

On Measuring Inclusiveness of Growth in Pakistan

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Abstract:

Using social opportunity function approach, this work assesses, firstly, the change in and access to education and employment opportunities available to the population and secondly, how equitably these opportunities are distributed. Opportunity Index (OI) and Equity Index of Opportunities (EIO) are calculated to measure and quantify the extent of progress made in these two most important socio-economic components of development. Based on data, extracted from Pakistan Social and Living Standards Measurement (PSLM) Surveys of 1998/99 and 2007/08, the present work finds that growth process has resulted in increased inequalities both in education and employment opportunities over the study period. Average opportunities available to population increased for education while a decline in average employment opportunities is documented in 2007/08 as compared to 1998/99. OI registered an increase for primary and secondary levels of education. EIO improved at primary level, remained stagnant for secondary level and decreased for literacy rate over the time. Moreover, EIO for employment opportunities, suggesting equitable distribution for employment and paid employment, registered a decrease and opportunities distribution turn inequitable when calculated based on average monthly income earned. Findings of the paper suggest that policies should be focused to actively engage the marginalized groups of the society in growth process through improvement in higher education and more equitable distribution of opportunities.

Introduction

Increasing level of inequalities in societies has diverted the attention of policy makers towards the new development paradigm of “Inclusive Growth” across the developing world especially. Despite the achievement of reduction in extreme poverty 60.3% of the population still lives under \$2-a-day poverty line in Pakistan. Gini coefficient increased from 30.3% (1993), to 33% (2006)¹ indicating that growth has been uneven and the gap between haves and have-nots widened over the time. A small segment of the population is benefiting fruits of growth to a large extent leaving large segment of the society deprived of basic needs; 51% of the population is suffering from severe deprivation of education and 29% with health². The prevailing inequalities

¹ World Development Indicators Online World Bank

² Human Development Report (HDR) 2010

in Pakistan have resulted in 31.5%³ loss in human development which could have been improved otherwise. Different socio-economic indicators show that the disadvantage groups including poor, people living in rural areas have not benefited proportionally from economic growth⁴. Income inequalities can hamper the growth through lowering the impact on poverty reduction of a given rate of growth, and thereby reduce the growth. Furthermore inequalities can operate through political (in)stability and social cohesion channels to dissuade economics growth (Ali and Son 2007). In this back drop, reducing inequalities has become a major concern of development policy across the globe especially so for developing countries generating interest in inclusive growth. Inclusive growth ensures fair and equal access to all stratum of society, including disadvantaged and marginalized, to opportunities created (Ali and Son 2007).

Creation of economic opportunities and ensuring equal access to opportunities by all groups of society is essential and prerequisite for socio-economic development. An enabling environment is a pre condition to allow all individuals to equally participate with growth process. Equity in the provision of public services particularly education, health and employment opportunities is required failing to which can worsen the situation. In last two decades the economic growth achieved in Pakistan has not been successful in engulfing the poor-rich gap and resulted in ever increasing inequalities. Until the fruits of development are not shared with and by all segments of society sustainable development, with its ultimate objective of poverty reduction, cannot be achieved. In recent years, Pakistan has increased its pro-poor expenditures to improve health, and education conditions, with major focus on skill development for

³ Loss in HDI shows; total loss in achieving potential level of; human development that could be achieved if there was no inequality in distribution of: income, years of schooling and expected length of life. HDR 2010

⁴ Pakistan Economic Survey 2010

productive labor force, and provide social safety net to the vulnerable groups⁵. Different policies and programs are in progress to achieve these objectives. Consistent with the definition and measurement approach of inclusive growth adopted by “*Ali and Son*” this study aims to assess the inclusiveness of growth in context of education and employment opportunities, and evaluate equity thereof, in Pakistan using cross-sectional data from Pakistan Living Standards And Measurement Survey (PLSM) for the period 1998-99 and 2007-08. The study empirically evaluates the change in and access to both education and employment opportunities available to the population and how equitably these opportunities are distributed. We find that growth process has increased the inequalities both in education and employment opportunities over the study period. Average opportunities available to population increased for education while a decline in average employment opportunities is documented in 2007/08 as compared to 1998/99. Equity Index of Opportunities (EIO) improved at primary level, remained stagnant for secondary level, and decreased for literacy rate over the time. Moreover, EIO for employment opportunities, suggesting equitable distribution for employment and paid employment, registers a decrease and turn inequitable when calculated based on average monthly income.

The concept of inclusive growth has not been a part of much academic debate in Pakistan therefore this study draws the attention of policy makers towards the new development paradigm which focuses on income as well as non income dimensions of progress for poverty and inequality reduction. The findings of this work will provide the basis to gauge the overall opportunities generated in last decade. It will assist to; identify the problem of current growth process which has increased the inequality, so that targeted policies could be designed for efficient allocation of resources. Rest of the paper is organized in six sections wherein section 2

⁵ Pakistan Economic Survey 2010-11

lays conceptual foundation of inclusive growth while section 3 provides literature review. Data and Methodology adapted to measure inclusive growth is discussed in section 4 and section 5 furnishes empirical illustration. Section 6 concludes the paper and draws some policy implications.

2 Inclusive Growth- The Concept

Nevertheless there is no agreed and common definition of inclusive growth; the concept however, is understood to refer to “*growth coupled with equal opportunities.*” Inclusive growth is one which emphasizes that economic opportunities created by growth are available to all, particularly the poor (Rauniyar and Kanbur 2009). Growth will be inclusive when the benefits will reach to poor, marginalized and socially excluded groups in any society. It should bring social development and empower the weaker groups in the society to gain access to assets and opportunities. Equitable distribution of assets and opportunities leads to sustainable economic growth and ultimately result in reduction of poverty and inequality. The new development approach of inclusive growth emphasize that, for poverty reduction, public policies should focus on multidimensional approach which expands socio-economic opportunities as well as ensures equal access of all segments of society to these opportunities under the framework of accelerated economic growth (Naqvi, 2010). It not only considers the pace but also the pattern of growth simultaneously.

Inclusive growth aims on ensuring that the economic opportunities created by growth are available to all, particularly the poor, to the maximum extent possible (Asian Development Bank). While United Nations Development Program (UNDP) emphasized inclusive growth as growth with low and declining inequality, economic and political participation of the poor in the

growth process, and benefit-sharing from that process. Inclusive growth involves a long term perspective and focuses on generating decent employment in order to increase the income of excluded groups (Ianchovichina and Lundstrom 2009). Growth allowing every individual (group) of society participate in, and contribute to the growth process on an equal footing regardless of their individual circumstances is called to be growth with inclusiveness (Ali and Zhuang 2007).

3 Literature Review

Inclusive growth has become an important development policy of many developing countries. Different definitions and measurement concepts of inclusive growth exist in the literature. Stephan Klasen (2010), defines inclusive growth as nondiscriminatory and disadvantage-reducing growth, which focuses on two characteristics; one on process, in the sense that the actual growth include many people who participate in growth (i.e. inclusive growth is based on inputs from a large number of people), second; on outcomes of the growth process (i.e. inclusive growth benefits many people). The author argues that inclusive growth adds much beyond the existing pro-poor growth concepts. According to author *“income growth is inclusive when it; allows participation and contribution by all members of society, with particular emphasis on the ability of the poor and disadvantaged to participate in the process of growth (the nondiscriminatory aspect of the growth), and associates with declining inequality in non-income dimensions of wellbeing that are particularly important for promoting economic opportunities, including education, health, nutrition, and social integration (the disadvantage-reducing aspect of inclusive growth)”*.

Rauniyar & Kanbur (2009) conclude that a growth that is accompanied by declining income inequality is inclusive in nature. The authors highlighted different factors essential for inclusive growth and development including; sustainable and equitable growth that is broad-based across sectors and regions creating more employment opportunities for poor and vulnerable groups, improved quality of infrastructure, rural infrastructure and agricultural technologies to provide rural population economic opportunities, social protection for disadvantaged groups, legal identity, capacity building, rule of law and enabling environment for business and investment and public private partnership to promote equity and inclusiveness.

Lanchovichina & Lundstrom (2009) asserts that sustainable growth should be broad-based across sectors and inclusive of the vast majority of country's labor force. This concept of growth focuses on productive employment as a means of increasing incomes of excluded groups rather than on direct income distribution. The authors applied inclusive growth analytics to Zambia and conclude that poor education and health, access to capital and credit, infrastructure and government failure are the constraints to productive employment and inclusive growth.

Yoko (2009), focus on gender dimensions of growth process and concludes that despite the improvement in education, and to some extent health outcomes, women's improved capabilities are not translated into an equal participation between men and women in economic and political activities. Gender gaps in access to resources and opportunities remain significant particularly in South Asia, which are caused and reinforced by interlinked cultural, social, and economic factors. Based on empirical evidence the author argues that; educating public, enforcing antidiscrimination legislations, promoting economic development to generate economic opportunities and improving women's capabilities and access to the opportunities, are the key ingredients for greater progress toward gender equality and inclusive growth.

Mendoza & Thelen (2008), point out the barriers that poor people face in accessing and actively participating in markets as producers and consumers. Lack of access to credit, limited investment in human capital, including skills and entrepreneurship training, and geographical obstacles, according to authors, can be major causes of exclusion of the poor people from labour and various product markets. The paper also describes the role of markets in promoting economic growth and its benefits to those who are able to access and participate successfully.

Ali (2007) establishes higher demand of coupled with higher wages for skilled workers backed by rising importance of new technologies and foreign direct investment has resulted in increased income inequalities in Asia over the time. Further, according to author, with the decline in effective delivery of public services non-income inequalities have also risen. Creation of economic, social and political opportunities, equal access to opportunities and provision of social protection scheme to the vulnerable groups will promote inclusive growth in the region. The author also emphasized the importance of measuring inclusive growth in term of average opportunities available and distribution of these opportunities.

Ali and Son (2007), in a very influential work, examined that to what extent social opportunities are distributed across different income groups and how this distribution changes over time. The originality of paper lies in devising methodology to measure inclusive growth. This approach relies on a social opportunity function, similar to the idea of a social welfare function. Growth is considered inclusive, according to authors, if it increases the social opportunity function, which in turn, depends on two factors namely average opportunities available to the population, and how equitably these opportunities are shared among the population. This paper also provides empirical application of the proposed approach to Philippines to analyze the access to and equity of opportunities in education and health facilities.

The authors conclude that government health facilities are more utilized by the people at the lower income distribution, whereas private health facilities which are superior in quality tend to be highly inequitable in favor of rich. Further primary and secondary level education opportunities are more inequitable over the time period 1998 to 2004.

Ali and Zhuang (2007), emphasize that inclusive growth is not based on a redistributive approach but its goal should be the high and sustainable growth to create productive and decent employment opportunities as well as social inclusion to ensure equal access to opportunities. Further the authors emphasized that social inclusion could be achieved by investing in education, health and other social services to enhance human capacities, promoting economic and social justice and provision of social safety nets to prevent extreme deprivation.

4 Data and Methodology

Crossectional data from Pakistan Social and Living Standards Measurement Survey (PSLM) 1998 -99 and 2007-08 is used to gauge the inclusiveness of Growth in Pakistan. Baseline comparison will be made with the 1998-99 dataset. PSLM survey provides various micro level household based socio-economic indicators including education, employment, health, income, expenditure etc. These two datasets provide information of more than, 16000 (1998-99) and 15000 (2007-08) households, from all over the Pakistan including urban and rural areas of the four provinces and Islamabad; however military restricted areas are not included in the surveys. Based on Ali and Son (2007) a social opportunity curve and index is calculated for 1998-99 and 2007-08 PLSM data to gauge access to education and employment opportunities. The idea of a social opportunity function is similar to social welfare function. It states that inclusive growth leads to the maximization of social opportunity function and growth inclusiveness could be

measured in terms of increasing the social opportunity function, which depends on two factors: (i) average opportunities available to the population, and (ii) how the available opportunities are shared or distributed among the population. This social opportunity function gives greater weight to the opportunities enjoyed by the poor: the poorer a person is, the greater the weight will be. Such a weighting scheme will ensure that opportunities created for the poor are more important than those created for the non-poor i.e. if the opportunity enjoyed by a person is transferred to a poorer person in society, then social opportunity must increase making growth more inclusive.

Suppose there are n persons in the population with incomes x_1, x_2, \dots, x_n , where x_1 and x_n are poorest and richest person respectively. Social opportunity function then, based on social welfare function, can be defined as:

$$O = O(y_1, y_2, \dots, y_n) \dots\dots\dots 1$$

Where y_i is the opportunity enjoyed by the i^{th} person who has income x_i and where y_i can take binary values of 0 and 100 indicating that i^{th} person is deprived of or enjoys a certain opportunity respectively. The average opportunity for the population is then defined as:

$$\bar{y} = \frac{1}{n} \sum_{i=1}^n y_i \dots\dots\dots 2$$

It also represents the percentage distribution because y_i takes the binary values of 0 and 100. This idea will be operational if the problem is formulated in continuous distribution. Suppose the population is arranged in ascending order of their incomes and \bar{y}_p is the average opportunity enjoyed by the bottom p percent of the population, where p varies from 0 to 100 and \bar{y} is the mean opportunity available to whole population, then \bar{y}_p will be equal to \bar{y} when $p = 100$ (which covers the whole population). As \bar{y}_p varies with p , a curve \bar{y}_p could be drawn for different values

of p , which is a concentration curve of opportunity when the individuals are arranged in ascending order of their incomes called the opportunity curve. The higher the curve, the greater is the social opportunity function. The index calculated based on area under the opportunity curve will capture then magnitude of the change in opportunity distributions.

$$\bar{y}^* = \int_0^1 \bar{y}_p dp \dots\dots\dots 3$$

\bar{y}^* in equation 3, is proposed opportunity index (hereafter OI) where the greater value of \bar{y}^* denote that opportunities available to population are greater. If everyone in the population enjoys the same opportunity then \bar{y}^* should be equal to \bar{y} but deviation of \bar{y}^* from \bar{y} provide the distribution of opportunities across the population. Thus based on the assumptions of the opportunity curve an equity index of opportunity (hereafter EIO) is also proposed which could be determined as:

$$\phi = \bar{y}^* / \bar{y} \dots\dots\dots 4$$

$$\Rightarrow \bar{y}^* = \phi \bar{y}$$

In order to achieve inclusive growth \bar{y}^* should be increased over time and to understand the dynamics of inclusive growth both sides of equations are differentiated

$$\Rightarrow d\bar{y}^* = \phi d\bar{y} + \bar{y} d\phi \quad (\text{Differentiating both sides}) \dots\dots\dots 5$$

Here $d\bar{y}^*$ measures the change in the degree of growth inclusiveness while $\phi d\bar{y}$ is the contribution to inclusiveness of growth by increasing the average opportunity in the society when the relative distribution of the opportunity does not change. $\bar{y} d\phi$, in equation 5, denotes the contribution of

changes in the distribution when the average opportunity does not change⁶. Access to and equity of education and employment opportunities and how this access and equity of opportunities has changed over time in Pakistan is assessed by employing the above given methodology.

5 Empirical Illustration

Empirically, inclusiveness of growth can be measured by two approaches; (i) partial approach which is derived through “opportunity curve” and; (ii) full approach in which a quantified index is calculated from the area under the opportunity curve. In first approach slope of the opportunity curve determines that either opportunities are distributed equitably or inequitably among the population at a given point in time. If the curve slopes downward, it suggests that opportunities are equitably distributed among the population, i.e. lower income groups of the population have more opportunities than the groups with higher level of income. Whereas an upward slope of the curve suggests that distribution of opportunities is inequitable and population with higher level of income have more opportunities. Further if the curve shifts upward over the time period at all levels of income distribution then growth is considered inclusive. Partial approach determines the pattern of growth only. However in order to quantify the precise magnitude of the change in distribution of opportunities and equity level over time this work also employs second approach and OI is calculated from the area under the opportunity curve as well. The greater value of OI shows greater level of opportunities available to population hence inclusive growth.

In order to assess the equity of education and employment opportunities over the time period of 1998-99 to 2007-08 following section provides the results determined through both

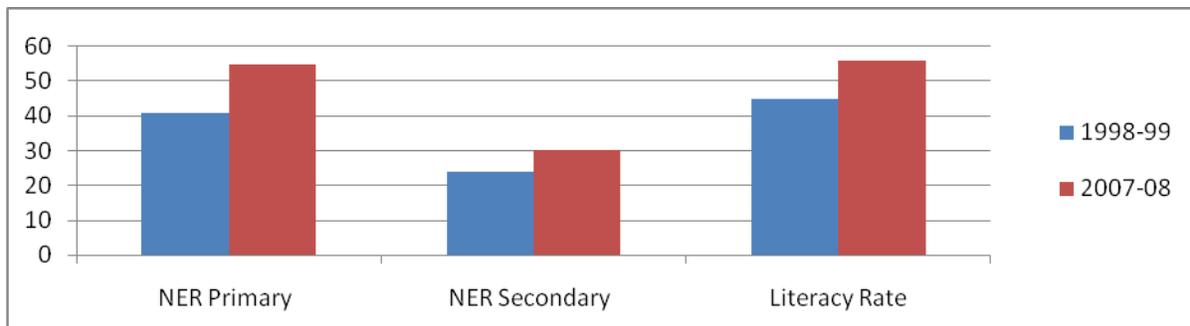
⁶ Detailed mathematical derivations of the methodology are available on demand

measurement approaches, i.e. partial and full approach. The calculations presented are based on statistics calculated from datasets provided by PLSM surveys of 1998-99 and 2007-08.

5.1 Access to and Equity of Education Opportunities

This section provides the average access to and equity of education opportunities for major indicators including Net Enrolment Rate (NER)⁷ at primary and secondary levels as well as Literacy Rate (LR). Figure 1 shows Net Enrolment Rate at Primary⁸, Secondary⁹ level and Literacy Rate¹⁰, for Pakistan for the years 1998-99 and 2007-08.

Figure 1: Major Education Indicators



Source: Authors' own calculations based on 1998-99 & 2007-08 PSLM survey

Figure 1 exhibits an increase in NER and LR for Pakistan over the time period 1998-99 to 2007-08 at levels of education. However access to primary level of education for children at their required age is higher than that of secondary level of education. More than 41 percent of children aged 5-9 years attended primary level of education in 1998-99 which increased to 55

⁷ NER (Net Enrollment Rate) refers to the proportion of students enrolled in a specific level of education with required age of that level of education.

⁸ NER at Primary Level: (Number of children aged 5-9 years attending primary level (classes 1-5) divided by total number of children aged 5-9 years) multiplied by 100.

⁹ NER Secondary Level: (Number of children aged 10-14 years attending secondary level (classes 6-10) divided by number of children aged 10-14 years) multiplied by 100.

¹⁰ Literacy is taken as the ability to read a newspaper and write a simple letter & Literacy Rate is the population that is literate, expressed as a percentage of the total population (Presented literacy rate is for 15-60 years aged population).

percent in the year 2007-08. Similarly 24 percent of children aged 10-14 years were enrolled at secondary¹¹ level of education in 1998-99 while the proportion increased to 30 percent in the year 2007-08. Fifty six percent of the population aged 15 – 60 years is literate¹² as compared to 45 percent in 1998-99. Above figure shows improvement in access to education opportunities, however difference in access to education opportunities are expected to vary between different income groups¹³.

To assess the access of different groups of population to education opportunities we apply above proposed methodology and determine the inclusiveness of growth in education opportunities at all levels of income. Figures 2, 3 and 4 represent opportunity curves¹⁴, over the time period 1998 to 2008, of access to education opportunities for different age groups of the population. Growth is argued to be inclusive if opportunity curve shifts upward at all points indicating that everyone in society is enjoying an increase in overall opportunities available for the whole society. However the degree of inclusiveness depends on; how much the curve is shifting upward and in which part of the income distribution the shift is taking place. It is evident that when the entire population of children aged 5-9 years (or 10-14 years) is covered i.e. variable- arranged in ascending order of their income - in the horizontal axis is 100), the opportunity curve coincides with the average access to primary (or secondary) level of education. The upward shift of the curves represent that, overall average level of education opportunities has increased over the study period (1998/99-2007/08) and growth is inclusive (figure 2).

¹¹ NER at middle level (aged 10-12) is 18% & at Matric Level (aged 13-14) is 11%.

¹² A person is literate if he/she can read and write with understanding.

¹³ Ali and Son, 2007

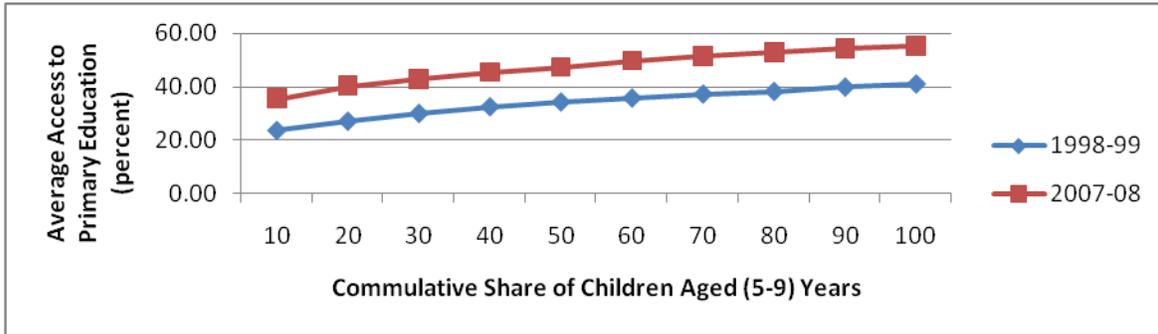
¹⁴ Horizontal axis of opportunity curves represent the population arranged in ascending order of per capita yearly income level of their household.

Notes:

1. Per capita Income level is determined by dividing the total yearly income of household with total number of person of that household.
2. Total yearly income variable is based on multiple PIHS indicators that provide information on total income received from all members of the household from; employment activities, pensions, remittances, selling goods/property, revenues generated from rent or profit or any other source.

However negligibly slight increase in secondary level opportunities is observed (figure 3). Upward slope of these curves shows that distribution of education opportunities at primary and secondary level of education over the time period, 1998 – 2008, is not equitable i.e. children belonging to higher level of income groups have greater access to education opportunities as compared to bottom end of the income distribution. Figure 2 clearly shows that; $d\bar{y} > 0$ since, average opportunity in primary education has expanded over the period among children aged 5 – 9 years.

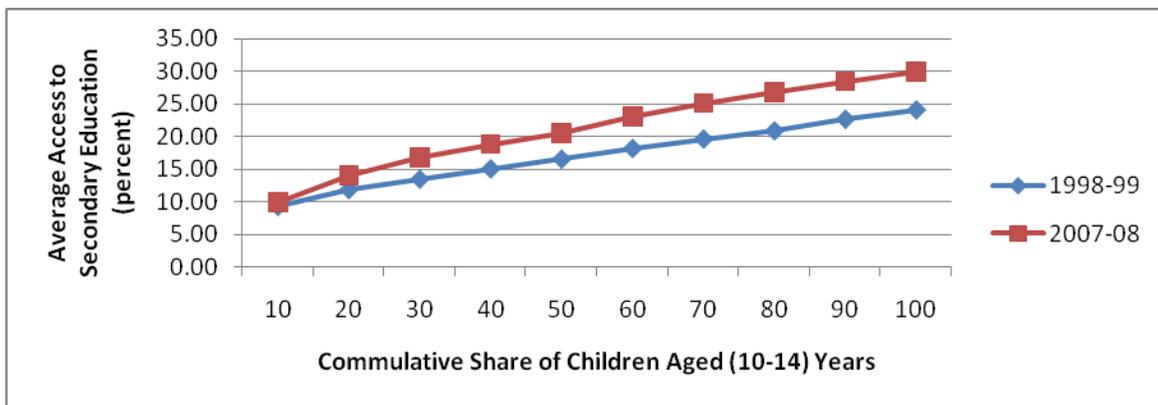
Figure 2: Opportunity Curves for Access to Primary Education 1998 – 2008



Source: Authors' own calculations based on 1998-99 & 2007-08 PSLM surveys.

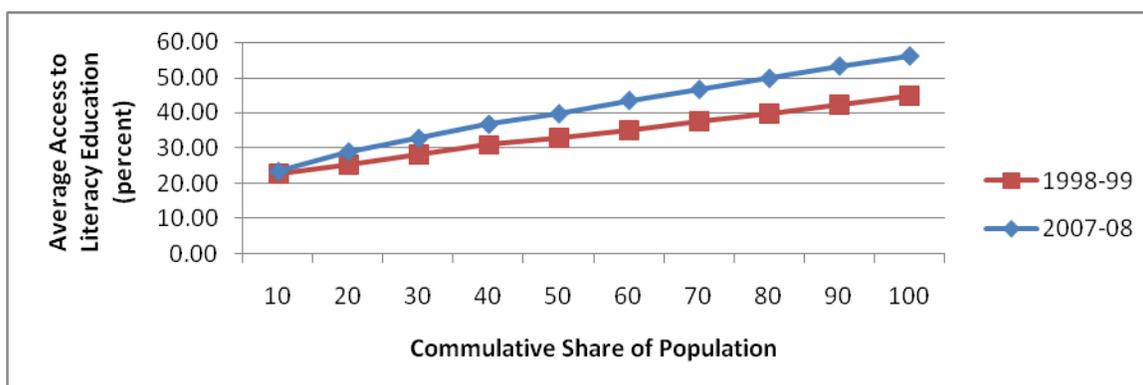
Figure 3 & 4 show that average access to secondary level education opportunities for children aged 10 – 14 years and literacy rate is increased ($d\bar{y} > 0$). However this increase is lower and more inequitable as compared to the primary level of education. This is also evident from increasing gap between the two opportunity curves with increasing level of income. Here shift in curves is greater for children belonging to households with higher income level. Similar patterns are observed for literacy rates in Figure 4 for segregated population groups based on income.

Figure 3: Opportunity Curves for Access to Secondary Education 1998 – 2008



Source: Authors' own calculations based on 1998-99 & 2007-08 PSLM survey.

Figure 4: Equity of Literacy Rate (15 – 60) Years Aged Population 1998 – 2008



Source: Authors' own calculations based on 1998-99 & 2007-08 PSLM survey.

5.1.1 Access to Education Opportunities: Opportunity Indices

The opportunity curves depicted above provide only partial ranking of education opportunities. We also estimate Opportunity Index (\bar{y}^*) (OI) and Equity Index of Opportunity (ϕ) (EIO) to quantify the precise magnitude of changes in opportunities and equity level over time and results are reported in table-1, The results will help us to evaluate and quantify the changes in access to education opportunities over the time.

Table 1: Opportunity Index for Access to Education Opportunities 1998 – 2008

Population Share (Percent)	Primary		Secondary		Literacy	
	1998-99	2007-08	1998-99	2007-08	1998-99	2007-08
10	23.54	35.38	9.27	9.92	22.62	23.53
20	26.98	40.24	11.84	14.09	25.13	29.05
30	29.92	42.77	13.45	16.85	28.09	32.85
40	32.38	45.24	15.04	18.85	30.88	36.85
50	34.20	47.25	16.52	20.57	32.88	39.83
60	35.68	49.72	18.17	23.08	35.09	43.55
70	37.16	51.34	19.61	25.17	37.45	46.68
80	38.15	52.88	20.87	26.77	39.61	49.81

90	39.79	54.33	22.65	28.47	42.21	53.28
100	40.93	55.31	24.08	30.01	44.84	56.13
Opportunity Index (\bar{y}^*)	33.87	47.45	17.15	21.38	33.88	41.16
Equity Index of Opportunity (ϕ)	0.83	0.86	0.71	0.71	0.76	0.73
Comments	Not Equitable	Not Equitable	Not Equitable	Not Equitable	Not Equitable	Not Equitable

Source: Authors' own calculations based on 1998-99 & 2007-08 PSLM Survey.

Table-1 shows that EIO for education indicators at all levels remained below 1 for the time period 1998 – 2008 confirming inequitable distribution of education opportunities. It is evident from the results that the value of EIO for primary level education has improved from 0.83 to 0.86 (i.e. $d\phi > 0$). EIO for secondary level of education, however, remained unchanged. Notably EIO for literacy rate has decreased ($d\phi < 0$) from 0.76 to 0.73 documenting increasing inequalities in access to education. In order to achieve inclusive growth $OI (\bar{y}^*)$ should increase, which is possible by increasing; (i) the level of opportunities \bar{y} (ii) the Equity Index of Opportunities ϕ or (iii) both (i) and (ii). Since $d\bar{y}^* > 0$, for primary and secondary level of education and literacy rate is suggestive that growth is inclusive.

But most importantly, distribution of opportunities is not equitable at all levels and both pre-requisite of inclusive growth are met only for primary level of education opportunities whereas in the case of secondary level education \bar{y}^* (OI) shows a slight increase but no change is observed in EIO. Results are even more unsatisfactory for literacy rate with decline in EIO. These results are suggestive that over study period (1998-2008) policies were more focused towards increasing the overall average opportunities at primary level of education as compared to secondary level of education. Further to mention equity aspect of the policies could not find

much attention and population from bottom groups remain ignored and still lags behind resulting in improved average access to education opportunities at required age but huge disparities prevails across different income groups. Especially at secondary level of education very small change in OI can be seen with more inequitable distribution.

5.2 Access to and Equity of Employment Opportunities

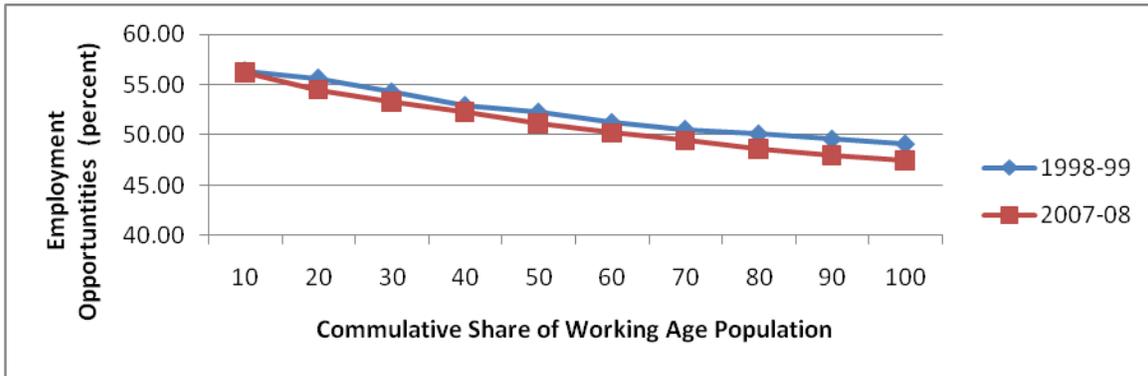
This section provides equity and inclusiveness of employment¹⁵ opportunities over the time period 1998 - 2008. This analysis, based on working age population (15+ years), aims to determine the efficacy of economy to create more job opportunities for population with greater possibility to be a part of labor force. An employed person could be categorized as paid or self employed but a significant proportion of these employed persons is also engaged as unpaid family worker. This section also measures the equity of paid employment and monthly income earned through employment activities over the specified time period. Results are reported below.

Figure 5 shows the opportunity curves for employment opportunities available to the working age population¹⁶. The curves show that across all income groups the share of the working age population that is in employment has decreased over the time. It is also evident that average employment opportunities are slightly decreased but the distribution of these opportunities is equitable. This suggests that the population belonging to the bottom end of income distribution have more job opportunities than the non-poor.

¹⁵ Any person who worked for at least one hour for pay, profit or family gain during the month preceding the survey is considered as employed.

¹⁶ Population aged 15 years and above is considered as working age population (results are still valid if population aged 15 years and above currently attending school is excluded from base population)

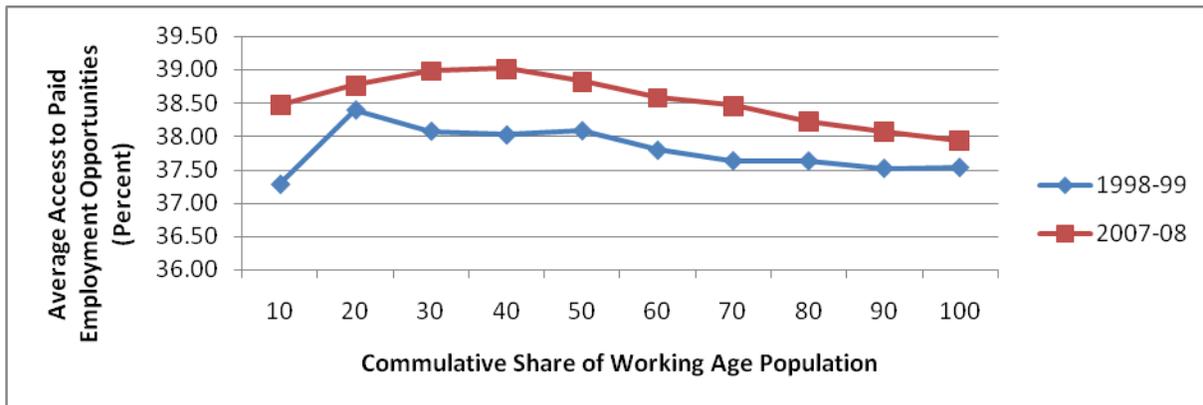
Figure 5: Opportunity Curves for Employment Opportunity 1998 – 2008



Source: Authors’ own calculations based on 1998-99 & 2007-08 PSLM survey.

Although working age population belonging to bottom end of the income distribution has more job opportunities but a significant proportion of total employed persons were engaged as unpaid family worker therefore analysis is extended to paid employment¹⁷. The shift in opportunity curve taken place in Figure 6 shows that the paid employment opportunities have increased over the time, and distribution of these opportunities is equitable and inclusive.

Figure 6: Opportunity Curves for Paid Jobs/ Earning Employment 1998 – 2008



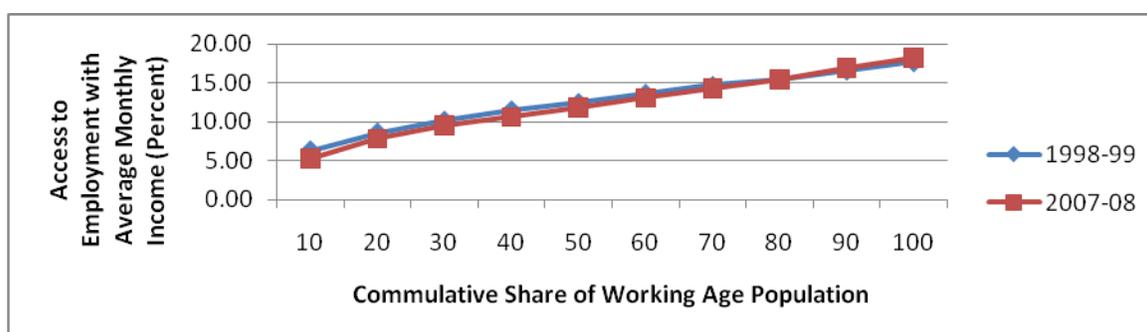
Source: Authors’ own calculations based on 1998-99 & 2007-08 PSLM survey.

Stagnant but equitable nature of employment opportunities urge the need to determine the equity of monthly income earned through these employment opportunities over the time so that nature

¹⁷ All employment activities (self employment, paid employee) which resulted in earnings received in cash or in kind i.e. unpaid family worker are not included in this category.

of employment could be determined. Figure 7 shows opportunity curves for employment with average¹⁸ monthly income over the time. It shows the distribution of employment opportunities with average income earned across different income groups and suggests that distribution of employment opportunities with average monthly income has slightly decreased and remained inequitable over the time. Population belonging to bottom end of income distribution has lesser share of employment opportunities in context of average monthly income earned and is engaged in low earnings or unpaid employment activities (evident from figure 5 & 6). For population belonging to higher income groups, on the other hand, this distribution has slight upward shift over the time.

Figure 7: Opportunity Curves for Employment Opportunities with Average Monthly Income 1998 – 2008



Source: Authors' own calculations based on 1998-99 & 2007-08 PSLM survey.

5.2.1 Access to Employment Opportunities: Opportunity Indices

Table 2 depicts precise magnitude of equity and changes in employment opportunities over time period 1998-2008. The results document a slight decline in overall Employment to population

¹⁸ Median of monthly incomes earned through employment activities by all employed persons is considered as average monthly income of the population. For 1998-99 average monthly income was Rs.2500 and for 2007-08 it was above Rs. 4500.

ratio while slight increase is observed in paid employment opportunities. Decrease in \bar{y}^* (from 49.13 to 47.49) confirms that employment growth is not inclusive however it is equitable ($\phi > 1$). Increasing value of OI for paid employment in table 2 indicates that more of the unpaid family workers are now entered to the category of paid/earning workers and this shift has taken place at all levels of income distribution ($\phi > 1$). In spite equitable distribution of employment opportunities the equity and inclusiveness of growth in monthly income earned through these employment opportunities is another important dimension to be explored, which will also assist to evaluate the nature of jobs being created in the economy. The results for this exploration are provided in last two columns of table-2.

Table 2: Opportunity Index for Access to Employment Opportunities 1998 - 2008

Population Share (Percent)	Employment		Paid Employment		Employment with Average Monthly Income	
	1998-99	2007-08	1998-99	2007-08	1998-99	2007-08
10	56.35	56.20	37.28	38.47	6.34	5.27
20	55.65	54.48	38.39	38.76	8.66	7.89
30	54.28	53.28	38.07	38.98	10.19	9.54
40	52.93	52.29	38.02	39.02	11.52	10.65
50	52.27	51.19	38.08	38.82	12.48	11.83
60	51.24	50.23	37.79	38.58	13.68	13.13
70	50.57	49.47	37.63	38.46	14.67	14.29
80	50.13	48.66	37.63	38.22	15.46	15.52
90	49.61	48.01	37.52	38.07	16.58	16.98
100	49.13	47.49	37.53	37.93	17.65	18.29
Opportunity Index (\bar{y}^*)	52.22	51.13	37.79	38.53	12.72	12.34
Equity Index of Opportunity (ϕ)	1.06	1.08	1.01	1.02	0.72	0.67
Comments	Equitable	Equitable	Equitable	Equitable	Not Equitable	Not Equitable

Source: Authors' own calculations based on 1998-99 & 2007-08 PSLM Survey.

From the findings of study, it is evident that overall employment opportunities with average monthly income have increased (17.65 to 18.29 percent), but distribution of these opportunities is neither equitable nor inclusive. Growth is inclusive if $d\bar{y}^* > 0$, above table shows that OI index for employment opportunities with average income level has decreased to 12.34 in 2007-08 from 12.72 in 1998-99. Furthermore, working age population belonging to higher income groups of the society shares larger proportion of job opportunities with monthly income at or above average level whereas lesser share is left for lower quintiles. Above findings highlight that population belonging to lower end of income distribution shares a larger proportion of employment opportunities but with an inequitable distribution of monthly earnings from employment opportunities. On the whole efficacy of economy has not improved to absorb the increasing proportion of working age population and more of the jobs created are with lower earnings.

6 Conclusion

Inclusive growth aims to accelerate economic growth process and expand socio-economic opportunities along with ensuring that opportunities created are available to all segments of society, particularly to the disadvantaged and marginalized, hence leading to inequalities decline. This paper assesses the inclusiveness of growth in terms of education and employment opportunities for Pakistan using data from 1998-99 and 2007/08 PSLM surveys. Findings presented are based on two approaches; firstly opportunity curve are drawn to provide partial ranking of opportunities; secondly, opportunity index (OI) and equity index of opportunities (EIO) are calculated to quantify the amount of changes in opportunities and equity level over time. The results are suggestive that over the time period 1998 – 2008 increased

education opportunities are inclusive but distributed inequitably. We find that overall level of primary education and equity index is improved however only a slight increase in access to secondary education opportunities is documented over the study time without any change in equity index. Most importantly EIO for literacy level is decreased indicating an increase in inequalities.

Furthermore, it is evident from the findings that proportion of paid employment activities increased over the time with more opportunities for lower income groups of the society however these jobs are below average level of earnings. Population belonging to higher income groups of the society shares larger proportion of employment opportunities with earnings at or above average level. Policies must be devised to; focus on more equitable distribution of primary and secondary level of education opportunities and also highlight the urgency to improve the overall access to secondary and higher level of education which will also improve the access of lower income groups of the society to decent employment opportunities. In order to actively engage all groups of the society in growth process policies should be tailored towards lower income groups of the society with more employment avenues and higher level of education so that they could have greater access to economic opportunities which will ultimately lead to poverty reduction and hence more sustainable development.

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