An Assessment of Economic Inequality in the District of Purulia, West Bengal, India

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ABSTRACT

Unequal access to resources, employment and income along with its trend of steady magnification results into multiple social and economic depreciations. The issue of income inequality at macro level, i.e. national and state level has been well focused whereas analysis of micro-level disparities in this aspect has yet to be explored significantly. The development plans, at presents, rely on decentralized planning processes where the micro level sectoral and spatial variation of income should be given importance. Purulia district is one of the most backward districts in West Bengal in perspective of all the dimensions of human development accompanied with the income inequality at a considerable magnitude. The present study attempts to assess the intra-district income inequalities between different social, ethnic and religious classes. The study analyses the profiles of income distributions of different competitive classes carefully. It also plotted the relative deprivation curve. The result of the analyses has been critically discussed for an amicable conclusion.

Keywords: Disparities, well-being, human resources, working classes

The present paper aims to assess the economic inequality in the district of Purulia. However, the discussion of the present economic inequality remains incomplete except a brief review of the literature regarding the changing scenario of 'man-society-environment' relationship in the district which is intrinsically linked with the prevailing scenario of economic inequalities in the district. The district (*extends between 22.70295⁰ N to 23.71335⁰ N latitude and 85.82007⁰ E to 86.87508⁰ E longitude, covering a total area of 6259 sq. Km and accommodates 2,930,115 populations with an average population density of 468 persons per sq. Km as per the record of Census of India, 2011*) is attributed with its unique physio-ecological setting. However, this uniqueness experiences a gradual change due to the continuous human intervention over the natural set-up. This process of human intervention leads to drastic transformation in the sustainable 'man-society-environment' relationship established and nourished by the aboriginal communities in this district, mainly learned through the 'trial and error' method, being harmonized with the ethics of forest based livelihood from the distant past.

Physiographically, most part of the district is included in the first step of the gradual descent of the elevated plateau of Chotanagpur proper towards the Gangetic alluvial plain and also a part of Ranchi peneplain. The hills and valleys dominate the districts bordered by Hazaribag and Santhal Parganas at the north, to the south by Singbhum (Coupland, 1911). Almost all the province of pre-colonial Purulia (i.e. the then Manbhum) was covered with moist tropical deciduous forest characterized by tall trees rising up to 40 meters to form the top-most layer of canopy, a lower second storey of many species with some evergreens; and a mantle of shrubs below, entangled by a network of climbers (West Bengal District Gazetters: Purulia, 1985). After all, this natural forest was intimately linked with the indigenous tribal people and the forest fringe dwellers of the district. (Mahato, 2016).

This scenario began to change during the first few decades of nineteenth century. The imbrications of economic policies by ruling East India Company led to a large scale forest clearance (accompanied with the carnage of wild animals) targeting the extension of agricultural land made a havoc ecological transformation in this area (Mohapatra, 1991). This process was further stimulated by the establishment of Bengal-Nagpur Railway through Kharagpur and Jhargram in 1898, followed by a narrow gauge tract between Purulia and Ranchi in 1908 (Coupland, 1911). The opening of railway link made the interior part of the forest land including Purulia (i.e. the then Manbhum) to become more accessible which made the ecological set-up vulnerable and exposed opportunities for exporting of forest resources without any kind of scientific supervision (Directorate of Forests, W.B. 1964). Successive modification of the colonial forest policy made the forest and forest-fringe dwellers, especially the tribal communities to loss their traditional rights on forestland by the end of nineteenth century (Damodaran, 2002). Thus, forest resource based livelihood faced a severe challenge. The responsibility of sustainable utilization of forest resource was thus snatched away from the foster community, empowering the '*zamindars*' (i.e. the Land Lords) who actually acted as the intermediaries between the colonial rulers and the local communities. The hunter-gatherer indigenous people like the Santals, Savars and Birhors could not assimilate themselves with the changing scenario and became ecological refugees (Mahato, 2010).

The district of Manbhum was included within the province of Bihar during the independence of India. As the consequence of the movement of Bengali speaking peoples at the major portion of the district, the areas under 16 Police Stations were included with West Bengal as the district of Purulia vide the Bihar and West Bengal (Transfer of Territories) Act, 1956 on 1st November, 1956. Purulia got the recognition of new district, separated from Manbhum, however, the mineral resource affluent and mine based industry prospective areas were excluded from it to face a new economic challenge for the peoples of Purulia. Post-independent Purulia experiences a rapid growth of population. Around 15% decadal growth rate of population found for the decades of 1951-61(16.33%), 1961-71(17.86%),

1971-81(15.65%), 1981-91(20%), 1991-2001(14.02%) and 2001-2011(15.52%) as reflected in the Census of India in different years. This addition of a high volume of population adds surplus pressure on land and forests in the districts. Forests were cleared rapidly to remit the growing demand of agricultural land and establishing settlement. As a result, the extensive forest coverage has been gradually transforming into isolated forest patches, dissected by human settlement and agricultural tracts. 1159 Km^2 of forest covered area (i.e. 18.51% of total area) of the district in 1991 (W.B. State Forest Report, 2006-07) has been reduced to 750.48 Km2 (i.e. 11.99% of total area) in the year of 2011 (Economic Review, W.B. 2010-11). Most part of the agricultural fields are characterized by shallow to moderately deep loamy red lateritic soil (including the very shallow gravely loamy red lateritic soil at hill slopes) with least water holding capability and insufficient humus content. Under this soil condition, the agricultural output has limited scope to be increased through enhancing the productivity of the soil with proper management. Moreover, only 711.3 Km^2 area (11.37% of total area) of the district is facilitated with irrigation Agriculture Contingency Plan, 2011); hence, in most part of the district the agriculture is a seasonal activity which is absolutely dependent to the 'whimsical' monsoon rainfall.

The labour surplus theory of Lewis, Fei and Ranis (Lewis, 1958; Fei & Ranis, 1961) still forms the fundamental concept to explain the internal functions within a traditional subsistence agricultural sector. Increasing trend of population results into gradual overcrowding at the rural agricultural fields of occupation which leads to gradual declination of per capita food production due to natural constraints in the productivity and spatial limitation of the land. As a result, the marginal productivity of labours in this sector declines ultimately falling to zero, that is, if a labourer is removed from his job in agriculture, the production does not declines, that is, his contribution in the production system was zero (Lewis, 1958; Fei and Ranis, 1961). The existence of such excess labours signifies disguised unemployment. It can be identified by the more rapid growth of non-working population volume than that of the total population volume.

Table 1 shows a detailed information of the decadal change of population itself and the different working

Table 1: Decadal change of total population as well as main, marginal and non-working population in different blocks of Purulia district during census year of 1991, 2001 and 2011

Blocks	Rate of decadal change (in %)							
	Population		Main workers		Marginal workers		Non-workers	
	1991 to 2001	2001 to 2011	1991 to 2001	2001 to 2011	1991 to 2001	2001 to 2011	1991 to 2001	2001 to 2011
Arsha	15.39	19.81	-18.93	-2.15	167.16	30.36	140.35	27.09
Bagmundi	13.70	20.57	-12.98	-19.67	145.27	45.75	135.35	34.22
Balarampur	14.34	17.91	-16.48	-10.64	66.20	42.77	160.06	22.80
Barabazar	7.76	16.61	-36.79	3.82	289.08	20.64	128.46	21.33
Bundwan	14.58	6.26	-8.48	-41.15	198.75	55.53	127.52	22.46
Hura	12.06	12.66	-22.61	-3.34	130.49	38.87	138.12	9.87
Jhalda - I	17.01	10.38	7.11	-28.14	95.49	25.58	144.93	31.45
Jhalda - II	18.17	9.78	-2.53	-5.66	155.18	-8.07	141.09	28.53
Jaipur	18.03	10.13	-15.51	-13.85	115.95	-5.63	140.86	28.58
Kashipur	13.65	5.65	-36.70	-6.78	338.54	23.45	163.49	3.34
Manbazar - I	8.55	13.28	-34.02	-19.48	160.15	55.76	148.52	9.40
Manbazar - II	7.98	13.97	-28.65	-16.59	201.41	54.39	128.09	12.95
Neturia	1.64	6.92	-29.34	-0.41	260.66	28.91	129.67	3.54
Para	15.87	3.26	-22.03	-7.03	233.33	16.29	167.44	2.81
Puncha	12.17	14.54	-25.62	6.74	238.57	59.00	153.98	1.36
Purulia - I	14.39	16.10	-11.92	-17.97	110.63	45.48	151.21	22.04
Purulia - II	16.50	10.62	-15.46	-17.07	154.74	36.05	150.26	13.59
Raghunathpur - I	26.10	3.11	-22.42	0.72	485.19	-14.51	191.26	9.60
Raghunathpur - II	4.46	28.58	-32.30	15.40	246.08	46.29	142.89	27.83
Santuri	9.42	4.31	-9.16	-13.86	153.95	0.59	132.19	13.22
Total	**13.22**	**12.08**	**-20.49**	**-10.86**	**173.71**	**29.37**	**146.43**	**16.24**

classes for the last two decades in different part of the district. The population of the district gets a moderate positive increase for both the decades of 1991-2001 (13.22%) and 2001-2011 (12.08%). On the other hand, the main working population has been decreased by 20.49% between 1991-2001; and by 10.86% between 2001-2011 decade. On contrary, both the marginal and non-working population have been increased drastically between 1991-2001 and at a comparatively slow pace during 2001-2011. However, there is a considerable difference at block levels regarding the rate of change of population and its different counter parts which may take a very important role in determining the spatial distribution pattern of income and economic well-off throughout the district.

The gender specific trend of work participation and its change during last three decades has clearly been reflected in Fig. 1. The block wise data of the male population of the district, when plotted on a triangular diagram, shows (*see* Fig. 1a) that around 45-55% were main workers; and there are less than 10% of male population of every blocks who were enumerated as marginal workers; rest were (mainly children and old) seen as non-working males. But the scenario changes rapidly for the following decades. The share of marginal workers in the male population increase gradually compensating the share of main workers with retaining the non-working population share nearly constant (somehow between 40 to 50% of the males). Moreover, all the twenty blocks in the district shows a similar kind of trend altogether regarding this phenomena. The similar trend is similarly found for the case of female working population also (*see* Fig. 1b). More than half of the female population of every blocks were enumerated as non-workers during 1991 and some of the blocks dominated with non-tribal population e.g. Raghunathpur I & II, Neturia, Santuri, Para etc shows more than two third of the female population as non-workers. Whereas, the majority of the remaining working
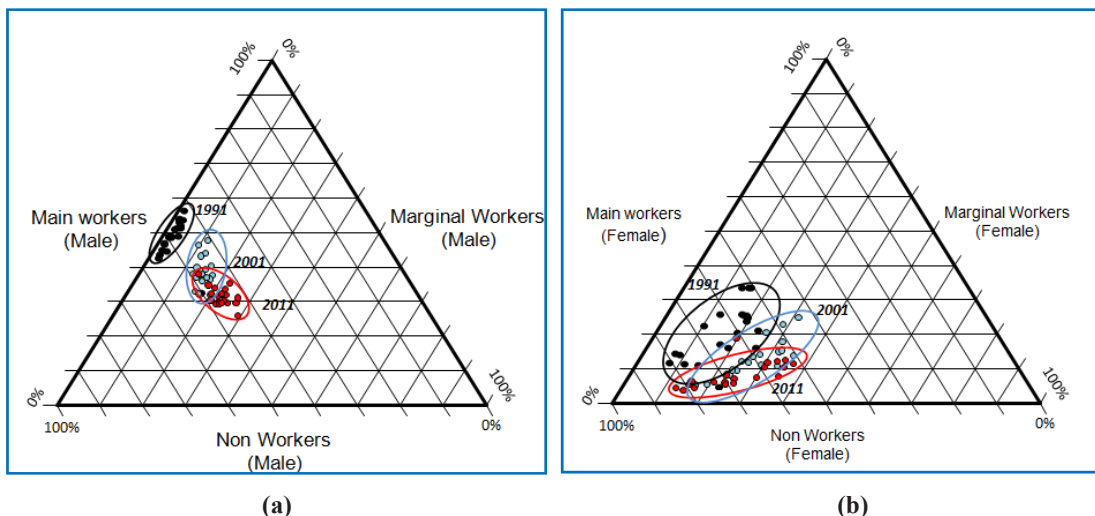
Fig. 1: Share of main, marginal and non-working population among (a) male and (b) female population in the district of Purulia during Census Years 1991, 2001 and 2011 (Data source: Census of India, Different years)

female were marginal workers during 1991 census. But the share of marginal workers within female population increases rapidly with a decrease in main workers' share is viewed clearly data of the following two consecutive census years of 2001 and 2011.

The prolonged periods of absence of strong and scientific decision making and imbrications of rational economic policies for the district has made it an area with unequal opportunities of income and employment between different social classes residing in the district. This motivates the effort of assessing the extent of economic inequality in the district that may support the orientation of future socio-economic planning and policies.

METHODS OF ASSESSING INCOME INEQUALITIES

Analysis of income distribution

The annual per capita income data collected through the household survey are fitted with normal distribution and the curve for each of the targeted attributes and interpreted accordingly. This has efficiently exhibited graphically the differences in income distribution between different social, religious classes and genders to identify the areas of considerably higher magnitude of differences that requires careful observations and further investigation.

The distribution of income of the individuals is assumed to follow the normal distribution which is expressed as:

$$P(X) = \frac{1}{\sigma\sqrt{2\pi}} e^{\frac{-(x-\mu)}{2\sigma^2}} \qquad \dots (1)$$

Where, X = Values of continuous random variable; μ = Mean of the normal random variable; σ = Standard Deviation of the normal random variable; e and π = Mathematical constant.

Now, considering the area under the curve corresponding to a normal distribution equal to unity, regardless of the particular number of observations involved, the equation of a normal curve corresponding to a particular distribution that is independent of N with a given value of sample mean (X) and sample standard deviation (σ) is thus given by,

$$y_i = f(x_i) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\left(\frac{x_i - \bar{X}}{2\sigma}\right)^2} \qquad \dots (2)$$

Therefore, the relative frequency (f_R) of a class having class-width of Δx, fitted with the normal distribution corresponding to given X and σ can be given as:

$$f_R, x \sim (x + \Delta x) = \frac{1}{\sigma\sqrt{2\pi}}\left[e^{-\left(\frac{(x+\Delta x) - \bar{X}}{2\sigma}\right)^2} - e^{-\left(\frac{x - \bar{X}}{2\sigma}\right)^2} \right] \qquad \dots (3)$$

Hence, the theoretical frequency (f_E) fitted with the normal distribution of the same class can be calculated through multiplying the total of observed

frequency (f_O) with the calculated relative frequency (f_R) for the target class as:

$$f_E, \left[x \sim (x+\Delta x)\right] = \left(f_R, \left[x \sim (x+\Delta x)\right]\right)\left(\sum_{i=1}^{n} f_o i\right) \quad \dots(4)$$

Inequality and the relative deprivation

The classical definition of relative deprivation can be given by referring Runciman (1966) as 'the magnitude of a relative deprivation is the extent of the difference between the desired situation [e.g., the income of the richer] and that of the person desiring it'. Let, the relative deprivation of an individual with income $Q(p)$, when comparing himself with another individual with income $Q(q)$, be given by (following Duclos and Gregoire, 2001):

$$\delta(p,q) = \begin{cases} 0, & \text{if } Q(p) \geq Q(q) \\ Q(q) - Q(p) & \text{Otherwise} \end{cases} \quad \dots(5)$$

Now, assuming p_x as different percentile value of the distribution of income for the present study, the relative deprivation curve can be computed along those percentiles as,

$$\overline{\delta}(p_x) = \int_0^1 \delta(q, p_x) dq \quad \dots(6)$$

DATA & SOFTWARE

Primary data collection

The present study used the primary data collected through household surveys constructed using a pre-printed survey schedule. The district of Purulia is constituted of 20 Community Development Blocks (i.e. C.D. Blocks) and a total of 170 Gram Panchayats (GPs) within the administrative jurisdiction of these blocks.

There are also three urban municipalities in the district. The survey was designed to estimate simple proportions without any cross-classifications in a large population by collecting the samples randomly from each C.D. Block, provided that the sample is distributed at least one census village in each of 170 GPs and one municipal ward of each of three urban municipalities of the districts ensuring the representation of the entire study area. The sufficiency of the collected sample size from each unit was validated by using the following formula (Australian Bureau of Statistics, 2016):

$$n_x \geq \frac{\left(Z_{1-\alpha}\right)^2 \left(\dfrac{p_E}{p_x}\right)\left(1 - \dfrac{p_E}{p_x}\right)}{c^2} \quad \dots(7)$$

where, n_x is sample size for × set of population; $Z_{1-\alpha}$ is the Z value at α significance level; p_x is the population within set x; p_E is the expected population having the attributes which are being estimated from the survey; and c is the confidence interval.

For the present study, the ratio $\left(\dfrac{p_E}{p_x}\right)$ was assumed to be unknown and was set to 0.5 (i.e. 50%), as this would produce a conservative estimate of variance. The value of Confidence Interval (c) was set as 0.05. The coordinates of all the surveyed villages (will be mentioned as 'sites' in the following part of the paper) were recorded with the help of a GPS handset for the purpose of plotting the data with GIS Software platform (*See Fig. 2*).

Sources of secondary datasets

The Census of India provides required dataset for generating required variables associated with the statistical estimation of the level of Human Development in different part of the district of Purulia. The datasets of Census of India 2001 and 2011 has been utilized for the analysis of a decadal changing pattern of development perspective in the district.

Software used

The statistical analysis has been operated with MS Excel v2007 (*Microsoft Corporation*) and SPSS v17.0 (*IBM Analytics*). D.A.D. v4.6 (*A software for distributive analysis, developed by Jean-Yves Duclos, Abdelkrim Arrar and Carl Fortin, funded by International Development Research Centre, Govt. of Canada*) is used for the plotting of Relative Deprivation Curve.

RESULTS AND DISCUSSION

Inequality between different caste & categories

The income inequality in varying degree among different social classes is a common phenomena in each and every part of India. The sample population of the district has been classified into four broad categories, i.e. General, Other Backward Classes (OBCs), Scheduled Castes (SCs) and Scheduled Tribes (STs) and the income distribution within each

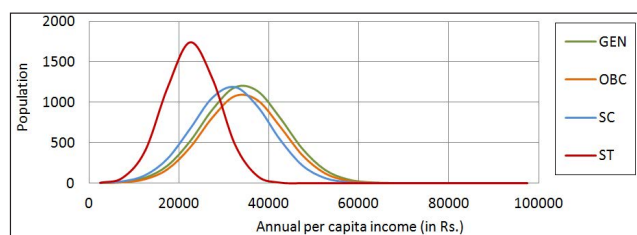category has been fitted with the normal curve (*see* Fig. 2).

Fig. 2: The distribution of annual per capita income fitted with normal curve within different categories of sample population in Purulia District

Within the district of Purulia, there is a predominance of the hereditary skills in occupation and the inter generational shift of occupation is found more frequent at the lower edges of economic classes and mostly among the tribal peoples residing within the district. There is a sharp difference of income and occupation between the tribal and non-tribal population in the district of Purulia. The data collected from the sample survey (*see* Table 2) shows that the average per capita income among the tribal population is around ₹ 22800 annually where as the households belong to the non-tribal population have the average per capita income more than ₹ 31000 annually.

Table 2: Annual per capita income among different caste & categories in sample population

Class	Annual per capita income (₹)			
	Minimum (X_{MIN})	Maximum (X_{MAX})	Mean (σ)	SD (μ)
General	2650	167833	34325.15	8968.89
OBC	2500	132550	34236.61	8569.56
SC	1633	133600	31679.95	8447.48
ST	1638	96300	22801.67	5838.98

Not only the difference in per capita income, rather the values of standard deviation of the income is also a figure that seeks due consideration. The values of standard deviation of income among the tribal population is calculated as ₹ 5838.98 where as it is around ₹ 8500 for the non-tribal population. The income among tribal population with low mean income and low standard deviation indicates a greater participation of this group of population to the lower edge of economy and there is a lower scope of gaining better income for the population in this group if the present occupational pattern

is followed hereditary. On the other hand there is a wider income range for the non-tribal sample households, indicating the existence of a greater intra-group inequality as well as diversified opportunity of income and occupation.

Inequality between different religious groups

The religious groups of the district exhibit a significant differences in income distribution pattern in the district. The data of the Census of India, 2011 states that district is mostly the abode of peoples belongs to the religious groups like Hinduism (80.99%) and Islam (7.76%); whereas the Christianity, Buddhism, Jainism and Sikhism and other organized religious group in together cover only 0.43% of the total population, leaving 10.55% of the population of the district who belong to the traditional tribal religious belief which involves ancestor worship or the worship of spirits of natural features like the tribes of other part of the country (NCERT, 2009); and needless to say that there is one more thing common also: the tribal population are under constant pressure from the major organized religions (Heitzman and Worden, 1995). Some of this pressure is intentional, as different missionaries work among tribal groups to gain converts.

Table 3: Annual per capita income among different religious groups in sample population

Group	Annual per capita income (₹)			
	Minimum (X_{min})	Maximum (X_{max})	Mean (σ)	SD (μ)
Hindu	1633	167833	34467.18	8810.52
Muslim	2288	89160	26987.66	7081.65
Tribes	1638	96300	22301.90	5640.68
Others	8020	105367	38060.40	9790.51

However, most of the pressure, comes from the process of integration within a national political and economic system that brings tribes into increasing contact with other groups with different and 'prestigious' belief systems. Practically, the tribal population of the district has made the transition away from hunting and gathering and toward sedentary agriculture or mining activities as low-status labourers find their ancient religious forms in decay and those places are being filled by practices of different organized religious beliefs. However,

the tribal religious groups are lagged behind by any other religious groups in the district in terms of the economic status.
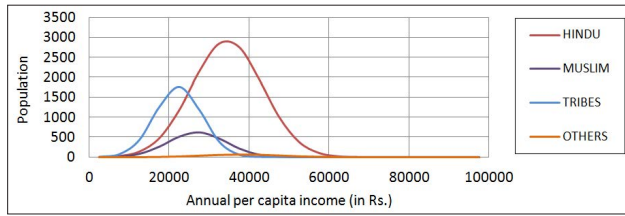

Fig. 3: The distribution of annual per capita income fitted with normal curve within different religious groups of sample population in Purulia District

The sample household data (*see* Table 3) shows that the mean per capita income annually for the tribal population of the district is as low as ₹ 22301 where this is ₹ 26987 for Muslims, ₹ 34467 for Hindus and remarkably ₹ 38060 for the population belong to other religious groups. Besides, the standard deviation of income is the lowest for the tribal and highest for the 'others'. This 'other' religious group in the district shows a wider range of income distribution (*see* Fig. 3); within which, the lower edges of income is generated by mostly tribal population converted to Christians or Buddhist as well; where, the upper end of the income are gained by the medium to large scale business families of Sikh or Jain religious group whose ancestors have migrated into the district from outsides the states.

On the other hand, the higher incoming households of the tribal families are mostly found receiving the income from salary by rendering services to Government Offices or Government aided institutions. The income distribution among Muslims shows a relatively worse scenario than that of the Hindus and other non-tribal religions residing in the district evidenced by the upper extreme of the per capita income within this religious group is even lower than that of the tribal sample households. The issue of lower per capita income among Muslims may be linked with the high population growth within this religious group in comparison with other religious groups in the district. The Census of India (1991, 2001 and 2011) data shows (*see* Table 4) that the growth rate of the among Muslims in the district is considerable higher than that of the average population growth rate in the district since 1991. The higher growth rate results into a higher dependency ration which ultimately come into

force of lowering the per capita income figure of the Muslim religious group in the district.

Table 4: Population growth rate among different religious groups in the sample population

Religious groups	Population			Growth (%)	
	1991	2001	2011	1991 to 2001	2001 to 2011
Hindu	2023143	2116037	2373120	4.59	12.15
Muslim	133119	180694	227249	35.74	25.76
District	2224577	2536516	2930115	14.02	15.52

The gender gap of income

The data from the household survey also reveals that there is considerable gap of income between the two genders in the district (*See* Fig. 4).
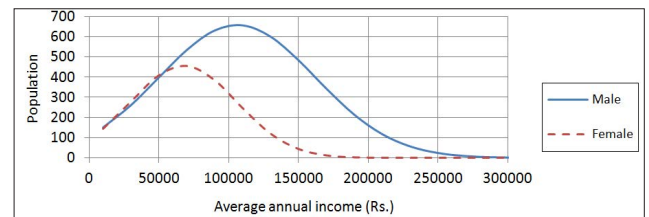

Fig. 4: Distribution of male and female working population by the average annual income contributed to the household

Table 5: Average income of the incoming persons in the sample households annually

Gender	Average income of the incoming persons annually (₹)			
	Minimum (X_{min})	Maximum (X_{max})	Mean (σ)	SD (μ)
Male	9650	439800	106117.00	55687.26
Female	8300	202900	67762.53	37616.81

Table 5 shows that the mean value of the average income generated by male working population (i.e. ₹ 106117) is far higher than that of females (i.e. ₹ 67752); and, the range of income of male working population is also wider than that of the females. Like the other parts of India, the district of Purulia also witness the deprivation of unorganized labourers form wages; and, a degree of injustice is reported by the respondents to happen in the wage and employment of female marginal workers engaged in agricultural, household, construction or mining sectors in different parts of the district. The female marginal workforce are mainly utilized for the low-end daily wage based jobs; and, moreover

the female labourers are paid lower amount of wage than that of the male workers engaged in the same sector and performing the job with similar status of skills and labours.

The inequality of income among different field of workers

Another issue in this concern is the mode of participation of the population in income generating process. The working population are classified into two broad categories – main and marginal workers. The two categories has been ascribed as their nature of involvement to the economy. Ministry of Statistics and Programme Implementation, Govt. of India has defined 'main workers' as 'those workers who had worked for the major part of the reference period (i.e. 6 months or 180 days) or more'; and 'marginal workers' as 'Those workers who had not worked for the major part of the reference period' (Manual on Labour Statistics (I), 2012). Whatever the definition may be, the issue of marginality in involvement in the economic system is not a mere data-field in the census report, rather it has a greater socio-economic implication. The Merriam-Webster's dictionary defines 'marginalization' as "to relegate to an unimportant or powerless position within a society or group". Marginalization typically involves some degree of exclusion from access to power and/or resources; it indicates a group at the periphery or at the edge of the society in virtual sense, i.e., those who are marginalized do not get to enjoy the full or typical benefits that those who are closer to the center tend to receive (Maynard & Ferdman, 2009). The presence of marginalization can be conceptualized as the existence of some degree of social exclusion within the region. Beside this, the spatial pattern of share of marginal workers within the population in a region has significant scope to provide a meaningful insight into the ongoing economic process of the region.

In synchronization with the classification of working population in the Census of India since 1991, the sample working population (P'_W) has been categorized into the following classes on the basis of gender i.e. males (M) and females (F); degree of work participation i.e. main workers (MW) and marginal workers (RW); and the field of work i.e. cultivators (CL), agricultural labourers (AL), household industry workers (HH) and other

workers (OT). Hence, all the occupational sub-groups within total working population can be written as,

$$P'_W = [P'_{M,MW,CL} + P'_{M,MW,AL} + P'_{M,MW,HH} + P'_{M,MW,OT} + P'_{M,RW,CL}$$
$$+ P'_{M,RW,AL} + P'_{M,RW,HH} + P'_{M,RW,OT} + P'_{F,MW,CL}$$
$$+ P'_{F,MW,AL} + P'_{F,MW,HH} + P'_{F,MW,OT} + P'_{F,RW,CL}$$
$$+ P'_{F,RW,AL} + P'_{F,RW,HH} + P'_{F,RW,OT}]$$

From each group of sample population, the sample mean (X) and sample standard deviation (σ) of income has been calculated *(see* Table 6*)*; by which the normal curves fitted with the income distribution of each of the sixteen occupational groups mentioned above can be defined using *equation (iii)* mentioned previously; and, from this, the relative frequency of different income classes of each group is calculated as mentioned in *equation (iv)* above.

Table 6: Income distribution among different field of workers specified with the genders

Worker Type	Category	Gender	Mean Annual Income in ₹ $(\overline{X})$	Standard Deviation of Annual Income in ₹ (σ)
Main Workers	Cultivators	Male	132500	33562.6
		Female	88600	14628.75
	Agricultural labourers	Male	56400	8265.35
		Female	47280	7812.58
	Household Industry Workers	Male	95600	27568.6
		Female	72510	15450.65
	Other Workers	Male	159650	35690.6
		Female	138550	32255.56
Marginal Workers	Cultivators	Male	30425	8346.7
		Female	19565	5428.4
	Agricultural labourers	Male	21765	5688.4
		Female	18250	4505.5
	Household Industry Workers	Male	21565	6228.4
		Female	15465	4522.6
	Other Workers	Male	25755	7652.6
		Female	12560	2987.5

The diagram of the income distribution among different working classes specified by genders (Fig. 5) exhibits a very distinct scenario of differences of income between different sectors within the district. Besides, a noticeable feature is viewed from
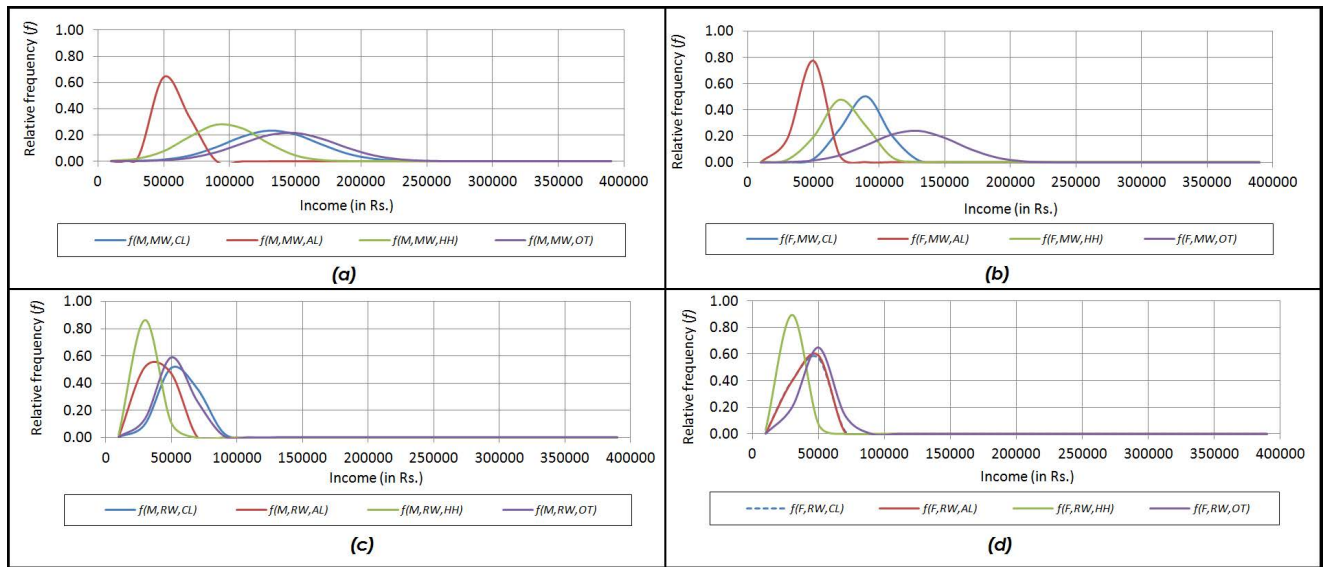
Fig. 5: Relative frequency distribution of income of sample working population grouped by occupation as presented in Census of India since 1991 (i.e. cultivators, agricultural labourers, household industry workers and other workers) classified on the basis of gender and nature of work participation as: (a) Male main workers, (b) Female main workers, (c) Male marginal workers and (d) Female marginal workers

the diagram that, there is a marked differences of income gaining between two different genders at each and every field of occupations; and also, the field of occupations showing higher magnitude of income also showing the existence of difference of income between genders at higher magnitude.

The relative deprivation of income

The above discussion of the income gained by different social and religious group in the district has viewed the entire matter from the standpoint of an absolute sense of relating income with well being; however, social status of an individual which, indeed, do play a very important role in the determination of his personal assessment of well being (Weiss and Fershtman, 1998). The notion of relative deprivation can be given following Runciman (1966) that a person can be considered as relatively deprived of X when he does not have X or he sees some other person or persons, which may include himself at some previous or expected time, as having X or he sees it as feasible that he should have. Kakwani (1984) introduced the relative deprivation curve as a useful graphical device, to represent the gaps between the individual's income and the incomes of all individuals richer than him, as a proportion of mean income, and proved that the area under this curve is the Gini coefficient. Duclos (2000) has shown that a generalization of

Gini, the s-Ginis, could be interpreted as indices of relative deprivation. In the present study, the relative deprivation curve for different social classes or religious groups drawn, following Duclos (2000) with the income data collected from the household survey of the study area which allows the objective comparison of the persons of a particular group living at a certain percentile standard of income with the rest of the group. For the present case, the relative deprivation curve is drawn on individual's income by equally distributing the total household income over the members of the households.

The relative deprivation curve in Fig. 6 clearly indicates that the social groups or religious classes having greater share of income exhibit higher magnitude of deprivation of income. The tribal population of the districts manage to attain the lowest amount of income and the magnitude of relative deprivation among tribes are found least than that of any other social or religious groups along a certain percentile levels of income thereto. At the lowest income strata of the district, the value of relative deprivation for non-tribal population is as high as more than ₹ 32,000 whereas for the tribal groups it is just above ₹ 20,000. Considering the average household size of 5.17 in the district (Census of India, 2011), a tribal household at the lowest stratum of the economy should feel a deficit of income of more than one lakh annually whereas
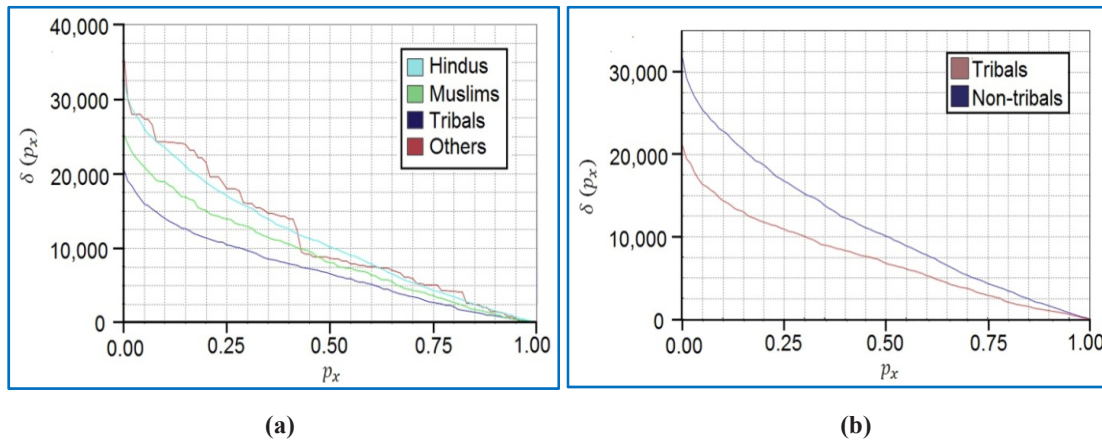
Fig. 6: Percentile income wise distribution of intra group relative deprivation within (a) different religious groups in the district of Purulia and (b) a crude comparison between the tribal and non-tribal population within the district in terms of the relative distribution of income

a non-tribal household at the similar standard of economy feels a deprivation of more than ₹ 1.6 lakh within their group. This gap of relative deprivation decreases at the upper income level; and at the 75th percentile level the relative deprivation value is reduced by around 1/10th form the initial level; which is a clear indication of the higher concentration of income and wealth at the upper income level of the society depriving the lower strata of the economy.

CONCLUSION

The concept of economic development in India has long been equated with the agricultural growth; and the generalization of this idea may have misleaded the planning procedure, especially the vast rural areas of the country where agriculture has a degree of environmental and functional limitations (like the present study area). Now, development is required to be conceptualized as a strategy designed to improve economic and social life. Hence, the essence of future development lies in spontaneous people's participation in the development process and creating the capacity of the people through the empowerment of the community for sustained development with the rational utilization of ambient natural and social resources. This posses a great challenge for planner not only to plan for even dispersal of social infrastructures all through the government but also prepare specific planning strategy for the backward communities or classes so as to enable them to come up to the level of presently comparatively advanced; failing which growth

will pass sizeable chunk of the district population keeping them perpetually in the backward of development. No doubt, classes are more conductive to fetch overall prosperity to the people of those classes in comparison of others. A concerned effort is paramount in order to enhance the overall economy of all the blocks and all the social and religious classe of the district. In fact, district is a very small region therefore much attention is not paid pertaining to the issue of regional disparities in development.

However, the analysis demonstrated that the issue cannot be ignored further. The district of Purulia itself is one of the most backward districts in the state of West Bengal and it ranked 16th out of 17 districts under calculation with a poor value of HDI. Within such a district with depressed level of human development, the magnitude of economic inequality is undoubtedly an issue which is worthy to be further investigation. Admittedly, unequal development is often seen more depreciative than that of the slow rate of equal development in social and economic context. The development planning for societal and economic betterment to be chalked out in such a way that it should ensure the development of each and every sector equally as far as possible. The assumption that a district is an unit of development during policy making, may result into a wrong outcome from the plan execution. Each and every classes of the districts are equally neither developed nor backward in terms of income and employment. During plan formulation, the differentiation of existing status of economic

development require to be analyzed carefully leading to ensure the schemes of development to remain beneficial for all irrespective to the social, religious, economic and gender identities of the citizens.

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