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Divisive and inegalitarian? Economic and social outcomes of public, private, and faith-based education in Pakistan

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Abstract

Pakistan follows a diverse educational system consisting of three different tracks (public, private and faith-based Madrasah education) with often conflicting objectives. As national cohesion has remained an elusive goal in Pakistan, it is important to know if there are systematic differences in the way graduates from different educational tracks access available opportunities. Using Pakistan Social and Living Standards Measurement (PSLM) survey data 2013-2014, we find that graduates from three tracks face different occupational choices and economic outcomes after their transition to the labor market and systematically differ with respect to the inter-generational transmission of educational and occupational opportunities. Additionally, we analyzed if graduates from the three educational types differ with respect to their socializing skills. Using 'sum-score' approach to estimate the social exclusion, we found that graduates from private and Madrasah educational systems are the least and most socially excluded respectively.

Keywords: Segregated Education, Intergenerational Mobility, Social Exclusion, Income Inequality.
JEL Codes: H75, I24, I38, Z1

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1. Introduction

Pakistan has a diverse education system which consists of public, private and faith-based education. The educational system in Pakistan is perceived to be exclusive and divisive and deeply segregated based on income, social and ideological identities (Bradley and Saigol, 2012; Malik and Hassan, 2015). It is argued that private education serves the relatively well-off sections of the society while the public sector education caters to the poorer sections of the society (Jimenez and Tan, 1987). Private schools have a long history in Pakistan and even date back to British India. Most Anglicized members of the Pakistani elite were trained in such schools (Rahman, 2005). However, most of the private educational institutes in Pakistan established in recent years bear no direct comparison with the elitist private institutions which existed erstwhile. Private education is substantially regulated in Pakistan now. The Punjab Private Educational Institutions (Promotion and Regulation) Ordinance 2015 is one obvious example of how private education is in state control.

While the impression that private education caters to the rich people seems plausible at the primary and secondary level education, there is substantial evidence that the private education is being increasingly used by the rich and the poor alike in recent years (Andrabi, Das, & Khwaja, 2008). At the tertiary level, private education is often expensive at both the private and public institutions and partly explains why a small percentage of students make the transition from secondary to the tertiary level of education. Public-sector institutions of professional education such as medical and engineering sciences are often the first choice of the students partly because they charge a smaller fee (Halai, 2013).

Apart from the public-private education division, another major division lies between the faith-based religious education imparted through religious seminaries or *Madaris* and the traditional education composed of both the public and private education system imparted through schools, colleges, and universities. While there is little public debate on the deep divisions in the public and private education reflected in the different ability levels and different economic and social

outcomes, an intense debate continues around the role of *Madrassah* in stoking extremism and terrorism (Murphy and Malik, 2009). However, a strong counter-narrative also exists which challenges the myth of the *Madrassah*-extremism nexus (Cockcroft et al., 2009).

Based on the wide differences in different educational tracks reflected in their worldviews, learning outcomes and expected returns on education, it is believed that education system in Pakistan has failed to live up to its purpose of promoting equality and social cohesion. The education system in Pakistan is viewed as a major reason for the internal and external conflicts. Rahman (2008) is of the view that mistrust exists among the graduates of different educational tracks and is caused in part by the choice of language for the medium of instruction. The education system is also viewed as sowing the seeds of conflict with neighbouring countries (Lall, 2008). In view of the fact that the segregated and exclusive nature of the education is routinely exploited as a tool of social exclusion (Ferri and Connor, 2005; Musterd, 2003), Pakistan may already be facing varying degrees of social exclusion among the graduates from different educational tracks.

The quality of education has important implications with respect to intergenerational mobility. There is compelling evidence to suggest that the socioeconomic status of the parents transmits to their children' educational and occupational outcomes (Boserup, Kopczuk, & Kreiner, 2018). Many pathways and channels are proposed in the literature to explain the intergenerational transmission of the socioeconomic status of the parents. Socialization plays an important role in the choice of educational and occupational outcomes (Baron, Cobb-Clark, & Erkal, 2015). Children learn the norms, customs and values surrounding their education in the early stages of their life. The households where the parents have little or no education rarely inspire the children to pursue higher education. One possible reason is that the father is doing some low-paid job and as a result wants his male children to become a helping hand as early as possible. In such households, children often end up working as disciples in the workshops or as salesmen in small retail shops (Haider and Qureshi, 2016). Young out-of-the-school children

routinely work in the agriculture sector or in football industry where the nimble fingers are still a preference despite being outlawed by several legal instruments (Khan, Munir, & Willmott, 2007).

Similarly, the households where the parents discriminate against certain job types, the children often desist from undertaking those jobs. One obvious pattern in Pakistan is that the salaried employees, especially in the public-sector, rarely encourage their children to undertake their own businesses because of the security that comes with the government jobs or regular salary at the end of the month in the private sector (Abbasi and Sarwat, 2014). One direct consequence of this type of thinking is that with every passing year, a significant number of young graduates are added to the already expanding pool of the unemployed. Sluggish GDP growth caused by the insecurity and political instability in the country significantly contribute to the anaemic growth of high-quality jobs.

Parents with better socioeconomic status have better networking opportunities and the right linkages to get their children right education and better jobs (Mare, 2015; Plug, van der Klaauw, & Ziegler, 2018). There is a widespread perception in Pakistan that good jobs, especially in the public sector, require 'references' (a euphemism for nepotism). Alumni from different universities and educational institutions are known to help each other in the corporate sector job market. Employer discrimination may yet be another factor influencing the intergenerational transmission of the socioeconomic status of the parents with respect to the educational and occupational choices of the children (Darity, Hamilton, & Stewart, 2015). There is widespread perception that nepotism, corruption and unethical networking is involved at both the entry level recruitment and promotion to the higher positions (Azam and Qureshi, 2018; Nadeem and Kayani, 2017). There is some anecdotal evidence to suggest that in Pakistan, a relative already doing a job in the armed forces is still factored in for the recruitment to the armed forces. Graduates from certain prime institutions are given a preference for job in the corporate sector, while the graduates with the same educational level from the public-sector universities are left out. Gender

discrimination, harassment against women and wage inequality are also rampant in the private-sector job market.

Given the preceding discussion, this research has explored i) if a segregated education system in Pakistan systematically contributes to widely different economic opportunities, ii) if different educational tracks are similar in terms of intergenerational transmission of desirable outcomes, and iii) if the graduates from different educational tracks socially interact in a similar way or the degree of social exclusion differs among the graduates of different educational streams.

2. Methodology

We used data from the Pakistan Social and Living Standards Measurement (PSLM) 2013-2014 survey collected by the Pakistan Bureau of Statistics. We used only the male population for our analysis. The choice of the male population is driven by data constraints. Compared with the data on the male population, much fewer data is available on the type of education and employment categories for women. One reason is that female enrolment in the madrassah system was barely 1.3 per cent of the total enrolment (ASER, 2016). Additionally, the female share in the total labour force in Pakistan was only 22 per cent in 2017 and even smaller in preceding years.[5] So we have a very few observations in PSLM where the data on the daughters and fathers is available which can be disaggregated across different educational tracks.

We used three types of methods to analyse how different types of education shape the social and economic outcomes of the population. First, we used the transition matrix which measures the probability that a generation will achieve a certain outcome relative to the observed position of the preceding generation. Second, we used ordered logit multivariate regression analysis to see the strength of the association between the educational and occupational status of the fathers and their sons. Third, we developed a social exclusion index and dis-aggregated it by the types of education to see how graduates from different educational

[5] https://data.worldbank.org/indicator/SL.TLF.TOTL.FE.ZS?locations=PK

tracks socially interact. We use Stata/MP 14.0 for Windows for the quantitative analysis.

2.1 Transition Matrices

The transition matrix refers to the 'chance opportunities open to each dynasty in the passage from one generation to the following' (Checchi, 1997). Each entry of the transition matrix is a non-negative real number indicating a probability of transition from state *i* to state *j*. If the probability of moving from state *i* to *j* is $Pr(j|i) = P_{i,j}$, then the transition matrix *P* is given by $P_{i,j}$ as the i^{th} row and j^{th} column element.

$$P = \begin{bmatrix} P_{1,1} & P_{1,2} & \cdots & P_{1,j} & \cdots & P_{1,S} \\ P_{2,1} & P_{2,2} & \cdots & P_{2,j} & \cdots & P_{2,S} \\ \vdots & \vdots & \ddots & \vdots & \ddots & \vdots \\ P_{i,1} & P_{i,2} & \cdots & P_{i,j} & \cdots & P_{i,S} \\ \vdots & \vdots & \ddots & \vdots & \ddots & \vdots \\ P_{S,1} & P_{S,2} & \cdots & P_{S,j} & \cdots & P_{S,S} \end{bmatrix} \quad (1)$$

Since the total of the probability from the state, *i* to all other states is 1, so that $\sum_{j=1}^{S} P_{i,j} = 1$ is the right matrix.

2.3 Regression analysis

2.3.1 Educational outcomes

We estimated the effect of the fathers' education on the educational outcomes of the sons and see this relationship dis-aggregated over three types of education: Government, private and *Madaris* system. Specifically, we used the ordered logit model to estimate the Eq. 2

$$Y_{i,S}^{\tau} = \alpha + \beta_1 Y_{i,F}^{\tau} + \beta_2 X_i + \epsilon_i \quad (2)$$

where $Y_{i,S}$ is the educational outcome of the sons and $Y_{i,F}$ are the educational outcomes of the fathers and τ is the education type. τ takes only three values corresponding to the Government, Private and *Madaris* educational tracks. The β_1 is a measure of the inter-generational persistence or immobility and $\epsilon_i \sim N(0, \sigma^2)$. The β_1 takes the values between 0 and 1. When $\beta_1 = 1$, it indicates that there is a perfect correspondence between the educational outcomes of fathers and sons (perfect immobility). When $\beta_0 = 0$, it refers to perfect mobility, that is, the educational outcomes of sons are independent of the educational outcomes of fathers. As

the educational outcomes are expressed in terms of different stages on an educational continuum (primary, middle, matriculation, intermediate and graduation or higher educational level), a unit increase in the educational outcomes of the fathers (for example, from primary to middle-level education) results in a unit change in the educational outcomes of the sons. We control the Eq. 2 for additional characteristics of the fathers such as his income, age and regional status (rural or urban).

2.3.2 Occupational Outcomes

We also estimate the effect of the fathers' occupation on the sons' occupation we estimate the Eq. 3

$$Y_{i,S}^{\tau} = \alpha + \beta_1 Y_{i,F}^{\tau} + \beta_2 X_i + \epsilon_i \quad (3)$$

where $Y_{i,S}$ is the occupational outcome of the sons and $Y_{i,F}$ refers to the occupational outcomes of the fathers. The occupational outcomes are expressed in terms of professions based on the average monthly income corresponding with: i) low-income professions, ii) lower-middle-income professions, iii) average income professions, iv) above average income professions and v) high-income professions.

2.3.3 Social exclusion

We have used a sum-score approach to estimate social exclusion (Kostenko, Scutella, & Wilkins, 2009; Scutella, Wilkins, Kostenko, & others, 2009). In assigning equal weight to all dimensions (See Table A-I in Appendix), this approach assumes that all the dimensions equally contribute to the welfare loss. We measure the extent of the social exclusion of individual *i* in the dimension $x_{i,d}$. Each dimension is equally important irrespective of the number of indicators *within* that dimension. The overall social exclusion x^S is the sum of scores $x_{i,d}$ across the seven dimensions.

$$x_i^S = \sum_{d=1}^{7} x_{id} \quad (4)$$

$$x_{id} = \frac{\sum_{d=1}^{K_d} x_{id}^k}{K_d} \quad (5)$$

The $x_{i,d}^k$ is a binary indicator which indicates the presence

of social exclusion in indicator *k* in the dimension *d* for individual *i* and K_d is the total number of indicators in the domain *d*.

Table 1
Dimensions and indicators of social exclusion

Dimension	Indicator	Deprived	Not Deprived
Material resources	Income	Income less than 60 of median income	Income greater than 60 of median income
	Occupancy	Not homeowner	Homeowner
	Number of rooms	1	> 1
	Roof material	Wood/bamboo	Iron, cement, T-R/Grater/ RCC
	Water source	Hand pump; River/lake/stream	Piped; Motorized pump; Well; Tanker; Mineral; Filtration
Employment	Employment	Did not work in last month (Age 26-60 years)	Worked in last month (Age 26-60 years)
	Marginally employed	Worked for less than 12 months in last year	Worked for 12 months in the last year
Education and skills	Literacy	Can't read/write any language with understanding	Can read/write any language with understanding
	Numeracy	Can't solve simple arithmetic question	Can solve simple arithmetic question
	Low formal education	Under primary	Primary education or above
Health	Health	Sick or injured in last two weeks	Not sick or injured in last two weeks
Social	Marital life	Not married (Age>30)	Married
Community	Neighbourhood quality (Cooking fuel)	Firewood; dung cake; crop residue; charcoal	Gas; kerosene; electricity

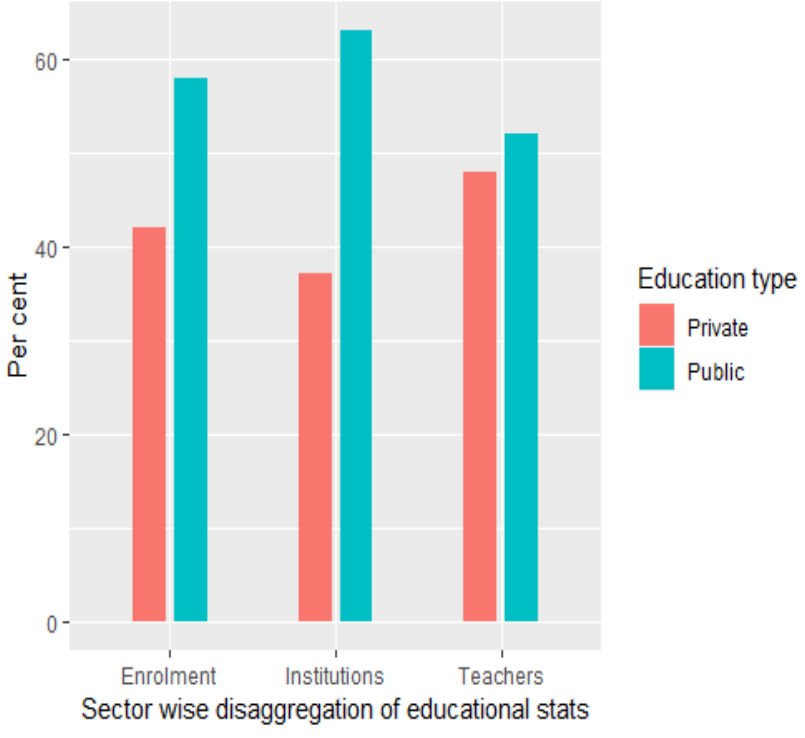
All the indicators are taken from PSLM 2014-2015

3. Results and discussion

3.1 Distribution of the education system

The education system in Pakistan is unevenly distributed across public, private and Madaris education system. While a substantial percentage of enrolment is concentrated in the primary, middle and higher secondary level education in the traditional education system (82.3%), enrolment in the *Madaris* is barely 5.5 per cent (PES, 2014). The private sector comprises 37 per cent of the total institutions in the country but caters to the need of 42 per cent of the relevant population (Figure 1). The ratio of teachers in private institutions (48%) is not much different from the percentage of public sector teachers even if the public-sector institutions are in much greater supply (63%).

Figure 1
Contribution of the public and private education system

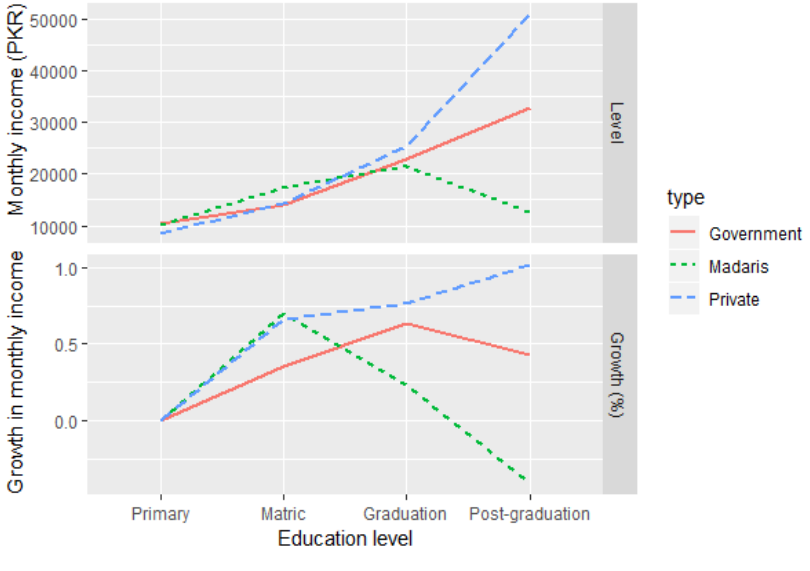


Source: Pakistan Education Statistics 2015-2016

3.2 Economic outcomes vary with the type of education

The distribution of the education system in terms of three different educational tracks, viz., public, private and *Madrassah* can give us important information about the educational characteristics of the labor force. Here we compare the average returns from the education of these three types at the primary, matriculation, graduation, and post-graduation educational levels. Figure 2 shows that the average monthly returns differ greatly for the graduates of different tracks as the educational attainment level goes up. Compared with the earning of the individual with primary level education from the government institutions, the earnings of the individual with the post-graduation level education from the government institutions are three times higher. This increase is over four times higher in case of private institutions. The increase in the case of *Madaris* is abysmally low: a small growth of 23 per cent compared with the 300 per cent and 400 per cent growth in case of government and private institutions respectively.

Figure 1
Mean earnings from the last month in PKR (age>17)



Source: Authors' calculation based on data from PSLM 2013-2014
Note: The mean income is given in both level (above) and growth (below).

One reason why the *Madaris* graduates have a substantially smaller average monthly income is that they have limited access to high-paid jobs because of their limited knowledge of the English language. According to one estimate, the share of students who manage to learn English in the *madrassah* system is less than 3 per cent (Rahman, 2002). The efforts of the government to reform the madrassah system and make the *madrassah* education relevant to the job market requirements are viewed as a threat to the religious authority and are thus vehemently resisted in Pakistan (Zaman, 2010). There is a widespread perception that the wages on offer in the *Madaris* or *Dar-ul-Ifta* are often a pittance compared with the wages in other professions with the same years of the educational experience. However, efforts have been underway to bring the mosques under state control through appointing the prayer leaders *(khatib)* through the public sector.[6] The difference in wages conditional on the education type is also reported in some previous studies in Pakistan and elsewhere (Asadullah, 2009; Borooah and Knox, 2017; Hadjar and Uusitalo, 2016; Haroon, Toor, & Khan, 2003; Wu, Liu, & Zhang, 2017).

3.3 Inter-generational educational outcomes

Pakistan's educational system reveals a very high degree of intergenerational immobility. The sons, whose fathers are uneducated, are also 26 per cent likely to be uneducated (Panel I of Table 2). Even more disturbing is that the probability of these sons going beyond the middle level of education is virtually nil. Similarly, the sons whose fathers have a primary level of education are much less likely to be uneducated (1.2%) but again there is a much smaller probability to go beyond matriculation-level education. Conversely, the sons whose fathers have attained higher education have 51.6 per cent probability to reach the level of higher education but zero probability of being uneducated. This transition matrix clearly shows both an intergenerational transmission of educational attainment and a lack of level playing field for the sons of less educated or uneducated people.

[6] https://www.pakistantoday.com.pk/2017/09/10/mosque-khateebs-to-be-made-government-employees/

Table 2
Transition matrix of educational outcomes

Fathers' education	Probability of sons attaining educational level (%)						
	Uneducated	Primary	Middle	Matriculation	Intermediate	Graduation +	Total
Panel I: Full Sample							
Uneducated	25.8	67.3	6.9	0.0	0.0	0.0	100
Primary	1.2	33.2	28.4	25.7	7.5	4.0	100
Middle	0.5	22.2	31.6	26.7	10.1	8.9	100
Matriculation	0.1	16.8	22.3	30.8	15.3	14.5	100
Intermediate	0.0	10.2	16.8	25.9	21.6	25.5	100
Graduation +	0.0	4.4	9.4	16.9	17.6	51.6	100
Total	0.6	22.1	24.8	26.5	12.3	13.7	100
N = 4176; Pearson $\chi^2(25)$ = 1.1e+03 Pr = 0.000							
Panel II: Government institutions							
Uneducated	25.8	67.3	6.9	0.0	0.0	0.0	100
Primary	1.2	33.2	28.4	25.7	7.5	4.0	100
Middle	0.5	22.2	31.6	26.7	10.1	8.9	100
Matriculation	0.1	16.8	22.3	30.8	15.3	14.5	100
Intermediate	0.0	10.2	16.8	25.9	21.6	25.5	100
Graduation +	0.0	4.4	9.4	16.9	17.6	51.6	100
Total	0.6	22.1	24.8	26.5	12.3	13.7	100
N = 4103; Pearson $\chi^2(25)$ = 1.1e+03 Pr = 0.000							
Panel III: Private & Madaris institutions							
Primary		22.4	43.8	0.5	0.0	33.3	100
Middle		7.4	39.0	49.3	4.3	0.0	100
Matriculation		30.1	32.3	16.9	0.0	20.8	100
Intermediate		0.0	0.0	100.0	0.0	0.0	100
Graduation +		27.3	0.0	2.6	19.2	50.9	100
Total		20.1	29.1	27.6	4.2	19.0	100
N = 54; Pearson $\chi^2(16)$ = 40.3136 Pr = 0.001							

Source: Authors' calculations based on data from PSLM 2013-2014

A small percentage of children, whose fathers are either uneducated or have little education, survive up to the matriculation level of education. The reason behind this low transition lies in the structure of the labour market. The uneducated or less educated people are most likely to be the poorest and more likely to get their children away from school and force them into work as child laborers, often in hazardous situations (Hussain and Saud, 2017). Transition matrix of

educational outcomes of the graduates from the government institutions shows closely similar results to the overall educational landscape (Panel II of Table 2). As the PSLM 2013-2104 wave has the largest percentage of observations for government educational institutions (94.31%) followed by 4.89 per cent and 0.8 per cent of the data for the private and *Madaris* education respectively, the government institutions closely match the overall transition matrix.

We jointly estimated the transition matrices for the graduates of private and *Madaris* educational tracks because of data constraints. Panel III of Table 2 above shows a significantly different picture. The probability that a son of a father with a primary level of education is 22.4 per cent likely to have a primary education but is 33.3 per cent likely to have higher education. Conversely, a son of a father with higher education is 51 per cent likely to have higher education but 27.3 per cent likely to have primary education. Against the backdrop of a shrinking public sector employment opportunities and a scramble for government jobs because of the benefits they offer, people might feel disincentivized to pursue higher education and may opt for their own business which often does not require any formal education in Pakistan.

Intergenerational transmission of educational inequalities is well documented and explained in the previous literature too. When the achievements of the students differ with the change in the family characteristics, it is reasonable to presume that the placement in various tracks is itself a function of the family characteristics (Hanushek and others, 2006). Dearden, Machin, & Reed (1997) found an asymmetry in the inter-generational educational mobility in that the upward mobility from the bottom was more likely than the downward mobility from the top. It is not only the education of the parents which significantly explains the educational mobility of the children: the educational level of the grandparents also matters a lot in shaping the educational outcomes of the grandchildren.

We also used an ordered logit multivariate regression model to estimate the association between the educational outcomes of the fathers and sons controlling for a set of covariates (Table 3). Regressing the sons' educational attainment on the

fathers' educational attainment and some additional control variables, we see the fathers' education level has a significant impact on the sons' education. The positive sign suggests that as the fathers move from the lower education level to the higher education level, there is also a corresponding transition of the sons towards the high education level. The statistically significant impact of fathers' education on the sons' education is an indication of educational immobility.

Table 3
Correlates of sons' educational attainment: ordered logit multivariate regression

	Full Sample	Government	Private/Madaris
Father's Education	0.456***	0.453***	0.365
	(3.77)	(3.77)	(0.96)
Father's Age	0.0605**	0.0588**	0.0583
	(2.80)	(2.78)	(1.01)
Father's Income	0.00000329	0.00000325	
	(1.62)	(1.63)	
Urban [Ref. Rural]	1.142**	1.131**	1.439
	(2.75)	(2.76)	(1.94)
F	10.62	10.57	2.418
P	0.000000152	0.000000170	0.0881

t statistics in parentheses
$* p < 0.05$, $** p < 0.01$, $*** p < 0.001$

The graduates from the government institutions show roughly the same degree of immobility because the coefficient of the fathers' education is 0.453 compared with the complete sample where it is 0.456. The coefficients in the case of private and *Madaris* education are not statistically significant though. Fathers' age has a statistically significant effect on the sons' educational attainment. However, counter to our intuition, there is a very small and statistically insignificant positive impact of fathers' income on the sons' education level. There might be some other unobservable *enablers* which translate the income of the parents into the income of the children. The social and economic status of a person is increasingly determined by the parental wealth and other family characteristics as the globalization process picks up (Wu, et al., 2017). Compared with the rural residential status, the urban residence significantly explains the transition of the sons to higher educational levels.

The insignificant coefficient of the father's income Many previous studies have discussed the nature of intergenerational mobility and have identified various drivers of that intergenerational mobility.

3.4 Inter-generational occupational outcomes

Similar to a high degree of educational mobility in Pakistan, we also observe a high degree of occupational intergenerational immobility too. The sons whose fathers are in the low-income profession are 79.1 per cent likely to end up in the low-income profession (Panel I of Table 4). The probability to reach the occupational category offering better income prospects monotonically decreases for such sons, so much so that there is less than 1 per cent probability of entering the high-income occupational category.

The floor and ceiling effect (FCE) of the transition matrix is identified as a major limitation of the transition matrices. The FCE poses a problem because the transition below the bottom group and above the top group is not possible. So, it is better to consider the middle group for a better understanding of the degree of mobility. The probability that the sons whose fathers are in the average income professions will also be in the average income professions is merely 37.2 per cent. It needs to be highlighted that these sons have a higher probability to end up in the low-income profession (37.5%).

The situation for graduates of government institutions looks quite similar to the full sample primarily because of the preponderantly large representation of the government institutions in the PSLM data (Panel II of Table 4). There is a higher degree of mobility in the graduates of private institutions and Madaris compared with the government institutions (Panel III of Table 4). The sons whose fathers are in the low-income profession are 72 per cent likely to be in the low-income group but there is a greater probability to get into the above-average income profession (10.6% compared with 5.4 for government institutions). Another obvious difference is that there is a relatively high probability that sons are concentrated either in the low-income profession or above-average income professions. One possible explanation is that the sons graduating from private schools are already in the

high-income quintiles and as such, they reach the high-income profession categories while the *Madaris* students end up in the low-income professions. Because of limited observations, the sons' share in the high-income profession could not be estimated in the private and Madaris categories.

Table 4
Transition matrix of educational outcomes

Father's occupation type	Probability of Sons' adopting father's profession (%)					
	(1)	(2)	(3)	(4)	(5)	Total
Panel I: Full Sample						
(1) Low income profession	79.1	10.2	6.6	3.8	0.3	100
(2) Lower middle-income professions	35.6	46.3	12.1	5.4	0.6	100
(3) Average income professions	37.5	15.6	37.2	6.5	3.2	100
(4) Above average income professions	19.0	10.4	10.7	56.4	3.5	100
(5) High income professions	17.5	15.0	16.7	14.5	36.2	100
Total	59.5	17.0	11.7	9.8	2.0	100
N = 6920; Pearson $\chi^2(16)$ = 5.1e+03 Pr = 0.000						
Panel II: Government institutions						
(1) Low income profession	75.2	8.7	10.0	5.4	0.7	100
(2) Lower middle-income professions	32.9	45.3	14.3	6.7	0.8	100
(3) Average income professions	34.3	16.4	36.7	8.5	4.1	100
(4) Above average income professions	17.3	10.5	11.7	55.9	4.6	100
(5) High income professions	13.5	16.4	19.4	16.6	34.1	100
Total	47.9	17.6	16.1	14.8	3.6	100
N = 2881; Pearson $\chi^2(16)$ = 1.9e+03 Pr = 0.000						
Panel III: Private & Madaris institutions						
(1) Low income profession	71.5	8.0	9.9	10.6		100
(2) Lower middle-income professions	44.0	43.7	0.0	12.3		100
(3) Average income professions	49.2	24.1	2.9	23.9		100
(4) Above average income professions	25.9	19.1	6.5	48.4		100
Total	71.5	8.0	9.9	10.6		100
N = 56; Pearson $\chi^2(16)$ = 1.9e+03 Pr = 0.000						

Source: Authors' calculations based on data from PSLM 2013-2014

Regressing the sons' occupations, expressed in terms of the returns they offer, on the fathers' occupations and some additional control variables, we see the fathers' occupation has a significant impact on the sons' occupation (Table 5). The positive sign suggests that as the fathers move from the low-income professions to the high-income professions, there is also a corresponding transition of the sons towards the high-income professions. The graduates from the government institutions show a slightly higher degree of immobility because the coefficient of the fathers' occupation is 0.977 compared with the complete sample where it is 0.998 suggesting that there is a higher degree of mobility in the private and *Madaris* education system. The coefficients in the case of private and *Madaris* education are smaller indicating higher mobility but they are not statistically significant.

Table 5
Correlates of the sons' occupational status: an ordered logit multivariate regression analysis

	Full Sample	Government	Private/Madaris
Father's Occupation	0.998***	0.977***	0.654
	(6.96)	(6.93)	(2.07)
Father's Age	0.0429*	0.0412*	
	(2.44)	(2.36)	-0.0254
Father's Income	0.000000518	0.000000501	(-0.73)
	(0.16)	(0.16)	
Urban [Ref. Rural]	1.529***	1.501***	1.395
	(4.62)	(4.55)	(1.97)
F	26.69	24.42	7.940
P	9.48e-17	1.49e-15	0.00111

t statistics in parentheses
$* p < 0.05$, $** p < 0.01$, $*** p < 0.001$

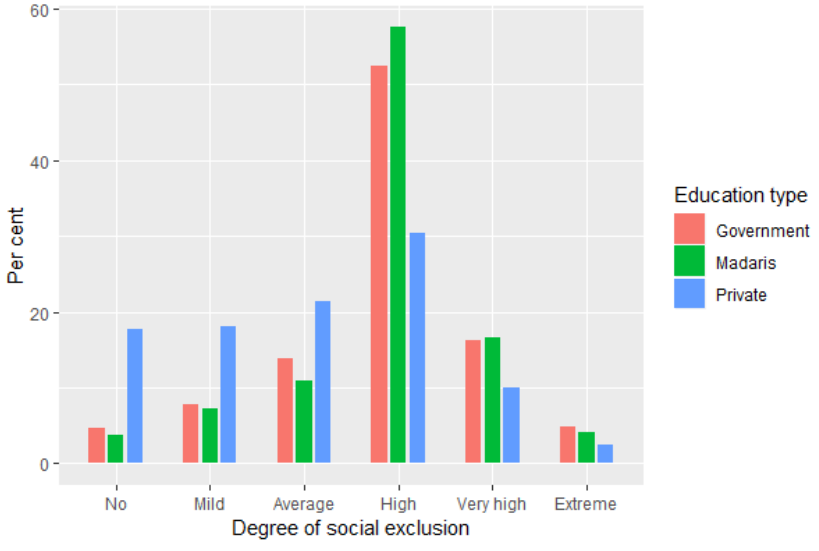
Fathers' age has a statistically significant effect on the sons' occupation. However, counter to our intuition, there is no statistically significant impact of fathers' income on the sons' choice of occupation. One possible reason might be the multicollinearity between fathers' income and fathers' occupation. We retained the fathers' income variable in the model because of theoretical concerns. Compared with the rural residential status, the urban residence explains the transition of the sons to the higher income occupations.

3.5 Social exclusion

Here we analyse the prevalence of social exclusion and how it is distributed among the graduates from different education tracks. An individual may be excluded in all indicators (or may not be deprived in any of the indicators) *within* a dimension. In the former case, the deprivation score is 1 while in the latter case it is 0. As we have seven dimensions in our social exclusion index, our overall index value can lie between 0 and 7.

Figure 3 shows the distribution of social exclusion in terms of its intensity and how it differs with the type of education. The maximum number of 'sum-score' in our sample is 5 which indicates that there is no individual in our sample who suffers from social exclusion in more than five dimensions while the minimum score is 0 which indicates that there is no social exclusion in any dimension. We make an ordered scale of the social exclusion spanning the range [0 5] where 0 represents 'No social exclusion' and 5 represents 'Extreme social exclusion.' We see visible spikes at the 'high social exclusion' category in both the government and *Madaris* graduates.

Figure 2
Exclusion by education type



Source: Authors' calculations based on the PSLM data

Among the individuals who fall in the category of no social exclusion, the share of the graduates from the private education is nearly three times higher (13.37%) relative to the graduates from the government (4.5%) or *Madaris* graduates (3.79%). Conversely, in the category of extreme social exclusion, graduates of the government institutions top the list with 9.68 per cent followed by the *Madaris* graduates (7.46%) and private institutions graduates (4.76%). In the category of the high social exclusion which has the highest concentration of individuals (37.32%), social exclusion among the government and *Madaris* system is nearly double the rate of social exclusion among the graduates of private institutions (26.86%). This situation clearly shows that graduates from different educational tracks socially interact in different ways.

There are several explanations as to why segregated educational systems lead to varying levels of exclusion. The schooling experience influences civic engagement of the students with low SES possibly through peer socialization or curriculum differences (Hoskins, Janmaat, Han, & Muijs, 2016). The initial conditions (individual and group characteristics of the students) help explain the individuals' human capital developed in educational life. The academic outcomes in an education system with different tracks may be influenced by the differences in the teaching methods and teachers' attitude (Strakova, 2007). Financial problems in childhood significantly explain the depression in adult life (Bøe, Balaj, Eikemo, McNamara, & Solheim, 2017).

While this study fills in a significant gap in the intergenerational mobility and social exclusion in Pakistan's context, it suffers from certain limitations. Very few observations on the graduates from the Madaris education system, and to some extent on the graduates from the private institutions, hindered a satisfactory disaggregated analysis. Excluding women from the analysis because the data constraints is another major limitation of our study. While we saw the effect of father's socioeconomic status on the son's educational and occupational choices, there is reason to believe that the mother's socioeconomic status might well be a better predictor of the lifelong opportunities of the children.

4. Conclusion

This study has found that the graduates from the government, private and *Madrassah* educational systems in Pakistan significantly differ from one another in terms of the economic returns on their education. The inter-generational transmission of the educational and occupational outcomes is also markedly different across the different educational tracks. Regression analysis suggests that the degree of inter-generational educational immobility is higher among the graduates of the government and *Madrassah* system compared with the graduates of the private institutions. The intergenerational occupational immobility is also found to be higher among the government and *Madrassah* graduates compared with the graduates with private education.

We also find that social exclusion exists among the graduates of all three educational tracks in varying degrees. Graduates from the private education system are found to be least socially excluded while the graduates from the *Madaris* are found to be the most socially excluded. The broad picture supports the widespread perception that the education system in Pakistan has failed to promote equality and social cohesion. This study implies that comprehensive changes are required to make the educational system equitable and egalitarian.

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1. Appendix

Table A-I

Dimensions of social exclusion

Dimension	Indicator	Variable
Material resources	Household income	(1) Income less than 60 of median income
	Household net worth	(2) Household net worth less than 60 of median consumption expenditure
	Household consumption expenditure	(3) Consumption expenditure less than 60 of median consumption expenditure
	Financial hardship	(4) Three or more indicators of financial stress
Employment	Paid work and unpaid work	(5) Long-term unemployed
		(6) Unemployed
		(7) Unemployed or marginally attached
		(8) Unemployed, marginally attached or underemployed
		(9) In a jobless household
Education and skills	Basic skills (literacy and numeracy)	(10) Low literacy
		(11) Low numeracy
	Educational attainment	(12) Poor English proficiency
		(13) Low level of formal education
	Lifelong learning	(14) Little or no work experience
Health and disability	General health	(15) Poor general health
	Physical health	(16) Poor physical health
	Mental health	(17) Poor mental health
	Disability or long-term health condition	(18) Has a long-term health condition or disability
		(19) Household has a disabled child
Social	Social support	(20) Little social support
	Participation in common social services	(21) Get together with friends/relatives less than once a month
Community	Civic participation and voluntary activity/membership	(22) Low neighbourhood quality
		(23) Reported satisfaction with 'the neighbourhood in which you live' low
		(24) Reported satisfaction with 'feeling part of local community' low
		(25) Not currently a member of a sporting, hobby or community-based club or association
		(26) No voluntary activity in a typical week
Personal Safety	Victim of violent crime	(27) Victim of physical violence in the last 12 months
	Victim of property crime	(28) Victim of property crime in the last 12 months
	Subjective safety	(29) Low level of satisfaction with 'how safe you feel'

Source: Kostenko, et al. (2009)