United Nations Research Institute for Social Development

Intergenerational Mobility in Education: Estimates of the Worldwide Variation

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Overcoming Inequalities in a Fractured World: Between Elite Power and Social Mobilization

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Acronyms

GDIM	Global Database on Intergenerational Mobility
GDP	Gross Domestic Product
IGM	Intergenerational Mobility
ISCED	International Standard Classification of Education
PISA	Programme for International Student Assessment
SDGs	Sustainable Development Goals
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization

Abstract

This paper applies the recently published "Global Database on Intergenerational Mobility" to present a detailed picture of the chances of mobility around the world. The empirical results obtained from transition matrices and linear regression models, and based on harmonized data for education attainments of children and their parents from 148 countries, point to three main conclusions: first, the likelihood of attaining intergenerational mobility differs widely across countries and word regions; second, intergenerational persistence in education is particularly strong in the least-developed countries; and, finally – and perhaps most importantly – the mobility gap between poor and rich countries has increased over time.

Keywords

Intergenerational mobility, inequality, education

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Introduction

Understanding the mechanisms behind the reproduction of income inequalities has gradually taken on an increasing importance for policymakers and the scientific community. A growing body of literature indicates that families play a powerful role in shaping children's abilities and, consequently, their achievements as adults. The "accident of birth" is a primary source of inequality and serves as an important mechanism in perpetuating income disparities in modern society.[1]

These studies address the issue of intergenerational mobility (IGM) and are aimed at investigating how much of children's education, earnings, income and wealth can be predicted by looking at the outcomes of their parents (Blanden and Macmillan 2011; Black and Devereux 2010). The topic of intergenerational mobility presents itself as an interdisciplinary field of research and refers to the extent to which socioeconomic outcomes, such as income, education or occupation, are likely to change across different generations within a single family. In the hypothetical case of a complete lack of IGM in education, for example, children from illiterate parents would become illiterate adults, while those from parents with a tertiary education would also achieve a college degree.[2]

The topic of IGM has attracted increasing attention outside of academia and is becoming one of concern for policymakers both in developing and industrialised countries. In the United Kingdom, for example, the "Social Mobility Commission" was established in 2016 with the goal of monitoring progress towards improving social mobility.[3] In 2013, United States President Barack Obama called for government action to address the lack of social mobility in the country (Obama 2013). The importance of "opportunities for all" was also raised during the first speech of former Brazilian president Dilma Rousseff on the occasion of her inauguration (Rousseff 2011).

The adoption of the 2030 Agenda for Sustainable Development in September 2015 brought the topic of IGM to the centre of the political debate. In many of the 17 Sustainable Development Goals (SDGs) it is possible to identify the ambition to increase opportunities for the younger generations, leading the world to a situation in which the chances of success are less dependent on inherited characteristics and more on individual choices. SDG 4, for example, aspires to "promote lifelong learning opportunities for all", indicating that the chances of education should be open to all people, irrespective of their individual characteristics or family (socioeconomic) background (United Nations, 2015).

This focus on education finds its fundaments in economic literature. Using the human capital theory, a wide range of empirical studies have pointed to a positive association between years of schooling and future earnings, highlighting in this way the crucial role of education for the chances of eventual social mobility. In this context, the investigation of current educational inequality can provide an important contribution to our understanding of the evolution of future income inequality.[4]

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1 See, for example, Roemer and Ünveren (2017), Fox et al. (2016), Guner (2015), Corak et al. (2014), Björklund and Jäntti (2009), Cunha and Heckman (2007), Duncan et al. (2005) and Mazumder (2005) for reviews of the literature.

2 Azam and Bhatt 2015; Corak 2004; Piketty et al. 2000.

3 Welfare Reform and Work Act of Great Britain, 2016. Accessed 19 September 2018. http://www.legislation.gov.uk/ukpga/2016/7/pdfs/ukpga_20160007_en.pdf.

4 Azam and Bhatt 2015; Blanden and Macmillan 2014; Gregg and Macmillan 2010.However, it should also be emphasized that some renowned authors advocate for the exceptional importance of non-education-related factors for social mobility, given that a (higher) education degree does not necessarily represent a guarantee of employment or higher earnings (see, for example, Arifin 2017; Young 2017; Haveman and Smeeding 2006).

In the face of rising political interest in social mobility, some clarifications on these matters are necessary in order to ensure that policy priorities are correctly determined and public resources allocated in an efficient way. It is in this sense that the present work intends to contribute to the academic literature. This paper aims to improve the understanding of the global variation in mobility providing useful insights for policy makers into internationally comparable measures of intergenerational persistence in educational attainment for 148 countries, covering around 96 percent of the world's population. This global investigation of mobility, difficult to undertake until recently, has been made possible by the publication of the "Global Database on Intergenerational Mobility" (GDIM), a harmonised statistical database on educational attainment and income level of individuals and their respective parents.

The GDIM was created by the Development Research Group of the World Bank and made available to the public in May 2018. In July of the same year, the World Bank published a detailed report entitled "Fair Progress? Economic Mobility across Generations around the World", wherein the empirical results from the GDIM were presented to the general public (Narayan et al. 2018). The main finding presented in this report is that intergenerational mobility tends to be much higher in high-income countries than in developing ones, a fact that has not changed over the last decades. According to the World Bank report, this gap between country groups has been widening because (on average) developing countries have not been able to increase mobility chances for their population for those born during the last forty years.

However, this simple way of categorizing (developing) countries may lead to misperceptions about progress in intergenerational mobility, and it is in this regard that this paper intends to contribute to the literature. The present study uses the main conclusion of the World Bank report as a starting point in order to investigate in more depth the *distribution of mobility chances* around the world. While the study of the World Bank was focused mainly on the comparison of mobility between two groups of economies (developing and high-income countries), this paper will expand this investigation presenting the mobility chances divided by geographic world regions and also four income groups, providing in this way more detailed insights for the understanding of the global variation of intergenerational mobility. The other relevant contribution of this paper to the literature is the presentation of empirical evidence for the development of educational attainment and inequality in schooling across the 148 surveyed countries. As we will see in the following sections, the success or failure of countries in increasing over time the average years of schooling in society plays a crucial role for mobility chances. However, for methodological reasons, this investigation was not part of the World Bank report.

The results of my analysis indicate a general improvement in educational attainment and at the same time a steady reduction in the inequality of schooling in all regions of the world over the last five decades. In relation to mobility, the empirical evidence points to two important mechanisms in the perpetuation of inequalities across generations. First, the chances of achieving educational success differ greatly between rich and poor countries, and, second, the intergenerational transmission of privileges is particularly strong in the least-developed countries. Around 60 percent of people born in Norway between 1980 and 1989 have attained a university degree, while the same proportion is only five percent in Mali. However, if a child in Mali is born into a family with a tertiary education, then their probability of achieving a college degree increases to 60.4 percent, greater than the likelihood of doing so in Norway.
Particularly relevant, and worrying, is the evolution of IGM over time. In low-income countries, intergenerational educational persistence for the generation born in the 1980s is greater than for

persons from the 1940s cohort, indicating that chances of mobility have actually decreased. Given that the more developed countries present the opposite trend, the mobility gap between poor and rich countries has become even bigger during the last few decades.

The remainder of the article proceeds as follows. In the next section, I summarize the current knowledge on the topic of IGM, focusing on the most relevant theoretical and methodological contributions. Section 3 presents the GDIM. The fourth section contains the empirical approaches used for the estimations, while the main empirical findings are reported and discussed in section 5. Finally, section 6 ends with the conclusions.

Understanding Intergenerational Mobility

A review of existing literature on the topic of IGM shows that empirical studies have used three different outcomes for the measurement of mobility: income, education and professional occupation.[5] However, independent of the outcome used for the measuring of mobility, these empirical estimations are not a straightforward matter, and all three of these approaches have methodological weaknesses (Björklund and Jäntti 2009; Hertz 2007). [6]

Ideally, an empirical investigation of income mobility across generations requires, for example, data on the lifetime (or permanent) income of parents and children.[7] This would require a survey that runs for up to 80 years, (equivalent to the whole length of parents' and their children's professional life) capturing the total income of both generations. However, in most international studies, this condition is not satisfied, because the databases used tend to contain only short-term information about income status, meaning only monthly or annual earnings (Björklund and Jäntti 2009; Hertz 2007).

Given this limitation, researchers estimate lifetime income based on short-term earnings.[8] Renowned studies have already demonstrated that this approach does not necessarily generate accurate estimates of permanent income, because these estimations are exposed to life-cycle biases.[9] This is the case when, at the time of the sample selection, parents are in an advanced stage of their career with at least 20 years of work experience, while their children are still at an early stage of their professional life (Black and Devereux 2010).

In the same way, the use of professional occupation categories for the measurement of IGM cannot be taken as a method free of bias (Altham and Ferrie 2007). As has been described in greater detail by Long and Ferrie (2013), the key problem with this measure is that the level of mobility is estimated based on (different) occupational structures for children and parents. Within this approach, researchers apply the same occupational classification for a parent's and child's

[5] Most notable among various contributions to the literature on IGM were the landmark studies of: Bratberg et al. (2017), Chetty et al.(2014b), Lee and Solon (2009) and Corak (2006) for income mobility; Azam and Bhatt (2015), Checchi et al. (2013), Daude (2011), Aydemir et al. (2013), Hertz et al. (2007) and Bourguignon et al. (2007) for education mobility; and, Torche (2014), Long and Ferrie (2013), Altham and Ferrie (2007), and Matras (1961) for occupational mobility.

[6] Concise and comprehensive literature overviews on the topic of IGM are provided by Fox et al. (2016), Jäntti and Jenkins (2015), Blanden (2013), Black and Devereux (2010), Björklund and Jäntti (2009), Mazumder (2005), Solon (1992), Piketty et al. (2000) and Checchi et al. (1999).

[7] The term "lifetime income" refers to the aggregate income which individuals have earned over their entire lifetime (Corneo 2015).

[8] Nybom and Stuhler 2017; Mazumder 2016; Black and Devereux 2010.

[9] See, for example, Mazumder (2005), Solon (1992), and Zimmerman (1992).

occupations and then investigate the association between rows and columns across the created transition matrices.

However, the empirical results tend to become biased in the case of a variation over time in the socioeconomic status related to occupations Some professional occupations can experience sharp deterioration in their status over years, changing in this way their market remuneration and their position within social classifications. In the last decades, for example, there was an increase in the demand for more skilled jobs. Therefore, it is reasonable to expect that the remuneration and socioeconomic status from workers in farming or in unskilled manual jobs is lower in the generation of children compared to parents (Altham and Ferrie 2007; Long and Ferrie 2013).

In view of these empirical limitations, the use of educational attainment is playing an increasingly important role for research on IGM and has been justified by the extensive literature confirming the strong association between educational attainment and lifetime earnings: basically, the higher the education level, the higher the earnings.[10] In contrast to income, the approach based on education has the advantage of being less exposed to a life-cycle bias. Generally speaking, individuals tend to finish their education around the age of 25 and the investigation of IGM can be carried out also with people at the beginning of their working lives.

In addition, the use of education as a measure of mobility can address the problem of informality in the labour market, mainly present in developing countries – where a significant portion of workers are in the informal sector (Azam and Bhatt 2015; Black and Devereux 2010). Compared to professional occupation, the use of educational attainment does not present the problem of estimation bias in case of a variation in the socioeconomic status across generations. As will be shown in the following sections, this approach allows us to take into account the changes over time in the socioeconomic status related to schooling (Nybom and Stuhler 2017; Jäntti and Jenkins 2015).

However, the use of educational attainment for the measuring of IGM presents two important limitations. First, it does not take into account the quality of education – thereby making the outcome an imperfect proxy for skill level. The World Development Report 2018, entitled Learning to Realize Education's Promise" (World Bank 2018), for example, makes clear that schooling is not the same as learning. In this policy report, the World Bank states that the quality of education is very low in many education systems around the world – particularly in low- and middle-income countries. The second limitation is that educational attainment does not capture