EMPLOYMENT TREND IN SMALL SCALE INDUSTRIES: A STUDY OF PUNJAB

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Abstract: *The present study aims to make a trend analysis of the employment generated by small scale industrial units of Punjab. The study covers district wise distribution of employment in the small scale industries of Punjab for the period ranging from 2005-06 to 2013-14. It has been observed that in terms of employment in various small scale industries, preeminent mean has been scored by E3(194706.44) and the nethermost score has been witnessed in E24(22.34) indicating the lowest number of persons employed in the units of this industrial unit. Trend equation in perspective of various small scale industries of Punjab revealed that the employment in most of the industries is expected to increase by 2020-21. The maximum rise in employment is expected to occur in E25 where the employment is predicted to rise from 129 persons employed in 2013-14 to 1085 persons expected to be employed in the units of this industry in the year 2020-21. But employment in E18, E31, E19, E28, E5, E22, E26, E27 and E23 is expected to decline in the units of these industries by the year 2020-21. The study exhibited that with reference to district wise distribution of employment in the small scale industries of Punjab, Ludhiana (353180.11) recorded the highest mean score during the period under study. The employment in the units of Tarn Taran district declined significantly over the respective period from 5052 persons employed in 2006-07 to 2468 persons employed in 2013-14 as is indicated by its negative CAGR of -13.38(t-value=-4.33). According to the trend equation, it is envisaged that the increase in the number of persons employed in various units of small scale industries is expected to be recorded highest in Moga (93652 persons) from 23930 persons employed in 2013-14. On the other hand, the number of persons employed in the units of Tarn Taran district is expected to decline significantly by the year 2020-21.*

Key Words: Small scale industries, Trend analysis, Growth rate, Employment

Section I-Introduction:

Industries are key for the economic development of nations. Their existence, spread and development have become a prerequisite for the process of development across economies because it not only leads to economic growth but also helps in the transformation of the socio-economic and institutional set up of the economy (Singh, 1982). Under the Micro, Small & Medium Enterprises Development Act, (MSMED) 2006, micro, small and medium enterprises were defined on the basis of their investment in plant and machinery for manufacturing enterprises, as shown in Table 1.1:

Table 1.1 Classification of Micro, small and medium enterprises

Classification	Manufacturing Enterprises (Investment limits in Plant and Machinery)
Micro industries	Up to Twenty five Lakh Rupees
Small scale industries	More than Twenty five Lakhs Rupees but not more than Five Crore Rupees
Medium scale industries	More than Five Crore Rupees but not more than Ten Crore Rupees

Source: Ministry of Micro, Small & Medium Enterprises

The state of Punjab has a huge agricultural base but it is also well on its way towards rapid industrialization through coordinated development of different scale of industries. During period of independence of the nation, the industrial base of Punjab had to suffer to a great extent but the rejuvenation policy of the state aimed at getting back the industries on the track, worked well and started showing the positive results. Relative to large scale industries, small scale industries have known to have contributed a large part towards employment generation in the state. This particularly endows to the lesser amount of investment required to set up these industries and their potential to offer family as well as part time employment to the work force.

Section II-Objectives of the Study:

The study is confined to small scale industrial units of Punjab. The district wise distribution of employment in the small scale industries of Punjab for the period ranging from 2005-06 to 2013-14 has been taken into consideration. The main objective of the present empirical study is to examine how much amount of employment has been generated by small scale industrial units over the respective period of time and how much employment is expected to be generated by the year 2020-21.

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

The study covers district wise distribution of employment in the small scale industries of Punjab for the period ranging from 2005-06 to 2013-14 during the period under study. 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 have been used to write results of this study in which E1 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 sections. Section I provides introduction about the small scale industry of Punjab and its contribution to the employment. Section II defines 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 employment in the small scale industries of Punjab for the period ranging from 2005-06 to 2013-14. Ludhiana(353180.11) recorded the highest mean score during the period under study followed by Jalandhar(144433.89), Amritsar(101514.11), Gurdaspur(55764.89), Sangrur(53225.67), Patiala(45272.44), Moga(44901.44), Hoshiarpur(30091.44), S.A.S.Nagar(28354.75), Kapurthala(23158.56), Bathinda(22425.33), Fatehgarh Sahib(21784.44), Muktsar(18262.22), Ferozepur(17800.78), Nawanshahar(15884.44), Ropar(14582.56), Fazilka(13824.50), Faridkot(13623.89). During the same period, relatively lower mean scores in terms of number of units were recorded in Mansa(8064.89), Barnala(7199.75) followed by Tarn Taran(3770.50) which showed the lowest mean score in terms of its number of persons employed in the units of this district. Coefficient of variation which is used to describe the dispersion of the variable has been recorded highest in Moga(151.07 percent), followed by Nawanshahar(84.83 percent), Fazilka(57.75 percent), S.A.S. Nagar (54.27 percent), Ropar (47.81), Tarn Taran(38.21 percent), Ferozepur(37.38 percent), Ludhiana(17.19 percent), Amritsar(17.10 percent), Fatehgarh Sahib(11.39 percent). On the other hand relatively lower variation has been found in Barnala(10.63 percent) followed by Mansa(10.55 percent), Sangrur(8.03 percent), Hoshiarpur (7.67 percent), Kapurthala(7.04 percent), Jalandhar(6.51 percent), Patiala (6.08 percent), Bathinda(4.55 percent), Faridkot(3.28 percent), Muktsar(2.46 percent), and Gurdaspur recorded the lowest coefficient of variation of with only 1.25 percent variation in the data. Thus, maximum variation has been found in the data of Moga with 151.07 percent variation and least degree of dispersion is found in Gurdaspur district indicating data is more stable. Table 4.1 exhibited that employment in the units of Ludhiana district has increased from 288504 persons in 2005-06 to 446191 persons in 2013-14 at the highest rate of CAGR of 6.24 percent which tends out to be significant (t-value=12.85 at five percent level), with lowest growth rate of employment in Patiala where the number of persons employed declined initially from 49538 persons employed in 2005-06 to 41907 persons employed in 2007-08, but then afterwards, it increased to 47793 persons employed in 2013-14 at CAGR of only 0.07 percent which came out to be insignificant(t-value=0.09). On the other hand, the employment in the units of Tarn Taran district declined significantly over the respective period from 5052 persons employed in 2006-07 to 2468 persons employed in 2013-14 as is indicated by its negative CAGR of -13.38(t-value 4.33). According to the trend equation, it can be envisaged that the increase in number of persons employed in various units of small scale industries is expected to be recorded highest in Moga (93652 persons) from 23930 persons employed

### TABLE: 4.1 SMALL SCALE DISTRICT WISE PUNJAB-EMPLOYMENT

District / Year	Amritsar	Barnala	Bathinda	Faridkot	Fatehgarh Sahib	Fazilka	Ferozepur	Gurdaspur	Hoshiarpur	Jalandhar	Kapurthala
2005-06	119818	Nil	21352	12625	22585	Nil	27874	56074	32345	152179	25755
2006-07	115423	5892	21453	13458	21302	Nil	18523	56001	28535	152510	24102
2007-08	114768	6692	21551	13410	18367	Nil	19502	56303	26038	159736	20927
2008-09	114921	6816	21810	13512	18571	Nil	19674	56512	27492	137723	21150
2009-10	114963	6976	21955	13758	20224	Nil	19869	54363	29364	134280	21778
2010-11	88561	7291	22744	13850	21700	Nil	20019	54922	31501	131982	22665
2011-12	80118	7719	23270	13907	23156	0	20545	55604	31617	139152	23618
2012-13	82055	8014	23778	13984	24635	13621	7058	55934	31857	143903	24104
2013-14	83000	8198	23915	14111	25520	14028	7143	56171	32074	148440	24328
Mean	101514.11	7199.75	22425.33	13623.89	21784.44	13824.50	17800.78	55764.89	30091.44	144433.89	23158.56
Std. dev.	17362.96	765.58	1020.15	447.18	2481.99	7984.17	6653.18	697.69	2307.04	9399.34	1630.48
CV	17.10	10.63	4.55	3.28	11.39	57.75	37.38	1.25	7.67	6.51	7.04
GROWTH	-3.67	4.42	1.59	1.19	1.94	2.99	-12.80	-0.08	1.38	-0.98	0.14
t VALUE	-5.42	10.59	10.25	5.35	2.06	1.73	-3.22	-0.49	1.43	-1.21	0.14
A	130100.44	5818.89	20625.42	12886.06	18913.94	13214.00	23734.78	55998.31	28087.36	151741.06	23058.97
B	-5717.27	306.86	359.98	147.57	574.10	407.00	-1914.80	-46.68	400.82	-1461.43	19.92
PREDICTIONS											
2020-21	27190	11342	27105	15542	29248	20540	-10732	55158	35302	125435	23417

District / Year	Ludhiana	Mansa	Moga	Muktsar	Nawan Shahar	Patiala	Pathankot	Roop Nagar	S.A.S. Nagar	Sangrur	Tarn Taran
2005-06	288504	9695	21223	18082	10572	49538	Nil	33170	Nil	49927	Nil
2006-07	291903	8011	21377	17826	10310	47180	Nil	12069	22995	44762	5052
2007-08	303731	7115	21381	18121	8372	41907	Nil	12119	28511	51124	5052
2008-09	308713	7144	21729	18378	8372	41447	Nil	12138	30666	52315	5158

2009-10	335541	7276	22004	18382	8525	43361	Nil	12190	35689	53259	5175
2010-11	376490	8624	225774	17573	40154	44180	Nil	12291	7444	55555	2740
2011-12	401827	8649	23062	18207	39054	45489	Nil	12344	7554	56506	2155
2012-13	425721	7807	23633	18709	8799	46557	Nil	12412	45371	57300	2364
2013-14	446191	8263	23930	19082	8802	47793	Nil	12510	48608	58283	2468
Mean	353180.11	8064.89	44901.44	18262.22	15884.44	45272.44	0.00	14582.56	28354.75	53225.67	3770.50
Std. dev.	60719.27	850.91	67834.84	450.03	13474.68	2754.34	0.00	6971.81	15388.13	4273.84	1440.67
CV	17.19	10.55	151.07	2.46	84.83	6.08	0.00	47.81	54.27	8.03	38.21
GROWTH	6.24	-0.23	5.61	0.54	5.90	0.07	0.00	-6.09	2.16	2.89	-13.38
t VALUE	12.85	-0.16	0.52	2.01	0.65	0.09	0.00	-1.60	0.17	5.21	-4.33
A	245165.86	8214.22	26151.19	17760.89	9090.03	45185.11	0.00	21333.22	19461.36	46138.83	6072.57
B	21602.85	-29.87	3750.05	100.27	1358.88	17.47	0.00	-1350.13	1976.31	1417.37	-511.57
PREDICTIONS											
2020-21	634017	7677	93652	19566	33550	45500	0	-2969	55035	71651	-3136

Source: Directorate of Industries and Commerce, Punjab
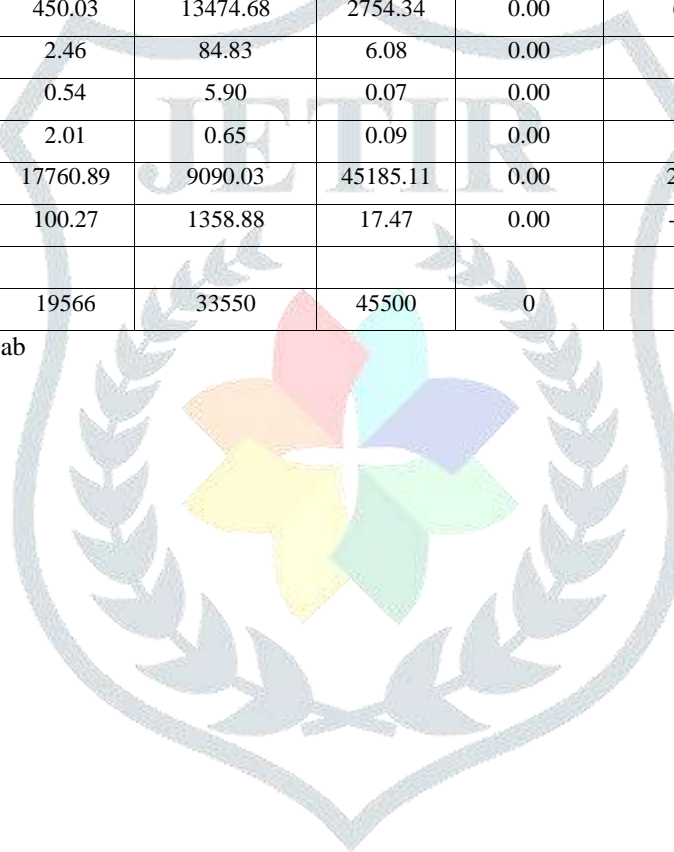
in 2013-14. The increase in employment in 2020-21 is expected to be followed by Nawanshahar (33550 persons), Fazilka(20540 persons), Ludhiana(634017 persons), Sangrur(71651 persons), Barnala(11342 persons), Bathinda(27105 persons), Faridkot(15542 persons), Fatehgarh Sahib(29248 persons), S.A.S. Nagar(55035 persons), Hoshiarpur(35302 persons) and Muktsar(19566 persons) from 8802 persons, 14028 persons, 446191 persons, 58283 persons, 8198 persons, 23915 persons, 14111 persons, 25520 persons, 48608 persons, 32074 persons and 19082 persons employed in the units of respective districts in the year 2013-14. On the other hand, the number of persons to employed in the units of Tarn Taran district is expected to decline significantly by the year 2020-21. Table 4.2 exhibits the industry wise employment in the units of small scale industries in Punjab for the period ranging between 2005-06 and 2013-14. It has been observed that the a notable rise in the average score has been recorded in E3 (194706.44) followed by E1 (131008.78), E14 (100528.67), E15 (99259.11), E21 (63132.67), E13 (60946.78), E27 (45575.44), E22 (43773.33), E5 (36926.33), E12 (34759.78), E4 (30425.89), E10 (25104.00), E11 (22749.33), E20 (20094.33), E6 (18130.89), E17 (16799.33), E26 (14536.89), E7 (12613.67), E8 (7369.56), E18 (4629.11), E28 (3975.11), E19 (3735.78), E31 (2517.33), E30 (1895.33), E34 (1514.89), E9 (1062.78).On the other hand, a moderate mean score has been scored by E23 (819.89), E16 (381.56), E2 (105.33), E25 (85.00), E32 (81.78), E29 (66.11), E33 (40.56) with E24 (22.34) having the lowest average score for the respective period. Accordingly, preeminent mean has been scored by E3 and the nethermost score has been witnessed in E24 indicating lowest number of persons employed in the units of this industrial unit. Coefficient of variation is used to describe the dispersion of the variable from the mean. It has been found maximum in E34 (160.81percent), indicating maximal and highest variation in the data under study. On the other hand, less amount of variation has been recorded in E25 (82.63 percent), E24 (76.23 percent), E30 (51.17 percent), E23 (44.57 percent), E33 (38.16 percent), E4 (32.52 percent), E29 (29.10 percent), E16 (22.70 percent), E27 (17.68 percent), E21 (17.08 percent), E26 (15.28 percent), E22 (13.39 percent), E14 (12.03 percent), E7 (11.79 percent), E32 (10.43 percent), E5 (10.01 percent), E11 (9.91 percent), E3 (9.54 percent), E2 (8.36 percent), E17 (8.20 percent), E28 (7.95 percent), E15 (7.91 percent), E19 (6.83 percent), E13 (6.79 percent), E9 (6.48 percent), E1 (6.26 percent), E8 (5.52 percent), E31 (5.32 percent), E20 (5.20 percent), E12 (5.07 percent), E10 (3.24 percent), E6 (1.85 percent), E18 (1.63 percent). Thus, least

Table 4.2 PUNJAB SMALL SCALE INDUSTRY WISE-EMPLOYMENT

Industry \\ Year	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11
2005-06	121810	97	174897	20476	42816	18264	11316	7288	1129	25088	20850
2006-07	119769	100	175338	20492	41445	17819	11242	7202	1016	24533	20407
2007-08	125179	100	179744	20982	40817	17957	11520	7108	1012	24184	20868
2008-09	128428	100	183094	23134	35343	17976	11136	6766	1012	24294	21278
2009-10	129932	100	191394	26875	36187	18118	11959	6953	1012	24786	21922
2010-11	134607	117	200418	38803	33610	17887	13351	7587	981	24944	23029
2011-12	135642	117	206248	41496	33835	17921	13576	7610	1111	25442	24231
2012-13	139028	117	212948	44185	34124	18340	14583	7876	1126	26022	25480
2013-14	144684	100	228277	37390	34160	18896	14840	7936	1166	26643	26679
Mean	131008.78	105.33	194706.44	30425.89	36926.33	18130.89	12613.67	7369.56	1062.78	25104.00	22749.33
Std. dev.	8204.34	8.80	18583.64	9894.35	3697.25	335.79	1486.53	406.72	68.90	812.48	2254.30
CV	6.26	8.36	9.54	32.52	10.01	1.85	11.79	5.52	6.48	3.24	9.91
GROWTH	2.26	1.79	3.41	11.62	-3.14	0.36	4.04	1.44	0.99	0.91	3.44
t VALUE	1.34	1.96	13.25	6.16	-5.28	1.67	7.01	2.67	1.23	3.26	8.78
a	116310.61	95.83	161649.61	14139.89	42950.00	17803.39	10076.50	6832.97	1009.03	23949.53	18831.67
b	2939.63	1.90	6611.35	3257.20	-1204.73	65.50	507.43	107.32	10.75	230.88	783.53
PREDICTIONS											
2020-21	169224	130	280654	72769	21265	18982	19210	8765	1203	28105	32935

Contd.

Industry / Year	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22
2005-06	33918	57635	90708	90612	311	15468	4626	4007	20266	51158	51705
2006-07	32890	57413	88660	91095	307	15575	4751	3995	20233	52174	43425
2007-08	33612	58971	91511	95391	307	15540	4644	4031	20044	54205	51033
2008-09	32830	57435	88467	93336	307	16240	4620	3218	18587	55363	47207
2009-10	34142	62420	96893	96224	311	16536	4681	3734	18639	62158	48059
2010-11	35278	57798	103717	101629	463	16781	4506	3647	19729	65419	37251
2011-12	35416	62262	109066	103964	476	17084	4525	3646	20377	71699	37820
2012-13	36741	66097	115850	108330	476	18595	4643	3655	21178	76588	38512
2013-14	38011	68490	119886	112751	476	19375	4666	3689	21796	79430	38948
Mean	34759.78	60946.78	100528.67	99259.11	381.56	16799.33	4629.11	3735.78	20094.33	63132.67	43773.33
Std. dev.	1761.48	4137.21	12092.52	7848.15	86.62	1377.47	75.34	255.11	1044.31	10780.56	5861.32
CV	5.07	6.79	12.03	7.91	22.70	8.20	1.63	6.83	5.20	17.08	13.39
GROWTH	1.62	2.07	4.13	2.79	7.44	2.80	-0.19	-1.12	0.87	6.25	-3.81
t VALUE	4.91	4.16	7.27	10.17	4.75	7.80	-0.87	-1.29	1.36	15.04	-3.48
a	31928.03	54578.69	79808.50	85450.78	243.14	14439.58	4672.11	3955.19	19197.42	43851.50	52285.75
b	566.35	1273.62	4144.03	2761.67	27.68	471.95	-8.60	-43.88	179.38	3856.23	-1702.48
PREDICTIONS											
2020-21	42122	77504	154401	135161	741	22935	4517	3165	22426	113264	21641

Contd.

Industry / Year	E23	E24	E25	E26	E27	E28	E29	E30	E31	E32	E33	E34
2005-06	1520	12	NIL	17326	59461	4338	55	1058	2641	78	13	371
2006-07	1274	0.01	NIL	18170	53232	4333	58	1076	2618	63	26	7953
2007-08	464	0.01	NIL	15914	51140	4099	58	1190	2561	83	41	459
2008-09	464	21	NIL	15286	49782	4124	55	1254	2514	83	41	446
2009-10	482	21	NIL	13011	43488	4123	109	1544	2508	84	41	486
2010-11	768	21	NIL	12133	39318	4030	55	1905	2215	96	45	722
2011-12	781	37	4	12291	37856	3574	62	2050	2442	83	51	758
2012-13	810	42	122	13160	37882	3580	55	3426	2502	83	38	1339
2013-14	816	47	129	13541	38020	3575	88	3555	2655	83	69	1100
Mean	819.89	22.34	85.00	14536.89	45575.44	3975.11	66.11	1895.33	2517.33	81.78	40.56	1514.89
Std. dev.	365.41	17.03	70.24	2221.34	8058.13	316.08	19.24	969.93	134.02	8.53	15.48	2436.14
CV	44.57	76.23	82.63	15.28	17.68	7.95	29.10	51.17	5.32	10.43	38.16	160.81
GROWTH	-3.76	118.59	467.89	-4.40	-5.90	-2.70	3.14	17.80	-0.56	2.06	14.92	0.82
t VALUE	-0.67	2.05	1.79	-3.87	-9.26	-6.57	0.96	9.09	-0.77	1.55	3.62	0.06
a	1092.39	-5.99	-40.00	17917.64	59645.94	4513.03	55.19	277.92	2586.42	74.03	16.89	2852.56
b	-54.50	5.67	62.50	-676.15	-2814.10	-107.58	2.18	323.48	-13.82	1.55	4.73	-267.53
PREDICTIONS												
2020-21	111	96	1085	5747	8992	2577	94	6101	2338	102	102	-1963

Source: Directorate of Industries and Commerce, Haryana

degree of variation to mean is present in the data of E18 indicating that the data is relatively more stable in comparison to units of other industries. Table 4.2 shows that the employment in the units of E25 has increased from 4 persons employed in 2011-12 to 129 persons employed in 2013-14 at the highest rate of CAGR of 467.89 percent which tends out to be significant at five percent level (t-value=1.79). Hence, E25 has the maximum share in terms of employment among all the other industries. The lowest growth in the employment has been witnessed in E6 where the number of persons employed in the industrial units has increased from 18264 persons employed in 2005-06 to only 18896 persons employed in 2013-14 at CAGR of 0.36 percent which came out to be insignificant (t-value 1.67). Alternatively, the highest decline in the employment has been witnessed in E27 where it has declined from 59461 persons employed in 2005-06 to 38020 persons employed in 2013-14 at CAGR of -5.90 percent which tends out to be highly insignificant(t-value 9.26). Trend equation in the table 4.2 revealed that the employment in most of the industries is expected to increase by 2020-21. The maximum rise in the employment is expected to occur in E25 where the employment is predicted to rise from 129 persons employed in 2013-14 to 1085 persons expected to be employed in the units of this industry in the year 2020-21. This rise is expected to be followed by E24, , E4, E30, E16, E33, E21, E2, E7, E14, E11,E3, E32, E15, E17, E1, E13, E12, E8, E29, E10, E9, E20 and E6 where the number of persons to be employed are expected to increase to 96 , 72769 , 6101 , 741 , 102, 113264 , 130, 19210 , 154401 , 32935, 280654, 102 , 135161 , 22935, 169224 , 77504 , 42122, 8765 , 94 , 28105, 1203 , 22426 ,18896 persons in 2020-21 from 47 persons, 37390, 3555, 476, 69 , 79430 , 100 , 14840 , 119886, 26679 , 228277 , 83 , 112751, 19375 , 144684, 68490 , 38011 , 7936 , 88 , 26643 , 1166, 21796 and 18982 persons employed in the units of the respective industries in the year 2013-14. This, signifies that employment in the units of these industries is expected to rise by the year 2020-21 with highest rise in E24 and at a lower rate of rise in E20. But employment in E18, E31, E19, E28, E5, E22, E26, E27 and E23 is expected to decline in the units of these industries by the year 2020-21. Least decline has been projected to be recorded in E18 where the employed persons in the units of this industry are likely to reduce from 4666 persons employed in 2013-14 to 4517 persons to be employed in the year 2020-21. On the other hand, employment in the units of E34 is expected to decline significantly by the year 2020-21.

Section V-Summary & Conclusions:

The following are conclusion and findings of the present study pertaining to small scale industry of Punjab and its contribution to employment.

1. The study exhibited that with reference to district wise distribution of employment in small scale industries of Punjab, the employment in the units of Ludhiana district has increased from 288504 persons in 2005-06 to 446191 persons in 2013-14 at the highest rate of CAGR of 6.24 percent which tends out to be significant (t-value=12.85 at five percent level), with lowest growth rate

of employment in Patiala, where the number of persons employed declined from 49538 persons employed in 2005-06 to 41907 persons employed in 2007-08, but then afterwards, it increased to 47793 persons employed in 2013-14 at CAGR of only 0.07 percent which came out to be insignificant(t-value=0.09). On the other hand, the employment in the units of Tarn Taran district declined significantly over the respective period from 5052 persons employed in 2006-07 to 2468 persons employed in 2013-14 as is indicated by its negative CAGR of -13.38(t-value=-4.33).

2. According to the trend equation, it can be envisaged that increase in number of persons employed in various units of small scale industries is expected to be recorded highest in Moga (93652 persons). On the other hand, number of persons employed in the units of Tarn Taran district is expected to decline significantly by the year 2020-21.

3. It has been observed that a notable rise in the average score of employment has been recorded in E3 (194706.44).

4. The results showed that moderate mean score for employment in small scale industries has been scored by E23 (819.89), E16 (381.56), E2 (105.33), E25 (85.00), E32 (81.78), E29 (66.11), E33 (40.56) with E24 (22.34) having the lowest average score for the respective period. Accordingly, preeminent mean has been scored by E3 and nethermost score has been witnessed in E24 indicating lowest number of persons employed in the units of this industrial unit.

5. Further, with respect to employment among different types of small scale industries in Punjab, lowest growth in employment has been witnessed in E6 where number of persons employed in the industrial units has increased from 18264 persons employed in 2005-06 to only 18896 persons employed in 2013-14 at CAGR of 0.36 percent which came out to be insignificant (t-value=1.67).

6. Trend equation in perspective of various small scale industries of Punjab revealed that employment in most of the industries is expected to increase by 2020-21. The maximum rise in the employment is expected to occur in E25 where the employment is predicted to rise from 129 persons employed in 2013-14 to 1085 persons expected to be employed in the units of this industry in the year 2020-21.

7. A least decline has been projected to be recorded in E18 where employed persons in units of this industry are likely to reduce from 4666 persons employed in 2013-14 to 4517 persons to be employed in the year 2020-21.

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