INEQUALITY OF OPPORTUNITY AMONG INDIAN CHILDREN

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Abstract : Imagine the case of two children, first, child A, who is a girl child born in rural India to parents belonging to socially and historically disadvantaged caste, parents who are uneducated with no formal occupation and therefore poor. Now consider the second, child B, who is a boy, born in urban India to parents belonging to socially advantaged caste, parents who are educated have formal occupation and therefore affluent. If we consider the two cases, what are the chances that child A will have access to and receive health care (during infancy, early childhood and later), will receive minimum level of healthy nutrition, will get a minimum level of education, have access to good housing conditions (clean drinking water, sanitation facilities etc.) and other services, comparable to the services available to child B. Since all these services and facilities are necessary for a child to blossom into a youth who is healthy and can earn a decent livelihood, every child should get an opportunity (in terms of basic services and facilities) equal to any other child of the society.

If there are unfair differences in starting points, it can be toxic, in particular if opportunities are systematically denied to specific groups of the population. Here it is important to define what we mean by opportunities as far as a child is concerned. By opportunities, we mean the set of goods and services that are critical for children, for example access to immunization, to minimum nutritional levels, to education, to basic infrastructure and a birth certificate or other identity document. Equality of opportunity seeks to level the playing field so that circumstances such as gender, ethnicity, birthplace, or family background, which are beyond the control of a child, do not influence a child's life chances. Success in life should depend on individuals' choices, efforts and talents, not on their circumstances at birth. For any child, access to vaccination, to other health facilities, to safe drinking water or to a primary school is clearly an exogenous opportunity, which is controlled not by him/her but by his/her family or society. So, if there is difference between the extent and level of these opportunities among children of a society then this inequality (which is due to circumstances beyond the control of a child) is inequality of opportunity following Roemer (1998 and 2006)[1], which is totally unjustified, unacceptable and there must be policy interventions in terms of redistribution or any other mechanism to reduce this kind of phenomenon in the society.

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[1] Roemer, John E., 1998, "Equality of Opportunity", Cambridge, MA: Harvard University Press.
Roemer, John E., 2006, "Economic Development As Opportunity Equalization", Cowles Foundation Discussion Paper No. 1583.

But any policy intervention can happen only if, for a society (country), we are able to measure systematically the extent of this inequality in basic services for children of that society. A recent development in this field which addresses this issue is the concept of Human Opportunity Index (Barros et al, 2009)[2] which is a synthetic measure of inequality of opportunity and which can be used for measuring the inequality of opportunity in basic services for children. The index posits that a development process in which society attempts to equitably supply basic opportunities requires ensuring that as many children as possible have access to those basic opportunities, with a target of universalism; it requires distributing available basic opportunities increasingly towards the more disadvantaged groups. The Human Opportunity Index summarizes in a composite indicator two elements: (i) how many opportunities are available, that is, the coverage rate of a basic service; and (ii) how equitably those opportunities are distributed, that is, whether the distribution of that coverage is related to exogenous circumstances. Hence, an increase in coverage of a basic service at the national level will always improve the index.

Universal provision of basic opportunities (defined as subset of goods and services for children, such as access to immunizations, to minimum nutritional levels, to safe water, to education that are critical in determining opportunity for economic advancement in life) is a realistic and important social goal. In the case of children, most societies agree on the importance of a set of basic opportunities, even if different societies might have different standards about the right set of basic opportunities.

The Human Opportunity Index focuses on coverage and inequality of opportunities among children for following main reasons:

- First, from an empirical standpoint, it can be readily operationalized by measuring children's access to basic goods and services that are critical for the full development of the child. For children, access defines opportunity because children (unlike adults) cannot be expected to make the efforts needed to access these basic goods by themselves.
- Second, from a policy standpoint, evidence indicates that interventions to equalize opportunity early in the lifecycle of an individual are significantly more cost effective and successful than interventions later in life.
- Third, focusing on children helps put inequality of opportunity at the centre of the policy debate. As pointed out by the World Development Report 2006, on the day of their birth, children cannot be held responsible for their family circumstances, despite the fact that these circumstances –such as race, gender, parent's income and education, and urban or rural location – will make major differences in the lives they lead.

As noted, the human opportunity index synthesizes into a single indicator measurements of both the level of basic opportunities in a society and how equitably those opportunities are distributed. The first component of the index –the average coverage rate for a given basic opportunity (e.g. access to health facilities) –can be readily determined using household survey data (e.g. demographic and health surveys). The second component –the equity of opportunity distribution –requires a more involved calculation.

[2] Barros, R. P., Francisco, H.G., Vega, J.R.M. and Chanduvi, J.S., 2009, "Measuring Inequality of Opportunities in Latin America and the Caribbean**",** The World Bank

The measure proposed to measure the inequality of opportunity (dissimilarity or difference in access to basic facilities among children because of circumstances beyond the control of an individual) is a version of the dissimilarity index (D), widely used in sociology and applied to dichotomous outcomes. The D-index measures the dissimilarity of access rates for a given service for groups defined by circumstance characteristics (for example, caste, religion, gender, location, parental education, and so on so forth) compared with the average access rate for the same service for the population as a whole. If the equal opportunity principle is consistently applied, an exact correspondence between population and opportunity distribution should be observed. The D-index ranges from 0 to 1 (0 to 100 percentage terms), and in a situation of perfect equality of opportunity, D will be zero.

Access probability gaps are at the heart of the D-index. The D-index is a weighted average of the absolute differences of group specific access rates, p_i (the average probability in the subgroup *i* that a child will have access to a particular basic service say vaccination), from the overall access rate , $\overline{p}$ (the average probability in the entire population that a child will have access to the particular basic service say vaccination). For example if, the two subgroups are rural and urban population (there can be any number of subgroups based on different circumstances or combination of circumstances) , p_{rural} (average probability in the rural population that a child will have access to vaccination) is less than $\bar{p}$ (average probability in the entire population that a child will have access to vaccination) then it captures that children of rural areas have a much lower probability of having access to vaccination than the urban counterparts and the D-index will be higher than zero. There can be as many probability gaps as there are possible combinations of group defining circumstances (for example, if we take location and literacy of parents, then we can have four groups viz. children of illiterate parents living in rural areas, children of literate parents living in rural areas, children of illiterate parents living in urban areas and children of literate parents living in urban areas respectively. We can also add gender, caste, religion etc. to form the subgroups as we intend to do in this research, for India. As far as India is concerned, few important variables related to circumstances exogenous to a child can be gender, caste, religion, birthplace, educational attainment of parents and father's occupation. The exact procedure to calculate the p_i 's involves an econometric specification.

The D-index can be interpreted as showing the fraction of all available opportunities that needs to be reassigned from better-off groups to worse-off groups to achieve equal opportunity for all. For example, if finishing fifth grade on time is taken as an educational indicator, and if the D-index score for say India comes out to be x percent, then it indicates that x percent of total opportunities for finishing fifth grade on time have to be reallocated to ensure equal chances for all.

The Human Opportunity Index (O) incorporates into a single composite indicator both overall access rates and the D-index measure of opportunity distribution. This index combines average access to opportunities ($\bar{p}$) with how equitably those opportunities are distributed (D). The proposed index is given by O = $\bar{p}$ (1-D). On an intuitive level, the human opportunity index takes access to a basic opportunity, the coverage rate, and discounts it if those opportunities are allocated inequitably. Two factors drive the index: for a given level of D, an increase in the prevalence of opportunities (that is, a higher $\bar{p}$) increases the index, while an improvement in the way existing opportunities are allocated (a reduction in D) will also improve the index. However, the D-index gives

much greater weight to those opportunities allocated to a disadvantaged sector of the population than to those allocated to an advantaged group, and is therefore a distribution-sensitive measure.

Building on the thoughts described in the previous sections, it is time to describe what is actually intended in this paper. The research is exclusively based on India and uses data from various rounds (1992-93, 1998-99 and 2005-06) of National Family Health Survey (NFHS, which is the DHS of India), which is nationally representative micro unit recorded household survey and is very reliable in terms of sample size, survey design, coverage etc. as well as very rich in terms of variables concerned (family background and other details like sex, religion, caste, place of birth, education etc.). It also has community level (village) information (1992-93 and 1998-99 rounds) as well as detail information on children collected through the Household & Woman's questionnaires. The research addresses following issues:

- Construction of Human Opportunity Indexes for seventeen major states of India based on basic opportunities like access to immunization and other health services, to primary education, to minimum nutritional levels, to safe drinking water and to decent housing conditions. This will address the basic question, whether in different states of India, is there inequality of opportunity among children as far as access to different basic services is concerned or not.
- Evaluation of various trends and patterns, for example, whether human opportunity index is higher for rich states compared to poorer states or otherwise. Whether it increases as we move from poorer states to higher states or vice versa.
- Construction of a single summary indicator that can facilitate the measurement of opportunity in each state. All different indicators of children's opportunities (like access to immunization and other health services, to primary education, to minimum nutritional levels, to safe drinking water and to decent housing conditions) are proposed to be incorporated into an overall Human Opportunity Index.
- Examination of, whether and how the individual indexes and the single summary indicator have changed over time in India. Availability of multiple rounds of NFHS data makes it feasible.
- Analysis of the changes in the Human Opportunity Index. This analysis will be opportunity wise and state wise. To seek answer to various questions like, if in a state the Human Opportunity Index for health services has increased, whether it is due to increase in average access ($\bar{p}$) or increase in equality of opportunity (1-D).

To implement policies that reduce inequality of opportunities, a clear understanding of the concept of inequality of opportunity, its various dimensions and systematic measurement of its presence and the extent of its presence in the society is needed. Further, which key exogenous circumstances are unfairly influencing access of children to basic services, is also required. Whether, it is the caste, or religion, or gender, or rural location which is the most significant factor which is causing the inequality among children with respect to access to basic services. This research addresses all the above aspects. Also, the study can shed light on policy interventions such as the extent of redistribution needed (kindly recall that the D-index can be interpreted as showing the fraction of all available opportunities that needs to be reassigned from better-off groups to worse-off groups to achieve equal opportunity for all) to bring equality as far as access to basic services is concerned.