



Growth Inclusiveness and Devaluation of Power, Myth or Reality: A case Study of Pakistan's Education Sector

Syed Tahir Hussain Shah¹, Ihtsham Ul Haq Padda²

¹ Lecturer/Ph.D. Scholar, Department of Economics, University of Wah/Federal Urdu University of Arts, Sciences & Technology, Islamabad Campus, Pakistan. Email: syed.tahir@uow.edu.pk

² Associate Professor, Department of Economics, Federal Urdu University of Arts, Sciences & Technology, Islamabad Campus, Pakistan. Email: ihtshamulhaq@fuuast.edu.pk

ARTICLE INFO

Article History:

Received: April 27, 2023
Revised: June 18, 2023
Accepted: June 19, 2023
Available Online: June 20, 2023

Keywords:

Inclusive Growth
Opportunity Index
Equity of Opportunity Index
Social Opportunity Function
Net Enrolment of Primary Education
Net Secondary Enrolment
Net Literacy Rate
Growth

Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

The education system of the country faces problems in quality of education, accessibility and equal opportunity forever at all level. To minimize these constraints, successive government reforms are desirable for Pakistan's economic and societal development. This study analyzes consequence of devaluation of power (famously known as "The 18th amendment") through a new approach called the inclusive growth. For this purposes a social opportunity function is used to assess firstly access to average education opportunities available to the population and secondly how these educational opportunities are shared and received by the population in the pre-amendment and post amendment. The 18th amendment is noted advantageous for all provinces in term of improvement of NER primary education. The change in average access to primary education is recorded more than 20 percent on average in the post-amendment. More than eight percent change is observed in the secondary education level in the post-legislation. However, the social opportunity curves shifted upward for all provinces shows a minor growth in the literacy rate for pre and post-amendment era except Sindh province which show shift in the only pre-amendment while the curves overlapped each other for post-legislation. The equity index of opportunity (EIO) in absolute term for NER of all education level (primary, secondary and literacy rate) for both legislations period remained less than one for both study period confirmed inequitable distribution of net enrolment opportunities for the all provinces. While in relative terms the equity of opportunities the NER primary level is equitable for both pre and post-amendment era of the study periods for Punjab and KPK provinces indorsing inclusiveness of primary enrolment opportunities for these two provinces and unequitable for remaining two provinces (Sindh and Blochistan) in pre and post amendment except only last study period of post-amendment era.

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Corresponding Author's Email: syed.tahir@uow.edu.pk

1. Introduction

The growth is said to be inclusive if the new economic opportunities are created and have equal access to all in a society. If the benefits of growth bypass the marginalized groups of the society then the result in increasing inequality and give rise to poverty in the country which would result political stability as well as social cohesion in the country. Hence it became a major concern of policy makers and also generated interest in inclusive growth. There is various factor which could help the economy to get rid of these cliquish. Intre alia, the Education is a key determinant of economic well-being and upsurges the human capital inherent in the labor force of a country (Hanushek & Woessmann, 2010). A society's progress and prosperity is subjects to its educational choices and access to the population. Education trained the young to understand the complexities of economic growth. Quality of life can be better with good education system

and warrants socio-economic growth in an economy (United Nations, 1997). Asian economies (S. Korea, India and China) have accomplished ideal economic growth in the last few decades through reforms especially in the education.

Economic growth and education has a contiguous relationship between each other. Higher economic growth rates of an economy can be achieved with higher level of access to education. Better education leads towards faster economic growth and also caused investment in education which payback in the long run in the form of monetary profit and indirectly leads to reduce poverty. The government is trying its best to boost up the access and equity in the enrollment through not only provision of qualitative educational facilities but also devaluation of power to the all provinces and regions.

Pakistan accomplished independence from over a century of British colonial rule in August 1947 and consisted most neglected and extremely backward areas in all aspect including education. At the time of independence approximately 85 percent of the people illiterate. From the first day of independence till now, several policies and recommendation have been developed by various governments to boost the education system in the country. The idea for Pakistan's educational planning was free and compulsory education was adopted under the umbrella of "Universal Declaration of Human Rights (1948)". The result of these policies were not satisfactory due to unstable administrative and organizational failures. On the recommendations of commission constituted by the Ayub Khan (1958) primary and secondary schooling was considered compulsory. In the early 1970's all educational institutions of the country were nationalized by the Bhutto government with commitment of compulsory, universal and free primary education for all. Infected the Bhutto regime was committed to the idea of failed social inclusion.

It was declared¹ that education² is the right of every child in the society and the State's has to ensure the provision of primary education free for all. In spite of all commitments and claimed, approximately 50 percent male students and more than 66 percent of female did not attend primary schools. Inter-provincial enrolment data was showing same behavior with 32 percent for Balochistan, 52 for NWFP, 56 for Punjab and 59 for Sindh. By acknowledging the International commitments³ government of Pakistan tried to opt the educational policy to enhance the literacy rate of by 2000 with the help and direct involvement of donor agencies in the education sector. These donor agencies provided assistance in different education projects and programs includes the World Bank, ADB, UNDP, UNESCO, UNICEF, DFID, JICA, NORAD, GTZ, OPEC, EU, and others. Structural reforms in the education sector have been taken with the help of these institutions to achieve universal primary education and adult literacy. As a results provinces (Punjab, Sindh) has made compulsory and free education up to matric levels and also set⁴ up a workable idea for higher access to education and improvement of governance as well as quality of education.

On 2010 an amendment was introduced in the constitution of Pakistan called famously "The 18th Amendment" which has transformed the relationship between the federal and provincial governments. This Act granted the provinces substantial budgetary and legislative autonomy in the fields of education, health, and other social services. Under 18th Amendment the provincial government has to decide their curriculum, implement syllabus, planning and policy, quality, centers of excellence and standards of education. This is an important step towards the devaluation of power by the state by considering the importance education for enhancing one's chances for socioeconomic growth. Considering the importance of education for the development of the country this study is the continuation of struggle to seek the ways how to make used of a diverse spectrum of policy (i.e. 18th amendment) incentives in order to widen social inclusion of education in the process of and benefits disbursement through a new approach "inclusive growth⁵". For this purposes a social opportunity function is used to assess the change

¹ "The Literacy and Mass Education Commission (LAMEC) constituted by under military regime of Zia-ul-Haq-1979".

² "The Convention on the Rights of the Child (1989)"

³ "World Declaration on Education for all (1990), Delhi Summit Declaration (1993)"

⁴ Punjab Education Sector Reform Program (PERSP)

⁵ "Inclusive growth refers to both the pace and distribution of economic growth. For growth to be sustainable and effective in reducing poverty it needs to be inclusive".

in and access to basic indicator of growth i.e. education and analyze how equitably these opportunities are distributed among the population of the provinces after 18th amendment.

2. Literature Review

The developed and developing countries alike and their social system is depending upon economic growth in order to be able to fulfill the basics of the individuals and redistribution of resources in the economy.

Jordi Prat et al. (2018) examined policy options to help the countries in the region boost long-term inclusive economic growth while mitigating the risks of the current international juncture. They concluded that the fiscal sector faces serious challenges in the long-term growth of the CADR economies⁶. Given a lack of political agreement a continued upward trend in fiscal deficits and public debt putting pressure on interest rates which would have adverse repercussions on economic growth reflected low inclusivity in the region. Whereas Leonel et al. (2014) examined the effects of fiscal policy on income inequality and growth and found that gross fixed capital formation, public health spending and education spending have significant positive effects on economic growth. The effects of fiscal spending on the Gini coefficient are negligible. He further concluded that the fiscal expenditure contributed more to inclusive growth in developing economies. Kireyev (2017) examined dynamics of growth inclusiveness by using incidence curve and concluded that within study period Senegal's poverty declined but overall inequality remains broadly unchanged. He disclosed that the growth incidence curve gives somewhat steady signals on distributional shifts in Senegal.

Kiani (2013) found that the gap between education level and GDP growth is widening which indicated that the government's investment in higher education didn't produced the desired results. However overall literacy rate has improved and relatively lower in the rural area as compared to urban. (Sajid & Ali, 2018) found education opportunities were distributed inequitably but inclusive. The equity index of primary education was improved over the time but equity index of opportunities for literacy level were decreased indicating an increase in inequalities for access of education in the country. Atif & Mohazzam, (2012) explored the relationship between the macroeconomic and social development indicators and found inverse relationship between public expenditure on education and health. These indicators did not satisfy the rational of inclusive growth. While Affandi and Peiris (2012) showed that growth was in general pro-poor. Specifically, a 1% increase in real per capita income caused to decline 2% poverty headcount ratio. Therefore, any successful pro-poor growth strategy should have at its core measures to achieve sustained and rapid economic growth. Senegal's experience was consistent with this cross-country evidence. A study also discussed the positive relationship between education and economic growth of Pakistan. He found no empirical relationship between the two factors in short-run however there exist a positive long run relationship between education and economic growth.

Zunia et al (2011) discussed whether growth in Pakistan has been beneficial for all or not. The study's findings revealed that there has been an overall improvement in the country due to the upward shift of the concentration curve but the concentration curves got steeper over time which is indicative of efficiency without equity. They further tested this proposition using the social mobility index and the income equity index. The comparison of average per capita income and social mobility index depicted that the average per capita income was higher than social mobility index implying that the distribution of income is inequitable. Given these findings, it was concluded that the growth in Pakistan was not inclusive since growth has been achieved at the expense of equity. The benefits of growth were unevenly distributed where the poor benefit less as compared to the rich. Qayyum, A. et al (2008) following the Hausmann's, et al. (2005) by using the decision tree methodology identified three constraints to growth in Pakistan, poor state of governance, poor state of institutions and lack of competitive environment. Due to these constraint governance failure and institutional shortcomings were the heart of the matter. (Kiani, 2013) found positive relationship between real GDP growths and the primary school enrolment.

⁶ Central America and the Dominican Republic (CADR)
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3. Data & Methodology

In order to assess the access and equity of inclusiveness introduced by (Ali & Son, 2007), the average opportunities and opportunity indexes are calculated by using the cross-sectional datasets provided by Pakistan Social and Living Standards Measurement (PLSM) surveys of 2004–05 to 2019–20 published by Federal Bureau Statistics (FBS) to measure the inclusiveness of Growth in Pakistan at provincial as well as regional level of Pakistan. Baseline comparison will be made with the 2004-05 dataset.

By using the existing empirical and benchmarking work done by (Ali & Son, 2007) assuming there are i^{th} individual in the population (where $i=1,2,3,4,\dots,n$) with incomes $y_1, y_2, y_3, \dots, y_n$ where y_1 is the poorest person in the population and y_n is the richest. Let the social welfare function "w" is

$$w=w(y_1, y_2, y_3, \dots, y_n) \quad (i)$$

Since the social welfare function "w" which is an increasing function of its arguments (income y). By the same token a social opportunity function "V" are the opportunities enjoyed by individuals in the population. Which may be defined as an increasing function of its arguments. The social opportunity function "V" is denoted by

$$v(o) = v(Y_1, Y_2, Y_3, Y_4, \dots, Y_n) \quad (ii)$$

Where Y_i are the opportunities enjoyed by the i^{th} individual who has y_1 income. The opportunity can be defined in terms of various services enjoyed by the individual i.e. access to education and etc. Y_i can take the form of a binary value with a value of 1 when the i^{th} individual access to a given opportunity and 0 if i^{th} individual deprived from a certain opportunity.

We can predict that if the distribution (say) Y_p denotes opportunity superior to the distribution (say) Y_p^* then the distribution Y_p will have always a higher opportunity curve. Similarly if the distribution Y_p^* higher opportunity curve then Y_p then distribution Y_p^* will provide higher social opportunity curve. Therefore Y_p^* is the social opportunity curve and its slop $\left(\frac{dY_p^*}{dp}\right)$ (where $0 \leq p \leq 1$) measured the marginal change in the access to opportunity curve as it's an addition of one more non-poor to the entire population. If $\left(\frac{dY_p^*}{dp}\right) = 0$ indicates that there is perfect equity in access to opportunity in the society regardless income level. If $\left(\frac{dY_p^*}{dp}\right) < 0$ means that lower percentage of people have more access to a given opportunity in the society and vice versa in the case of $\left(\frac{dY_p^*}{dp}\right) > 0$. For magnitude of the change in opportunity distributions we take the social opportunity function which may be obtained by calculating an index as

$$Y_p^* = \left\{ \int_0^1 \bar{Y}_p dp \right\} \quad (iii)$$

Equation *iii* is our proposed opportunity index (*OI*). The greater Y_p^* will be resulted the opportunities available to the population. If Y_p^* equal to \bar{Y}_p which predict that everyone in the population enjoying exactly the same opportunity. The deviation between these two ($Y_p^* & \bar{Y}_p$) provide an indication of how opportunities are distributed across the population. For instance, if Y_p^* greater than \bar{Y}_p then opportunities are equitable distributed mean pro-poor. If the society faces a vice versa situation that is Y_p^* less than \bar{Y}_p than opportunities are inequitably are distributed mean anti-poor.

Let the propose equity index of opportunity (φ) is

$$\varphi = \frac{Y_p^*}{\bar{Y}_p} \quad (iv)$$

Which implies that opportunities are equitable distributed in the society if (φ) is equal to above equation could be written as;

$$Y_p^* = \varphi \bar{Y}_p \quad (v)$$

It implies that proposed (OI) is the product of (EIO) and the average level of opportunities available to the entire population. To find out the dynamic of the inclusive growth we take total differential both side

$$dY_p^* = \varphi dY_p^* + \bar{Y}_p d\varphi \tag{vi}$$

Where dY_p^* is the measure the change in the degree of growth inclusiveness that is the growth become more inclusive if $dY_p^* > 0$. The $d\bar{Y}_p$ measures the contribution to inclusiveness of growth by increasing the average opportunity in society when no change in the relative distribution of the opportunity. Whereas the term $d\varphi$ shows the contribution of changes in the distribution when there is no change in the average opportunity. If $d\varphi > d\bar{Y}_p$ which mean than a development strategy by the government is focused on creating opportunities for the poor rather than to expand the average opportunities for all. If both terms are positive ($d\bar{Y}_p > 0, d\varphi > 0$), growth will always be inclusive. Similarly if both terms are negative ($d\bar{Y}_p < 0, d\varphi < 0$), growth will not be inclusive.

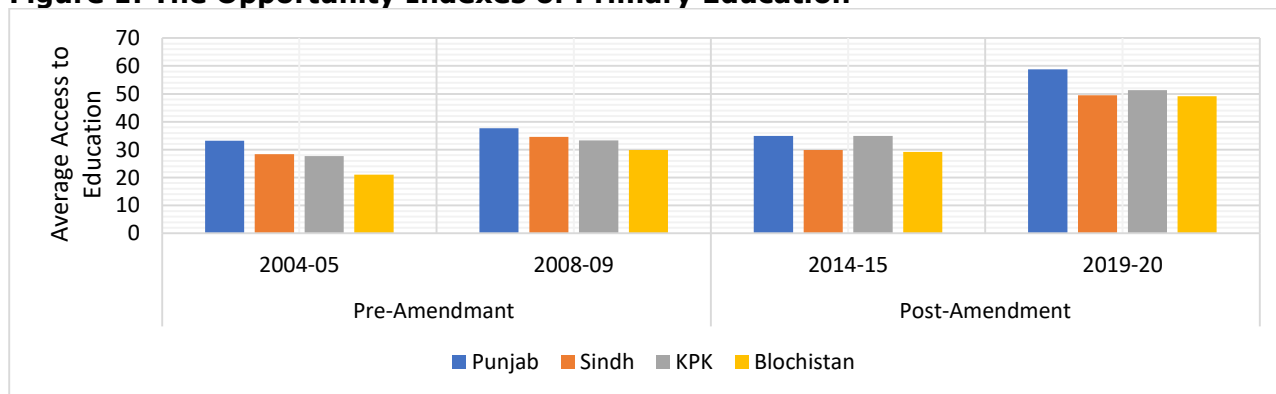
4. Empirical Results

There are 2 approaches to measure the inclusiveness of growth, the partial Approach which is analyze through "Social Opportunity Curve" an analogous to Lorenz Curve introduced by (Ali & Son, 2007). The social opportunity curve determines either opportunities are equitable distributed among the society or not at a given period of time. The growth is considered inclusive if the entire curve shifts upward over the period of time at all level of incomes. The upward shift of social opportunity curve will be beneficial for all income groups. The other approach is called "full approach" used to quantify the equity level over the defined period of time and enumerate the exact magnitude of the change in the distribution of opportunities.

4.1. Average Access to Education Opportunities

The average access to primary, secondary and literacy level for all provinces in the pre and post amendment is presented in below (figure i to iii). The average access to primary education is remained 30 to 40 percent for all provinces in the pre-amendment as compared to 10 to 15 percent change estimated by (Sajid & Ali, 2018) at national level. They used same methodology for the years 1998-99 to 2007-08 at national level. In 2010 the 18th amendment is introduced which provided a substantial budgetary and legislative autonomy to the provinces in the fields of education. From free and compulsory education to development of need base curriculum, current syllabus, planning and policy and quality of education fall under the purview of the provinces. Soon after the legislation a negative trend is observed in the growth of average access to primary education except Khyber Pakhtunkhwa. Some⁷ dissention voices of are upraised by different levels including the Ministry of Education against legislation. The competency of provincial governments is challenged that province could not take up the massive change and incompetent with respect to human and other resources to cope with the gigantic task in front of them.

Figure 1: The Opportunity Indexes of Primary Education



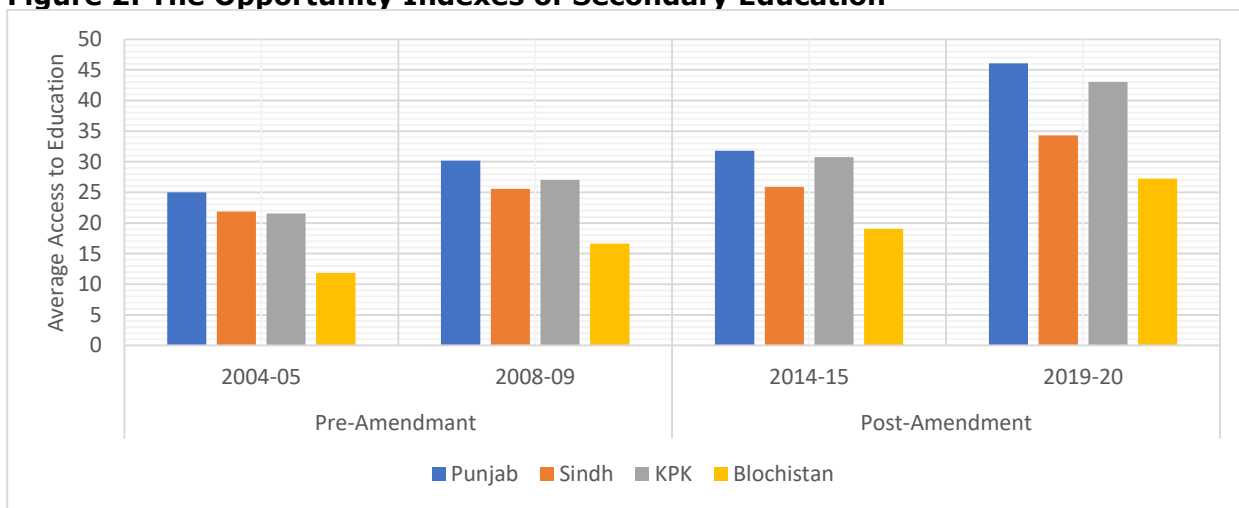
Sources: Author own calculation based on data PSLM surveys from 2004-05 to 2019-20

⁷ M. Khan, A, & Mirza, M.S. etc.
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On the other hand, this is considered a transitional period when provinces with the help of IPEMC⁸ are busy for drafting the implementable and result oriented educational policy. After implementation of educational policy a dramatic change⁹ is observed in all provinces i.e. 23.82 percent average access to primary education increase in the Punjab, 19.65 percent in the Sindh, 16.36 in the Khyber Pakhtunkhwa and 20.01 percent increase in the Baluchistan. It could be concluded from above situation that after 18th amendment the growth to average access to primary education substantially improved.

The average access to secondary education observed almost same behavior. The average access to secondary education before amendment is witness less than 30 percent for all provinces. Same results were found by (Sajid & Ali, 2018) at national level. Whereas (Marquez-Ramos & Mourelle, 2019) found that over the time period the secondary enrollment ratio increased of all regions of Spain during 1971 to 2019. More than 20 percent improvement is noted in the post amendment. Before 18th amendment the average access to secondary education for all provinces are remain between 30 percent (Punjab) to 16 percent (Balochistan). A minor positive change is observed soon after the legislation (for study period 2014-15) but a recognizable shift in the average access to secondary education is witness in the study year 2019-20.

Figure 2: The Opportunity Indexes of Secondary Education



Sources: Author own calculation based on data PSLM surveys from 2004-05 to 2019-20

The improvement of average access to secondary education is recorded more than 14 percent for Punjab, 12 for KPK and 8 percent for Sindh and Balochistan. Therefore, after 18th amendment the growth in average access to secondary education is recorded 15 to 20 percent for most of the provinces. These improvement is the result of combined effort made by all development partners including government representatives, Global Partnership for Education, non-governmental organizations, teachers and civil society organizations including the Local Education Group. The knowledge economy¹⁰ is emerged due to financial interventional in the education sector which enhanced opportunity to leverage Science and Technology. The vision of a 'knowledge economy' cannot actualize without promoting, access and equity in education in the Pakistan.

The negligible change is observed in the average access to literacy rate in pre and post legislation for all provinces. The average literacy rate is recorded more than 48 percent in the pre-amendment. Whereas the literacy rate found by Sajid et al. (2007) at national level were more than 58 percent. Similar results were also confirmed by the (Kiani, 2013) by analyzing the

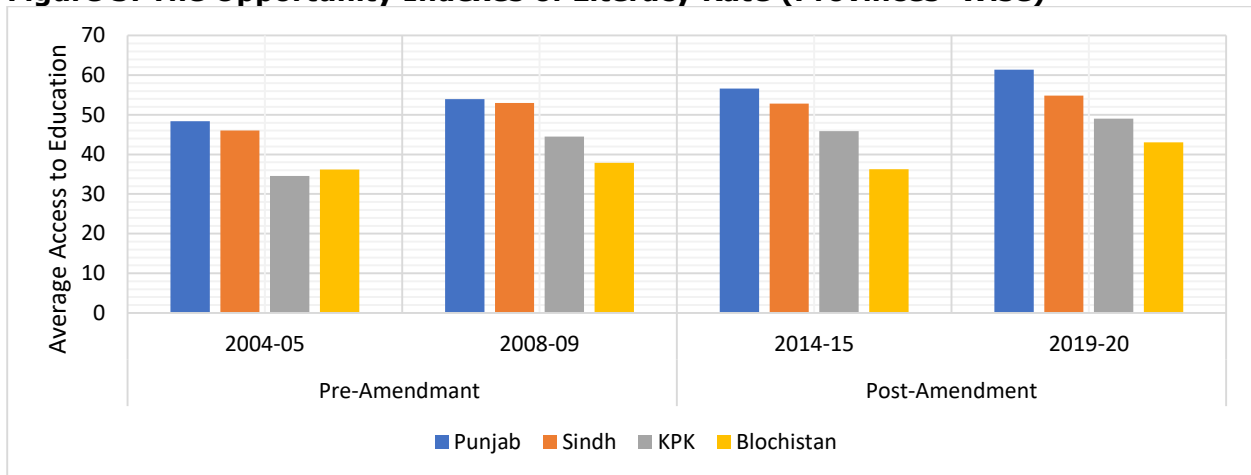
⁸ Inter-Provincial Education Ministers Conference

⁹ "A larger reform and presence of road map enrollment in the primary and secondary have shown impressive increases in Punjab. Khyber Pakhtunkhwa Free, Compulsory Primary and Secondary Education Act, and SDG-4 of the Sustainable Development Agenda 2030"

¹⁰ "The knowledge economy, which is the primary economy among developed nations is an economy dependent on human capital and intangible assets such as proprietary technology".

causality relationship of Education and growth of Pakistan. Only 10 percent change is recorded after legislation.

Figure 3: The Opportunity Indexes of Literacy Rate (Provinces–Wise)



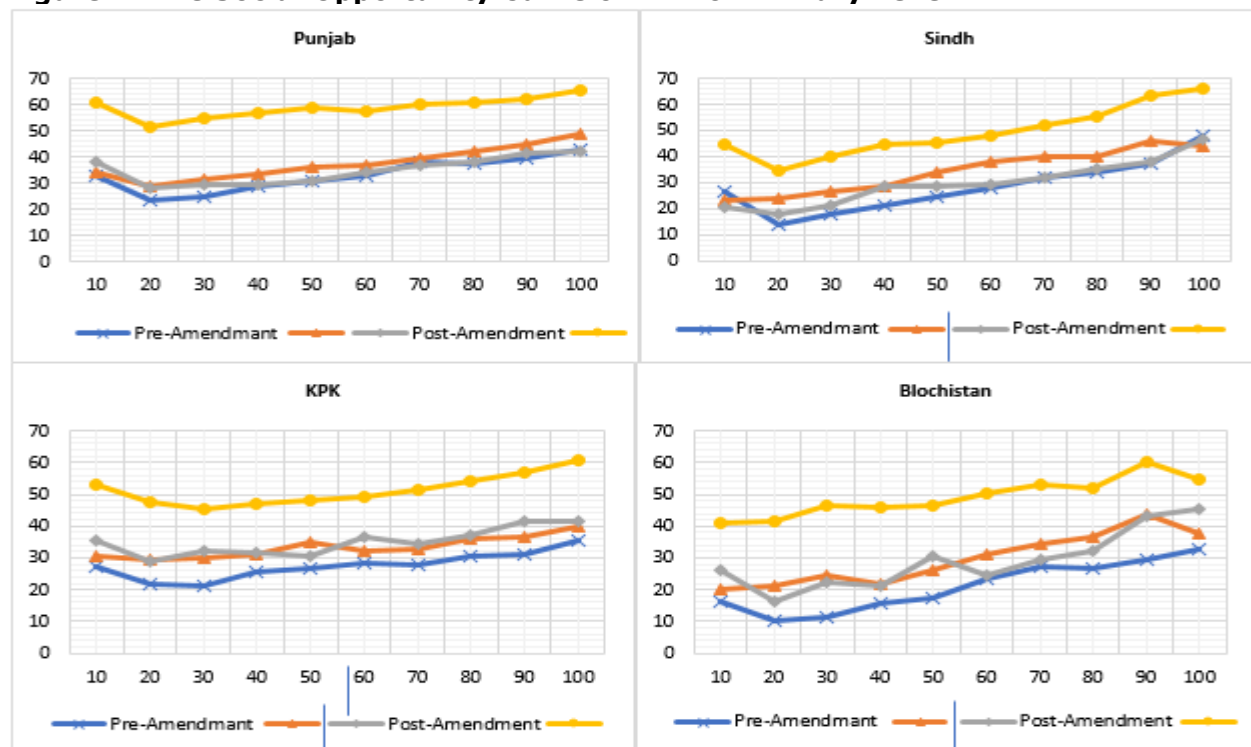
Sources: Author own calculation based on data PSLM surveys from 2004–05 to 2019–20

The Punjab and Sindh provinces have shown very improved position than the Khyber Pakhtunkhwa and Baluchistan in the pre-amendment with average access to literacy rate more than 56.2 percent and 49 percent respectively. Whereas Balochistan average access to literacy is recorded 37 percent and KPK 40 percent in the in the pre-amendment. After the legislation only two provinces (Punjab and KPK) show a positive change with very minor change while for other two provinces the change in the average access to literacy is negative for the post-amendment era. The average access to literacy rate for Punjab is recorded more than 61 percent with less 5 percent increment, Sindh 54 percent with less than 2 percent, KPK 49 percent with 3 percent and Balochistan 43 percent with 6 percent increment. It could be concluded that the effectiveness of legislation is not recognizable for the literacy rate in all provinces.

4.2. Access to and Equity of Education Opportunities: Social Opportunity Curve

The growth inclusiveness can be discussed through the partial Approach. It determines either opportunities are equitable distributed among the population or not within given period of time.

Figure 4: The Social Opportunity Curve of NER of Primary Level

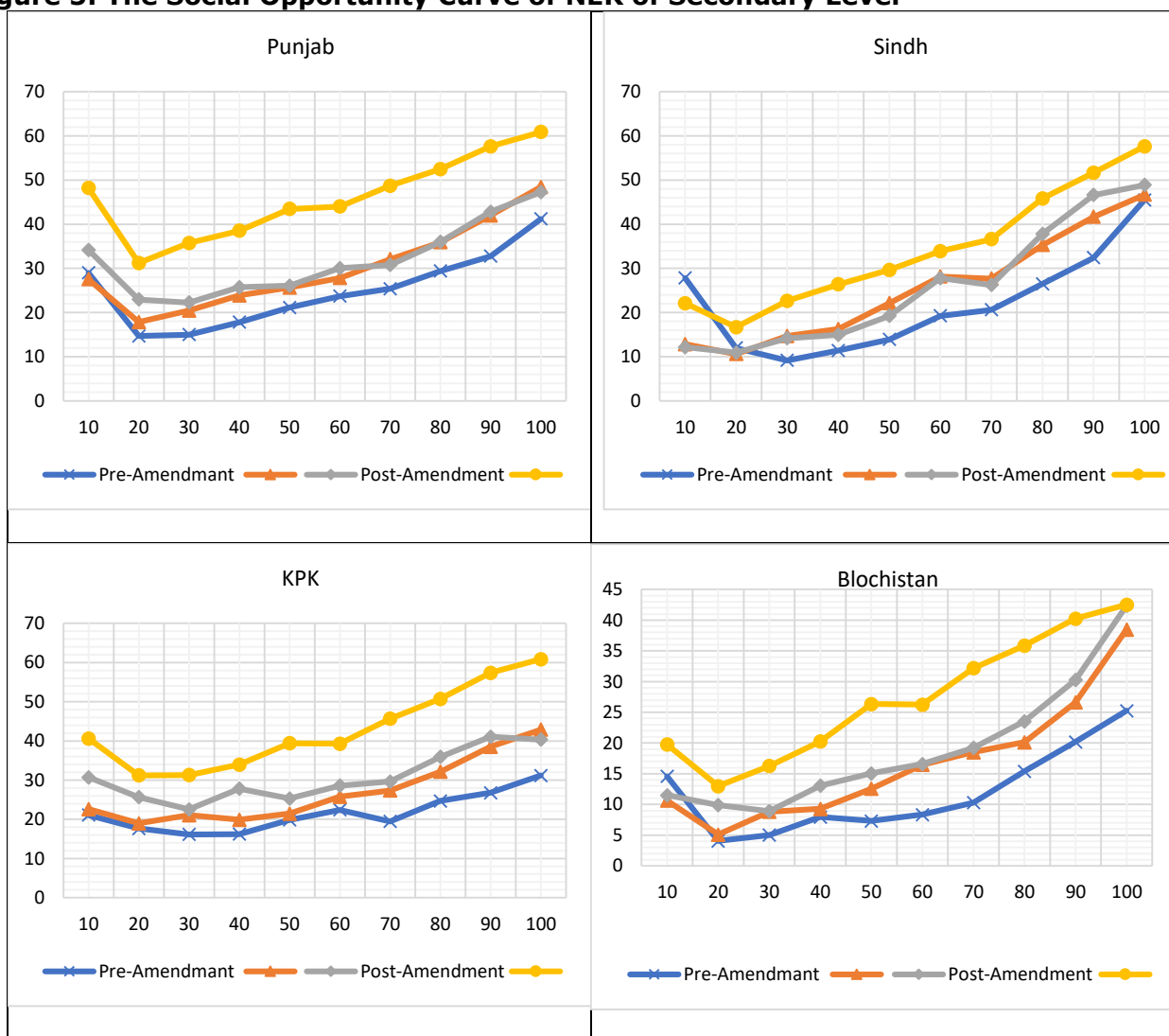


Sources: Author Own Calculation based on data PSLM surveys from 2004–05 to 2019–20

The results are presented in the figures 4 to 5. On the vertical axes average access to primary education are measured while on horizontal axes cumulative share of children aged 5-9 years are taken. Pre and post amendment results are shown with four different colors (in addition, cross and trianglor shapes used for pre-legislation era whereas rhombus and circular shapes are used post-legislation).

The social opportunity curves of access to primary level shifted upward shown a minor change in the accessibility of primary education in the pre-amendment era of study (2004-05 to 2008-09) in the all provinces which mean that a small group of population is added to in the primary education (figure 4). The slope of the access to NER of primary education was ($d\bar{Y} > 0$) noted more than four percent in the pre-legislation for Punjab as compared to six percent in the Sindh and Balochistan while five percent for KPK. Our results are consistent with the Jamal ¹¹ (2021) who calculated the access to education by using the composite indices approach for national as well as for provinces level. Haroon concluded that an average 6 percent change was observed overall with all provinces in the study period. The social opportunities curve slope upwards for all provinces before legislation indicating that higher income segments of the population are receiving more benefits of growth in the NER primary education than the poor segment of the population. Moreover, all provinces witnessed a declining the social opportunity curves for initial 20 percent of bottom population showing a small progress in the benefits for poorest segment of the population.

Figure 5: The Social Opportunity Curve of NER of Secondary Level



Sources: Author Own Calculation based on data PSLM surveys from 2004-05 to 2019-20

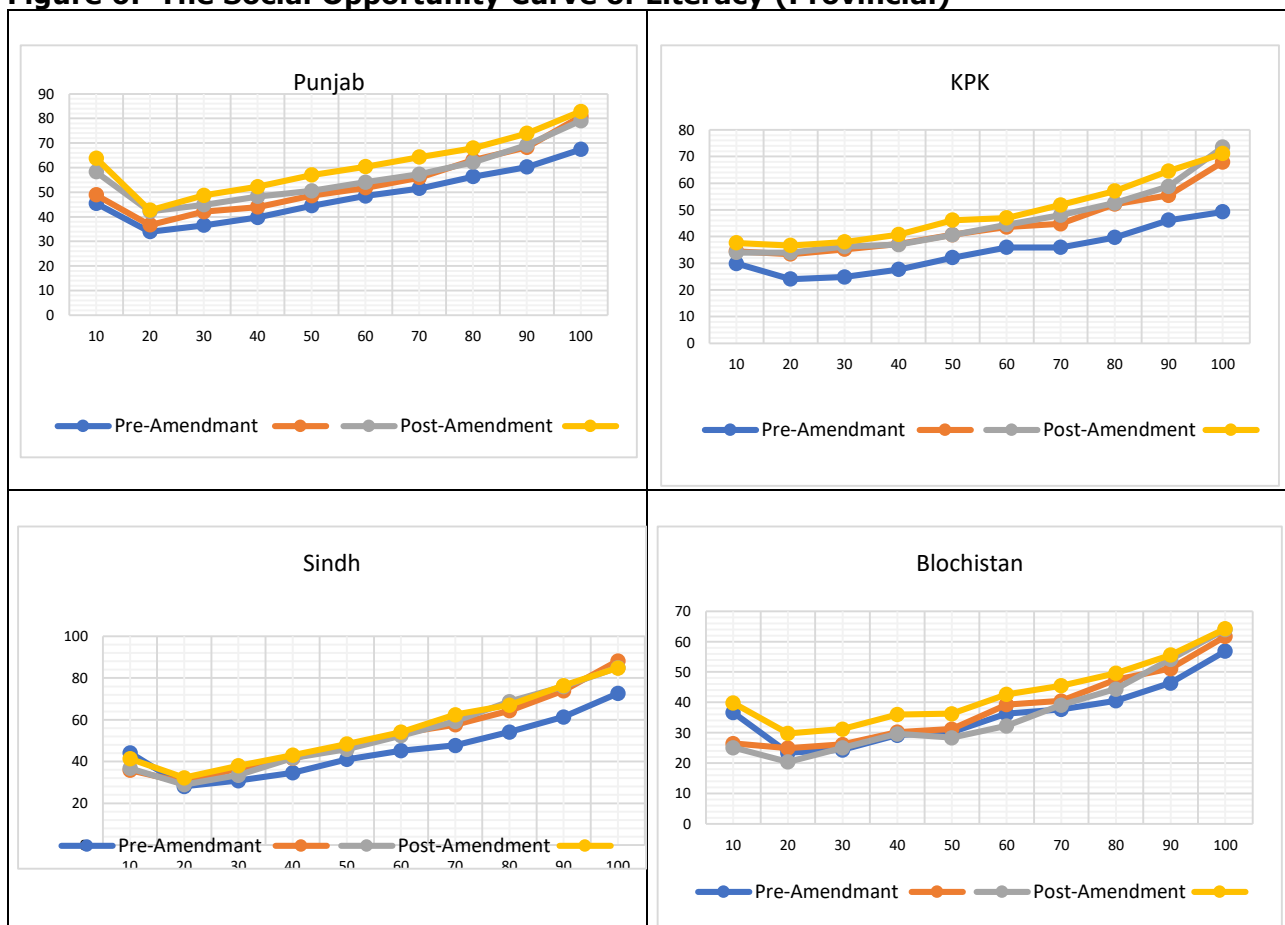
¹¹ Jamal H. (2021) "Educational Status of Pakistan: Pre and Post 18th Amendment Scenario" *Social Policy and Development Centre (SPDC)*.

Same behavior is observed in the average access to net secondary level for all provinces of the Pakistan (figure 5). The average access to secondary education is recorded maximum 30 percent whereas 16 percent on other side in the pre-amendment for all provinces. After the legislation the social opportunity curves shifted upward showed the average access to secondary education improved by more than eight percent for all provinces. Soon after the legislation (2014-15) the social opportunity curves almost overlapped on the previous curves which mean that reimbursements of legislation are not started so far. But next study period the social opportunity curves jumped upward ($d\bar{Y} > 0$), shows a constructive growth in the average access to secondary education with more than 14 percent advancement for Punjab, 12 percent for KPK and more than 8 percent for Sindh and Balochistan. Moreover, all provinces witnessed a declining behavior in the social opportunity curves of secondary education for initial 20 percent of bottom population showing a small progress in the welfares poorest segment of the population.

Similar trend is observed in the literacy rate (figure 6). The social opportunity curves shifted upward for all provinces showed a small growth in the literacy rate for pre and post-amendment era except Sindh province where a small shift is observed in the only pre-amendment while the cures overlapped each other for post-legislation.

Soon after devaluation of power the social opportunity curves almost overlapped each other showing no progress over the time period. The social opportunity curves for literacy is also declined for the lowest segment of the population indicating the average opportunities of literacy is not equitable which mean that greater access to education opportunities are enjoyed by the higher income kids as compared to bottom end distribution hence the growth of education is unequitable. These results are inconsistent with (Kiani, 2013) who concluded that over the time period the literacy rate increase in Pakistan (at national level) and has very strong impact on the growth of real GDP.

Figure 6: The Social Opportunity Curve of Literacy (Provincial)



Sources: Author Own Calculation based on data PSLM surveys from 2004-05 to 2019-20

4.3. Access to and Equity of Education Opportunities: Opportunity Indices

To quantify the opportunities indices empirically, opportunity index¹² $\{\bar{Y}^*\}$ are estimated from the average access to primary enrollment, secondary enrollment and literacy opportunities received by each province in the pre-amendment and post-amendment. Further Equity Index of Opportunity $\{\varphi\}$ are calculated. Results of primary, secondary enrollment and literacy of and φ are reported in the table 1 to 3.

By using absolute definition, the equity index of opportunity for NER of all education level (primary, secondary and literacy rate) for both legislations period remained less than one which implies inequitable distribution of net enrollment opportunities for the all provinces.

This mean that there is imperfect equity in access to opportunities in the society, hence the distribution of opportunities is anti-poor. In relative definition the equity of opportunities showed different results for NER of all education level (primary, secondary and literacy rate) for both legislations period. For example, the NER primary level is equitable for both pre and post-amendment era of the study periods for Punjab and KPK provinces indorsing inclusiveness of primary enrollment opportunities for these two provinces while for remaining two provinces (Sindh and Balochistan) it is inequitable for pre and post amendment except last study period of post-amendment era. The results also confirm that the growth in enrollment are improving in both era (pre & post-legislation) exhibited that reimbursements of devaluation has been carried out. Hence the opportunities of primary education are said to be pro-poor for both eras. The change in the equity index of opportunity $d\varphi$ expressed the contribution of changes when there is no changes in the average opportunity \bar{Y} was recorded increasing for primary enrollment ($d\varphi > 0$) for both legislations period for all provinces i.e. 2 percent for Punjab in the pre-legislation as compared to 5 percent in the post-legislation, for Sindh 4 percent to 10 percent, 9 percent to 15 percent for Balochistan while no change is recorded for KPK in the pre & post amendment. It could be concluded that the contribution to inclusiveness of growth is more in the post amendment for all provinces.

Table 1: Opportunities Index for Access to NER Primary Education 2004–05 to 2019–20

Population	Punjab		Sindh		KPK		Balochistan									
	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment								
	10	33.10	34.02	38.28	60.50	26.32	23.29	20.34	44.87	27.49	30.41	35.24	53.07	16.27	20.00	26.09
20	23.63	28.60	28.12	51.44	13.85	23.82	17.92	34.43	21.79	29.65	28.74	47.69	10.16	21.06	16.06	41.73
30	24.76	31.34	29.12	54.69	17.87	26.94	20.96	39.92	21.36	30.00	31.94	45.41	11.38	24.63	22.59	46.35
40	29.10	33.56	29.62	56.51	21.47	28.38	28.42	44.91	25.56	30.86	31.60	46.81	15.75	21.97	21.00	45.89
50	31.10	36.01	31.11	58.48	24.71	33.93	28.93	45.64	26.71	35.00	30.70	47.87	17.47	26.31	30.65	46.23
60	32.87	37.01	34.17	57.74	27.66	38.21	29.43	48.10	28.42	32.10	36.60	49.12	23.17	31.36	24.55	50.48
70	37.86	39.48	36.50	59.96	32.13	40.12	31.99	52.29	28.01	32.78	34.55	51.24	27.46	34.65	29.53	53.18
80	37.16	42.43	38.39	60.60	34.21	40.29	35.22	55.26	30.35	35.85	37.28	54.40	26.49	36.58	32.42	51.99
90	39.69	44.87	41.69	61.93	37.45	46.16	38.31	63.24	31.33	36.50	41.56	57.06	29.56	43.72	43.29	60.07
100	42.52	49.09	42.13	65.52	47.97	44.18	46.78	66.13	35.55	40.09	41.49	60.59	32.53	37.93	45.15	54.70
OI	33.18	37.64	34.91	58.74	28.36	34.53	29.83	49.48	27.66	33.32	34.97	51.33	21.02	29.82	29.13	49.14
EIO	0.83	0.85	0.90	0.95	0.70	0.74	0.73	0.83	0.87	0.91	0.91	0.94	0.64	0.73	0.74	0.89
Comments	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable

Sources: Author Own Calculation based on PSLM surveys data from 2004–05 to 2019–20.

The equity index of opportunity (φ) for NER secondary level are considered equitable especially for post-amendment era. The remaining two provinces i.e. Sindh and Blochistan the equity index of opportunity (φ) for NER secondary level are observed inequitable for pre and post amendment era. The change in the equity index of opportunities of secondary enrollment when there is no changes in the average opportunity \bar{Y} is recorded decreasing ($d\varphi < 0$) for pre-legislation period for all provinces. i.e. for Punjab 2 percent decline is noted in the pre-legislation as compared to 16 percent in the Sindh, 6 percent in KPK, 16 percent in Blochistan. Which

¹² it is mean of average access by each decile of the population

indicates that over the time there are no contribution of growth witness in the pre-legislation in all provinces. Similar results were concluded by Sajid et al. (2007) concluded that over the time inequitable distribution of net primary enrollment opportunities was observed in Pakistan. A positive changed is observed in the post-legislation period in the equity index of opportunity for the Sindh and Blochistan provinces. The inclusiveness of growth contribution by increasing the average access to secondary enrollment opportunity ($d\bar{Y}$) when no change in the equity index of opportunity for all provinces is found to be positive ($d\bar{Y} > 0$) for poorest group (20 percent of population) for both legislation periods. Which shows that average access to secondary education opportunities contributed the bottom population of all provinces. These results are consistent with Khan and Mirza (2011) and Siddique M.H. (2012) concluded that over the time growth in the net primary enrollment was observed in Pakistan.

Table 2: Opportunities Index for Access to NER Secondary Education 2004–05 to 2019–20

Population	Punjab		Sindh		KPK		Balochistan									
	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment								
10	28.99	27.55	34.15	48.19	27.82	12.83	12.14	22.08	21.08	22.61	30.71	40.61	14.58	10.66	11.51	19.76
20	14.69	17.85	22.94	31.21	11.98	10.60	10.90	16.67	17.64	18.97	25.65	31.21	4.07	5.09	9.89	12.98
30	14.99	20.45	22.27	35.75	9.16	14.69	14.16	22.64	16.14	21.05	22.51	31.29	5.03	8.81	8.91	16.26
40	17.81	23.87	25.72	38.52	11.40	16.25	14.96	26.37	16.20	19.89	27.80	33.94	7.95	9.30	13.07	20.26
50	21.12	25.67	26.08	43.44	13.91	22.11	19.24	29.62	19.85	21.41	25.29	39.42	7.33	12.56	15.06	26.35
60	23.69	27.81	30.05	43.98	19.26	28.17	27.79	33.87	22.40	25.74	28.57	39.29	8.36	16.46	16.59	26.25
70	25.39	32.06	30.75	48.69	20.63	27.69	26.23	36.58	19.47	27.36	29.63	45.66	10.30	18.51	19.22	32.18
80	29.40	35.90	35.96	52.48	26.46	35.30	37.79	45.81	24.67	32.13	35.93	50.73	15.40	20.12	23.54	35.87
90	32.74	41.98	42.80	57.59	32.42	41.67	46.61	51.63	26.78	38.50	41.08	57.38	20.18	26.61	30.26	40.25
100	41.20	48.41	47.27	60.88	45.47	46.68	48.86	57.59	31.16	42.87	40.34	60.86	25.26	38.48	42.36	42.51
O.I.	25.00	30.16	31.80	46.07	21.85	25.60	25.87	34.29	21.54	27.05	30.75	43.04	11.85	16.66	19.04	27.27
E.I.O.	0.76	0.74	0.83	0.83	0.69	0.53	0.50	0.64	0.82	0.76	0.87	0.80	0.67	0.51	0.57	0.64
Comments	Equitable	Not Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable	Not Equitable	Equitable

Sources: Author Own Calculation based on PSLM surveys data from 2004–05 to 2019–20.

Similarly results of equity index of opportunity for the literacy opportunities are found inequitable in both definitions which mean opportunities of literacy distributed in the society inequitable, children belonging to bottom segment as compare to higher income groups have least access to education opportunities hence the growth of literacy found to be inequitable. The change in the equity index of literacy opportunity ($d\phi$) when there is no changes in the average opportunity of literacy is recorded decreasing ($d\phi < 0$) for pre-legislation period for all provinces except KPK where it is found increasing by 2 percent while for Punjab 1 percent decline is noted in the pre-legislation as compared to 7 percent in the Sindh and 8 percent in for Balochistan. Which indicate that over the passage of time there are no contribution of growth witness in the pre-legislation in 3 provinces. An improvement is noted in the literacy rate in the post-legislation era with four percent for Sindh, one present for KPK and ten percent for Balochistan province while it is declined for Punjab by two percent. It could be deduced from the results that the change in the equity index of opportunity of literacy is observed positive in the post-amendment era. The contribution to inclusiveness of growth by shifting up average access to literacy opportunity ($d\bar{Y}$) when no change in the equity index of opportunity for all provinces is positive ($d\bar{Y} > 0$) for poorest group (20 percent of population) for both legislation periods. Which shows that average access to literacy opportunities contributed the bottom population of all provinces.

5. Conclusion and Policy Implication

The main aims of this study is to assess the impact of devolution of power on socio-economics opportunities created and distributed in the economy within given period of time with new approach inclusive growth. The results revealed that although the opportunities of NER of all education level are created in the society before and after the legislation era but distributed inequitably. The social opportunity curves of all educational level indicates that before

legislation, the NER of primary, secondary as well as literacy rate is remained under 30 percent but in the post legislation the curves shifted upward by more than 10 to 15 percent showing that growth to average access to all education substantially improved.

Table 3: Opportunities Index for Access to Literacy

Population	Punjab		Sindh		KPK		Balochistan									
	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment	Pre-Amendment	Post-Amendment								
10	45.45	48.92	58.28	63.78	44.22	35.88	36.78	41.37	29.87	34.46	34.02	37.59	36.65	26.49	25.10	39.81
20	33.92	36.66	42.21	42.69	28.08	30.01	28.98	32.24	24.08	33.40	33.91	36.66	23.43	24.93	20.42	29.80
30	36.52	42.07	44.86	48.69	30.85	36.71	33.49	37.98	24.80	35.23	36.23	37.97	24.38	26.14	25.05	31.24
40	39.75	43.93	48.23	52.26	34.65	41.54	41.67	43.07	27.65	37.17	36.97	40.70	29.23	30.23	29.66	36.02
50	44.49	48.59	50.54	57.00	41.06	47.69	45.90	48.42	32.10	40.69	40.59	46.12	30.15	31.20	28.36	36.26
60	48.44	51.79	54.02	60.35	45.18	53.55	52.41	54.14	35.90	43.51	44.43	46.96	36.28	39.26	32.26	42.67
70	51.54	55.95	57.32	64.29	47.77	57.63	59.22	62.43	35.91	44.76	47.95	51.83	37.69	40.51	39.12	45.51
80	56.35	63.00	62.17	67.93	54.15	64.41	68.77	67.07	39.67	52.09	52.54	57.03	40.56	47.48	44.40	49.61
90	60.24	68.22	69.13	73.87	61.41	73.95	75.94	76.45	46.12	55.41	58.78	64.52	46.39	51.12	54.21	55.62
100	67.38	80.77	79.03	82.82	72.64	88.21	84.98	84.88	49.25	67.90	73.46	71.07	56.85	61.69	64.01	64.26
O.I.	48.41	53.99	56.58	61.37	46.00	52.96	52.81	54.80	34.53	44.46	45.89	49.04	36.16	37.91	36.26	43.08
E.I.O.	0.80	0.79	0.86	0.84	0.75	0.68	0.67	0.71	0.77	0.79	0.77	0.78	0.79	0.71	0.69	0.79
Comments	Equitable	Not	Equitable	Not	Equitable	Not	Equitable	Not	Equitable	Not	Equitable	Not	Equitable	Not	Equitable	Not

Sources: Author Own Calculation based on PSLM surveys data from 2004–05 to 2019–20.

At the same time the social opportunity curves sloped upwards indicating that the average access to all education level are less available to the poor 40 percent and least available for poorest 20 percent of the population. More over the equity index of opportunity also indicating that the growth in the average access to all education level is not inclusive. In order to distribute these opportunities equitable, motivation to the students to enroll in schools at different education levels should be mandatory for all population segments. The policy makers are suggested that the measures should be adopted to improve the accessibility of primary, secondary education and literacy in all provinces, so that a universal enrolment rate in primary, secondary education may be achieved in near future. In addition, measures may also be taken by the provinces to enhance the literacy rate in the country to boost the economic growth in Pakistan. The 18th amendment in the constitution has proven beneficial for the provinces, now there is a need of providing them with financial and legislative autonomy so that the provinces work as per their requirement. The equitable distribution of primary and secondary education opportunities must be focus in the policies which also highlight the maximum access to primary, secondary and literacy. The policy makers are suggested to opt policies which will pull up the bottom income groups of the society in all provinces.

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