



Accessing higher education in developing countries: Panel data analysis from India, Peru, and Vietnam

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ABSTRACT

We use unique individual-level panel data from India (Andhra Pradesh), Peru, and Vietnam on a cohort of individuals surveyed from the age of 8 years to 19 years to study factors affecting enrolment in higher education in these middle-income countries. We document (a) that similar to nationally representative data, the proportion having accessed higher education at this age is high (~35–45 per cent); (b) that there are steep gradients in higher education access across wealth and parental education; (c) that a substantial part of the gradient with regard to parental education is explained by parental and child aspirations for education, at 12 years of age, and previous measures of learning; (d) that in contrast, wealth gradients decline much less with the inclusion of these variables, indicating that the correlation between household economic circumstances and higher education access is only partly due to differences in early-childhood human capital formation; and (e) that there are important differences in terms of gender in access to levels of higher education (favouring boys in India and girls in Vietnam) and in the association of various household and individual characteristics and parental and child aspirations with enrolment in higher education by 19 years of age. To the best of our knowledge, this is the first such comparative longitudinal analysis of access to higher education in developing country settings.

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1. Introduction

Education levels have risen rapidly and impressively around the world in recent decades (Barro & Lee, 2006). Enrolment in primary schooling, an explicit global policy target in the Millennium Development Goals, is near-universal in most countries (UNESCO, 2015). Access to secondary schooling, while not as high, has also seen a rapid rise and also is now an international target for the Sustainable Development Goals.

Our focus in this paper is on the subsequent, tertiary, stage of education. In particular, we seek to analyze the determinants of access to higher education from a life-cycle perspective in the context of developing countries. While higher education has also increased rapidly in many countries in the last two decades, we know much less about the relevant life-cycle determinants of access, especially in developing countries.¹ Across disciplines, most analysis on this topic in developing countries has been constrained

to only using cross-sectional data and a limited set of factors that may determine access. These largely focus on socio-economic background and gender – see, e.g., Chakrabarti (2009) in India; Ogawa and Limura (2010) in Indonesia; Torche and Costa-Ribeiro (2012) in Brazil; and Vu, Le, and Muhajarine (2013) in Vietnam. However, these studies do not take into account other factors from childhood or adolescence, including, crucially, measures of human capital from earlier periods. The lack of knowledge in this area contrasts with the extensive literature on this topic in developed countries for which rich longitudinal data is available.² And yet, due both to the rising prevalence of higher education and the changing economic structures of many developing countries, especially those now attaining middle-income status, questions of access to higher education are already

² For panel-based analyses of the determinants of access to higher education in the USA and the UK, which are closest in motivation to our own work, see for instance Cameron and Heckman (1998), Cameron and Taber (2004), Cameron and Heckman (2001), Keane and Wolpin (2001), and Chowdry, Crawford, Dearden, Goodman, and Vignoles (2013). Additionally, several papers whose primary focus is on specific interventions at earlier school-going ages use access to higher education as a relevant outcome variable: examples of such studies include those of school quality (Deming, Hastings, Kane, & Staiger, 2014), high-stakes performance incentives in high schools (Angrist & Lavy, 2009), and Charter schools (Angrist, Cohodes, Dynarski, Pathak, & Walters, 2015).

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¹ For a review of global trends in higher education in the last decades, see Schofer and Meyer (2005).

worth considering and likely to increase in importance in the near future.

We attempt to partially address this knowledge gap using rich panel data on a cohort of individuals collected for over a decade preceding college enrolment in three countries: India, Peru, and Vietnam. This is part of a group of countries selected by the Young Lives study to represent the key regions in the developing world, and a wide range of cultural, political, geographical and social contexts (Barnett et al., 2013). The data were collected using comparable instruments, thus allowing us to test the same set of hypotheses across countries. Specifically we focus on three related questions. First, we analyse patterns of access to higher education, focusing in particular on inequalities in access in terms of socio-economic characteristics and gender, to ask how inequitable is higher education access for recent cohorts. Second, we use panel-based decompositions employing rich child-level data collected for over a decade preceding college enrolment, to establish the extent to which these inequalities apparent in early adulthood reflect household circumstances through childhood vs. intrahousehold choices or the aspirations and investments in learning by individuals. Third, we investigate the extent to which the factors affecting eventual access to higher education vary in their effects across gender, across urban and rural areas, and across parental education.

These questions are of interest for several reasons, even in developing-country contexts where access may not be universal even at lower levels. First, higher education has a substantial effect on the future employment, wages, and security of tenure of individuals. Recent estimates – obtained from analysing data from 139 countries – show that the private returns to tertiary education are the highest among all the education levels (Montenegro & Patrinos, 2014).³ Given these high returns, inequalities in the access to higher education, especially on grounds of pre-determined social and economic characteristics, may therefore translate into inequality in outcomes later in life and may have significant distributional consequences.⁴ The possibility of non-pecuniary benefits, such as improvements to health, further accentuates this concern.⁵ Second, higher education may have direct effects on the economic prospects of countries (see e.g. Bloom, Canning, & Chan, 2006). Inequality in access to higher education, when arising from factors unrelated to future worker productivity, is then an illustration of a misallocation of resources with implications not only for the individuals but also for the broader economy.⁶ Finally, if higher education has intrinsic value for individuals, at least to some degree, then inequality in access to higher education can have direct consequences for individual welfare. These concerns are likely to be most relevant for middle-income developing countries. Typically, in such contexts, access to schooling has already increased rapidly, the economic structure

has changed, and the demand for higher education has also risen with rising per capita incomes. These trends, moreover, are likely to continue – and the salience of this area, therefore, is likely to grow.⁷

The data used in this paper come from the Young Lives study which has tracked a cohort of individuals born in 1994/95 over four survey rounds from 2002 to 2014 in India (Andhra Pradesh state only), Peru, and Vietnam.⁸ Although these countries were chosen in part due to the availability of rich data, they nevertheless offer an excellent spread across the range of developing countries for which the issues mentioned above are likely to become most relevant in coming decades. The data are particularly suitable for this analysis. In the most recent round of data collection, individuals in this cohort were aged around 19 years and had typically either made the transition into tertiary education or dropped out of education.⁹ This ensures that our information is on the most recent cohorts entering higher education in these countries, which is very useful given relatively rapid changes in higher education access in recent decades. Second, rich information on household circumstances, parental and child aspirations for education, detailed measures of academic achievement and ability, and household and individual investments in education allow for extensive analyses of the factors determining access. Third, the same instruments and a comparable sampling design were applied in the three countries.

The key contribution of our paper is to present what is, to our knowledge, the first investigation to focus on this increasingly important research area using a long panel, with detailed data and comparable measures. We document five main descriptive results: (a) that similar to nationally representative data, the proportion having accessed higher education at this age is high (~35–45 per cent)¹⁰; (b) that there are steep gradients in higher education access across wealth and parental education; (c) that a substantial part of the gradient with regard to parental education is explained by parental and child aspirations for education, at 12 years of age, and previous measures of learning; (d) that in contrast, wealth gradients decline much less with the inclusion of these variables, indicating that the correlation between household economic circumstances and higher education access is only partly due to differences in early-childhood human capital formation; and (e) that there are important gender differences in access to levels of higher education (favouring boys in India and girls in Vietnam) and in the association of various household and individual characteristics and parental and child aspirations with enrolment in higher education by 19 years of age. To the best of our knowledge, this is the first such comparative longitudinal analysis of access to higher education in developing-country settings.

The rest of this paper is divided as follows: Section 2 presents, as a background for our panel analysis, a general context of the study countries and an analysis of the trends in the access of men and women to higher education across successive cohorts in these three countries, using nationally representative datasets; Section 3 presents details about the Young Lives data and sample

³ This represents a shift given that, for a long period of time, primary schooling was thought to have the largest 'premium' (Psacharopoulos & Patrinos, 2004). In the case of India the 'college premium' quadruples the return of both primary and secondary schooling. In the case of Peru, the 'college premium' doubles the return to secondary schooling, though is still below the return to primary.

⁴ The role of education for promoting social mobility is well known. Torche (2014) reviews the evidence about determinants of intergenerational mobility in Latin America in the last decades. Among other aspects, the author emphasizes the role that educational policies that prioritized expenditure in access to higher education – when access to basic education was still far from universal – might have had on inequality persistence in this region of the world.

⁵ See, for instance, Cutler and Lleras-Muney (2008) and Oreopoulos and Salvanes (2011).

⁶ There is a large and rapidly growing macroeconomic literature on the misallocation of human capital. See, in particular Hsieh and Klenow (2009) and the recent summary article by Restuccia and Rogerson (2013). Apart from its direct contribution to factors of production (augmented human capital), higher education could affect economic growth through potential spillovers into the strengths and weaknesses of state institutions, which could also affect economic outcomes (Kapur & Crowley, 2008).

⁷ For instance, globalisation and skill-based technical change may raise the skill premium from tertiary education and cause a polarisation in labour earnings similar to that in the USA; if so, our first concern, of distributional consequences for individuals, is likely to become more germane. Similarly, skills developed in higher education may be particularly relevant for economic growth at the stage of development in which middle-income countries find themselves; in which case, our second concern, about the macroeconomic impacts of inequality in higher education access, may increase in relevance.

⁸ The Young Lives study also collects data on individuals in the same birth cohort in Ethiopia. We have not used data on Ethiopia in the present analysis since a substantial portion of the sample are yet to complete secondary education and because our focus here is restricted to middle-income countries.

⁹ The precise distribution is presented in Section 3.

¹⁰ For approximate comparison, according to official statistics the initial participation rate for 17–30 year olds in the UK was about 47% in 2013/14.

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