

Regional Disparity: The Concept and Measurement

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Abstract

In the present paper Regional Disparity: The Concept and Measurement have been studied. Though there exists trade-off between economic equity and efficiency, however a practical balance between the both may be established. For that the concept of disparity is to be understood properly along with evaluation of the methodology of its measurements. The disparity depends on its economic indicators e.g. income, output, saving, COR, investment and social indicators- life expectancy, literacy, educational attainment as access to certain amenities. Regional disparities are quantified following suitable methods then logical and meaningful coefficients are calculated for interpretation of decision, policies and programmes. We arrive at various coefficient of disparity depending upon specific characteristic based on vivid methods of measurement of disparity.

Keywords: Disparity, equity, efficiency, Gini's-co-efficient, U-curve, Inverse U-curve.

Introduction

Development of all by maximization of welfare is the prime concern for every nation. Welfare economics has 'efficiency' as its crux to be achieved however there exists trade-off between Equity and Efficiency. Development can be observed in a Pareto-optimal situation by the efficiency in Exchange, Production and Product-mix and at the very same time ignoring Equitable-Distribution aspect of national income generated in such a way. 'A State can be Pareto-optimal with some people in extreme misery and others rolling in luxury, so long as the miserable cannot be made better off without cutting into the luxury of the rich'.

Independent India embraced equality as a cardinal value against a background of elaborate, valued and clearly perceived inequalities. Her constitutional policies to offset these proceeded from an awareness of the entrenched and cumulative nature of glory inequality. Though, there exists trade-off between Equity and Efficiency however reduction of Inequality has been objective of most of the Development-Planning and furthers the Regional-Disparities too. As it has been accepted (in the Report of the Finance Commission, 1969, p. 11) that "the progress of the nation depends in a real sense on the development of the Weaker-States". Many times political tension and unrest is observed due to wide spread regional disparities in the levels of Economic Development causing a threat to the national unity. Thus the Disparity or in particular Regional Disparity becomes national objective altogether other objectives for the policy framers and implementing agencies thereof.

Objective of the Study

1. To bring into light the concept of regional disparity
2. To explain measurement of disparity.
3. To synthesize the measured values (co-efficient) with the concept of disparity
4. To calculate Gini-concentration coefficient of GDP and sectoral employment.

Review of Literature

Sen (1990) highlighted on disparity with respect to ethics where as Basu & Sisson (1986) highlighted on social, economical development aspect. Palkiwala (1969) focused on growth and social justice aspect where as Canovan (1996) related his analysis particularly in nationhood and political theory contexts. On the otherhand Wolf (1996) described disparity with respect to political philosophy whereas Bhagawati (2006) co-related with globalization and defended globalization as a weapon to reduce disparity. Basu & Ghosh (2014) focused on disparity in India corelearning



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with infrastructure whereas Chakravarty (1989) concentrated on development planning in disparity contexts. On the other hand Rangrajan (1992) presented disparity in politico-historical aspect in ancient India. Panda (2005) explored disparity in the development journey of India where as Ramakrishna (2008) observed in ecology of economies. In the same way Arnold & Guha (1996) also followed and observed disparity in the state of nature, culture and colonization. Lal (2000) compared India with world economy highlighting disparity where as Chakroborty explored in social organization ethics and values. Most of the above highlighted or focused a very limited and specific field and ignored economy and social disparity in broader sense.

Methodology

Secondary data related to GDP, employment in different sectors have been used. One of the methods (Ginis concentration Co-efficient) has been applied for the calculation of disparity. The concept of disparity has been explained with the help of various concepts propounded by different economist.

Result

1. Ginis concentration co-efficient for the year 1951= 0.1718
2. Ginis concentration co-efficient for the year 2000-01= 0.3909 and sectoral contribution coefficient was 0.4169 which reflects high degree of disparity. Figure 1 explains various factors which affects disparity and the method of measurement of disparity have been explained making use of Table 1,2,3,4 and 5.

The concept of Regional-Disparity

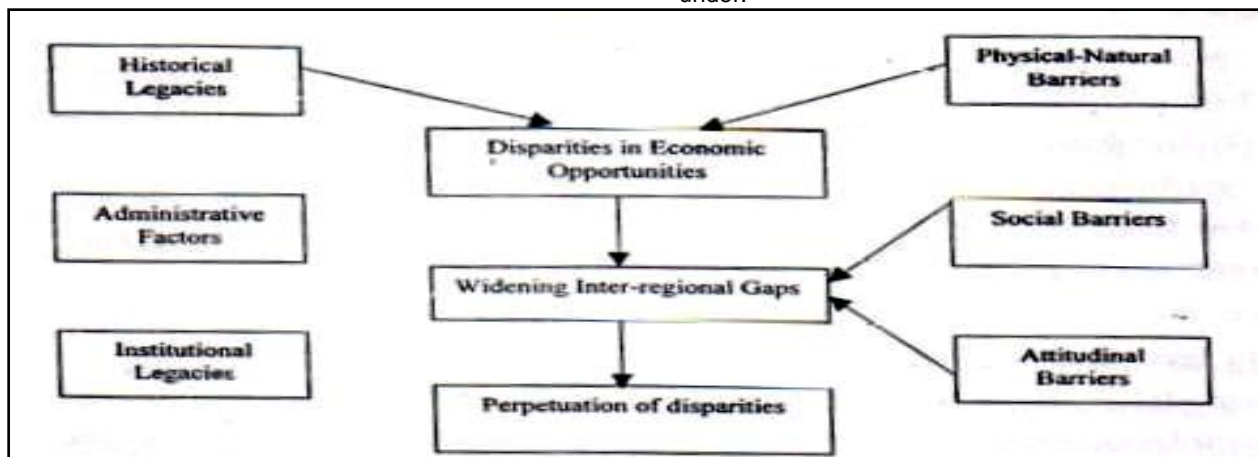


Figure-1: Factors of Disparity (Source- Study on Interregional Eco. Inequality in Rajasthan-2004 (SPRI) Page8

Among the prominent factor variables may be Economic-Indicators as income, output, saving, investment, COR Social-Indicators e.g. - life expectancy, literacy, educational attainment, access to certain amenities etc. Regional disparities are quantified using data related the above and then a logical and meaningful coefficient is calculated for interpretation and decision for policies and programme.

Measurement of Regional Disparity

Inequality/ disparity are measured making use of certain statistical or/ and mathematical,

Whenever the term Inequality or disparity is used, that is used in the Income Level whether at individual, national, state, regional or international level. The levels of income tend to differ/ distances from the state of parity at inter-personal, inter-regional or international level on account of a number of factors. The term disparity, generally; means disparity of the level of GDP or SDP whatever the case may be.

Generally, the concept of disparity is synonymously used in lieu of inequality. There have been a number of factors responsible for disparity of certain parameters related to the socio-polito-economic sphere of life.

There have been many studies, prominent among them are by Myrdel(1957), Nicholas Kaldor (1970) which focused disparity as its own cause. At one hand Smith(1979), Immanuel (1972) and Dixit and Norman (1980) observed that free-trade causes a reduction in disparity whereas on the other hand Bhagwati and Srinivas (1980) found that free-trade deteriorates that however Hirschman concludes that Trickle-down-Effect is more powerful than the Spread-Effect. The relationship between Regional Disparity and Growth have been found of U-Curve or Inverse-U-Curve or absence of such relation in different studies which may interpreted as directly related/ inversely related or no relation.

Disparity and diversity of distribution of natural resources endowments are two different phenomenon therefore a conceptual clarity is required to deal with, though the former is a consequence of the later and the factors responsible may be as under:-

econometrics techniques popular among them are as:-

1. Gini's Concentration / Lorenz-Curve Method
2. Composite Index of Development
 - a. Equal Weighted Index Method
 - b. Deprivation Method
3. Shastri's Composite Index
4. Modified Principal Component Analysis Technique
5. Composite Ranking Method
6. Contribution Approach
 - a. Partial Contribution Approach - Partial Differentiation

b. Total Contribution Approach – Total Differentiation

Table 1. Gini's Concentration / Lorenz-Curve Method – One Variable

X	Differences								ΣΔ
	I		II		III		IV		
X ₀	-	-	-	-	-	-	-	-	-
X ₁	X ₀ -X ₁	Δ ¹ ₀	-	-	-	-	-	-	Δ ₀ =
X ₂	X ₀ -X ₂	Δ ¹ ₁	Δ ¹ ₀ -Δ ¹ ₁	Δ ² ₀	-	-	-	-	Δ ₁ =
X ₃	X ₀ -X ₃	Δ ¹ ₂	Δ ¹ ₀ -Δ ¹ ₂	Δ ² ₁	Δ ² ₀ -Δ ² ₁	Δ ³ ₀	-	-	Δ ₂ =
X ₄	X ₀ -X ₄	Δ ¹ ₃	Δ ¹ ₀ -Δ ¹ ₃	Δ ² ₂	Δ ² ₀ -Δ ² ₂	Δ ³ ₁	Δ ³ ₀ -Δ ³ ₁	Δ ⁴ ₀	Δ ₃ =
N=5	ΣΔ	Δ ¹ ₌		Δ ² ₌		Δ ³ ₌		Δ ⁴ ₌	ΣΔ= (m x n)

- Number of Differences i.e n = 1/2 N(N-1)
= 1/2 x 5(5-1) = 5(4)
= 1/2 x 5 x 4 = 1/2 x 20 = 10
- Gini's Mean Difference = ΣΔ / n =
- Gini's Concentration Coefficient = ΣΔ / 2 X⁻ =

Table 2. Gini's Concentration / Lorenz-Curve Method - One Variable

X	Differences								ΣΔ
	I		II		III		IV		
X ₀₌₁₅	-	-	-	-	-	-	-	-	-
X ₁₌₁₉	15 - 19	4	-	-	-	-	-	-	Δ ₀ =4
X ₂₌₂₅	15 - 25	10	4 - 10	6	-	-	-	-	Δ ₁ =16
X ₃₌₂₈	15 - 28	13	4 - 13	9	6 - 9	3	-	-	Δ ₂ =25
X ₄₌₃₀	15 - 30	15	4 - 15	11	6 - 11	5	3 - 5	2	Δ ₃ =33
N=5	ΣΔ	Δ ¹ _{= 42}		Δ ² _{= 26}		Δ ³ ₌₈		Δ ⁴ _{= 2}	ΣΔ=78 (m x n)

- ΣX=117; X⁻ = 117 / 5 = 23.4
- Number of Differences i.e. n = 1/2 N (N-1)
= 1/2 x 5(5-1) = 5(4)
= 1/2 x 5 x 4 = 1/2 x 20 = 10
n = 10
 - Gini's Mean Difference Δ₁ = ΣΔ / n =
= 78 / 10
 - Gini's Concentration Coefficient; G = Δ¹₁ / 2 X⁻
G = 7.8 / 2 x 23.4 = 7.8 / 46.8
= 0.167
Gini's Concentration Coefficient = 0.167

Table 3 Gini's Concentration / Lorenz-Curve Method–(Two Variables) in 1951 in India

In Sector	% of Population	%Share in GDP	Proportion		Cumulative Proportion		X _i Y _{i+1}	X _{i+1} Y _i
			Population	Share in GDP	X _i	Y _i		
Primary	72.7	55.11	0.727	0.5623	0.727	0.5623	0.5078	0.4655
Secondary	10.1	13.34	0.101	0.1362	0.828	0.6985	0.8280	0.6985
Tertiary	17.2	29.55	0.172	0.3015	1.000	1.000	1.3358	1.1640
	100	98	1.000	1.0000				
	N Σ i=j						ΣX _i Y _{i+1} i=j 1.3358	ΣX _{i+1} Y _i i=j 1.1640

Gini's Concentration Coefficient = 01.3358 – 1.1640 = 0.1718

(Source: Eco. Survey-2004-05, GOI)

Table 4. Gini's Concentration / Lorenz-Curve Method–(Two Variables) in 2000-01 in India

In Sector	% of Population	%Share in GDP	Proportion		Cumulative Proportion		X _i Y _{i+1}	X _{i+1} Y _i
			Population	Share in GDP	X _i	Y _i		
Primary	60	24.2	0.600	0.242	0.600	0.242	0.2778	0.1839
Secondary	16	22.1	0.160	0.221	0.760	0.463	0.7600	0.4630
Tertiary	24	53.7	0.240	0.537	1.000	1.000	--	--
	100	98	1.000	1.0000				
	N Σ i=j						ΣX _i Y _{i+1} i=j 1.0378	ΣX _{i+1} Y _i i=j 0.6469

Gini's Concentration Coefficient = 1.0378 – 0.6469 = 0.3909		
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(Source: Eco. Survey-2004-05, GOI)

Table 5. Gini's Concentration / Lorenz-Curve Method-(Two Variables) in 2010-11 in India

In Sector	% of Population	%Share in GDP	Proportion		Cumulative Proportion		X _i Y _{i+1}	X _{i+1} Y _i	
			Population	Share in GDP	X _i	Y _i			
Primary	51	14.5	0.51	0.145	0.510	0.145	0.2157	0.1058	
Secondary	22	27.8	0.22	0.278	0.730	0.423	0.7300	0.4236	
Tertiary	27	57.7	0.27	0.577	1.000	1.000	--	--	
	100	100	1.000	1.0000					
	n Σ i=j						ΣX _i Y _{i+1} i=j 0.9457	ΣX _{i+1} Y _i i=j 0.5288	
Gini's Concentration Coefficient = 0.9457 – 0.5288 = 0.4169									

(Source: Eco. Survey-2004-05, GOI)

	2000	2010
Share of employment in agriculture (%)	60	51
Share of employment in industry (%)	16	22
Share of employment in services (%)	24	27

With the help of the above analysis it is evident that disparity of GDP increased between the Era-1951 - 2000-01 and the Sectoral GDP disparity was very high at 0.4169 which reflects inefficient sectoral contribution and Wealth & Income Concentration among few people of India.

Our constitution aimed at making India the land of opportunities; our politicians have converted it into a land of opportunism. The role of the state thus becomes crucial towards growth and development policies, programmes and implementation for a multicultural society as of India. Since a multicultural society can't be stable and last long without developing a common sense of belonging among its citizens therefore Co-operation will evolve the way in the state of the nature, even among self-interested creatures.' In order to achieve that, a Public action, however; will not succeed unless it reflects not only passion but also reason and analysis.

Today we live in an age of globalization where a country can not exist in isolation or in other words in 'Autarky'. Economic globalization constitutes integration of national economies into international economy through trade, direct foreign investment (by Corps. And MNCs), short-term capital flows, international flow of workers and humanity generally, and flow of technology. An outward trade orientation helped the Far-Eastern economies in the postwar years to export labour-intensive goods; this added to employed and reduced poverty rapidly. In India, the emphasis is on autarky and on capital-intensive projects reduced both growth and increase in the demand for labour, so the impact on poverty was minimal.

Many countries experienced their corresponding terms of trade further deteriorated even after registering a phenomenal growth. The way to avoid (Immiserizing growth) adverse outcome is to diversify away from product (Produced by endowed resources) exported. It is not always true that growth will pull up the poor into gainful employment.¹⁰ Along with economic growth; other factors which are related

to structural and institutional improvement ensure a sustaining base to growth.

Affluence has never been yardstick for measuring the contribution of a nation to the growth and development of human civilization. Besides, in recorded history, nations and civilizations have perished through affluence; but no nation, civilization, has died of adversity. Therefore, 'Given all its potentials and a large young population the prosperity of the country would depend on how quickly and well it is able to strengthen its crumbling social infrastructure – Education and Health- and ensure preventive, promotive and curative health care for all at affordable prices.' A 'Growth and Development' strategy may be either market friendly or depending on central planning or having varied degree of both.

Though, every strategy has its pros and cons; generally balanced policy-mix may reduce the unwarranted-outcomes. 'It is not clear to me that planning as a strategy can be easily dismissed on the grounds of efficiency (in contrast with any specific strategy of planning), where major structural changes are involved and where the invisible hand can only be grasped through a very dark glass indeed.'¹³ Therefore the ultimate responsibility rests with the administration. The main guiding principles of the administration of the economy were that the state should run a diversified economy actively, efficiently, prudently and profitably. An economy has to undergo major reforms to strengthen and speed-up its growth and development potential.

If we take a stock of Indian scenario the reforms are needed in a multidimensional way. While product market reform have brought in availability of goods and services, the gains of the reform measures cannot be realized fully unless substantial factor market reforms also take place. The key areas that call for reforms in the domestic sector in the Indian economy are:

1. Labour Market
2. Land Market
3. Bankruptcy Procedure
4. Small Scale Reserves

Conservation and Sustainable Development, from a human angle, such an integrated approach demands satisfying basic human needs in an equitable manner, maintenance and indeed promotion

of social, cultural and biological diversity, and indeed the ecological integrity of the system as a whole. Ever since ancient times, our economic activities have been intimately interwoven into the religious and cultural fabric of a society. The organization and pursuits of the Indian people cannot be understood except in the context of the joint family, the caste system, the self sufficient village community and the general pattern of religious and social inhibitions coupled with various injunctions and taboos. Generally, the conceptions are to be framed and viewed in a wide range of aspects and that is imperative with respect to growth, development equity, equality, and disparity too. Before venturing to look into the inequality or disparity in India it is advisable to make familiar with agrarian and industrial state in the pre and the post colonial era in the country.

It was a close-knit social order well adapted to the needs of the changing times because it could weather all kind of upheavals in society till it was exposed to the inroads of the modern European industrial system which began in the 18th century. The same holds true with respect to the environmental issues also. The environmental history of south Asia is a field which, the richness and theoretical sophistication of work on other regions notwithstanding must develop its' own voice, vocabulary, and research strategy. In this way, before embarking upon one ought to take due care of the values, wide acceptance attained views, norms, parameters and sustained and time-tasted practices also as extra tools of the for a just analysis. A piece of advice often heard in organizational psychology (OP) circles, to further change in attitudes and behavior, is 'get in touch with your emotions' A fresh re-look becomes imperative when the conceptions get designed in a skewed-westernization and thus dresses to a state of collective and unforeseen mourning.

There is a crisis of 'values' in the west with its' peculiar disjunction of the complementary aspects of the humanism of the Renaissance from the rationalism of the Scientific Revolution, Eco-fundamentalism is the inevitable mutant, which will continue to cause the world a good deal of grief for some time to come. *And the only way out is the properly understanding of the concepts of disparity and manage for better & balanced sustainable development..*

Conclusion

Disparity in general and regional disparity in particular is very disputed concepts there for these are to be viewed in proper contexts and reference. Measurement of disparity, in general, is practiced following different methods forwarded by Statistician and Economist there for suitable methods should be used which explain disparity in more transparent way. Regional disparity represents inefficiency which is an obstacle in the process of a society aspiring for equality for opportunity, commands and entitlements.

Suggestion

Regional disparity represents inefficiency which is an obstacle in the process of a society

aspiring for equality for opportunity, commands and entitlements there for proper management at macro-level is required in every economy including India.

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