International Journal of Educational Development 62 (2018) 234–244

Contents lists available at ScienceDirect

International Journal of Educational Development

journal homepage: www.elsevier.com/locate/ijedudev

Inequality of opportunity in higher education in the Middle East and North Africa☆

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ARTICLE INFO

Keywords:
Inequality
Higher education
Socio-economic mobility
Education policy
Middle East and North Africa

ABSTRACT

Struggles with inequality have been prominent in the Middle East and North Africa in the aftermath of the Arab Spring. This paper examines the extent and drivers of inequality of opportunity in attaining higher education in Egypt, Jordan, and Tunisia. We find that inequality is similarly high in Egypt and Tunisia, but moderate in Jordan. Background characteristics affect attainment even after accounting for test scores, which are themselves influenced by background. Particularly in Egypt and Tunisia, where higher education is free of charge, public spending on higher education is regressive. Thus, a theoretically meritocratic and equitable system perpetuates inequality.

1. Introduction

A perceived lack of social justice played a key role in the recent events in the Middle East and North Africa (MENA) region, referred to as the Arab Spring (World Bank, 2013). However, standard economic measures, such as income, are not unusually unequal in the region, nor has inequality increased substantially over time (Assaad et al., 2016b; Belhaj Hassine, 2015, 2011). One explanation for this apparent contradiction is that the region does not have high inequality in easily measurable economic outcomes, such as income, but instead in human development, such as education (Assaad and Krafft, 2016). This paper investigates one aspect of inequality in human development that is under-researched in the region and throughout the globe: access to higher education.

Substantial inequalities have been identified in learning and attainment for pre-university levels in the MENA region (Assaad and Krafft, 2015; Assaad et al., 2014; Bouhlila, 2017; El-Kogali and Krafft, 2015; Salehi-Isfahani et al., 2014). Assessing inequality in higher education is more difficult, since young people often leave their families around the age of higher education, precluding an examination of the relationship between background and higher education using typical household survey data. The availability of new data allows us, in this paper, to assess inequality of opportunity in higher education in Egypt, Jordan, and Tunisia.

The comparative element of this work has important implications for how policies, especially free higher education, may enable or inhibit access to higher education. While Egypt and Tunisia offer free higher education, Jordan does not. Globally, free higher education has been demanded in protests and proposed in political platforms as one method to combat inequality (e.g. Arango et al., 2016; Mateo, 2016; McKinley, 2017; South African Government News Agency, 2017). However, calls for free higher education as a solution to inequality lack solid empirical support. Evidence from developed countries suggests free higher education may increase enrollments but is unlikely to be the most effective approach to reducing inequality. Depending on policy design, free education may even increase disparities (Dynarski, 2000; Heller and Marin, 2004). This work contributes comparative evidence from developing countries on the relationship between free higher education and inequality. The potentially mediating role of test scores in determining higher education access is also examined.

2. Background

2.1. Education systems

Egypt, Jordan and Tunisia have similar education systems. Pre-primary education is attended by between 20%–40% of children, primarily from well-off families (El-Kogali and Krafft, 2015).

☆ We appreciate the comments of participants at the Middle East Studies Association 2016 annual conference, especially the insights of our discussant, Melani Cammett. We would like to thank the participants in the Youth as Subjects, Objects, and Agents (YaSOA) Collaborative Research Circle, and especially our discussant Deborah Levison, for helpful comments and suggestions. We thank Kristine West and Caitlyn Keo for helpful comments on paper drafts. This paper was supported by St. Catherine University's Collaborative Undergraduate Research Program.

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https://doi.org/10.1016/j.ijedudev.2018.05.005
Received 7 October 2017; Received in revised form 14 April 2018; Accepted 20 May 2018

Students typically enter school at age six to start primary (or basic) education. In Egypt and Tunisia, the primary stage lasts six years, followed by a three-year preparatory (lower secondary or middle school) phase. In Jordan, the basic education stage lasts ten years, followed by (upper) secondary education, either in the vocational or general secondary (academic) track. In Egypt, general secondary essentially guarantees access to higher education, while in Jordan and Tunisia examinations at the end of secondary determine access to higher education. All three countries also have multiple types of higher education, including less selective two- or three-year programs as well as four-year programs.

2.2. Access to education

Education is commonly framed as a basic human right. Free, compulsory primary education is included in the Convention on the Rights of the Child (CRC), to which Egypt, Jordan, and Tunisia are signatories (United Nations Office of the High Commissioner for Human Rights, 1990). Equal opportunities for access to education are a particular focus of the CRC. The CRC further emphasizes making higher education accessible to all, while recognizing capacity constraints. In Egypt, the right to a free education is included in the constitution (Egypt State Information Service, 2014). Jordan guarantees the right to free basic education (Independent Election Commission of Jordan, 2016). Tunisia's 2014 constitution also guarantees the right to free education at all levels (Constitute Project, 2014).

In the countries we study, access to higher education is supposed to be determined by test scores in the preceding levels of school. The test scores that young people achieve in school, and therefore their access to higher education, are in turn determined by a combination of their efforts (in studying) and the familial and school resources that support that studying. Paying for private higher education may be a method for wealthier families to circumvent test score requirements at public institutions that precluded access overall or access to preferred specializations (Barsoum, 2017; Krafft et al., 2017).

3. Inequality

3.1. Theoretical framework

Drawing on the concept of equality of opportunity (Roemer, 1998), inequality in outcomes such as attending higher education can be partitioned into two parts: efforts and circumstances. Inequality due to efforts includes things within the control of individuals, such as time spent studying. Inequality due to circumstances includes factors outside the control of individuals, such as their sex or their families' resources. Inequality due to effort is morally acceptable and socially desirable, as it incentivizes effort. Inequality due to circumstances is morally repugnant and termed *inequality of opportunity*. It is this type of inequality that we are concerned with in this paper.[1]

Inequality of opportunity could manifest itself directly, for instance when youth are required to attend only universities in their region. Inequality of opportunity could also occur indirectly, by affecting efforts. For instance, the family needing children to work could cut into studying time, and thus affect effort. This paper disentangles the indirect effects of circumstances, as mediated through test scores, and circumstances that affect higher education access directly (Bourguignon et al., 2007). Comparing the effects of different circumstances in the models without and with test scores can be informative as to whether circumstances are affecting access directly, or indirectly through preceding educational experiences.

3.2. Existing evidence on inequality in education

Inequality of opportunity starts before children enter primary, with substantial inequality of opportunity in early childhood care and education (ECCE) enrollment in MENA (El-Kogali and Krafft, 2015). While Egypt, Jordan, and Tunisia have essentially achieved universal primary enrollment, this is a relatively recent development. Examining seven MENA countries with data from the 2000s, Assaad et al. (2014) find that, while there are disparities by sex and background across all the studied countries, Tunisia, Egypt, and Jordan have the lowest chances of vulnerable children never entering school. Essentially all advantaged children enter secondary, while Egypt and Jordan, followed by Tunisia, do the best in providing secondary access to vulnerable youth. By this stage there are already large disparities that will affect higher education access. For instance, among the most vulnerable only 41% of boys and 30% of girls enter secondary in Tunisia. Inequality of opportunity is also visible in educational achievement, measured by international assessments during primary and secondary (Bouhlila, 2017; Hashemi and Intini, 2015; Salehi-Isfahani et al., 2014). Disparities in achievement and attainment may be linked to varying degrees across countries.

Since higher education aged youth do not all live with their families (and thus background is difficult to measure), there is little evidence on inequality of opportunity in higher education in MENA. Existing studies pertain to Egypt, where there is substantial inequality in higher education access (Assaad, 2013; Cupito and Langsten, 2011). For example, only 9% of youth from the poorest quintile of households attend university compared to 80% of youth from the richest quintile of households (Assaad, 2013). Father's education and especially mother's education also are important determinants of access. The availability of private higher education may also affect access. In Egypt and Jordan, attending private higher education is more common for men than women, more prevalent in certain regions, and shaped by socio-economic status (Assaad et al., 2017b; Buckner, 2013).

4. Methods

We empirically model the probability of attaining higher education as a function of individual circumstances and test scores with a logistic model. To quantify inequality of opportunity in higher education, we rely on the dissimilarity index (D-index) (de Barros et al., 2009, 2008). While numerous measures of inequality exist, the most common measures, such as the Theil or general entropy measures, are meant for a continuous outcome. The D-index is commonly used for quantifying inequality in binary outcomes, such as attaining a certain level of education. The D-index is based on comparing the mean p_i for unique circumstance group i to the population mean $\overline{p}$ with sample weights or population shares α_i as follows:

$$D = \frac{1}{2\overline{p}} \sum_{i=1}^{k} \alpha_i \, |p_i - \overline{p}| \tag{1}$$

The D-index can be interpreted as the percentage of opportunities that would have to be redistributed from groups that are better off to groups that are worse off for equality of opportunity to have prevailed.[2] The D-index ranges from 0 to 1 (0% to 100%), with zero indicating

[1] There are a number of important caveats to implementing this framework. First, inequality of opportunity can only be assessed insofar as circumstances are measured. Second, particularly for education during childhood, some argue that inequalities in children's outcomes should be attributed entirely to circumstances (Hufe et al., 2015; Kanbur and Wagstaff, 2014). Since higher education is conditional on preceding educational performance, this argument might also be extended to higher education.

[2] As an example, consider the outcome of school enrollment. Pretend there are 200 children from two equal groups: 100 poor children and 100 rich children. Only 10 of the poor children (10% group mean) attend school while 20 of the rich children (20% group mean) are in school. There are 30 children in total in school (15% population mean). Calculating the D-index for this case shows that 16.7% of total opportunities to go to school (5 of the 30 spots) need to be reallocated from the rich to the poor for equality of opportunity to prevail. This yields 15 spots for each group and identical group means of 15%, equality of opportunity.