Education

Construction of social capital index for rural West Bengal

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Abstract
The Sustainable Livelihood Approach adopts the asset-based analysis of poverty to focus on the resource stock at the disposal of any poor community. The absence or short fall of the resources needed for a sustainable livelihood determines a community's asset position. This approach looks beyond the parameter income and considers different types of assets of any community. The asset stock is very important in reducing or managing poverty of any region. Social capital is one such important asset which determines a community's stock of social resources like cooperation, trust, fellow-feeling present in the community. Social capital is not uni-dimensional, in this paper we have taken mainly status of education and health of a community. So, the stock of social capital consists of different variables. The paper constructs a Social Capital Index (SCI), which considers education status and health status of the community/region. SCI consists of Voting Index (index of turn-out of voters in Panchayat Election) and Co-operative membership Index (index of percentage of people as members of village cooperative). This index can be used for quantifying a qualitative aspect like social capital (trust, cooperation etc.) in any economic study.

Keywords: social capital index, voting index, trust, cooperation

Introduction

In many less developed countries, we find chronic and long-term poverty present, especially in rural areas. There are particular regions in India and in different states where poverty is very acute. But this multi-dimensional poverty is not only income-based, it is asset-based. So, unless we follow an asset-based multi-dimensional approach the chronic poverty cannot be analyzed. So, to find cause and any solution to poverty we need to look beyond the parameter income. Sustainable Livelihood Approach looks into other parameters of livelihood to analyze the state of poverty in any region. This approach takes into account of the resource stock of any region to analyse the cause of past and present poverty and at the same time this approach can suggest ways to expand livelihood to prevent future poverty. Livelihoods comprise of *capabilities, assets and activities* required for a means of living. The rural livelihood concept as provided by *Ellis (1998)* was,

"A livelihood [1] *comprises incomes in cash and in kind; the social relations and institutions that facilitate or constrain individual or family standards of living; and access to social and public services that constitute to the well-being of the individual or family".*

The livelihood will be sustainable if it can cope with and can recover from the stresses and shocks and can maintain and enhance its assets and capabilities both now and in the future, while not undermining the natural resource base [2]. Swift (1989), Scoones (1998) identified *five* types of capital which are important for the livelihood. They are as follows:

1. Natural capital
2. Physical capital
3. Financial capital
4. Human capital
5. Social capital

Among these we concentrate on social capital in this paper. Social capital is an important concept in business, economics, organizational behavior, political science, public health, sociology and natural resources management that refers to *connections within and between social networks as well as connections among individuals*. The concept of social capital was forwarded by *Lyda Judson Hanifan (1916, 1920)* [3]*,* the state supervisor of rural schools in West Virginia in early 1900s. She used this term while discussing the rural school community Centre to describe '*those tangible substances [that] count for most in the daily lives of people*'. The modern usage of the term was done by *Jane Jacobs* in the 1960s. She did not provide definition but used the term with reference to value of networks. Social capital refers to *connections* among individuals—*social networks and the norms of reciprocity and trustworthiness* that arise from them (Putnam, 2000).

Definitions

While discussing social capital we should mention the definitions provided by three important thinkers, namely Bourdieu (1983), Coleman (1994) and Putnam (2000) along with the definition provided by the World Bank. The concept of social capital, developed by *Pierre Bourdiew* in the 1970s and early 80s. Bourdieu's concept is connected to his theoretical ideas on class. He identifies three ideas of capital each with its own relationship to class: *economic, cultural and social capital*. Bourdieu's concept of social capital puts the emphasis on conflicts and the power function (social relations that increase the ability of an actor to advance his/her interests). He defines social capital as "*The aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition*".

Coleman (1994) defined social capital by its functions. According to him, it is not a single entity, but a variety of different entities, having two characteristics in common: they all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure. According to him the more social capital is used the more it grows.

In recent times *Putnam* (2000) launched social capital as a focus for research and policy discussion. According to Robert Putnam, social capital refers to the collective value of all social networks to do things for each other. Putnam's concept of social capital has three components: moral obligations and norms, social values (especially Trust) and social networks (especially voluntary associations). According to him, whereas physical capital refers to physical objects and human capital refers to properties of individuals, social capital refers to connections among individuals-social networks and the norms of reciprocity and trustworthiness that arise from them (Bowling Alone, 1995). In that sense social capital can be called '*civic virtue*'. Putnam's central thesis is that if a region has a well-functioning economic system and a high level of political integration, these are the result of the region's successful accumulation of social capital (1993). According to him, a good number of social problems in US are caused by decline in the social capital. So the concept of a strong civic community is the precondition for the development of strong, responsive representative institutions and a prosperous economy. He showed that government reforms of 1976-77 in Italy were successful well in northern Italy because it was supported by a florescence of 'civic community'. This was also the main reason for the economic prosperity of Northern Italy in comparison with the southern part of the country. Thus, social capital like physical capital occupies an important place in economic development.

According to the definition of World Bank (1999) [4], social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions... Social capital is not just the sum of the institutions which underpin a society—it is the *glue* that holds them together.

Social capital and growth
The process of producing economic growth requires the combination of different types of capital. Social capital is one of them, and the social capital smoothens the process of combination of the three other different types of capital. Social capital enhances the benefits of investment in physical and human capital (Putnam, 1993). Thus, social capital has implications for growth. Though social capital can promote and sustain economic growth in many ways, the strong correlation coefficient between social capital and growth has not yet been established historically and cross-sectionally (Grootaert, 1998).

Place of social capital in analysis of resources (Particularly Common Property Resources)
Social capital is one of the five types of capital included in the definition of livelihood in Sustainable Livelihood Approach. The livelihood of a large number of people in the less developed countries, especially in the rural areas is biomass-based. Their livelihood critically depends on the common property resources. The quality of the livelihood of resource-dependent poor people depends on the status of the common property resources. The main characteristic of the common property resources is the undefined property rights and the co-equal use rights of the community members over the resource. The most important element is the right to access by a group of individuals who are not necessarily the owners of the resource that is used. So, there is a problem of management of Common Property Resources, because of the lack of strictly defined property rights and there is a possibility of overexploitation of the resource.

At regional level historically the common property resources were associated with low population pressure, market isolation, limited technological, institutional interventions etc. There were limited incentives and compulsions for privatization of common property resources and the circumstances were favorable to common property resources. At community level there were *community sanctions* for common property resources, there was focus on collective risk-sharing. The farm level technology was also favorable to common property resources protection. But these conditions do not exist today. The common property resources are subject to different kinds of pressure from society, from Government, from an increased local population. The '*Tragedy of Commons*' phenomenon points out the difficulty of management of common property resources. A strong base of social capital eevolved through many generations can prevent the tragedy.

Forms of social capital
As is already discussed Putnam's (2000) concept of social capital has three components: *moral obligations and norms*, *social values* (*especially Trust*) and *social networks* (*especially voluntary associations*). For the construction of the index, we need quantifiable measure of social capital. According to Mukherjee, (2002) three generic criteria have been considered for measuring social capital of institutions: *productivity, equity and sustainability*. Based on these three generic criteria, specific measures have been considered. The generic criterion for measuring 'productivity' includes those which enhance productivity or growth of social capital. *Group membership* is important because the broader the membership base, the more is the coverage of people coming together for a cause. So, I took percentage of membership in agricultural cooperatives as a measure of social capital. The existing literature shows that the formation of cooperative is the beginning of formation of a good stock of social capital. Not only the formation of cooperative but the membership base is also very much important for the social capital. *The larger the membership base the higher is the stock of social capital.*

The generic criteria for measuring *equity* includes criteria such as making sense of group objectives for all its *members and active participation of members in decision making*. In democracy the most important way of taking part in decision

making is the voting process. The higher the awareness among the people and keener the urge for getting involved in the decision-making process the larger is the participation in the democratic voting process. The higher participation in the voting process implies higher social capital stock.

Methodology of construction of social capital index
According to Putnam (2000), social capital refers to *connections among individuals—social networks and norms of reciprocity.* If we have to apply the concept of social capital in common property resources management to improve livelihood, we have to identify the relevant forms of social capital. Putnam (2000) stressed on social networks, i.e., voluntary associations, so higher stock of any voluntary associations create higher stock of social capital. The cooperative societies are an important form of voluntary organization, so these societies are also important form of social capital. So, membership in cooperative societies can develop the stock of social capital.

Next counts the degree of people's participation in the decision-making process. The democratic voting process, which is an important means of taking part in the decision-making process of the society, can also create and develop social capital. So, the turn-out ratio of voters can be a good indicator of the degree of social capital present in the society. So, we have taken two important variables that can measure social capital are *membership of cooperative societies* (measured by percentage of people who are members of cooperative societies) and *participation in the voting process (*measured by turn-out ratio of voters). The membership of any local associations is considered to be one important indicator of measurement of social capital. The World Bank working paper 3 on 'Social Capital: The Missing Link?' by Grootaert (1998) has listed both group membership and extent of participatory decision making as important indicators of social capital. The *Social Capital Index (SCI)* described below provides a measure of social capital present in any community/ locality. So here social capital index is measured by two variables:

▪ Percentage of rural people who are members of agricultural cooperatives: the agricultural cooperatives are important in the rural communities, because agriculture is the pre-dominant activity in rural areas in India. The membership of cooperatives builds mutual trust,

cooperation and the ability to utilize the own resources.

▪ Percentage of participation of electors in voting process, which is the decision-making process in democracy, shows the awareness of the people in the desire to affect the democratic process. This is one indicator of the degree of participation of people in the social decision-making process.

Method of normalising data scores
Normalizing component scores
In order to combine components which are based on different units of measurement, the scores need to be 'normalized' before combination. This means putting them on the same scale. In this study, scores for each indicator are calculated by the formula:
$(x_i - x_{min}) / (x_{max} - x_{min})$, where x_i, x_{max} and x_{min} are the original values for location i, for the highest value region, and for the lowest value region respectively. The score for any one indicator then lies between 0 and 1.

Construction of social capital index for West Bengal
This section is devoted to the construction of SCI for West Bengal. The Social Capital Index measures the state of cooperation and the willingness of the peoples to take part in the community's decision-making process. We have constructed the Social Capital Index for all the districts leaving Kolkata, as it is a totally urban area. The District Statistical Handbook 2005 reports data separately for Uttar and Dakshin Dinajpur, but the West Bengal Human Development Report 2004 reports data on Rural Poverty Ratio for Dinajpur as a combined state. So, to reduce confusion for further analysis I have taken combined data for Dinajpur as a whole. Though the district of Medinipur was divided into East and West Medinipur in 2002, the data in District Statistical Handbook, West Bengal, 2005 reports data for combined Medinipur, this is because most of the data is based on Census 2001, prior to the division of Medinipur.

As we do not have data on district-wise rural poverty of West Bengal after 2004, we took the data on capital stocks around 2004. The District Statistical Handbook 2005 covers the census data 2001. This is the source of the district-wise data on the component variables. Each index is calculated as (actual value-minimum value) / (maximum value –minimum value). All indices are shown as achievement index.

Table 1: Construction of index of agricultural cooperative membership (group participation)

Districts	No of agriculture co-op members	Rural pop	% Of rural people under coop	Diff	Ind coop
Darjeeling	28176	1008766	2.7931	0.0000	0
Jalpaiguri	115574	2794403	4.1359	0.0134	0.10735
Koch behar	123250	2253551	5.4691	0.0268	0.21393
Dinajpur	170834	3453576	4.9466	0.0215	0.17215
Malda	121722	3049605	3.9914	0.0120	0.09580
Murshidabad	243420	5133834	4.7415	0.0195	0.15576
Birbhum	421880	2757000	15.3021	0.1251	1.00000
Bardhaman	415571	4348311	9.5571	0.0676	0.54073
Nadia	241362	3625380	6.6576	0.0386	0.30893
North 24 PGNS	192328	4082969	4.7105	0.0192	0.15328

Hugli	259620	4082969	6.3586	0.0357	0.28504
Bankura	241075	2957393	8.1516	0.0536	0.42837
Purulia	147957	2281088	6.4862	0.0369	0.29524
Medinipur	917791	8626571	10.6391	0.0785	0.62723
Haora	95387	2121166	4.4969	0.0170	0.13621
South 24 PGNS	227076	5820267	3.9015	0.0111	0.08861

Source: Computed from District Statistical Handbook, West Bengal, 2005

Table 2: Construction of index for participation in the social decision-making process

Districts	No of electors	Total votes polled	% Of voter turn out	Voting IND
Darjeeling	-	-	-	0
Jalpaiguri	1559790	1324104	84.8899	0.841485
Cooch Behar	1527614	1369030	89.6188	0.957163
Uttar Dinajpur	1053308	940113	89.2534	0.948224
Dakshin Dinajpur	750887	686155	91.3793	1
Malda	1532244	1370064	89.4155	0.95219
Murshidabad	2828580	2556929	90.3962	0.976179
Birbhum	1603581	1338128	83.4462	0.80617
Bardhaman	2995715	1854737	61.9130	0.279428
Nadia	2151995	1954616	90.8281	0.986744
North 24 PGNS	1849896	1647769	89.0736	0.943826
Hugli	2360103	1191730	50.4948	0
Bankura	1796597	1271593	70.7779	0.496278
Purulia	1419463	1196614	84.3005	0.827066
Medinipur	5151630	3829694	74.3395	0.583402
Howrah	1725242	1456020	84.3951	0.829382
South 24 PGNS	3386134	2927489	86.4552	0.879775

Index of Dinajpur is taken as average of separate indices of Uttar Dinajpur and Dakshin Dinajpur as 0.9741

Source: computed from District Statistical Handbook, West Bengal, 2005

Table 3: Construction of SCI [5]

Districts	Voting Ind	Co-operative index	SCI
Darjeeling	0		
Jalpaiguri	0.841485	0.1073	0.474415
Cooch Behar	0.957163	0.2139	0.585546
Uttar Dinajpur	0.948224	0.1324	0.540298
Dakshin Dinajpur	1	0.2375	0.618774
Malda	0.95219	0.0958	0.523992
Murshidabad	0.976179	0.1558	0.565968
Birbhum	0.80617	1.0000	0.903085
Bardhaman	0.279428	0.5407	0.410077
Nadia	0.986744	0.3089	0.647838
North 24 PGNS	0.943826	0.1533	0.548553
Hugli	0	0.2850	0.142517
Bankura	0.496278	0.4284	0.462324
Purulia	0.827066	0.2952	0.561152
Medinipur	0.583402	0.6272	0.605315
Howrah	0.829382	0.1362	0.482794

Source: District Statistical Handbook, West Bengal, 2005

Conclusions

Thus, we can construct the SCI for any region and can use it for making comparisons both cross-sectionally and over the time periods. The SCI can be constructed for any regions as the data requirements are simple and we can use both primary and secondary data sources. Most of the measures of social capital like People's Participation Index by Singh (1992) [6] require primary survey and they are constructed for resource-dependent communities only. But this index can be used for any kind of region; instead of village cooperative membership we can use membership in any group also. We need a quantifiable summary index for a qualitative aspect like social capital. We can comfortably use this index for any kind of further research. There are a number of policies whose success crucially depends on the level of fellow-feeling and coincidence of intra-group homogeneity. For policy planners also this kind of index can be helpful for determining a community's level of intra-group homogeneity.

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