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THE CHANGING TRENDS OF FACTORY EMPLOYMENT IN PUBLIC AND PRIVATE SECTOR IN INDIA

Article Particulars

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Abstract

The trends in employment generations in the Indian economy have been sluggish and moving towards downward sloping. As a result the growing labour force has been striving a lot for survival in the job market. The slothful employment creation shifts the bargaining power from the worker to employer due to reduced demand for labour consequently wage level may reduces in the economy. It reduces the aggregate demand and income levels and generates more socio-economic tribulations. This certainly hinders the economic growth and development both in the long-run and short-run. In this background it is very important to examine the trends in the employment levels in the Indian economy. So the present study puts an effort to evaluate the trends in factory employment both in the public and private sectors.

Keywords: *Employment generations, labour force, slothful employment, bargaining power and aggregate demand.*

Introduction

Employment generations have to increase as the labour force increases in any economy. When there are large gaps exists between them the speed of the economic growth and development would certainly come down. Consequently the poverty perpetuates in the long run. Evaluation of the employment trends in all the sectors of the economy helps for the suitable policy formulations in order to create adequate level of employment so as to protect the interest of growing labour force. It is evident from the statistics that the public sector factory employment is sluggish and moved towards negative. But the private sector factory employment is moving towards positive but it s not all enough to meet the growing population in Indian economy. The

present study is assessed the trends in factory employment in both the public and private factories between 2000 and 2012.

Objectives

1. To estimate the trends in the factory employment in the public sector in India.
2. To estimate the trends in the factory employment in the private sector in India.

Hypotheses

1. **H_0:** There is no significant difference in the factory employment during 2000-2012 in public sector factories in India.
2. **H_1:** There is a significant difference in the factory employment during 2000-2012 in public sector factories in India.
3. **H_0:** There is no significant difference in the factory employment during 2000-2012 in private sector factories in India.
4. **H_1:** There is a significant difference in the factory employment during 2000-2012 in private sector factories in India.

Methodology

The study attempts to evaluate the trends in the factory employment from the selected factories both in public and private sectors in India. The data has been collected form Statistical Year Book India 2016 for the period of 13 years from 2000 to 2012 for the selected factories like Textiles, Printing, publishing & allied industries, Manufacture of machinery, Electrical machinery apparatus, appliances & supplies, Transport equipment, Electricity, gas and steam, Food and Beverages, Tobacco, Chemical and Chemical Products, Non-Metallic Mineral products, Basic Metal Industries and Manufacture of Machinery. In order to analyse the data the statistical tools such as Compounded Annual Growth Rates (CAGR), Analysis of Variance (ANOVA, F-test), and linear regression with R square and parameters estimation have been used with the help of SPSS (Statistical Package for Social Sciences). The data has been presented in the form of tables and graphs.

Trends in Factory Employment in Public Sector in India

Public sector is also playing an essential role in the creation of employment in Indian economy as against private sector. Many factories are running by the public sector under the supervision of the government. It helps to avoid the monopoly elements in the economy in certain key sectors such as Textiles, Printing, publishing & allied industries, Manufacture of machinery, Electrical machinery apparatus, appliances & supplies, Transport equipment, Electricity, gas and steam. The employment generation in these above sectors is also determining the level of performance in the economy.

Table-1: Factory Employment in Public Sector in India

Year	Textiles	Printing, publishing & allied industries	Manufacture of machinery	Electrical machinery apparatus, appliances & supplies	Transport equipment	Electricity, gas and steam	Rest of the factories	Total
2000	79	38	40	22	74	70	475	798
2001	90	44	54	18	109	81	507	903
2002	85	42	67	24	104	80	563	965
2003	70	31	45	21	78	72	420	737
2004	83	44	74	24	109	88	597	1019
2005	64	31	75	16	97	97	577	957
2006	57	32	75	19	81	97	563	924
2007	59	34	104	20	83	129	628	1057
2008	52	26	91	18	75	112	515	889
2009	31	28	64	12	100	93	414	742
2010	36	27	42	13	114	140	744	1116
2011	35	31	54	28	135	138	728	1149
2012	15	18	38	7	106	87	367	637

Source: Labour Bureau Chandigarh, Ministry of Labour and Employment.

Graph-1: Compounded Annual Growth Rates of Factory Employment in Public Sector in India from 2000 to 2012

The table-1 and graph-1 clearly shows the factory employment in public sector in India. There are six factory sectors have been taken into consideration and also have estimated the performance of the rest of the factories in terms of employment. During the study period from 2000 to 2012 in the textile industry the employment was decreased by 13.2 percent (CAGR = 13.2) and was attained a negative growth rates of employment. The textile industry was failure to put effort to increase the level of employment in 13 years period. The levels of employment in the factories like Printing, publishing & allied industries was reduced by 12.7 percent, manufacturing of machineries by 12.2 percent, Electrical machinery apparatus, appliances & supplies by 11.8 percent, and in the rest of the factories it was reduced by 10.6 percent. The total factory employment in the public sector was reduced by 10.3 percent in Indian economy during 13 years period. It is clear from the study that, the factory sector has been attained negative growth of employment and the public sector had been failure to put efforts in employment generations over the period of time.

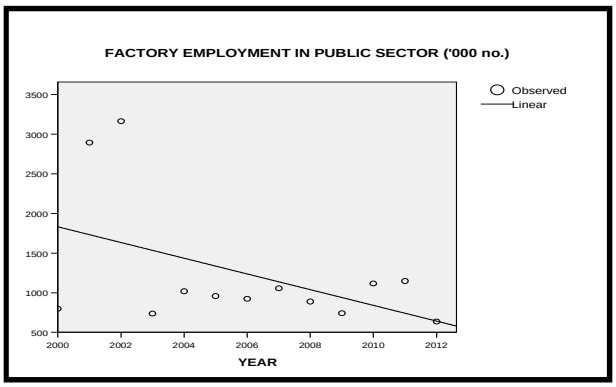
Table 2 Model Summary and Parameter Estimates.

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.226	3.212	1	11	.101	200095.835	-99.132

The independent variable is Year.

Dependent Variable: Factory Employment in Public Sector ('000 no.)

Graph-2 Trends in Factory Employment in Public Sector in India



The trends in factory employment in public sector in India for the period 2000-2012 have been worked out and the result is presented in table-2 and graph-2. It is estimated that the factory employment in public sector in India was to the tune of -99.132 per cent. Also the growth was found to be highly insignificant (F=3.212) with R square value 0.226. This implies that trends in factory employment in public sector in India have not been making continuous efforts to increase over the period of time.

Table-3 Descriptives

Factory Employment in Public Sector ('000 no.)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
2000	6	53.83	23.481	9.586	29.19	78.48	22	79
2001	6	66.00	33.413	13.641	30.94	101.06	18	109
2002	6	67.00	29.448	12.022	36.10	97.90	24	104
2003	6	52.83	23.861	9.741	27.79	77.87	21	78
2004	6	70.33	31.053	12.677	37.75	102.92	24	109
2005	6	63.33	33.732	13.771	27.93	98.73	16	97
2006	6	60.17	30.029	12.259	28.65	91.68	19	97
2007	6	71.50	41.736	17.039	27.70	115.30	20	129
2008	6	62.33	36.990	15.101	23.51	101.15	18	112
2009	6	54.67	36.615	14.948	16.24	93.09	12	100
2010	6	62.00	51.942	21.205	7.49	116.51	13	140
2011	6	70.17	52.182	21.303	15.40	124.93	28	138
2012	6	45.17	41.489	16.938	1.63	88.71	7	106
Total	**78**	**61.49**	**34.763**	**3.936**	**53.65**	**69.32**	**7**	**140**

The table-3 shows the descriptive statistics of a Factory Employment in Public Sector in India. The factory sector such as Textiles, Printing, publishing & allied industries,

Manufacture of machinery, Electrical machinery apparatus, appliances & supplies, Transport equipment, Electricity, gas and steam, are considered and the employment rates are estimated for 13 years (2000-2012). During this period the average employment was 61.49. It means that the public sector has been provided employment to 61000 employees on an average. It indicates that in India within this selected factory sector the highest average employment was 71000 (71.50) in 2007 and the lowest average employment recorded was 45000 (45.17) in 2012.

Table-4 Test of Homogeneity of Variances

Factory Employment in Public Sector ('000 no)

Levene Statistic	df1	df2	Sig.
1.442	12	65	.170

The Levene test for Homogeneity of Variances is not significant ($p>0.05$) it means that the significance value is greater than alpha value (i.e., 0.170>0.05). It implies that the assumption of ANOVA has not been violated. As such we can proceed ahead to see the ANOVA results.

Table-5 Analysis of Variance (ANOVA) for Factory Employment in Public Sector

Factory Employment in Public Sector ('000 no.)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4542.487	12	378.541	.278	.991
Within Groups	88507.000	65	1361.646		
Total	93049.487	77			

The above ANOVA table-5 shows that $F (12, 65) = 0.278$, $p>0.05$ is not significant. It is very clear from the table that the F test value at 5 percent level of significance along with the degree of freedom 12 and 65 is 0.278 (F=0.278). And the significance value is 0.991. It means that the significance value is greater than the alpha value (0.991>0.05). Hence, we can accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1) that there is no significant difference in the factory employment from the selected factories in public sector in India.

Trends in Factory Employment in Private Sector in India

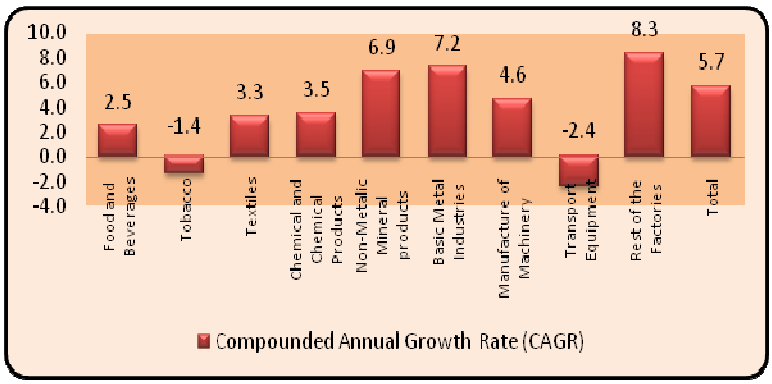
In Indian economy the private sector has been considered as the unorganized sector and is providing more employment opportunities as compared to the public sector. It is absorbing the huge unemployed by providing employment. A few factories such as food and beverages, tobacco, chemical and chemical products, non-metallic mineral products, basic metal industries, manufacture of machinery and transport of equipment had been taken into consideration.

Table-6 Factory Employment in Private Sector in India

Year	Food and Beverages	Tobacco	Textiles	Chemical and Chemical Products	Non-Metallic Mineral products	Basic Metal Industries	Manufacture of Machinery	Transport Equipment	Rest of the Factories	Total
2000	676	36	516	256	267	193	174	85	1225	3428
2001	753	34	853	546	323	261	125	100	1835	4830
2002	822	44	786	471	355	332	355	111	2089	5365
2003	715	36	547	329	312	292	242	93	1624	4190
2004	955	45	847	518	415	346	278	113	2267	5784
2005	980	52	931	534	471	406	337	126	2385	6222
2006	1036	47	1071	721	524	484	369	140	2954	7246
2007	1054	46	882	468	589	585	408	146	2782	6960
2008	944	43	869	376	610	508	494	100	2587	6531
2009	897	33	600	422	550	403	308	119	2415	5747
2010	1318	40	1320	650	799	862	483	143	4124	9739
2011	1441	47	1419	711	845	895	494	158	4420	10430
2012	912	31	763	386	595	447	299	63	3202	6698

Source: Labour Bureau Chandigarh, Ministry of Labour and Employment.

Graph-3 Compounded Annual Growth Rates of Factory Employment in Private Sector in India from 2000 to 2012



The table-6 and graph-3 clearly shows the factory employment in private sector in India. During the study period from 2000 to 2012 in the Food and Beverages industry the employment was increased by 2.5 percent (CAGR = 0.025) and was attained a positive growth rates of employment. The textile industry was succeeded to put effort to increase the level of employment in 13 years period. The levels of employment in the factories like tobacco was reduced by 1.4 as well as transport and equipment sector also attained a negative growth of employment with 2.4 percent. Apart from this factories the levels of employment in factory industries such as textiles increased by 3.3 percent, chemical and chemical products by 3.5 percent, non-metallic mineral products by 6.9 percent, basic metal industries by 7.2 percent, manufacture of machinery by 4.6 percent and rest of the factories by 8.3 percent. The total factory employment in the private sector was increased by 5.7 percent in Indian economy during 13 years period. It is very clear from the study that, the factory sector has been

attained positive growth of employment in the private sector as compared to the public sector and the private sector had to put efforts to increase the employment generations over the period of time.

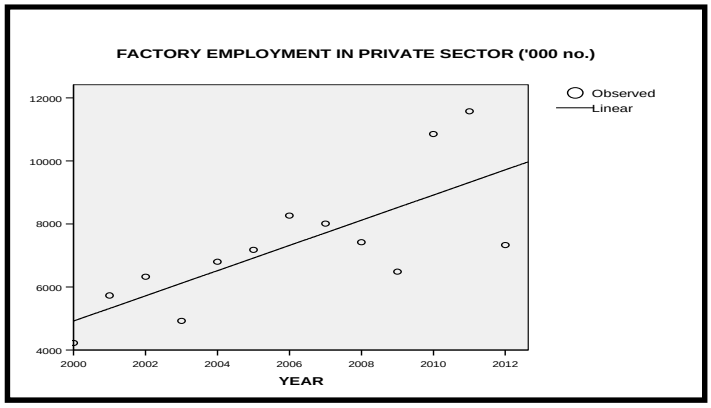
Table-7 Model Summary and Parameter Estimates

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.561	14.067	1	11	.003	-794506.857	399.714

The independent variable is YEAR.

Dependent Variable: Factory Employment in Private Sector ('000 no.)

Graph-4 Trends in Factory Employment in Private Sector in India



The trends in factory employment in private sector for the period 2000-2012 have been worked out and the results are presented in table-7 and graph-4. It is estimated that the average employment rates for factory sector in private sector was to the tune of 399.714 per cent. Also the growth was found to be highly significant (F=14.067) with R square value 0.561. This implies that average employment rates for factory employment in private sector in India have been making continuous efforts to increase over the period of time.

Table-8 Descriptives

Factory Employment in Private Sector ('000 no)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
2000	8	275.38	216.944	76.701	94.01	456.74	36	676
2001	8	374.38	309.542	109.439	115.59	633.16	34	853
2002	8	409.50	280.390	99.133	175.09	643.91	44	822
2003	8	320.75	222.565	78.689	134.68	506.82	36	715
2004	8	439.63	324.173	114.612	168.61	710.64	45	955
2005	8	479.63	336.117	118.835	198.62	760.63	52	980
2006	8	549.00	377.165	133.348	233.68	864.32	47	1071
2007	8	522.25	339.105	119.892	238.75	805.75	46	1054

2008	8	493.00	322.785	114.122	223.15	762.85	43	944
2009	8	416.50	275.146	97.279	186.47	646.53	33	897
2010	8	701.88	477.759	168.913	302.46	1101.29	40	1320
2011	8	751.25	516.418	182.581	319.51	1182.99	47	1441
2012	8	437.00	312.438	110.463	175.80	698.20	31	912
Total	**104**	**474.63**	**346.854**	**34.012**	**407.17**	**542.08**	**31**	**1441**

The table-8 shows the descriptive statistics of a factory employment in private sector in India. The factory sector such as Food and Beverages, Tobacco, Chemical and Chemical Products, Non-Metallic Mineral products, Basic Metal Industries and Manufacture of Machinery and Transport equipment, are considered and the employment rates are estimated for 13 years (2000-2012). During this period the average employment was 474.63. It means that the private sector has been provided employment to 474000 employees on an average. It indicates that in India within this selected factory sector under the private sector the highest average employment provided was 751000 (751.25) in 2011 and the lowest average employment was recorded to 275000 (275.38) in 2000.

Table-9 Test of Homogeneity of Variances

Factory Employment in Private Sector ('000 no.)

Levene Statistic	df1	df2	Sig.
1.045	12	91	.416

The Levene test for Homogeneity of Variances is not significant ($p>0.05$) it means that the significance value is greater than alpha value (i.e., $0.416>0.05$). It implies that the assumption of ANOVA has not been violated. As such we can proceed ahead to see the ANOVA results.

Table-10 Analysis of Variance (ANOVA) for Factory Employment in Private Sector

Factory Employment in Private Sector ('000 no.)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1760119.500	12	146676.625	1.255	.259
Within Groups	10631574.875	91	116830.493		
Total	12391694.375	103			

The above ANOVA table-10 shows that $F(12, 91) = 1.255$, $p>0.259$ is not significant. It is very clear from the table that the F test value at 5 percent level of significance along with the degree of freedom 12 and 91 is 1.255 ($F=1.255$). And the significance value is 0.259. It means that the significance value is greater than the alpha value ($0.259>0.05$). Hence, we can accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1) that there is no significant difference in the factory employment from the selected factories in private sector in India during the study period.

Conclusion

The study concludes that from the above analysis the public sector was completely failure to create employment opportunities during 13 years from 2000 to 2012. The

overall employment growth rates were reduced by 10.3 percent in Indian economy. Each factory sector also attained a negative growth of employment in the public sector due to many reasons and lack interest of the government. The study strongly suggests that the government has to take up a suitable measure to empower the public sector factories by creating adequate employment to its growing population. On the other hand the private sector was positive a growth in the employment. Basic metal industries (7.2 percent) and non-metallic mineral products industries (6.9 percent) have recorded a highest growth in employment creation as compared to the other factories which have taken under the private sector. The private factory sector has attained a 5.7 percent of employment and it is a positive sign in the Indian economy. It is also suggest that, the government has to focus more on the private sector through suitable policy formulations and implementations for sufficient employment generations for the growing labour force.

References

1. Statistical Year Book India 2016.
2. Santosh Mehrotra, Jajati Parida, et. al. (2014), "Explaining Employment Trends in the Indian Economy: 1993-94 to 2011-12", Economic & Political Weekly, Vol. XIIX, No. 32. Pp. 49-57.
3. T.S. Papola and Partha Pratim Sahu (2012), "Growth and Structure of Employment in India Long-Term and Post-Reform Performance and the Emerging Challenge", Institute for Studies in Industrial Development, New Delhi, pp. 35-44.
4. International Labour Organization (2016), "India Labour Market Update", ILO Country Office for India, pp.1-4.
5. Narayan Chandra Nayak (2011), "Employment Intensity of Service Sector in India: Trend and Determinants", International Conference on Business and Economics Research, vol.1 (2011) © (2011) IACSIT Press, Kuala Lumpur, Malaysia, pp. 62-66.
6. A. Srija & Shrinivas V. Shirke (2012), "An Analysis of the Informal Labour Market in India", Confederation of Indian Industry, pp. 40-46.