Research Paper

EPRA International Journal of Economic and Business Review-Peer Reviewed Journal
Volume - 13, Issue - 5, May 2025 | e-ISSN: 2347 - 9671| p- ISSN: 2349 – 0187

SJIF Impact Factor (2025): 8.862 || ISI Value: 1.433 || Journal DOI URL: https://doi.org/10.36713/epra2012

OCCUPATIONAL DIVERSIFICATION IN THE BACKWARD REGION OF WEST BENGAL: A STUDY BASE ON UNIT LEVEL DATA

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ABSTRACT **DOI No: 10.36713/epra21353** **Article DOI: https://doi.org/10.36713/epra21353**

The present paper analyses occupational diversification in backward region of West Bengal on the basis of NSSO Unit Level data of 55th Round (1999-00) and 68th Round (2011-12). Occupation diversification is the most important factor for the enhancement of worker's standard of living. We have found that Worker-population Ratio (WPR) has marginally declined in backward region of West Bengal. As regards the status of employment, the self-employment dominates in the backward region of West Bengal. Relatively higher number of workers has been transformed from farm sector to non-farm sector during recent years. The structure of employment refers to the distribution of workers across different categories, viz regular, self-employment and casual employment. Employment conditions improve when workers move from lower quality to higher quality jobs, or when there is favourable change in the structure of employment. The condition of employment, estimated by employment structure index, was declined in backward region during 1999-2000 to 2011-12. That indicates unfavourable change in employment structure. The employment diversification, estimated by Employment Diversification Index, from farm sector to non-farm sector is witnessed in backward regions along with overall West Bengal. But the value of diversification index decreased from 1999-00 to 2011-12.

KEYWORDS: ***Employment, Status of employment, Employment Diversification Index (EDI), Employment Structural Index (ESI)***

I. INTRODUCTION

A great deal of attention has been focused in recent years on the issue of occupational diversification in backward regions of West Bengal. It has been observed that most of the rural households in the developed countries depend on a diverse portfolio of activities and income, together with crop and different type of production (Ferrington *et al.*, 2006). The trends of rural employment have been transformed from the farm sector to non-farm sector in India (Das, 2004). The rural households pursue a numerous of activities as part of their subsistence strategy (Ellis, 1998, 2000; Barrett *et al.*, 2001; Reardon *et al.*, 2001; Lanjouw and Lanjouw, 2001). Expanding the working engagement into different categories of activities helps not only to reducing the risk of income failure, but also to overawed 'labour smoothening' difficulties which arise due to seasonality of pure agricultural operations. Ellis (2000), opines although the household may have diverse activity portfolio, which might have been maintained for security and/or good returns, individual household members might specialise in single occupations/sectors depending upon their own choice that is often determined by a host of factors. In that situation, it becomes imperious to explore those factors, which govern choice of occupations among possible substitutes by the individual employer in rural areas. The process of transforming rural occupational structure system in developing countries is regarded in the development literature from two demand pull and distress push (Koppel et al1994, Unni 1996). The rural non-farm sector displays enormous heterogeneity, both in terms of sectors, and in terms of type of employment. The issue of diversification from the perception of individual employers.

Review of Literature

Das (2004) observed that the percentage share of RNFE increased in West Bengal during post-reform period. In pre-reform period, it is observed that rural poverty declined up to 1990 and then a sudden increase was noticed. After 1993-94, rural poverty ratio remains more or less stable. The cross classification of the states shows that there is close correspondence between rural poverty and non-farm employment and this correspondence is negative.

Das (2012) observed that there has been a decline in employment in the rural area, led by a sharp fall in the employment of rural females. He observed that there has been a reduction of rural female workforce in India during 2004-05 to 2009-10. The manufacturing sector, the most important absorber of rural workers, has experienced substantial loss of jobs.

Ellis (2004) observed that occupational diversification challenges conventional wisdoms about poverty reduction in rural areas of low-income countries. Diversification takes place in order to overcome risk and seasonality in natural resource-based livelihoods, but it also reflects the failure of agriculture to deliver improving livelihoods in the post-liberalisation era. Those farms achieving yield growth often do so due to cash

resources generated from non-farm activities, rather than being the origin of growth in such activities as is the conventional wisdom.

Lanjouw and Shariff (2004) examined that non-farm incomes account for a significant proportion of household income in rural India, with considerable variation across quintiles and across India's major states. The direct contribution of the non-farm sector to poverty reduction is possibly quite muted as the poor suffers from lack of assets, but it has been found that the growth of certain non-farm sub-sectors is strongly associated with higher agricultural wage rates.

Pandit (2024) analyse that trend and pattern of rural non-farm employment significantly increased from farm sector to non-farm sector. He also demonstrated that rural non-farm employment plays an important and significant role to reduce rural poverty in Backward Region as well as in West Bengal. He also explained that employment conditions improved when workers moved from lower quality to higher quality jobs, or when there is favourable change in the structure of employment. The condition of employment, estimated by employment structure index, increased in backward region during the period of 1999-2000 to 2011-12.
Rani and Shylendra (2002) observed that the changing occupational structure has come to be explained from both the developmental and the distress approaches. He also explained both the development and distress are influencing rural occupational structure simultaneously. He emphasises the need for a new focus in diversification studies to explain the phenomenon not only in terms of the micro-level dynamics but also from a broader perspective considering various macro processes.

Timothy (2011) argued that diversification from subsistence farming and support for rural on-farm employment opportunities could be poverty-reducing. He has been noticed that an increase in foreign remittances reduces poverty in developing countries. This study considers remittances as a source of income which could possibly reduce poverty in the rural sector of the economy.

Objective of this study

In this brief background the present paper sets three-fold objectives for itself:

- To analyse the status of employment in backward vis-à-vis other regions of West Bengal.
- To analyse the employment diversification in backward vis-à-vis other regions of West Bengal.
- To examine the changes in the condition of employment in backward vis-à-vis other regions of West Bengal.

Sources of Data and Methodology

The present paper on the basis of NSSO unit level data in two points of time during post-reform years- 55th round (1999-2000) and 68th round (2011-12). All rounds are related with the Employment and Unemployment Survey. For employment here we have considered the principal status activities of the workers. National Sample Survey Organisation (NSSO) has divided four regions in West Bengal. These are Central region, East region, Himalayan and Western region. Western region is the most backward region in West Bengal. Central region indicates 24 Parganas (S), 24 Parganas (N), Calcutta, Howrah, Hooghly and Burdwan. East region indicates. Dinajpur, Malda, Murshidabad, Nadia and Birbhum. Himalayan delta indicates Jalpaiguri, Darjeeling and Koch Bihar and Western regions indicates Medinipur (W), Medinipur (E), Bankura and Purulia. This data has also been analysed with employment structural index. We have also analysed employment diversification Index by different non-farm sector.

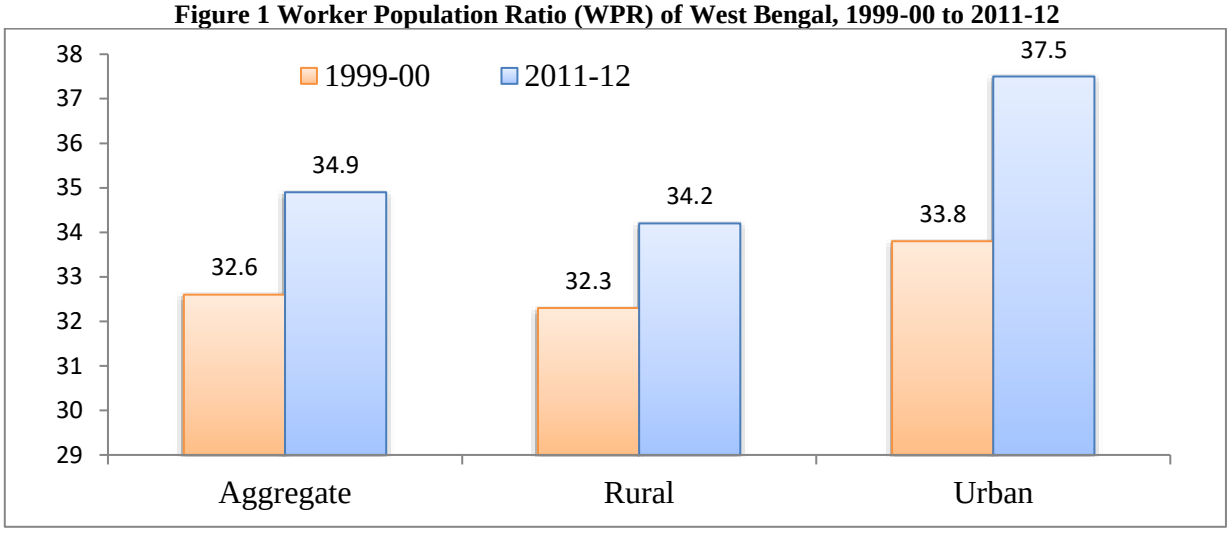
Plan of the Study

The rest of the paper is divided into eight sections. Section II determinant Workers and their status. Sections III explain of the employment diversification in backward region as well as others region in West Bengal. In section IV explains to structural change of condition of employment by different sector in backward region vis-a-vis West Bengal, 1999-00 to 2011-12. Finally, section V makes the concluding observations.

II. WORKERS AND THEIR STATUS

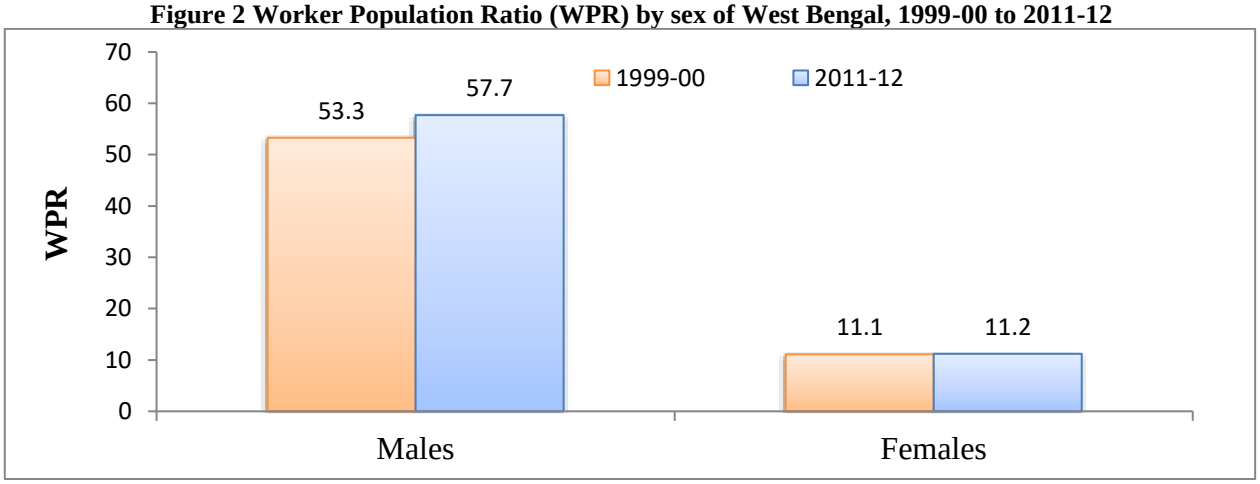
Highly disparate trends are noticeable for the trend of work participation rate (WPR) during the period 1999-00 to 2011-12 of West Bengal is explained in Figure 1 and Figure 2. Overall WPR of West Bengal marginally increased from 32.6 per cent in 1999-00 to 34.9 per cent in 2011-12. Male's and female's WPR of West Bengal sharply increased during the period 1999-00 to 2011-12 where male's WPR was higher than the female's WPR. Urban WPR of West Bengal was higher than the rural WPR during the period 1999-00 to 2011-12.

Figure 1 Worker Population Ratio (WPR) of West Bengal, 1999-00 to 2011-12



Source: *NSSO Unit Level Data, Author own's calculation*

Figure 2 Worker Population Ratio (WPR) by sex of West Bengal, 1999-00 to 2011-12



Source: *NSSO Unit Level Data, Author own's calculation*

Table 1 Worker Population Ratio (WPR) in Backward vis- a –vis other regions of West Bengal, 1999-00 to 2011-12

	1999-00			2011-12		
	Total	**Rural**	**Urban**	**Total**	**Rural**	**Urban**
Central Region	32.0	30.8	34.0	35.9	34.5	37.6
East Region	34.0	33.6	37.5	35.1	34.7	38.2
Himalayan	32.6	33.0	29.9	35.7	36.2	33.5
Western Region	32.0	32.2	28.3	31.9	32.2	39.2

Source: *NSSO Unit Level Data, Author own's calculation*

WPR is presented in Table 1 in different region of West Bengal during the period 1999-00 to 2011-12. Urban WPR of central and east plain is higher than that of the rural WPR during the year 1999-00 to 2011-12 in the other hand rural WPR in backward region and Himalayan region is higher than that of urban WPR in the year 1999-00 but in 2011-12 rural WPR is lower than that of the urban WPR in backward region. In this context we can say that increasing WPR means improved labour market and job opportunity is very high in urban central and east region in other hand rural Himalayan and backward region see opposite scenario. Better success employment generation programme both region and better access to education and skills leading to employability.

Table 2 Worker Population Ratio (WPR) by Caste in Backward Region vis- a –vis West Bengal, 1999-00 to 2011-12

	1999-00			2011-12		
	ST	**SC**	**Non-SC/ST**	**ST**	**SC**	**Non-SSC/ST**
Central Region	32.9	32.1	32.0	51.4	34.8	35.7
East Region	31.6	32.9	34.5	38.4	36.4	34.4
Himalayan	36.8	31.8	31.9	41.4	36.7	33.6
Western Region	36.9	32.9	31.0	33.5	33.6	31.2

Source: *NSSO Unit Level Data, Author own's calculation*

Worker population ratio (WPR) by caste is presented in Table 2 in different region of West Bengal during the period 1999-00 to 2011-12. WPR of Non-SC/ST in backward region is lower than that of SC and ST's WPR during the period 1999-00 to 2011-12. WPR of ST and SC are more developed. In the backward region, SC population has better access to education and skills leading to employability. WPR by Non-SC/ST and SC gradually increased in all region during the period 1999-00 to 2011-12. ST's WPR significantly increased in all region (Except in backward region) during the period 1999-00 to 2011-12. In back ward region ST population has less access to education and skills leading to employability.

Table 3 Percentage share of employment status to total employment, 1999-00 to 2011-12

	1999-00			2011-12		
	SE	**RE**	**CL**	**SE**	**RE**	**CL**
Central Region	43.7	24.5	31.8	41.8	25.5	32.7
East Region	55.7	5.1	39.2	41.1	9.1	49.8
Himalayan	36.7	22.0	41.2	41.3	19.3	39.5
Western Region	53.3	6.8	39.9	49.3	11.7	39.0
West Bengal	48.7	14.9	36.4	42.8	18.3	38.9

Source: *NSSO Unit Level Data, Author own's calculation*

Percentage share of employment's status of different region vis-à-vis West Bengal are presented in Table 3. Percentage share of self-employment is higher than that of the regular employment and casual labour both West Bengal as well as different region during the over all period. Share of regular employment continuously increased in three regions (except Himalayan region) of West Bengal during the period 1999-00 to 2011-12. In the backward region, share of regular employment has been increased from 6.8 percent in 1999-00 to 11.7 percent in 2011-12 but share of self-employment and casual labour declined during the all over period. In this context, more and more employment generated in this backward region than that of other region of West Bengal. Casual labour more generated in Eastern region than that of another region of West Bengal.

III. EMPLOYMENT DIVERSIFICATION FROM FARM TO NFE

Non-farm sector (NFS) plays an important role in reducing the widespread rural poverty through generation of employment and income and creation of effective demand for goods and services. The role of NFS becomes important as it can provide diverse employment opportunities to the rural people and in the process transform the rural economy in the desired direction of inclusive growth (Pal and Biswas 2011).

Table 4 Percentage Distribution of farm employment during 1999-00 to 2011-12

	1999-00		2011-12	
	Farm	**NFE**	**Farm**	**NFE**
Central Region	33.5	66.5	27.1	72.9
East Region	60.9	39.1	50.4	49.6
Himalayan	64.9	35.1	50.6	49.4
Western Region	65.6	34.4	55.3	44.7
West Bengal	50.7	49.3	40.0	60.0

Source: *NSSO Unit Level Data, Author own's calculation*

In West Bengal, most surprising overall share of farm employment declined where it shifted in non-farm employment during the recent years (in Table 4). Percentage share of non-farm employment to total non-farm employment increased from 49.3 per cent in 1999-00 to 60 per cent in 2011-12 in West Bengal during the recent period. Share of non-farm employment was relatively low in Western region than the other region of West Bengal during the period 1999-00 to 2011-12. About 14.3 per cent non-farm worker was in Himalayan than another region of West Bengal (in Table 4).

Table 5 Percentage Distribution within non-farm employment to total non-farm employment by caste during 1999-00 to 2011-12

	1999-00			2011-12		
	ST	**SC**	**Non-SC/ST**	**ST**	**SC**	**Non-SC/ST**
Central Region	2.0	24.8	73.3	0.7	22.9	76.5
East Region	4.8	28.6	66.6	1.3	27.5	71.1
Himalayan	13.7	29.8	56.5	9.1	36.2	54.7
Western Region	12.3	16.7	71.0	4.8	21.0	74.2
West Bengal	4.7	24.9	70.4	1.9	24.6	73.4

Source: *NSSO Unit Level Data, Author own's calculation*

The workers of Non-SC/ST caste have dominated workers of SC and ST caste in the non-farm activity during the recent year (in Table 5). Now ST workers were less in non-farm sector than SC Non-farm worker non-farm worker belonging SC community declined in West Bengal as well as other regions of West Bengal where non-farm worker belonging SC community

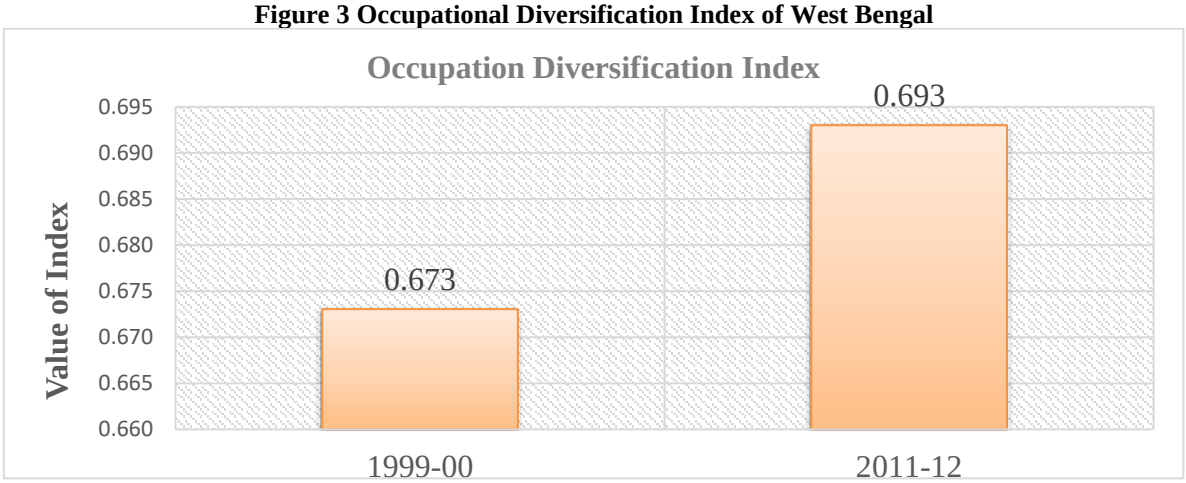
increased in Himalayan and Western region during the period 1999-00 to 2011-12.

Occupation diversifications have been measured with help of Entropy Index. Entropy diversification index is

$$DIE = \sum \left[p_{it} \, X \ln \left(\frac{1}{p_{it}} \right) \right] \text{ when i = Farm \& NFE } \ldots\ldots\ldots \textbf{(1)}$$

Where DIE is the diversification Entropy Index and P_i is proportion of i^{th} rural non-farm sector to total i^{th} rural non-farm employment at time point t, where I = (Farm & Non-farm employment). DIE is expected to increase with increase in the extent of diversification and vice-versa. Higher (lower) is the value of DIE; higher (lower) is the level of diversification.

Figure 3 Occupational Diversification Index of West Bengal

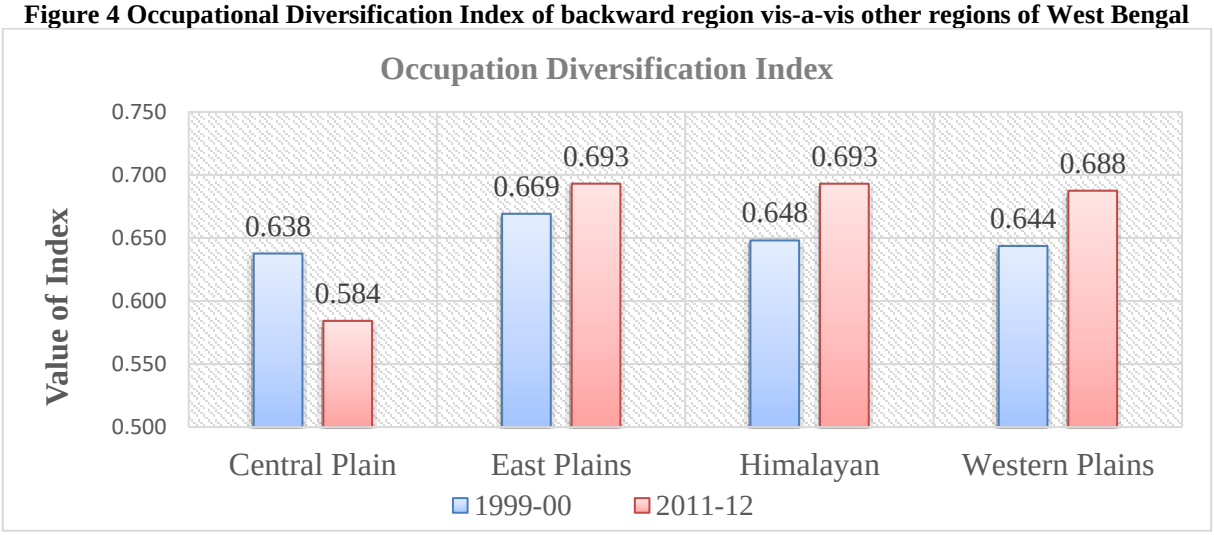


Source: *NSSO Unit Level Data, Author own's calculation*

In figures 3 & 4 we have measured employment diversification index of West Bengal and different regions by using Entropy Index during the period 1999-00 to 2011-12. A higher value of farm and non-farm diversification indicates that worker is becoming more and more dependent on the non-farm sector in West Bengal and all region (Except in Central region). And higher values of employment diversification indicate more diversification of non-farm employment, which implies workers are getting employed in diverse non-farm activities resulting in the transformation of the rural economy.

It would be quite interesting that, whether the increasing employment diversification has resulted in the transformation of employment structure. Transformation indicates for the non-farm employment and farm employment as a whole for the period 1999-00 to 2011-12 reveals significant structural transformation in both non-farm employment and farm employment.

Figure 4 Occupational Diversification Index of backward region vis-a-vis other regions of West Bengal



Source: *NSSO Unit Level Data, Author own's calculation*

IV. STRUCTURAL CHANGE OF THE CONDITION OF EMPLOYMENT

The essential idea of the well-known development patterns is that, as the country grows initially, the economy changes from the farm sector to the industrial sector and in the next stage of development, service sector expands to facilitate the increasing economic development and the economy then shifts towards the service sector. But in India the service sector has outmoded the rural industrial sector because it mainly facilitates the growing agricultural sector (Pal and Biswas 2011). Overall share of secondary sector of West Bengal has been increased from 42.01 per cent in 1999-00 to 48.38 per cent in 2011-12 where overall share of tertiary sector has been declined from58 per cent in 1999-00 to 51.62 per cent in 2011-12 (In Table 6). Relatively higher number of workers has shifted from tertiary sector to

secondary sector within NFE. In rural and urban area, percentage share of secondary sector increased where share of tertiary sector declined during the recent period.

Table 6 Percentage share of NFE to total NFE by different sector of West Bengal

Sector	Total		Rural		Urban	
	1999-00	2011-12	1999-00	2011-12	1999-00	2011-12
Mining & quarrying	0.86	0.86	0.84	0.77	0.90	0.96
Manufacturing	33.59	33.40	39.70	35.04	25.93	31.50
Electricity, Gas & Water	0.79	0.50	0.29	0.15	1.41	0.92
Construction	6.76	13.62	6.92	19.66	6.57	6.68
Secondary	**42.01**	**48.38**	**47.75**	**55.62**	**34.80**	**40.05**
Trade, hotel & restaurant	26.72	20.39	26.31	18.33	27.24	22.75
Transpose, storage & communication	10.93	9.83	10.05	9.08	12.02	10.70
Other service	20.34	21.40	15.89	16.97	25.93	26.50
Tertiary	**57.99**	**51.62**	**52.25**	**44.38**	**65.20**	**59.95**

Source: *NSSO Unit Level Data, Author own's calculation*

Construction is the dynamic sector. We have observed that higher number of workers engaged in construction sector. Eventually, relatively higher number of workers in construction sector has been shifted from other sector in rural area than the urban area during the period 1999-00 to 2011-12. Percentage share of service sector marginally increased during the recent period.

The workers of Non-SC/ST dominated worker of other caste in the non-farm activity during the recent years (In Table 7). Relatively higher number of ST worker engaged in secondary sector as compared to other caste workers during the period 1999-00 to 2011-12. ST worker has been dominated to other caste from secondary sector where other caste workers have been dominated to ST workers from tertiary sector. Higher number ST worker engaged in construction sector than the ST worker and Non-SC/ST workers.

Table 7 Percentage share of non-farm employment to total non-farm employment of social group by different sector of West Bengal

	ST		SC		Non-SC/ST	
	1999-00	2011-12	1999-00	2011-12	1999-00	2011-12
Mining & quarrying	0.8	1.8	1	0.6	0.8	0.9
Manufacturing	33.5	26.8	33.7	31.1	33.6	34.4
Electricity, Gas & Water	0.1	0	0.6	0.2	0.9	0.6
Construction	12.6	26.9	5.9	16.3	6.7	12.4
Secondary	**47**	**55.5**	**41.1**	**48.2**	**42**	**48.3**
Trade, hotel & restaurant	15.9	12.3	29.2	17.7	26.6	21.5
Transpose, storage & communication	11.5	9.7	11.7	12.8	10.6	8.8
Other service	25.6	22.5	18	21.4	20.8	21.4
Tertiary	**53**	**44.5**	**58.9**	**51.8**	**58**	**51.7**

Source: *NSSO Unit Level Data, Author own's calculation*

Structural Change of the condition of Employment

There are three types of employment in backward region of West Bengal as also in each of the production sector (mining & quarrying, manufacturing, construction, electricity, gas & water etc.). We can assign numbers to indicate the quality ranking of the different types of the employment established as Regular Employment (3), Self-employment (2) and Casual labour (1). The structure of employment refers to the distribution of employment across these different categories. Employment conditions improve when workers move from lower quality to higher quality jobs, or when there is favourable change in the structure of employment. Employment structural index is

$$ESI = \sum \frac{w_i x_i}{x_i} \text{ When i } = 1, 2 \text{ and } 3 \quad \text{..... (2)}$$

$$ESI = \sum \frac{w_i y_i}{y_i} \text{ When i } = 1, 2 \text{ and } 3 \quad \text{..... (3)}$$

Where w_i is the quality ranking of status of non-farm employment and x_i and y_i is different status of non-farm employment.

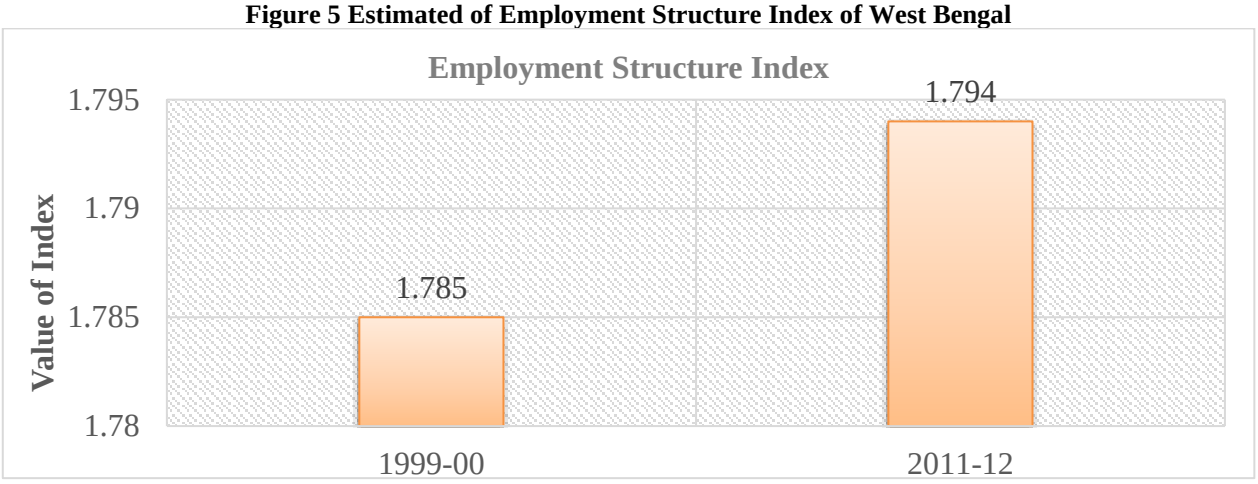
Table 8 Estimates of employment structure index

	1999-00 (x_i)			2011-12 (y_i)		
	RE	SE	CL	RE	SE	CL
Central Region	24.5	43.7	31.8	25.5	41.8	32.7
East Region	5.1	55.7	39.2	9.1	41.1	49.8
Himalayan	22.0	36.7	41.2	19.3	41.3	39.5
West Region	6.8	53.3	39.9	11.7	49.3	39.0
West Bengal	14.9	48.7	36.4	18.3	42.8	38.9
Weight (w_i)	3	2	1	3	2	1

Source: *NSSO Unit Level Data, Author own's calculation*

In Table 9 we have explained the condition of employment structure index in all region of West Bengal using equation 2 and equation 3. There was substantially net movement of worker from jobs in the self-employment and casual labour to jobs in regular employment and jobs in casual employees to jobs in self-employees in West Bengal and other regions of West Bengal during the period 1999-00 to 2011-12. We have estimated ESI of West Bengal and other regions of West Bengal (in Figure 5 and in Table 8). The index constructed by using the information on quality ranking based on Table 13 of different type of employment in West Bengal and backward region. A higher value of the index indicates an improved structure of employment where the result from favourable change in the distribution across employment category. We have also conformed from estimated value of index that overall structure of employment increased in West Bengal. There was favourable change in structure of employment in West Bengal (In figure 5)

Figure 5 Estimated of Employment Structure Index of West Bengal



Source: *NSSO Unit Level Data, Author own's calculation*

In table 9 we have estimated employment structure index in different regions during the period 1999-00 to 2011-12. The value of the employment structure index in central region and western region has also improved but in east and Himalaya region does not improve in this period. So, we can say that there was favourable change in structure of employment, the employment structured index showed a significant rise in central plains and western region of West Bengal. Thus, there was significant overall quality improvement.

Table 9 Estimates of employment structure index of backward vis-a-vis other regions of West Bengal

	Central Region	East Region	Himalayan	Western Region
1999-00	1.926	1.659	1.808	1.669
2011-12	1.928	1.593	1.798	1.726

Source: *NSSO Unit Level Data, Author own's calculation*

V. CONCLUDING OBSERVATION

WPR has been declined in West Bengal vis-à-vis other region (Except in western plains) during post-reforms period. The male WPR has been increased in West Bengal vis-à-vis other regions but female WPR relatively declined. WPR of the general caste is also higher than that of other castes in Backward vis-à-vis other region of West Bengal. WPR of SC and Non-SC/ST has been increased in West Bengal and other caste (accepted in east region) during the recent years. As regards to the status of employment the self-employment is relatively higher in the backward region of West Bengal. Relatively higher number of workers has been transformed from Farm sector to non-farm sector during recent years. The workers of general caste dominate workers of other caste in the non-farm activity during the recent year. The employment structural index showed a significantly increased in Central region and Western region of West Bengal but dominant to Himalayan and East region. There was movement of workers from poorer to better jobs: from self-employment to regular employment and from casual employees to self-employment. Thus, there was significant overall quality improvement.

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