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C O N T E N T S

List of Tables

List of Figures

ABSTRACT

The study has been carried out to measure the incidence of government spending on education in Pakistan at the provincial (both rural and urban) level, using the primary data of the Pakistan Social Standard Living Measures Survey (PSLM), 2004-2005, and by employing the three-step Benefit Incidence Approach methodology. The paper reviews the national policies emphasising provision of education in Pakistan, as well as the trend in coverage and public sector spending on education facilities in Pakistan. The study examines the inequalities in resource distribution and service provision in relation to the government education expenditure. The rural areas of Pakistan are the more disadvantaged in the provision of the education facilities. Overall, the expenditure on the education sector is progressive, both at the regional and the provincial levels. However, variation exists in the shares of different income groups' benefit from the provision of educational facilities created by public expenditure.

JEL classification: H52, H53, I21, I22, I28, I38, O18

Keywords: Education, Public Expenditure, Public Policy, Gini Coefficient, Concentration Coefficient, Benefit Incidence Approach

1. INTRODUCTION AND BACKGROUND

Education is the most important instrument to enhance human capabilities and to achieve the desired objectives of socio and economic development. Education enables individuals to make informed choices, broaden their horizons and opportunities and to have a voice in public decision-making. At the macro level, education means strong and sustainable economic growth due to productive and skilled labour force. At the micro level, education is strongly correlated to higher income generating opportunities and a more informed and aware existence. Emerging globalisation offers immense opportunities and challenges in a competitive environment, and only those nations can benefit from it which have acquired the required knowledge base and skills.

In Pakistan, education has suffered from a myriad of issues including underinvestment, failure to implement five-year plans, and lack of purpose and direction in its policy. Since independence, Pakistan has increased the number of primary schools eighteen-fold and multiplied enrolment sixteen times. But these gains have been defeated by rising population and lack of quality education [HDR (1998)].

According to Economic Survey of Pakistan, 2005-06, Pakistan is spending 2.1 percent of GDP on education sector. Currently, adult literacy rate is 53 percent net, which is lower than the target of the PRSP that was 58 percent for 2004-05. Retention rate for 2004-05 is observed 61 percent and significant gender gap at all levels of enrolments especially in rural areas persist. On the whole male literacy rate is 65 percent while for female it is 40 percent. In rural areas female literacy rate is 29 percent while in urban areas it is 62 percent. Female are more underprivileged group as for as the literacy rate is concerned at provincial and regional levels. In Balochistan, the female literacy rate is 19 percent, lowest of all and even it presents the worst picture in rural Balochistan that is only 13 percent; while highest in Punjab, i.e., 44 percent. While male literacy rate ranges from 58 percent to 65 percent at provincial tier.

Latest education statistics, by National Education Census, show that unlike health sector service delivery in Pakistan, the public sector leads in education sector. Overall, the public sector owns 72 percent institutions and 56 percent teachers, and 66.8 percent enrolments were observed in public sector education establishments as of 2005. However, the private sector plays leading role in delivering pre-primary and middle/elementary, and some balanced role in

higher secondary education. 2005-06 Economic Survey of Pakistan shows that out of the total primary level gross enrolment rate, i.e., 86 percent, 62 percent are enrolled in government school while the remaining 38 percent belongs to the private sector.

Literacy and primary school enrolment rates in Pakistan are low compared with the countries of the region. Education for All (EFA) Global Monitoring Report (2005) demonstrates that Pakistan is among those 37 countries whose EFA-Development Index (EDA) is below 0.8. EDA ranges from zero to 1; the closer the value of EDA is to 1 the closer country is to meeting its goals and greater is its EFA achiever. Furthermore, the report shows about 800 million adults were illiterate in 2002, 70 percent of them live in nine countries belonging mostly to Sub-Saharan Africa and East and South Asia, notably India, China, Bangladesh and Pakistan.

Today the illiterate population, 15 years and above, is larger than the population of the country at the time of independence, in 1947. Poor infrastructure is also another obstacle facing Pakistan. Schools/colleges lack many basic facilities including: classrooms, toilets, blackboards, furniture and qualified teachers. In Pakistan, hardly 10 percent of the population complete twelve years of schooling due to high drop out rates; highest in South Asia. Study shows that at least 50 percent of the budget is spent on children who drop out of school before completing primary education cycle. Around 25 percent leave after 8 years of schooling and another 15 percent by Grade-10. Wide spread teacher absenteeism is another issue which hinders the provision of education at all levels.

In order to make better, more skilful, efficient and productive human resource capital, governments subsidise education for its people. To make the masses more educated governments pay whole or some part of the cost of their education. The magnitude and allocation of these subsidies differs from country to country. But the key question is to what extent these expenditures are productive and efficient? Is the public sector spending achieving their goals? The answer lies in the analysis of the volume and allocation of public sector spending in different education sub-sectors and the distribution of benefits of public outlays among the people of different areas of the country? In addition to present scenario of the human resource any marginal positive change in government expenditures on education services may positively effect with high expenditure incidence at different levels of income and geographical areas.

The current study is an extension of the previous research work on *health care services and government spending in Pakistan*. Following the Introduction to the research theme, Section 2 put forwards the Literature Review. Education is an integral part of the social sector and hence a number of policies emphasising improved education provision. Section 3 highlights Policies Emphasising Provision of Education followed by the trend in the Provision of

Education and Government Spending on education sector in Pakistan in Sections 4 and 5 respectively. Research methodology and data sources are discussed under research focus in Section 6, followed by Results and Discussion, and Conclusion and Policy Recommendations in Sections 7 and 8 respectively

2. LITERATURE REVIEW

Economic literature frequently corroborates the positive impact of education on economic performance, with higher returns to primary education than to secondary and/or tertiary education. Education results in the highest economic benefits where there are pro-poor growth policies and effective demand for educated manpower are in progress. Apart from economic value for its user, education is an extremely important instrument for social mobility and cohesion within societies, and serves as a repository and defender of core national values and memories, leading to a society which is innovative and at peace with itself. The elevation of the levels of education would help nations to improve people's access to the processes of economics and politics as well as giving people better access to the intrinsic right of knowledge.

Education for All (EFA) Global Monitoring Reports (2005), ESCAP (2003), Gupta, *et al.* (2002) and Roberts (2003) highlights that better education contributes to higher lifetime earnings and more robust national economic growth. In accordance with Christian (2002) improvement in education and health outcome is sought because their intrinsic value in raising capabilities and individual freedoms. Both have instrumental value in contributing to higher incomes and reinforcing each other.

The main asset of the poor is his/her labour. Education is critical to preserving and enhancing the quality of this asset and for this reason investment in education is especially important for the poor, as the labour is the main asset of the poor.

In developing countries, like Pakistan, the government spending relative to their GDP on education services has increased over time, but it varies form country to country. Primary enrolment and completion rates have no strong relation with expenditure level. As in the study of Flug, *et al.* (1998) exhibits that government expenditures have positive but insignificant impact on enrolments. This relationship has also been confirmed by Roberts (2003) by concluding that recent cross-country evidence suggests that two-thirds of the inter-country variance in primary completion rates and nearly half of the variance in gross enrolment rates are explained by demand-side factors such as adult literacy and per capita income. Stressing on the efficiency of the public spending on education, Roberts (2003) has said that the wide quality and cost effectiveness differentials in education programmes explain the lack of significance of the education expenditure variable in econometric evidence.

A vast body of literature demonstrates that public sector expenditure does not equally benefit all groups of the population. Benefit of these expenditures can vary with respect to income, age, gender and/or region. For example, spending on state of art coronary care services are more likely to benefit rich, while financing in unemployment insurance is more beneficial for poor. A higher allocation of funds for pension is beneficial to the old people, while funding of a school meal is advantageous to the young ones. Provision of the pipe water is more beneficial to the women while building a road provide improved access of men to the city.

Public spending on education can be progressive or regressive. Studies, like Gupta, *et al.* (2002) and SPDC Report (2004) shows that in country like Columbia, Ecuador, Malaysia, Philippine and Pakistan the expenditure on primary and secondary education, health care, public transport and infrastructure have a progressive benefit incidence. According to Rasmus, *et al.* (2001) the 'conventional wisdom' of the benefit incidence literature is that spending on primary education are the most progressive items in developing country public sector budgets, particularly if spending is targeted to rural areas and on disadvantaged groups.

Access to the publicly provided education services can varies depending upon the race, gender, caste, region and religion. Government expenditure benefit incidences are skewed against such groups since their service utilisation rates are lower than privileged groups. Research by Al-Samarrai and Zaman (2002) in Malawi, Sabir (2003) in Pakistan, Shahin (2001) in Côte d'Ivoire and Selden and Wasylenko (1992) in Peru established that females of school-age as group received fever benefits than their male counterpart. Jorge (2001) have used the benefit incidence approach to analyse the incidence of expenditure and came to the result that average benefits for female is quite a bit smaller than males. Classification by ethnic groups may show disadvantaged status of ethnic minorities.

The shares of benefits of the public spending can vary among different income group. In the analysis of incidence of the public sector expenditure on education and health in Mozambique, Rasmus, *et al.* (2001) have estimated that the poorest quintile receives 14 percent of the total education spending; the poorest half receives 36 percent, while the richest quintile receives 33 percent. Positive relationship exists between public spending and education indicators in the developing countries. The cross-sectional study of 56 countries done by Gupta, *et al.* (2002) showed that increase in government expenditure on education is associated with improvement in both access to and attainment in school.

Government expenditure can be used as mean to reduce the poverty. As it enhances the capabilities and skills of the labour which leads to higher income generating opportunities and resultantly alleviate poverty. Analysing the fiscal

policy in the Thailand, Hyun (2006) demonstrated that government subsidies (in-kind transfer income) would benefit the poor more and achieve the maximum reduction in the poverty. Furthermore, the tax exemption or subsidies in education services will be overall pro-poor.

The effect of the public sector spending on different groups depend on the composition; what programmes are being implemented and how much financing is going to each, e.g., basic education versus university level education. The studies like David and Stephen (2000), Demery and Verghis (1994) and Younger (1999) have examined the education expenditure incidence. Results show that the primary education is the most progressive followed by the secondary education, public universities, and finally private universities. Economic literature is very much clear that the social rate of the return is highest on primary education followed by secondary and tertiary education. [See Pascharropolous (1994); World Bank (1995)]. At the same time evidence suggests that spending on tertiary education in many countries is excessively high [see Sahn and Bernier (1993); Gupta, *et al.* (1998); World Bank (1995)].

Government expenditure on education can be used as the main fiscal vehicle for improving the welfare of the poor. Lanjouw and Ravallion (1999) have argued, using data from rural India, that marginal spending affects the poor more than average spending because when programmes are expanded and/or reduced the composition of beneficiaries tends to change. Thus, expanding programmes may increase coverage of the poor, and likewise contraction may hurt the poor relatively more. Hence, benefit incidence studies based on *average* incidence are likely to underestimate the impact on poverty of marginal fiscal changes.

Government in-kind subsidies can be regressive. Studies like Norman (1985), Sakellariou and Patrinos (2004) and Hamid, *et al.* (2003) have shown that government expenditure on education benefits upper income more than the lower income groups. Only 16 percent of benefits accrue to the poorest quintile. In contrast, the richest quintile receives about 27 percent of benefits, more than its share in the population. There is little evidence, however, of middle-class capture; on average, the middle 60 percent of the population distribution receives about 58 percent of the total benefits**.**

Expenditure shares on education decreases with the increase in the income. Bjorn and Shi (2004) have investigated how such expenditures affect poverty assessments and came to the result that although mean expenditures on education increase with disposable income, expenditure shares decrease rapidly by deciles. For example, in China the lowest deciles spent 4.6 percent of total education expenditure on education as of 1995, the corresponding percentages for the highest deciles was 1.0 percent and 2.2 percent, respectively.

Examining the government expenditure on education in Pakistan, Sabir (2003) concluded that the government subsidies directed toward primary

education are pro-poor in all four provinces of Pakistan. Moreover, females are more disadvantaged group in access to primary education. Government subsidies directed towards higher education are poorly targeted and poorest income group receive less than richest income group and indeed favour those who are better off. Husain, *et al.* (2003) showed that in Pakistan there are no disparities in allocation of funds to education sector between districts. Nevertheless, economic growth is necessary but sufficient condition for the human development.

With reference to Pakistan only two studies which have analysed the government spending on the education include the study done by Sabir (2003) and the other by Hussain. Since these studies are based on the old data sets don't explain the current nature of the incidence of the public sector expenditures on education. So there is a desired need to revisit the data and the incidence of government expenditure on education. The current research work will fill the gap by explaining the present nature of the incidence of the government spending on the education by using the latest household survey data, i.e., Pakistan Social and Living Standards Measurement Survey (PSLM), 2004-05, collected by the Federal Bureau of Statistics, Government of Pakistan.

3. POLICIES EMPHASISING PROVISION OF EDUCATION IN PAKISTAN

Education is the most important instrument to enhance human capabilities and to achieve the desired objectives of socio and economic development. Education enables individuals to make informed choices, broaden their horizons and opportunities and to have a voice in public decision making. At the macro level, education means strong and sustainable economic growth due to productive and skilled labour force. At the micro level, education is strongly correlated to higher income generating opportunities and a more informed and aware existence. Emerging globalisation offers immense opportunities and challenges in a competitive environment, and only those nations can benefit from it which have acquired the required knowledge base and skills.

Pakistan Social Living Standard Measure (PSLM) shows that in 2004-05, the adult literacy rate was 53 percent; net enrolment at the primary level was 52 percent; retention rate for 2004-05 was observed as 61 percent and significant gender gaps at all levels especially in the rural areas persist. Table 1 shows change in literacy rate (10 years and above) between 2001-02 and 2004-05 at national, provincial and regional levels. At all levels, improvement in literacy level was observed; with the least improvement in Balochistan.

Table 1

Literacy Rate (10 Years and Above): Pakistan and Provinces

(Percentage)

Province/ Area	2001-02 PIHS			2004-05 PSLM		
	Total	Male	Female	Total	Male	Female
Pakistan	**45**	**58**	**32**	**53**	**65**	**40**
Rural	36	51	21	44	58	29
Urban	64	72	56	71	78	62
Punjab	**47**	**57**	**36**	**55**	**65**	**44**
Rural	38	51	26	47	59	35
Urban	66	71	60	72	78	66
Sindh	**46**	**60**	**31**	**56**	**68**	**41**
Rural	33	51	14	38	56	18
Urban	64	74	54	72	80	62
NWFP	**38**	**57**	**20**	**45**	**64**	**26**
Rural	35	55	16	41	61	23
Urban	56	70	41	61	75	47
Balochistan	**36**	**53**	**15**	**37**	**52**	**19**
Rural	32	49	11	32	47	13
Urban	54	71	36	60	74	42

Source: PSLM 2004-05.

The 1973 constitution of the Islamic Republic of Pakistan recognises the importance of education and says that the state shall:

(i) Promote unity and observance of the Islamic moral standards;
(ii) Promote with special care the educational and economic interests of backward areas;
(iii) Remove illiteracy and provide free and compulsory secondary education within minimum possible period;
(iv) Make technical and professional education generally available and higher education equally accessible to all on the basis of merit;
(v) Enable the people of different areas, through education, training, agriculture and industrial development, and other methods to participate fully in all form of national activities including employment in the services of Pakistan; and
(vi) Ensure full participation of women in all the spheres of national life [Dawood (2005)].

At the start of the 21st Century, the Government of Pakistan took several initiatives underlining the education sector reform. These include: National Education Policy (1998-2010); Education Sector Reforms (ESR) 2001–06; Education for All (EFA) by 2015; Ten Years Perspective Development Plan 2001-2011; National Commission for Human Development (NCHD); Poverty Reduction Strategy Papers (PRSP); and Medium Term Development Framework

(MTDF) 2005-10. The fact that multiple programmes are working together within Pakistan to alleviate the problems in the education sector is a positive sign that things are moving in the right direction. Following sub-sections will discuss some salient features of some of the above mentioned education related strategies.

3.1. Education Millennium Development Goals

Universal Primary education has been listed as the second Millennium Development Goal, after halving the population living on less than a dollar per day and that suffer from hunger. This high position on the MGDs represents the highly significance of the primary education in all societies, not merely in Pakistan.

For the attainment of eight millennium goals, the UN Millennium Declaration fixed 18 targets and 48 indicators; of which Pakistan has adopted 16 targets and 37 indicators. Pakistan is a signatory to the UN MDGs, 2000-2015, as well as the Dakar World Education Forum 2000. The National Plan of Action for Education for All was initiated in response to the commitment made at Dakar for World Summit. The Education MDGs include: Achieve Universal Primary Education (1 target, 3 indicators) and Promote Gender Equity (1 target, 2 indicators). Following are the targets and indicators by definition, adopted by the government of Pakistan:

Target 3: Ensure that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Indicators	Definitions
Net primary enrolment ratio (%)	Number of children aged 5-9 years attending primary level classes, i.e., 1-5, divided by the total number of children aged 5-9 years, multiplied by 100.
Completion/ survival rate to grade 5 (%)	Proportion of students who complete their studies from grade 1 to grade 5.
Literacy Rate (%)	Proportion of people aged 10+ years who can read and write with understanding.

Target 4: Eliminate gender disparity in primary and secondary education by 2005 and to all levels of education no later than 2015

Indicators	Definitions
Gender Parity Index (GPI) for primary, secondary and tertiary education	Proportion of girls' enrolment at primary, secondary and tertiary levels in comparison with boys.
Youth literacy GPI	Proportion of females as compared with males aged 15-24 who can read and write with understanding.

3.2. Medium-term Development Framework (2005–2010)

The first Medium Term Development Framework (MTDF), 2005-10 provides guidelines to ensure equitable development in all the regions of Pakistan, having fully integrated economy with a sense of common and shared destiny.

Before putting forward the education strategy, the MTDF first discusses some major challenges in providing education in schools and beyond school for its growing population and diversifying needs. The requirement for an educated populace and workforce is greater than ever before, yet Pakistan's record on a number of key indicators of educational performance is poor. In this regard, the MTDF highlights six key questions:

(i) **Participation:** Do children and working-age adults have access to education for a sufficient number of years and training in school and beyond and what is the gender participation rate as student or teacher?
(ii) **Preparation:** How well are young people in high school being prepared to either enrol or succeed in post secondary or college-level education or for the work place?
(iii) **Completion:** Do students persist in and complete certificate and degree programmes, and how many do so at the first attempt?
(iv) **Affordability:** Considering typical family incomes, the cost of attending school or college may deter enrolment, especially in private educational institutions.
(v) **Benefits:** Is school and post school education sufficiently broad based and economically relevant ?
(vi) **Alternative Pathways:** Does the education system provide alternative paths for further learning and training for dropouts or those who wish to re-join later?

The MTDF envisages achieving the targets set under MDGs for universal primary education, literacy, and promotion of gender equality and empowerment (GPI). Table 2 shows the MTDF benchmark 2004-05 and its targets by year 2010 followed by the MDG targets by year 2015.

The policy document re-emphasises the government's commitment to the MDGs and Education for All (EFA) up to 2015 to meet the Dakar Goals. In this regard, primary education will be made compulsory through enactment on the one hand and provision of free text books at primary level. Further, *katchi* classes are planned to be introduced in all primary schools in rural areas to enhance participation. The MTDF envisages 30,000 additional primary schools in the country. Other key strategies will include free education up to secondary school level, induction of vocational/technical streams in 2000 secondary schools, and provision of science laboratories and computer education in every school.

Table 2

MTDF (2010) and MDG (2015) Targets

	Benchmark 2004-05	MTDF 2010	MDG 2015
Literacy Rate (Pop. 10+)			
Total	56	77	88
Male	62	85	89
Female	44	66	87
Youth Literacy Rate (Pop. 15-24)			
Total	66	80	100
Male	79	90	100
Female	52	70	100
Gender Parity Index (GPI)			
Primary Education	0.80	0.94	1.00
Secondary Education	0.72	0.90	0.94

Co-educational schooling system will be introduced in all primary schools and all the primary schools will move towards the goal of 100 percent female teachers, as per the policy of the government, which has been found most conducive in girls' enrolment and retention in rural areas. Moreover, reduction of gender gaps in enrolment and retention will be enabled through financial and nutritional incentives to girl students, especially in rural areas. Financial incentives will also be provided to attract and retain female teachers in rural areas.

The MTDF education strategy plans to launch a major skill based programme for the potential age group 15-24 years. This will be done through provision of science laboratories and computer education in every school to help balance the ratio between Arts and Science streams, and introduction of technology education/technical stream as a core subject at secondary level. The major focus will be on teacher training for science laboratories and technical streams in schools.

The MTDF proposes to mainstream 8,000 Madrassas with a view to bring them in line with national standards and accreditation, especially as regards technical and vocational skills. A number of actions are proposed such as introduction of Mathematics, Social/Pakistan Studies, Computer Science and English language in all the Madaris, and the induction of teachers for these subjects.

The strategy emphasises on separate intermediate stream from degree colleges, as it reduces the efficacy of bachelor's level education, and secondly, introducing the 4 year stream in degree colleges. Initially the MTDF envisages upgrading 300 existing degree colleges by providing major inputs in the form of

funds for infrastructure enhancement, teaching tools, libraries, and capacity building of teachers. Moreover, there will be 100 new degree colleges established with 4 year stream, and expand the programmes offered to include economically relevant courses, especially for professional courses which are of short/medium term duration (6–12 months). The MTDF supports the idea to provide autonomy to colleges, with Board of Governors/Trustees drawn from local community, academia and business.

Financing the education sector is the most critical issue. The MTDF presents the projected allocations to the education sector during MTDF period at national and provincial levels. A portfolio of Rs 119.7 billion (Federal and Provincial funds) has been earmarked for development of basic and college education for the MTDF 2005-10, while the private sector is also expected to invest Rs 50.0 billion in education sector. Primary education and Literacy, together with Madaris, receive 34.5 percent of the proposed spending, while technical / vocational education second at 23.5 percent.

3.3. Poverty Reduction Strategy Papers

Poverty Reduction Strategy Papers (PRSP) describe a country's macroeconomic, structural and social policies and programmes to promote growth and reduce poverty, as well as associated external financing needs. PRSPs are prepared by governments through participatory process, set out national plans and define the terms of cooperation between donors/development partners and the aid recipients.

Education is a strong policy instrument in PRSP for reducing poverty. Recognising the close linkages between poverty and education, the ESR Action Plan has been integrated into the PRSP. Additional income alone would not eliminate poverty unless the causes of poverty are addressed. Pakistan first published its Interim-PRSP (I-PRSP) in 2001-02. I-PRSP mainly focused on three key areas, i.e., engendering growth, improving governance, and human development and social protection. I-PRSP highlighted the challenges in the health service provision. Those were weak policy formulation capacity, centralised management, frequent staff transfers and absenteeism. The first PRSP was published in September 2003 by the PRSP secretariat, ministry of finance. The PRSP put forward its strategy to achieve targets, in line with the MDGs, between 2003-04 and 2005-06. The second PRSP draft is published in April 2007 which offers strategy for the next three years, i.e., 2006-07 to 2008-09.

PRSP envisages expanding and improving the quality of publicly provided primary, secondary and tertiary education in Pakistan. Education covers a large share of the overall PRSP budget. The PRSP strategy for the education sector includes, improving the functioning, utilisation of existing school, improving the quality of education, increase enrolment, improving access to education and expanding the primary education system.

The PRSP documents mainly provide the coverage and annual/quarterly-based public sector budgetary expenditure on all the PRSP sectors, including education. Moreover, it provides expenditure share of sub-sectors of education (i.e., Primary Education; Secondary Education; General Universities, Colleges and Institutes; Professional and Technical Universities, Colleges and Institutes; Teacher and Vocational Training; and Other) over the years by province, current and development expenditure. To relate its impact and progress at grass-root level, the PRSP uses the PSLM and CWIQ survey results. Status and trend underlining public sector spending on education are discussed in the following section.

3.4. National Education Policy (1998-2010)

At the time of independence, Pakistan had a weak educational setup. Most of the population was illiterate and numbers of educational institutions were insufficient for adequate provision of education. Pakistan inherited administrative setup from the British in 1947 and since then the system has improved to some extent through a number of administrative reforms but revamping of administrative structures did not take place. Since independence of Pakistan, various attempts have been made to narrate the education system to the needs and inspirations of the country. An Education Conference was held in 1947 as per directives of Quaid-e-Azam Muhammad Ali Jinnah (the founder of Pakistan). He provided the basic guidelines for the future development in education by emphasising that the education system should suit the genius of our people, consonant with our history, culture and instil the highest sense of honour, integrity, responsibility, and selfless service to the nation. It should also provide scientific, technical, and professional knowledge to build up our political, social, and economic life [Dawood (2005)].

In Pakistan, educational administration has been practiced through centralised coordination. Ministry of education at the federal level and provincial education departments at the provincial levels are regulating the educational laws and policies. The system of local government before Devolution Plan 2001 was established in 1979. With the new devolved governance system, provincial governments have delegated some functions to the local councils through ordinances; however, fiscal decentralisation is still a main hurdle in delivering better education services.

A comprehensive study on pre- and post-devolution in education sector was done by Dawood (2005). At the time of independence (1947) the organisational structure of local government was vibrant. During 1950s and 1960s, local councils delivered most of the public services. Since 1970 some of the important functions of local councils were moved up to the provincial government. It is believed that highly centralised current system of education is greatly hampering the efficiency and effectiveness of delivery service at the

grass-root level. Successive governments addressed this problem in their policies and strategies. Dawood (2005) presents a brief review of education policies in respect of education decentralisation is given below:

In 1959, the "Report of the Commission on National Education" proposed the creation of separate sections with considerable autonomy within their spheres of responsibility introduced a concept of the devolution of authority that has not received much application in educational administration.

National Education Policy (1970) also proposed the introduction of decentralisation of educational administration to ensure academic freedom and financial autonomy required for the healthy and effective growth of educational institutions at various levels.

National Education Policy (1979) stated that educational administration would be decentralised for effective supervision and management of education through providing more powers and facilities to educational management at lower levels.

National Education Policy (1992) emphasised that the process of decision-making will be decentralised. Educational development plans shall be effectively coordinated and monitored. Management of district level education will be improved by associating the local community.

In order to make the organisation structure of education more efficient and effective the education administration was decentralised in 1973 in the province of Punjab and Sindh whereas the decentralisation was implemented in province of NWFP during 1979. For decentralisation of education administration, each province was divided into divisions comprising of four to six districts. Each divisional office was headed by a Divisional Director (separate for schools and colleges). The division was further divided into district and the Education Department at district level was headed by District Education Officer who was assisted by Deputy Education Officer/Assistant Education Officer/ Sub Divisional Education Officer. All the primary, middle, secondary and higher secondary schools were under the administrative control of District Education Officer. The colleges at district level were under the administrative control of Directorate of Colleges. Table 3 presents some brief background and score card during each policy period, highlighting number of illiterate adults and number of out-of-school children.

The current National Education Policy (1998-2010) was framed in the perspective of historical developments, modern trends in education, and emerging requirements of the country. Basic education has been assigned top priority in the national strategy document. The policy mainly focuses provisions for "Education for All (EFA)", i.e., Elementary Education, Adult Literacy and Early Childhood Education (*Katchi*). The document also presents the *Ten-Year Perspective Development Plan* (2001-11) and the *Education Sector Reform* (2001-05).

Table 3

Pakistan: The Plan Rhetoric and The Reality

Plans	Declarations	Score Card (during the plan period)			
		No. of Illiterate Adults (000)		No. of Out-of-School Children (000)	
		Total	Female	Total	Female
1st Five-Year Plan (1955-60)	*'the country may reasonably hope to achieve a universal system of free and compulsory primary education by about 1975'*	20,975	11,003	5,704	3,168
2nd Five-Year Plan (1960-65)	*'girls will be provided with much greater facilities for education and this will be done by admitting more girls to the existing schools'*	23,731	12,448	5,990	3,490
3rd Five-Year Plan (1965-70)	*'the objective of the third plan is to greatly increase enrolment at the primary level in order that universal primary education may be achieved'*	26,721	14,221	6,725	3,915
Non-Plan Period (1970-78)	*'the aim is to create a literate population and an educated electorate by mobilizing the nation and its resources'*	32,811	17,875	8,566	4,772
5th Five-Year Plan (1978-83)	*'the plan will provide cent percent coverage to 5 year old boys in class 1, so as to lay the foundation of universal enrolment by 1987'*	37,269	20,639	9,642	5,451
6th Five-Year Plan (1983-88)	*'serious efforts will be made to institute universal education by ensuring that all boys and girls of the relevant age group get enrolled in class 1 by 1988'*	42,372	23,926	10,540	6,045
7th Five-Year Plan (1988-93)	*'the seventh plan will provide primary education facilities to all children in the age group of five to nine years'*	49,000	28,000	9,377	5,828
8th Five-Year Plan (1993-98)	*'the eighth plan will provide primary education facilities at a reachable distance for every boy and girl of the relevant age'*	50,827	29,283	9,657	5,690

Source: HDC, 1998; Government of Pakistan, (*various years*).

Ten-Year Perspective Development Plan (2001-11)

The Ten-Year Perspective Development Plan (2001-11) has been formulated to visualise the required long-term macroeconomic and sectoral growth strategies. As effective implementation is the key, a steady movement towards 2010-11 will be vigorously pursued through operational strategies embodied in the Three-Year Development Strategies, which will roll over every year. The Perspective Plan focuses on the following areas:

(i) Economic Framework for Growth.
(ii) Poverty Reduction and Human Development.
(iii) Overcoming Drought and Reviving Agriculture.
(iv) Public Sector Investment.

Poverty Reduction and Human Development is the priority area of the Ten-Year Perspective Plan for which detailed strategies in the following fields have been spelled out: Poverty Reduction Strategy; Employment Policy; Education and Training; Science and Technology; Information Technology; Health and Nutrition; Population Welfare; Social Welfare; Gender and Development; and Governance and Civil Society. Sector-wide development approach covering all the sectors of education has been adopted under Education and Training. EFA has been assigned central position in Education Sector Development Plan.

Education Sector Reform (2001-05)

Education Sector Reforms (ESR) programme is a short-term perspective of National Education Policy (1998-2010) and the Ten-Year Perspective Development Plan (2001-2011). ESR is an Action Plan for 2001-2005 strategically positioned in the objective conditions prevailing in the country. The ESR Action Plan has emerged from consultations held with over 600 stakeholders which include: Governors of the four provinces; Federal Minister for Finance and Chairman Planning Commission; Provincial Ministers for Education, Literacy, and Finance; Provincial Departments of Education and Planning and Development; Non-government Organisations (NGOs) and Private Sector.

ESR is the comprehensive sector wide programme to address the issues of low educational attainment, lack of access to schooling, and educational inequities by gender and location. The ESR will facilitate the development process of education in view of Devolution Plan through improving information on the performance of the education system and developing local capacity building. The most important objective of this programme is to develop an educated citizenry in which every person has to complete at least a minimum level of education. To this end compulsory primary education, linked to provision of appropriate facilities, is being introduced gradually. ESR is an Action Plan for 2001-2005, has been fully integrated into the MTDF and PRSP. About 80 percent of the ESR package covers Adult Literacy, EFA and Technical Education. Devolution plan is the mainframe for implementation of ESR.

Following are the ESR objectives highlighted in the ESR/National Education Policy documents:

(i) Universalisation of primary education and adult literacy.
(ii) Mainstreaming Madaris to diversify employment opportunities for the graduates.
(iii) Strengthening the quality of education through better teachers, upgraded training options, curriculum and textbook reforms, and competency based examination system.
(iv) Improving the relevance of education—introducing a third stream of gender and area specific technical and vocational education at secondary level with innovative approaches for students' counselling.
(v) Setting up mono-techniques/polytechnics at District and Tehsil levels.

The total estimated cost of the ESR Action Plan (2001-2005) is Rs 100 billion. Out of the total, 42 percent has been allocated for elementary education and literacy campaign, 10 percent for secondary, 10 percent each for secondary, college/higher education, 15 percent for technical education, 10 percent for quality issuance and .7 percent for Public Private Partnership. (ESR, Action Plan 2001-2005, p.7). An amount of Rs 1.574 billion allocated in federal PSDP 2001-2002 for implementation of ESR. An additional amount of Rs 2 billion with grant in aid from the US government was also allocated for various components of the ESR during 2001-2002.

Various governments have, over the years, formulated an assortment of education policies and plans to fulfil the constitutional commitment of providing education to the people and removing disparities. Table 4 shows the plan and policy targets for primary education in Pakistan over the last six decades.

Table 4

The Plan and Policy Targets for Primary Education in Pakistan

Plan/ Policy	Period	Target (%)	Year	Achievement (%)
National Plan of Education Development	1951-1957	67	1957	43 (1955)
First Five Year Plan	1955-1960	49	1960	36 (1960)
Second Five Year Plan	1960-1965	56	1965	45 (1965)
Third Five Year Plan	1965-1970	70	1970	39 (1970)
Non-Plan Period	1970-1978	–	1978	–
Fifth Five Year Plan	1978-1983	–	1983	–
Sixth Five Year Plan	1983-1988	75	1988	69 (1998)
Eighth Five Year Plan				
Boys	1993-1998	96	1998	86 (1998)
Girls		82	1998	58 (1998)
National Education Policy				
Net	1998-2010	90	2003	–
Gross		105	2010	–
Education Sector Reform Action Plan				
Net	2001-2005	76	2005	52
Gross		100	2005	88

Source: ADB, Sector Assistance Programme: Evaluation for the Social Sectors in Pakistan (2005); Social Development in Pakistan: Annual Review 2002-2003, and PSLMS 2004-05.

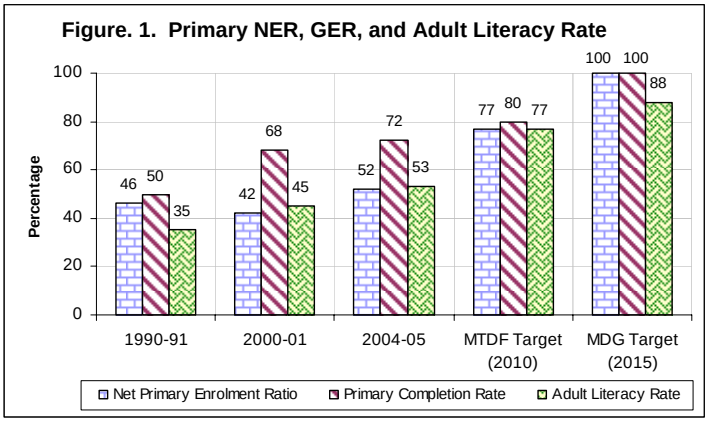
4. PROVISION OF EDUCATION IN PAKISTAN

There are number of factors that play into Pakistan's poor public provision of education. These include the non-existence of cost-effective schooling, poor curriculum and low level of awareness among parents, especially in rural areas, regarding its outcomes and impact on household welfare. Studies show that only 41.5 percent of people older than 15 years of age are literate in Pakistan, the lowest in South Asian countries. Along with their literacy rates, Pakistan also has one of the highest dropout rates, with just over 10 percent of students finishing twelve years of schooling.

As of 2004-05, the literacy rate (age 10+) in Pakistan was 54 (72 urban, 45 rural) against 45 (64 urban, 36 rural) in 2001-02. The ratio of the highest to the lowest quintile was 1.95 (1.69 urban, 1.76 rural) in 2004-05, as compared to 2.41 (2.08 urban, 2.17 rural) in 2001-02. Similarly, the adult literacy rate (age 15+) was 50 (69 urban, 40 rural) in 2004-05 as compared to 43 (63 urban, 34 rural) in 2001-02. The ratio of the highest to the lowest quintile was 2.22 (1.89 urban, 1.93 rural) in 2004-05 against 2.52 (2.11 urban, 2.23 rural) in 2001-02.

Figure 1 shows the trend in primary net and gross enrolment ratio and adult literacy rate in Pakistan over time. Since 1990-91, the net enrolment ratio (children age 5–9 years, class 1–5) has increased only 6 percentage points, i.e., from 46 percent in 1990-91 to 52 percent in 2004-05. In 2004-05, 72 percent primary completion rate (proportion of children starting grade 1, who complete grade 5) was observed against 50 percent in 1990-91. For both indicators, the MDG target is cent-percent by year 2015. Adult literacy is yet another important indicator to gauge progress in education sector. Progress has been observed in adult literacy rate (proportion of 10+ years, who can read and write with understanding) since 1990-91. In 2005-06, there was 53 percent (65 male, 40 female) adult literate population against 35 percent (48 male, 21 female) in 1990-91.

Figure. 1. Primary NER, GER, and Adult Literacy Rate



Eliminating gender disparity at primary, secondary and tertiary level of education has been clearly highlighted in the MTDF, MDG and PRSP targets. GPI (proportion of girls' enrolment at primary, secondary and tertiary levels in comparison with boys) shows 0.85 for primary and 0.83 for secondary level education in 2004-05. Underlining the GPI for youth literacy (proportion of females as compared with boys aged 15–24, who can read and write), a progress of 0.16 points have been observed since 1990-91, i.e., 0.67 in 2004-05 from 0.51 in 1990-91.

Table 5 presents the latest education statistics (National Education Census) on number of institutions, teachers and enrolment by stage and kind of provision. Unlike health sector service delivery in Pakistan, the public sector leads in education sector. Overall, the public sector owns 72 percent institutions and 56 percent teachers, and 66.8 percent enrolments were observed in public sector education establishments as of 2005. However, the private sector plays leading role in delivering pre-primary and middle/elementary, and some balanced role in higher secondary education.

Table 5

Education Statistics: Number of Institutes, Teachers, and Enrolment by Stage and Kind of Provision

	Stage	Institutions	Teachers	Enrolment
	Pre-Primary	287	301	8,670
	Mosque	14,035	22,097	796,758
	Primary	105,525	308,596	10,761,355
Public	Middle/ Elementary	14,335	112,109	2,788,727
	Secondary	9,471	165,747	4,544,724
	Higher Secondary	1,079	27,418	753,789
	Total	144,732	636,268	19,654,023
	Pre-Primary	794	3,405	52,694
	Mosque	88	299	6,146
	Primary	16,823	86,148	1,671,885
Private	Middle/ Elementary	24,115	194,244	3,864,143
	Secondary	13,484	194,263	3,778,322
	Higher Secondary	1,056	20,575	396,690
	Total	56,360	498,934	9,769,880
	Pre-Primary	1,081	3,706	61,364
	Mosque	14,123	22,396	802,904
	Primary	122,348	394,744	12,433,240
Total	Middle/ Elementary	38,450	306,353	6,652,870
	Secondary	22,955	360,010	8,323,046
	Higher Secondary	2,135	47,993	1,150,479
	Total	201,092	1,135,202	29,423,903

Source: National Education Census (2005), Ministry of Education.

Education system in Pakistan faces many hurdles on the road to a smoothly functioning environment. These include: political interference, lack of school/college autonomy, immature managerial capacity, high drop out rate, lack of teachers dedication, motivation and interest in their low paid profession, lack of physical infrastructure, and poor knowledge sharing. These obstacles have created a chronic neglect of social sectors. Amongst the worst profiles in human development index, where 30 percent children of primary school age are not enrolled and at secondary level 60 percent are not in school. University level participation rate stays at less than three percent.

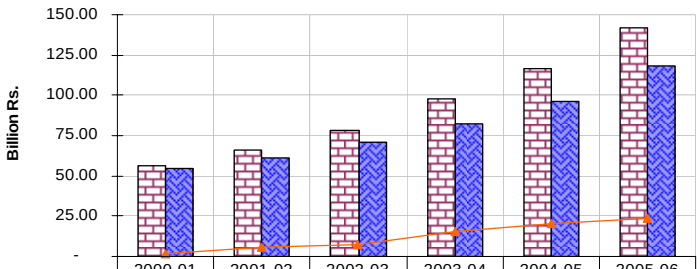
Today the illiterate population, 15 years and above, is larger than the population of the country at the time of independence, in 1947. Poor infrastructure is also another obstacle facing Pakistan. Schools/colleges lack many basic facilities including: classrooms, toilets, blackboards, furniture and qualified teachers. In Pakistan, hardly 10 percent of the population complete twelve years of schooling due to high drop out rates; highest in South Asia. Study shows that at least 50 percent of the budget is spent on children who drop out of school before completing primary education cycle. Around 25 percent leave after 8 years of schooling and another 15 percent by Grade-10. Wide spread teacher absenteeism is another issue which hinders the provision of education at all levels.

5. GOVERNMENT SPENDING ON EDUCATION SECTOR

Education is the fundamental human right and has constructive impact on household welfare and vital prerequisite for economic growth and development in a country at the macro level. Like other social sectors, education is not a priority area of the Pakistani government. Though Pakistan is trying to make some amends for its past neglect, and investment in education has been gradually rising. In the fifth five year plan, spending on education as a percentage of total plan outlay was 1.2 percent, which increased to 1.6 percent in the sixth five year plan, 3.0 percent in the seventh plan and 8.4 percent in the eighth five year plan. The development budget for basic education has also risen by more than 7 times in the past seven years [HDC (1998)].

The total public sector budgetary expenditure on education sector shows promising figures in last six years, however, the share of development spending on education is still very low (see Figure 2). The total public sector expenditure on health has increased from Rs 56.54 billion in 2001-02 to Rs 141.70 billion in 2005-06, with a highest jump of Rs 24.83 billion in 2005-06.

Figure 2. Government Spending on Education Sector

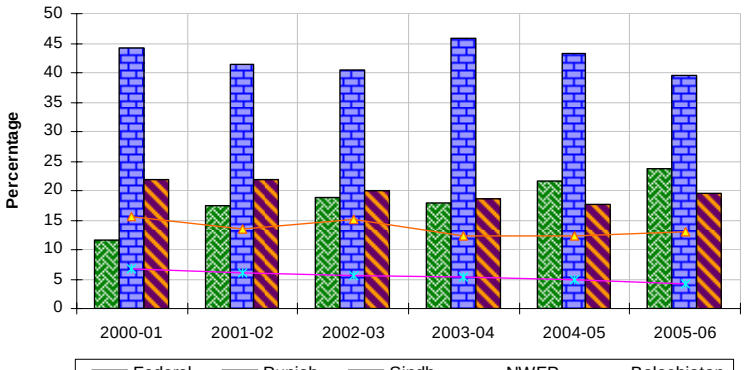


	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Total	56.54	66.29	78.45	97.70	116.87	141.70
Current	54.57	60.80	70.94	82.42	96.58	118.27
Development	1.96	5.49	7.51	15.28	20.29	23.43

Source: PRSP Annual Progress Reports (*various years*).

The share of federal and provinces in total public spending on education sector shows that on average the Balochistan and NWFP are spending the least (see Figure 3). The major share of spending on education has been observed in Punjab, whereas Sindh and Federal shows somewhat balanced trend. The trend of public expenditure in Balochistan and NWFP shows alarming situation where the public spending is declining since 2001-02 with slight development (in NWFP only) over 2002-03.

Figure 3. Share in Total Government Spending on Education



Source: PRSP Annual Progress Reports (*various years*).

Since, public provision of education is the constitutional responsibility of the provincial and federal government in their respective jurisdiction; Table 6 presents the percentage share of expenditure in education by province and level of education. Overall, during 2000-01 and 2005-06, the provincial governments spent the most on primary followed by secondary education and the least in

Table 6

Percentage Share in Education Expenditure by Province and Level of Education

Percentage

	Federal	Punjab	Sindh	NWFP	Balochistan	Pakistan
2000-01						
Primary Education	15.58	56.97	48.39	47.69	41.82	47.79
Secondary Education	17.28	26.55	30.56	36.92	31.09	28.27
College and Universities	33.17	9.12	8.58	7.65	5.04	11.30
Professional	25.34	4.11	5.59	5.10	9.20	7.41
2001-02						
Primary Education	9.09	56.41	46.62	35.52	36.75	32.65
Secondary Education	10.78	24.9	32.25	32.32	28.32	28.51
College and Universities	29.44	9.39	8.55	6.01	7.70	14.71
Professional	28.82	5.83	7.24	5.10	8.59	10.21
2002-03						
Primary Education	8.79	57.54	45.72	41.55	36.75	42.4
Secondary Education	11.94	24.27	33.81	35.73	28.32	25.81
College and Universities	46.59	9.77	9.23	3.09	8.43	15.52
Professional	16.92	5.17	6.36	3.42	11.86	7.73
2003-04						
Primary Education	7.83	60.14	43.08	44.88	34.88	44.32
Secondary Education	10.25	21.35	32.61	38.52	29.66	24.00
College and Universities	50.81	7.30	8.26	7.14	6.83	15.27
Professional	13.76	4.65	6.11	4.93	7.37	6.74
2004-05						
Primary Education	11.46	57.6	42.91	45.84	30.66	42.18
Secondary Education	8.81	21.56	33.41	41.3	24.44	23.46
College and Universities	28.70	7.88	8.93	6.22	6.35	12.31
Professional	40.54	4.49	6.85	4.97	7.79	12.97
2005-06						
Primary Education	5.47	55.06	39.73	45.71	30.43	37.99
Secondary Education	7.82	23.18	32.87	41.14	26.85	23.89
College and Universities	59.10	8.73	10.29	6.17	6.93	20.62
Professional	13.12	5.17	6.13	5.31	9.79	7.47

Source: PRSP Annual Progress Report (*various years*).

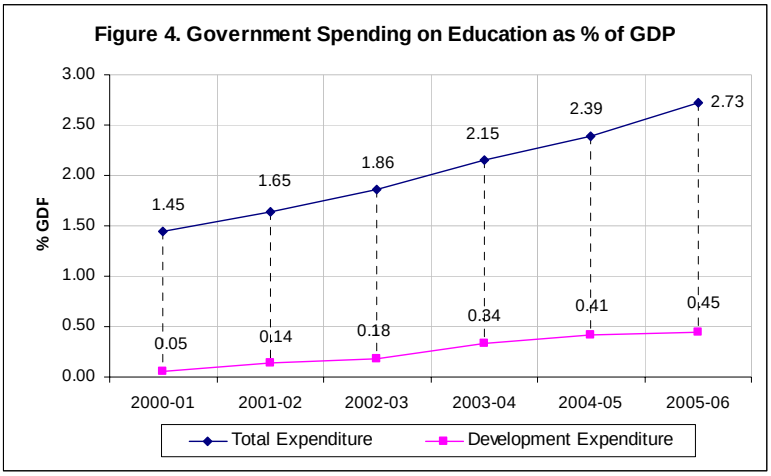
Note: 'Professional' includes Professional and Technical Universities, Colleges and Institutes plus Teachers and Vocational Training. 'Other' category is not presented.

professional education. However, the federal spent the least on primary and the most on colleges and universities followed by professional education. This could be because of low burden in the primary and secondary education where the private sector plays an important role.

The overall stage-wise and/or province-wise trend presents a mix picture; however, it is interesting to observe that the share of expenditure on primary and secondary education has dropped (except for secondary education in Sindh and NWFP) since 2000-01. The huge amount of money was injected in the higher education through Higher Education Commission (HEC), Islamabad. The impact of higher education grants is observed at the Federal level; where the share of college and universities has improved to 59.10 percent in 2005-06 from 33.17 percent in 2000-01.

The total public sector expenditure as percentage of GDP shows that the in last six years the public sector spending on education sector has been doubled since 2000-1, i.e., 2.73 percent in 2005-06 from 1.45 percent of the GDP in 2000-01. After becoming a signatory to the United Nations' Millennium Declaration in the year 2000, the progress underlining government spending was just of 1.28 percentage points of GDP (see Figure 4). Interestingly, there was only a change of less than one-percent, i.e., 0.94 percent, of GDP between 2000-01 and 2004-05. Moreover, the public sector development expenditure as percentage of GDP presents worst picture over the same period of time; improvement of 0.40 percentage points.

Figure 4. Government Spending on Education as % of GDP



Pakistan's education system faces a number of challenges. These include: under-funded and inefficient public sector along with a mixed, expensive and unregulated private sector, underdeveloped managerial leadership, academician and academic independence, poor salary structure (especially of primary and

secondary school teachers) and lack of physical infrastructure. These poor conditions in the education sector may be attributed to a number of factors like poverty, malnutrition, unequal access to health facilities, and high population growth, infant mortality, and foremost lesser income generating opportunities in a competitive environment. For equity, efficiency and effectiveness of the education sector, inputs from both the public and regulated private sector would be necessary.

6. RESEARCH FOCUS

To explain the nature of the incidence[1] of the public sector spending on education in Pakistan, following research questions/hypothesis are raised in the current study:

(i) Are the government expenditures in education sector progressive in Pakistan, both at provincial and regional level?
(ii) Who are the beneficiaries from government expenditures in different education sub-sectors?
(iii) What kind of inequalities exists in the distribution of these benefits from the public sector spending on education, regionally and income wise?

Methodology

To analyse the incidence of the government expenditure, two kinds of methodologies are widely applied, i.e., the *Benefit Incidence Approach* (BIA) and the *Behavioural Approach* (BA). BIA uses the estimated input costs or marginal costs of provision as the measure for marginal benefits. While BA uses econometric techniques to estimate behavioural demand for publicly provided private goods, which then can be used to derive willingness to pay.

To analyse the incidence of the government spending on education sector in Pakistan the BIA has been applied. The BIA also called as the classic approach or non-behavioural approach, which was pioneered by twin World Bank studies conducted by Selowasky (1979) and Meerman (1979). Later many authors have used this methodology to analyse the government expenditure incidence such as Chris Sakellariou and H.A. Patrinos (2004), Castro-Leal, *et al.* (2000), Jorge Martinez-Vazquez (2001) and Sabir (2003). Jorge (2001) applied BIA to measure the impact of budgets on the poor. The advantage of BIA is that it permits to focus on the important issues of how effectively public expenditure

[1]Incidence of the government expenditure is progressive if it benefits more the poor as compared to the rich, i.e. the poor get more share of the government expenditures as compared to the rich. The expenditures will be regressive if it benefits the rich more as compared to poor. i.e. the high-income groups get more shares of the public expenditures as compared to the low-income group.

programmes targeted the poor by focusing on different rates of usage of publicly provided goods and services.

The purpose of benefit incidence is to analysis and to identify who benefit from the public spending and how much. The magnificence of this approach lies in that it takes in to account the information of cost of the publicly provided goods and services keeping in view the uses of goods and services by the different income groups and finally finds out the estimates of the distribution of benefits. The course of action is that the individual beneficiaries are grouped by their income level, but they can also be grouped by geographical area, ethnic group urban and rural location, gender and so on. In analysing the incidence of public expenditures on education in Pakistan this grouping has been made on the basis of income.

In practice, the conduct of incidence analysis involves three steps:

(1) Obtain the estimates of the unit cost or subsidy implied by the provision of a particular public service. Data for this step usually comes from public expenditure accounts. For example, budget data on per student cost or subsidy by level of education.

(2) Impute the subsidies to the individual or household, identified as user of the service, by using information available on availing service by different income groups. For example stage-wise enrolments to the education establishments as reported by different households in consumer expenditure surveys ordered by income level ranging from poor to rich.

(3) Aggregate individuals or households in groups ordered by income or expenditure or any other grouping of interests such as race or gender, distribute the benefits among the different groups and arrive at an estimate of the incidence of per capita subsidies accruing to each group.

These steps can be transformed into mathematical equations. The service-specific public sector subsidy received by an individual is:

$$S_k = q_k c_k - f_k$$

Where S_k represents subsidy received by the individual on service k, q_k indicates the quantity of service k utilised by individual c_k represents the unit cost of providing k in the region where individual resides and f_k represents the amount paid for k by individual.

$$S_j = \sum_{i=1}^{4} H_{ij} \quad \frac{E_i}{H_i} = \sum_{i=1}^{4} \frac{H_{ij}}{H_i} E_i$$

Where S_j is the value of the total health subsidy imputed to group j, H_{ij} represents the number of enrolments of group j to the education facilities at the level i (i representing representing primary, secondary, higher or Professional education in education), H_i is the total number of such enrolments (across all groups) and E_i is the government spending on education at level i (with fees and other cost recovery netted out). Note that E_i/H_i is the unit subsidy of attending a school at level i the share of the total education subsidy E_i accruing to the group is given by:

$$S_j = \sum_{i=1}^{4} \frac{H_{ij}}{H_i}\left(\frac{E_i}{E}\right) = \sum_{i=1}^{4} b_{ij}.e_i$$

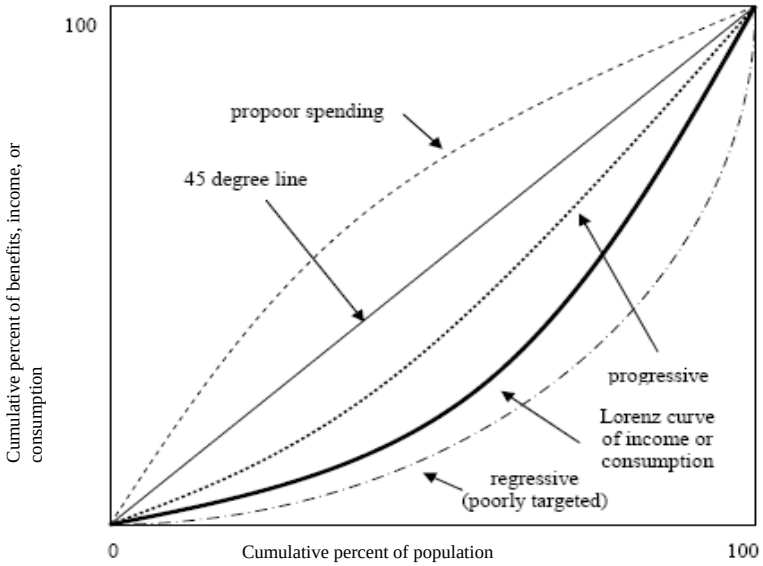
Clearly, this share (and indeed overall inequality in the benefit incidence) is determining two proximate factors: The share of the group in total attending a school at each level of the facility b_{ij} and the share of the each level of education total education spending $e_{i.}$ The value b_{ij} reflect household decision to attend a school, where as the value e_i reflects government spending allocation.

To measure the inequalities in the distribution of the benefits graphically we can use *Lorenz Curve* and the *Concentration Curve*. However, unlike the Lorenz curve, which shows the cumulative proportion of income earned by the cumulative population, a concentration curve can lie above the diagonal: The poorest 40 percent of the population cannot earn more than 40 percent of income, but they can get more than 40 percent of spending on social grants.

The Concentration curve that lies above the Lorenz curve are least progressive or weakly equity enhancing i.e., it would redistribute the resources even if funded by proportional taxes and the poorer are comparatively better off when considering both their income and public spending, compared to considering only their income. The concentration curve which lies above the diagonal shows that spending is targeted at the poor, i.e. it is strongly equity-enhancing or per capita progressive or pro-poor, i.e., the poor benefit more than proportionately to their numbers. If a concentration curve lies anywhere above the 45-degree line, the benefit is per capita progressive; indicating that poorer households receive disproportionately large shares of the benefit. Concentration curves that lie below the Lorenz curve are classified as regressive.

Figure 5 presents the diagrammatical nature of the incidence. Concentration curves are a useful way to summarise information on the distributional benefits of government expenditures, statistical testing of differences in curves is important. This type of graphical analysis has been used by Sahn and Younger (2000) who have examined the progressivity of social sector expenditures in eight Sub-Saharan African countries.

Fig. 5. Diagrammatical Nature of Incidence



Data Sources

Data used in the current study has been taken from the following sources:

(i) The information on the use of the publicly provided education services, income of the household and the individual expenditures on the education have been obtained from the PSLM Survey (Round-1) 2004-05, Federal Bureau of Statistics, Government of Pakistan.

(ii) To find out per capita expenditure on education facilities, the data on population has been obtained from the National Institute of Population Study (NIPS).

(iii) Total expenditures in different sub-sectors of the education have been taken from the PRSP Annual Progress Reports; FY 2000-01 to 2005-06, obtained from the PRSP Secretariat, Ministry of Finance, Government of Pakistan.

(iv) The data on enrollments in different educational institutions have been taken from Pakistan Education Statistics, National Education Census (2005) and District Education Statistics—Public Schools (2004-05), Academy of Educational Planning and Management, Ministry of Education Government of Pakistan.

Results and Discussion based on the above mentioned methodology are articulated in Section 7.

7. DISCUSSION AND RESULTS

Per capita public expenditure at different levels of education has been calculated by dividing the total government expenditure allocated to the respective level by the total number of enrolments in that specific level of education. Per capita individual expenditure has been calculated by taking the average expenditure of households where all household-member-children were currently enrolled in the same level of education, e.g., to calculate the per capita individual expenditure at primary level, the research focused only those households where all the children were enrolled at primary level. The average of respective household expenditure in primary education was then used as individual primary education for the selected sample population. Same method has been applied to calculate the individual expenditure at secondary, higher, and professional level of education.

Net public subsidies going to a household have been obtained by deducting the total individual expenditures incurring on using an education service from the total per-household government expenditures in the provision of education service in that area where this particular individual resides. From this net subsidy, the GINI and Concentration coefficients[2] have been calculated to test out the nature of incidence of government spending on education. Theoretically, if the concentration coefficient is lower than the GINI coefficient then the spending on education is progressive or pro-poor and vice versa. Net subsidies also have been used to calculate the shares of different quintiles in the government expenditures on education to measure the inequalities in the expenditures shares of different quintiles.

According to Economic Survey of Pakistan, 2005-06, Pakistan is spending 2.1 percent of the GDP on education. It spends 42.18 percent on primary education, 23.46 percent on secondary and 12.31 percent of the total education expenditure on the higher education. However, according to the PRSP expenditure figures, as of 2005-06, the government spent 2.73 percent of GDP on education; whereas the share of the development expenditure was only 0.45 percent of GDP. Of the total expenditure, 38 percent was spent on primary, followed by 24 percent on secondary, 21 percent on college and universities, and 7.5 percent was spent on teacher and training.

Incidence of the government spending on education is shown in Table 7. The table demonstrates that overall expenditure in the primary education is progressive in Pakistan; both at the provincial and the regional levels. Minor

[2]The concentration coefficient shows the inequalities in the distribution of the government expenditures. This is calculated in same as the GINI coefficient, which shows the income inequalities. Only the difference is that we calculate concentration coefficient keeping income group same. The concentration coefficient can lies in range of –1 and 1 while the GINI coefficient lies between 0 and 1. If concentration coefficient is lower than GINI coefficient it shows that expenditures are more evenly distributed than income and vice versa.

differences prevail in the shares of upper and the lower quintiles in benefits of the primary education subhead public sector spending. Both the lower and upper quintile shares are lowest in the urban NWFP. This implies that in urban areas of NWFP people prefers to send their children in private school. The 4th and 5th columns of Table 7 present the GINI coefficients and the concentration coefficient. All the GINI coefficients are higher than the concentration coefficient. This implies that the government spending in primary education is more equally distributed than the income distribution. The expenditure in the primary education is pro-poor in Pakistan at provincial and regional level.

The share of lowest quintile in public sector expenditure on primary education ranges from 13 to 21 percent while the share of the upper quintile ranges from 16 to 23 percent in Pakistan. Overall the share of the lowest quintile is lower than the highest quintile however it is more skewed in rural NWFP, More inequalities persists in shares of upper income group and lowest income group of Balochistan and Sindh as compared with other provinces.

Government expenditure on secondary education is also progressive in Pakistan; overall, both at rural and urban level. The concentration coefficient of expenditure is lower than the GINI coefficient, which, means that the government expenditures are more evenly distributed as compared with the income distribution. The expenditure in secondary educations is pro-poor in its nature. Categorising the income-wise expenditure, the share of lowest quintile in secondary education expenditure is 17 percent while the share of the highest quintile is 23 percent. Somewhat similar kind of behaviour exists both at rural and urban areas.

At provincial level the expenditures are also pro-poor. In all provinces the coefficient of concentration are lower than the GINI coefficient. This implies that the poor are getting more benefits than rich people from the government expenditures in the secondary education. The share of lower income group in public expenditures ranges from 16 percent to 19 percent while the share of the higher income group ranges from 20 to 29 percent in all provinces.

The share of the poorest quintile is lower than the richest quintile at provincial and in Pakistan overall. But these differences are not significant. However as vast difference exists in Balochistan where upper quintile receives 29 percent while lower quintile receives only 16 percent of total expenditures in secondary education.

Public sector spending on higher education is also pro-poor in overall Pakistan as well as at provincial level. This phenomenon of progressiveness of expenditures in Pakistan is described in the column 12th and 13th of Table 7; shows the concentration coefficient and GINI coefficient. At national and both at provincial and regional levels, the concentration coefficient is lower than the GINI coefficient. It implies that expenditures are more equally distributed than the income. Poor are having more opportunities to get access to the higher

Table 7

Distribution of Government Expenditure on Primary, Secondary, and Higher Education (2005-2006)

Region	Primary Education				Secondary Education				Higher Education			
	Lower 20% Share in Expenditure	Upper 20% Share in Expenditure	GINI Coefficient	Concentration Coefficient	Lower 20% Share in Expenditure	Upper 20% Share in Expenditure	GINI Coefficient	Concentration Coefficient	Lower 20% Share in Expenditure	Upper 20% Share in Expenditure	GINI Coefficient	Concentration Coefficient
Punjab	**18.76**	**19.98**	**0.33**	**0.01**	**17.74**	**21.30**	**0.39**	**0.04**	**17.86**	**21.38**	**0.39**	**0.06**
Rural	19.01	19.93	0.31	0.02	17.91	23.66	0.34	0.06	18.09	22.86	0.32	0.05
Urban	20.71	20.39	0.35	0.01	19.78	19.93	0.40	0.00	18.25	21.34	0.39	0.06
Sindh	**18.27**	**21.78**	**0.27**	**0.03**	**17.30**	**23.27**	**0.32**	**0.07**	**21.26**	**17.79**	**0.35**	**0.01**
Rural	17.92	22.48	0.25	0.04	18.30	25.32	0.25	0.08	31.07	20.49	0.32	-0.07
Urban	19.47	19.47	0.27	0.02	17.51	19.84	0.32	0.03	17.97	18.19	0.34	0.02
NWFP	**18.23**	**23.35**	**0.36**	**0.05**	**18.68**	**22.08**	**0.38**	**0.04**	**17.88**	**22.74**	**0.35**	**0.05**
Rural	18.39	24.22	0.31	0.05	19.18	21.99	0.30	0.03	18.83	22.20	0.33	0.03
Urban	12.93	15.76	0.42	0.04	17.66	20.90	0.45	0.02	16.76	20.58	0.35	0.05
Balochistan	**18.17**	**23.29**	**0.27**	**0.05**	**15.77**	**28.97**	**0.27**	**0.07**	**18.75**	**20.83**	**0.25**	**0.03**
Rural	18.67	23.07	0.25	0.04	17.51	23.08	0.24	0.06	–	–	–	–
Urban	18.61	19.85	0.26	0.05	18.71	22.87	0.26	0.05	20.00	12.50	0.25	0.03
Pakistan	**19.04**	**21.70**	**0.32**	**0.02**	**16.86**	**21.77**	**0.36**	**0.06**	**18.79**	**21.79**	**0.36**	**0.04**
Rural	18.44	22.00	0.29	0.03	16.83	22.62	0.30	0.06	18.82	22.74	0.32	0.03
Urban	20.73	21.51	0.34	0.02	17.15	20.31	0.38	0.03	20.67	22.37	0.15	0.01

education. This may be due to the fact that higher income group send their children abroad for the higher studies. Although the public expenditures are progressive in higher education but there exists a large variation in distribution of it.

The share of lower quintile is 19 percent in government spending in higher education subhead while the share of highest quintile is 22 percent in Pakistan. Urban areas are having more benefits as compared to the rural areas. In rural areas lower quintile share is just 18 percent while in urban areas this is 23 percent and the share of higher quintile is 21 percent while in urban areas it is 23 percent of the expenditure in higher education.

At provincial level the share of lower quintile is lower than share the upper quintile except in Sindh and Balochistan. In Sindh the share of the lower income group is 10 percentage points higher than the share of the upper quintile while it is 8 point higher in Balochistan. The share of higher quintile is varying from 13 percent to 23 percent at provincial level. It is highest for rural Punjab and lowest for Balochistan urban, i.e., 23 percent and 13 percent respectively of the total expenditures in higher education. For the lower quintile, the share of benefits of government spending is 16 to 31 percent.

Scarcity of the data as whole and unavailability of information of Balochistan province is the main hindrance to calculate the analysis of incidence of public sector expenditures on professional education. Only provincial and overall Pakistan analysis have been performed and reported in Table 8. This table exhibits that the public subsidy in professional education is progressive. The lower quintile share in these expenditures is 19 percent while the upper quintile share is 23 percent.

Table 8

Distribution of Government Expenditure on Professional Education (2005-2006)

Region	Lower 20 % Share in Expenditure	Upper 20 % Share in Expenditure	GINI Coefficient	Concentration Coefficient
Pakistan	**18.878**	**22.855**	**0.397**	**0.069**
Rural	15.240	25.649	0.445	0.113
Urban	20.319	12.788	0.370	0.031
Punjab	**25.898**	**26.201**	**0.419**	**0.002**
Rural	13.224	36.776	0.499	0.163
Urban	35.147	1.107	0.330	-0.197
Sindh	**24.828**	**24.828**	**0.347**	**0.079**
Rural	–	–	–	–
Urban	18.752	10.156	0.339	0.063
NWFP	**17.084**	**19.019**	**0.408**	**0.118**
Rural	18.795	29.315	0.328	0.050
Urban	6.571	8.121	0.397	0.084

As for the government spending on technical education at provincial level is concerned these are progressive in all the provinces of Pakistan. It implies that public expenditures are pro-poor in Punjab, Sindh and NWFP provinces of Pakistan. The results in the Table 8 exhibits that poor segment of the population is more inclined toward technical education as compared with higher income groups. By enhancing the skills in technical institutes they can get jobs more easily as compared to the formal education. Another reason of pro-poorness of the technical subsidies is that the higher income people send their children abroad for the technical degrees. The shares of lower quintile in technical education expenditures are in the range of 17 to 25 percent while the share of higher quintile is in the range of 19 to 26 percent.

8. CONCLUSION AND POLICY IMPLICATIONS

Conclusion

(1) Our first hypothesis that the government spending on education in Pakistan is progressive; is widely accepted.
(2) The other hypothesis that there exist large inequalities in the shares of the different quintiles in benefits of the government spending on education can not be rejected.
(3) The education expenditure in overall Pakistan as well as in all the provinces is progressive in nature. It means that public subsidies in the education sector are more evenly distributed as compared to the income distribution. These expenditures are pro-poor.
(4) Overall poor segment of population is getting more benefits from the expenditures in different areas of education subheads. However there exist large variations in the shares of the upper quintiles and the lower quintiles in benefits of government education expenditures.
(5) The share of lower quintiles is lower than the share of upper quintiles in all the regions except higher education in Sindh and Balochistan.
(6) The rural urban inequalities are more reflective. The rural areas are more underprivileged regions in education facilities.
(7) The critical issue will remain shortage of teachers, without which it would not be possible to achieve universal primary education and/or good quality education and/or skills of acceptable quality. The profession is not able to attract and/or retain the talented persons, because of continually falling status, working conditions, career perspectives and professional development.
(8) Pakistan’s education system faces a number of challenges. These include: under-funded and inefficient public sector along with a mixed, expensive and unregulated private sector, underdeveloped managerial leadership, academician and academic independence, poor salary

structure (especially of primary and secondary school teachers) and lack of physical infrastructure.

(9) Pakistan has previously neglected investment in human capital and thus fosters a persistently high population, deceleration of growth and overruling poverty. In education, the problems are low level of enrolments not only at the primary, but also at the middle, secondary, and higher education levels along with poor quality of public education.

(10) Pakistan still has to go a long way to reach the MTDF, PRSP, and MDG targets and until and unless education is given the due priority that it deserves in the policy framework and allocation of financial resources this sector will continue to show weak performance in the coming years.

Policy Implications

On the basis of our results and policy debate, following policy implication are proposed:

(1) Distribution of the benefits of the public spending on education among different quintiles in not even. Inequalities are persistent at provincial and regional level. Horizontal and vertical equity in allocation of the funds to education both at provincial and regional level can make the expenditure programmes in education more efficient.

(2) The principle of horizontal equity calls for equal treatment of equal individual and vertical equity calls for the unequal treatment of unequal individuals. Government programme should target more to specific population rather managing public education.

(3) Reallocation of resources and restructuring of the education financing policy that target to benefit the poor more in particular and improve the low income people access to these services is the need of the time. Education policies measures should be targeted towards poor as fee waiver, scholarships, cash transfers and in-kind transfer or any other public support may result increase of subsidy to poor and will enhance the share of lower quintiles.

(4) Although the hypothesis that public expenditures education are progressive in Pakistan cannot be rejected. But current indicators of education in Pakistan present the poor picture of expenditures on education. As Pakistan is among the countries which has lowest HDI and other education parameter.

(5) A number of studies demonstrate that investment in human capital has larger returns, increase investment in human capital will result more return. The increase in the government spending as percentage of GDP is the desired need of time.

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