A VARIABLE SPECIFIC ANALYSIS OF LARGE SCALE INDUSTRY OF PUNJAB

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Abstract: *The present empirical analysis is confined to a variable specific analysis with respect to production pattern of large scale industrial units of Punjab. The study covers district wise distribution of production in the large scale industrial units of Punjab for the period ranging from 2003-04 to 2013-14. It is projected that production in Faridkot district is expected to increase to 2013.18 crores in 2020-21 as compared to 503.67 crores of production made in 2013-14. This is followed by Gurdaspur , S.A.S. Nagar , Kapurthala , Barnala , Bathinda, Tarn Taran, Hoshiarpur , Jalandhar , Nawanshahar , Sangrur , Ludhiana , Amritsar and Fatehgarh Sahib. With respect to trend values, it can be inferred that production amount in various units of industries is expected to increase by 2020-21. The amount of production in 2020-21 is expected to be highest in D7 (Rs.7631.67 crores) as compared to* Rs.901.71 crores of production made in the year 2013-14.*This is likely to be followed by D16, D8, D13, D1, D9, D14, D3, D10, D6 and D11 where it is expected to increase to Rs.1623.87 crores, Rs. 24662.70 crores, Rs. 2396.57 crores, Rs.20698.84 crores, Rs.3220.56 crores, Rs. 604.93 crores, Rs. 38030.68 crores, Rs.1500.23 crores, Rs.7683.47 crores and Rs.8715.98 crores in the year 2020-21. Thus the highest rise in production is expected to be seen in D7 by 2020-21 and least increase is likely to be seen in D6 where it has been projected to increase from Rs.6455.25 crores made in 2013-14 to only Rs.7683.47 crores in the year 2020-21.But the production to be made in the units of D4, D5 and D12 is expected to decline significantly by the year 2020-21.*

Key Words: Large Scale Industry, Growth Rate, Production.

Section I-Introduction:

The role of manufacturing as an engine of growth is assumed due to the unique attributes and contribution of this sector which include the following aspects: Productivity levels in the industrial sector are higher than other sectors and the growth in productivity is quicker. The Manufacturing sector provides distinctive opportunities for the accumulation of capital, spatial concentration, agglomeration of economies and economies of scale. Manufacturing goods are easily tradable so the sector can profit not only from domestic demand but also from global demand (Kaltenberg and Verspagen, 2015). The manufacturing sector plays a special role as a driver of technological advance, the factor which is perhaps the most important in modern economic growth (Kaldor 1966; Cornwall, 1977). In fact, this argument involves a number of strands. Firstly, manufacturing and certain sectors within manufacturing are presumed to be more R&D intensive than other sectors (see Jacob and Sasso, 2015). Secondly, it is assumed that more innovation takes place in manufacturing than in other sectors. This is particularly the

case for some subsectors of manufacturing. Thirdly, manufacturing provides special opportunities for technologically lagging countries to profit from global technology and knowledge flows. Finally, it is assumed that the spillovers and linkages for manufacturing are stronger than for other sectors (see Lavopa and Szirmai, 2012). The argument that the manufacturing sector plays a key role in technological advance for the total economy is perhaps the most important argument in favour of industrial policies favouring this sector. The expansion of the industrial sector is deemed to result in increased levels of productivity and income. This key factor contributing to this situation is the transfer of labour force from low productivity sector to the high productivity sector, i.e. from agricultural sector to industrial sector. Further, this is expected to result in more savings, ensuing more demand and hence improved standard of living. Myrdal (1957), opined that manufacturing industry symbolizes, a higher stage of production. Since increased productivity implies higher efficiency of resource utilisation, industrialization may be, considered crucial for the developing economics and that part of the working population which is employed in the industry, is deliberated as a means of raising per capita national income. The state of Punjab has a huge agricultural base and is now well on its way to rapid industrialization through coordinated development of Small, Medium and Large scale industries. A key indicator to recognize the extent of contribution of industrial sector in the growth and development of the state is Gross State Domestic Capital Formation (GSDCF) by Industry of use, which demonstrates the input of various industries in GSDCF.

Section II-Objectives of the Study:

The study is confined to large scale industrial units of Punjab. The district wise distribution of production pattern of large scale industries of Punjab during the period ranging from 2003-04 to 2013-14 is under consideration.The main objective of the present empirical study is to find out how much amount of production is done by the large scale industrial units of Punjab state.

Section III-Data Base, Sample Size and Research Methodology:

The study covers district wise distribution of production in the large scale industries of Punjab for the period ranging from 2003-04 to 2013-14. For achieving the main objectives of the present empirical study mean, standard deviation, Coefficient of variation, CAGR (Compound Annual Growth Rate), t-test and Trend Coefficients are used to come to the conclusions and findings. The abbreviations are used for writing the results of this study where D1 denotes Food Products, D2 denotes Beverages, D3 denotes Textile and Yarn including Dyeing, D4 denotes Hosiery & Garments, D5 denotes Leather & Leather Products, D6 denotes Paper & Printing, D7 denotes Coal, Coke & Petroleum Products, D8 denotes Chemical Products, D9 denotes Rubber & Plastic Products, D10 denotes Non-metallic Mineral Products, D11 denotes Basic Metal Products, D12 denotes Metal Products, D13 denotes Machinery & Parts except Elec., D14 denotes Electrical Machinery & Parts, D15 denotes Transport Equipment & Parts, D16 denotes Misc. Industries. The paper is organized into five sections. Section I provides the introduction about the production pattern of large scale industry of Punjab. Section II defines the main objectives of the present study. Section III deals with data source, sample size & research methodology to be followed

in the study. Section IV presents reports and analysis of the empirical results of the study. Section V summarizes and concludes the study.

Section IV-Empirical Results:

Table 4.1 depicted district wise distribution of production in the large scale industries of Punjab for the period 2003-04 to 2013-14. The mean share has been found to be highest in Ludhiana (14930.63) during the period under study, followed by S.A.S. Nagar (13408.03), Hoshiarpur (4862.18), Patiala(4212.42), Bathinda (3742.79), Sangrur(3436.93), Ropar (3204.32), Barnala (3130.70), Nawanshahar(2904.11), Kapurthala (2173.63), Fatehgarh Sahib(1645.24),Amritsar (1623.99), Gurdaspur(1352.16), Jalandhar (1105.49), Moga(649.28), Faridkot (559.29), Fazilka(491.26) Ferozepur (431.89) and Muktsar(327.29). During the same period, relatively lower mean scores in terms of production were recorded in Tarn Taran (170.90), followed by Pathankot(163.78) which showed lowest mean score in terms of its production in the district. Coefficient of variation is used to describe dispersion of the variable. CV regarding production in various large scale units of industries has been recorded highest in Faridkot(243.51 percent), followed by Fazilka(217.26 percent), Gurdaspur(202.08 percent), Pathankot (143.93), Amritsar(76.94 percent), Tarn Taran(70.46 percent), Kapurthala(64.19 percent), Moga(60.52 percent), Fatehgarh Sahib(56.93 percent),S.A.S. Nagar (54.85 percent), Ferozepur(54.65 percent), Barnala(42.33 percent), Sangrur(39.47 percent) Bathinda (38.82 percent), Roopnagar/Ropar (36 percent), Patiala(26.52 percent). Muktsar recorded a lowest coefficient of variation of 26.13 percent. Therefore, least degree of dispersion is found in Muktsar indicating that the data is less variable or more stable than the data with higher CV in other districts. Table 4.1 exhibited that the production in Tarn Taran district registered a significant rise from 52.69 crores of production in 2006-07 to 380.98 crores of production in 2013-14 at the highest rate of CAGR of 38.51 percent which tends out to be significant (t-value=1.03 at five percent level). Hence, Tarn Taran district registered highest growth in terms of the amount of production made in various large scale units of the district over the years among all the other districts. The lowest growth rate in the production has been seen in the units of Patiala district where the production grew over the respective period at CAGR of only 2.35 percent which has been found to be insignificant (t-value=0.16). On the other hand, production has declined over the respective period and thus negative growth rate has been registered in the Fazilka district where the production has decreased significantly from 3598.52 crores in 2010-11 to only in 684.78 crores made in 2013-14 at CAGR of -39.35 percent which has been found to be insignificant(t-value= -1.62). From the existing trend equation, it can be projected that the production in Faridkot district is expected to increase to 2013.18 crores in 2020-21 as compared to 503.67 crores of production made in 2013-14. This is followed by Gurdaspur, S.A.S. Nagar, Kapurthala, Barnala, Bathinda, Tarn Taran, Hoshiarpur , Jalandhar, Nawanshahar, Sangrur, Ludhiana, Amritsar, Fatehgarh Sahib where the production is expected to increase to 3799.43 crores, 36299.57 crores, 4539.06 crores, 10188.34 crores

Table: 4.1 PRODUCTION (in crores): DISTRICT WISE IN LARGE SCALE INDUSTRIAL UNITS OF PUNJAB

District / Year	Amritsar	Barnala	Bathinda	Faridkot	Fatehgarh Sahib	Fazilka	Ferozepur	Gurdaspur	Hoshiarpur	Jalandhar	Kapurthala
2003-04	881.95	Nil	2607.68	53.44	882.24	0	613.81	468.41	1800.7	656.82	1189.33
2004-05	894.8	Nil	2686.51	34.04	1012.23	0	283.4	406.28	2249.29	653.2	1248.43
2005-06	1040.52	Nil	2784.26	36.12	1038.52	0	662.41	389.09	2689.75	697.2	1434.5
2006-07	826.51	1279.74	2949.38	32.5	798.11	0	401.37	435.72	3808.12	761.2	1660.2
2007-08	904.35	1590.17	3279.7	120	1572.59	0	555.59	361.63	4197.31	793.2	1838.97
2008-09	1054.75	1965.19	4321.6	109.5	2049.01	0	549.35	510.25	3186.55	1034.17	2200.65
2009-10	695.55	3557.24	4782.48	77.8	1710.93	0	504.38	682.26	3512.07	1056.87	2516.79
2010-11	1880.8	3582.05	7520.99	4630.37	1193.85	3598.52	791.35	9564.13	4998.18	1196.92	1724.16
2011-12	1983.41	3969.1	4025.18	51.13	1734.92	566.81	91.69	252.2	13171.17	2873.91	6209.91
2012-13	2918.74	4463.74	3532.42	503.67	1966.8	553.71	84.71	785.09	6451.26	1011.28	1943.32
2013-14	4782.54	4638.35	2680.46	503.67	4138.43	684.78	212.68	1018.71	7419.58	1425.63	1943.69
Mean	1623.99	3130.70	3742.79	559.29	1645.24	491.26	431.89	1352.16	4862.18	1105.49	2173.63
Std. dev.	1249.42	1325.37	1452.94	1361.92	936.61	1067.31	236.03	2732.42	3243.86	635.86	1395.16
cv	76.94	42.33	38.82	243.51	56.93	217.26	54.65	202.08	66.72	57.52	64.19
CGR (Compound Growth Rate)	16.18	28.24	4.25	34.40	22.17	-39.35	-4.96	11.56	26.25	20.24	18.02
t-value	4.14	0.309	1.41	2.475	1.615	-1.62	-0.28	1.202	1.714	1.327	1.257
Trend Coefficients											
a	-139.37	778.12	2754.62	-167.7	384.24	3539.53	638.27	128.51	605.37	399.58	990.9
b	293.88	522.79	164.69	121.16	210.66	-875.43	-34.39	203.94	709.46	117.65	197.12
Predictions											
2020-21	5150.47	10188.34	5719.04	2013.18	4176.12	-6090.2	19.25	3799.43	13375.65	2517.28	4539.06

Contd.

District / Year	Ludhiana	Mansa	Moga	Muktsar	Nawanshahar	Patiala	Pathankot	Roop Nagar	S.A.S. Nagar	Sangrur	Tarn Taran
2003-04	8910.59	0	561.48	249.09	1594.38	4759.99	0	4342.58	Nil	2399.17	Nil
2004-05	9573.17	0	670.95	259.13	1948.95	5331.74	0	4087.16	Nil	2623.56	Nil
2005-06	9212.78	0	768.21	273.62	1810.92	6077.5	0	4972.74	Nil	2885.6	Nil
2006-07	10303.55	0	790	283.04	2300.82	3446.95	0	2029.29	6270.85	2063.05	52.69
2007-08	11976.27	0	980.4	308.64	3079.94	4817.05	0	2262.2	6813.71	2141.85	73.31

2008-09	13160.05	0	1108.52	340.72	7269.47	5479.99	0	1924.16	8634.29	3338.99	75.63
2009-10	15956.83	0	1338.88	366.65	2640.75	3619.35	0	1926.73	12057.72	2407.96	89.67
2010-11	13577.65	0	166.06	341.64	3324.31	3700.25	418.39	4204.49	19033.36	4152.24	299.09
2011-12	14929.84	0	249.97	296.25	1131.87	2975.94	507.36	4123.4	28417.39	4620.83	210.37
2012-13	24394.28	0	247.33	321.17	3262.73	2834.08	569.62	2383.41	14091.3	5052.71	185.44
2013-14	32241.93	0	260.31	560.26	3581.05	3293.84	306.18	2991.39	11945.62	6120.24	380.98
Mean	14930.63	0	649.28	327.29	2904.11	4212.43	163.78	3204.32	13408.03	3436.93	170.90
Std. dev.	7232.12	0	392.94	85.53	1650.69	1116.96	235.72	1153.51	7353.98	1356.46	120.42
CV	48.44	0	60.52	26.13	56.84	26.52	143.93	36.00	54.85	39.47	70.46
CGR (Compound Growth Rate)	21.77	0	-4.27	14.51	14.08	2.35	-76.86	5.53	22.11	19.33	38.51
t-value	1.522	0	-0.373	0.995	0.88	0.16	-2.07	0.35	0.66	1.25	1.03
Trend Coefficients											
A	3824.02	0	957.16	215.63	2099.06	5702.45	518.98	3864.54	5777.51	1365.72	-15.12
B	1851.1	0	-51.31	18.61	134.17	-248.33	-27.43	-110.03	1695.67	345.2	41.33
Predictions											
2020-21	37143.82	0	33.58	550.61	4514.12	1232.51	25.24	1884	36299.57	7579.32	728.82

Source: Directorate of Industries and Commerce, Punjab

Table 4.2 LARGE SCALE INDUSTRIES PUNJAB - INDUSTRY WISE - PRODUCTION (CRORES)

Industry / Year	D1	D2	D3	D4	D5	D6	D7	D8
2003-04	5332.85	880.29	6498.3	801.05	69.91	1066.46	NIL	5029.59
2004-05	5287.53	984.46	6959.69	607.22	53.37	1109.89	NIL	5521.21
2005-06	5779.2	990.95	7161.31	599.94	48.05	1331.5	NIL	6315.62
2006-07	6044.24	1328.71	7737.1	509.46	31.81	1252.66	NIL	7358.14
2007-08	7252.89	1546.72	9055.67	578.94	46.31	1380.17	1366.23	7819.09
2008-09	7870.26	2846.49	10557.56	609.71	37.5	1780.79	737.84	12080.86
2009-10	8753.12	2640	12100.75	798	0.01	1766.29	756.92	10176.28
2010-11	10196.68	NIL	15786.9	68.2	3.6	2603.33	866.66	20777.3
2011-12	20058.5	NIL	18252.65	155.72	4.5	3364.48	22	23255.73
2012-13	10768.54	NIL	21277.47	408.14	61.74	4203.18	892.17	11390.46
2013-14	11837.14	NIL	30044.58	128.03	7652	6455.25	901.71	9650.23
Mean	9016.45	1602.52	13221.09	478.58	728.07	2392.18	791.93	10852.23
Std. dev.	4308.44	814.41	7461.44	258.07	2296.53	1685.03	398.84	6003.06
CV	47.78	50.82	56.44	53.92	315.43	70.44	50.36	55.32
GROWTH	11.32		16.34	-15.48	3.85	18.66	-14.56	11.94
t VALUE	5.31		13.78	-2.70	0.12	9.26	-0.55	3.42
a	3175.26		816.30	814.45	-1328.87	-253.46	-792.69	3946.99
b	973.53		2067.47	-55.98	342.82	440.94	468.02	1150.87
PREDICTIONS								
2020-21	20698.84	0.00	38030.68	-193.16	4841.95	7683.47	7631.67	24662.70

Contd.

Industry / Year	D9	D10	D11	D12	D13	D14	D15	D16
2003-04	1246.71	678.91	3021.46	117.4	1278.55	693.53	3888.31	1368.34
2004-05	1234.29	775.53	4102.83	123.23	1582.58	540.04	3536.65	1544.32
2005-06	1330.74	858.75	4073.36	137.34	2047.56	544.78	3925.43	1629.21
2006-07	1467.56	1356.34	3723.76	124.1	2326.43	517.79	5276.61	1438.38
2007-08	1715.2	1647.99	4814.23	200.2	1989.03	472.74	5960.03	1821.44
2008-09	2142.12	1016.33	6419.11	430.64	2942.67	585.45	6010.98	2254.53
2009-10	1777.23	1112.04	6770.02	336.8	2910.71	718.91	6584.94	2298.9
2010-11	1789.65	1029.53	1471.97	420.33	3119.99	620.75	8314.53	5214.37
2011-12	1789.82	1097.17	5877.26	477.83	2646.02	913.67	13687.06	790.32
2012-13	2627.4	1178.46	6457.89	3897.65	1212.91	449.83	11881.09	849.9
2013-14	2371.24	1208.59	7504.54	7285.01	1226.64	474.33	11455.02	511.53
Mean	1772.00	1087.24	4930.58	1231.87	2116.64	593.80	7320.06	1792.84
Std. dev.	456.52	271.12	1842.55	2288.62	725.35	137.64	3540.09	1269.14
CV	25.76	24.94	37.37	185.78	34.27	23.18	48.36	70.79
GROWTH	7.11	4.03	5.56	45.38	0.42	-0.27	14.62	-5.88
t VALUE	6.23	1.84	1.23	5.77	0.12	-0.13	9.69	-1.03
A	1047.71	880.74	3037.88	-1641.93	1976.68	588.24	1472.95	1877.33
B	120.71	34.42	315.45	478.97	23.33	0.93	974.52	-14.08
PREDICTIONS								
2020-21	3220.56	1500.23	8715.98	6979.46	2396.57	604.93	19014.28	1623.87

Source: Directorate of Industries and Commerce, Punjab

5719.04 crores, 728.82 crores, 13375.65 crores, 2517.28 crores, 4514.12 crores, 7579.32 crores, 37143.82 crores, 5150.47 crores, 4176.12 crores respectively. The least expected increase in production in large scale industries is expected to be recorded in the units of Muktsar district where production is expected to decline to 550.61 crores in the year 2020-21 from 560.26 crores made in 2013-14. On the other hand, production in Fazilka is expected to decline significantly in the year 2020-21.

Table 4.2 highlighted the industry wise distribution of production made in various large scale industrial units of Punjab for the period ranging from 2003-04 to 2013-14. During the relevant period, the highest mean score has been recorded in D3 (13221.09) followed by D8(10852.23), D1(9016.45), D15(7320.06), D11 (4930.58), D6(2392.18), D13(2116.64), D16(1792.84), D9(1772), D2(1602.52), D12(1231.87), D10(1087.24), D7(791.93), D5(728.07), D14(593.80). On the other hand, lowest mean score in terms of production made in various units of the industries during the relevant period has been registered in D4(478.58). Coefficient of variation which is used to explain the variations in the variables, has been viewed maximum in D5(315.43 percent) followed by D12(185.78 percent), D16(70.79 percent), D6(70.44 percent), D3(56.44 percent), D8(55.32 percent), D4(53.92 percent), D7(50.36 percent), D15(48.36 percent), D1(47.78 percent), D11(37.37 percent), D13(34.27 percent), D9(25.76 percent), D10(24.94 percent). On the contrary, lowest coefficient of variation has been recorded in D14(23.18 percent) representing that the data is less variable as compared to D5 , in which highest variation in the production data has been found. Table 4.2 exhibited growth in the production made by the units of various industries during the respective period. It has been observed that production of D12 has increased from Rs.117.4 crores in 2003-04 to Rs.7285.01 crores in 2013-14 at the highest rate of CAGR of 45.38 percent which has been found to be highly significant (t-value 5.77 at five percent level). On the other hand, the lowest growth in amount of production in various industries has taken place in D13 where it has followed fluctuating trend and has increased during the respective period at CAGR of only 0.42 percent, which came out to be insignificant (t-value=0.12). Alternatively, it has been seen that production in the D4 has decreased from Rs.801.05 crores made in 2003-04 to Rs.128.03 crores in 2013-14 at the rate of negative CAGR of -15.48 percent (t-value-2.70). The increase in the expected amount of production by 2020-21 to be made in various units of the industries is anticipated to be highest in D7 (Rs.7631.67 crores), where it is expected to increase from Rs.901.71 crores of production made in the year 2013-14. This is likely to be followed by D16, D8, D13, D1, D9, D14, D3, D10, D6 and D11 where it is expected to increase to Rs.1623.87 crores, Rs. 24662.70 crores, Rs. 2396.57 crores, Rs.20698.84 crores, Rs.3220.56 crores, Rs. 604.93 crores, Rs. 38030.68 crores, Rs.1500.23 crores, Rs.7683.47 crores and Rs.8715.98 crores in the year 2020-21. But the production to be made in the units of D4, D5 and D12 is expected to decline significantly by the year 2020-21.

Section V-Summary & Conclusions:

The study is confined to large scale industrial units of Punjab. The study covers district wise distribution of production in the large scale industries of Punjab for the period ranging from 2003-04 to 2013-14. The

following are the conclusion and findings of the present study regarding production pattern in the large scale industry of Punjab.

- The mean share has been found to be highest in Ludhiana (14930.63) during the period under study. This has been followed by S.A.S. Nagar (13408.03), Hoshiarpur (4862.18), Patiala(4212.42), Bathinda (3742.79), Sangrur(3436.93), Ropar (3204.32), Barnala (3130.70), Nawanshahar(2904.11), Kapurthala (2173.63), Fatehgarh Sahib(1645.24), Amritsar (1623.99), Gurdaspur(1352.16), Jalandhar (1105.49), Moga(649.28), Faridkot (559.29), Fazilka(491.26) Ferozepur (431.89) and Muktsar(327.29).
- It is found that during the same period, relatively lower mean scores in terms of production were recorded in Tarn Taran (170.90), followed by Pathankot(163.78) which showed lowest mean score in terms of its production in the district.
- It is revealed that CV regarding production in various large scale units of industries has been recorded highest in Faridkot (243.51 percent), whereas Muktsar recorded a lowest coefficient of variation of 26.13 percent.
- It is shown that least degree of dispersion is found in Muktsar indicating that the data is less variable or more stable than the data with higher CV in other districts.
- It is found that production in Tarn Taran district registered a significant rise from 52.69 crores of production in 2006-07 to 380.98 crores of production in 2013-14 at the highest rate of CAGR of 38.51 percent which tends out to be significant (t-value=1.03 at five percent level). Hence, Tarn Taran district registered highest growth in terms of the amount of production made in various large scale units of the district over the years among all the other districts.
- It is observed that lowest growth rate in the production has been seen in the units of Patiala district where the production grew over the respective period at CAGR of only 2.35 percent which has been found to be insignificant (t-value=0.16).
- It is seen that production has declined over the respective period and thus negative growth rate has been registered in the Fazilka district where the production has decreased significantly from 3598.52 crores in 2010-11 to only in 684.78 crores made in 2013-14 at CAGR of -39.35 percent which has been found to be insignificant(t-value= -1.62).
- It is projected that the production in Faridkot district is expected to increase to 2013.18 crores in 2020-21 as compared to 503.67 crores of production made in 2013-14.
- It is found that during the relevant period, the highest mean score has been recorded in D3 (13221.09).
- It is revealed that lowest mean score in terms of production made in various units of the industries during the relevant period has been registered in D4 (478.58).
- It is shown that coefficient of variation which is used to explain the variations in the variables, has been viewed maximum in D5(315.43 percent), followed by D12(185.78 percent), D16(70.79 percent),

D6(70.44 percent), D3(56.44 percent), D8(55.32 percent), D4(53.92 percent), D7(50.36 percent), D15(48.36 percent), D1(47.78 percent), D11(37.37 percent), D13(34.27 percent), D9(25.76 percent), D10(24.94 percent).

- It has been observed that production of D12 has increased from Rs.117.4 crores in 2003-04 to Rs.7285.01 crores in 2013-14 at the highest rate of CAGR of 45.38 percent which has been found to be highly significant (t-value 5.77 at five percent level).
- It is revealed that lowest growth in amount of production in various industries has taken place in D13 where it has followed fluctuating trend and has increased during the respective period at CAGR of only 0.42 percent, which came out to be insignificant (t-value=0.12).
- It has been seen that production in the D4 has decreased from Rs.801.05 crores in 2003-04 to Rs.128.03 crores in 2013-14 at the rate of negative CAGR of -15.48 percent (t-value-2.70). With respect to trend values, it can be inferred that the production amount in various units of industries is expected to increase by 2020-21. The increase in the expected amount of production to be made in the various units of the industries has been found to be highest in D7 (Rs.7631.67 crores), where it is expected to increase from Rs.901.71 crores of production made in the year 2013-14. Thus the highest rise in production is expected to be seen in D7 by 2020-21 and least increase is likely to be seen in D6 where it has been projected to increase from Rs.6455.25 crores made in 2013-14 to only Rs.7683.47 crores in the year 2020-21.But the production to be made in the units of D4, D5 and D12 is expected to decline significantly by the year 2020-21.

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