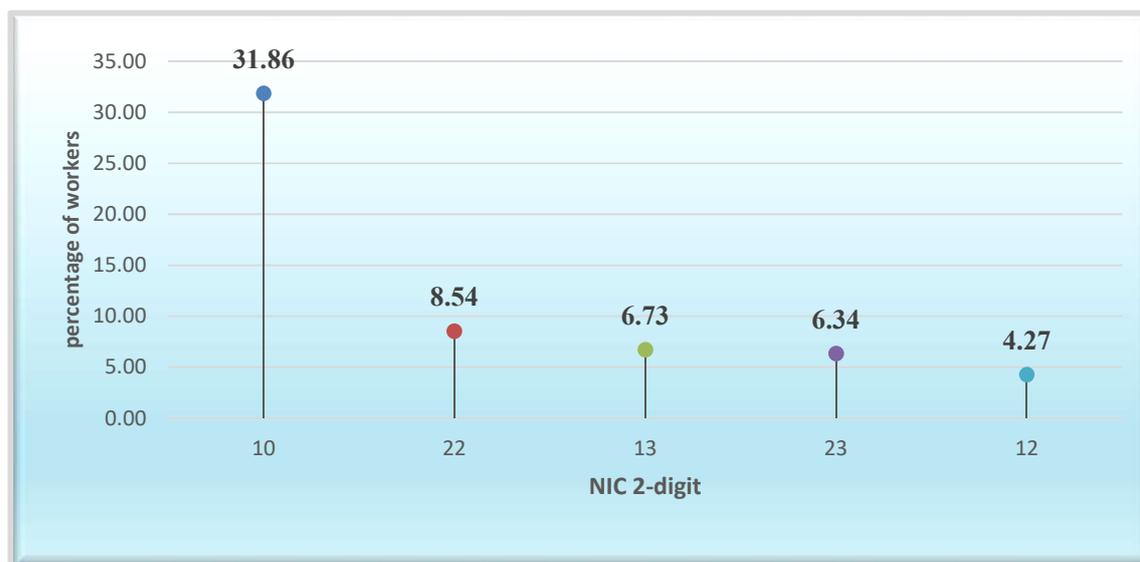


Table 2.6: Distribution of workers by NIC (2008)-2-digit group of industries

NIC 2-digit	Description	No. of workers	Percentage
10	Manufacture of food products	78670	31.86
11	Manufacture of beverages	2543	1.03
12	Manufacture of tobacco products	10533	4.27
13	Manufacture of textiles	16611	6.73
14	Manufacture of wearing apparel	7160	2.90
15	Manufacture of leather and related products	4803	1.94
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	8106	3.28
17	Manufacture of paper and paper products	1914	0.78

NIC 2-digit	Description	No. of workers	Percentage
18	Printing and reproduction of recorded media	3625	1.47
19	Manufacture of coke and refined petroleum products	5715	2.31
20	Manufacture of chemicals and chemical products	8966	3.63
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	6181	2.50
22	Manufacture of rubber and plastic products	21095	8.54
23	Manufacture of other non-metallic mineral products	15667	6.34
24	Manufacture of basic metals	3878	1.57
25	Manufacture of fabricated metal products, except machinery and equipment	4549	1.84
26	Manufacture of computer, electronic and optical products	5431	2.20
27	Manufacture of electrical equipment	4221	1.71
28	Manufacture of machinery and equipment n.e.c	2798	1.13
29	Manufacture of motor vehicles, trailers and semitrailers	261	0.11
30	Manufacture of other transport equipment	6960	2.82
31	Manufacture of furniture	2476	1.00
32	Other manufacturing	4212	1.71
33	Repair and installation of machinery and equipment	1095	0.44
38	Waste collection, treatment and disposal activities; materials recovery	29	0.01
58	Publishing activities	659	0.27
	Others	18786	7.61
	Total	246944	100.00

The survey also estimates the number of contract workers in various manufacturing industries. As per the result, out of 2,46,944 workers employed, 1,99, 533 were directly employed by the factories and 47,411 were hired as 'contract workers'. The number of contract workers varies widely across different industries with varied economic activities. The manufacture of other transport equipment and coke & refined petroleum products industries stands at the highest share of contract workers- i.e., in 2020-21 about three in every four workers (75.46% and 75.35% respectively) was a contract worker. Other industries with a higher share of contract workers include Waste collection, treatment and disposal activities; materials recovery industry (72.41%) and Tobacco products industry (59.33%). The top two

industries with highest share of directly employed workers were Publishing activities (99.39%) and Leather and related products (99.31%) which has the lowest share of contract workers, at just 0.61% and 0.69% respectively. The other industries with larger proportion of directly employed workers include Wearing apparel industry (98.95%), Motor vehicles, trailers and semitrailers industry (97.32%), Wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials industry (94.02%), Furniture industry (92.81%), Paper and paper products industry (90.28 %) (See Figure 2.9. Table 2.7).

Figure 2.9: Share of Directly employed and contract workers by NIC (2008) 2-digit group of industries

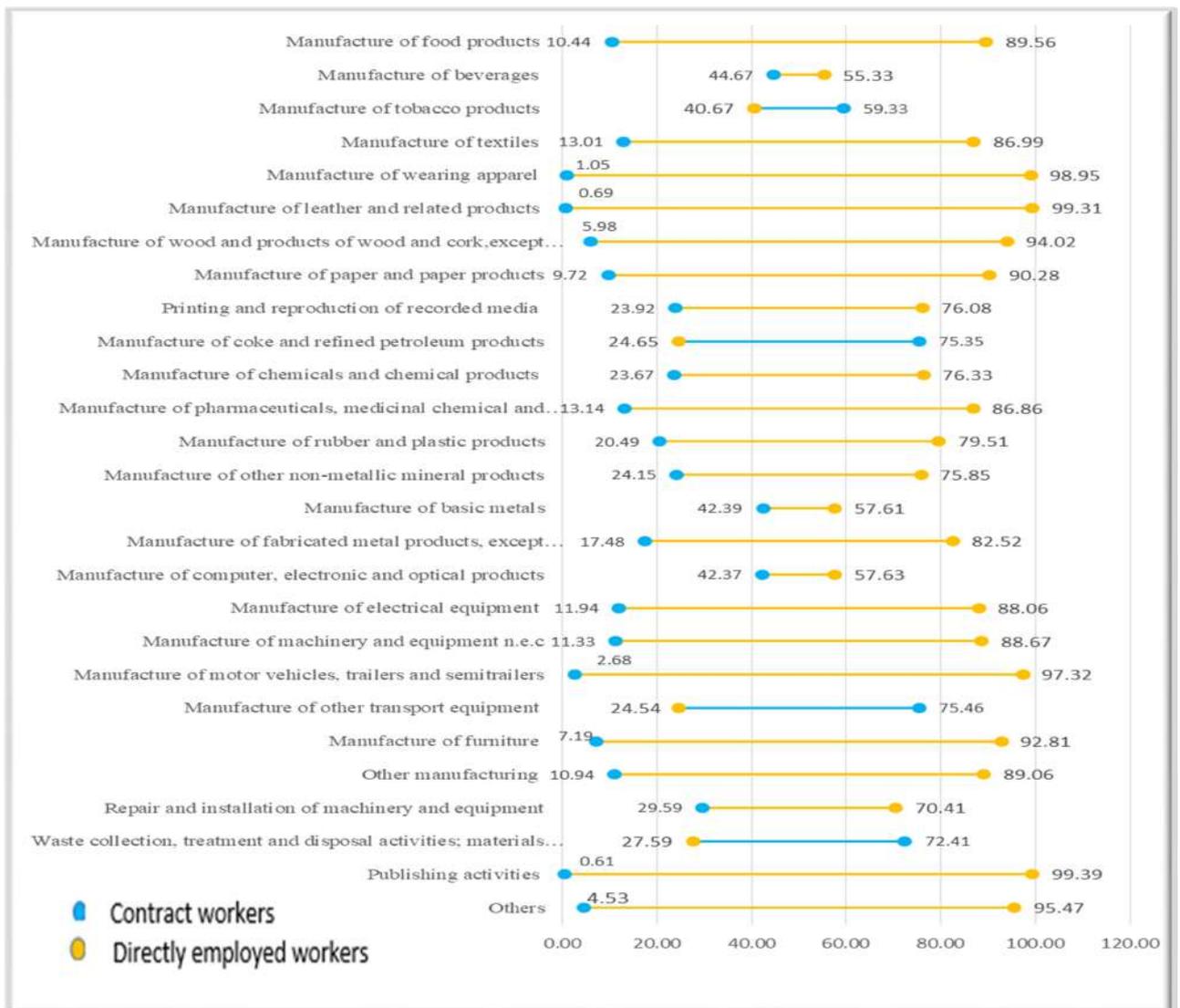


Table 2.7: Distribution of directly employed and contract workers by NIC (2008)
2-digit group of industries

NIC (2 Digit)	Description	Share of contract workers	Share of Directly employed workers
10	Manufacture of food products	10.44	89.56
11	Manufacture of beverages	44.67	55.33
12	Manufacture of tobacco products	59.33	40.67
13	Manufacture of textiles	13.01	86.99
14	Manufacture of wearing apparel	1.05	98.95
15	Manufacture of leather and related products	0.69	99.31
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	5.98	94.02
17	Manufacture of paper and paper products	9.72	90.28
18	Printing and reproduction of recorded media	23.92	76.08
19	Manufacture of coke and refined petroleum products	75.35	24.65
20	Manufacture of chemicals and chemical products	23.67	76.33
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	13.14	86.86
22	Manufacture of rubber and plastic products	20.49	79.51
23	Manufacture of other non-metallic mineral products	24.15	75.85
24	Manufacture of basic metals	42.39	57.61
25	Manufacture of fabricated metal products, except machinery and equipment	17.48	82.52
26	Manufacture of computer, electronic and optical products	42.37	57.63
27	Manufacture of electrical equipment	11.94	88.06
28	Manufacture of machinery and equipment n.e.c	11.33	88.67
29	Manufacture of motor vehicles, trailers and semitrailers	2.68	97.32
30	Manufacture of other transport equipment	75.46	24.54
31	Manufacture of furniture	7.19	92.81
32	Other manufacturing	10.94	89.06
33	Repair and installation of machinery and equipment	29.59	70.41
38	Waste collection, treatment and disposal activities; materials recovery	72.41	27.59
58	Publishing activities	0.61	99.39
	Others	4.53	95.47
	Total	19.20	80.80

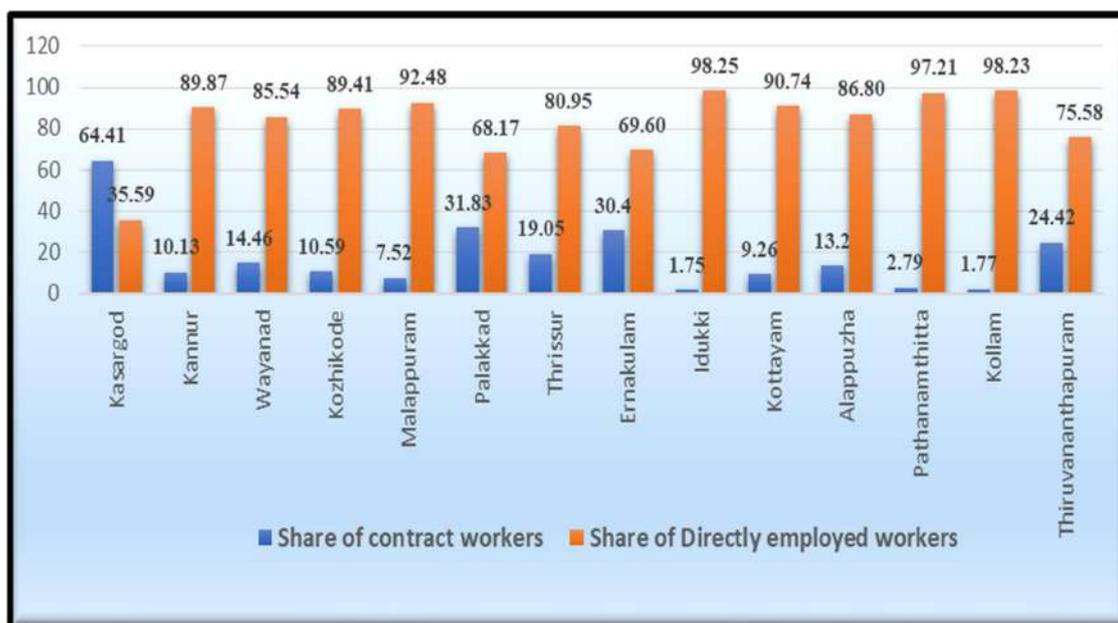
Analyzing the composition of the industrial workforce across the districts, in 2020-21, Kasaragod leads in terms of hiring of contract workers, 64.41% whereas Idukki and Kollam had just 1.75% and 1.77% respectively. Kasaragod is the only district with more than 50% contract workers in the manufacturing

factories while the other districts witnessed highest share of directly employed workers. The Palakkad district reported 31.83% contract workers whereas Ernakulam, the most industrialized district of the state reported 30.40% contract workers in the manufacturing sector (*Table 2.8 and Fig 2.10*).

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

District	Directly Employed	Employed through Contractors	Total Workers	Share of contract workers
Kasargod	3378	6114	9492	64.41
Kannur	11898	1341	13239	10.13
Wayanad	2302	389	2691	14.46
Kozhikode	9156	1084	10240	10.59
Malappuram	6183	503	6686	7.52
Palakkad	11089	5177	16266	31.83
Thrissur	20163	4745	24908	19.05
Ernakulam	44731	19535	64266	30.40
Idukki	4947	88	5035	1.75
Kottayam	10501	1072	11573	9.26
Alappuzha	20794	3162	23956	13.20
Pathanamthitta	5646	162	5808	2.79
Kollam	38383	691	39074	1.77
Thiruvananthapuram	10362	3348	13710	24.42
Kerala	199533	47411	246944	19.20

Figure 2.10: District wise Percentage share of Directly employed and Contract Workers in manufacturing industry



In addition to this, the estimates of employment status based on different types of organization reveals that only those industries under the category of Government Company-Public had the highest share of contract workers, 56.44% while all the other types of organizations showed significantly high share of directly employed workers (see Figure 2.11).

Figure 2.11: Share of contract workers in the industries by type of organization

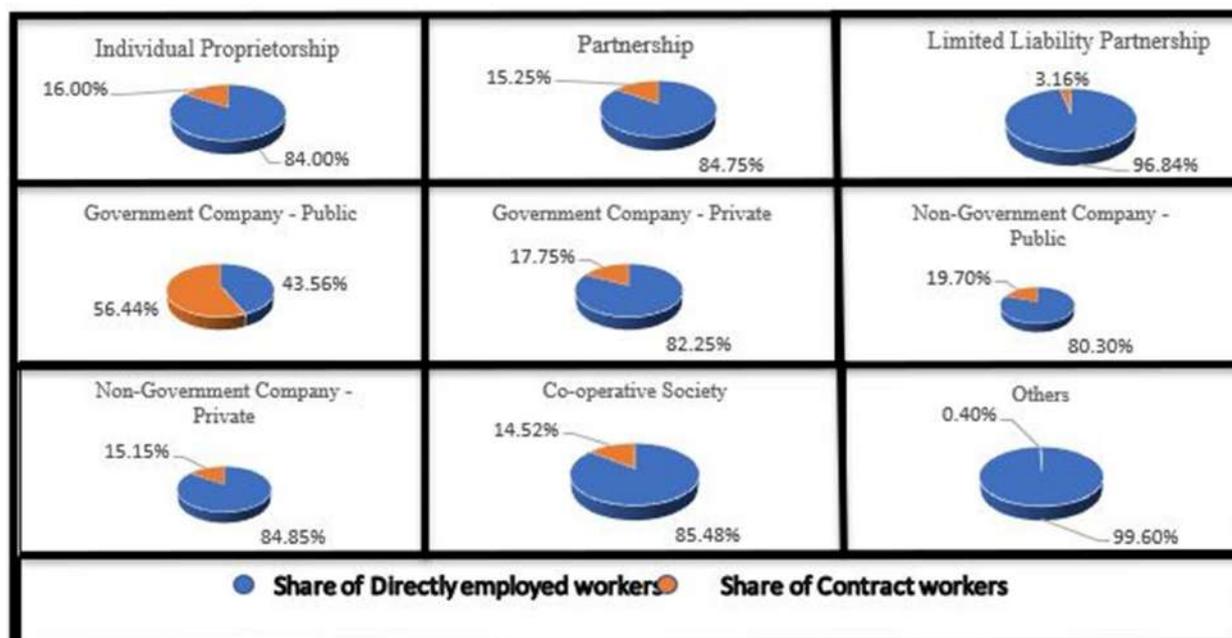
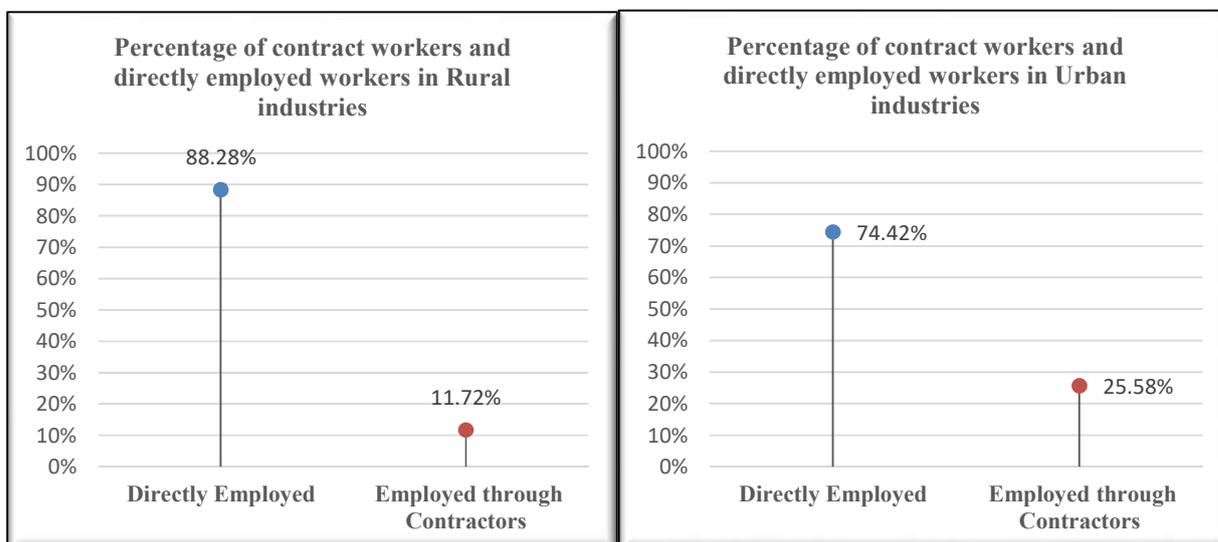


Table 2.9: Sector wise distribution of Directly employed and Contract workers

Employees	Rural	Urban	Total
Directly Employed	100359	99174	199533
Employed through Contractors	13319	34092	47411
Total Workers	113678	133266	246944

Figure 2.12: 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 42.2% (84,194) of the total work force in 2020-21. This share shows a decline when compared to previous year figure which was 44.5 %. It was also revealed that in Tobacco Products manufacturing industries, the directly employed women representation stands at a striking figure of 96.5%. And the other women work force dominated industries were Wearing apparels (72.4 %) and Food products (68.8 %). 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	21955	48500	70455	68.8
11	Manufacture of beverages	774	633	1407	45.0
12	Manufacture of tobacco products	150	4134	4284	96.5
13	Manufacture of textiles	8222	6228	14450	43.1
14	Manufacture of wearing apparel	1954	5131	7085	72.4
15	Manufacture of leather and related products	3836	934	4770	19.6

NIC (2 digit)	Description	Directly Employed			
		Men	Women	Total	Percentage
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	5965	1656	7621	21.7
17	Manufacture of paper and paper products	1013	715	1728	41.4
18	Printing and reproduction of recorded media	2279	479	2758	17.4
19	Manufacture of coke and refined petroleum products	1382	27	1409	1.9
20	Manufacture of chemicals and chemical products	6028	816	6844	11.9
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	2802	2567	5369	47.8
22	Manufacture of rubber and plastic products	13763	3010	16773	17.9
23	Manufacture of other non-metallic mineral products	10341	1543	11884	13.0
24	Manufacture of basic metals	2030	204	2234	9.1
25	Manufacture of fabricated metal products, except machinery and equipment	3042	712	3754	19.0
26	Manufacture of computer, electronic and optical products	1838	1292	3130	41.3
27	Manufacture of electrical equipment	2608	1109	3717	29.8
28	Manufacture of machinery and equipment n.e.c	2273	208	2481	8.4
29	Manufacture of motor vehicles, trailers and semitrailers	223	31	254	12.2
30	Manufacture of other transport equipment	1629	79	1708	4.6
31	Manufacture of furniture	1926	372	2298	16.2
32	Other manufacturing	2015	1736	3751	46.3
33	Repair and installation of machinery and equipment	639	132	771	17.1
38	Waste collection, treatment and disposal activities; materials recovery	8	0	8	0.0
58	Publishing activities	643	12	655	1.8
	Others	16001	1934	17935	10.8
	Total	115339	84194	199533	42.2

Figure 2.13: Directly employed Female- Dominated Industries



Rural-Urban sector wise estimates shows that among 1,00,359 directly employed workers in rural industries, about 49 % were women whereas out of 99174 workers in urban industries 35.3 % 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

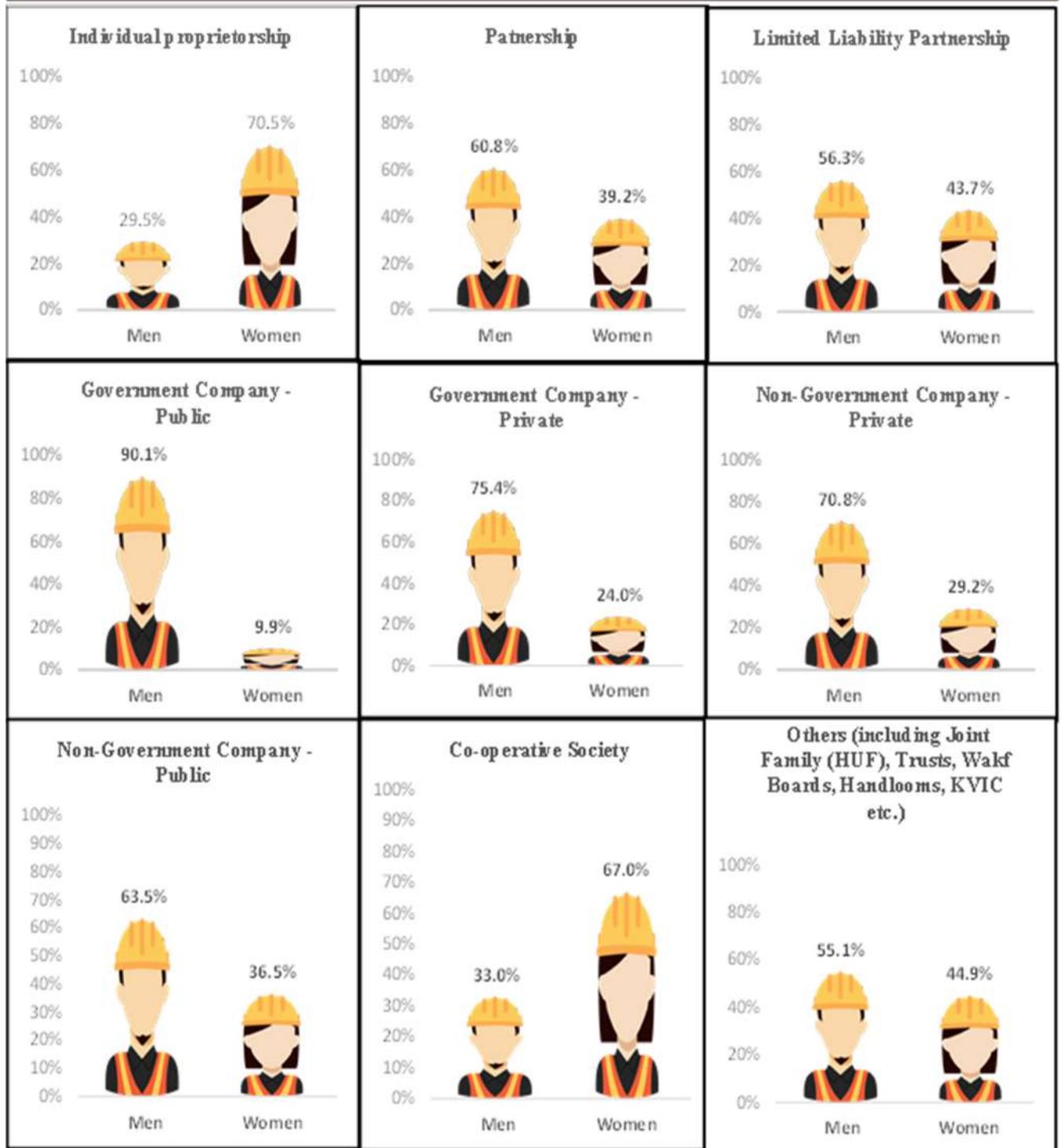
Directly Employed Workers	Rural	Urban	Total
Men	51192 (51.0%)	64147 (64.7%)	115339 (57.8%)
Women	49167 (49.0%)	35027 (35.3%)	84194 (42.2%)
Total	100359	99174	199533

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 70.5% and 67.0 % respectively. The remaining type of organizations were male dominated (*refer Table 2.12, Figure 2.14*).

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	12044	28850	40894	70.51
Partnership	22790	14706	37496	39.21
Limited Liability Partnership	2450	1898	4348	43.7
Government Company – Public	8617	942	9559	9.9
Government Company – Private	5105	1664	6769	24.6
Non-Government Company – Public	13828	7932	21760	36.5
Non-Government Company – Private	45001	18519	63520	29.2
Co-operative Society	4273	8680	12953	67.0
Others	1231	1003	2234	44.9
Total	115339	84194	199533	42.2

Figure 2.14: Gender wise distribution of Directly employed workers in Manufacturing sector by type of organization



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 310958 persons engaged in factories during fiscal year 2020-21 accounts to ₹ 10,24,577 lakhs and out of the total emoluments, 38% (₹ 3,89,362 lakhs) was earned by employees in the rural industries and 62% by those in urban industries (₹ 6,35,215 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 lakhs whereas the salary per Supervisory & Managerial Staff was ₹ 8.13 lakhs and that of other employees, ₹ 3.43 lakhs. On monthly basis the wage for each category of employees turns out to be ₹ 16,662, ₹ 67,747 and ₹ 28,608 respectively. Also, if on an average of 30 days is considered per month, a worker in state’s organized manufacturing sector earned ₹ 555 as daily wage in 2020-21. On the other hand, those working as Supervisors & Managerial Staff, earned ₹ 2,258 per and Other employees earned ₹ 954 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

₹ 1383 followed by industries such as Chemicals and Chemical products, Publishing activities with an estimated daily wage of ₹ 1300 and ₹ 1257 respectively.

It may also be observed that the least daily wage was earned by workers engaged in Tobacco products manufacturing industry (₹ 166) 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 (₹ 328) and Wearing Apparel (₹ 365) (refer Figure 2.15, Table 2.13).

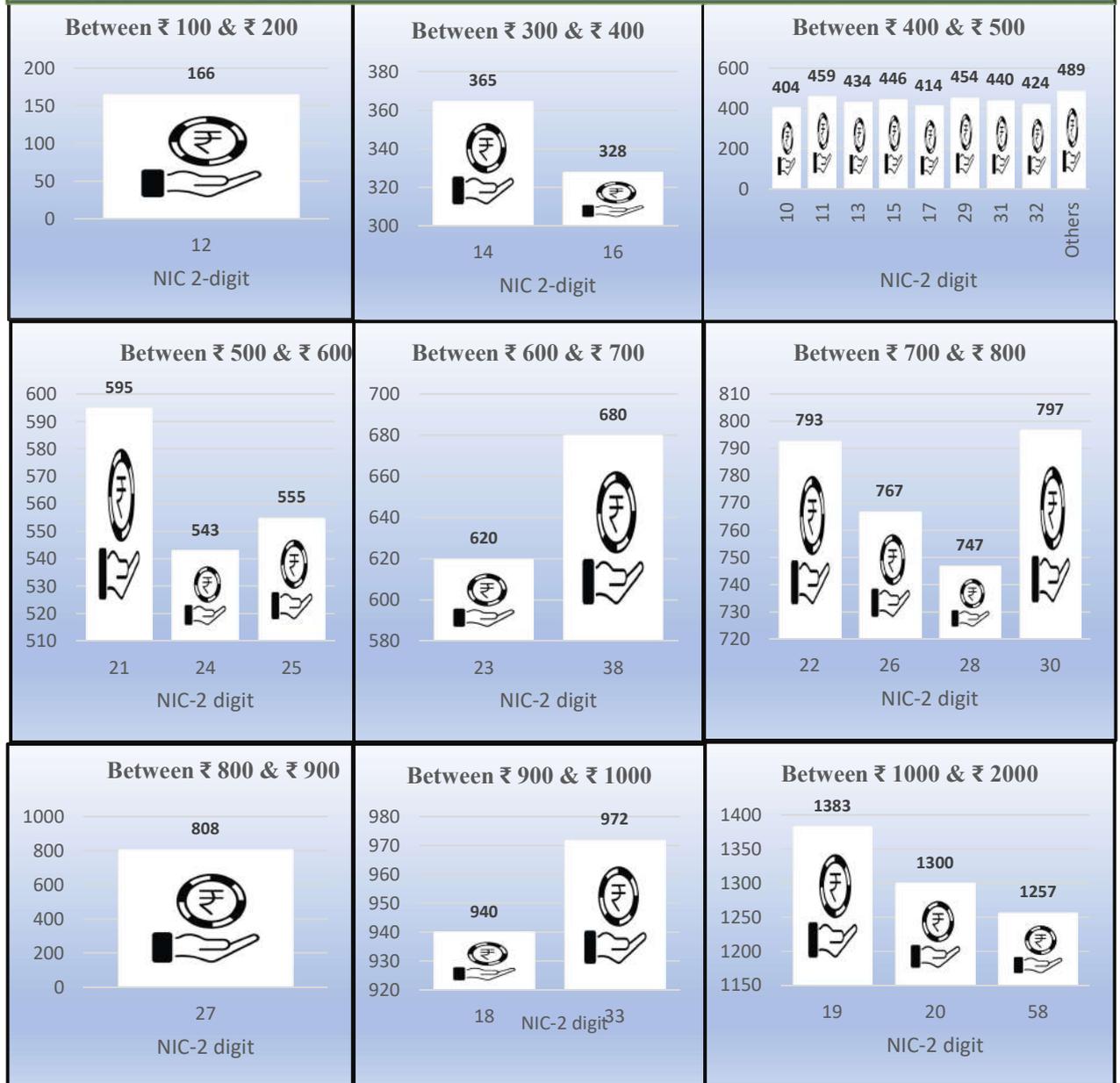
Figure 2.15: Daily wage of workers (in ₹) in factory sector by NIC(2008)-2-digit group of industries



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	114539	78670	1.46	404
11	Manufacture of beverages	4202	2543	1.65	459
12	Manufacture of tobacco products	6289	10533	0.60	166
13	Manufacture of textiles	25959	16611	1.56	434
14	Manufacture of wearing apparel	9400	7160	1.31	365
15	Manufacture of leather and related products	7711	4803	1.61	446
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	9565	8106	1.18	328
17	Manufacture of paper and paper products	2853	1914	1.49	414
18	Printing and reproduction of recorded media	12265	3625	3.38	940
19	Manufacture of coke and refined petroleum products	28448	5715	4.98	1383
20	Manufacture of chemicals and chemical products	41945	8966	4.68	1300
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	13239	6181	2.14	595
22	Manufacture of rubber and plastic products	60236	21095	2.86	793
23	Manufacture of other non-metallic mineral products	34953	15667	2.23	620
24	Manufacture of basic metals	7583	3878	1.96	543
25	Manufacture of fabricated metal products, except machinery and equipment	9081	4549	2.00	555
26	Manufacture of computer, electronic and optical products	14991	5431	2.76	767
27	Manufacture of electrical equipment	12273	4221	2.91	808
28	Manufacture of machinery and equipment n.e.c	7527	2798	2.69	747
29	Manufacture of motor vehicles, trailers and semitrailers	427	261	1.64	454
30	Manufacture of other transport equipment	19981	6960	2.87	797
31	Manufacture of furniture	3921	2476	1.58	440
32	Other manufacturing	6432	4212	1.53	424
33	Repair and installation of machinery and equipment	3833	1095	3.50	972
38	Waste collection, treatment and disposal activities; materials recovery	71	29	2.45	680
58	Publishing activities	2983	659	4.53	1257
	Others	33050	18786	1.76	489
	Total	493757	246944	2.00	555

Figure 2.16: Distribution of daily wage (in ₹) of workers in manufacturing sector by NIC (2008)-2 digit group of industries, 2020-21



In the state the Supervisory and Managerial Staff in the manufacturing sector earned an average daily salary of ₹ 2258 in the report year. Among this category of employees, the highest average daily salary (₹ 7119) was earned by those working in Coke and Refined Petroleum Products industry whereas the least (₹ 471) in the Tobacco Products industry.

Figure 2.17: Distribution of Daily salary (in ₹) of Supervisory & Managerial Staff by NIC (2008)-2-digit group of industries

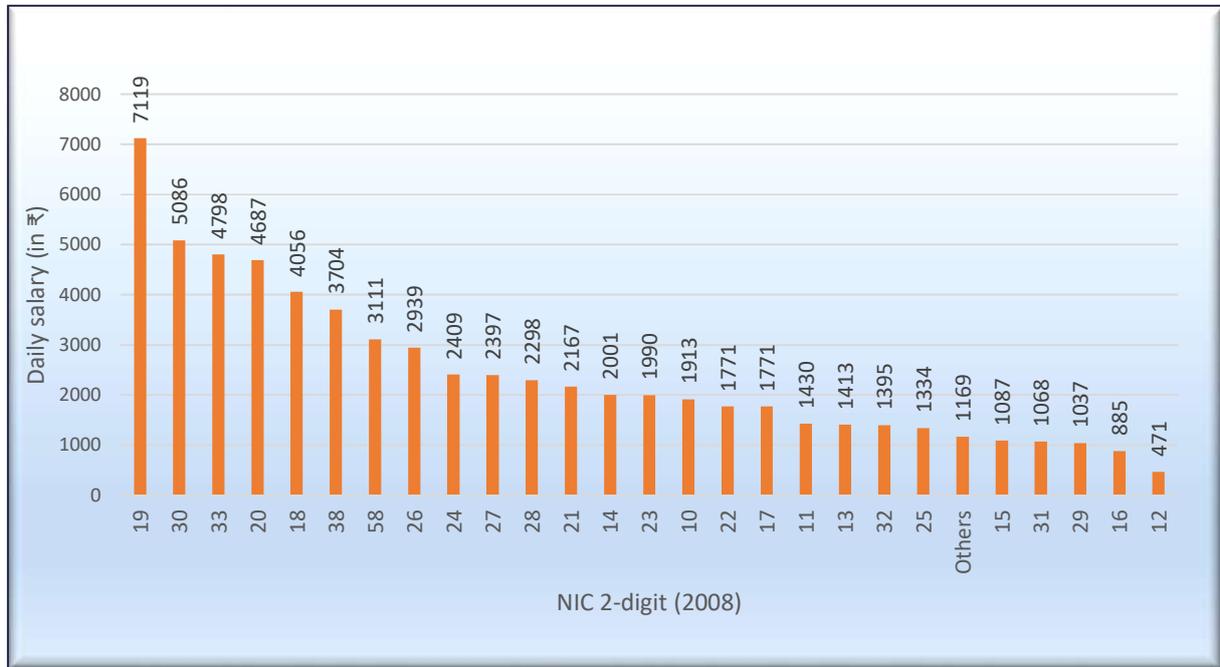


Table 2.14: Distribution of Daily salary of Supervisory and Managerial staff, 2020-21

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	6103	42021	6.89	1913
11	Manufacture of beverages	356	1833	5.15	1430
12	Manufacture of tobacco products	85	144	1.69	471
13	Manufacture of textiles	1142	5809	5.09	1413
14	Manufacture of wearing apparel	337	2428	7.20	2001
15	Manufacture of leather and related products	387	1514	3.91	1087

NIC (2 Digit)	Description	No.of Supervisory & Managerial Staff	Salary of Supervisory & Managerial Staff	Salary per Supervisory & Managerial Staff (in ₹ lakhs)	Daily salary (in ₹)
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	1277	4068	3.19	885
17	Manufacture of paper and paper products	230	1466	6.37	1771
18	Printing and reproduction of recorded media	790	11534	14.60	4056
19	Manufacture of coke and refined petroleum products	906	23220	25.63	7119
20	Manufacture of chemicals and chemical products	1906	32163	16.87	4687
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	934	7285	7.80	2167
22	Manufacture of rubber and plastic products	3580	22828	6.38	1771
23	Manufacture of other non-metallic mineral products	2055	14723	7.16	1990
24	Manufacture of basic metals	700	6070	8.67	2409
25	Manufacture of fabricated metal products, except machinery and equipment	798	3833	4.80	1334
26	Manufacture of computer, electronic and optical products	1337	14145	10.58	2939

NIC (2 Digit)	Description	No.of Supervisory & Managerial Staff	Salary of Supervisory & Managerial Staff	Salary per Supervisory & Managerial Staff (in ₹ lakhs)	Daily salary (in ₹)
27	Manufacture of electrical equipment	934	8059	8.63	2397
28	Manufacture of machinery and equipment n.e.c	373	3086	8.27	2298
29	Manufacture of motor vehicles, trailers and semitrailers	41	153	3.73	1037
30	Manufacture of other transport equipment	510	9338	18.31	5086
31	Manufacture of furniture	272	1046	3.85	1068
32	Other manufacturing	728	3657	5.02	1395
33	Repair and installation of machinery and equipment	135	2332	17.27	4798
38	Waste collection, treatment and disposal activities; materials recovery	9	120	13.33	3704
58	Publishing activities	333	3730	11.20	3111
	Others	3349	14090	4.21	1169
	Total	29607	240695	8.13	2258

With respect to the 'Other employees' category in the manufacturing industries of the state, the estimated daily salary earned by the employees was ₹ 954. And among these employees the highest was earned by those working in the industry involved in the manufacturing of Other Transport Equipment and the least (₹ 288) by those working in the Tobacco Products industry.

Figure 2.18: Daily salary (in ₹) of Other employees by NIC (2008)-2-digit group of industries

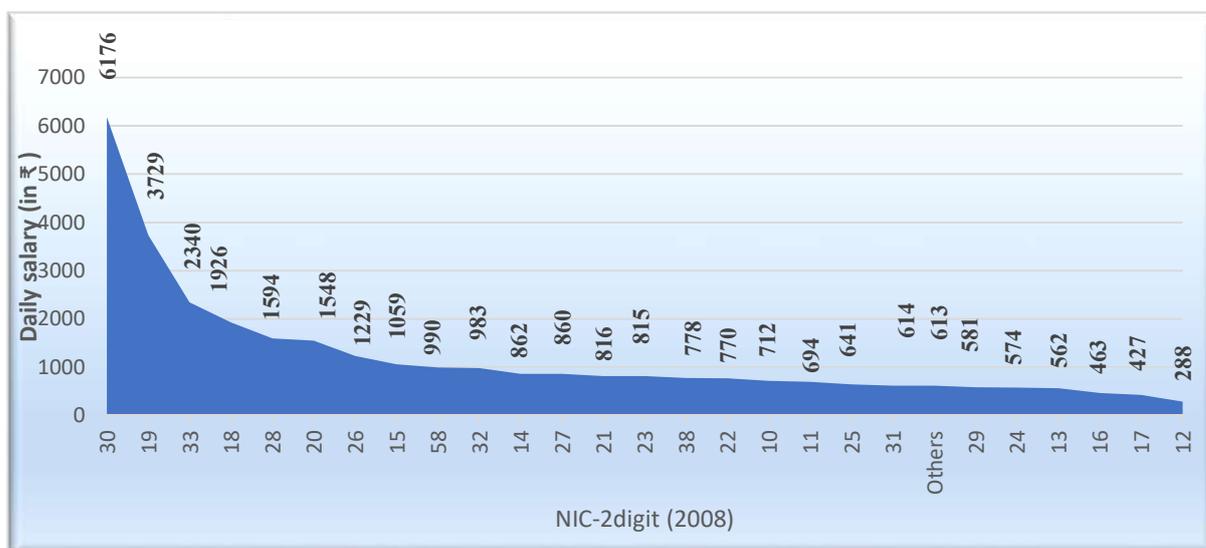


Table 2.15: Distribution of Daily salary of ‘Other employees’ category, 2020-21

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	8573	21975	2.56	712
11	Manufacture of beverages	213	532	2.50	694
12	Manufacture of tobacco products	186	193	1.04	288
13	Manufacture of textiles	1384	2798	2.02	562
14	Manufacture of wearing apparel	358	1111	3.10	862
15	Manufacture of leather and related products	689	2627	3.81	1059
16	Manufacture of wood and products of wood and cork,except furniture ;manufacture of articlesof straw and plaiting materials	657	1096	1.67	463
17	Manufacture of paper and paper products	201	309	1.54	427
18	Printing and reproduction of recorded media	1888	13091	6.93	1926
19	Manufacture of coke and refined petroleum products	268	3598	13.43	3729
20	Manufacture of chemicals and chemical products	1917	10680	5.57	1548
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1948	5721	2.94	816

NIC (2 Digit)	Description	No. of Other Employees	Salary of Other Employees (₹ lakhs)	Salary per other employee (in ₹ lakhs)	Daily salary (in ₹)
22	Manufacture of rubber and plastic products	2285	6334	2.77	770
23	Manufacture of other non-metallic mineral products	2022	5933	2.93	815
24	Manufacture of basic metals	630	1302	2.07	574
25	Manufacture of fabricated metal products, except machinery and equipment	583	1345	2.31	641
26	Manufacture of computer, electronic and optical products	602	2663	4.42	1229
27	Manufacture of electrical equipment	602	1863	3.09	860
28	Manufacture of machinery and equipment n.e.c	594	3409	5.74	1594
29	Manufacture of motor vehicles, trailers and semitrailers	44	92	2.09	581
30	Manufacture of other transport equipment	253	5625	22.23	6176
31	Manufacture of furniture	388	858	2.21	614
32	Other manufacturing	1115	3945	3.54	983
33	Repair and installation of machinery and equipment	118	994	8.42	2340
38	Waste collection, treatment and disposal activities; materials recovery	45	126	2.80	778
58	Publishing activities	1633	5822	3.57	990
	Others	3108	6856	2.21	613
	Total	32304	110898	3.43	954

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 2020-21 is 58.4 i.e., ₹ 58.4 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 (₹ 126.5 lakhs) and Kasaragod, the lowest (₹ 5.2 lakhs).

Figure 2.19: District wise Labour Productivity (Output per unit labour) of the manufacturing industries

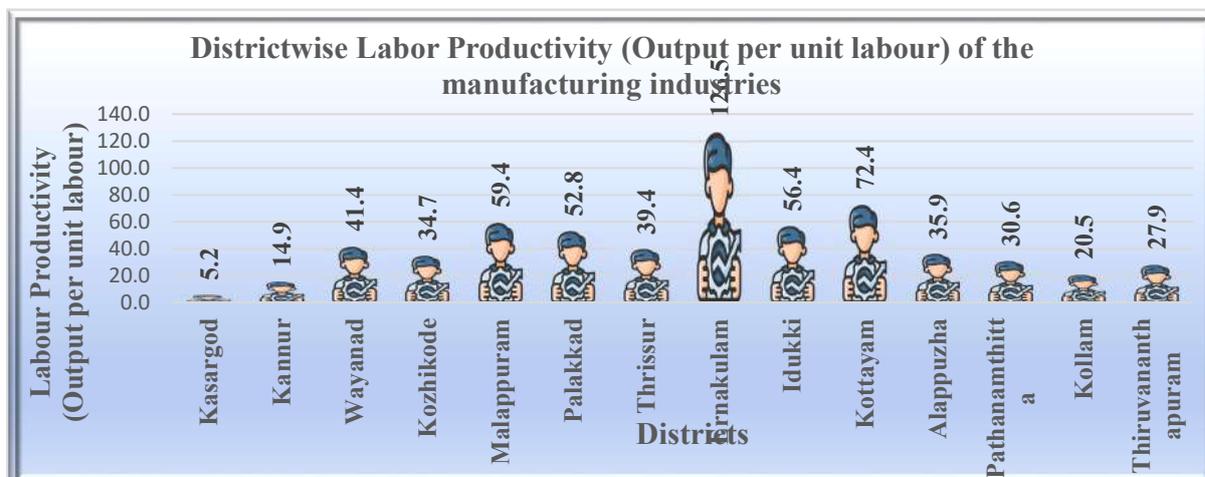


Table 2.16: District wise Labour Productivity (Output per unit labour) of the manufacturing industries

District	Total Output (In ₹ Lakhs)	No.of workers	Labour Productivity (Output per unit of labour in ₹ lakhs)
Kasaragod	49714	9492	5.2
Kannur	196605	13239	14.9
Wayanad	111460	2691	41.4
Kozhikode	355678	10240	34.7
Malappuram	397239	6686	59.4
Palakkad	858590	16266	52.8
Thrissur	982434	24908	39.4
Ernakulam	8131371	64266	126.5
Idukki	283792	5035	56.4
Kottayam	838225	11573	72.4
Alappuzha	859862	23956	35.9
Pathanamthitta	177952	5808	30.6
Kollam	802204	39074	20.5
Thiruvananthapuram	382365	13710	27.9
Kerala	14427491	246944	58.4

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 (₹ 767 lakhs) and the lowest in Tobacco Products industry (₹ 1.01 lakhs). This implies that ₹ 767 lakhs of output were generated per unit labour in Coke and Refined Petroleum Products industry whereas only ₹ 0.97 lakhs of output were generated by Tobacco Products industry.

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	3405833	78670	43.29
11	Manufacture of beverages	109615	2543	43.10
12	Manufacture of tobacco products	10648	10533	1.01
13	Manufacture of textiles	286452	16611	17.24
14	Manufacture of wearing apparel	89117	7160	12.45
15	Manufacture of leather and related products	168587	4803	35.10
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	244950	8106	30.22
17	Manufacture of paper and paper products	34856	1914	18.21
18	Printing and reproduction of recorded media	148015	3625	40.83
19	Manufacture of coke and refined petroleum products	4383400	5715	767.00
20	Manufacture of chemicals and chemical products	947123	8966	105.63
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	174899	6181	28.30
22	Manufacture of rubber and plastic products	1283440	21095	60.84
23	Manufacture of other non-metallic mineral products	511087	15667	32.62
24	Manufacture of basic metals	490934	3878	126.59
25	Manufacture of fabricated metal products, except machinery and equipment	225802	4549	49.64
26	Manufacture of computer, electronic and optical products	288556	5431	53.13
27	Manufacture of electrical equipment	154636	4221	36.63
28	Manufacture of machinery and equipment n.e.c	78326	2798	27.99
29	Manufacture of motor vehicles, trailers and semitrailers	3770	261	14.44
30	Manufacture of other transport equipment	330185	6960	47.44
31	Manufacture of furniture	39723	2476	16.04
32	Other manufacturing	355660	4212	84.44
33	Repair and installation of machinery and equipment	88435	1095	80.76
38	Waste collection, treatment and disposal activities; materials recovery	6944	29	239.45
58	Publishing activities	50008	659	75.88
	Others	516490	18786	27.49
	Total	14427491	246944	58.42

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 2020-21 was ₹ 80,32,739 lakhs. Among all the District, Ernakulam with the highest number of factories had the highest invested capital (₹ 56,08,864 lakhs) and it accounts to about 69.8% 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% -5% range. This reveals that major investment in the manufacturing sector of the state is made by the industries of Ernakulam district (*see Figure 2.20, Table 2.18*).

Figure 2.20: District wise share of Invested Capital, 2020-21

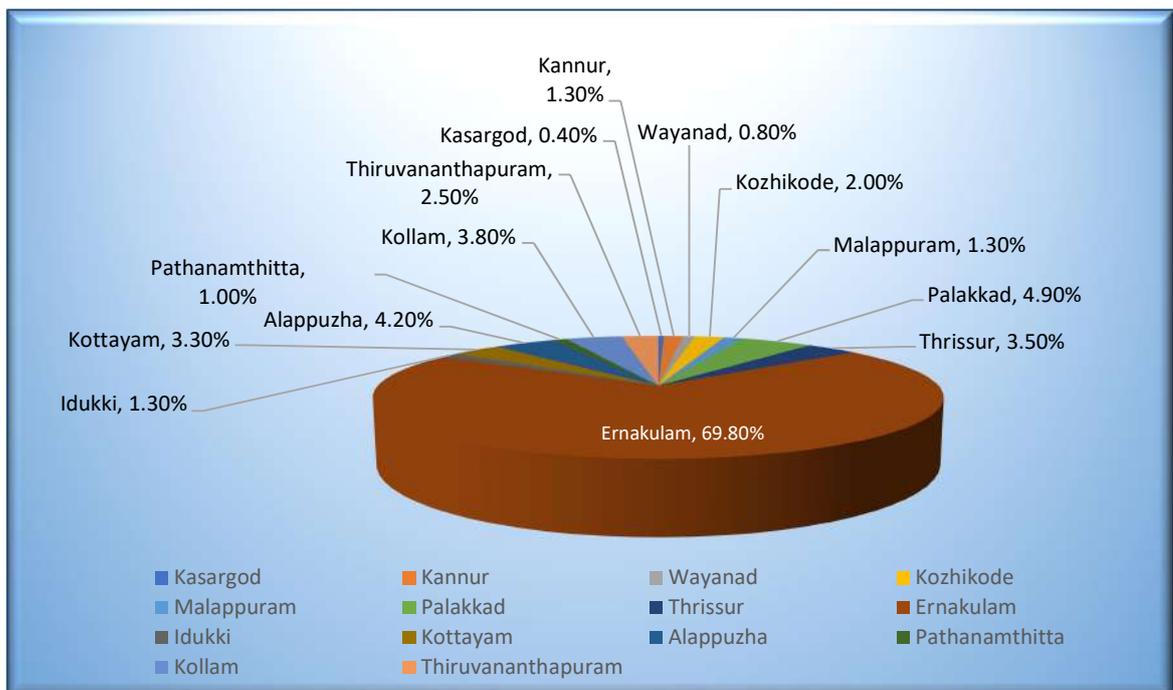


Table 2.18: District wise distribution of Invested Capital of manufacturing industries, 2020-21

District	Invested Capital (in ₹ Lakhs)	Percentage of Invested Capital
Kasaragod	28533	0.4
Kannur	101302	1.3
Wayanad	64646	0.8
Kozhikode	158489	2.0
Malappuram	103297	1.3
Palakkad	397576	4.9
Thrissur	278271	3.5
Ernakulam	5608864	69.8
Idukki	107465	1.3
Kottayam	261102	3.3
Alappuzha	335332	4.2
Pathanamthitta	81170	1.0
Kollam	308903	3.8
Thiruvananthapuram	197789	2.5
Kerala	8032739	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 ₹ 40.69,285 lakhs which accounts to about 50.66% of state's aggregate value. The least capital (₹ 2860 lakhs) was invested by industries attributed to the Manufacture of motor vehicles, trailers and semitrailers contributing 0.04% to the aggregate.

Figure 2.21: Share of invested capital of industries by NIC (2008)-2digit categorisation

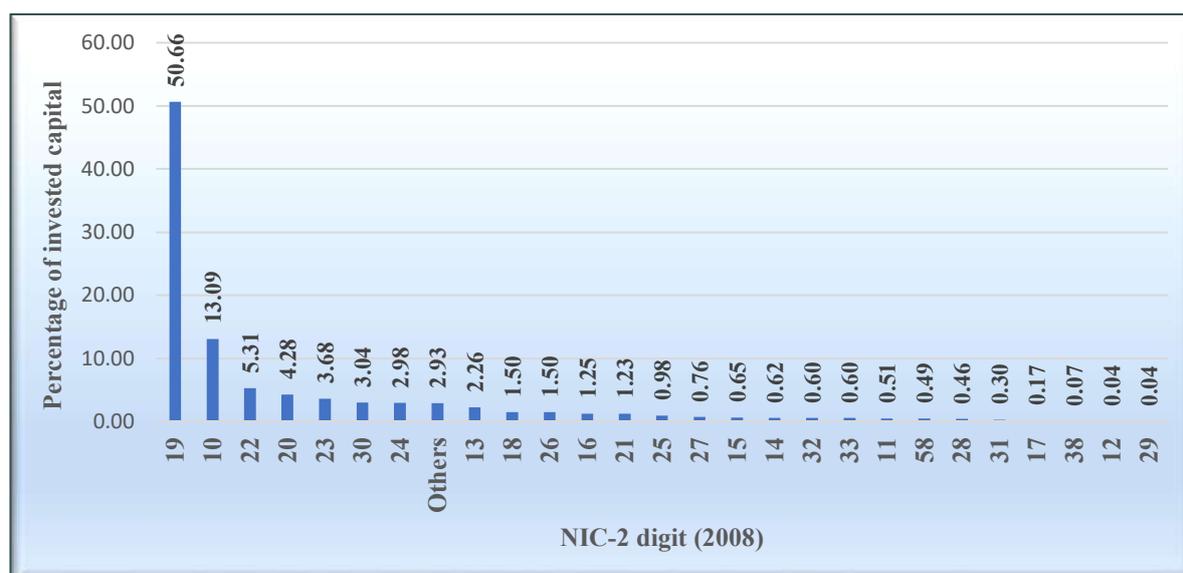


Table 2.19: Distribution of invested capital as per NIC (2008)-2-digit classification of industries

NIC (2 Digit)	Description	Invested Capital (in ₹ Lakhs)	Percentage of invested capital
10	Manufacture of food products	1051569	13.09
11	Manufacture of beverages	40612	0.51
12	Manufacture of tobacco products	3169	0.04
13	Manufacture of textiles	181616	2.26
14	Manufacture of wearing apparel	49614	0.62
15	Manufacture of leather and related products	52553	0.65
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	100564	1.25
17	Manufacture of paper and paper products	13279	0.17
18	Printing and reproduction of recorded media	120613	1.50
19	Manufacture of coke and refined petroleum products	4069285	50.66
20	Manufacture of chemicals and chemical products	344165	4.28
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	98971	1.23
22	Manufacture of rubber and plastic products	426380	5.31
23	Manufacture of other non-metallic mineral products	295771	3.68
24	Manufacture of basic metals	239364	2.98
25	Manufacture of fabricated metal products, except machinery and equipment	78387	0.98
26	Manufacture of computer, electronic and optical products	120496	1.50
27	Manufacture of electrical equipment	61179	0.76
28	Manufacture of machinery and equipment n.e.c	37297	0.46
29	Manufacture of motor vehicles, trailers and semitrailers	2860	0.04
30	Manufacture of other transport equipment	244189	3.04
31	Manufacture of furniture	23954	0.30
32	Other manufacturing	48314	0.60
33	Repair and installation of machinery and equipment	48210	0.60
38	Waste collection, treatment and disposal activities; materials recovery	5954	0.07
58	Publishing activities	39370	0.49
	Others	235004	2.93
	Total	8032739	100.00

Based on the organization type, industries under the category Government Company – Public shows highest invested capital (₹ 41,67,880 lakhs) in the fiscal year 2020-21 which covers 51.89% of the total investment in the manufacturing industries of the state.

And the least invested capital (₹ 37198 lakhs, 0.46% 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 1.51% of total capital invested on the manufacturing industries (₹ 1,21,199 lakhs) of the state (see Figure 2.22, Table 2.20).

Figure 2.22: Invested Capital of industries based on type of Organization

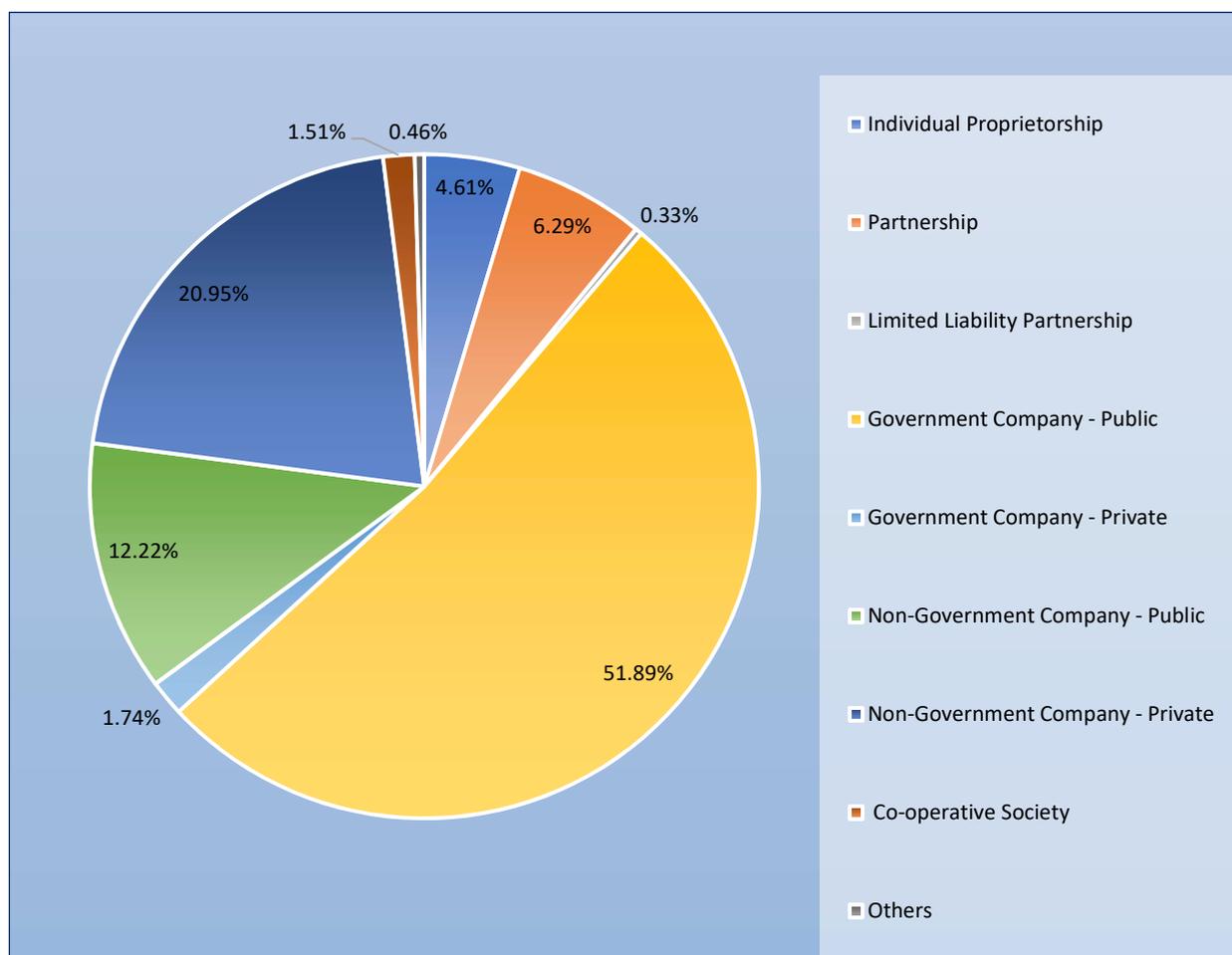
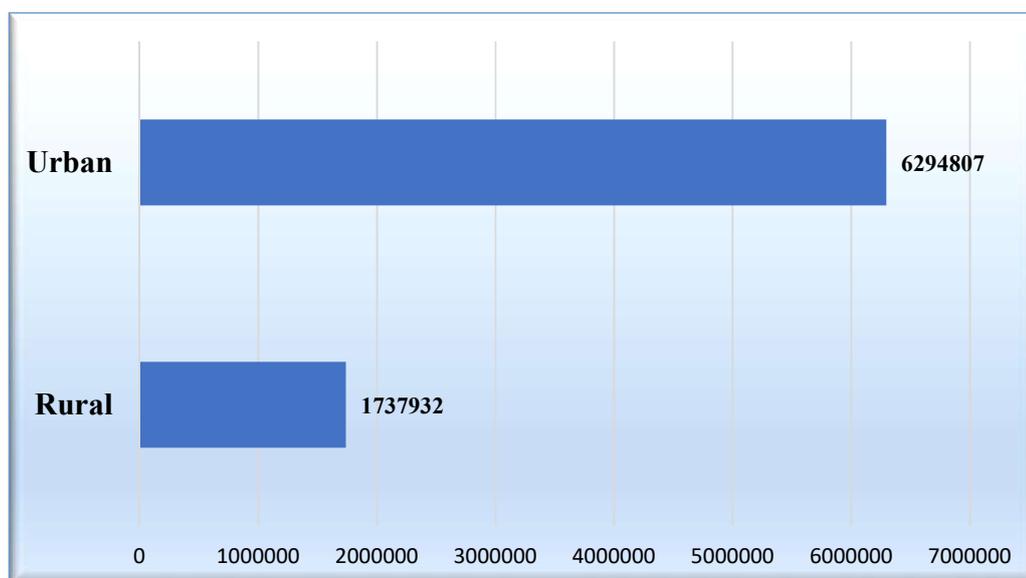


Table 2.20: Distribution of Invested capital of factory sector by type of organization

Type of Organization	Invested Capital (in ₹ Lakhs)	Percentage of invested capital
Individual Proprietorship	370229	4.61
Partnership	505122	6.29
Limited Liability Partnership	26264	0.33
Government Company - Public	4167880	51.89
Government Company - Private	139748	1.74
Non-Government Company - Public	981922	12.22
Non-Government Company - Private	1683177	20.95
Co-operative Society	121199	1.51
Others	37198	0.46
Total	8032739	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 3478 factories in operation located in rural areas was 21.6% of the state aggregate (₹ 17,37,932 lakhs) and that of 3479 factories located in urban areas was 78.4% (₹ 62,94,807 lakhs).

Figure 2.23: Invested Capital (in ₹ lakhs) in the manufacturing industries in rural-urban sector



2.3.4. 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 2020-21 stands at ₹ 5,99,633 lakhs which is 47.61 % decline from previous year figure (₹ 11,44,598 lakhs in 2019-20). Among the District the highest GFCF was recorded by factories in Ernakulam district and the least in Kasargod.

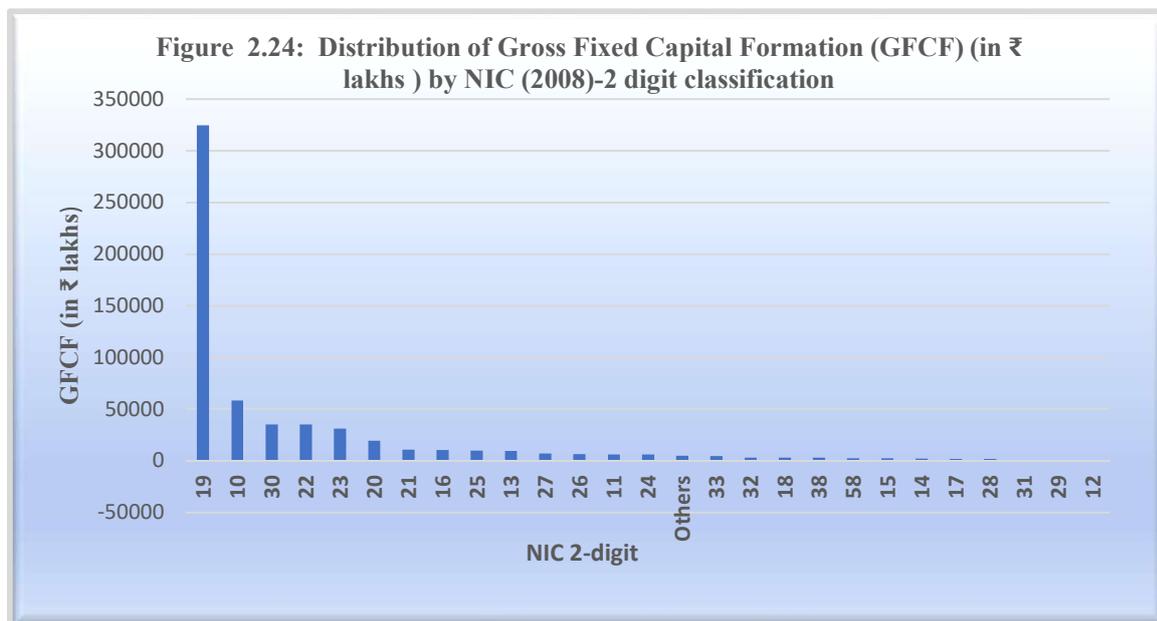
Table 2.21: District wise distribution of Gross Fixed Capital Formation (GFCF) of industries

District	Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	Percentage of GFCF
Kasargod	602	0.10
Kannur	5893	0.98
Wayanad	1644	0.27
Kozhikode	7786	1.30
Malappuram	9270	1.55
Palakkad	28438	4.74
Thrissur	12429	2.07
Ernakulam	460550	76.81
Idukki	4760	0.79
Kottayam	14308	2.39
Alappuzha	29433	4.91
Pathanamthitta	3959	0.66
Kollam	7296	1.22
Thiruvananthapuram	13265	2.21
Kerala	599633	100.00

Out of various types of industries, in 2020-21 coke and refined petroleum products manufacturing industry leads with an estimated Gross Fixed Capital Formation of ₹ 3,24,827 lakhs. But this industry had a significant decline from 2019-20, when the GFCF was ₹ 7,37,072 lakhs. Apart from this, state aggregate's 54.17 % is contributed by this industry while other industries had made only minor contribution.

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	58144	9.70
11	Manufacture of beverages	6264	1.04
12	Manufacture of tobacco products	-165	-0.03
13	Manufacture of textiles	9639	1.61
14	Manufacture of wearing apparel	1920	0.32
15	Manufacture of leather and related products	2198	0.37
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	10344	1.73
17	Manufacture of paper and paper products	1820	0.30
18	Printing and reproduction of recorded media	2953	0.49
19	Manufacture of coke and refined petroleum products	324827	54.17
20	Manufacture of chemicals and chemical products	19506	3.25
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	10641	1.77
22	Manufacture of rubber and plastic products	34972	5.83
23	Manufacture of other non-metallic mineral products	31118	5.19
24	Manufacture of basic metals	6252	1.04
25	Manufacture of fabricated metal products, except machinery and equipment	9983	1.66
26	Manufacture of computer, electronic and optical products	6640	1.11
27	Manufacture of electrical equipment	7071	1.18
28	Manufacture of machinery and equipment n.e.c	1713	0.29
29	Manufacture of motor vehicles, trailers and semitrailers	363	0.06
30	Manufacture of other transport equipment	34999	5.84
31	Manufacture of furniture	373	0.06
32	Other manufacturing	2979	0.50
33	Repair and installation of machinery and equipment	4850	0.81
38	Waste collection, treatment and disposal activities; materials recovery	2845	0.47
58	Publishing activities	2445	0.41
	Others	4939	0.82
	Total	599633	100.00



Considering the GFCF of different types of organization, the highest estimated value was attributed to ‘Government Company – Public’ industries (₹ 3,64,191 lakhs) which has a share of 60.74% of state aggregate. Limited Liability Partnership industries recorded the least with an estimated value of ₹ 1426 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	364191	60.74
Non-Government Company - Private	125691	20.96
Non-Government Company - Public	38652	6.45
Partnership	35107	5.85
Individual Proprietorship	17950	2.99
Co-operative Society	8078	1.35
Government Company - Private	6622	1.10
Others	1916	0.32
Limited Liability Partnership	1426	0.24
Total	599633	100.00

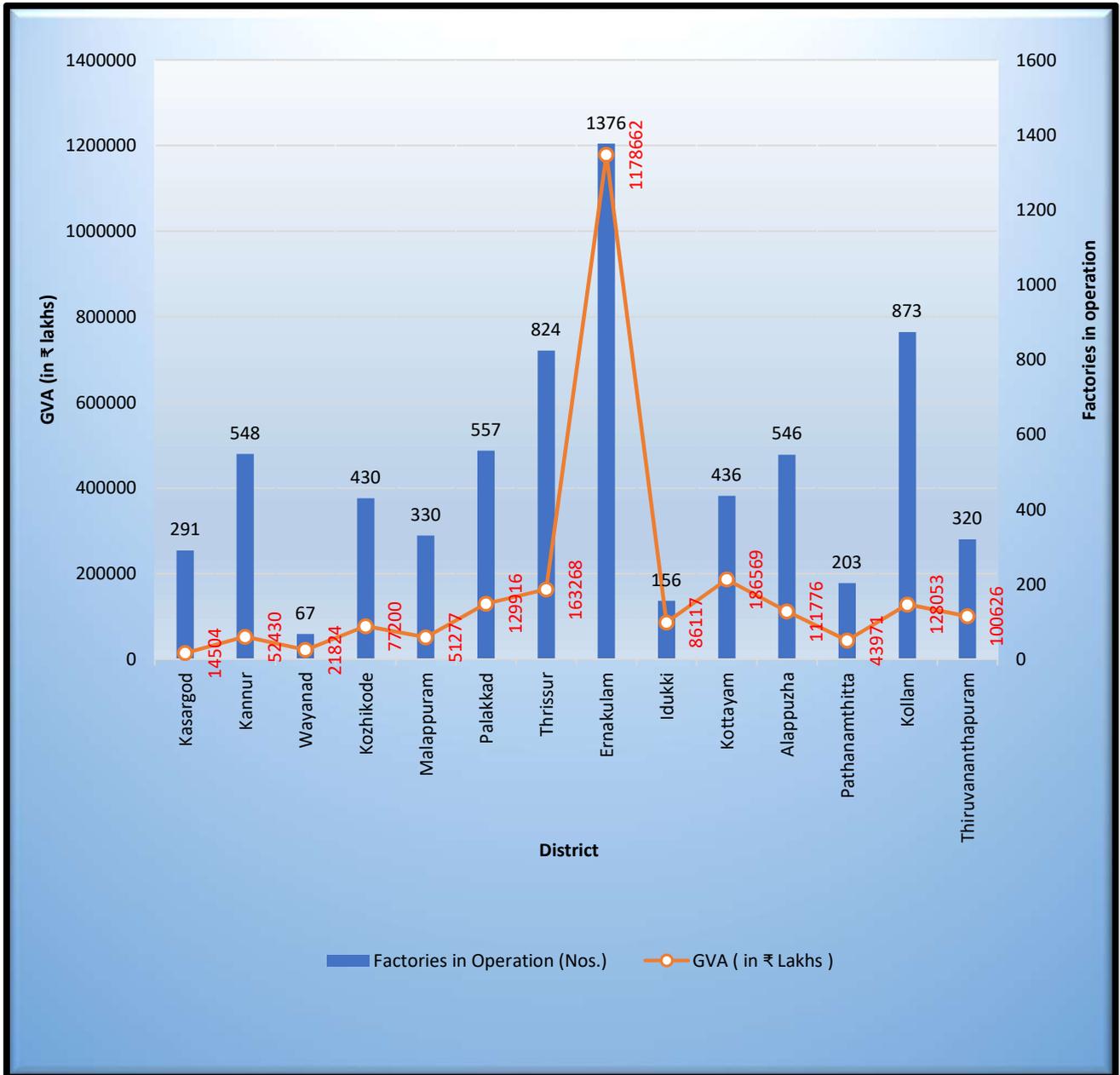


2.4 Gross Value Added (GVA)

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 6957 factories in operation, the estimated Gross Value Added in fiscal year 2020-21 at current prices was ₹ 23,46,193 lakhs which exhibits a decline of 1.2% from the previous year (₹ 23,73,743). That is GVA per factory in operation dropped from 341.4 to 337.2 (in ₹ lakhs). Also, the district wise estimates show that Ernakulam with highest number of factories created highest GVA of ₹ 11,78,662 lakhs and second highest by the industries in Kottayam (₹ 1,86,569 lakhs). It is to be noted that while industries in Ernakulam contributes 50.2 % share of aggregate GVA industries in Kottayam contributes only 8%. 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 2.26: District wise distribution of factories in operation and GVA (in ₹ lakhs)



Considering GVA per factory in operation, the top three districts are Ernakulam (₹ 856.6 lakhs), Idukki (₹ 552.0 lakhs) and Kottayam (₹ 427.9 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, ₹ 325.7 lakhs.

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

District	Factories in Operation (Nos.)	GVA (in ₹ Lakhs)	Percentage of GVA	GVA per factory in operation
Kasargod	291	14504	0.6	49.8
Kannur	548	52430	2.2	95.7
Wayanad	67	21824	0.9	325.7
Kozhikode	430	77200	3.3	179.5
Malappuram	330	51277	2.2	155.4
Palakkad	557	129916	5.5	233.2
Thrissur	824	163268	7.0	198.1
Ernakulam	1376	1178662	50.2	856.6
Idukki	156	86117	3.7	552.0
Kottayam	436	186569	8.0	427.9
Alappuzha	546	111776	4.8	204.7
Pathanamthitta	203	43971	1.9	216.6
Kollam	873	128053	5.5	146.7
Thiruvananthapuram	320	100626	4.3	314.5
Kerala	6957	2346193	100.0	337.2

Out of the industries in terms of NIC (2008)-2-digit classification under the coverage of the survey, the major four industries with highest share of GVA were Food Products (19.4 %), Chemicals & Chemical Products (13.3 %), Coke and Refined Petroleum Products (12.9 %) and had Rubber and Plastic Products (10.4 %).

Figure 2.27: Distribution of GVA across manufacturing industries of Kerala by NIC (2008)-2-digit category of industries

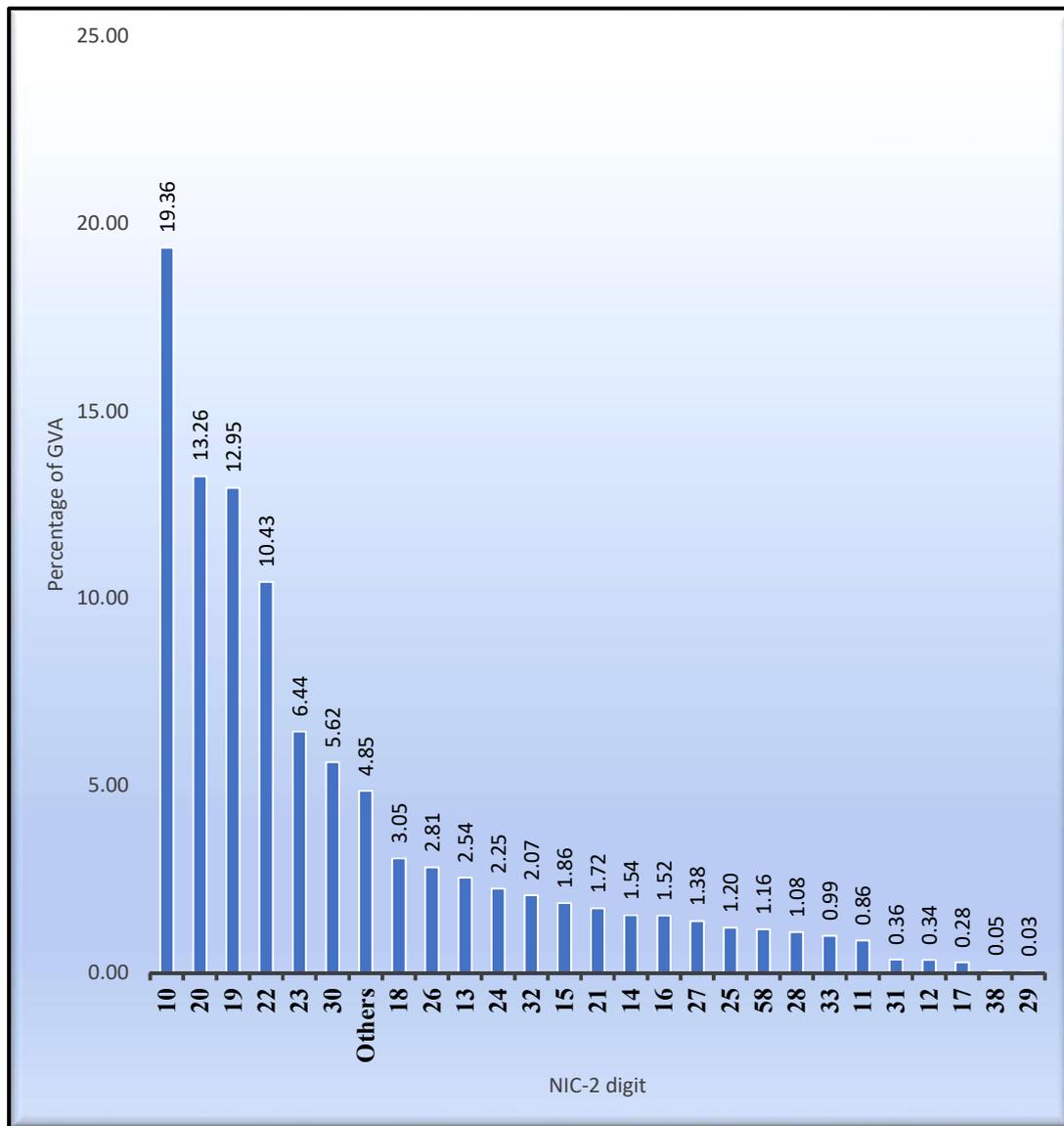


Table 2.25: Distribution of GVA across manufacturing industries of Kerala by NIC (2008)-2-digit group of industries

NIC (2-digit)	Description	GVA (in ₹ Lakhs)	Percentage
10	Manufacture of food products	454213	19.4
11	Manufacture of beverages	20171	0.9
12	Manufacture of tobacco products	8030	0.3
13	Manufacture of textiles	59530	2.5
14	Manufacture of wearing apparel	36018	1.5
15	Manufacture of leather and related products	43614	1.9
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	35719	1.5
17	Manufacture of paper and paper products	6475	0.3
18	Printing and reproduction of recorded media	71623	3.1
19	Manufacture of coke and refined petroleum products	303744	12.9
20	Manufacture of chemicals and chemical products	310998	13.3
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	40420	1.7
22	Manufacture of rubber and plastic products	244809	10.4
23	Manufacture of other non-metallic mineral products	151027	6.4
24	Manufacture of basic metals	52683	2.2
25	Manufacture of fabricated metal products, except machinery and equipment	28228	1.2
26	Manufacture of computer, electronic and optical products	66012	2.8
27	Manufacture of electrical equipment	32352	1.4
28	Manufacture of machinery and equipment n.e.c	25442	1.1
29	Manufacture of motor vehicles, trailers and - trailers	778	0.0
30	Manufacture of other transport equipment	131889	5.6
31	Manufacture of furniture	8416	0.4
32	Other manufacturing	48503	2.1
33	Repair and installation of machinery and equipment	23252	1.0
38	Waste collection, treatment and disposal activities; materials recovery	1211	0.1
58	Publishing activities	27260	1.2
	Others	113776	4.8
	Total	2346193	100.0

Region wise, the major part of the GVA of the manufacturing sector is contributed by the industries in the urban area with 64.98 % share. In addition, while considering the industries based on organization type the factories under Non-Government Company-Private. Government Company-Public and Non-Government Company -public made up a large chunk (76.02 %) of GVA for the fiscal year 2020-21.

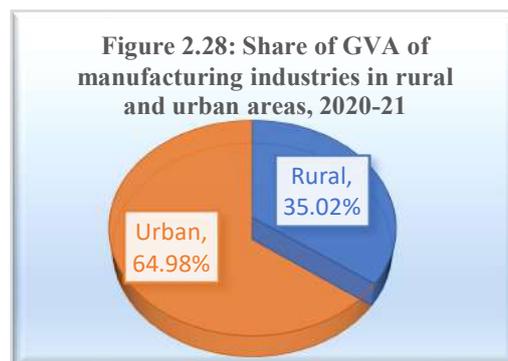


Figure 2.29: Distribution of GVA across manufacturing industries by type of Organization



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 6957 operating factories was ₹ 14,42,7491 lakhs and these factories had an input worth ₹ 12,08,1298 lakhs. Considering the state aggregate the estimated ratio of output to input was 1.19. Among the District the output-input ratio of industries is highest in Idukki with an estimate of 1.44. This measure shows how the resources are efficiently used to increase the output. The figures do not vary significantly much across the districts.

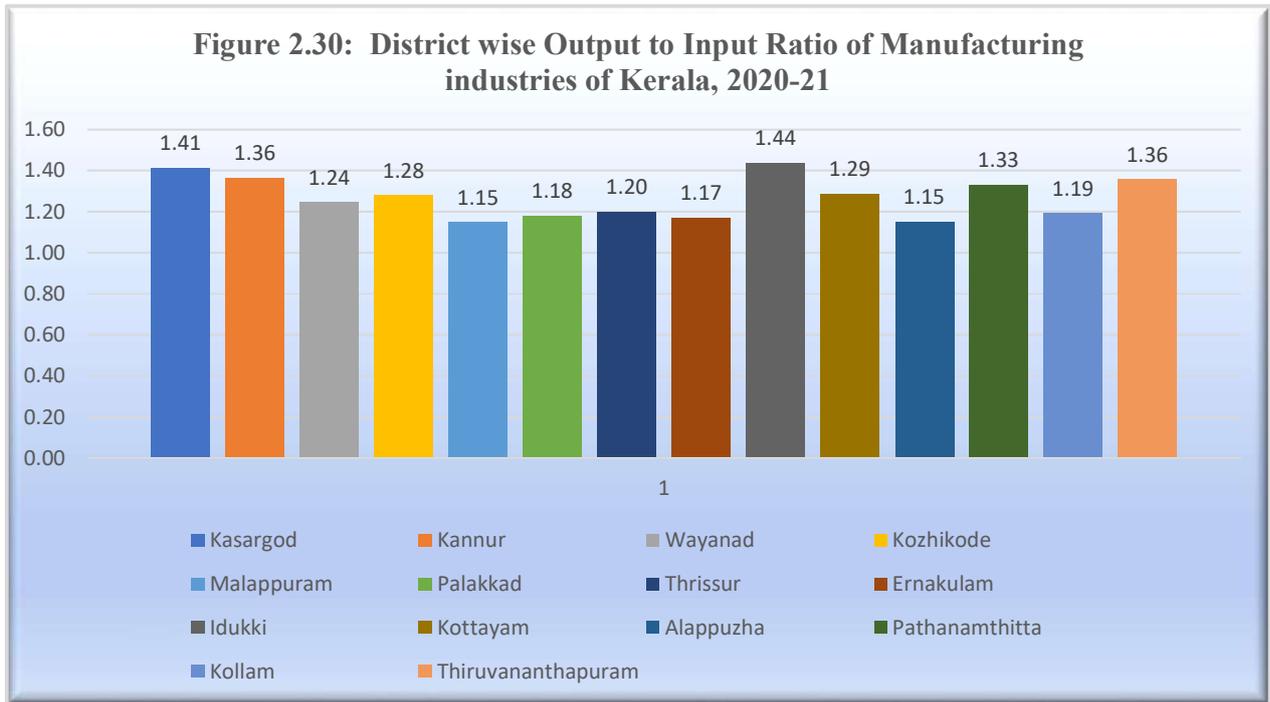


Table 2.26: District wise distribution of Output, Input and Output to Input Ratio

District	Total Output (in ₹ lakhs)	Total Input (in ₹ lakhs)	Output-Input Ratio
Kasargod	49714	35210	1.41
Kannur	196605	144175	1.36
Wayanad	111460	89636	1.24
Kozhikode	355678	278478	1.28
Malappuram	397239	345962	1.15
Palakkad	858590	728674	1.18
Thrissur	982434	819166	1.20
Ernakulam	8131371	6952709	1.17
Idukki	283792	197675	1.44
Kottayam	838225	651656	1.29
Alappuzha	859862	748086	1.15
Pathanamthitta	177952	133981	1.33
Kollam	802204	674151	1.19
Thiruvananthapuram	382365	281739	1.36
Kerala	14427491	12081298	1.19

When different category of industries based on economic activities are considered, the output to input ratio of Tobacco products manufacturing industries accounts to 4.07 which implies that the value output created was four times the input. The next highest ratio is recorded by industry attributed to Publishing Activities which has the ratio value of 2.20 which signifies that the value of output is double the input. While the other industries do not show significant difference.



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 2015-16 to 2020-21. Here an attempt has been made to explore the trend behaviour 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) at current price from 2015-16 to 2019-20 reveals that sectoral composition of manufacturing had a downward trend during the period 2016-17 to 2019-20. And in the financial year 2016-17 the contribution was 10.87 % which declined in subsequent years to reach at a figure of 9.23 % in the financial year 2019-20.



4.1 Factories in operation

As per ASI survey results from 2015-16 to 2020-21, 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 2020-21 the number of operating factories slightly declined at the rate of 0.06 %.

Table 4.1: Total factories and factories in operation from 2015-16 to 2020-21, Kerala

Principal Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Number of factories	7584	7982	7596	7695	7793	7972
Factories in Operation (Nos.)	6371	6507	6538	6840	6957	6953
Percentage of factories in operation	84.0	81.5	86.1	88.9	89.3	87.2

Table 4.2: Percentage growth of operational factories, Kerala 2016-17 to 2020-21

Characteristic	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 Over 2017-18	2019-18 over 2018-19	2020-21 over 2019-20
Factories in Operation	2.13	0.48	4.62	1.71	-0.06

Figure 4.2: Factories in operation & percentage growth rate over the previous year from 2015-16 to 2020-21



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 2015-16 to 2018-19; which declined at the rate of 1.2% in the year 2019-20 compared to previous year. In 2020-21, physical working capital i.e. the value of inventory controlled by the firms showed a growth rate of 5.58% (see Figure 4.3).

Figure 4.3: Physical capital (in ₹ lakhs) & percentage growth rate over the previous year from 2015-16 to 2020-21



The change in fixed capital from 2015-16 to 2020-21 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 year (2020-21) it dropped by 1.88 % (see Figure 4.4).

Figure 4.4: Fixed capital (in ₹ lakhs) & percentage growth rate over the previous year from 2015-16 to 2020-21



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 0.07 % in 2020-21 (see Figure 4.5).

Figure 4.5: Invested capital (in ₹ lakhs) & percentage growth rate over the previous year from 2015-16 to 2020-21



Table 4.3: Capital invested in manufacturing sector from 2015-16 to 2020-21

Principal Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Fixed Capital (in ₹ lakhs)	4069375	4784549	4369284	4907497	5928546	5817077
Physical working capital (in ₹ lakhs)	1647775	1762792	1825536	2124099	2098604	2215662
Invested Capital (in ₹ lakhs)	5717150	6547340	6194820	7031597	8027150	8032739

Table 4.4: Percentage growth of capital, Kerala 2016-17 to 2020-21

Principal Characteristic	Percentage growth				
	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Fixed Capital	17.57	-8.68	12.32	20.81	-1.88
Physical working capital	6.98	3.56	16.35	-1.20	5.58
Invested Capital	14.52	-5.38	13.51	14.16	0.07

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 2017-18 and 2020-21 at the rate of 57.96 % and 47.61 % respectively compared to previous year.

Figure 4.6: Gross Fixed Capital Formation (in ₹ lakhs) & percentage growth rate over the previous year from 2015-16 to 2020-21

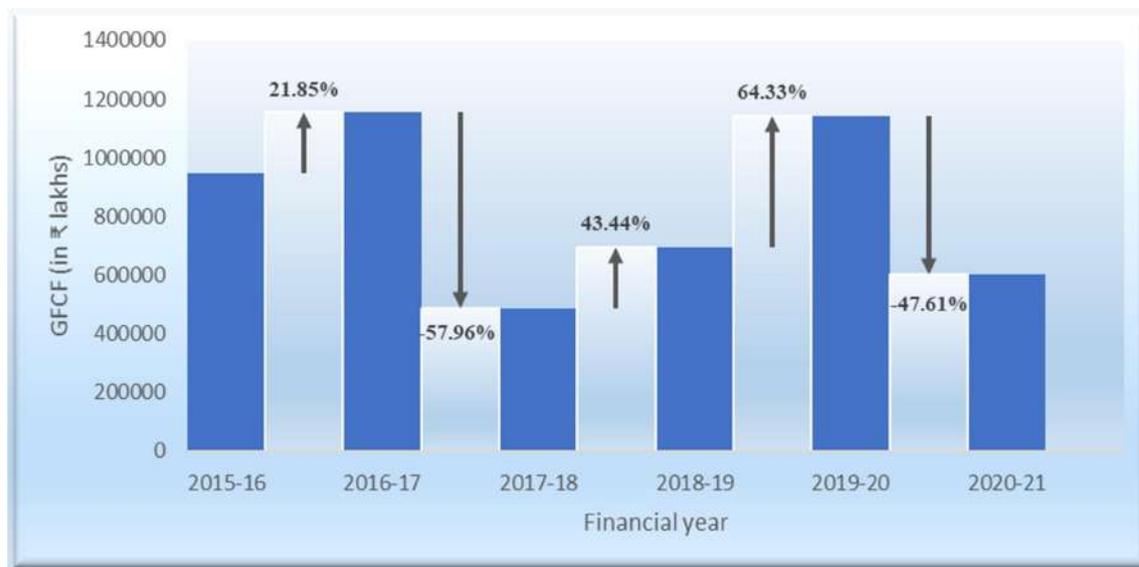


Table 4.5: Gross Fixed Capital Formation (GFCF) in manufacturing sector from 2015-16 to 2020-21

Principal Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	947818	1154951	485582	696533	1144598	599633

Table 4.6: Percentage growth of Gross Fixed Capital Formation (GFCF), Kerala 2016-17 to 2020-21

Principal Characteristic	Percentage growth				
	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Gross Fixed Capital Formation (GFCF) (in ₹ lakhs)	21.85	-57.96	43.44	64.33	-47.61

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. Again, it plummeted at the rate of 34.07 % in 2020-21 (Figure 4.7)

Figure 4.7: Output (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2020-21



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. Both input and output showed a major decline in their values in 2020-21 (Figure 4.8).

Figure 4.8: Input (in ₹ lakhs) & percentage growth rate over the previous year from 2016-17 to 2020-21

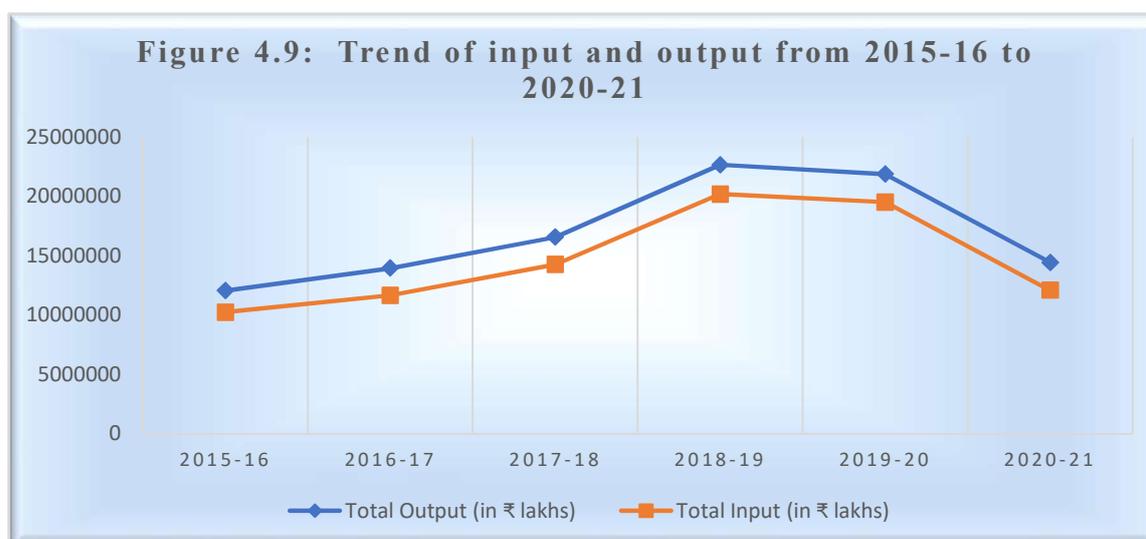


Table 4.7: Input and Output manufacturing sector from 2016-17 to 2020-21, Kerala

Principal Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Total Output (in ₹ lakhs)	12052212	13942718	16556578	22651833	21881862	14427491
Total Input (in ₹ lakhs)	10237768	11643987	14256475	20185943	19508119	12081298

Table 4.8: Percentage growth of input and output, Kerala 2016-17 to 2020-21

Principal Characteristic	Percentage growth				
	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Input	13.74	22.44	41.59	-3.36	-38.07
Output	15.69	18.75	36.81	-3.40	-34.07



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 2016-17 to 2019-20. With fluctuating growth rates in years 2019-20 and 2020-21 it showed consecutive decline rating of 3.74 % and 1.16 % respectively. Even though the input and output plummeted by more than 30 % in absolute terms during 2020-21, the Gross Valued Added showed a decline rate of 1.16 % only (see Figure 4.8).

Figure 4.10: Gross Value Added (in ₹ lakhs) & percentage growth rate over the previous year from 2015-16 to 2020-21

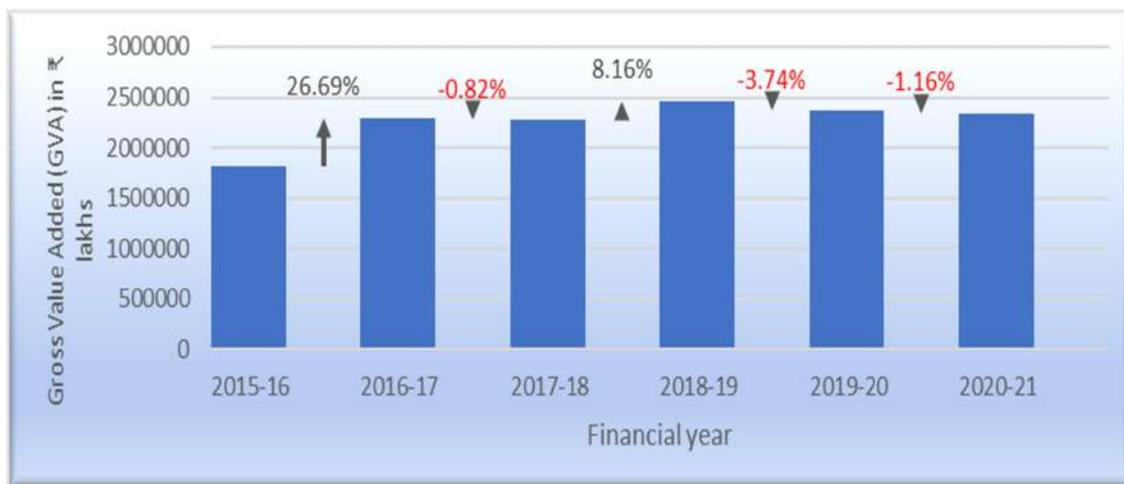


Table 4.9: Gross Value Added (GVA) manufacturing sector from 2016-17 to 2020-21

Principal Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Gross Value Added (GVA) (in ₹ lakhs)	1814445	2298731	2279897	2465890	2373743	2346193

Table 4.10: Percentage growth of Gross Value Added (GVA) Kerala 2016-17 to 2020-21

Principal Characteristic	Percentage growth				
	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Gross Value Added (GVA)	26.69	-0.82	8.16	-3.74	-1.16

4.5 Employment and Wages

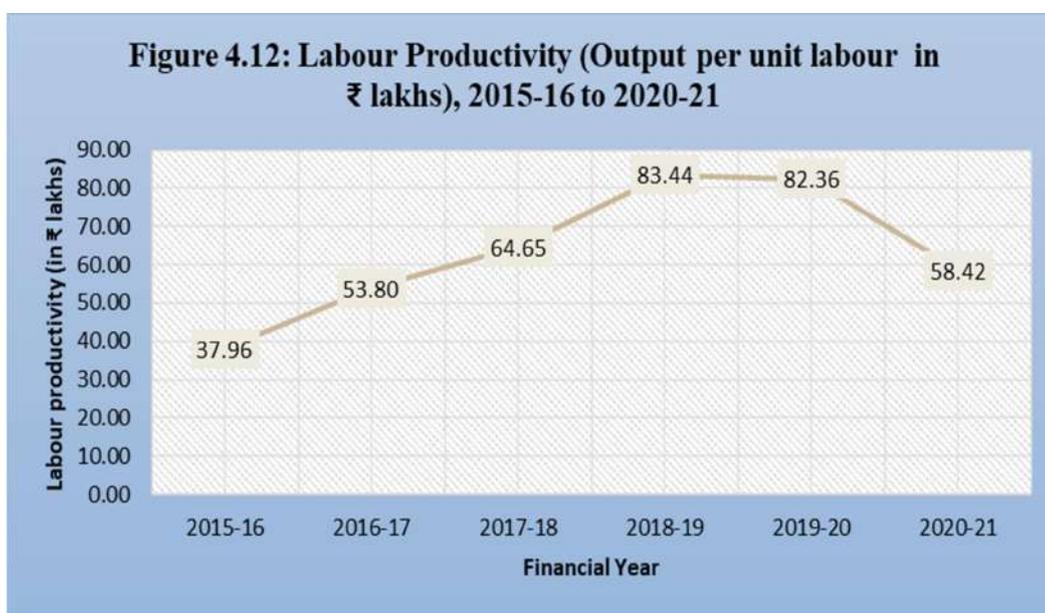
In this section an attempt has been made to analyse the behaviour of labour employment, wage per worker and labour productivity. Over the years, the number of persons engaged in factories declined by 14.24 % during 2016-17 and 10.24 % in 2020-21.

Figure 4.11: Number of persons engaged in manufacturing & percentage growth rate over the previous year from 2015-16 to 2020-21



The labour productivity was measured in terms of Output per worker and the times series data reveals an upward trend during period from 2015-16 to 2019-20. In the subsequent year the productivity started declining in 2020-21 output generated turns out to be about ₹ 58.42 lakhs per worker, a reasonable decrease.

Figure 4.12: Labour Productivity (Output per unit labour in ₹ lakhs), 2015-16 to 2020-21



Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Total Output (in ₹ lakhs)	12052212	13942718	16556578	22651833	21881862	14427491
Number of workers	317472	259160	256090	271485	265685	246944
Labour Productivity	37.96	53.80	64.65	83.44	82.36	58.42

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 2015-16 to 2017-18. During 2020-21 the number of workers declined by 7.05% compared to 2019-20.

Figure 4.13: Number of workers in manufacturing & percentage growth rate over the previous year from 2015-16 to 2020-21



Among the workers, considering the directly employed workers, in 2016-17 it shows a decline of 20.43%. In the remaining years the only upward trend (4.92 %) was shown during 2018-19. In 2019-20 and 2020-21 the number of directly employed workers again declined with rates 5.82 % and 8.20% respectively.

Figure 4.14: Number of Directly employed workers in manufacturing & percentage growth rate over the previous year from 2015-16 to 2020-21



Compared to directly employed workers, the contract workers showed better growth rates over the years. 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. It's evident from the figures that the rate of decline of contract workers were less as compared to directly employed workers over the years.

Figure 4.15: Number of contract workers in manufacturing & percentage growth rate over the previous year from 2016-17 to 2020-21



Table 4.11: Number of workers in manufacturing sector from 2016-17 to 2020-21, Kerala

Employees	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Workers	317472	259160	256090	271485	265685	246944
Directly Employed	278193	221358	219973	230788	217347	199533
Employed through Contractors	39279	37803	36117	40697	48338	47411

Table 4.12: Growth of number of workers, Kerala 2016-17 to 2020-21

Employees	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Workers	-18.37%	-1.18%	6.01%	-2.14%	-7.05%
Directly Employed	-20.43%	-0.63%	4.92%	-5.82%	-8.20%
Employed through Contractors	-3.76%	-4.46%	12.68%	18.78%	-1.92%

4.5.1 Female participation in manufacturing

Analysing the directly employed female participation in manufacturing from 2015-16 to 2020-21, the statistics shows a continuous decline from 2016-17 onwards. Moreover, in 2016-17 women participation dropped at rate of 23.76 % while from 2017-18 to 2019-20 it showed a slow rate of decline range 1%-4%. In the subsequent year, 2020-21, female participation again dropped by 12.97 %.

Figure 4.16: Female participation in manufacturing & percentage growth rate over the previous year from 2015-16 to 2020-21

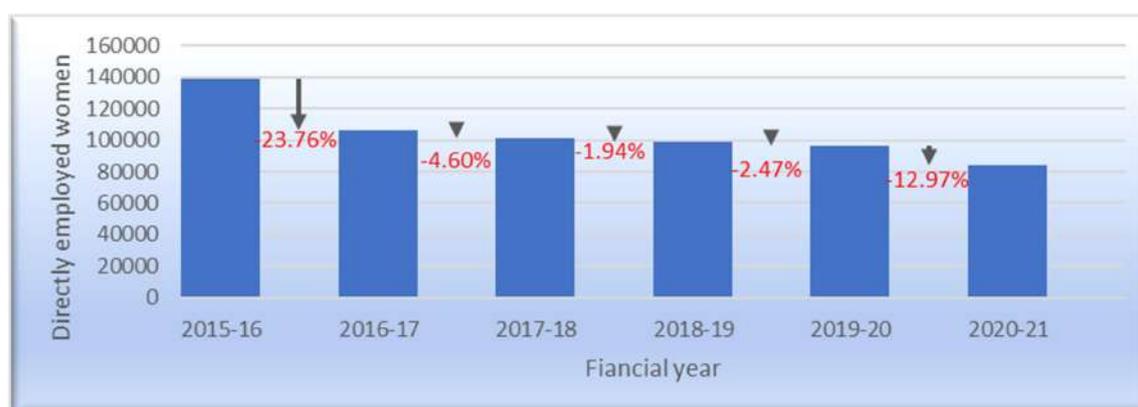


Table 4.13: Gender wise number of directly employed workers in manufacturing sector from 2016-17 to 2020-21

Directly employed workers	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Men	139119	115322	118816	131597	120606	115339
Women	139074	106035	101157	99191	96741	84194

Table 4.14: Gender wise growth of number of directly employed workers, 2016-17 to 2020-21

Directly employed workers	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Men	-17.11%	3.03%	10.76%	-8.35%	-4.37%
Women	-23.76%	-4.60%	-1.94%	-2.47%	-12.97%

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 2016-17 to 2018-19, but during 2020-21 the same is declined at the rate of 4.77 %.

Figure 4.17: Wages/Salaries of employees in manufacturing & percentage growth rate over the previous year from 2016-17 to 2020-21

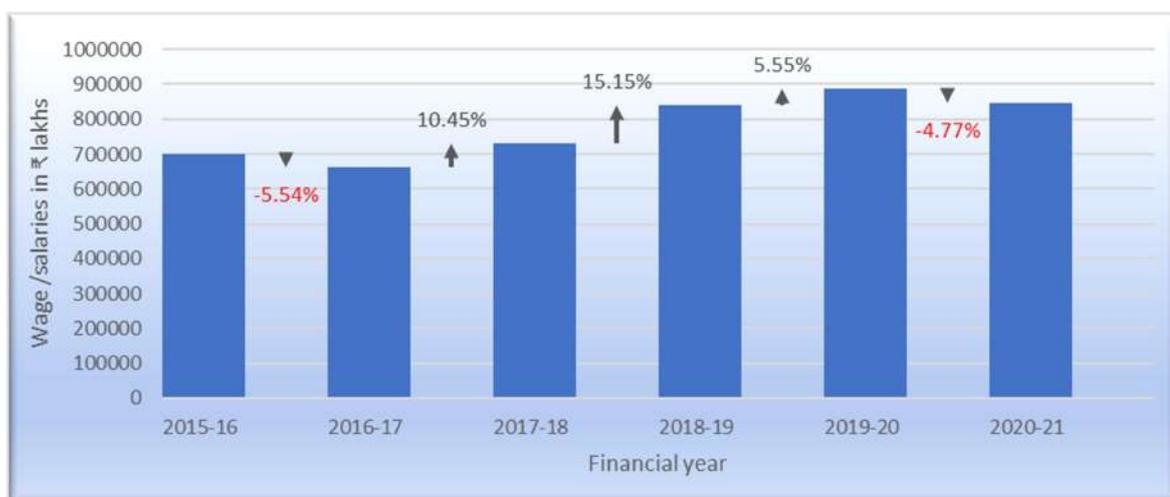


Table 4.15: Wages & Salaries of employees, 2015-16 to 2020-21

Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Wages & Salaries (in ₹ lakhs)	700091	661318	730404	841056	887725	845401

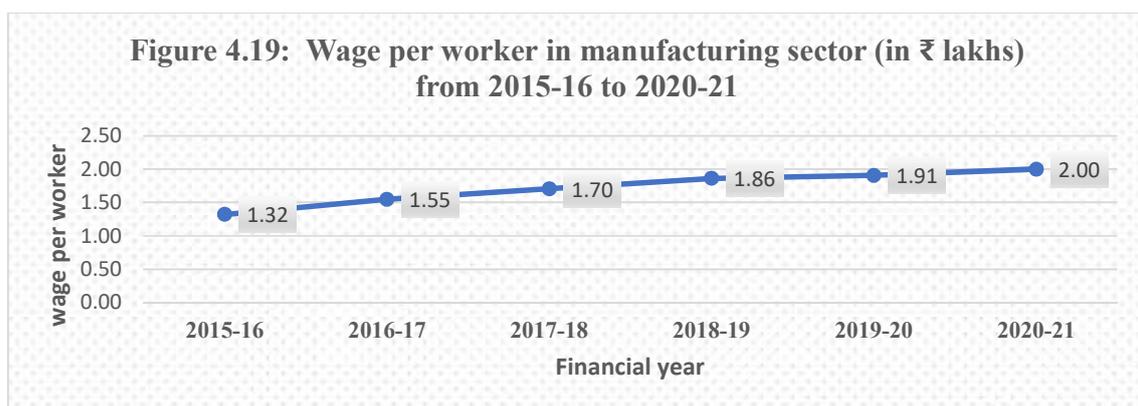
Table 4.16: Growth rate of wages & salaries of employees, Kerala 2016-17 to 2020-21

Wages & Salaries	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Employees	-5.54%	10.45%	15.15%	5.55%	-4.77%

Figure 4.18: Wages of workers in manufacturing & percentage growth rate over the previous year from 2015-16 to 2020-21



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 2015-16, the annual wage earned by worker was ₹ 1.32 lakhs which increased over the subsequent years and in 2020-21 it was estimated as 2.00 lakhs annually.



4.6. Income and Profit

Income of the manufacturing sector is fluctuating with consecutive ups and downs. The highest income was estimated in 2016-17 with a growth rate of 35.33%. A steady growth is not witnessed in the case of income. But the net income grew by 2.53% in 2020-21.

Figure 4.20: Income (in ₹ lakhs) and its growth rate from 2015-16 to 2020-21



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 2016-17 (104.79 %) and year 2020-21 also witnessed an upward trend at a growth rate of 16.43 % compared to previous year.

Figure 4.21 : Profit (in ₹ lakhs) and growth rate from 2015-16 to 2020-21



Table 4.17: Net income (₹ lakhs) in manufacturing sector from 2015-16 to 2020-21

Characteristic	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Net income (in ₹ lakhs)	1377101	1863677	1799319	1861860	1727064	1770743
Profit (in ₹ lakhs)	509639	1043683	884010	824389	640827	746139

Table 4.18: Growth rate of Net income in manufacturing sector, Kerala 2016-17 to 2020-21

Characteristic	Percentage growth				
	2016-17 over 2015-16	2017-18 over 2016-17	2018-19 over 2017-18	2019-20 over 2018-19	2020-21 over 2019-20
Net income	35.33%	-3.45%	3.48%	-7.24%	2.53%
Profit	104.79%	-15.30%	-6.74%	-22.27%	16.43%

4.7. Impact of Covid-19 pandemic on Organized Manufacturing sector

The unprecedented pandemic, Covid-19 hit the nation in the year 2020 and it put a halt to all the activities and largely disruptive. All sectors, health, manufacturing, employment, service sector etc., were adversely affected by this pandemic. The reference period of the ASI survey coincided with the pandemic period. The following tables represent percentage change in the value of characteristics estimated in 2019-20 and 2020-21.

Table 4.19: Principal characteristics of manufacturing sector during 2020-21 and 2019-20 with percentage of change

Sl. No.	Characteristic	2020-21	2019-20	Percentage change compared to 2019-20
1	No. of Factories	7972	7793	2.30
2	Factories in Operation (Nos)	6957	6953	0.06
3	Fixed Capital (in ₹ lakhs)	5817077	5928546	-1.88
4	Physical Working Capital (in ₹ lakhs)	2215662	2098604	5.58
5	Working Capital (in ₹ lakhs)	1529079	1908718	-19.89
6	Invested Capital (in ₹ lakhs)	8032739	8027150	0.07
7	Gross Value of Additions to Fixed Capital (in ₹ lakhs)	1109172	1228473	-9.71
8	Rent Paid (in ₹ lakhs)	4993	4475	11.58
9	Outstanding Loan (in ₹ lakhs)	1274259	1629117	-21.78
10	Interest Paid (in ₹ lakhs)	190198	235015	-19.07
11	Rent received (in ₹ lakhs)	622	757	-17.83

Sl. No.	Characteristic	2020-21	2019-20	Percentage change compared to 2019-20
12	Interest Received (in ₹ lakhs)	47501	54090	-12.18
13	Gross Value of P&M (in ₹ lakhs)	3261600	3268810	-0.22
14	Value of Products & By-products (in ₹ lakhs)	12888107	20169889	-36.10
15	Other Output (in ₹ lakhs)	1539384	1711973	-10.08
16	Total Output (in ₹ lakhs)	14427491	21881862	-34.07
17	Fuels Consumed (in ₹ lakhs)	659942	849833	-22.34
18	Material Consumed for Manufacturing (in ₹ lakhs)	9708347	16753877	-42.05
19	Other Input (in ₹ lakhs)	1713022	1904409	-10.05
20	Total Input (in ₹ lakhs)	12081298	19508119	-38.07
21	Gross Value Added (in ₹ lakhs)	2346193	2373743	-1.16
22	Depreciation (in ₹ lakhs)	380261	407187	-6.61
23	Net Value Added (in ₹ lakhs)	1965932	1966556	-0.03
24	Net Fixed Capital Formation (in ₹ lakhs)	219372	737411	-70.25
25	Gross Fixed Capital Formation (in ₹ lakhs)	599633	1144598	-47.61
26	Gross Capital Formation (in ₹ lakhs)	1023320	1089844	-6.10
27	Net Income (in ₹ lakhs)	1770743	1727064	2.53
28	Profit (in ₹ lakhs)	746139	640827	16.43

Table 4.20: Employment and Emoluments of the employees engaged in manufacturing sector during 2020-21 and 2019-20 with percentage of change

Sl. No	Characteristic	2020-21	2019-20	Percentage change compared to 2019-20
A	Average no. of Persons Engaged	310958	346449	-10.24
1	Workers	246944	265685	-7.05
1.1	Directly Employed	199533	217347	-8.20
1.1.1	Men	115339	120606	-4.37
1.1.2	Women	84194	96741	-12.97

Sl. No	Characteristic	2020-21	2019-20	Percentage change compared to 2019-20
1.2	Employed through Contractors	47411	48338	-1.92
2	Employees other than Worker	61911	78715	-21.35
2.1	Supervisory & Managerial Staff	29607	37186	-20.38
2.2	Other Employees	32304	41529	-22.21
3	Unpaid Family Members / Proprietor etc.	2103	2046	2.79
B.	Man-days Employed , Total	86266	98196	-12.15
C.	Wages & Salaries , Employer's Contribution	1024577	1086239	-5.68
1.	Wages & Salaries including Bonus (in ₹ lakhs)	884296	932069	-5.13
1.1	Wages & Salaries	845401	887725	-4.77
1.1.1	Workers	493757	506560	-2.53
1.1.2	Supervisory & Managerial Staff	240695	246174	-2.23
1.1.3	Other Employees	110898	134993	-17.85
1.2	Bonus to all Staff	38895	44344	-12.29
2.	Employer's Contribution etc.	140281	154170	-9.01

Table 4.21: Fuel Consumption in manufacturing sector during 2020-21 and 2019-20 with percentage of change

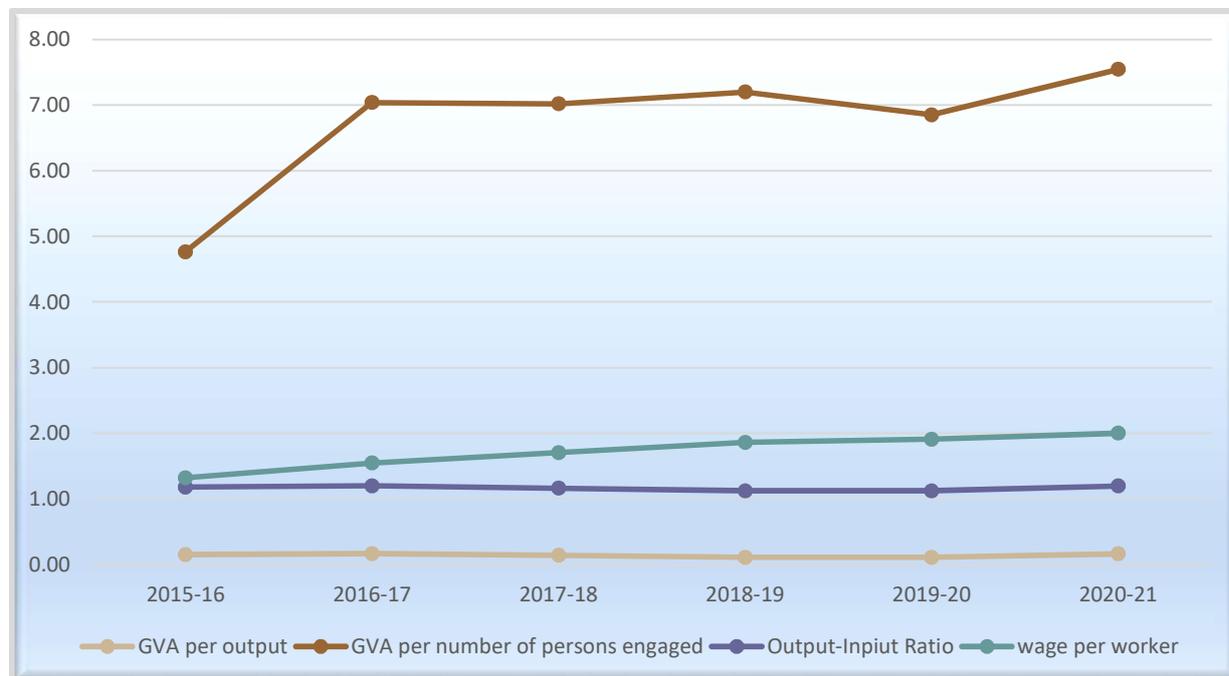
Fuel	2020-21	2019-20	Percentage change compared to 2019-20
Coal Quantity (Tonne)	145	211	-31.28
Coal Consumed (Value)	1149516	1306617	-12.02
Electricity Purchased Quantity(KWH)	2747974	3149485	-12.75
Electricity Purchased (Value)	19222945	22062616	-12.87
Petroleum Products (Value)	26057929	36824547	-29.24
Gas Consumed (Value)	17437961	23203257	-24.85
Other Fuels (Value)	2125436	1584649	34.13

4.8. Trends of some structural ratios

Table 4.22: Structural ratios of the indicators from 2015-16 to 2020-21

Financial Year	GVA per output	GVA per number of persons engaged	Output/ Input Ratio	Wage per worker
2015-16	0.15	4.76	1.18	1.32
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

Figure 4.22: Trends of structural ratios



Some notable changes in the characteristics of manufacturing sector during the outbreak of pandemic, 2020-21 compared to pre-pandemic year 2019-20

- ❖ Working Capital of industries declined by 19.89 %.
- ❖ Total Output dropped by 34.07 %.
- ❖ Fuel consumed dropped by 22.34 %.
- ❖ Material Consumed for Manufacturing declined by 42.05 %.
- ❖ Total input declined by 38.07%.
- ❖ Even though the input and output declined by a major percentage the Gross Value Added dropped by only 1.16%.
- ❖ Net Fixed Capital Formation declined by 70.25%.
- ❖ Gross Fixed Capital Formation dropped by 47.61 %.
- ❖ Profit increased by 16.43 %.
- ❖ Average no. of Persons Engaged fell by 10.24 %.
- ❖ Directly employed women participation declined by 12.97 %.
- ❖ Man-days employed dropped by 12.15%.
- ❖ Wages & Salaries declined by 4.77 %.
- ❖ Consumption and value of all types of fuels dropped by more than 12 % except other fuels category.



Chapter 5: Structural Ratios & Technical Coefficients

The measures of structural ratios and technical coefficient are used to assess the overall productivity, resource efficiency, productivity of capital, productivity of labor, capital intensity etc. The following are the structural ratios and technical coefficients of the manufacturing sector in the fiscal year 2020-21.

5.1 Structural Ratios

Table 5.1: Structural ratios based on estimated characteristics of the state, 2020-21

Structural Ratio	2020-21
Fixed Capital per factory in operation	836 lakhs
Total no. of persons engaged per factory in operation	45
Number of workers per factory in operation	35
Output per factory in operation	₹ 2074 lakhs
Net Value Added (NVA) per factory in operation	₹ 283 lakhs
Output per person engaged	₹ 46,39,691
Gross Value Added (GVA) per person engaged	754505
Net Value Added (NVA) per person engaged	₹ 6,32,218
Wages per worker	₹ 1,99,947

Table 5.2: Structural Ratios by Districts, 2020-21

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	43	36	33	171	45	480097	140068	127059	66308
Kannur	125	28	24	359	82	1272113	339243	291116	157346
Wayanad	848	51	40	1664	302	3276308	641505	594856	221628
Kozhikode	243	33	24	827	147	2507247	544199	445094	178887
Malappuram	152	28	20	1204	138	4344734	560833	497802	196425
Palakkad	464	37	29	1541	197	4141176	626615	529306	195949
Thrissur	214	37	30	1192	179	3227868	536431	484666	200225
Ernakulam	3116	61	47	5909	686	9724892	1409647	1128170	272243
Idukki	506	48	32	1819	507	3764818	1142438	1048634	166475
Kottayam	416	43	27	1923	372	4490892	999566	867972	292690
Alappuzha	343	52	44	1575	176	3011881	391523	335903	147725
Pathanamthitta	286	36	29	877	187	2456204	606915	523451	172710
Kollam	189	50	45	919	133	1836379	293135	266406	136620
Thiruvananthapuram	411	56	43	1195	272	2129811	560497	485033	229424
Total	836	45	35	2074	283	4639691	754505	632218	199947

Figure 5.1: District wise pattern of structural ratios



Table 5.3: Structural Ratios by NIC (2008)- 2 digit group of industries, 2020-21

NIC (2008) -2 digit	Description	Fixed Capital per factory in operation (₹ lakhs)	Total persons engaged per factory in operation (Number)	Workers per factory in operation (Number)
10	Manufacture of food products	363	61	51
11	Manufacture of beverages	375	42	34
12	Manufacture of tobacco products	9	37	35
13	Manufacture of textiles	328	52	45
14	Manufacture of wearing apparel	449	141	128
15	Manufacture of leather and related products	125	31	25
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	76	14	11
17	Manufacture of paper and paper products	67	19	15
18	Printing and reproduction of recorded media	745	43	25
19	Manufacture of coke and refined petroleum products	134213	276	229
20	Manufacture of chemicals and chemical products	1089	81	56
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	379	62	42
22	Manufacture of rubber and plastic products	491	44	34
23	Manufacture of other non-metallic mineral products	319	27	21
24	Manufacture of basic metals	1411	46	34
25	Manufacture of fabricated metal products, except machinery and equipment	203	29	22
26	Manufacture of computer, electronic and optical products	1277	184	136
27	Manufacture of electrical equipment	203	57	42
28	Manufacture of machinery and equipment n.e.c	170	42	31
29	Manufacture of motor vehicles, trailers and semitrailers	115	27	20
30	Manufacture of other transport equipment	7883	322	290
31	Manufacture of furniture	70	21	17
32	Other manufacturing	216	65	45
33	Repair and installation of machinery and equipment	696	32	26
38	Waste collection, treatment and disposal activities; materials recovery	1327	21	7
58	Publishing activities	1453	114	29
	Others	225	32	23
	Total	836	45	35

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NIC (2008) -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	2216	264	3631765
11	Manufacture of beverages	1462	235	3493149
12	Manufacture of tobacco products	35	26	97091
13	Manufacture of textiles	774	136	1488217
14	Manufacture of wearing apparel	1591	585	1132651
15	Manufacture of leather and related products	887	209	2831491
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	323	39	2356875
17	Manufacture of paper and paper products	274	43	1459021
18	Printing and reproduction of recorded media	1007	373	2339788
19	Manufacture of coke and refined petroleum products	175336	5978	63601277
20	Manufacture of chemicals and chemical products	5957	1857	7376347
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1198	244	1925564
22	Manufacture of rubber and plastic products	2090	359	4737514
23	Manufacture of other non-metallic mineral products	680	160	2545254
24	Manufacture of basic metals	4345	415	9390474
25	Manufacture of fabricated metal products, except machinery and equipment	1101	106	3760859
26	Manufacture of computer, electronic and optical products	7214	1501	3914216
27	Manufacture of electrical equipment	1531	285	2677216
28	Manufacture of machinery and equipment n.e.c	861	259	2062296
29	Manufacture of motor vehicles, trailers and semitrailers	290	45	1074074
30	Manufacture of other transport equipment	13758	5247	4269818
31	Manufacture of furniture	265	50	1242897
32	Other manufacturing	3784	486	5857378
33	Repair and installation of machinery and equipment	2106	496	6531388
38	Waste collection, treatment and disposal activities; materials recovery	1736	206	8169412
58	Publishing activities	2174	892	1905067
	Others	646	123	2040172
	Total	2074	283	4639691

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NIC (2008) -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	484344	432529	145594
11	Manufacture of beverages	642798	562620	165238
12	Manufacture of tobacco products	73220	71943	59708
13	Manufacture of textiles	309279	260599	156276
14	Manufacture of wearing apparel	457778	416650	131285
15	Manufacture of leather and related products	732516	667551	160545
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	343683	282200	117999
17	Manufacture of paper and paper products	271034	230640	149060
18	Printing and reproduction of recorded media	1132200	867815	338345
19	Manufacture of coke and refined petroleum products	4407197	2168369	497778
20	Manufacture of chemicals and chemical products	2422103	2300031	467823
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	445007	392580	214189
22	Manufacture of rubber and plastic products	903654	814617	285546
23	Manufacture of other non-metallic mineral products	752126	597555	223100
24	Manufacture of basic metals	1007708	897131	195539
25	Manufacture of fabricated metal products, except machinery and equipment	470153	362642	199626
26	Manufacture of computer, electronic and optical products	895442	814501	276027
27	Manufacture of electrical equipment	560111	498390	290760
28	Manufacture of machinery and equipment n.e.c	669879	619695	269014
29	Manufacture of motor vehicles, trailers and semitrailers	221652	168091	163602
30	Manufacture of other transport equipment	1705535	1628424	287083
31	Manufacture of furniture	263329	232916	158360
32	Other manufacturing	798798	752108	152707
33	Repair and installation of machinery and equipment	1717282	1537371	350046
38	Waste collection, treatment and disposal activities; materials recovery	1424706	968235	244828
58	Publishing activities	1038476	781257	452656
	Others	449423	388766	175929
	Total	754505	632218	199947

5.2 Technical Coefficients

Table 5.4: Technical Coefficients based on estimated characteristics of the state, 2020-21

Technical Coefficients	2020-21
Fixed Capital to Net Value Added (NVA)	2.96
Fixed Capital to Output	0.40
Net Value Added (NVA) to Output	0.14
Gross Value Added (GVA) to Fixed Capital	0.40
Output to Input	1.19
Profit to Output	0.05
Contract workers to total workers	0.19

Figure 5.2: Technical Coefficients based on estimated characteristics of the state, 2020-21

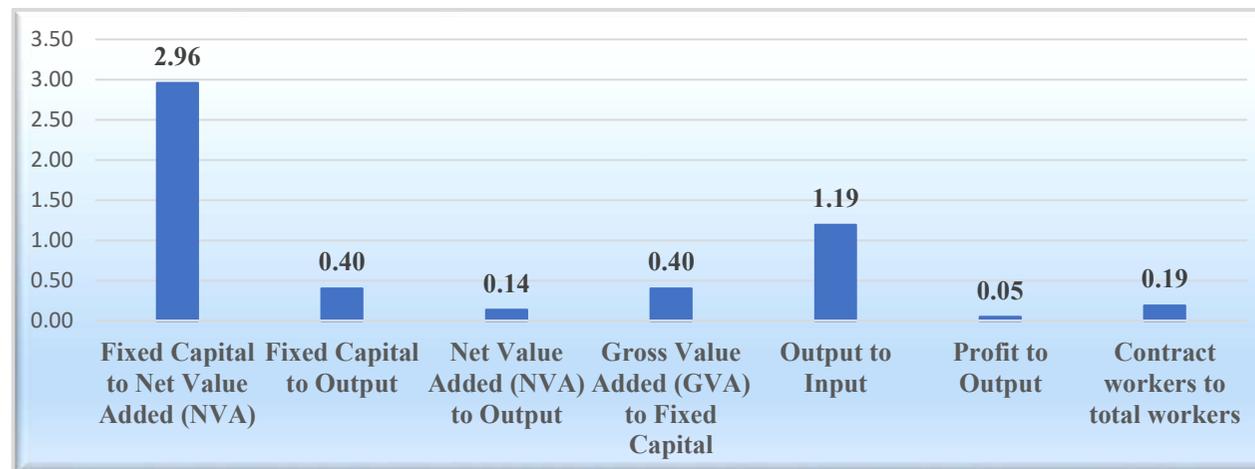


Table 5.5: Technical Coefficients by Districts, 2020-21

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	0.95	0.25	0.26	1.16	1.41	0.05	0.64
Kannur	1.52	0.35	0.23	0.77	1.36	0.03	0.10
Wayanad	2.81	0.51	0.18	0.38	1.24	0.07	0.14
Kozhikode	1.66	0.29	0.18	0.74	1.28	0.04	0.11
Malappuram	1.10	0.13	0.11	1.02	1.15	0.04	0.08
Palakkad	2.35	0.30	0.13	0.50	1.18	0.04	0.32
Thrissur	1.20	0.18	0.15	0.93	1.20	0.05	0.19
Ernakulam	4.54	0.53	0.12	0.27	1.17	0.06	0.30
Idukki	1.00	0.28	0.28	1.09	1.44	0.18	0.02
Kottayam	1.12	0.22	0.19	1.03	1.29	0.08	0.09
Alappuzha	1.96	0.22	0.11	0.60	1.15	0.02	0.13
Pathanamthitta	1.53	0.33	0.21	0.76	1.33	0.08	0.03
Kollam	1.42	0.21	0.15	0.78	1.19	0.01	0.02
Thiruvananthapuram	1.51	0.34	0.23	0.76	1.36	0.02	0.24
Total	2.96	0.40	0.14	0.40	1.19	0.05	0.19

Figure 5.3.: District wise Pattern of Technical Coefficients

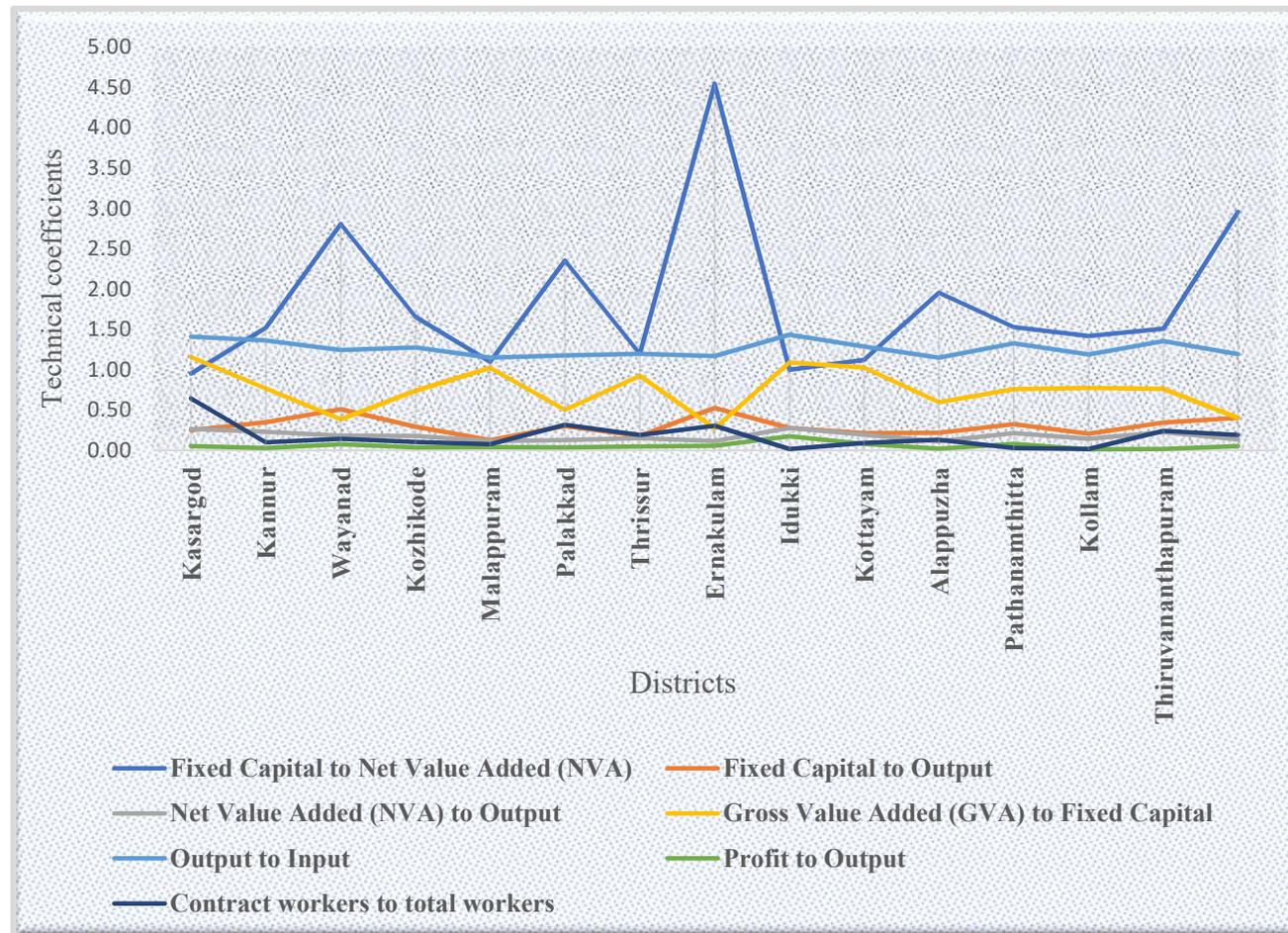


Table 5.6: Technical Coefficients by NIC (2008) -2-digit group of industries, 2020-21

NIC-2 digit	Description	Fixed Capital to NVA	Fixed Capital to Output	NVA to output
10	Manufacture of food products	1.37	0.16	0.12
11	Manufacture of beverages	1.59	0.26	0.16
12	Manufacture of tobacco products	0.33	0.25	0.74
13	Manufacture of textiles	2.42	0.42	0.18
14	Manufacture of wearing apparel	0.77	0.28	0.37
15	Manufacture of leather and related products	0.60	0.14	0.24
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plating materials	1.96	0.23	0.12
17	Manufacture of paper and paper products	1.55	0.24	0.16
18	Printing and reproduction of recorded media	2.00	0.74	0.37
19	Manufacture of coke and refined petroleum products	22.45	0.77	0.03
20	Manufacture of chemicals and chemical products	0.59	0.18	0.31
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	1.55	0.32	0.20
22	Manufacture of rubber and plastic products	1.37	0.23	0.17
23	Manufacture of other non-metallic mineral products	2.00	0.47	0.23
24	Manufacture of basic metals	3.40	0.32	0.10
25	Manufacture of fabricated metal products, except machinery and equipment	1.91	0.18	0.10
26	Manufacture of computer, electronic and optical products	0.85	0.18	0.21
27	Manufacture of electrical equipment	0.71	0.13	0.19
28	Manufacture of machinery and equipment n.e.c	0.66	0.20	0.30
29	Manufacture of motor vehicles, trailers and semitrailers	2.54	0.40	0.16
30	Manufacture of other transport equipment	1.50	0.57	0.38
31	Manufacture of furniture	1.40	0.26	0.19
32	Other manufacturing	0.45	0.06	0.13
33	Repair and installation of machinery and equipment	1.41	0.33	0.24
38	Waste collection, treatment and disposal activities; materials recovery	6.45	0.76	0.12
58	Publishing activities	1.63	0.67	0.41
	Others	1.83	0.35	0.19
	Total	2.96	0.40	0.14

Contd...

NIC-2 digit	Description	GVA to Fixed Capital	Output to input	Contract workers to total workers
10	Manufacture of food products	0.82	1.15	0.10
11	Manufacture of beverages	0.72	1.23	0.45
12	Manufacture of tobacco products	3.07	4.07	0.59
13	Manufacture of textiles	0.49	1.26	0.13
14	Manufacture of wearing apparel	1.43	1.68	0.01
15	Manufacture of leather and related products	1.83	1.35	0.01
16	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.62	1.17	0.06
17	Manufacture of paper and paper products	0.76	1.23	0.10
18	Printing and reproduction of recorded media	0.65	1.94	0.24
19	Manufacture of coke and refined petroleum products	0.09	1.07	0.75
20	Manufacture of chemicals and chemical products	1.80	1.49	0.24
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.73	1.30	0.13
22	Manufacture of rubber and plastic products	0.81	1.24	0.20
23	Manufacture of other non-metallic mineral products	0.63	1.42	0.24
24	Manufacture of basic metals	0.33	1.12	0.42
25	Manufacture of fabricated metal products, except machinery and equipment	0.68	1.14	0.17
26	Manufacture of computer, electronic and optical products	1.29	1.30	0.42
27	Manufacture of electrical equipment	1.57	1.26	0.12
28	Manufacture of machinery and equipment n.e.c	1.65	1.48	0.11
29	Manufacture of motor vehicles, trailers and semitrailers	0.52	1.26	0.03
30	Manufacture of other transport equipment	0.70	1.67	0.75
31	Manufacture of furniture	0.81	1.27	0.07
32	Other manufacturing	2.38	1.16	0.11
33	Repair and installation of machinery and equipment	0.80	1.36	0.30
38	Waste collection, treatment and disposal activities; materials recovery	0.23	1.21	0.72
58	Publishing activities	0.82	2.20	0.01
	Others	0.63	1.28	0.05
	Total	0.40	1.19	0.19

ANNEXURES

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 2020-2021 the reference period is the financial year commencing from 1st April 2020 and ending on 31st March 2021 or the accounting year of the factory ending on any date between 01.04.2020 to 31.03.2021.

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 June 2022 to November 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.

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**.

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.

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 2020-2021 (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.....)											
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)

DSL No PSL No

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 ----	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)											

DSL No PSL No

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)**		
<p><i>Note:</i></p> <p>* Give reasons in the footnote for negative values and abnormal verification in opening and closing values.</p> <p>** If outstanding loans include interest, a footnote may be given</p>			

DSL No PSL No

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]						

DSL No PSL No

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

DSL No PSL No

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):						

DSL No PSL No

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

DSL No PSL No

Block J: Products and by-products manufactured by the unit (if needed, additional sheets may be used for recording output items with serial nos. starting from 14)												
Sl. No.	Products/By-products description (First ten major items as per value - no brand name)	Item code (NPC-MS)	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)
							Excise duty	Sales tax/VAT	Others	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):

DSL No PSL No

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 2020-21?	
2.	Did the factory use the internet during FY 2020-21?	
3.	Did the factory have a website as on the date of survey?	
4.	Did the factory receive orders via the internet during FY 2020-21?	
5.	Did the factory place orders for business purpose via the internet during FY 2020-21?	
6.	Did the factory connect to the internet either by a. Narrowband or b. Fixed broadband or c. Mobile broadband during FY 2020-21?	
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 e.g. Ratio of output to input, ratio of depreciation/distributive expenses to output etc should be given.</i></p> <p>Please refer to detailed instructions also for further guidance.</p>

Annual Survey of Industries 2020-2021						
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)	X	X	Superintending Officer	Scrutinizing Officer
		Major Ten basic items consumed				
		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 (2020-21)	Previous year (2019-20)	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(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})			
	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 (2020-21)	Previous year (2019-20)	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 _{2,6}) (-) (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

()
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:

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

${}^sY'_{is}$)

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

$${}^s\hat{Y}'_{is} = \frac{1}{2} \sum_{m=1,3} {}^s\hat{Y}'_{ism}.$$

Thus, the estimator for any characteristic of the unit **in the sample sector** of the i^{th} state is:

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

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

$${}^{\text{Central}}\hat{Y}_i = {}^s\hat{Y}'_i + {}^c\hat{Y}''_i$$

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

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

(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:

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

$\text{State } Y'_{ism}$ 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, $\text{State } \hat{Y}'_{ism}$, m=2,4 i.e., $\text{State } \hat{Y}'_i = \frac{1}{2} \sum_{m=2,4} \text{State } \hat{Y}'_{ism}$, where $\text{State } \hat{Y}'_{ism}$ 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:

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

Using ${}^c Y''_i$ 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:

$$\text{State } \hat{Y}_i = \text{State } \hat{Y}'_i + {}^c Y''_i$$

(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 ${}^s \hat{Y}'_{ism}$.

Then

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

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 ${}^{Pooled}\hat{Y}'_{is} = \frac{1}{4} \sum_{m=1}^4 {}^S\hat{Y}'_{ism}$. In some cases, in a particular stratum one or more sub-samples may be void. Then stratum-level estimate will be generated from the simple average of the non-void sub-samples in that stratum. Thus, general form of stratum-level estimate may be ${}^{Pooled}\hat{Y}'_{is} = \frac{1}{t} \sum_{m=1}^t {}^S\hat{Y}'_{ism}$, where t (≤ 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:

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

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

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

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

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:

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

The sampling variance based on central Samples is:

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

The sampling variance based on state Samples is:

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

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

For generating estimates of variance for the pooled sample is:

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

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

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

$$V\hat{a}r(\hat{Y}) = \sum_i V\hat{a}r(\hat{Y}_i) \dots\dots\dots (10)$$

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

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

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

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

where ${}^c\hat{Y}_s = \frac{1}{2} \sum_{m=1,3} \hat{Y}_{sm}$, ${}^c\hat{X}_s = \frac{1}{2} \sum_{m=1,3} \hat{X}_{sm}$, $\hat{R} = \text{Central } \hat{Y} / \text{Central } \hat{X}$, and \hat{Y}_{sm} and \hat{X}_{sm} 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 $\text{Central } \hat{X}$ and $\text{Central } \hat{Y}$ will be obtained using eq. (3) for the characteristics x and y respectively.

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

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

where ${}^c\hat{Y}_{is} = \frac{1}{2} \sum_{m=1,3} \hat{Y}_{ism}$, ${}^c\hat{X}_{is} = \frac{1}{2} \sum_{m=1,3} \hat{X}_{ism}$, $\hat{R}_i = \text{Central } \hat{Y}_i / \text{Central } \hat{X}_i$, and \hat{Y}_{ism} and \hat{X}_{ism} 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 $\text{Central } \hat{X}_i$ and $\text{Central } \hat{Y}_i$ will be obtained using eq. (2) for i-th state for the characteristics x and y respectively.

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

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

where ${}^s\hat{Y}_{is} = \frac{1}{2} \sum_{m=2,4} \hat{Y}_{ism}$, ${}^s\hat{X}_{is} = \frac{1}{2} \sum_{m=2,4} \hat{X}_{ism}$, ${}^s\hat{R}_i = \text{State } \hat{Y}_i / \text{State } \hat{X}_i$; \hat{Y}_{ism} and \hat{X}_{ism} 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 $\text{State } \hat{X}_i$ and $\text{State } \hat{Y}_i$ will be obtained using eq. (5) for i-th state for the characteristics x and y respectively.

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

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

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

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

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

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

5. Estimates of RSE:

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

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

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

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 × District × Sector × 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

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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;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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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.

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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]

Description along with 3/4-digit NIC-2008 codes

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

Description along with 3/4-digit NIC-2008 codes

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

Description along with 3/4-digit NIC-2008 codes

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

Description along with 3/4-digit NIC-2008 codes

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

Description along with 3/4-digit NIC-2008 codes

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

Description along with 3/4-digit NIC-2008 codes

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.

Description along with 3/4-digit NIC-2008 codes

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

Description along with 3/4-digit NIC-2008 codes

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

Description along with 3/4-digit NIC-2008 codes

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