Intergenerational Mobility: Evidence from Pakistan Panel Household Survey

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Intergenerational Mobility: Evidence from Pakistan Panel Household Survey

Sajid Amin Javed and Mohammad Irfan

This paper, using data from Pakistan Panel Household Survey 2010, finds evidence for higher (lower) intergenerational immobility (mobility) for Pakistan. The results from transition matrix and regression analysis suggest that the educational, occupational and income status of the son is mostly determined by the socio-economic position of the father.

I. INTRODUCTION

Pakistan over the years, since its independence in 1947, had a rather erratic growth profile but on average GDP growth rate hovered around 5 percent per annum with per capita income growth ranging between 2 to 3 percent. The structure of the economy graduated from being predominantly agriculture in 1950s to being service sector orientated since the turn of the century. The manufacturing sector grew from almost insignificance in 1947 to a reasonable level accounting for around one third of the GDP.

The demographic inertia associated with unchecked population growth and emergence of job opportunities in urban areas led to massive rural to urban migration, which resulted in a rather high level of urbanisation. Concomitant changes in both the urban and rural labour markets are visible too. Not only did average years of schooling of the labour force rise but also changes in occupational classification suggest a relative rise in white collar jobs and a substantial shift from self-employment to wage employment.

An examination of the appropriation of the evolving mixes of opportunities by people from different sections of the society is a challenging task. Foremost among the challenges is the fact that Pakistan encountered several structural breaks- one at the time of partition when a massive shift of population took place between India and Pakistan. Pakistan emerged as the net gainer in terms of population shift. Simultaneously a vacuum among the government services was created due to scarcity of educated people, which also influenced the acquisition potential of the future generations. Similarly, the independence of Bangladesh in 1971 and influx of Afghan refugees in 1980s could be treated as structural breaks bearing upon the participation pattern of people from the different sections of the economy. This paper is an attempt to understand rather partially

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the achievements made by people belonging to various walks of life through a scrutiny of Intergenerational mobility.

Intergenerational mobility dynamics have long been bewildering social scientists. The slogan of equality of opportunity underlies the very motivation to understand intergenerational education, occupational or earning (im) mobility. In particular income mobility has been explored extensively. Leaving educational and occupational mobility behind in terms of the empirical expeditions undertaken. A handful of literature is available documenting the extent to which the economic position of the father determines the income of the son rather than his own education and skill.[1]

Currently improved econometric techniques have also resulted in generating a volume of empirical studies. In contrast to emphasis on the description of the shifts in ranking and positions and the descriptive aspect of intergenerational mobility not much has been done to explore the process underlying it. It needs to be kept in mind that the allocative process depicting hierarchies and positions is a by-product of the overall socio-economic and political set up. It is in this sense that the study of intergenerational mobility becomes complex in nature and demands a great deal of information.

It may, however, be noted that in this study the authors are confined to a descriptive analysis of intergenerational mobility which refers to the changes in the positions and ranking of individuals using the transition matrix as a summary measure. The analysis is further subjected to estimation of elasticity of intergenerational mobility by applying Ordinary Least Squares (OLS) and Two Stages Least Square (2SLS). The normative aspects such as degree of inequalities in opportunities can hardly be inferred from such an exercise.

The rest of the paper is structured as follows: this section is followed by section II furnishing a brief review of the literature. Section III details the empirical illustrations while results and discussion are presented in Section IV. Section V concludes the study.

II. LITERATURE REVIEW

Research studies have highlighted that those who are born rich are likely to remain rich since, along with other factors, a higher investment in education precludes the chances of zero intergenerational earnings correlations, as rewards/returns are higher on higher education [Solon (2004)]. Income distribution can also be persistent because of genetic differences. The intergenerational income mobility has outcomes similar to those of income distribution but there are different reasons underlying intergenerational income mobility in terms of policy implications. The intergenerational mobility assigns an active role to public sector to reduce the intergenerational differentials through increased educational opportunities whereas the income distribution leaves very narrow space for public policy [Black and Devereux (2010)].

Intergenerational income elasticity and correlation stand as the most widely used measures. Intergenerational elasticity, the coefficient of the father's log income in standard regressions, is preferred over correlation, because it is unbiased to any measurement errors in the son's income (the dependent variable). Intergenerational

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[1]See Bjorklund and Jantti (2009), Blanden (2009), Corak (2006), Grawe (2004), and Solon (2002) for excellent survey.

income elasticity is also sensitive to the data period (T) used in the analysis where it is an increasing function of *T* [Mazumder (2005)]. Also the sensitivity of intergenerational income elasticity to the point in time at which the income of the son and the father is observed, is a revealing fact known as life cycle bias.[2] Nilsen, *et al.* (2008) also provide evidence on the life cycle bias for Norwegian data.

Coming to the empirical studies in the field with respect to time and region, Jantti, *et al.* (2006), studying six countries including USA and UK, find the highest persistence or immobility for USA for the earnings of the son. Bratsberg, *et al.* (2007) confirm the non-linearity of the son-father income nexus using data for USA, UK, Denmark, Finland and Norway. The intergenerational elasticity estimates for Italy and France are estimated to be 0.5 [Piraino (2007); Mocetti (2007)] and 0.4 [LeFranc and Trannoy (2005)] respectively. Leigh (2007), Corak and Heisz(1999) and Vogel (2008) report much lower intergenerational income elasticity for Australia, Canada and Germany. This difference in intergenerational elasticity estimates may stem, along with other factors, from the public education system[3], political participation [Ichino, *et al.*(2009) and different labour market dynamics [Blanden (2009)]. Credit constraints, as proposed by Solon (2004) can determine the size of intergenerational income elasticities. Han and Mulligan (2001), Grawe and Mulligan (2002), and Grawe (2004) provide the theoretical underpinnings for the effect of credit constraints on intergenerational elasticity.[4] The bulk of the empirical literature on intergenerational income mobility, based on US data, especially in the 1970s and 80s, reports intergenerational elasticity of 0.2 [Sewell and Hauser (1975); Bielby and Hauser (1977); Behrman and Taubman(1985)].[5] The intergenerational mobility estimates, confined to USA for a certain period, can now be traced across the globe including UK [Nicoletti and Ermisch(2007); Dearden, *et al.*(1997)]; Brazil [Dunn (2007)], Malaysia [Lillard and Kilburn (1995)], Chile [Nunez and Miranada (2010)]; Finland [Österbacka(2001)] along with many others.[6]

To conclude the section, the literature was scanned to find relevant studies on Pakistan in respect of intergenerational income mobility indicators. The available studies examine the role of parental characteristics on school enrolment of children in a choice theoretic framework primarily focusing on parental capacity to invest in education of children [Burney and Irfan (1991)][7] and the rate of return on education reporting the dependence of individual wages on his/her father's wage and parental education [Shahrukh and Irfan(1985)]. Havinga, *et al.* (1986) deal with income and wealth intergenerational mobility and social change in Pakistan at individual and family level. Based on the findings emerging from a pilot survey, the authors found upward intergenerational income and wealth mobility. A recent study by Shehzadi, *et al.* (2012), based on a small survey, provides intergenerational social mobility and

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[2]Refer to Haider and Solon (2006), Grawe (2006) for details.

[3]See Davies, Zhang, and Zeng (2005) for theoretical exposition. Pekkarinen, *et al.* (2009) gives evidence on the issue.

[4]Grawe (2004) outlines the approaches to empirical analysis of the argument. Mulligan (1997) provides empirical evidence for budget constraint hypothesis.

[5]Solon (1992) and Zimmerman (1992) criticise these studies on account of ignoring measurement errors and sample bias.

[6]All these studies have similar findings and reach the same conclusion that USA has severe income inequality issues compared to other countries.

[7]Shahrukh and Irfan (1985) also examine determinants of child school enrolment in Pakistan.

child development link for Faisalabad. The study at hand is different from the above studies on Pakistan in nature and scope. First, none of these studies explores intergenerational income mobility explicitly. Second, we improve on methodology and estimation techniques through controlling the life cycle bias and endogeniety involved in estimation of intergenerational income mobility.

III. DATA AND METHODOLOGY

Data are taken from Pakistan Panel Household Survey (PPHS) 2010; a survey administrated by Pakistan Institute of Development Economics (PIDE) since 2001.[8] The PPHS, providing rich information on socio-economic characteristics of households, covers 4246 households divided into 2746 urban and 1500 rural units respectively.[9] Separate modules for males and females were administrated to collect the information at household level [for more detail, see Nayab and Arif (2012)]. Data were extracted from the household roster and the education and employment sections of the questionnaires and merged on the basis of their common household identification codes. In the male module, the data include the characteristics of sons and fathers respectively. All information on daughters is excluded because of smaller number of observations for working daughters. This paper focuses on co-resident[10]sons and fathers reporting positive income . The study deals with the sons falling in the following age brackets (1) less than 21 years, (2) more than 20 years, (3) 25-39 years, and (4) 30-50 years for cohort analysis.[11] The detail of sample size against different filters imposed for analysis is given below:

Table1

Sample Size Details

Sample	Numbers
Non '0' income sons	2508
Non '0' income sons of working fathers	1398
Working fathers	1398
Working fathers (Urban)	392
Working fathers (Rural)	974
Fathers having non '0' income	1367
Sons having non '0' income and less than 20 years of age	608
Sons having non '0' income and more than 20 years of age	1900
Sons of working fathers less than 21 years of age	477
Sons of working fathers more than 20 years of age	921
Sons of working fathers more than 20 years of age (Urban)	227
Sons of working fathers more than 20 years of age (Rural)	694
Sons of working fathers having age between 25-39 years	550
Sons of working fathers having age between 30-50 years	247

[8]PPHS 2010 is 3rd round of the series with 2001 and 2004 completed previously.

[9]Urban sample is covered first time in PPHS 2010 while rural panel comprises 3 cross-sections of 2001, 2004 and 2010.

[10]The exclusion of sons not living with fathers due to unavailability of income and other characteristics, is a major limitation of the data for this study.

[11]See Appendix I and II for variable construction and data description respectively.

Methodology

This study applies two methodologies for empirical analysis, namely the construction of transition matrix and regression analysis, wherein the former gives the relative position of the child as compared to the father while the latter provides the extent to which the father's economic status impacts the economic status of the son. Regression analysis in its different variants is widely applied in intergenerational mobility literature.[12] Ordinary Least Square (OLS) remains the frequently used technique along with the instrumental variable (IV) approach. This study applies both OLS and IV approach.[13] The analysis starts with the OLS analysis by regressing the son's log income on the father's log income in the first model while in the second model other socio economic characteristics of the son are introduced. OLS regression is performed on the fathers' reported and estimated income.[14] We begin the methodological illustrations with the following equation:

$$\bar{Y}_{iS} = \alpha + \beta_1 \bar{Y}_{iF} + \varepsilon_i \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (1)$$

Where $\bar{Y}_{iS}$ and $\bar{Y}_{iF}$ are lifelong log incomes of ith son and father respectively and ε_i is error term assumed to be distributed as $N(0,\sigma^2)$. The constant term α comprises the environment that the generation of the sons enjoys while β_1 is the measure of intergenerational persistence or immobility. Conversely $1 - \beta_1$ gives intergenerational mobility. Generally β_1 takes the value between zero (0) and one (1) where a higher value indicates the higher chances that a son will hold the same socio-economic status as his father did. $\beta_1 = 0$ means perfect mobility where all sons are independent of the father's status, suggesting equality of opportunities or merit based system while $\beta_1 = 1$, indicates perfect immobility and suggests that the son, subtracting any random errors, will exactly inherit the position of the father. β_1, the elasticity measure by construction in Equation (1), indicates the percent difference in the sons' income observed for each 1 percent difference across the incomes of the fathers. A negative value for β_1 would be indicative of lower economic status of the sons in their own generation compared to the position of their fathers who ranked high in income distribution.

In reality, however, the lifelong incomes of the son and father are captured by the short run measure of income i.e. income measured at a certain point of time (generally past one month or year) so;

$$Y_{iS}(t) = \bar{Y}_{iS} + \beta_i A_{iS}(t) + v_{iS} \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (2)$$

$$Y_{iF}(t) = \bar{Y}_{iF} + \beta_i A_{iF}(t) + v_{iF} \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (3)$$

Both v_{iS} and v_{iF} are assumed to be homoscedastic distributed zero mean. $Y_{iS}(t)$ and $Y_{iF}(t)$ are short run measures of income of ith son and father, while $A_{iS}(t)$ and $A_{iF}(t)$ are their ages respectively. Solving Equations (2) and (3) for $\bar{Y}_{iS}$ and $\bar{Y}_{iF}$ and substituting in Equation (1) gives the standard intergenerational income mobility specification as

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[12]Mulligan (1997), Solon (1992), and Zimmerman (1992) are some examples of studies using models as given in Equation (1) and its variants.

[13]The regression analysis adopted in this study is similar to I-Hsin Li (2011).

[14]Income of father adjusted for age, occupation and education of father as given in Equation (8) in methodology section.

$$Y_{iS}(t) = \alpha + \beta_1 Y_{iF}(t) + \beta_2 A_{iS}(t) + \beta_3 A_{iF}(t) + \upsilon_i \quad \dots \quad \dots \quad \dots \quad (4)$$
$$\text{Where} \upsilon_i = \varepsilon_i + \upsilon_{iS} - \beta_1 \upsilon_{iF}$$

To gauge the net effect of the father's economic status on the son's income, and to avoid omitted variable bias, we, in the second step, add in Equation (1) additional characteristics of sons and fathers, which gives rise to Equation (5) below.

$$Y_{iS} = \alpha + \beta_1 Y_{iF} + \beta_i X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (5)$$

Where X_i is a set of control variables specifically including the age of the son, the age of the father, the square of the ages of the father and son, the occupation and education of the son etc. What is worth mentioning, however, is that both the ages of the son and father are incorporated simultaneously to account for the life cycle bias as the income for both is not observed at the same point of age. A homogenous income growth is, however, assumed across the individuals in order to tackle the life cycle bias.

The education and occupation of the father are not included in this specification purposefully as the father's income already simulates their effect. The issue is dealt by introducing the estimated income of the father in Equations (1) and (4) resulting in Equations (6) and (7).

$$Y_{iS} = \alpha + \beta_1 \hat{Y}_{iF} + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (6)$$

$$Y_{iS} = \alpha + \beta_1 \hat{Y}_{iF} + \beta_i X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (7)$$

Where $\hat{Y}_{iF}$ is the estimated income of the ith father. The rest of the notations are as explained above. $\hat{Y}_{iF}$ is estimated using the following equation:

$$\hat{Y}_{iF} = \alpha + \beta_1 Age_F + \beta_2 Age^2{}_F + \beta_2 Edu_F + \beta_3 Occu_F + \varepsilon_i \quad \dots \quad \dots \quad (8)$$

Equation (8), gives the income of the father adjusted for his age, occupation and education. This estimated income is then placed in Equations (1) and (5) to calculate the intergenerational income mobility. The approach is very similar to the instrumental variable approach though it operates indirectly.

Instrumental Variable Approach

The instrumental variable approach appears to be an important tool in recent literature to tackle measurement biases. Different sets of instruments for the father's income are used in the empirical literature such as occupational status [Zimmerman (1992); Nicoletti and Ermisch (2007); Nunez and Miranada (2010), city of residence of the sons [Björklund and Jantti (1997)] and state (province) of birth [Aaronson and Mazumder (2008)].[15]OLS will produce consistent results only if both the sons' and fathers' income are distributed normally as elaborated in Equation (9).

$$\beta_{OLS} = \frac{\{cov(Y_{iS}, Y_{iF})\}}{var(Y_{iF})} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (9)$$

As we are studying some selective pairs of sons and fathers, OLS will generate inconsistent results [Fertig (2001); Nicoletti (2008)]. Further the bias in OLS estimations is induced because of short run (one year) estimate of incomes of the father resulting in

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[15]We use education of father, occupation of father and province of residence of a son as instruments.

downward bias in intergenerational elasticity estimates (attenuation bias) [Solon (1992); Zimmerman (1992)].

Most importantly the correlation between υ_{iF} and Y_{iF} causes endogeniety in Equation (4) referred to as the attenuation bias. The attenuation bias can be minimised by averaging the earnings over a certain period of time (generally 5 years). The alternative, and the preferred way, to reduce downward estimation of intergenerational elasticity is to use the IV approach wherein the fathers' income is instrumented by different variables of which the father's educational status and occupation remain most commonly used.

Equation (3) can be expressed as

$$Y_{iF}(t) = \delta q_{iF} + \beta_i A_{iF}(t) + \upsilon_{iF} = \theta Z_{iF} + \upsilon_{iF} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (10)$$

Where $Z_{iF} = q_{iF}, A_{iF}(t)$ and q_{iF} denote instruments.

This estimation methodology is superior to the OLS, in order to control the measurement error effect. The measurement errors in the instrument do not create any nuisance in results as far as these errors are uncorrelated to the error term of regression. Further, education, used as instrument for the father's life time earnings, is free of transitory errors hence the IV approach gives consistent estimates for β_1 in Equations (1) and (5).

We estimate Equations (1) and (5) by applying the Two Stage Least Squares (2SLS) approach. The education and occupation of the father, along with some other variables, are used as instruments. The set of instruments, other than the father's education and occupation, varies with the specification depending upon the explanatory variables used. The 2SLS estimations are performed only for the reported income as the estimations based on estimated income are the indirect mode of 2SLS.

IV. RESULTS AND DISCUSSION

The percentage occupational and educational distribution of the fathers and sons is reported in Table 2 where, quite interestingly, 48.6 percent of the sons of working fathers reported working in elementary professions while 33.3 percent fathers worked in elementary professions.[16] It is also evident from the information that 94.3 percent of the sons and 95.2 percent of the fathers work in elementary services and agriculture etc. respectively and a very small number join blue collar professions like technicians.[17]

The situation improves with regards to education, because only 33.9 percent of the sons (though a big number in absolute terms) never attended school as compared to 56.3 percent[18] fathers suggesting improved status of school enrolments. The sons who completed the matriculation were 17.1 percent compared to 9.6 percent r fathers; while 10.7 percent of the sons completed graduation (14 years of education in Pakistan) as against only 3.9 percent of the fathers. Table 2, in general, indicates a better education attainment for the sons' generation as compared to that of the fathers.

[16]the occupational classification used in this study is based on the United Nations Standard Classification of Occupations (ISCO-1998).

[17]Given the fact that all major urban centres were not covered in PPHS 2010, the occupational, educational and income distribution could diverge from that reported in the surveys like PSLM and LFS.

[18]The number is 65.9 percent for sample of fathers when no condition of working status is imposed. This figure may be an indicator of lower enrolments for the old generation of fathers as the fathers aged between 89-105 years get excluded under this condition.

Table 2

Percentage Distribution of Respondents with Respect to Occupation and Education

Indicators Occupation	All Sons	Sons of Working Fathers	All Fathers	Working Fathers Only[c]
Elementary[a]	46.8	48.6	33.3	
Services/Agriculture[b]	47.1	45.7	61.9	
Technicians/Associate Professionals	3.6	3.7	2.4	
Mangers/Professionals	2.5	2.1	2.3	
Total	*2494*	*1391*	*1398*	
EDUCATION				
Never Attended School	33.9	33.9	65.9	56.3
Up-to Primary	18.1	20.5	15.6	20.5
Middle	15.9	16.3	7.4	8.7
Matriculation	18.1	17.1	7.4	9.6
Graduate and Above	13.9	12.1	3.6	4.5
Others	0.2	0.1	0.2	0.4
Total	*2508*	*1398*	*2508*	*1398*

[a]Elementary category includes armed forces also in which 2.9 percent sons and 0.2 percent fathers are employed respectively.

[b]Clerks, Services, Skilled Agriculture Workers, Crafts and related and Operators

[c]In occupational distribution, working fathers are unit of the analysis so "all fathers" are exactly "working fathers only".

Transition Matrix

Educational Mobility

This section improves on the previous one as it provides results based on the son-father (son of the same father) relationship. The transition matrix details the "*chance opportunity open to each dynasty in the passage from one generation to the following*". The intergenerational educational, occupational and income mobility is reported in Tables 3, 4 and 5 respectively. The order of ranking is from 1st (lowest) to the last (highest).

Table 3

Sons' Education against their Father's Education (%)

	Education of Sons					
Full Sample Education of Fathers	Never Attended School	Upto Primary	Middle	Matric	Graduation and Above	% (N)
Never Attended School	42.4	17.3	14.6	16.5	9.0	100 (1650)
Up to Primary	23.6	31.3	15.9	16.7	12.6	100 (390)
Middle	14.1	14.6	27.0	26.5	17.8	100 (185)
Matriculation	9.2	9.2	21.1	25.9	34.6	100 (185)
Graduation and above	11.2	2.2	5.6	22.5	58.4	100 (89)
URBAN						
Never Attended School	42.2	19.3	13.3	14.7	10.5	100 (353)
Up to Primary	29.0	26.2	13.1	16.8	14.9	100 (107)
Middle	15.1	6.8	30.1	24.7	23.3	100 (73)
Matriculation	10.4	5.2	24.7	27.3	32.5	100 (77)
Graduation and above	14.6	4.2	8.3	27.1	45.8	100 (48)
RURAL						
Never Attended School	42.6	16.8	15.0	17.0	8.8	100 (1287)
Up to Primary	21.6	33.2	17.0	16.6	11.7	100 (283)
Middle	13.4	19.6	25.0	27.7	14.3	100 (112)
Matriculation	8.3	12.0	18.5	25.0	36.2	100 (108)
Graduation and above	7.0	0.0	2.0	17.0	74.0	100 (41)

Table 3 (a)

Sons' Education against their Father's Education by Cohort

Full Sample Education of Fathers		Never Attended School	Up to Primary	Middle	Matric	Graduation and above	% (N)
		Education of Son (Less than 31 Years Aged Sons) (%)					
Never Attended School	<31[a]	43.20	19.90	15.10	14.50	7.20	100 (1157)
	>31	40.80	11.40	13.60	21.10	13.20	100 (493)
Up to Primary	<31	26.10	30.30	17.30	14.70	11.70	100 (307)
	>31	14.50	34.90	10.80	24.10	15.70	100 (83)
Middle	<31	15.60	16.30	27.20	26.50	14.20	100 (147)
	>31	7.90	7.90	26.30	26.30	31.60	100 (38)
Matriculation	<31	7.90	9.30	24.50	22.50	35.80	100 (151)
	>31	14.70	8.80	5.90	41.20	29.40	100 (34)
Graduation and above	<31	11.0	3.0	6.0	23.0	58.00	100 (71)
	>31	11.0	0.0	6.0	22.0	71.00	100 (18)
URBAN							
Never Attended School		44.70	21.80	13.80	14.20	5.45	100 (275)
Up to Primary		31.20	26.90	12.90	16.10	4.36	100 (93)
RURAL							
Never Attended School		42.70	19.30	15.50	14.60	7.9	100 (882)
Up to Primary		23.80	31.80	19.20	14	11.2	100 (214)

[a]<31 and >31 denotes sons of age less than or equal to 30 and sons older than or equal to 31 years of age respectively.

Table 4

Son's Occupation against his Father's Occupation (%)

Full Sample Occupation of Fathers	Elementary	Services/ Agriculture	Technicians/ Associate Professionals	Mangers/ Professionals	**% (N)**
	Occupation of Sons				
Elementary	71.6	25.8	1.1	1.5	100 (465)
Services/Agriculture	37.4	56.9	3.7	2.0	100 (860)
Technicians/Associate Professionals	47.1	38.2	14.7	0.0	100 (34)
Mangers/Professionals	15.6	40.6	28.1	15.6	100 (32)
URBAN					
Elementary	64.8	31.0	2.1	2.1	100 (142)
Services/Agriculture	26.8	65.9	5.0	2.3	100 (220)
Technicians/Associate Professionals	62.5	31.3	6.3	0.0	100 (16)
Mangers/Professionals	25.0	31.3	25.0	18.8	100 (16)
RURAL					
Elementary	74.6	23.5	0.6	1.2	100 (323)
Services/Agriculture	41.1	53.8	3.3	1.9	100 (640)
Technicians/Associate Professionals	33.3	44.4	22.2	0.0	100 (18)
Mangers/Professionals	6.3	50.0	31.3	12.5	100 (16)

Table 4(a)

Son's Occupation against his Father's Occupation—
Sons Aged Less than 31 Years (%)

	Occupation of Sons				
Occupation of Fathers	Elementary	Services/ Agriculture	Technicians/ Associate Professionals	Mangers/ Professionals	**% (N)**
Elementary	72.3	25.4	1.2	1.2	100 (422)
Services/Agriculture	38.8	55.8	3.3	2.1	100 (724)
Technicians/Associate Professionals	48.4	38.7	12.9	0.0	100 (31)
Mangers/Professionals	17.2	37.9	27.6	17.2	100 (29)
Elementary	64.9	31.3	2.2	1.5	100 (134)
Services/Agriculture	27.6	65.0	4.9	2.5	100 (203)
Technicians/Associate Professionals	66.7	33.3	0.0	0.0	100 (15)
Mangers/Professionals	26.7	33.3	20.0	20.0	100 (15)
Elementary	75.7	22.6	0.7	1.0	100 (288)
Services/Agriculture	43.2	52.2	2.7	1.9	100 (521)
Technicians/Associate Professionals	31.3	43.8	25.0	0.0	100 (16)
Mangers/Professionals	7.1	42.9	35.7	14.3	100 (14)

Table 4(b)

Son's Occupation against his Father's Occupation—
Sons Aged More than 30 Years

	Occupation of Sons				
Occupation of Fathers	Elementary	Services/ Agriculture	Technicians/ Associate Professionals	Mangers/ Professionals	**% (N)**[19]
Elementary	72.3	25.4	1.2	1.2	100 (422)
Services/Agriculture	38.8	55.8	3.3	2.1	100 (724)
Technicians/Associate Professionals	48.4	38.7	12.9	0.0	100 (31)
Mangers/Professionals	17.2	37.9	27.6	17.2	100 (29)

Elementary category includes armed forces also in which 2.9 percent sons and 0.2 percent fathers are employed respectively.

Table 5

Income Quintile Transition Matrix (%)

Full Sample	Quintiles of Annual Incomes of Sons					
Quintiles of Annual Incomes of Fathers	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	% (N)
1st Quintile	43.5	25.3	16.6	8.1	6.5	100 (308)
2nd Quintile	31.3	33.8	17.9	11.7	5.4	100 (240)
3rd Quintile	20.7	30.4	22.1	16.7	10.1	100 (276)
4th Quintile	21.3	24.5	23.1	20.2	10.8	100 (277)
5th Quintile	18.5	14.0	18.5	26.0	23.0	100 (265)
RURAL						
1st Quintile	53.7	27.8	9.3	7.4	1.9	100 (54)
2nd Quintile	30.4	32.9	24.1	8.9	3.8	100 (79)
3rd Quintile	22.9	28.1	21.9	17.7	9.4	100 (96)
4th Quintile	22.4	37.8	21.4	16.3	2.0	100 (98)
5th Quintile	18.5	15.4	20.0	21.5	24.6	100 (65)
URBAN						
1st Quintile	41.3	24.8	18.1	8.3	7.5	100 (254)
2nd Quintile	31.7	34.2	14.9	13.0	6.2	100 (161)
3rd Quintile	19.4	31.7	22.2	16.1	10.6	100 (180)
4th Quintile	20.7	17.3	24.0	22.3	15.6	100 (179)
5th Quintile	18.5	13.5	18.0	27.5	22.5	100 (200)

[19]The smaller sample size against occupation 3 and 4 (Table 4(b)) leaves us unable to undertake rural-urban analysis.

Tables 3 and 3(a) provide information on the educational mobility from the fathers' generation to the sons'. A "Vicious circle trap" is clearly visible from the Table and there is high probability that the educational status of the father will pass on to the sons' generation. "Inheritance" seems to be playing an important role in determining the final educational attainment outcome. Those whose fathers never went to school have a 42 percent probability of never getting enrolled in schools. The probability of reaching to primary level for the sons of father s who never attended school is 17 percent while the probability of earning a graduate degree is only 7.2 percent. The chances of the sons of remaining under primary and middle fade away as the father's education reaches to graduation and above and their probability of earning at least graduation or higher degree is 71 percent. The probability of acquiring the highest degree increases along with the increase in inherited educational status of the father as is evident from the 2nd last column of Table 3. Similar results were observed when the sample was split into rural-urban strata. These results show the intergenerational persistence of educational attainment suggesting unequal participation in the opportunities available in attaining education. This may, partly, be an outcome of different educational systems prevailing in Pakistan.[20] Another probable reason might be poverty driven "earning hand" concept leaving the majority of sons of uneducated fathers uneducated or unable to reach higher levels of education.

Table 3(a) furnishes the educational transition matrix for the cohort of sons with ages <31 and ≥31 years respectively. The results indicate that ultimately the probability of the sons meeting the same fate as that of their fathers is higher for cohorts in age≥ 31 years. The probability of attaining the highest degree for a son, having a father who never attended school, is as low as 0.5 percent. A son, older than 31 years of age, whose father has primary education has a 30 percent probability of reaching to the primary level while the probability that he remains un-enrolled in school is 26.1 percent; while the sons in cohort <31 years of age, with the fathers having primary education, are 34.9 percent likely to reach to the same level of education; their chances of never attending school are 14.5 percent however, which is much lower for the son with the same background but falling in cohort ≥31 years of age, indicating higher enrolment for children born after 1980.[21] Similar patterns of persistence are observed for both cohorts for all categories of education. It may be added that inferences regarding the vintage effect are difficult to be traced from a one-year cross-sectional data. This study however suggests that despite the rise in educational enrolments, a father in the poverty ridden elementary occupation could not get his son to have a perceptible upward mobility in education.

Occupational Mobility

Occupational mobility, which is classified somewhat differently than under Labour Force Survey (LFS), from one generation to the following is depicted in Tables 4 and 4(a) respectively where the latter provides the transition probabilities against different cohorts of sons with the same back ground. The numbers 1-4, in column and rows, rank

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[20] Different educational systems here refer to public and private schooling.
[21] Any child of 30 years of age or younger in 2010 must be born in 1980 or thereafter.

the occupations in increasing order and 4 is preferred over 1.[22] "In the name of father" situation is evident from the results and there is 71.6 percent probability that sons of fathers working in elementary occupation will end up with the same fate while the probability of their reaching to higher professions declines with the order of the occupation and falls to 1.5 percent for the highest ranked occupations, indicating that a son born to a father working in elementary sector has only 1.5 percent probability to be a manager or a professional.

The sons of fathers working in the services or agriculture sector (occupation ranked as 2) have a probability of 56.9 percent to fall in the same occupation. But more importantly, these sons have a probability of 37.4 percent of joining a profession lower than their fathers. A similar situation is observed for the sons whose fathers were technicians and associate professionals (occupation 3) where the probability for these sons to reach to the same occupational status is only 14.7 percent, while the probability that these sons end up joining occupations lower than their fathers' is 85.3 percent.

Floor and ceiling effects, a potential disadvantage of the transition matrix, suggest that the movement below and above the bottom and top groups respectively are not possible so the middle groups portray a good picture of the intergenerational mobility. For the sons of the fathers who are managers and professionals (the highest ranked occupation, 4), the probability to reach to the same profession is only 15.6 percent while the probabilities of their falling in occupation 1, 2 and 3 (lower than their father's occupational status) are 15.6 percent, 40.6 percent and 20.1 percent respectively. These figures suggest an alarming situation of regression in occupational status where the sons' generation is falling behind their fathers. This may be a reflection partly of the ceiling effect but seems to be primarily emerging from the ongoing meltdown in the labour market of the country characterised by excessive labour supply due to high level of population growth and poor performance of the economy on the labour demand side. Similar patterns are observed for rural and urban samples and the cohort of sons with ages <30 and >30 years respectively.

Income Mobility

Table 5, based on income quintiles, draws the information about probability of moving from one income group to the other group where 1 stands for the lowest income group (poorest) while 5 indicates the highest income group (richest).[23] The probability for a son to move to the highest quintile from the lowest one is only 6.5 percent while the probability of retaining the economic status equal to that of the father is 43.5 percent, given that the father falls in the 1st quintile. The sons born to fathers belonging to the middle income group (quintile 3) have a 10.1 percent probability of reaching the top quintile. As is obvious from the 2nd last column of Table 5, the probability of a sons reaching higher income groups is generally a positive function of the economic status of his father.

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[22]This classification, based on (ISCO-1998), though not common in Pakistan, is adopted purposefully to get concise picture of intergenerational occupational mobility where the reader can make easy comparisons.
[23]Pakistan Demographic and Health Survey (PDHS) 2006-07, though based on wealth rather than income, titles these quintiles as poorest, poor, middle, rich and richest ranked from 1-5 respectively.

Sons born to fathers at the tail end of income distribution are more likely to be at the tail end of income distribution of their own generation. In the rural sample the persistence is high with the probability of 53.7 percent sons falling in the lowest income quintile, given the fact that their fathers were in the same quintile. More importantly, the probability of reaching to the highest quintile from the lowest is 1.9 percent for a son born in rural Pakistan as compared to 7.5 percent to the son born in an urban area, which is suggestive of comparatively better opportunities available in urban areas.

Regression Analysis

The vulnerability of the transition matrix analysis of intergenerational mobility to floor and ceiling effect is a reason to use regression analysis. Starting from a simple linear regression, we incorporate non-linearity involved in the analysis. Further, the instrumental variable approach is used to tackle the potential endogeniety stemming from correlation between the father's income and the error term.[24] Sensitivity analysis is adopted wherein the base model is run by regressing the sons' log income on the log income of their father only and then, in the second step, the nexus is controlled for other characteristics of the son and the father. Regression analysis is also undertaken for rural and urban samples and for different cohorts of sons separately and the results are reported in Tables 6 and 7.[25]

Table 6 details the Ordinary Least Square (OLS) regression estimates against the fathers' reported and estimated income.[26] The first column of Table 6, reporting the estimates against the fathers reported income, shows that the father's income, without any other controls, has a positive and statistically significant impact on the son's income. The results suggest that, in Pakistan, slightly more than one quarter (0.269) of economic advantage of the fathers' passes on to the sons. The pass on ratio declines to one-fifth (0.207) when the relation is controlled for the sons' own education, age and age square.

The results, after decomposing the estimation into rural (N=974) and urban (N=392) samples are suggestive of the higher persistence in urban areas (column 2 Table 6) where 40 percent (0.394) of the earnings are determined by the economic status of the father when no controls are added in the regression, while this share declines to 25 percent after adding the control variables. The coefficient of the father's log income in the rural sample is somewhat similar to that of the full sample.

The last half of Table 6 reports regression estimates against estimated log income of the father which is adjusted for his age, occupation and education. Broadly speaking, the reported income of the father indicates the economic status while the estimated income is a combined indicator of the socio-economic status of the father. The β in reported income is different from that against estimated income as the latter explains the variation in the son's income adjusted for age, education and father's occupation. The results show that against one unit increase in the father's estimated income, the son's income increases by 0.33 percent as compared to 0.269 in case of reported income

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[24]As discussed in section on methodology.

[25]Smaller sample for provinces, especially Balochistan limits the analysis only to rural-urban clusters.

[26]Income of father adjusted for age, occupation and education of father as given in Equation (8) in methodology section.

Table 6

suggesting that the intergenerational mobility also depends, to some extent, on the age, occupation and educational status of the fathers, which may connote the social status of the father too. Interestingly, however, the pass on ratio of the fathers' status to the son's income falls by a half when the son's own age, education and occupation are introduced, implying that the extent of intergenerational mobility is also sensitive to the education and cohort of the sons' generation.[27] The coefficient for the father's log estimated income is higher (0.378) for the rural sample (0.293 for urban sample) indicating relatively lower intergenerational income mobility in rural areas when both the social and economic status of the father is accounted for. Sons born in rural areas will inherit most of their economic status from their fathers and their own characteristics have not much to add as is evident from a very marginal decline in the coefficient of the father's log estimated income in the rural sample when controls are added (from 0.378 to 0.310). The negative sign on the coefficient of the fathers' log income, though insignificant statistically, indicates that the sons, in their own generation, are lower in economic status than their fathers were in their generation.

The age of sons has statistical significance in all regressions and the value of the coefficient varies between 0.239-0.266, indicating that age is a significant determinant of the intergenerational mobility estimates.[28] The square of the age of the son carries a negative sign across the specifications and is significant at 1 percent level suggesting the non-linear nature of income-age relationship, implying a fall in income against increased age after a certain limit. The son's education and occupation register mixed result across the specifications but retain positive sign with smaller coefficients, leading us to conclude that in Pakistan the bulk of income of the son's generation depends on the economic position of the previous generation, which means lower mobility. The results confirm and highlight the ground situation of the country where the poor are poor because they were born poor. The provincial background determines the income of the son's generation, significantly pointing towards different dynamics embodied in the social set up of the respondents. The adjusted R^2 for specifications with controls included ranges between 0.269-0.316 across the specifications given in Table 6. Further the probability of F-statistic in all cases is <0.001 across the regression models as reported in the bottom row of Table 6.

Cohort Analysis

Life earnings are sensitive to the point in time (age of father and son) at which these earnings are observed. This presumed heterogeneity of earnings' growth across the age groups may lead to different levels of intergenerational mobility trends. The intergenerational mobility estimates are conceived to be downward biased for young sons and old fathers [Grawe (2006); Reville (1995)]. This work, building on the life cycle bias hypothesis, undertakes cohort analysis and performs regression analysis for all sons (more than 21 years of age), sons of age 25-39 and 30-50 years of age. Cohort analysis based on the results from Table 6 is undertaken. Table 7 reports the

[27]It may however be kept in mind that education of son itself is an outcome of fathers economic and educational position.
[28]Suggesting cohort analysis of intergenerational mobility.

OLS estimates for sons who are older than 20 years, 25-39, and 30-50 years of age. The cutoff point of 20 years is imposed to preclude the potential inclusion of sons who are involved in studies. Also the income reported at lower ages is not truly representative of lifelong earnings.

A continuous decline for the coefficient of log income of fathers is observed along the cohort and the higher the age of the son at which income is observed, the lower the persistence. Conversely, higher intergenerational income mobility is recorded when the earnings are observed at the later stages of life, confirming the life cycle bias. Slightly more than one tenth (0.113) of the economic status of fathers is passed on to the sons when income is observed at the ages between 30-50 years (later stages of life) as compared to one-fifth when the lower age limit is relaxed to 21 years, suggesting that immobility is higher for sons observed in early stages of life. For a cohort of sons at least 21 years old, the persistence is higher (0.381) in urban areas as compared to those born in rural areas (0.179). Model 2 in Table 7 reports the OLS estimates when the controls are added to control the son-father income status nexus, exhibiting similar patterns, but with lower values of the coefficient for the fathers' log income.

Models 3 and 4 in Table 7 detail the regression estimates for intergenerational mobility when the reported income of the father is replaced with his estimated income for the cohorts as mentioned above. The father's socio-economic status (income of father adjusted for age, education and occupation) becomes an insignificant predictor of the son's income when the earnings are observed at a point of time when the son's age is between 30-50 years (column 4 Table 9). Opposite patterns of mobility are observed for rural and urban samples with and without age restrictions on the son. Excluding sons younger than 21 years of age, a higher immobility (0.391) is observed for sons residing in urban areas, while it is the other way round when no age brackets are imposed. In this case immobility is higher (0.378) in the rural sample as compared to 0.239 for sons residing in urban areas. When the son-father income nexus is controlled for the characteristics of the son, lower values of pass on ratio of the father's economic status are observed.

Instrumental Variable Estimations

To tackle the perceived endogeniety of the variables, the intergenerational income mobility was estimated by applying Two Stages Least Square (2SLS) and the results are reported in Table 8.[30] Father's education and occupation are used as instruments for the father's income.[31] The results confirm the argument that OLS estimates of intergenerational mobility, by construction, are downward biased as is evident from Table 8.

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[30]Detailed results are available in Appendix V. and VI.

[31]The 2SLSestimates are undertaken only for the reported income of the father as instrumenting the fathers income by education and occupation is similar to the OLS estimates based on the estimated income of the father

Table 7

Table 8

Two Stage Least Square Regression Estimates

Models	Independent Variables		Cohort Analysis			>20 Years	
			>20	25-39	30-50	Urban	Rural
1	Father's Log	β	0.438 ***	0.408 ***	0.383	0.404 **	0.459 ***
	Income	(S.E)	(0.108)	(0.125)	(0.237)	(0.202)	(0.128)
		Prob (F)	0.000	0.001	0.107	0.000	0.000
		N	*921*	*550*	*247*	*227*	*694*
2	Fathers Log Income,	β	0.467 ***	0.418	0.531 ***	0.508 **	0.461 ***
	Education of Son,	(S.E)	(0.126)	(0.298)	(0.168)	(0.219)	(0.160)
	Age of Son	Prob (F)	0.000	0.126	0.000	0.004	0.000
		N	*921*	*247*	*550*	*227*	*694*

*; **; *** stand for significant at 10 percent, 5 percent and 1 percent respectively.
In parenthesis are reported standard errors.

The coefficients for the father's log income are consistently higher for all cohorts of the sons both with and without controls. Interestingly, when controls are added, the highest of the coefficients is for the father's log income as is obvious from model 2 of Table 8 where, at least, nearly half of the economic status of the son is governed by the economic position of the father. The highest value is observed when the son's income is observed at the later stages of life (30-50 years).These results confirm the downward bias of OLS estimates and suggest that the complexities of the intergenerational mobility, if ignored, can give erroneous estimates by producing lower elasticity estimates of intergenerational mobility.

V. CONCLUDING REMARKS

Drawing inferences from intergenerational mobility, involving a complex interaction of processes, based on estimates generated from a single cross-section of data, may not suffice. Nonetheless, some findings emerge from this study. First and foremost, despite all controls, the father's socio-economic status remains the most crucial determinant of the economic position of the son.[32] The rich are rich because they are born rich while the fate of the poor by birth is to stay poor. The inheritance burden is not easy to get rid of. A plausible explanation can be the lower investment in education on the one hand while, on the other hand, the inability of a poor father to buy good quality education available to the rich in private sector schools and failure of the public sector to provide quality education. In addition, job allocation, to the extent it is driven by considerations emanating from constituency built up[33] could be a major impediment to intergenerational mobility because the poor have no influence. Further, the mounting population pressure generating massive labour supply and resultant unemployment poses a major challenge to an economically stagnating country like Pakistan. The regression analysis of this study, to some extent, seems to indicate that the situation in Pakistan is very similar to Latin American countries where a high intergenerational persistence is documented. It is

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[32]Saima and Sajid (2011) provide evidence on non-inclusiveness of economic growth and inequalities of opportunities in education and employment sector of Pakistan over a period of 1990-2008.

[33] constituency built up here refers to the relation-based job findings i.e. political motivated appointments both at higher and lower job levels

worth reminding, however, that the analysis of this study is confined only to wage earners, as unavailability of data precludes the inclusion of the self-employed segment of the working class. It is imperative to highlight that data limitations as discussed in the paper must be kept in view while interpreting the results. It may further be added that information from one year data (cross-section) are insufficient to address the totality of the factors bearing upon the mobility (simultaneously determining education, occupation and income) where the each is intrinsically generated by multiple factors across generations over the time. Limited by data availability we tried to compensate by doing cohort analysis. Worth mentioning also is that this study primarily explores income mobility and only a slight description of educational and occupational mobility is provided just as a recap for the reader. This study, while exploring income mobility, denies in no way the totality of the inextricably entangled mobility and interlinkages between all three types of mobility namely educational, occupational and income. These interlinkages rest on a number of assumptions. For instance a non-merit based system, as it can be the case in many developing countries, ruptures the association between educational and income mobility as well as bears upon the occupational upward mobility. It must be kept in mind that not only the labour market has expanded in size but also has undergone compositional changes which can influence the above mentioned interlinkages in the three facets mobility.

APPENDIX-I

Variables

Annual Income: Annual income, the continuous variable, is constructed using information reported in Section 3 of PPHS (employment) and is a sum of all types of income. The log income of the son is used as a dependent variable in regression analysis.

Age: The completed years of age as reported by the respondents at the time of interview makes the variable "age". The age of the sons and fathers is categorised separately into different categories based on minimum and maximum values and the frequency distribution against each category. The sons' age is recoded into 9 categories, as those having 14 years fall at the most in the less than 15 years' category. Those who are older than 14 years are grouped together into 8 distinct groups with 5 years' interval. Similarly, the fathers having the age of up to 34 years are categorised into less than 35, and those having more than 34 are grouped together into 8 distinct groups with 5 years interval.

Education: The completed years of education, excluding all information on school going individuals, originally consisting of 16 discrete and 6 nominal categories, is recoded into 6 categories. Those who have no education are defined as *never attended school*; those who have availed 1 to 5 years of schooling as *up-to primary*, 6 to 8 as *middle*, 9 to 10 years as *matriculation*, up to 14 as *graduation* and those who have education equivalent to at least 15 years of schooling are categorised as *post graduates and merged into graduates*.

Occupation: The respondent was asked about the type of profession he/she is employed at the time of interview. Initially, occupation of respondent is coded into 10 different categories according to the nature and type of profession and then it is further recoded into 4 major categories to be used in descriptive analysis and transition matrices.

These variables along with their categorical coding are illustrated below

Variable	Coding Categories
Age (Son)	(1)Less than 15, (2)15-19, (3)20-24, (4)25-29, (5)30-34, (6)35-39, (7)40-44, (8)45-49 & (9)50 and above.
Age (Father)	(1) Less than 35, (2)35-40, (3)41-45, (4)46-50, (5)51-55, (6)56-60, (7)61-65, (8)66-70 & (9)71 and above.
Education	(0)Never attended school, (1)Up-to Primary, (2)Middle, (3)Matriculation, (4)Graduation *, (5)
Occupation (original coding)	(1)Armed Forces, (2)Professionals, (3)Managers, (4)Technical and Associate Professionals, (5)Clerks, (6)Services, (7)Skilled Agri-Workers, (8)Crafts and Related, (9)Operators & (10)Elementary
Occupation-2 (recoded)	(1)Armed Forces/Elementary, (2) Clerks/Services/Skilled Agri-workers/ Crafts and Related/ Operators, (3)Technical and Associate Professionals & (4)Managers/ Professionals

*Also includes poly-technique, FA, CT, BA and B.Ed, MA, M.Sc., M.Ed., Engineering, Medical and Degree in Law.

APPENDEX-II

DESCRIPTIVE ANALYSIS

This appendix details the information on age, education and income of fathers and sons. The unit of analysis is working fathers and sons reporting positive income. The age limit (> 20 years) for sons' sample was put to exclude sons who were still studying. The mean age of the fathers is 54.81 years while that of the sons is 30.07 years. The minimum age for the fathers was observed to be 25 years while the maximum age of 88 and 80 years were registered for fathers and sons respectively.

DESCRIPTIVE STATISTICS

Fathers	Mean	Min	Max	St.dev	N
	Working Fathers Reporting Positive Income				
Full Sample					
Age	54.81	25.00	88.00	9.71	1367
Education	3.07	0.00	16.00	4.02	1362
Annual Income	116881.45	11.00	3070000.00	175955.00	1367
Urban Sample					
Age	53.19	27.00	76.00	8.71	393
Education	4.19	0.00	16.00	4.39	391
Annual Income	104098.73	11.00	967152.00	105101.00	393
Rural Sample					
Age	55.46	25.00	88.00	10.02	974
Education	2.61	0.00	16.00	3.77	971
Annual Income	122039.16	132.00	3070000.00	197287.00	974
Punjab					
Age	54.27	28.00	88.00	9.53	659
Education	3.24	0.00	16.00	4.02	655
Annual Income	101561.16	11.00	3070000.00	180782.00	659
Sindh					
Age	54.27	25.00	79.00	10.11	388
Education	2.90	0.00	16.00	3.58	388
Annual Income	104048.53	132.00	1872500.00	165343.00	388
KPK					
Age	56.46	34.00	81.00	9.00	211
Education	3.69	0.00	16.00	4.73	211
Annual Income	167763.03	7000.00	1000000.00	145365.00	211
Balochistan					
Age	56.75	38.00	82.00	10.26	109
Education	1.41	0.00	16.00	3.59	108
Annual Income	156690.86	10000.00	1296000.00	211513.00	109
	Sons>21 Years Reporting Positive Income				
Full Sample					
Age	30.07	21.00	80.00	7.72	1900
Education	6.28	0.00	16.00	4.85	1896
Annual Income	134943.60	5.00	4200000.00	210265.00	1900
Urban Sample					
Age	28.66	21.00	62.00	6.77	460
Education	7.11	0.00	16.00	5.03	457
Annual Income	126564.61	5.00	4200000.00	247584.00	460
Rural Sample					
Age	30.52	21.00	80.00	7.95	1440
Education	6.02	0.00	16.00	4.76	1439
Annual Income	137620.23	2000.00	2200000.00	196882.00	1440
Punjab					
Age	29.92	21.00	64.00	8.07	722
Education	6.27	0.00	16.00	4.45	719
Annual Income	128885.22	5.00	2200000.00	205599.00	722
Sindh					
Age	30.01	21.00	80.00	7.74	500
Education	5.07	0.00	16.00	4.87	500
Annual Income	111179.38	2400.00	4200000.00	254622.00	500
KPK					
Age	30.42	21.00	59.00	7.44	525
Education	8.08	0.00	16.00	4.64	524
Annual Income	161022.04	6000.00	1560000.00	147971.00	525
Balochistan					
Age	29.74	21.00	57.00	6.91	153
Education	4.20	0.00	16.00	5.23	153
Annual Income	151708.87	10000.00	2400000.00	242613.00	153

It is important to note that the maximum age reported for the father was 105 years under no restriction but limiting the sample to fathers who are currently working gave 88 years as the maximum age for fathers. The condition of "working fathers' was set as the reported income was to be used in analysis for which both fathers and sons must be working at the time of survey. No major differences were observed for the mean age of the father across the provinces of Pakistan, but the minimum age of fathers varied across the provinces and was 38 years for fathers residing in Balochistan. Similar variations for maximum age were observed for sons across the sample.

The minimum average education of 1.4 years is observed for fathers residing in Balochistan. A clear divide is visible in rural and urban areas where fathers have an average education of 2.6 and 4.2 years respectively. Following the fathers, sons residing in Balochistan recorded a minimum (4.2) average educational years while the situation is, though surprisingly, much better in KPK where the sons' generation has, on average, 8 years education. The rural urban divide, in the son's generation, seems to be minimised and no major differences in educational years are observed. Sons earn, on average, more than the fathers as is evident from the mean incomes. But interestingly, the sons' generation in KPK and Balochistan, though the difference is negligible, earns less than the earnings of the fathers. Fathers belonging to Punjab and sons belonging to Sindh reported the highest amount of annual earnings respectively. A detailed analysis of earnings will be offered in the next section of this paper.

Appendix III

Appendix IV

Appendix V

Appendix VI

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