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Nature and Pattern of Changes in Rural Non-Farm Employment in Haryana

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India has got a major portion of its population based in the rural areas. The population dependent on agriculture has marginally declined but still continues to be around 60 per cent. The share of agriculture in national income has been on the decline and is estimated to come down to less than 25 per cent by 2000 A.D. This has aggravated the unemployment and under-employment situation in rural India. Indian industry also has nothing much to offer in this regard. On the other hand, projections based on the growth rate of labour force at 2.5 per cent per annum indicate the necessity of providing additional employment for about 94 million by 2000 A.D. The agricultural sector due to declining size of land holding, and the organised industry have not been able to generate the needed employment opportunities. That underscores the need for alternative avenues for employment generation in the rural areas. This brings the development of non-farm sector into focus.

Haryana State has experienced considerable development both in the agricultural and industrial sectors. The contribution of rural industries to the total industrial development remains unexplored. Needless to say, rural industries are the main source of non-farm employment. As such the present study aims at examining the changes in the relative share of non-farm employment (NFE) in the total employment, determining growth of non-farm employment, and analysing the determinants of output per worker in Haryana.

METHODOLOGY

The study is based on the data collected from *Statistical Abstracts of Haryana* for the period 1970-71 to 1993-94. The extent of farm and non-farm employment for the periods 1981 and 1991 has been analysed using different techniques. Total farm and non-farm employment in the rural sector in each district in relation to total rural employment in the state has been considered as an indicator of farm and non-farm employment. Hoover measure of employment concentration (see Deogirikar and Kurulkar, 1992, pp. 218-219) is used for this purpose: i.e., the relative share of the i-th district has been estimated by

$R_o = (L_{io})/(\Sigma L_{io})$ and $R_t = (L_{it})/(\Sigma L_{it})$

Similarly, the index of farm and non-farm employment is measured as

$$I_o = \frac{(L_{io})/(\Sigma L_{io})}{(P_{io})/(\Sigma P_{io})}$$

and,

$$I_t = \frac{(L_{it})/(\Sigma L_{it})}{(P_{it})/(\Sigma P_{it})}$$

where

L_{io} = employment in farm/non-farm sector in the i-th district in base year (1981),

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L_{it} = employment in farm/non-farm sector in the i-th district in terminal year (1991),
P_{io} = rural population of i-th district in base year (1981),
P_{it} = rural population of i-th district in terminal year (1991), and
n = number of districts in Haryana State.

Compound growth rates of production, employment and working capital in different rural industries in the state for the periods 1970-71 to 1979-80 and 1980-81 to 1993-94 and the total period 1970-71 to 1993-94 were also calculated. Best fit equations were obtained to examine the determinants of output per worker in rural industries.

RESULTS AND DISCUSSION

Changes in Relative Share of Non-Farm Employment

Districtwise relative shares and indices of farm employment (FE) and non-farm employment (NFE) are given in Table I.

TABLE I. DISTRICTWISE SHARES, INDICES OF FARM AND NON-FARM EMPLOYMENT IN HARYANA

District	1981				1991			
	Relative share		Index		Relative share		Index	
(1)	R_oFE (2)	R_oNFE (3)	I_oFE (4)	I_oNFE (5)	R_tFE (6)	R_tNFE (7)	I_tFE (8)	I_tNFE (9)
Ambala	0.0831	0.1485	0.8876	1.5855	0.0856	0.1508	0.8398	1.4790
Kurukshetra	0.1002	0.0761	1.0723	0.8136	0.1017	0.0719	1.0625	0.7498
Karnal	0.1019	0.0863	1.0533	0.8925	0.1006	0.0978	0.9987	0.9712
Sonepat	0.0635	0.0907	0.9231	1.3183	0.0398	0.0765	0.8566	1.6452
Rohtak	0.0944	0.1277	0.8858	1.1980	0.1133	0.1382	0.9878	1.2054
Faridabad	0.0556	0.0615	0.9476	1.0488	0.0599	0.0544	0.9786	0.8885
Gurgaon	0.0627	0.0832	0.0931	1.2352	0.0632	0.0971	0.8583	1.3188
Mohindergarh	0.0611	0.0949	0.0739	1.1486	0.0678	0.1080	0.7478	1.9140
Bhiwani	0.0812	0.0574	1.0616	0.7502	0.0789	0.0588	1.0377	0.7730
Jind	0.0914	0.0552	1.1412	0.6896	0.0722	0.0460	1.1240	0.7155
Hisar	0.1385	0.0875	1.1575	0.7313	0.1451	0.0702	1.2377	0.5988
Sirsa	0.0662	0.0308	1.1883	0.5534	0.0718	0.0305	1.2514	0.5310
State	1	1			1	1		

The share of NFE was observed to be the highest in Ambala district, followed by Rohtak district in both the years 1981 and 1991. This was the lowest in Sirsa district in these years. The NFE index was the highest in Ambala, followed by Sonepat in 1981. However, in 1991 these districts swapped their position with regard to non-farm employment. Sirsa district has remained the lowest in offering non-farm employment in both the years under study. It is further observed from the table that Mohindergarh reported the maximum increase in non-farm employment, followed by Sonepat, Karnal, Gurgaon, Jind, Bhiwani and Rohtak. The five remaining districts experienced a decline in NFE, the maximum being in Hisar, followed by Ambala district. These are the districts which are not agriculturally advanced (except Karnal) also. To keep the balance in the overall development, the Government might have given more allocation in generating non-farm employment in these districts.

Growth in Non-Farm Employment

Haryana State experienced a significant growth in non-farm employment during the period 1970-71 to 1993-94 (Table II). Initially, during the first decade (1970-71 to 1979-80), the growth was not significant. However, in the next decade, growth in non-farm employment was at a rate of 2.19 per cent per annum. The working capital of rural industries offering non-farm employment in the state has increased at a significant rate of growth during the whole period (1970-71 to 1993-94) and in the two sub-periods. Among industries, the growth rate in non-farm employment in food product industry was the maximum, being 15.83 per cent per annum, followed by carpentry and blacksmithy industry, limestone, paper, bee-keeping, pottery and cane and bamboo industries.

The rate of growth in non-farm employment has been positive and significant in all the rural industries except in oil ghani and gur and khandsari where it has declined significantly during the period 1970-71 to 1993-94 due to expansion of oil-expellers. It has been positive but non-significant in cottage match industry. The working capital, however, has increased at a maximum rate in the case of cane and bamboo industry, followed by aluminium industry. On the other hand, the rate of growth of production was observed to be the highest in bee-keeping, followed by paper industry. But no significant decline in the rate of growth in both working capital and production was observed in any of the rural industries in the state.

TABLE II. COMPOUND GROWTH RATES OF PRODUCTION, EMPLOYMENT AND WORKING CAPITAL DURING DIFFERENT PERIODS

(per cent per annum)

	1970-71 to 1979-80			1980-81 to 1993-94			1970-71 to 1993-94		
Industries	Production	Employment	Working capital	Production	Employment	Working capital	Production	Employment	Working capital
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Food product	16.90*	15.19*	16.63*	-0.10	52.00**	2.31	12.36**	15.83**	13.45**
Oil ghani	10.49**	1.77	20.90*	-12.59**	-18.75**	-8.13	-3.64	-10.02**	11.23**
Soap	10.70**	-5.15	9.12*	6.34**	2.58**	8.95**	10.92**	4.06**	17.26**
Pottery	39.59**	33.26**	33.47*	11.41**	0.84*	0.16	18.65**	11.06**	13.04**
Gur and khandsari	17.62	5.41	19.40	-5.85*	-13.52**	0.35	1.43	-6.23**	8.47**
Paper	20.03*	11.76*	7.96	14.61**	7.89**	-0.17	26.38**	12.98**	9.25*
Fibre	18.52**	-0.05	50.21**	13.24**	12.65**	2.97	20.26**	9.55**	26.80**
Leather industry	29.93**	17.11**	34.56**	-0.70	6.89**	6.63*	11.26**	9.85**	14.06
Khadi	5.89*	-6.58	54.91**	23.46**	11.92**	-0.60	15.44**	4.13**	6.51*
Carpentry and blacksmithy	36.09**	25.90**	32.52*	11.70**	4.31**	-10.34	21.44**	15.17**	10.31**
Limestone	54.31**	19.36**	-	13.75**	6.14**	8.13**	26.22**	13.85**	-
Cane and bamboo	-	-	-	14.58**	11.02**	36.31**	14.58**	11.02**	36.31**
Cottage match	54.38**	48.22**	56.89**	-	-13.74**	8.90	19.98**	3.93	16.24**
Bee-keeping	72.11**	-	17.33	8.30**	8.81	30.82**	35.71**	12.38**	27.54**
Aluminium	-	-	-	21.51**	-7.04	10.08	-2.09	-7.04	10.09
Total	-	9.67	24.97**	-	2.19**	5.08**	-	5.97**	14.91**

* and ** Significant at 5 per cent and 10 per cent probability level respectively.

Cottage match industry exhibited maximum and significantly positive rate of growth of 48.22 per cent per annum in employment during the first decade. However, during the second period (1980-81 to 1993-94), this industry has shown a declining rate of growth of 13.74 per cent per annum. Employment in food product industry has exhibited maximum rate of

growth during the second period. The next important industry in terms of rate of growth in employment during the first decade was pottery. The rate of growth has fallen to 0.84 per cent per annum in this industry too. No industry showed a negatively significant rate of growth in non-farm employment (NFE) during the first decade; but during the second period, industries such as oil ghani, gur and khandsari have shown negative rate of growth in employment due to the reasons stated above. It must be mentioned here that unlike cottage match industry, these industries had non-significant rate of growth in employment in the first decade.

Determinants of Output Per Worker

Industrywise best fit equations showing the factors among production, employment and working capital that affect the output per worker are given in Table III.

TABLE III. DETERMINANTS OF OUTPUT PER WORKER

Industry	Equation	R^2
Food products	O = 1.6894 + 0.4061** Pr - 0.6712** Em	0.9703
Oil ghani	O = 2.0955 + 0.87047** Pr - 1.49403** Em - 0.14462* Wc	0.9590
Soap	O = 1.7674 + 0.3830** Pr - 0.6765** Em	0.9992
Pottery	O = 1.0005 + 0.2439** Pr - 0.2366** Em - 0.01105** Wc	0.9953
Gur and khandsari	O = 1.5056 + 0.2724** Pr - 0.3998** Em - 0.0114** Wc	0.9972
Paper	O = 1.3360 + 0.5082** Pr - 0.7401** Em + 0.0412* Wc	0.9872
Fibre	O = 1.2023 + 0.3574** Pr - 0.4299** Em	0.9994
Leather industry	O = 1.1554 + 0.2652** Pr - 0.3062** Em	0.9949
Khadi	O = 1.0752 + 0.2731** Pr - 0.2942** Em	0.9994
Limestone	O = 1.4116 + 0.5596** Pr - 0.7990** Em	0.9516
Cottage match	O = 1.1985 + 0.5541** Pr - 0.6058** Em - 0.04700** Wc	0.9957
Bee-keeping	O = 1.5316 + 0.7400** Pr - 0.9548** Em	0.9666

Pr = Production; Em = Employment; Wc = Working capital.
* and ** Significant at 5 per cent and 10 per cent probability level respectively.

The high value of R^2 in each equation further shows the high extent of variability in the output per worker explained by the factors in the equations. Employment in all the industries is observed to be negatively related with the output per worker. It implies that the output per worker is declining in the rural industries with increase in employment despite the fact that production is increasing. This indicates that it may not be possible to get more and more people employed in these industries. The negative relationship of working capital with the output per worker in these industries (except in gur and khandsari) indicates the over-use of capital.

CONCLUSIONS

It is evident from the above that non-farm employment has increased significantly in a majority of the districts, which are not agriculturally advanced. To keep the balance in the overall development of the districts, the State Government has paid more attention to these districts. The working capital investment in rural industries providing non-farm employment has increased significantly. This indicates faster development of the rural industries in the state. Non-farm employment was found to be maximum in carpentry and blacksmithy,

limestone, bee-keeping and poultry. These are the traditional rural industries which have been providing non-farm employment to the rural people. The decline in non-farm employment in oil and ghani and gur and khandsari is due to expansion of oil-expellers and establishment of more sugar mills in the state. The output per worker is declining in the rural industries in spite of the fact that the contribution of production is increasing. This indicates that it may not be possible to get more and more people employed in these industries. In other words, they have reached a saturation point. Therefore, there is a need to evolve better technology for these industries to enable them to continue to absorb more and more rural labour force in these industries.

REFERENCE

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