PERFORMANCE ANALYSIS OF SMALL SCALE INDUSTRIES IN PUNJAB: A PRODUCTION PERSPECTIVE

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Abstract: *The present study covers district wise distribution of production made by small scale industries of Punjab for the period ranging from 2005-06 to 2013-14. Further, study of industry wise production made by disparate small scale industrial units of Punjab has also been made. The results signified that leading mean score has been gained by E3 (8679.06) which is symptomatic of the higher production made in the units of this industry for the respective period. Alternatively, E24 (5.01), E32 (2.00), E29 (1.28), E33 (0.72), E25 (0.67) recorded least average scores indicating lower production in the units of these industries during the relevant period. Trend equation revealed that production in nearly all the industries is likely to increase by 2020-21 except for E22, E19 and E23 where it is predicted to decline from Rs.753.29 crore, Rs. 54.95 crore and Rs.167.71 crore made in 2013-14 to Rs.404.99 crore, Rs.39.78 crore and Rs.143.21crore in 2020-21respectively. Among the district wise production made in the small scale industrial units of Punjab, the study depicted that Ludhiana district recorded highest average score (24879.76), while, lowest mean score(56.19) has been registered for the production made in the units of Tarn Taran district. The compound annual growth rate (CAGR) of the production has been recorded maximum in the units of Fazilka, where production* increased from 1101.67 crore in 2012-13 to 6193.41 crore in 2013-14 at the highest CAGR of 462.18 percent. While, *the lowest growth in the production has been recorded in units of Amritsar district (CAGR=0.73 percent). Trend equation revealed that the highest expected change for production in the year 2020-21 is expected to occur in small scale industrial units of Fazilka where the production is expected to increase from Rs.6193.41 crore made in 2013-14 to Rs.87661.25 crore. On the other hand, the least increase is projected to be recorded in S.A.S. Nagar district where the production is expected to increase from Rs. 974.15 crore made in 2013-14 to only Rs.1189.91 crore likely to be made in 2020-21.*

Key Words: Production, Growth Rate, Small scale industries

Section I-Introduction:

Economic growth and development of a country are achieved through the healthy growth of different sectors of an economy. Further, for sectoral growth, different states and territories employ their resources to optimum use to achieve the growth targets. Punjab state holds a unique place in terms of its being an agrarian economy and being a major contributor to the overall production of substantial items produced by different industries in Punjab. This is significant from the numbers of Gross State Domestic

Capital Formation shown in Table 1.1, which shows that the share of the manufacturing sector of the state has increased majorly over a period of time. This indicates that the highest contribution in the productive assets of the state has been made by this sector which in turn aids in the expansion of total production in the state.

Table 1.1 Gross State Domestic Capital Formation by Industry of use in Punjab (at constant 2004-05) prices (Rs. in crore)

Year / Industry	2004-05	2005-06	2006-07	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Agriculture including livestock	1806.23	1858.65	2255.81	2592.95	2145.23	2287.08	2357.02	2440.78	2394.74
Forestry	29.61	7.24	3.06	9.92	9.51	21.49	9.73	12.45	19.96
Fishing	0.76	0.65	0.77	0.82	0.88	1	1.09	0.74	1.16
Mining& Quarrying	0.03	0.03	0.04	0.08	0.04	0.05	0.66	0.01	0.04
Manufacturing	6133.15	6819.25	11130.45	10005.8	13487.07	16828.4	11025.32	13307.02	14406.89
Construction	138.35	166.49	258.81	511.11	706.03	990.6	1416.27	1359.42	1754.48
Electricity, gas & water supply	952.5	1221.97	1506.33	2537.05	2508.1	2522.02	1279.31	1047.11	1074.01
Transport, storage & Communication	1160.28	1344.19	1169.98	3049.96	3274.42	3761.09	3182.69	2368.56	1904.57
Trade, Hotels & Restaurant	6954.83	6382.70	6032.02	3746.8	2474.21	4433.88	3649.18	3508.03	3435.20
Banking and Insurance	305.48	319.80	266.32	242.36	284.37	291.96	239.91	416.50	475.13
Real Estate	301.52	309.26	355.8	430.77	491.77	545.68	370.63	379.44	393.26
Public Admn.	1109.52	1266.80	1946.57	3326.45	3463.05	3821.78	2595.61	3035.46	3589.69
Other services	136.18	133.12	202.5	355.97	343.18	517.62	176.62	192.25	488.84
States' contribution	19028.44	19830.15	25128.46	26810	29678.23	36609.43	25922.49	28068.57	29937.97

Source: Economic & Statistical Organisation, Punjab

The continuing efforts of government for the development of industries by offering industry friendly policies has been an important contributor for the growth in production of small scale industries. This is evitable from the milestone achieved by the industries in their production (n= Rs. 62971.24 crore) for the year 2012-13 which was a big jump from the production (n= Rs. 2971.24 crore) made by these industries in 2011-12.

Section II-Objectives of the Study:

The present study is based on small scale industrial units of Punjab. The share of production contributed by different types of small scale industries in the state and in the various districts of Punjab has been taken into consideration. The study is made for years ranging from 2005-06 to 2013-14. The main objective of the present empirical study is to examine the performance of small scale industries based on the production made by these industries in the state of Punjab.

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

The study covers district wise distribution of production made by small scale industries of Punjab for the period ranging from 2005-06 to 2013-14. Further, industry-wise production made by disparate small scale industries units in the state has also been analysed. For the purpose, 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 of the study. The details for abbreviations used to conclude the results of this study includes E1 which denotes Food products, E2 denotes Tobacco Products, E3 Denotes Textiles, E4 denotes Hosiery & Garments, E5 denotes Leather & Leather Products, E6 denotes Wood products, E7 denotes Paper & Paper Products, E8 denotes Printing, E9 denotes Coal, Coke & Petroleum Products, E10 denotes Chemical & Chemical Products, E11 denotes Rubber & Plastic Products, E12 denotes Non-metallic Mineral Products, E13 denotes Basic Metal Products,E14 denotes Metal Products, E15 denotes Machinery & Equipment N.E.C.,E16 denotes Office Accounting & Computer Machinery, E17denotes Electrical Mach. & Apparatus N.E.C., E18 denotes Radio, Television and Communication Equipment, E19 denotes Medical, Precision & Watches, E20 denotes Motor Vehicles, Trailers & Parts,E21 denotes Other Transport Equipment, E22 denotes Furniture, E23 denotes recycling, E24 denotes Elec., Gas, Steam & Hot Water Supply, E25 denotes Collection, Purification & Distribution of Water,E26 denotes Maintenance & Repair of Motor Vehicles NIC 1998, E27 denotes Maintenance & Repair of Household Goods, E28 denotes Cold Storage,E29 denotes Post & Telecomm. NIC 1998, E30 denotes Computer & related Activities, E31 denotes Other Business Activities, E32 denotes Health & Social Works, E33 denotes Recreational & Social Activities, E34 denotes Other Service Activities. The paper is organized into five different sections. Section I covers the introduction about the small scale industrial units of Punjab and its contribution to production. Section II outlines the main objectives of the study. Section III accentuates the methodology used for carrying out the study, including the data source, sample size and statistical tools. Section IV presents the empirical results from the analysis made for the defined variable under study. Section V summarizes and concludes the study.

Section IV-Empirical Results:

Table 4.1 depicted district wise production made in the small scale industrial units of Punjab for the period ranging from 2005-06 to 2013-14. The highest average score has been evidenced in Ludhiana(24879.76),which has been followed by Amritsar (3900.57), Fatehgarh Sahib(3362.31), Jalandhar (3207.49), Fazilka(2431.69), Sangrur (2262.14), Patiala (1975.44), Gurdaspur (1277.73), Bathinda (1183.38), Ferozepur (825.21), S.A.S.Nagar (667.12), Moga (655.01), Kapurthala (529.09), Ropar (473.04), Muktsar (467.58), Barnala (407.09), Mansa(396.93), Hoshiarpur (384.58), Faridkot (320.92), Nawanshahar (257.19). On the other hand, the lowest mean score related to production among various districts of Punjab has been found in Tarn Taran district (56.19). Coefficient of variation which is used to describe the variations in the data has been recorded highest in Fazilka (135.87 percent) followed by Nawanshahar (113.08 percent), Mansa(41.88 percent), Ludhiana(36.84 percent), Ropar (36.28), Ferozepur (36.46), S.A.S. Nagar (29.16 percent), Gurdaspur (28.24 percent), Kapurthala (28.09),

Fatehgarh Sahib (26.25), Tarn Taran (25.50 percent) Hoshiarpur(23.62 percent), Sangrur (22.75 percent), Patiala (21.44 percent), Moga(21.32 percent), Jalandhar (17.08 percent), Bathinda (16.32 percent), Barnala(13.06), Faridkot(11.31), On the other hand, the lowest variation has been found in Amritsar(5.23 percent) which indicates that data is less variable i.e. lowest number of variations has been found in the data of production of this district. The compounded annual growth rate of the production is shown in Table 4.1 which revealed that the production has been recorded maximum in the units of Fazilka. Though no investment was made in the year 2011-12 during which it was made the district, as no unit was established during that year, but then it increased from 1101.67 crore made in 2012-13 to 6193.41 crore made in 2013-14 at the highest CAGR of 462.18 percent which came out to be significant (t-value=2.33 at five percent level). The lowest

TABLE 4.1: SMALL SCALE DISTRICT WISE PRODUCTION IN PUNJAB (Rs. CRORE)

District / Year	Amritsar	Barnala	Bathinda	Faridkot	Fatehgarh Sahib	Fazilka	Ferozepur	Gurdaspur	Hoshiarpur	Jalandhar	Kapurthala
2005-06	3749.28	Nil	913.74	272.81	2812.02	Nil	783.92	903.66	294.4	2541.68	367.77
2006-07	3836.61	351.86	971.99	276.23	2714.87	Nil	623.13	902.23	286.34	2811.96	368.93
2007-08	3774.3	353.85	1055.34	294.77	2570.28	Nil	662.83	1029.13	286.27	3032.63	405.46
2008-09	4045.55	366.48	1148.54	306.33	2577.33	Nil	791.29	1050.27	324.51	2921.96	416.36
2009-10	4083.25	381.53	1168.02	324.98	2737.49	Nil	969.45	1131.24	374.94	3090.44	507.77
2010-11	3818.52	403.31	1202.58	336.48	3545.67	Nil	1132.85	1396.47	452.78	3049.91	594.62
2011-12	3592.42	444.33	1298.92	342.05	3938.84	0	1416.35	1488.13	453.43	3254.16	652.61
2012-13	3940.8	467.32	1369.06	354.61	4566.49	1101.67	463.05	1691.37	467.71	3838.47	701.95
2013-14	4264.36	488.06	1522.23	380	4797.79	6193.41	584	1907.07	520.84	4326.2	746.33
Mean	3900.57	407.09	1183.38	320.92	3362.31	2431.69	825.21	1277.73	384.58	3207.49	529.09
Std. dev.	204.01	53.15	193.08	36.30	882.65	3303.98	300.89	360.81	90.84	547.97	148.64
CV	5.23	13.06	16.32	11.31	26.25	135.87	36.46	28.24	23.62	17.08	28.09
GROWTH	0.73	5.27	6.06	4.20	8.45	462.18	-0.32	10.32	8.70	5.56	10.64
t VALUE	1.11	11.99	18.25	21.28	5.06	2.33	-0.07	13.68	9.06	6.16	13.65
a	3752.06	311.95	836.18	252.20	1928.69	-3990.07	777.82	640.63	225.21	2308.44	263.60
b	29.70	21.14	69.44	13.14	286.72	5091.74	9.48	127.42	31.87	179.81	53.10
PREDICTIONS											
2020-21	4286.69	692.54	2086.10	488.79	7089.71	87661.25	948.42	2934.20	798.94	5545.02	1219.37

Contd.

District / Year	Ludhiana	Mansa	Moga	Muktsar	Nawanshahar	Patiala	Pathankot	Roop Nagar	S.A.S. Nagar	Sangrur	Tarn Taran
2005-06	12863.24	490.7	480.67	284.82	87.1	1646.99	Nil	682.63	Nil	1698.14	Nil
2006-07	14808.47	451.77	508.37	304.16	86.17	1686.49	Nil	227.25	535.91	1480.78	39.64
2007-08	17163.46	401.02	538.33	344.49	91.02	1625.08	Nil	252.29	636.97	1880.72	39.64
2008-09	21650.96	402.74	562.92	432.65	111.02	1648.61	Nil	277.63	699.6	2091.88	70.45
2009-10	24530.92	413.82	681.49	487.23	130.45	1766.62	Nil	532.39	723.48	2244.92	77.01

2010-11	27495.4	133.32	698.61	524.19	755.29	1844.22	Nil	548.54	437.28	2538.16	54.68
2011-12	31020.04	133.62	750.46	594.64	782.36	2318.35	Nil	552.79	446.35	2660.39	43.98
2012-13	35137.29	507.93	792.95	512.3	135.63	2599.06	Nil	576.32	883.2	2805.99	58.04
2013-14	39248.07	637.42	881.31	723.77	135.65	2643.56	0	607.48	974.15	2958.28	66.09
Mean	24879.76	396.93	655.01	467.58	257.19	1975.44	0.00	473.04	667.12	2262.14	56.19
Std. dev.	9166.01	166.25	139.62	143.11	290.83	423.47	0.00	171.60	194.53	514.61	14.33
CV	36.84	41.88	21.32	30.61	113.08	21.44	0.00	36.28	29.16	22.75	25.50
GROWTH	15.18	-3.13	8.04	11.59	16.87	6.92	0.00	7.92	4.83	8.74	4.54
t VALUE	26.25	-0.41	17.83	8.88	1.47	5.58	0.00	1.48	1.04	9.33	1.13
a	8206.15	401.00	403.66	219.91	59.73	1283.26	0.00	338.16	492.86	1343.66	46.79
b	3334.72	0.81	50.27	49.53	39.49	138.44	0.00	26.98	38.73	183.70	2.09
PREDICTIONS											
2020-21	68231.16	415.65	1308.54	1111.52	770.58	3775.11	0.00	823.71	1189.91	4650.20	84.38

Source: Directorate of Industries and Commerce, Punjab

growth in the production has been recorded in units of Amritsar district where it increased from 3749.28 crore made in 2005-06 to 4264.36 crore made in the year 2013-14 at CAGR of 0.73 percent, which tends out to be insignificant(t-value=1.11). On the other hand, production made in the units of Mansa district has followed fluctuating trend as it initially declined from 490.7 crore made in 2005-06 to 401.02 crore in 2007-08, then increased 413.82 crore in 2009-10, remained constant at 133.62 crore up to 2011-12, and finally increased to 637.42 crore at CAGR of -3.13 percent which came out to be insignificant (t-value=-0.41). Trend equation in Table 4.1 illustrates the expected change in production that is expected to occur in the year 2020-21 in various small scale industrial units of Punjab. It has been revealed that the maximum rise is expected to crop up in Fazilka where the production is expected to increase from Rs.6193.41 crore made in 2013-14 in the units of the district to Rs.87661.25 crore expected to be made in the year 2020-21. This is expected to be followed by Nawanshahar, Ludhiana, Sangrur ,Muktsar, Hoshiarpur, Moga, Fatehgarh Sahib, Barnala, Bathinda, Faridkot and Tarn Taran where it is expected to increase in 2020-21 to Rs.770.58 crore, Rs.68231.16 crore, Rs.4650.20 crore, Rs.1111.52 crore, Rs.798.94 crore, Rs.1308.54 crore, Rs.7089.71 crore, Rs.692.54 crore, Rs.2086.10 crore, Rs.488.79 crore and Rs.84.38 crore from Rs.135.65 crore, Rs.39248.07 crore, Rs.2958.28 crore, Rs.723.77 crore, Rs.520.84 crore, Rs.881.31 crore, Rs.4797.79 crore, Rs.488.06 crore, Rs.1522.23 crore, Rs.380 crore and Rs.66.09 crore made in 2013-14 respectively. On the other hand, the least increase is projected to be recorded in S.A.S. Nagar district where the production is expected to increase from Rs. 974.15 crore made in 2013-14 to only Rs.1189.91 crore likely to be made in 2020-21. Table 4.2 depicts the production made in the various industrial units of Punjab for the period ranging from 2005-06 to 2013-14. E3 (8679.06) recorded the highest average which is symptomatic of the higher production made in the units of the industries for the respective period. E3 preceded E1 (8028.65), E13 (6941.49), E21 (6819.31), E15 (3378.17), E14 (3011.41), E4 (2265.12), E11 (1362.82), E10 (1309.14), E20 (857.79), E12 (696.57), E22 (617.78), E17 (562.87), E7 (562.77), E5 (471.17), E6 (453.55), E28 (429.69), E27 (323.27), E18 (199.31), E23 (163.12), E8 (148.42), E9 (133.99), E31 (91.68), E26 (78.90), E19 (54.65), E16 (24.06), E30 (20.32), E34 (18.75), E2 (17.25). In contrast to this, E24 (5.01), E32 (2.00), E29 (1.28), E33 (0.72), E25 (0.67) recorded slighter average scores indicating lower production in units of these industries during the relevant period. Accordingly, leading mean score has been gained by E3 and slightest by E25 signifying highest and least production made in these industries during 2006-07 to 2013-14 respectively. Alternatively, coefficient of variation which is used to depict variation of the variable from the mean has been found significant in E34 (113.94 percent) which preceded E24 (90.54 percent), E4 (81.47 percent), E25 80.45 percent), E33 (74.66 percent), E6 (70.68 percent), E29 (43.41 percent), E8 (42.70 percent), E31 (40.42 percent), E1 (37.85 percent), E16 (33.78 percent), E21 (33.45 percent), E15 (31 percent), E17 (30.32 percent), E3 (28.91 percent), E32 (28.61 percent), E13 (27.84 percent), E14 (26.23 percent), E20 (24.39 percent), E18 (23.73 percent), E12 (23.67 percent), E22 (23.46 percent), E10 (22.95 percent), E7 (22.27 percent), E26 (22.18 percent), E30 (17.33 percent), E11 (16.67 percent), E2 (15.36 percent), E9 (15.25 percent), E23 (10.94 percent), E27 (10.59 percent), E5 (9.97 percent), E19 (9.81 percent) and E28 (6.87 percent).It has been found that E34 and E28 have the highest and lowest variations respectively indicating variations in the amounts of production

made in these industries. Table 4.2 denotes that production in the units of E25 has increased from 0.05 crore 2011-12 to 1.03 crore 2013-14 at the highest CAGR of 353.87 indicating highest production in the units of these industry over the respective period and it has been found to be significant at five percent level with t-value of 1.84. Alternatively, lowest growth rate in the production has been found in E28 with CAGR of 1.71 percent only (t value=2.46). In addition to this, production has decreased in E23, E19 and E22 during relevant period at negative CAGR -0.75, -1.78 and -2.55 (t-value=0.52, -1.54 and -0.82) respectively. Trend equation in the table 4.2 exhibits the change in the production that is expected to be made in the year 2020-21 in the units of various small scale industries of Punjab. It has been revealed that the production in nearly all the industries is likely to increase by 2020-21except in E22, E19 and E23 where it is predicted to decrease from Rs.753.29 crore, Rs. 54.95 crore and Rs.167.71 crore made in 2013-14 to Rs.404.99 crore, Rs.39.78 crore and Rs.143.21crore anticipated to be made in 2020-21 respectively. On the other hand, it has been viewed that production in the year 2020-21 is likely to rise significantly in the units of E25 to Rs.8.51 crore from Rs. 1.03 crore made in the year 2013-14. This increase is likely to be followed by E34, E24, E21, E16, E6, E4, E8, E15, E3, E13, E14, E31, E18, E7, E17, E10, E20, E12, E2, E33, E32, E29, E11, E1, E9,E5, E26, E28, E30 and E27 where the production is expected to increase in 2020-21 to Rs.23.39 crore, Rs.25.44 crore, Rs.17538.80 crore, Rs.61.80 crore, Rs.742.35 crore, Rs.8094.53 crore, Rs.405.73 crore, Rs.8267.83 crore, Rs.20373.68
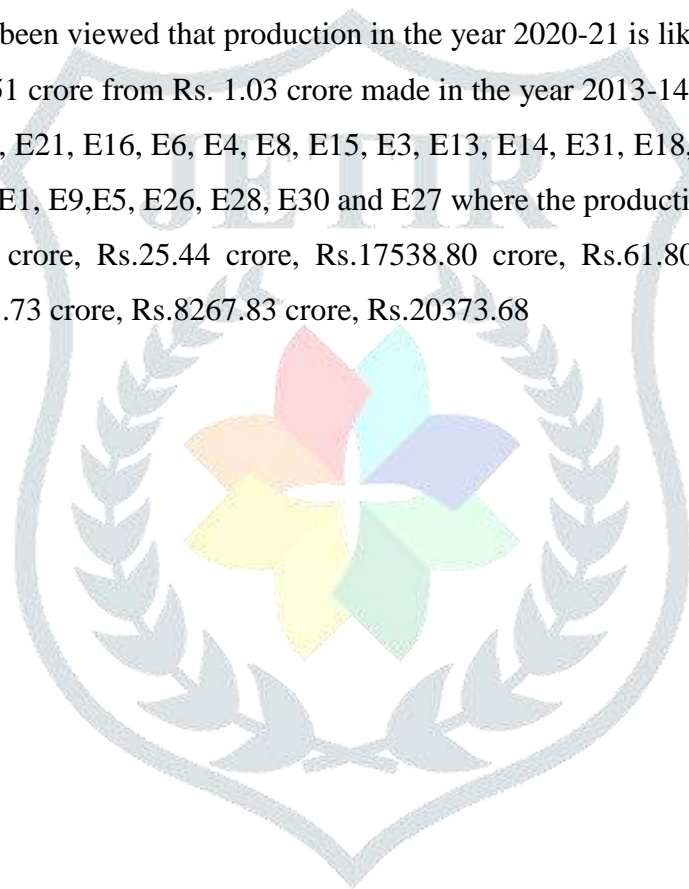
Table 4.2 SMALL SCALE INDUSTRY WISE PRODUCTION IN PUNJAB

Industry / Year	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11
2005-06	5245.88	12.86	5416.55	368.04	426.63	275.95	392.19	99.94	120.32	953.32	1072.24
2006-07	5385.98	14.07	6081.11	392.11	479.04	280.89	449.91	105.17	118.5	961.06	1120.27
2007-08	6060.42	15.5	7083.63	416.75	439.3	302.8	476.58	108.52	119.74	1006.15	1189.56
2008-09	6749.46	17.06	7901.37	2871.82	416.16	324.69	500.34	108.34	121.75	1267.11	1298.6
2009-10	7526.02	17.08	7569.14	3213.68	451.76	1291.9	529.11	116.44	123.18	1341.68	1372.8
2010-11	8147.37	19.24	9365.96	3580.06	452.27	348.38	576.17	134.48	125.19	1332.26	1392.45
2011-12	8700.43	19.56	10325.87	3990.04	491.03	370.08	683.19	149.33	142.77	1477.88	1433.88
2012-13	9241.03	19.93	11536.13	515.79	528.76	427.98	700.31	259.03	161.06	1648.86	1615.91
2013-14	15201.29	19.92	12831.81	5037.81	555.57	459.3	757.09	254.5	173.43	1793.94	1769.65
Mean	8028.65	17.25	8679.06	2265.12	471.17	453.55	562.77	148.42	133.99	1309.14	1362.82
Std. dev.	3038.76	2.65	2509.17	1845.39	46.98	320.59	125.33	63.37	20.43	300.38	227.21
CV	37.85	15.36	28.91	81.47	9.97	70.68	22.27	42.70	15.25	22.95	16.67
CAGR	11.98	5.80	11.06	30.62	2.80	6.49	8.36	12.93	4.71	8.63	6.09
t VALUE	7.50	8.83	17.79	2.16	3.27	1.03	18.18	5.40	4.93	12.55	15.45
a	3189.93	12.57	4181.13	23.04	404.13	342.48	337.78	49.45	101.53	772.93	957.90
b	967.75	0.94	899.59	448.42	13.41	22.22	45.00	19.79	6.49	107.24	80.98
PREDICTIONS											
2020-21	20609.34	29.40	20373.68	8094.53	645.47	742.35	1147.74	405.73	218.42	2703.29	2415.61

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Industry / Year	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22	E23
2005-06	518.98	4940.09	1971.94	2103.91	14.23	388.2	135.27	60.42	598.18	3929.58	768.09	199.72
2006-07	545.84	5068.18	2295.15	2360.54	16.44	416.26	149.14	62.66	663.1	4509.04	700.86	174.13
2007-08	580.88	5415.91	2405.92	2569.9	18.14	435.62	163.74	54.88	695.88	5086.99	809.95	144.3

2008-09	587.89	5724.28	2453.49	2823.95	20.17	468.28	179.3	47.81	743.79	5740.25	477.12	144.32
2009-10	631.48	6172.85	3031.84	3237.42	20.53	507.62	196.26	59.73	826.67	6483.07	504.53	144.74
2010-11	727.02	7367.57	3239.77	3529.6	26.15	540.95	212.87	48.44	919.21	7308.77	442.38	162.4
2011-12	792.93	8255.66	3529.08	4042.59	29.69	659.33	234.64	50.91	956.78	8259.22	477.2	163.31
2012-13	903.68	9535.17	3883.16	4528.52	33.56	771.15	245.55	52.01	1085.16	9420.55	626.63	167.46
2013-14	980.47	9993.72	4292.34	5207.08	37.66	878.42	277	54.95	1231.33	10636.34	753.29	167.71
Mean	696.57	6941.49	3011.41	3378.17	24.06	562.87	199.31	54.65	857.79	6819.31	617.78	163.12
Std. dev.	164.85	1932.18	789.99	1047.15	8.13	170.64	47.30	5.36	209.25	2280.77	144.92	17.84
CV	23.67	27.84	26.23	31.00	33.78	30.32	23.73	9.81	24.39	33.45	23.46	10.94
CAGR	8.49	10.17	10.03	11.83	12.90	10.68	9.15	-1.78	9.08	13.13	-2.55	-0.75
t VALUE	12.88	13.40	19.70	43.73	20.93	11.56	48.91	-1.54	24.54	194.44	-0.82	-0.52
a	406.35	3529.97	1588.22	1497.53	9.55	267.40	113.35	59.74	483.12	2696.43	699.63	170.78
b	58.05	682.31	284.64	376.13	2.90	59.09	17.19	-1.11	74.93	824.58	-16.37	-1.53
PREDICTIONS												
2020-21	1451.16	15811.46	6711.69	8267.83	61.80	1331.09	422.80	39.78	1831.92	17538.80	404.99	143.21

Contd.

Industry / Year	E24	E25	E26	E27	E28	E29	E30	E31	E32	E33	E34
2005-06	1.1	NIL	69.37	312.73	388.58	0.78	20.71	62.65	1.63	0.14	3.35
2006-07	0.01	NIL	77.02	304.37	405.99	0.85	19.62	53.49	1.3	0.35	60.72
2007-08	0.01	NIL	68.94	319.71	412.15	0.93	15.62	56.02	1.49	0.46	6.61
2008-09	3.8	NIL	71.87	325.59	425.51	1.04	17.16	57.38	1.7	0.52	4.88
2009-10	4.2	NIL	72.55	318.87	454.38	1.3	19.35	108.68	2.08	0.54	5.96
2010-11	4.5	NIL	63.95	286.04	471.93	1.09	19.7	100.05	1.98	1.42	12.26
2011-12	8.73	0.05	69.99	289.53	407.06	2	21.8	107.73	2.18	0.61	13.22
2012-13	10.32	0.94	99.62	357.27	433.58	1.1	20.68	116.82	2.46	0.63	50.67
2013-14	12.42	1.03	116.78	395.35	468.05	2.4	28.25	162.29	3.18	1.81	11.1
Mean	5.01	0.67	78.90	323.27	429.69	1.28	20.32	91.68	2.00	0.72	18.75
Std. dev.	4.54	0.54	17.50	34.24	29.52	0.55	3.52	37.05	0.57	0.54	21.37
CV	90.54	80.45	22.18	10.59	6.87	43.41	17.33	40.42	28.61	74.66	113.94
CAGR	108.99	353.87	4.72	1.83	1.71	12.09	3.74	14.29	9.60	25.38	11.55
t VALUE	2.68	1.84	2.19	1.49	2.46	3.83	2.06	5.74	6.17	3.95	0.83
A	-2.85	-0.31	57.93	290.83	393.29	0.49	16.30	30.46	1.06	-0.01	16.97
B	1.57	0.49	4.19	6.49	7.28	0.16	0.80	12.24	0.19	0.15	0.36
PREDICTIONS											
2020-21	25.44	8.51	133.42	407.62	524.36	3.32	30.77	250.85	4.46	2.60	23.39

Source: Directorate of Industries and Commerce, Haryana

crore, Rs.15811.46 crore, Rs.6711.69 crore, Rs.250.85 crore, Rs.422.80 crore, Rs.1147.74 crore, Rs.1331.09 crore, Rs.2703.29 crore, Rs.1831.92 crore, Rs.1451.16 crore, Rs.29.40 crore, Rs.2.60 crore, Rs.4.46 crore, Rs.3.32 crore, Rs.2415.61 crore, Rs.20609.34 crore, Rs.218.42 crore, Rs.645.47 crore, Rs. 133.42 crore, Rs. 524.36 crore, Rs.30.77 crore and Rs.407.62 crore in the units of respective industries. Thus, production at higher pace is expected to be made in E25 and least increase is expected in E27, where it is likely to increase from Rs. 395.35 crore made in 2013-14 to Rs.407.62 crore that is likely to be made in 2020-21. Alternatively, the production is expected to decline significantly in the units of E22.

Section V-Summary & Conclusions:

The present study was based on small scale industrial units of Punjab. The share of production contributed by different types of small scale industries in the state and in the various districts of Punjab has been taken into consideration. The study is made for years ranging from 2005-06 to 2013-14. The following are the conclusions and findings of the present study regarding production variable of the small scale industrial units of Punjab.

(1) Study depicted that from the district wise production made in the small scale industrial units of Punjab for the period ranging from 2005-06 to 2013-14, Ludhiana registered highest average score(24879.76) whereas, Lowest mean score in production among various districts of Punjab has been found in Tarn Taran district (56.19).

(2) The compounded annual growth rate of the production has been recorded maximum in the units of Fazilka. The lowest growth in the production has been recorded in units of Amritsar district where it increased from 3749.28 crore made in 2005-06 to 4264.36 crore made in the year 2013-14 at CAGR of 0.73 percent, which tends out to be insignificant(t-value=1.11).

(3) The results showed that production in the units of Mansa district followed fluctuating trend as it declined from 490.7 crore made in 2005-06 to 401.02 crore in 2007-08, then increased 413.82 crore in 2009-10, remained constant at 133.62 crore up to 2011-12, and then increased to 637.42 crore at CAGR of -3.13 percent which came out to be insignificant (t-value=-0.41).

(4) Further, the trend equation revealed that highest expected change for production in the year 2020-21 is expected to occur in small scale industrial units of Fazilka where the production is expected to increase from Rs.6193.41 crore made in 2013-14 to Rs.87661.25 crore. On the other hand, least increase is projected to be recorded in S.A.S. Nagar district where the production is expected to increase from Rs. 974.15 crore made in 2013-14 to only Rs.1189.91 crore likely to be made in 2020-21.

(5) It has been observed that production made in various industrial units of Punjab from 2005-06 to 2013-14 has recorded highest in E3 (8679.06), which is symptomatic of the higher production made in the units of this industry.

(6) Further, E24 (5.01), E32 (2.00), E29 (1.28), E33 (0.72), E25 (0.67) recorded least average scores indicating lower production in units of these industries during 2005-06 to 2013-14.

(7) The analysis showed that production in the units of E25 has increased from 0.05 crore 2011-12 to 1.03 crore in 2013-14 at the highest CAGR of 353.87 which indicates highest production in the units of the

industry over the respective period and it has been found to be significant at five percent level with t-value of 1.84. Alternatively, lowest growth rate in the production has been found in E28 with CAGR of 1.71 percent only (t value=2.46).

(8) The trend equation revealed that production is likely to increase by 2020-21, except in E22, E19 and E23 where it is predicted to decrease from Rs.753.29 crore, Rs. 54.95 crore and Rs.167.71 crore made in 2013-14 to Rs.404.99 crore, Rs.39.78 crore and Rs.143.21crore anticipated to be made in 2020-21respectively.

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