

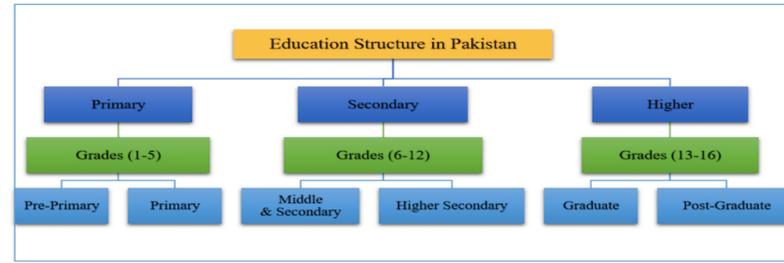
The Impact of Income and Socioeconomic Characteristics on Education: A Gender Differences Analysis



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Introduction

- Knowledge stimulates the stock of human capital (Barro et al., 2013)
- Gender equality in education helps to achieve MDGs (World Bank 2019)
- Pakistan: towards UPE and development in education sector (Chaudhary et al., 2009)
- Lowest expected years of schooling
- Out-of-school children in millions
- Government initiatives (APLs, UFGE, etc.)
- Bias treatment and cost-effective analysis
 - Parental preferences
 - Time allocation
 - Permanent vs Temporary residents
- Per capita income & education investment



Objectives

- To study the importance of gender differences in education by focusing females of Pakistan by per capita income, individuals and socioeconomic characteristics of the households
- To implement an empirical strategy for dealing potential endogeneity for non-linear models by exploiting exogenous variation of income shocks, windfall income and family background characteristics with 2SRI approach
- To capture discrimination and bias treatments by different parameters of inequalities and gender effect by Oaxaca-Type decomposition

Previous Studies

- Economic development between developed and developing countries (Klasen 2015)
- Gender discrimination in achieving first class degree (Robb et al., 2012)
- Difference in performance by budget (Lloyd et al. 2005; Sathar et al., 2005)
- Bias treatment by personal and external communal factors (Kingdon 2002)

Data, Model & Variables

- Micro data from the Pakistan Social and Living Standards Measurements (PSLM) survey, from 2005 to 2016 (Survey rounds 2005-06, 2007-08, 2010-11, 2011-12, 2013-14 and 2015-16) for 80000 households approximately
- Ordered Logit Model and Logit Model

- Dependent variables:
- Education attainment = $\begin{cases} 0 = \text{None education} \\ 1 = \text{Primary education (Grade 1 - 5)} \\ 2 = \text{Secondary education (Grade 6 - 12)} \\ 3 = \text{Tertiary education (Grade 13 - 16)} \end{cases}$
 - Current enrollment = $\begin{cases} 1 = \text{Currently enrolled in school.} \\ 0 = \text{otherwise} \end{cases}$

Explanatory variables: Individual, Household and community characteristics
 Inequality Parameters: Gini, AYS, SD, Gender gap, Gender Difference, Gender gap
 The structural model for latent education is, $Y_i^* = x_i\beta + \varepsilon_i$ econometric model,
 $Education\ Achievement = f(PC\ Income, Individuals., HH, Provinces + \varepsilon_i)$

In every ten female students only two are optioning to continue their higher education



Source: Pakistan Education Statistics 2015-16 | Source Link: <https://goo.gl/PDsk8C>

Results

- Positive relationship between education achievement and per capita income and significant transformation (Jacob 2002), educational transition is higher from primary to secondary education attainment
- Probability of education attainment of the girls is equally significant as boys however, associated socio-economic characteristics are playing major role in the related marginal differences (Orepoulos et al., 2007)

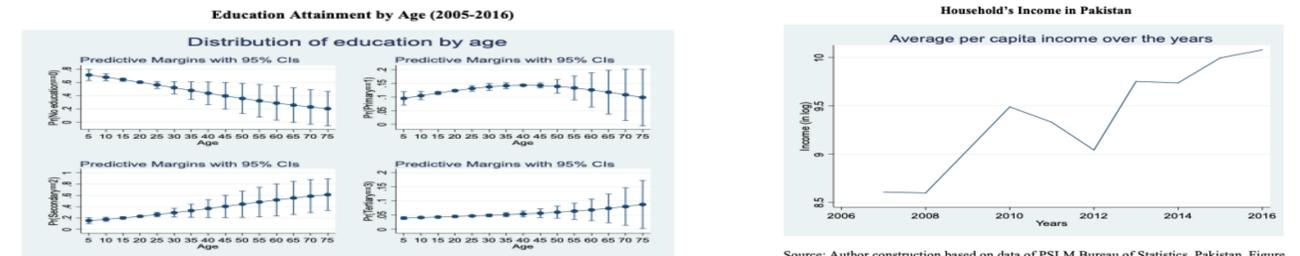
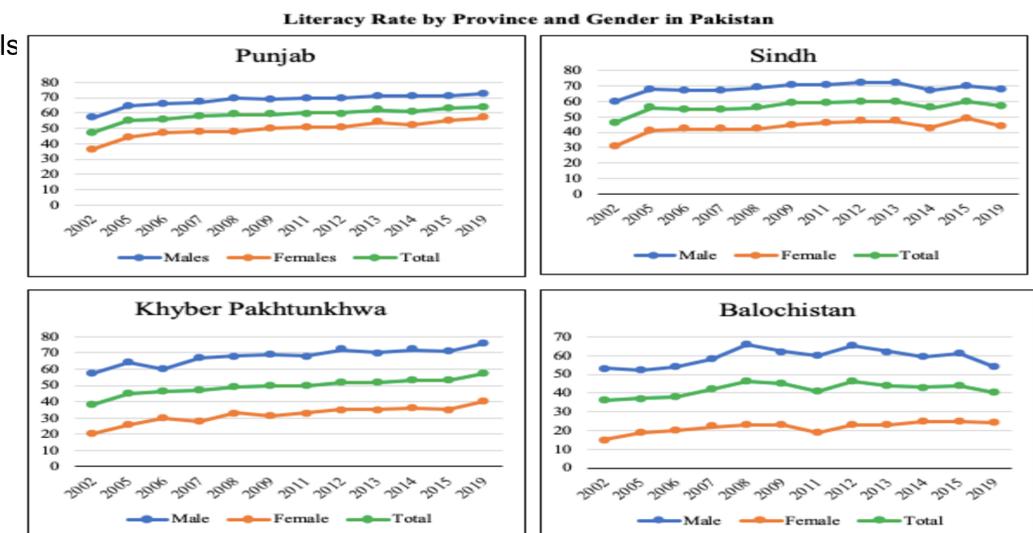


Figure describes the predictive margins between age and education levels. The probability to complete primary education decreases after the age 40, whereas, it is opposite for the tertiary level. Meanwhile, with the increase of age, it is more likely to complete secondary education level.

- Results suggest that income per capita, educated members, digital access and provincial heterogeneity significantly improve boys' education attainment and current enrollment
- Gini coefficient and educational inequalities provide more education achievement gap among girls
- 61 and 41 percent explained gender disparities in education attainment and current enrollment by Oaxaca decomposition; however, most of the variations remain unexplained
- Effect of age in boys determine economic returns at higher levels (Freedom et al., 1990)
- Occupational heterogeneity: Lower-income families provide higher aspirations (Chowdhary et al., 2011)
- Alternative specification: Girls' education likely to reduce income 7 times more than boys

Robustness Tests

- Lower returns by girls
- Ordered Probit & Probit Models
- Per capita expenditure
- Heterogeneity & provinces
- Different age groups (13-24)
- Control Function approach



Source: Author construction based on data of PSLM Bureau of Statistics, Pakistan. Figure shows the percentage of the literacy rate over the census of the years in different province. The statistics reveal the highest rate of literacy rate overall in Punjab, contrary, KPK and Balochistan have minimum rate of female literacy rate especially in 2009 to 2011.

Policy Implications

- Reforming education policies by prioritizing rural and tribal areas
- Allocation of incentives, scholarships and financial support on merit for talented and hardworking females
- Controlling gap between having enrolled and not having enrolled by considering low-income groups of the society
- Improving supply of education with mobile learning and by collaboration of federal and local governments
- Economic policies that can facilitates the income generation and transitional effect of education for gender equity

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