Distributions of income in West Bengal State Government Services

Introduction :

The object of this study is to present some results of investigations into the pattern of income distributions within the West Bengal State Government services from the year 1949 to 1974. An attempt has been made here to evalute, how far the objectives of egalitarianism have been realized in this sector of the economy.

Egalitarian distributions of the gains of economic and social development programmes have always been cherished as one of the main principles of planned development. Already, the attention of scholars has been drawn to the problem of inequality in the distributions and concentration of income. The current endeavour is an attempt to probe into the patterns of distribution of income in the public services in India. Of course, multi-pronged probe into the trends of distributions are essential in all the sectors ; but unfortunately, relevant data for studying them in most of the sectors are yet not enough for undertaking any thorough and comprehensive survey. This study marks the beginning of a large-scale investigation on distribution of wage income within State Government/Central Government/local bodies services in India.

The public service is regarded as one of the major organised sectors of the domestic product. The generation of income in this sector does not constitute a negligible percentage of total domestic product of a state. West Bengal is one of the principal states in the eastern region. Naturally, a study of the trends of distributions of income generated in the Government services in this state should have considerable indicative value. Total number of employees in these services in West Bengal has increased from 106668 in 1949 to 291129 in 1974. We are presenting the summary results of the study in the following sections.

In section one, the sources of data are stated in brief. Section two consist of methods of estimation of the trends of distributions. The results of the calculations and analysis are presented in section three. Section four presents the differentials in consumer price indices and

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their impact on level of living of different categories of employees in these services. Finally, in section five, a few concluding observations are noted. It should, however, be noted that this study forms only a part of a larger project ; so only some vital results are presented here for sake of brevity.

Section 1 : Sources of data

Almost all the State Statistical Bureaus in India conduct regular annual "censuses" of total persons engaged in respective state Government services, collecting data on their basic pay, various allowances and total emolument. These data are published annually by the respective State Bureaus. Thus, the data[1] on census of West Bengal State Government employees and their total emoluments are available by breakdowns of basic pay groups, total emoluments groups, by districts, by Ministries and by various classes of ranks in service from 1949 onwards. These ranks of services are—(a) gazetted, (b) non-gazetted superior and (c) non-gazetted inferior.

Section 2 : Methods of estimation

To study the distributions of income, concentration curves have been drawn on the basis of cumulative percentages of total employment, total basic pay and total emoluments by different ranges of basic pay groups. The concentration curves have been drawn seperately for basic pay distributions and total emolument distributions. Lorenz ratios have been calculated by graphical method on the basis of these concentration curves.

The Lorenz ratios have been supplemented by calculating shares of selected ordinal groups, viz. the bottom 50 percent of employees, the bottom 90 per cent of employees and the top 10 per cent of employees. The above calculations have been made both for all employees as well as for various ranks of employees, viz. gazetted and non-gazetted superior.

But it is very difficult to assess the intertemporal shifts in the size distributions of real wage income, if any. The shifts in the corresponding distributions of wage income at current prices may not be a correct index of shifts in real terms, as it is possible that consumer price movements over time have been different for the various ordinal groups of employees in various ranks in the Government.

This difficulty has been recognized in many previous studies on income distribution [vide Atkinson, 1975].[2] In India, Professor Mohalanobis[3] drew attention to this problem of unequal movements

of cereals prices for different decile groups of population in rural India. This was later corroborated by extensive tabulations of NSS household budget data undertaken for the Government of India Committee on Distribution of Income and levels of living. Iyengar and Bhattacharya considered this problem from the methodological point of view and also reported some evidencess of differential price movements over time in West Bengal.[4] For detailed discussion see Chatterjee and Bhattacharya's[5] paper on disparities in per capita household consumption in India. They were interested in comparing Lorenz curves of the size distribution of consumer expenditure using National Sample Survey household budget data of different rounds conducted over various years ; Iyenger and Bhattacharya[6] had earlier considered this problem from the methodological point of view and also reported some evidence on differential price movements over time in West Bengal. They used the unweighted averages of cost of living index numbers for 23 towns and cities of West Bengal published by the State Statistical Bureau of West Bengal to prove this contention. They pointed out that the stability over time in inequality measures of all-India expenditure distributions at current prices might really mean an increasing inequality in corresponding distributions at constant prices. This idea is clearly of considerable importance, though the relevant data on consumer price indices by levels of living are yet scanty/or unreliable.

Iyengar and Bhattacharya also reported some results obtained earlier by Iyengar, Chatterjee and Sarkar[7] who had utilized N.S.S. house-hold budget data collected from the rural areas of West Bengal during 4th 5th (1952-53) and 13th rounds. They constructed consumer price indices for the 13th (1957-58) round taking 4th 5th round period as base separately for people in different fractile groups based on a ranking in ascending order of per capital expenditure. The consumer price indices fell from about 120 for the bottom fractile groups to nearly 110 for the highest fractile groups.

Such cost of living indices are also available for some later years, as published by the State Bureau. This series has been presented in the section four.

Section 3 : Results of analysis

The Lorenz ratios and the shares of different ordinal groups calculated both for basic pay and for total emoluments are presented in table (1) for different years from 1949 to 1974. The concentration curves are presented only for three years for economy of space, viz. 1950, 1960 and

1974 in Figures I to II. The corresponding data on the cumulative percentage distributions of employment and income are presented in table (2).

It may be noted that the Lorenz ratios systematically declined over time from 0·490 in 1950 to 0·285 in 1974 for the basic pay calculations and from 0·350 to 0·250 for the distribution of total emoluments over the same period. The corresponding changes in the shares of different ordinal groups may also be clearly noticed from this table. Shares of both bottom 50 and 90 per cent declined over this period.

The determinants of the above movements are evident by comparing the left-hand side figures with the figures presented in the right-hand side of the table calculated on the basis of total emoluments. It may be noticed that the Lorenz ratio for emoluments is considerably smaller than that for basic pay. This means that the provision of dearness allowance and various fringe benefits considerably narrowed the disparities in the income distribution. The Lorenz ratios for both types of distributions decreased appreciably over time, the decrease was faster for basic pay. In fact, at the end of the period, Lorenz curves for basic pay and total emoluments were not widely different. However, the reduction in disparities in West Bengal Government services over these years may be partly illusory due to steeper rise in consumer prices for poorer sections of employees and the related segments of total population in this state.

The effects of fringe benefits on the level of disparities of income may be further observed from table (3) containing the Lorenz ratios and shares of selected ordinal groups calculated by breakdowns of two ranks of employees, that is gazetted and non-gazetted superior, adopting the same method as used to calculate table (1). Roughly speaking, Lorenz ratios are about equal for both categories of employees for basic pay, for total emoluments ; Lorenz ratio is somewhat lower for non-gazetted. In both categories, Lorenz ratio declined over time. The share of bottom 50 per cent of employees recorded fluctuating trends over the years covered while the share of top ordinal group declined steadily in in calculations by basic pays. This is also evident from the fluctuating trends of the Lorenz ratios.

In this connection, it may be useful to compare the income shares in the total household consumption expenditure of the same ordinal groups in rural and urban population in India. The following figures are based on N. S. S. 18th round data for the year 1963-64 :

Table (1)

Lorenz ratios and shares of selected ordinal groups for size-distributions of wage-income in West Bengal State Government services in India

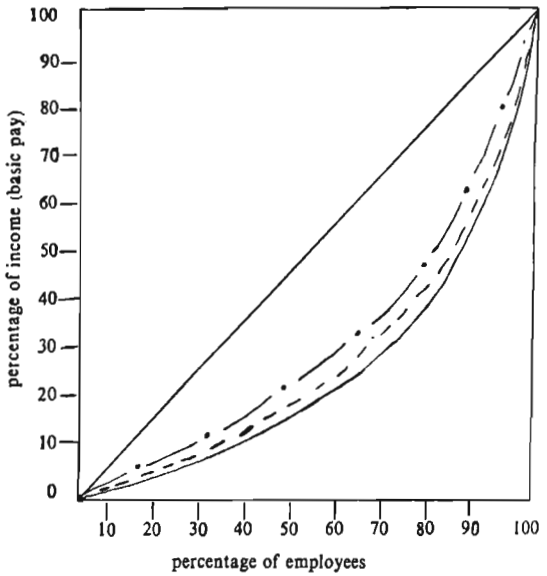
	basic pay distributions				total emolument distributions			
	percentage shares			Lorenz	percentage shares			Lorenz
	bottom 50%	bottom 90%	top 10%	ratio	bottom 50%	bottom 90%	top 10%	ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1949	18	55	45	0·505	26	67	33	0·363
1950	19	58	42	0·490	27	66	34	0·350
1951	20	60	40	0·455	27	68	32	0·340
1954	20	60	40	0·505	22	66	34	0·420
1956	23	64	36	0·440	28	71	29	0·325
1958	22	64	36	0 440	29	72	28	0·315
1959	21	64	36	0·445	28	71	29	0·330
1960	20	63	37	0·460	27	69	31	0·340
1961	20	62	38	0·475	27	69	31	0·355
1962	27	71	29	0·365	27	70	36	0·345
1963	25	70	30	0·375	26	70	30	0·359
1964	24	70	30	0·380	26	70	30	0·350
1965	26	70	36	0·360	29	70	30	0·200
1966	23	70	30	0·380	28	73	27	0·325
1970	25	69	31	0·365	31	76	24	0·278
1971	27	75	25	0·325	32	77	23	0·270
1972	30	76	24	0·293	30	77	23	0·275
1973	30	75	25	0·288	31	77	23	0·260
1974	32	75	25	0·285	33	77	23	0·250

Table (2)

Size-distributions of wages and salaries income in West Bengal State Government services, cumulative percentages

1950				1960				1974			
monthly basic pay groups in Rs.	total staff	total basic pays	total emolu-ments	monthly basic pay groups in Rs.	total staff	total basic pays	total emolu-ments	monthly basic pay groups in Rs.	total staff	total basic pays	total emolu-ments
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
0....	1·10	—	9·81	0·...	4·97	—	1·26	0....	3·34	—	0·56
1—20	33·42	10·34	10·54	1—25	25·34	5·69	11·40	1—75	4·45	0·30	1·06
21—40	67·07	29·64	40·13	26—50	49·59	20·39	27·79	76—100	4·60	0·36	1·15
41—60	79·20	42·32	52·52	51—75	74·57	41·21	50·03	101—150	19·52	9·04	10·64
61—80	87·09	54·00	63·33	76—100	83·87	52·74	61·10	151—200	50·41	30·63	32·97
81—100	90·55	54·07	68·92	101—150	91·70	66·80	73·43	201—250	65·53	45·16	47·39
101—150	95·17	66·22	78·87	151—200	95·65	76·41	81·59	251—300	75·06	55·58	57·75
151—200	97·08	73·63	83·94	201—250	97·35	82·04	86·29	301—400	89·53	75·15	76·92
201—250	98·18	78·75	87·50	251—300	98·21	85·51	89·04	401—500	94·97	85·15	86·51
251—300	98·69	81·73	89·45	301—400	99·08	89·91	92·35	501—700	98·34	93·01	93·76
301—350	98·91	83·31	90·44	401—500	99·29	91·31	93·33	701—1000	99·46	96·77	97·16
351—400	99·15	85·26	91·64	501—700	99·68	94·38	96·16	1001—1500	99·87	98·82	98·97
401—450	99·28	86·42	92·36	701—1000	99·85	96·37	97·62	1501—2000	99·97	99·51	99·58
451—500	99·40	87·66	93·08	1001—1500	99·96	98·34	98·98	2001—3000	99·99	99·97	99·82
501—600	99·56	89·46	94·14	1501—2000	99·97	98·70	99·22	above 3000	100·00	100·00	100·00
601—700	99·67	90·94	95·02	2001—3000	99·99	99·30	99·58				
701—800	99·78	92·62	96·04	above 3000	100·00	100·00	100·00				
801—900	99·82	93·36	96·50								
901—1000	99·85	94·03	96·88								
1001—1250	99·89	94·87	97·36								
1251—1500	99·93	95·91	97·92								
1501—1750	99·95	96·49	98·24								
1751—2000	99·96	97·03	98·51								
2001—2250	99·97	97·39	98·69								
2251—2500	99·97	98·52	98·75								
2501—2750	99·98	98·24	99·09								
2751—3000	99·98	98·63	99·27								
above 3000	100·00	100·00	100·00								

Figure I : Distributions of income in West Bengal State Government services : 1950, 1960, 1974.



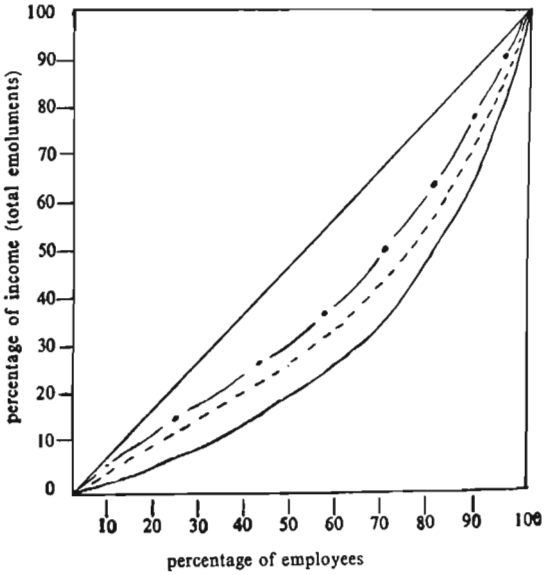
Basic pay distributions

1950 _____

1960 .....

1974 _ . _ . _ .

Figure II : Distributions of income in West Bengal State Government services : 1950, 1960, 1974.



Total emolument distributions

1950 _____

1960 .....

1974 —.—.—.

Table 3

Lorenz ratios and shares of selected ordinal groups for size-distributions of wage-income in West Bengal State Government services by ranks of employees

year	basic pay distributions				total emolument distributions			
	percentage shares			Lorenz ratios	percentage shares			Lorenz ratios
	bottom 50	bottom 90	top 10		bottom 50	bottom 90	top 10	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				(a) gazetted				
1950	23	66	34	0·395	27	69	31	0·355
1951	27	69	31	0·355	29	72	26	0·320
1952	25	68	32	0·405	28	70	30	0·365
1962	31	73	27	0·300	31	74	26	0·290
1963	30	75	25	0·275	31	75	25	0·270
1964	31	78	26	0·280	33	74	26	0·270
1965	31	74	26	0·295	32	25	25	0·275
1966	30	73	27	0·295	32	72	8	0·280
1967	30	75	25	0·200	33	76	24	0·270
1968	32	76	24	0·275	35	76	24	0·230
				(b) non-gazetted inferior				
1951	25	70	30	0·370	32	75	25	0·200
1952	25	69	31	0·370	29	74	26	0·320
1962	30	76	24	0·310	32	79	21	0·260
1963	33	76	24	0·265	34	78	22	0·250
1964	31	78	22	0·285	33	79	21	0·255
1965	34	78	22	0)240	37	79	21	0·215
1966	34	78	22	0·245	34	79	21	0·230
1967	32	78	22	0·255	36	70	22	0·225
1968	30	76	24	0·286	35	01	19	0·205

urban	rural
bottom 50% = 25	30
bottom 90% = 69	75
top 10% = 32	25

Comparing the above shares of total consumer expenditure of total population—urban and rural—with the wages and salary income of the employees in the West Bengal State Government services, a close similarity becomes quite evident.

In view of the impact of differential consumer price movements over time on various categories of earners, it is difficult to compare the trends of distributions of income between ranks, more so over time. In table (4), we have presented only the shares of each rank of employees in the total employment in these services in West Bengal.

The above table shows the disparities in income within particular ranks. It also indicates, even if vaguely, the general movement in disparity within the ranks in its turn, may influence the specific nature of disparities among different ranks. Clear indications of increase of the shares of gazetted and non-gazetted inferior ranks of employees are observed which increased from 2.26 and 24.75 to 3.12 and 31.53 respectively from 1949 to 1967. Reverse trends are noted in the share of non-gazetted superior rank which declined from 72.79 per cent to 65.35 per cent over this period. On the other hand, disparity in average income within each rank of employees is indicated by a comparison between the movement of the shares of employment and average income in each rank of employees intertemporally.

The indexes of the total emoluments of the two ranks of non-gazetted employees with base as the total emoluments of gazetted ranks of employees have increased considerably over this period. However, here also, the trends of disparities are somewhat confusing due to differentials in consumer price movements of various expenditures levels of households. This fact may be noted from table (5) presented below.

Section 4 : Impact of price differentials on measures of inequality

An attempt is made in this section to indicate the impact of price differentials in order to illustrate the difficulties in measuring inequalities in real income between different ordinal groups intertemporally. Data on consumer price expenditure by breakdowns of various expenditure

Table (4)

Percentage distributions of employment, average emoluments and index of average emolument between ranks

year	percentage of employees			average emoluments in Rs.			index of average emoluments		
	gazetted	non-gazetted superior	non-gazetted inferior	gazeted	non-gazetted superior	non-gazetted inferior	gazetted	non-gazatted superior	non-gazetted inferior
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1949	2·26	72·79	24·95	624·13	106·76	50·78	100·00	17·11	8·14
1950	2·23	72·15	25·62	622·20	108·51	50·09	100·00	17·44	8·05
1951	2·12	72·47	25·41	640·22	116·61	51·29	100·00	18·21	8·01
1952	2·22	70·71	27·07	618·81	128·61	53·11	100·00	20·78	8·58
1954	2·45	69·61	27·94	602·55	118·64	52·88	100·00	19·69	8·78
1962	2·76	64·44	32·79	586·59	138·77	62·52	100·00	23·66	10·66
1963	2·82	64·97	32·21	604·94	138·28	63·27	100 00	22 66	10 46
1964	2·91	65·04	32·05	616·50	145·48	67·41	100·00	23·60	10·93
1965	3·07	64·35	32·58	650·95	166·29	75·77	100·00	25·55	11·64
1966	3·13	66·97	29·90	680·78	163·07	89·63	100·00	23·95	13·17
1967	3·12	65·35	31·53	721·77	194·97	102 95	100·00	27·01	14.26

levels are available for West Bengal. These data are presented in table (5) for the available period.

Table (5) comprises unweighted average cost of living indices for 23 towns and cities of West Bengal published by the State Statistical Bureau of West Bengal. Unfortunately, these cost of living indices are available only for five income classes of population for the earlier years with the year 1950 as the base, which are :—

Rs. 1 — Rs. 100
Rs. 101 — Rs. 200
Rs. 201 — Rs. 300
Rs. 301 — Rs. 350
Rs. 351 — Rs. 700
Rs. 700 and above.

Later, these indices have been published by three income classes only, that is upto the group Rs. 201 to Rs. 350 and the base year has been shifted to the year 1960.

It is noted from the table that average cost of living indices increased with the level of household expenditure in the years 1954 and 1955. This trend showed a reverse movement thereafter and the indices registered a downward movement with rising expenditure levels.

Section 5 : Conclusion

Changes in the size-distributions of income are noticeable in the West Bengal State Government services, as indicated by the shifts in the Lorenz ratios from 1942 to 1974. However, it is difficult to study the inter-temporal changes in disparities conclusively, as there is paucity of data on fractile-group specific consumer price indexes to detect the shifts in real income shares of different ordinal groups.

On the other hand, the changes in the size-distributions of income over time, are not always represented through the data on consumer price indices. It is noticed from table (2) that size distributions of income in West Bengal Government services changed appreciably over the period from 1950 to 1974.

Table (5)
Average cost of living indices for 23 towns and cities of West Bengal, by levels of monthly household expenditure in Rs.

base : 1950=100

year	1 — 100	101 — 200	201 — 350	351 — 700	700 and above
(1)	(2)	(3)	(4)	(5)	(6)
1954	91·2	92·6	93·8	95·1	96·2
1955	89·2	92·6	91·7	93·1	94·3
1956	96·1	96·4	96·3	96·7	96·9
1957	102·2	101·8	101·0	100·7	100·5
1958	107·8	107·0	105·8	105·6	105·2
1959	107·7	107·4	106 6	106·7	106·6
1960	109·6	109·5	108·5	108·5	108·1
1961	109·8	110·2	109·7	110·1	109·9
1962	116·5	116·1	114·8	114·4	114·0
1963	125·6	124·0	121·1	119·7	123·6
1964	129·8	128·4	126·1	124·7	123·1
1965	141·4	139·9	125·8	134·7	132·2
1966	151·3	156·7	151·9	147·8	143·6
1967	192·87	186·3	177·4	170·0	160·6
1968	201·36	195·0	176·8	176·9	167·8
1969	191·93	187·8	180·2	174·7	167·5
1970	204·0	202·6	189·9	—	—
1971	209·9	204·4	186·3	—	—
		base : 1960 = 100			
1972	204·4	199·9	193·9	—	—
1973	215·7	227·6	219·1	—	—
1974	281·7	294·5	279·4	—	—
1975	297·5	289·5	278·3	—	—
1976	276·5	281·5	273·0	—	—

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