Socio-economic segregation of disadvantaged children between schools in Pakistan: Comparing the state and private sector

Nadia Siddiqui
School of Education
School of Applied Social Sciences
nadia.siddiqui@durham.ac.uk

Abstract
The distribution of children in different school-types and regions in Pakistan suggests that access and opportunities in education are not evenly accessible for many children. Segregation at school level is an important concern for equity and social justice because the adverse effects of segregation increase the pre-existing gap in opportunities between rich and poor, preventing the disadvantaged children from equal access to better life and success opportunities. This paper presents an analysis of segregation by poverty and pupil performance between schools, with a comparison of private and government schools in Pakistan. The data obtained for this study is from the ASER 2014 survey of households and schools. The analysis includes 27,979 children aged 5-16 years for whom the information could be linked with their schools, and parents' socio economic status. Segregation levels have been assessed using the Gorard Segregation Index (GS). The results show that segregation by academic performance is higher than segregation by poverty, and segregation by poverty is higher in the private sector compared to government schools, whereas segregation by performance is greater in the government schools. A regional level analysis shows that segregation in urban areas is higher in both school types compared to rural areas. In addition to insisting on full attendance for children of school age, the government should work towards decreasing segregation in the state sector, perhaps also involving an increase in the number of schools maintained, and therefore reducing the need for cheap private provision.

Key words: Segregation, performance, poverty, Pakistan schools, private education

Introduction
Schools are generally the first entry point for children to encounter a larger social world. This beginning provides children an understanding of social behaviours, life concepts and language of interaction (Behrman, Deming and Ross et al. 2008, Harbison and Hanushek 1992, Bali and Alvarez 2004, Strand 2010). Schools are generally considered to play an important role in shaping communities and larger societies. Research evidence has put forward some strong claims on social outcomes such as young people's involvement in social crimes and schools they attended (Saminsky 2010, Zagar et al. 2009). Children learn norms and behaviours from the environment in which they spend major part of their childhood. There is research evidence that shows clustering children with similar background characteristics in schools isolates them from a wider society, and this stratification is most harmful for those children who are disadvantaged (Gorard 2000, Harris and Williams 2012, Strand and Winston 2008, Bartholo 2014, Bartholo and Da Costa 2014, Billings, Deming and Ross 2016). Therefore, equality of access to schools is an issue that can address major social problems relatively easily.

The term 'segregation' has been used throughout in this paper to refer the phenomenon of pupil clustering in schools. This concept of segregation is very close in meaning to discrimination, separation, exclusion and ghettoisation of a social or economic group. However, it is not necessarily deliberate targeting of that group. Rather in an educational context segregation is traditionally considered in terms of studying the patterns and differences in the population of

schools as largely unintended outcomes of the policies and changing economies of the countries (Gorard and Taylor 2001). Although education policies in the modern world are geared towards increasing access and providing equal opportunities, some level of segregation is unavoidable under the current system of economies. A perfect mix of equality and fairness in education is only possible at a theoretical level. However, acknowledging the unevenness in the pupil populations can be helpful in formulating policies and introducing effective interventions to support disadvantaged groups.

This paper presents segregation analysis of the state of pupils' distribution in government and private school in Pakistan. This segregation analysis explains how far children are clustered on the basis of poverty and performance in government and private schools across the country. The results are relevant in understanding the differences between academic performance of children in government and private schools. Moreover, the results and discussion sections also include the differences in segregation levels between the two school types in urban and rural settings of the country.

Pakistani government and international aid donors have increasingly encouraged the growth of private schools since last two decades and as a result private schools have spread at a nationwide scale (Nguyen and Raju 2015). Nonetheless, Pakistan is still far behind achieving children's school enrolment targets. According to the most recent figures nearly 7 million children aged 5 to 9 years are not enrolled in any school (Education For All National Review: Pakistan, 2015). This is deeply rooted in persistent neglect by the state to invest and reform school education. The nationwide phenomenon of private school excessive growth raises serious concerns regarding children's fair and equal access to school education. Based on the results of segregation analysis the paper has recommendations for policy implications with regards to measures for school establishment and regulations on the intake of children.

The state of school education in Pakistan

In Pakistan the government school policy is to provide education maintaining a comprehensive system where school admissions are not dependent on academic ability, ethnicity, language, location of children's house and parents' occupation or income status (Jimenez & Tan 1987). There is no tuition fee charged but a small annual cost, no more than £2, is charged in the name of school maintenance fund. There are 43 million children enrolled in schools and of these government schools are providing education to 63%. Primary schools constitute 80% while secondary and higher secondary schools make 20% of the government education sector (NEMIS 2015). As per government policy schools do not charge any tuition cost but this does not imply that education is completely free even in the government schools. Going to school cost money in the form of books, uniform, transport and a school day meal. However, due to no tuition fee policy in the government schools the cost of education is comparatively lower than the private schools.

Of the total population of children enrolled in school 37% receive education in private schools (NEMIS 2015). These schools are run by non-state actors such as: individuals who can earn profit from the school income, non-government organisations who have donor led agenda and voluntary organisations that support education for the children of certain groups e.g. Pakistan armed forces, overseas employed Pakistanis who have their families in Pakistan, ex-service men, Christian minorities etc. (Rahman 2005). Voluntary organisations are also franchise businesses that provide a specific brand name to schools and people who want to run schools as a profitable business become associates of the franchise (For example: The Educators, The City

School, Roots School System, Beacon House Schools). These are also called elite schools where children from the middle and upper middle class receive education. Admission criterions in private schools could vary but largely dependent on parents' financial status to be able to pay the cost of schooling in the form of admission registration and regular monthly fees. The second common criterion of admission in private schools is a child's performance on school admission test or interviews. Private schools, in general, charge fees for admission (Rahman 2010, World Bank 2002, Sathar et al. 1994), monthly cost, school maintenance fund, and the cost for the period during vacations when children do not go to schools (The Express Tribune, 6th June 2015. Madrassahs are also categorised as private schools that are donor led and charity dependent where religious education is dominant over national curriculum and no student fee is charged (Rahman 2004). Non-formal education is also prevalent where children seek education in out-of-school context and no student fee or very low paid student fee is charged.

Education policies in Pakistan allow different school systems to run parallel to each other. School monitoring and regulation policies for schools are very lenient and allow schools to make independent decisions on pupils' intake. Stratification in schools is mainly the outcome of polices where the government allows private schools to provide services but does not monitor, regulate and control fee structures of the private schools (Express Tribune, 17th September 2015; Dawn 12 September 2015). In the last few decades services and standards of government schools have suffered severe lack of resources and poor management and this has enormously expanded the private school sector. This expansion is based on the need of regular income earning social groups who would essentially want their children to receive quality education (Sirivastava 2007). Therefore, private schools would target different income groups for their sustainability and for this reason not all private schools would be the same. There are varieties of private schools dependent of the need of people from different income earning groups.

There is existing evidence that shows children in private schools and private-public partnership schools perform better than children in the government schools (Amjad and MacLeod 2014, Andrabi et al 2007). Project LEAPS in Pakistan (Learning and Educational Achievements in Punjab Schools) is a survey-based study which is often mentioned as an evidence on private school effectiveness (Andrabi et al. 2007, Carneiro, Das and Resi 2016). Children in private schools perform better in academic performance test as compared with children in government schools. However, this difference cannot be attributed to private school performance because pupil in-take is not fairly balanced between these two school types. The LEAPS sample characteristics clearly show that compared with private schools government schools have higher proportion of disadvantaged children in terms of family income, parental education and father's job status.

The World Bank programmes invested in educational projects for increasing children's enrolment rates and school retention. In Pakistan these initiatives have adopted the strategies of public-private partnership in order to establish low-cost schools and other financial incentives schemes to increase enrolment and improve pupil retention in schools (Menashy et al. 2014). These initiatives are highly dependent on the interest and participation of the private sector and government bodies and so far not a great success has been achieved through these initiatives. The initiatives are also not rooted in robust experimental evidence on the establishment of private schools in parallel with a state funded school system. The programmes just rely on reviews and small scale survey studies and have not taken into account the existing state of education policies in Pakistan.

There is no clear evidence if foreign aided public-private partnerships can sustain their existence in Pakistan where political scenarios are always dwindling between democratic parties and military take-overs of the government. The partnership programmes can provide financial boost to the schools but cannot overcome the underlying barriers that prevent children's access to fair and quality education. The international evidence has shown that implementing partnerships programmes for improvement have not made any difference on school and pupil performance (Gorard 2015, Gorard 2009, Gorard 2005).

Education has never been a main priority of any of the previous or current ruling governments of Pakistan (Alif Ailaan 2014). According to the Asian Development Bank report (2014) Pakistan has the highest share of the most disadvantaged children who do not go to schools in South Asian region. The National Education Census (2005) presented the figures stating that more than 31% of children drop-out of education during their primary level. A large majority of these children are reported to join low paid income activities to support their families and parents in meeting the demands of basic survival (UNICEF 2013). There is absolutely no enforcement of laws against child labour or a legal compulsion on parents to send their children to schools. Children's education has become a choice of their parents. This is the first level of segregation among children where those who go to schools already have the advantage of having parents not on the extreme end of poverty and also do not abide by the cultural practices against girls' education. Children who go to school are from a social group of families where parents have enough earned income to be regularly spent on a child's education expenditure and are aware of the need of education.

Segregation at school level

School types have different standards of pupil enrolments and policies of teaching. It is not possible that all schools would provide fair and equal opportunities to children. The existing evidence from the developing countries has shown that any of the non-sate school type providers target specific social class and income groups excluding the rest who are actually the most deprived and marginalised and cannot afford even the lowest cost (Cameron 2011, Härmä 2011, Wang 2010, Lewin 2007). This diversity of school types in Pakistan is unchecked, unregulated and most often unaccountable as there are several private schools that are not even registered according to the government laws (Shaukat 2014, Ali 2013).

The studies on high quality population data sets have found that school types are associated with clustering of children on the basis of socioeconomic group, sex, language, religion and ethnicity (Gorard 2015, Gorard et al. 2003, Gorard et al. 2006). If schools are given choice of pupil selection then the intake of children would not be balanced and possibly be dominated by certain other unobservable characteristics (Morris 2015, Norwich and Black 2015). The non-state schools could genuinely intend to support the cause of education for a disadvantaged community. However, this clustering would not only share poverty as a common variable but can also be a proxy for all associated characteristics of poverty such as one ethnic group or religion, same caste or tribe, parents not educated, siblings involved in labour, history of crime or drug abuse etc. Segregation on the basis of a targeted characteristic can also become a contentious issues for example non-state independent schools supporting religious minority would group children on the basis of their parents' religion but the scope of such education is highly contentious in a secular society (Borooah and Knox 2015, Oldfield et al. 2013).

There could be several underlying factors of segregation at school level such as independent school policy, geographical limitations, housing and residential schemes, school allocation

policy, parents' choice etc. There is no experimented evidence of the causal nature of such clustering and its long term impact. However, secondary data analyses on large population data sets and longitudinal studies have shown that school level segregation on the basis of disadvantaged characteristics is one of the determinants of low academic attainment (Gorard 2015, Condron 2011, 2013, Knowels and Evans 2012) and therefore also determines less chances of access to university education (Boliver 2010, Cavalcanti et al 2010).

The evidence from the developing countries has suggested that the massive growth of private low cost fee schools is associated with increasing demand of those who want to have better service and quality of education as compared with the service provisions available in government schools (Alderman et al. 1996; Härmä 2010). In other words this demand is from regular income earning groups who have the option to select schools and pay the cost on regular basis. Schools, meeting the demand of this income earning class, do not function on the agenda of providing education for all rather become a reason of replacement for those parents who can afford income expenditure on their children's education (Zeitlyn 2015, Lewin 2007). There are also concerns that the increased devolution process of free public schools into fee paying public-private partnership would lead higher inequality for girls as poor parents in general would prefer to spend money on boys' education rather than on girls' education (Farah and Rizvi 2007). In context of developing countries parents' preference to spend on education for boys rather than on girls is another matter of concern which leads to uneven spread of girls and boys in schools.

There is no evidence that suggests if increasing school types would help children's access to education from the most deprived and conservative families. In fact existing research evidence on school choice has suggested that increasing school types is associated with higher segregation levels (Gorard & Fitz 2000 a & b). There could be associations such as girls attending private school more than the government schools as compared with boys (Ahmed et al. 2014; Lloyd et al. 2005, Andrabi et al. 2008). However, these are just associations and do not suggest that establishing private schools would make all conservative parents send their girls to schools. There is no large scale experimental study conducted that confirms the effectiveness of school types on children's performance. The causal claims of school attributes or school types on children's academic performance or even school enrolments are therefore flawed. These claims have wrongly motivated the growth of private schools in the developing countries such as Pakistan.

Tooley and Dixon (2006) conducted a large scale survey study on schools, households and pupils in India, Nigeria and Ghana. This study claims that pupils in private schools perform better than pupils in government schools. The samples from different countries are taken from selected regions and are not representative of all the schools in respective countries. The study attributes the performance differences to the quality indicators of schools such as appropriate pupil-teacher ratio, teacher's level of commitment to pupils' performance and better educational facilities as compared to government school. Private schools called as 'the poor's best chance' (Tooley 2004) are not seen in the same way in South Africa and were found only contributing 5% of enrolments and very expensive to attend therefore highly exclusive to those who could afford the cost (Rolleston and Adefeso-Olateju 2015; Akaguri 2010, Motala et al. 2007).

Segregation analysis conducted on the mainstream schools and pupil level data in England has suggested that the figures seem declining from 35% to 30% over a period 1989-1999 (Gorard 2006). A similar analysis was conducted in Rio de Janeiro using GS index which suggested

that segregation by poverty has declined from 29% to 20% from 2004 to 2010 (Bartholo & Da Costa 2014). The snapshot segregation figures in Pakistan are not largely different from segregation in England or in Brazil. This is likely the case that a certain level of segregation will exist in any system despite having comprehensive national schools. However, it is important to know the changing patterns of segregation so that effective educational policies could be implemented to protect the disadvantaged groups who are groups at risk of falling behind.

Annual Status of Education Report (ASER)

Annual Status of Education Report (ASER) is a citizen- led and non-government initiative that conducts nationwide household survey, school survey and pupil assessment. ASER formally began as a non-government organization in India aiming to capture the basic levels of education performance for pupils aged 5-16 years along with information on households and schools. The success and feasibility of this idea was later adopted by eight other countries (Pakistan, Kenya, Tanzania, Uganda, Mali, Senegal and Mexico) which encounter more or less similar challenges of access, equity and governance in education. These nine countries have huge targets to achieve with serious challenges to overcome and make education accessible for all.

Nationwide regular information on pupils, household and schools is the key principle of overcoming the challenges in education. Advanced countries where basic targets of education access have been achieved demonstrated that maintaining a regular national pupil database and school records are fundamental to policy making and developmental reforms in education. In Pakistan there is no example that any national policy has ever maintained the records of individual pupil level data or school level performance to formulate policy, monitoring or feedback. According to the education policy introduced in 2009 maintaining a unique identity number for each child was approved to be a national plan of action but nothing moved beyond a proposal in the documents and acceptance of the plan (Government of Pakistan 2009: pg 37).

ASER initiative has begun in Pakistan from 2009. It is a nationwide survey conducted by volunteering citizens of the local regions. The sampling technique involves 30 villages in each of the 144 districts of Pakistan. Villages are selected list wise on the basis of 1998 census records. Every year since 2009, 10 old villages are drooped and 10 new are selected so that the rotation of old and new villages gives estimate of changes over a period of year. Each village map is divided in to four parts from it centre location and from each part every 5th household is selected for the survey and pupil assessment. This results in 20 household from each village. From each village one government school is compulsory and one private school is optional to be surveyed.

This study is based on the analysis of ASER data for the year 2014. The research questions asked here are related with segregation levels across the regions and schools.

1) To what extent children from poor background are distributed across the regions?
2) Is there a difference in pupil intake between government and private schools?
3) What are the levels of segregation in government and private school in terms of poverty and academic performance?

The research questions asked here are related with existing segregation levels rather than the patterns of segregation over time. The best practice to answer the question of changes in segregation levels is to track the segregation records over a period of time. This explains more meaningful patterns of changes or consistencies in segregation as compared to the analysis of

segregation for just one year. However, analysis of the current patterns of clusters also gives insight into the differences and the determinants of differences that exist at levels of school-types and regions.

Method

Segregation at school level has been analysed by using the segregation index known as Gorard's Segregation Index (GS) (Gorard and Fitz 1998, Gorard and Fitz 2000a and 2000b). GS is defined in terms of proportion of children who will need to change their schools to make the spread of children even within the geographical area of analysis. In other words, the concept of clustering is conceived as uneven distribution patterns of pupils in schools and GS gives the number of pupils needed to change their schools to achieve equal distribution.

In this paper the geographical areas are provinces and districts, and then each district has urban centres and rural areas. This paper also includes segregation in private and government schools on the basis of poverty and academic performance. GS can be used to measure segregation at any level of interest. One can also consider the analyses of clusters on the basis of neighbourhood characteristics (Burgess et al. 2005) pupils' ethnicity, race, language, parents' education (as in Bartholo 2013) sex and special education need (as in Gorard 2015).

The formula for GS is:

GS = 0.5 * {Σ| Disadvantaged pupils per school/ disadvantaged pupils in area – Total pupils per school/ total pupils in area|}

It is important to mention here that the current analysis is based on a subgroup of a nationally representative data. It is not a national level data of schools and pupils in Pakistan. The national representation is also compromised due to the limitation of linking only those schools and pupils who shared common identifier code. Therefore, results are just a snap shot of the segregation levels. If a true population data could be achieved then much stronger evidence can be produced.

Coding

Children's proficiency in reading, English and maths has been analysed through simple cross-tabulation with the background variables. According to ASER descriptions the highest difficulty level in each test can be interpreted as equal to Year 2 (age 5 years old) of the national curriculum level (details on ASER assessment tools: http://www.aserpakistan.org/index.php?func=page&page_id=18). This means that children aged 5 should be able to read a short story in Urdu, be able to read simple sentences written in English, and be able to successfully do simple sums of division.

In terms of measuring the level of children's proficiency level a dichotomous variable of 'passed' and 'failed' was created. Children who scored level 3 consistently in reading, English and maths were recorded as 'passed' and those who were below level 3 in any of these three tests were recorded as 'failed'. This dichotomy of fail and pass is consistent with grade retention school practice in Pakistan according to which children failed in English, maths and reading tests do not up-grade with their peers or age fellows (King et al. 1999; Chohan and Qadir 2013).

Poverty level has been judged on the household indicators of wealth and possession of resources such as Television, mobile phone, electricity connection, ownership of the house,

house type (Mud-house, Semi-Mud house or Concrete house). Poverty has been coded into two variables; rich and poor. If children belong to the households who have the possessions of all these resources then they are coded as 'rich' and if they belong to the households who lack possessions of any one of these resources they are coded as 'poor'. The limitation of these categories is that the information is too limited to make a judgment on households' economic status. There are also rural and urban differences that account for peoples' socio economic conditions. The interpretation of results has considered for these differences and discussions also elaborate the categories of 'poor' and 'rich'.

Sample

The two linked data sets provided the sample of 27,976 children and 2,498 schools. The sample included in this study is selective in terms of only those children who were enrolled in school and their available information on the household data survey and test of reading, English and maths could be linked with the surveyed schools they attended. This selected sub-group includes children age 5 to 16 years and is not representative of all the children who were part of the complete ASER 2014 survey.

The distribution of government and private schools is spread across all the regions but it is not an equal spread in relation with actual school population in these regions. The school selection in this sample is only indicative rather than actual representation of government and private schools in these regions. Schools from areas of higher deprivation are given more weightage in the sample as compared to schools in economically developed regions and urban centres. Islamabad is given less representations of the school as the region is comparatively affluent.

Table 1: Number of schools and pupils in the sample

	Punjab	Sindh	Baluchistan	KPK	Islamabad	GB	FATA	AJK
Urban Government-Schools	67	36	23	32	16	97	37	194
Urban Private- Schools	70	35	25	27	14			
Rural Government-Schools	502	32	35	215	15	97	40	190
Rural Private- Schools	456	21	34	176	12			
Total No. of schools	1,095	124	117	450	57	194	77	384
Total No. of pupils	11,530	1,206	1,454	4,046	601	3,435	1,610	4,094

Note: For Gilgit-Baltistan (GB), Azad Jammu & Kashmir (AJK) and Federally Administered Tribal Areas (FATA) there is no urban and rural division.

The original sampling of ASER 2014 has been conducted in eight administrative units of the country. The main data has been systematically obtained from all the units with a careful representation of rural and urban regions but the pupil-school matched selection does not include all the cities or villages that have been covered in the original household survey.

Analysis

This analysis has been conducted to observe the segregation by poverty and by children's performance in government and private schools. The segregation analysis is based on GS

index. All schools were sorted into provinces, urban and rural regions. For the analysis of segregation by poverty proportion of rich and poor children in each school were calculated and for performance proportion of failed and passed children were calculated. The schools were then sorted in government and private school types and for each category GS index was calculated. The figures presented as a result of GS index show the proportion of children distribution in relation with overall children in the area.

The analysis has been presented in two ways. First is an overall aggregate of segregation by poverty and academic performance in the government and private schools. The second level of segregation analysis is at provincial level along with differences in the urban and rural regions. All the results are based on children enrolled in schools who are somewhat economically advantaged against those who are not enrolled in schools. Children not enrolled in school are not accounted for in this study therefore the beginning of analysis in itself is based on a stratified sample of advantaged children. This analysis does not take into account children's age in years which means that school going children from age 5 to 16 are included in the analysis.

Segregation overall and in government and private schools

Overall segregation figures are quite high which suggest that children are clustered in terms of poverty and performance. Segregation figures in Table 2 show that 37% of children in the sample would need to change their schools to make the distribution of disadvantaged children even across all of the schools. For performance 45% of children in the sample would need to change their schools to make the distribution pattern even across all schools.

Government and private schools are different from each other in terms of their pupil- intakes but this difference is not excessively large in terms of proportion of children from disadvantaged background. Nonetheless, there are differences by poverty and more by performance at school levels. Private schools are slightly more segregated by poverty (36%) as compared to government schools (32%) and by performance government schools are largely more segregated (22%) than private schools (15%).

Table 2: Segregation figures: Overall and at school-type level

	Segregation by poverty	Segregation by performance
Overall segregation	0.37	0.45
Government schools	0.32	0.22
Private schools	0.36	0.15

Segregation by poverty in private schools means that these schools are proportionately taking extra number of pupils from specific characteristics of disadvantaged background. However, government schools have lower segregation level which means that the proportion of children from different economic backgrounds is mixed as compared to private schools. Possible explanation of lower segregation in government schools is that they are open for all children. So far there are no policy restrictions such as allocation by house distance, ethnicity, language, and domicile or birth place and this could be the reason that government schools have a larger mix of children from rich and poor family background. This is exactly what a state funded school system should achieve but along with complete access and high quality of education.

Higher levels of segregation by poverty in private schools have two possible explanations. First is that private schools could have two tiers of system in which there are schools that are highly expensive in charging the admission cost and monthly fee, therefore exclusive to the children

of rich families. The second tier of private schools, generally known as low-cost private schools, is targeting low income families.

Parents willing to pay regular monthly fee would likely to be more motivated about their child's education and this has further implications on a child's attendance and performance in the schools. This aspect of high motivation and some basic means of paying the fee would be common for all parents who choose private schools for their children's education. However, children who attend low-cost private schools are not as disadvantaged as those whose parents cannot afford to pay any amount of regular fee or even not willing to send their child to schools. Government school is the only option for the children living in extreme poverty and also if they are fortunate enough to have parents willing to send them to school.

Low-cost private school is an option for parents who can afford minimum cost of regular monthly fee. These schools mainly address the need of people who are on the borderline of poverty. There is no doubt that low-cost private schools are increasing the chances of education for poor but at the same time creating stratified school system where children from below a threshold level of poverty cannot enter due to severe economic constraints and rich parents would not choose to send their children.

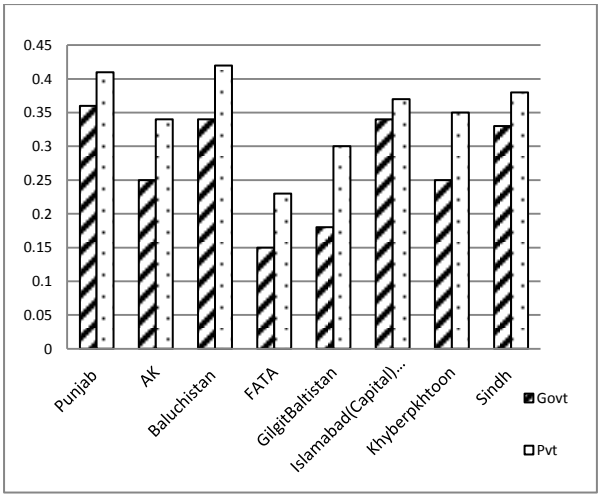
The situation is opposite in terms of performance. Segregation by performance means that government schools have higher stratification of pupils failing to achieve as compared to pupils in private schools. Plausible explanation of government schools having overall higher proportion of the failing children could be associated with the open admission policy of these schools. However, private schools are commonly known for their admission criterions such as admission cost, child's initial assessment or interview before joining the school. The admission policies are based on the selection criteria of children's ability to learn and their readiness to attend the schools which is another way of clustering children on the basis of their academic ability. The existing research has also shown that the children who attend private schools are highly likely to take extra tuition (Aslam and Atherton 2014). This could be associated with expectation from children to show performance, and the parents have means and willingness to spend extra income on their children's education. This group of children could be on the borderline poverty but having parents with high aspirations and motivation, like parents in any upper middle class family, make some difference to their school performance.

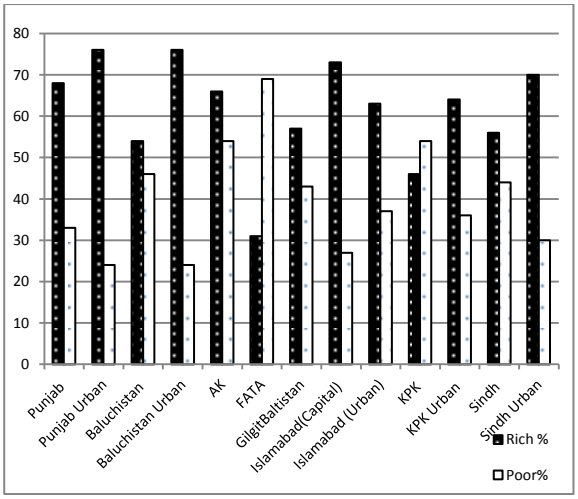
Segregation by poverty at provincial level

Segregation indices reflect the gaps between two characteristics. The segregation levels are likely to be high if the gaps between rich and poor are high in any regions. Graph 1 provides the GS index by poverty in government and private schools for all the administrative units of Pakistan. In Graph 2 simple percentage of rich and poor children in urban and rural regions is illustrated.

Graph 1: GS index by poverty

Graph 2: Percentage of rich and poor children





Segregation by poverty is higher in private schools as compared to government school. However, overall figures of segregation are higher in Punjab, AK and Islamabad and lower in the deprived regions of FATA, GB and KPK. This means that in the richer provinces where poverty is comparatively lower government and private schools have higher segregation as compared to poor provinces. It is possibly the effect of universal poverty in the poor regions which results in less difference between rich and poor populations. In deprived regions people generally share similar characteristics of poverty. Graph 2 explains the differences of rich and poor children clusters in the urban and rural regions of the provinces. Baluchistan has the highest bars of segregation index illustrated in Graph 1 and the difference between rich and poor shown in Graph 2 is the highest in Baluchistan urban region. Similar differences of rich and poor can be noticed in Sindh urban, Islamabad (Capital and urban) and Punjab urban.

The developed urban regions in Pakistan have high rate of population migrating from the rural areas. The common reasons of migration to urban regions are employment and marriage (Labour Force Survey 2014). In general migrants from rural to urban regions are young and educated population who take up low paid jobs but progress gradually to raise income equivalent to non-migrants of the areas (Arif 2010). It is likely the case that the educated and young migrant population who have a recent history of migration is largely on the borderline of poverty. They are mainly motivated to achieve economic progress and social mobility. Increasing migration rate is likely an explanation of the higher segregation levels in the urban areas.

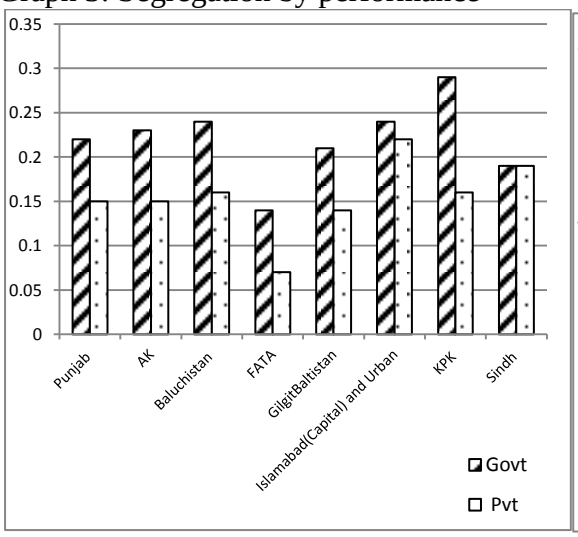
The above figures show that government and private schools are spread across all the regions of the country. However, segregation is consistently higher in the private schools as compared with the government schools. In rural areas deprivation is higher but segregation levels are lower than the urban regions. This could possibly be explained as the impact of universal poverty where people in general are all equally poor. In the urban regions where there is wealth and economic activity there is larger spectrum of income groups therefore more chances of stratification. The higher level of segregation in the schools of developed regions is consistent with the segregation analysis results conducted on a high quality and national level school data sets in the United States and England (Ayscue and Orfield 2015, Gorard 2015).

Segregation by performance at provincial level

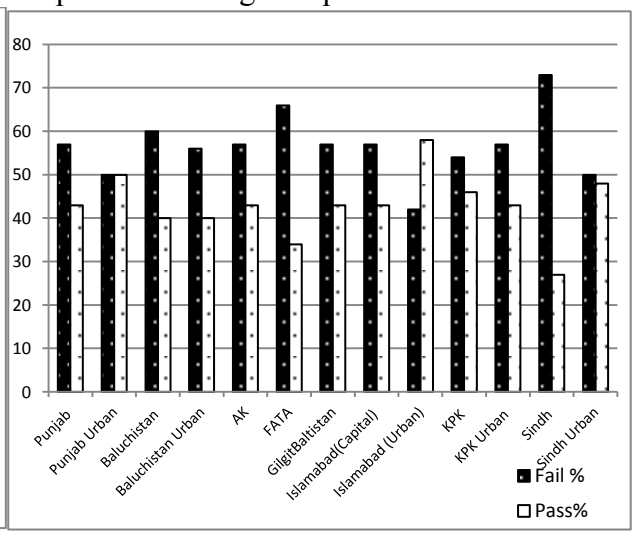
Segregation by performance generally follows the same regional patterns as segregation by poverty. Government schools have higher segregation levels of children failing as compared to

the private schools and the overall GS index for performance lowers in the areas of deprivation such as in FATA and GB.

Graph 3: Segregation by performance



Graph 4: Percentage of 'passed' and 'failed'



Children not achieving expected performance are generally high all across urban and rural regions except in Islamabad urban. This requires a careful interpretation of the figures because the sample included age range of children from 5-16 years old. The tests were not age standardised, therefore, results could be dominated by those who did not come in the appropriate age bracket of the test levels (5-16 years old). This sample could not select an appropriate age range that matched with actual difficulty level of the tests because it would have reduced the number of children to only 11% of the sample which was not sufficient to calculate the performance segregation index.

Government schools have higher segregation levels as compared to private schools. The possible explanation of this difference could be that children from a variety of backgrounds and socioeconomic status are enrolled in government schools. There is also no targeted selection criterion and therefore children with different academic abilities groups would be enrolled in government schools. This increases the chances of higher segregation by performance where a majority could be failing the performance tests. Private schools have lower segregation by performance and the most plausible explanation could be that children of similar academic abilities are clustered in the private schools. Children in private schools would be an advantaged group in terms of their parents' socioeconomic status and motivation to spend on children's education. At the same time private schools in general are known for their admission criterions for children and this process screens children with higher academic abilities.

The percentage differences in Graph 4 illustrates that in Punjab urban, Sindh urban and Islamabad urban the percentage of children passed is either equal to children who are failing or exceeding them. However, in the rural regions not only the overall percentage of children failing is higher but the percentage gap between failed and passed also becomes wider. In almost all the regions the performance differences show that children living in the urban regions have the advantage which children in the rural regions do not have.

In the urban areas private schools have more choice of selecting children because of the economic diversity in these regions. Monthly school fee of any amount is the first step of selection of children belonging to families who have resources. Admission tests and other

selection procedures are the next levels of selection and are widely distributed among low- cost private schools or expensive private schools. The sustainability of private schools depends on regular income of the families and there is existing evidence available that has shown association of regular family income on children's attainment (Alderman et al. 1997). Government schools would not have any choice to select children in any region because of the comprehensive admission policy.

Conclusion

Children in Pakistan who are enrolled in schools are not generally as disadvantaged as the ones who are not in schools (as far as we can tell). However, within this group of advantaged children, who have access to education, there are various challenges of equity and quality in education. This study shows that in addition to any distinction between the two school types in terms of their overall intake, there is evidence that private schools are clustering poor and academically able children more than the government schools. It is also discussed that the category of poor who can afford to pay the education cost could be on the borderline of poverty but not at an extreme end of poverty where sending children to a school is not even an option. The government schools have a slightly better mix of children, which a state-funded system must aim for. In order to improve fairness the government schools need to improve the quality and access to the state funded education so that a large majority of population can take its benefit.

The study has also shown that pupils in the rural areas are highly disadvantaged in terms of performance levels. Chronic poverty and lack of public services such as electricity connections, health centres, transport and housing facilities are associated with children's academic performance. Children living in urban areas have the advantage of public services which is somehow relevant to their performance levels. The government needs to mobilise the economic state of rural areas and need to take immediate action for the development of rural population.

Education access has increased for children from low income families but the most disadvantaged groups still have not received any relief. It is mainly the issue of equality and access for which the state must provide state-funded and universal school system at a national level. This does not mean to underestimate or undermine the services of private schools or an attempt to criticise the options for parents' choice of selecting schools. The argument in favour of state funded school systems is based on evidence presented in this paper which has shown that a state owned school system can challenge the segregation of children on the basis of household income and academic abilities. Independent private school systems cannot facilitate fairness and equality because they are consumer led rather than driven by agenda of education for all.

Private school growth is an unchecked and unregulated phenomenon in Pakistan. The government urgently needs to regulate this growth and account private school authorities for the intake of children. Narrow admission policies should be closely checked and tuition fee structures be legally capped at a certain level so that a wider socioeconomic mix of children can take advantage of private schools. The government can also take drastic steps to make incumbent on all private schools to enrol children from diverse socioeconomic backgrounds and be inclusive to all ability groups.

There are no government provisions or services at all for the disadvantaged groups living in remote rural areas. There never has been a sufficient and consistent support scheme or relief programmes offered by the state of Pakistan in the form of universal allowance for poor,

unemployed and disabled. In the circumstances where government support is not nationally available, children living in abject poverty of the rural areas are the most vulnerable citizens to whom their basic right to education has been dismissed. Encouraging the growth of private sector in providing school education seems reducing the chances of fair and equal access for the disadvantaged groups. Most importantly it seems dividing children into two different systems based on the inequalities of income status. This could never achieve the true purpose of education in the society and nor will it resolve critical issues that Pakistan is currently challenged with. The state just needs to consider the crisis in education as a priority to reform rather than blatantly avoid the responsibility of establishing a sustainable system of fair, free and quality education for all.

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