Uneven Odds, Unequal Outcomes

Inequality of Opportunity in the Middle East and North Africa

Nandini Krishnan, Gabriel Lara Ibarra, Ambar Narayan, Sailesh Tiwari, and Tara Vishwanath

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Preface and Acknowledgments

The Middle East and North Africa (MNA) is a region in turmoil. The pervasive sense of discontent and disenchantment among the people in the region appears at odds with the conventional measures of economic well-being. Extreme poverty is very low in most countries, and economic inequality is, on average, lower than in other parts of the world, with Gini coefficients ranging between 0.3 and 0.45. However, data from the World Values Survey and Gallup shows that low and even declining inequality in several countries in the region belies heightened perceptions about inequality and a growing sense of unfairness and lack of social justice.

Access to jobs, particularly for young entrants, has been a well-documented developmental challenge in this region, and perceptions data strongly corroborate this: satisfaction with the availability of jobs as well as with the overall job market situation is severely low and declining in several countries in the region. Life satisfaction and optimism about the future is lower in MNA countries than in the rest of the world, even compared to several countries in Latin America with the same or higher level of inequality. Likewise, in comparison to a decade ago, a larger fraction of citizens in the MNA region identifies with the lower classes and a smaller fraction with the upper classes, suggesting eroding living standards and widespread perception of downward economic mobility. What explains these patterns?

The central hypothesis examined in this report is whether inequality of opportunities (as opposed to inequality of outcomes)—starting from early in life and culminating into opportunities in the labor market—explains part of what many have labeled "the Arab inequality puzzle." The first chapter argues that understanding the inequalities in opportunities for economic mobility may provide an analytical basis on which the foundation for a more peaceful and prosperous society can be built. Accordingly, subsequent chapters of the report analyze the extent to which access to jobs depends on circumstances that individuals have no influence upon, such as family background, location, ethnicity, and gender. In addition, they analyze how access to basic services (such as in education and health) among children is associated with these circumstances, to understand the extent to which disadvantages in opportunities accumulate among some groups from the early years of life.

Overview

The Middle East and North Africa (MNA) is a region in turmoil. The pervasive sense of discontent and disenchantment among the people in the region appears at odds with the conventional measures of economic well-being. Extreme poverty is very low in most countries, and economic inequality is on average lower than in other parts of the world, with Gini coefficients ranging between 0.3 and 0.45. However, data from the World Values Survey and Gallup show that low and even declining inequality in several countries in the region belies heightened perceptions about inequality and a growing sense of unfairness and lack of social justice.[1]

Life satisfaction and optimism about the future are lower in MNA countries than in the rest of the world, even compared with several countries in Latin America with the same or higher levels of inequality. Compared with a decade ago, a larger fraction of citizens in the MNA region identifies with the lower classes and a smaller fraction with the upper classes, suggesting eroding living standards and widespread perception of downward economic mobility (figure O.1).

The lack of opportunities for economic mobility, in particular because of the persistent weakness in labor markets, appears to be a plausible explanation. In almost all countries in the region, the pace of job creation has been chronically low, and nowhere at the level required to absorb the growing and increasingly better educated work force. Unemployment in most MNA countries has been well above the average for low- and middle-income countries. The average unemployment rate in MNA has been greater than 10 percent in recent years, and Libya, the Republic of Yemen, and Tunisia have had the highest unemployment rates. High unemployment, coupled with growth rates that are lower than the average for low- and middle-income countries, suggest that countries in MNA share structural problems that have been preventing their economies from moving to a higher, sustainable, and job-creating growth path. Data from perceptions surveys strongly corroborate this: satisfaction with the availability of jobs as well as with the overall job market situation is severely low and declining in several countries in the region (figure O.2).

Job opportunities are not only scarce, but also distributed unevenly among the population. Job markets in almost all countries in MNA are segmented, with a

Figure O.1 Self-Specified Class Affiliations in the Arab Republic of Egypt, Jordan, and Morocco
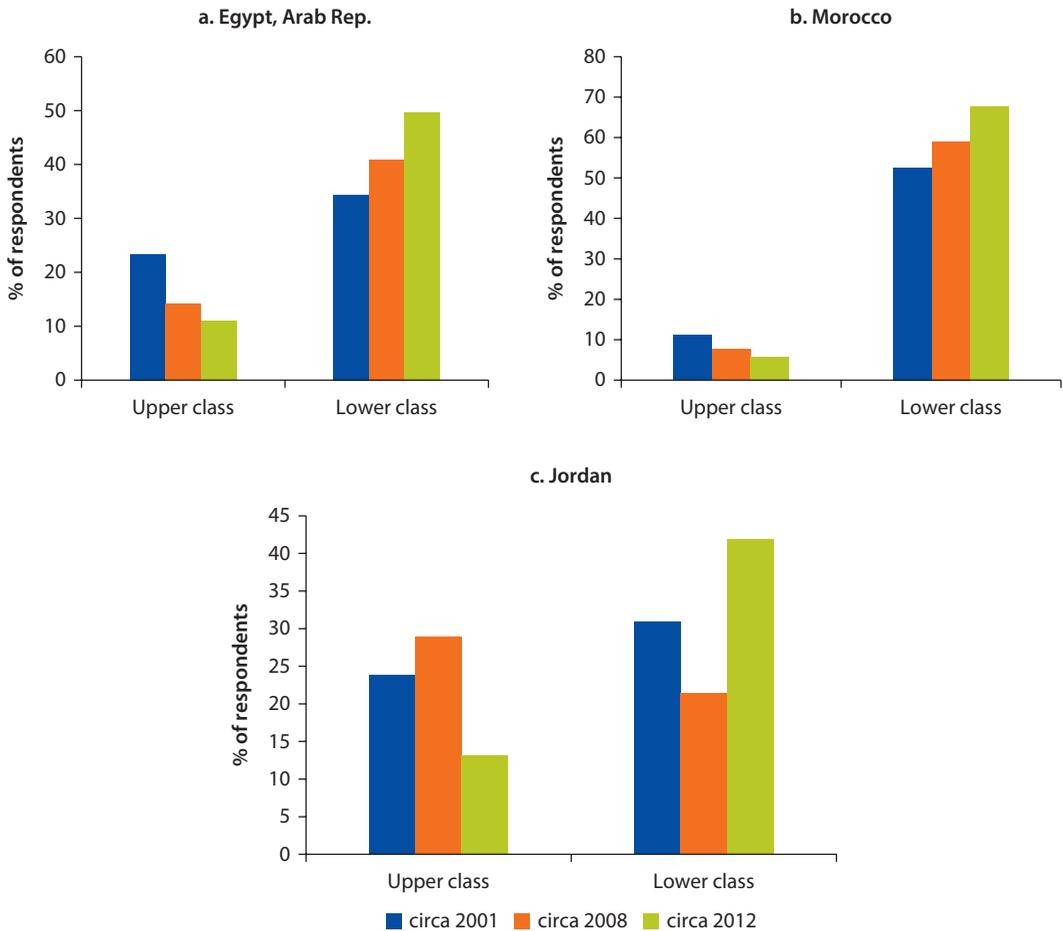
a. Egypt, Arab Rep.

b. Morocco

c. Jordan

■ circa 2001   ■ circa 2008   ■ circa 2012

Source: World Bank calculations based on data from the World Values Survey.
Note: Tunisia has only one data point. The World Values Survey is administered in different years in different countries, sometimes even in the same wave.

sharp division between the protected and the excluded. The demographic groups that appear to be the most disadvantaged are youth and women. Youth (ages 15–24 years) unemployment in MNA is among the highest in the world. The difference between the unemployment rate among youth and the overall unemployment rate—the so-called "youth unemployment gap"—is higher in the Arab Republic of Egypt, Jordan, the Republic of Yemen, Tunisia, and the West Bank and Gaza than the median figures for all other regions, which includes numbers as high as 22 percent in Egypt in 2005 and 16–18 percent in Tunisia in 2009 and 2010. Although there is fluctuation in the youth unemployment gap for all countries, the trends in Tunisia and West Bank and Gaza suggest a widening youth unemployment gap.

Figure O.2 Perceptions about the Job Market Situation in LAC and Comparator MNA Countries, 2010–2012
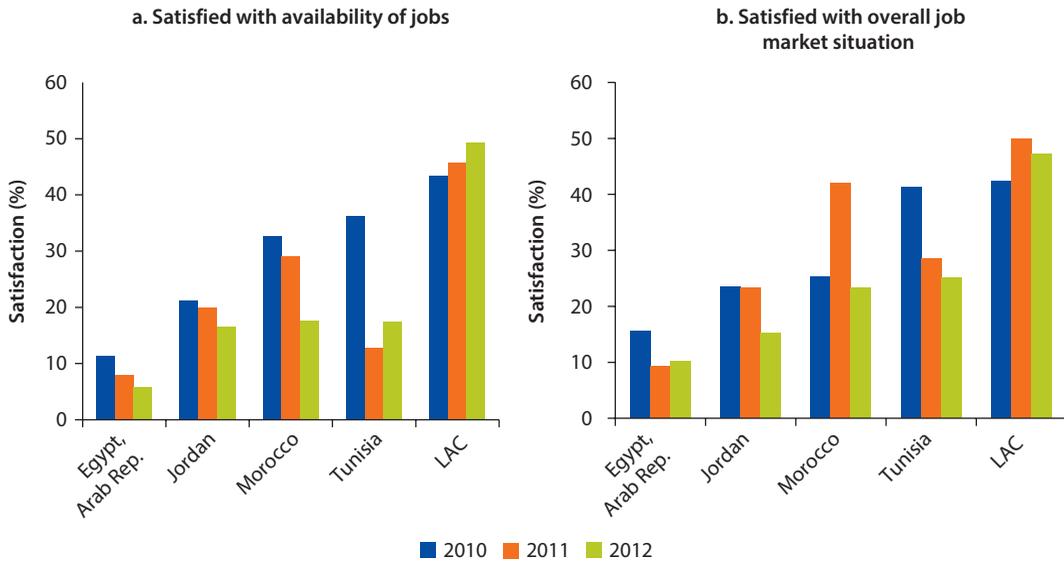
a. Satisfied with availability of jobs

b. Satisfied with overall job market situation

2010   2011   2012

Source: World Bank calculations based on data from Gallup.
Note: LAC = Latin America and the Caribbean; MNA = Middle East and North Africa.

Gender is another important dimension along which significant unemployment gaps exists in the region. The economic significance of the gender unemployment gap is amplified, considering the fact that labor force participation of women is already very low in the region, partly because of discouragement. The available estimates suggest that only a fourth of working age women in MNA participate in the labor force, which includes much lower rates in some of the fragile states, such as Iraq, the Republic of Yemen, and the West Bank and Gaza (World Bank 2013).

In addition, there are several peculiar features of the labor market in the region that accord distinct advantage to individuals of certain types. Among others, the culture of *wasta*—an Arabic word that roughly translates to "connection" or "clout" in English—is ubiquitous in all aspects of Arab life, including labor markets. Data from the 2013 Gallup World Poll suggest that over 60 percent of respondents in all MNA countries (with the exception of Qatar) agreed to the salience of *wasta* in their respective economies (figure O.3). The agreement rate appears to have been the strongest in Jordan and Lebanon.

To the extent that *wasta* represents the use of connections and networks to get ahead in the labor market, it is not a particularly unique feature of the MNA region; similar practices exist in other parts of the world as well, either formally or informally. It is also imaginable that to some extent individuals can cultivate such connections and networks. But the fact that these networks are deeply

Figure O.3 Youth Perceptions of the Role of *Wasta* in Getting Jobs in MNA Countries
Question: "In general, do you mostly agree or disagree with the following statement?
Knowing people in high positions is critical to getting a job (wasta)."

■ Percentage of those who disagreed with the   ■ Percentage of those who agreed with the
   above statement   above statement
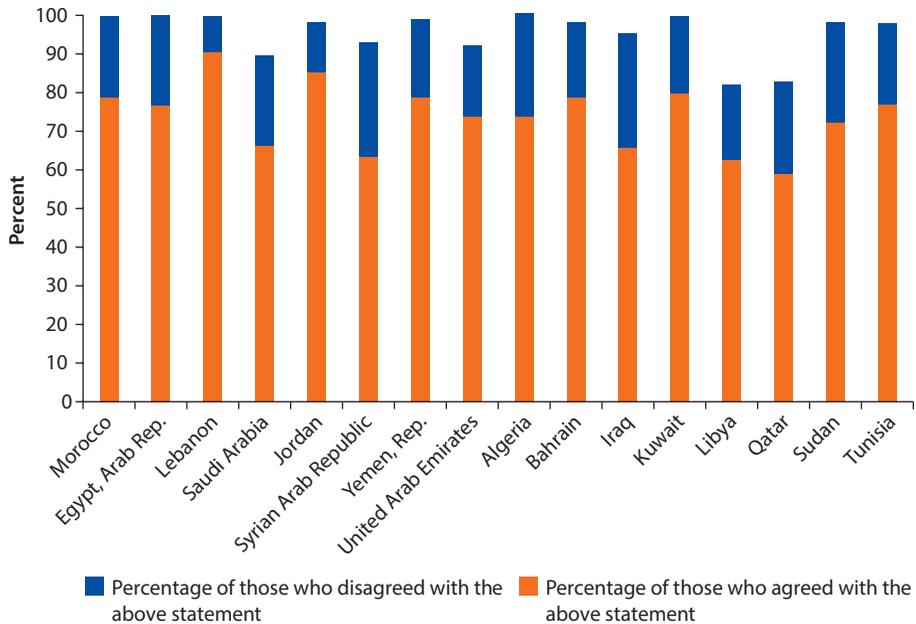
Source: World Bank calculations based on the 2013 Gallup World Poll Survey.

embedded in familial and tribal connections also implies that these are advantages that come largely as a consequence of the endowments allocated essentially by the lottery of birth.

The central hypothesis examined in this report is whether inequality of opportunity (as opposed to inequality of outcomes)—starting from early in life and culminating in opportunity in the labor market—explains part of what many have labeled "the Arab inequality puzzle," or the failure of conventional measures of inequality to account for the discontent that is prevalent in Arab societies. Resolving this puzzle and assessing the extent of inequality of opportunity for economic mobility that exists in MNA countries may provide an analytical basis on which the foundation for a more peaceful and prosperous society can be built.

A combination of complex factors is typically responsible for how unequal a society is and how that inequality is perceived. In part, inequalities in a society may reflect individual-level choices, such as whether a person chooses to attend college or the effort put into work, which many find to be less objectionable and even necessary to some extent for creating the incentives for individual enterprise and effort. Inequality of opportunity—the part of inequality that is linked to circumstances individuals are born into—is regarded quite differently, as it violates fundamental notions of fairness and mobility in most societies.

Although the most intense debates in development coalesce around overall inequality of income or wealth, the notion of inequality of opportunity has an intuitive appeal that can transcend ideological differences. For example, in one scenario, a group of people with vastly different sets of opportunities in life end up with vastly different outcomes, despite exerting the same amount of effort or making similarly sound life choices. In another scenario, individuals in a group, despite having similar opportunities, achieve vastly different outcomes because of differences in effort and life choices, and some element of random luck. If the opportunities (and the eventual outcomes) in the first scenario strongly favored those born into circumstances of privilege, most people would regard that to be much more problematic than the situation in the second scenario. The first scenario is unfair and causes enormous losses to society because of wasted human potential. By this argument, inequality of opportunity is likely to be objectionable by itself, whereas inequality of outcomes is objectionable largely to the extent that it is caused by inequality of opportunity. When the distribution of opportunities is linked to circumstances like ethnicity, gender, or family background, the upward mobility of an entire group of people can be impeded. For all these reasons, shifting the policy debate to inequality of opportunity can facilitate a political consensus on the nature of the problem and its underlying causes, which provides a common platform to debate the solutions.

Opportunities and life paths can diverge earlier in life if access to basic services such as health, education, and infrastructure are unequally distributed among children in their formative years. On average and benchmarked against other regions of the world, the MNA region does reasonably well on basic measures of children's access to education and health, based on the Human Opportunity Indexes for school attendance, timely school completion, full immunization, and child malnutrition. The coverage rates are high, and these opportunities are fairly equitably distributed among children of varying birth circumstances. But opportunities are far from universal in access to basic infrastructure, when opportunity is defined as access to a *bundle* of basic services, or when the *quality* of services is taken into account. Coverage of infrastructure services such as improved sources of drinking water and (especially) adequate sanitation is markedly lower, with significant disparities in how the services are distributed. Location of residence explains more than half the variation, with spatial advantages accruing to capital cities and large metropolitan areas that coincide with poles of economic activity. Coverage is also lower and inequality of opportunity is higher when "opportunity" is defined as having access to a bundle of basic services such that no single one is a substitute for another, rather than taking the services separately or one at a time.

When the standard for what constitutes an actual opportunity takes into account the *quality* of services, coverage rates drop and inequality of opportunity rises across all the indicators for which data are available. Children in the MNA region demonstrate lower basic proficiency in learning assessment tests than in other countries with comparable income levels (figure O.4). And the quality and reliability of public services in water, electricity, and sewage disposal are much

Figure O.4 Coverage and HOI for Basic Proficiency in Math, Reading, and Science, Based on PISA Scores of Selected Regions

a. Mathematics

b. Reading

c. Science

Legend: ■ HOI-EAP ■ HOI-ECA ■ HOI-LAC ○ Coverage ✳ HOI-MNA
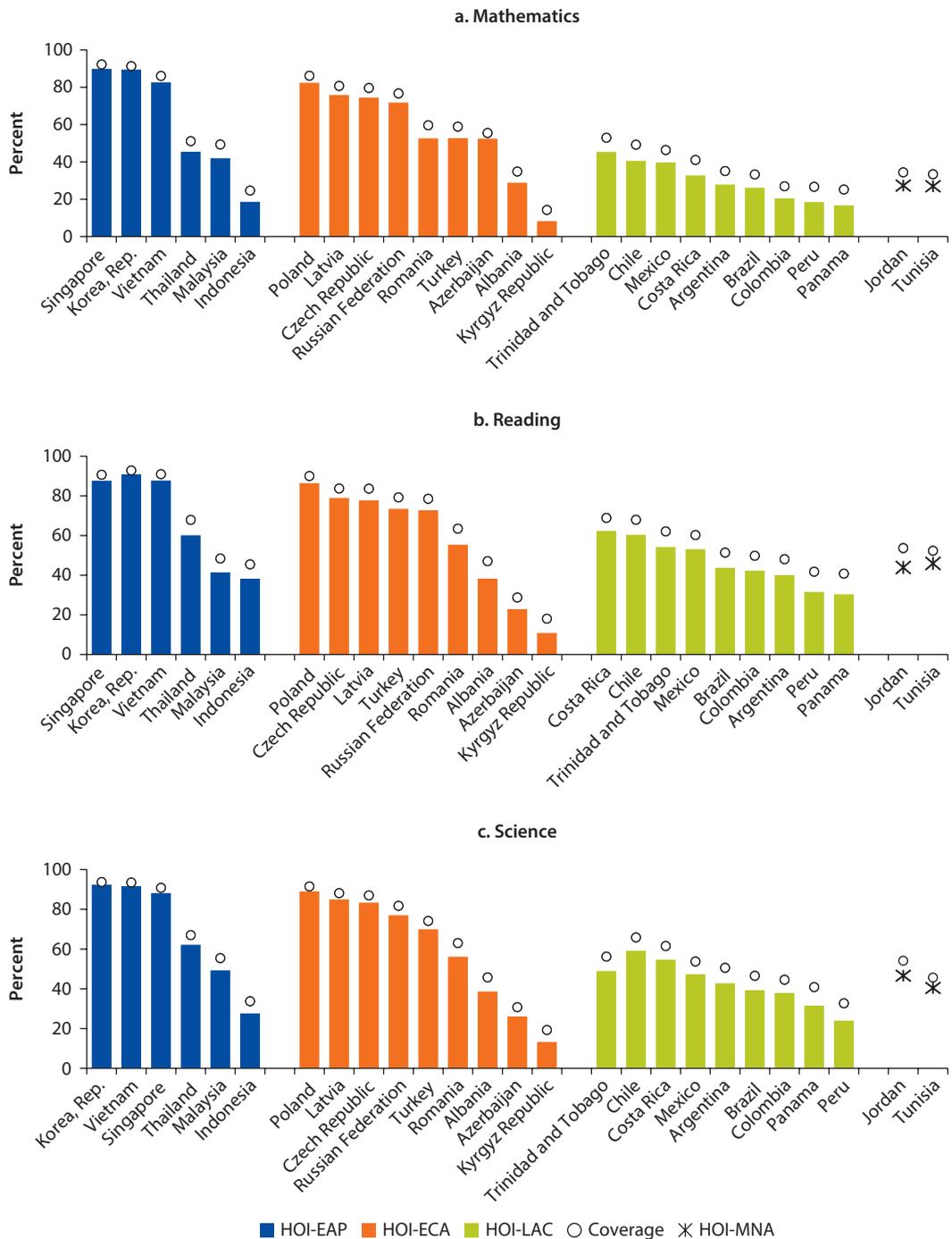
Source: World Bank estimates using data from PISA.
Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; PISA = Program for International Student Assessment.

lower than what the access figures would suggest. Low average quality of learning and infrastructure services translates into deep inequalities among children differentiated by circumstances such as socioeconomic background and location. When quality services are at a premium, those who are most likely to be excluded are children born in households that have inadequate means to access private sources and the least access to informal channels like social networks that substitute for weak institutions.

These inequalities are further compounded in the labor market, since the progress on investment in human capital of the population has not been matched by the growth in jobs. In particular, the private sector has not grown fast enough to create enough jobs to compensate for the receding public sector. And the jobs that do exist appear to be distributed fairly unevenly among individuals of varying circumstances. Data limitations constrain the ability to conduct a thorough analysis for the entire region. For the countries with data that permit some analysis, the study finds that, first, access to jobs with desirable characteristics is fairly low. Second, individuals' birth circumstances play a significant role in determining who has access to jobs. For example, in Egypt, over 50 percent of the inequality in being employed, employed full time, or employed in a job with a contract is attributable to circumstances over which the individual has no effective control. And third, consistent with the large youth unemployment gaps reported for the region, there appears to be a distinct generational disadvantage, with the younger cohorts facing poorer opportunity profiles than the older groups, as well as similar age cohorts in the past. Gender, parental education, and region of birth appear to be the circumstances that contribute most to the observed inequalities (figure O.5).

An equal opportunity society is integral for durable improvements in the welfare of the less well-off. The evidence generated in this report points to several policy directions. Although the region is currently mired in conflict and complicated political transitions, the path forward will hinge critically on the extent to which the real and perceived unfairness in access to opportunities for economic mobility can be remedied.

First, relieving the policy and institutional bottlenecks to generate more and better jobs should be a priority. Nowhere is the sense of the lack of fairness in access to opportunities manifested more starkly than in the labor markets in most countries in the region. The bulk of that frustration comes from the fact that there are not enough jobs being generated to meet the aspirations of the growing and more educated workforce. This study corroborates what other recent research has shown: there is a critical need for a broad set of regulatory and investment climate reforms to rectify decades of flawed industrial policies that have stymied the emergence of a dynamic, job-creating private sector. Put differently, labor market opportunities will expand in the region if constraints on equal opportunities for smaller and more dynamic entrepreneurs are lifted. As a thriving private sector facing a competitive marketplace becomes the primary source of jobs, access to these jobs should also gradually become more meritocratic.

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Figure O.5 Pattern of Generational Disadvantage in the Arab Republic of Egypt, by Opportunity Age Group

a. Age profile of basic coverage (2012)

b. Age profile of basic coverage (1998)

c. Overall inequality (2012)
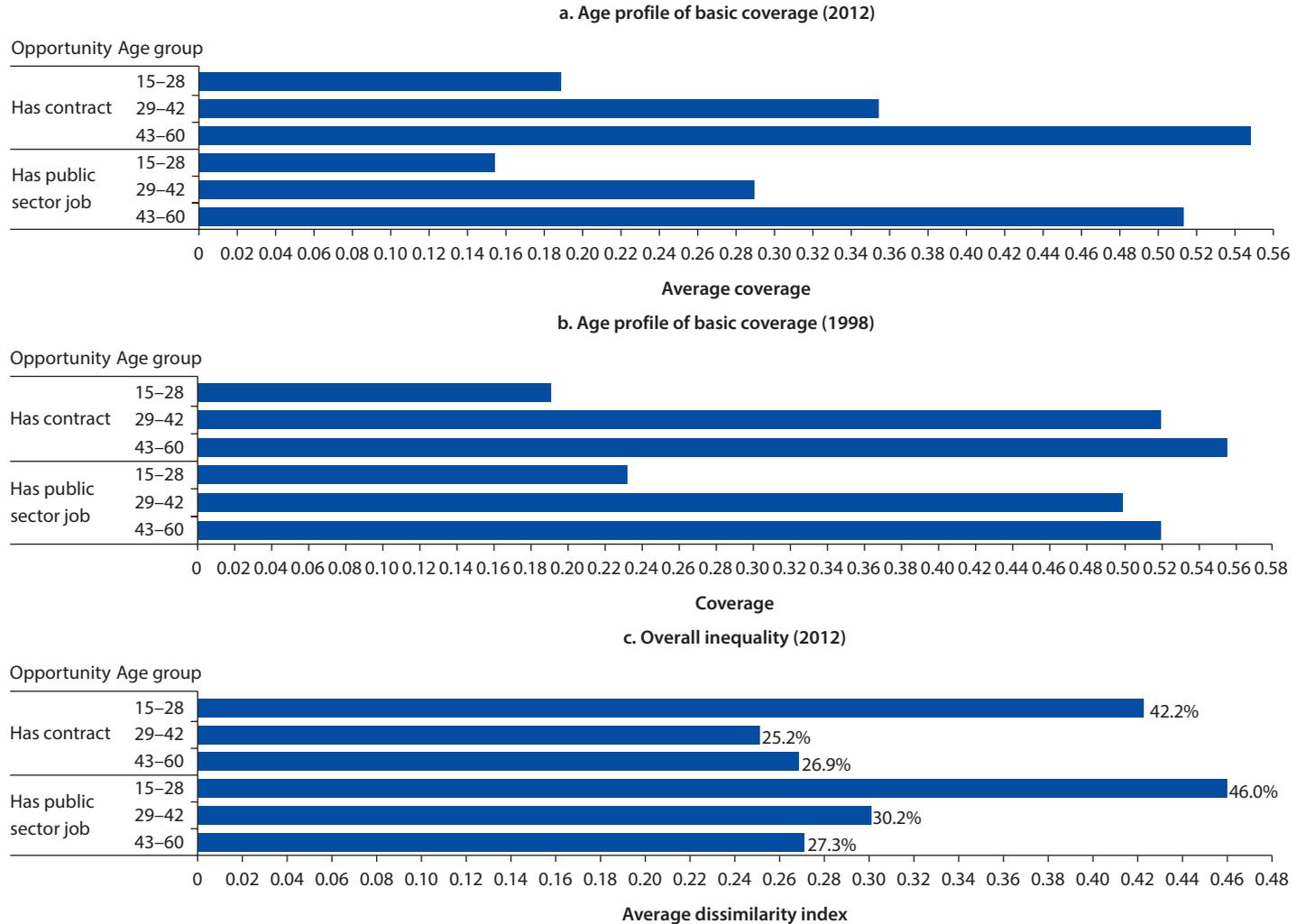
figure continues next page

Figure O.5 Pattern of Generational Disadvantage in the Arab Republic of Egypt, by Opportunity Age Group *(continued)*

d. Inequality due to circumstances (2012)

Circumstance (group)
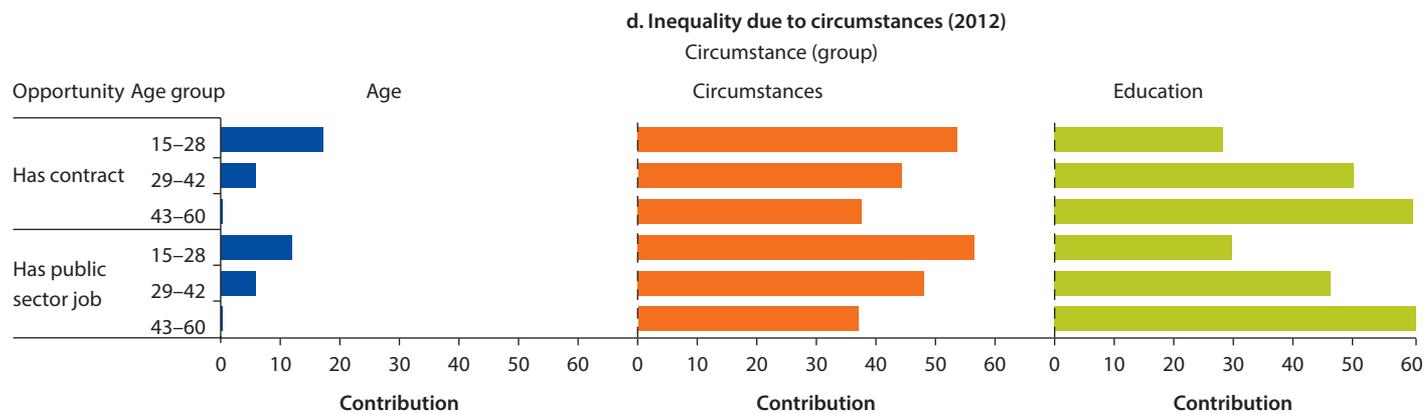
Note: World Bank calculations using the ELMPS data.

Box O.1 Contrasting Profiles of Amr and Mustafa: Two Hypothetical Individuals

Amr is a 28-year-old Egyptian man who was born and grew up in Menia village in rural Upper Egypt. Mustafa is also 28 years old and was born and brought up in an affluent greater Cairo neighborhood. Amr's father was an illiterate farm worker for most of his life, while Mustafa's father went to university and had a job in the government. Amr and Mustafa have completed about 11 years of formal education and are looking for a job. Although Amr and Mustafa look very similar on their curriculum vitae, the likelihood that Amr will end up in a job with a contract is about 17 percent, compared with a 42 percent likelihood that Mustafa will end up with a similar job.

Second, the evidence presented points to the need to look critically at the governance structures for the delivery of services in the region. The region has done remarkably well on the provision of basic access. But the prevailing service delivery apparatus has failed to maintain and deliver quality, particularly for the poor, because the non poor have access to the private sector. Investments in service delivery alone are inadequate and must be complemented by institutional reforms to improve governance through increased accountability and citizen engagement.

The observed inequality of opportunity in the region is consistent with a social contract in which the state is unable to adapt and evolve with citizen engagement and accountability mechanisms at all levels—to deliver quality services or employment in an equitable manner. The social contracts that centralized governments in the MNA region have long implemented have created institutions with little accountability to citizens or incentives to deliver quality. This social contract, which is coming under strain, involves the provision of public employment, generous benefits, and subsidies to citizens, and it boosts public sector employment and compensation at the expense of private sector job creation.

High rates of youth unemployment, low rates of female labor force participation, and the widespread use of networks rather than merit and qualifications for signaling and job search are perhaps symptomatic of the unequal access to the few quality jobs outside the public sector. In delivery of services, as a recent report documents, the lack of accountability and motivation on the part of policy makers, administrators, and service providers has led citizens to resort to informal payments and social networks to fulfill their needs (World Bank 2015). Neither of these mechanisms is easily accessible for the circumstance-disadvantaged, especially the poor. The social contract will thus need to be fundamentally reconfigured to build mechanisms for top-down and bottom-up accountability, with a focus on leveling the playing field for those whose birth circumstances place them at a distinct disadvantage vis-à-vis others.

Finally, emerging evidence from high income countries highlights the importance of innovative and long-term approaches for addressing intergenerational access to opportunity. Traditional interventions to improve service delivery or alleviate credit constraints only go so far when disadvantages caused by circumstances at birth run deep. Instead, the evidence points to the importance of fundamentally altering the environment to which young children are exposed, to break the trap of disadvantage at birth. A first step toward understanding the potential for such policy interventions in the MNA region is to strengthen the information and evidence base on these inequalities of opportunity, which has been the attempt of this report.

Countries at all income levels have used various methods to address the lack of or inequities in access to basic opportunities. From the individual point of view, a range of interventions focusing on expanding access to education, health, and other services that enhance human capital and ensure decent living conditions have been tried. Sometimes the interventions have been combined with conditional transfers to ease credit constraints in access, and early childhood interventions in schooling and nutrition to address critical deficiencies in a timely manner. There is a growing consensus that non-cognitive or soft skills are as important for enhancing individual capability as cognitive skills, and there is compelling evidence that investing in children's cognitive and non-cognitive skills early in life is critical to equalize opportunities in learning.

To address spatial disparities, geographically targeted initiatives to improve services have often been attempted. Some countries have also experimented with altering the environment in which children grow up, by facilitating the movement of households from disadvantaged areas to better environments. Another set of programs that has been widely considered, used, and debated is group-specific interventions to correct for group-based disadvantages, such as affirmative action programs, including quotas or subsidized access for disadvantaged groups.

In the MNA region, a fundamental challenge is one of data access and quality, which severely limits the analysis and insights to guide policy. Only six countries share the survey data that is required to measure even basic access to and coverage of essential opportunities. Even fewer countries have information linking child outcomes to parental characteristics. Addressing these data and information gaps will go far in creating the evidence base to design policies to address the widespread perceptions of unfairness rooted in the reality of inequality of opportunity, by adapting the emerging lessons from countries around the world to the specific contexts of individual MNA countries.

Note

1. This point is also made in Ianchovichina, Mottaghi, and Devarajan (2015).

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Abbreviations

CII   circumstance-induced inequality
D-index   Dissimilarity Index
EAP   East Asia and Pacific
ECA   Europe and Central Asia
GDP   gross domestic product
HOI   Human Opportunity Index
IAC   inequality-adjusted coverage
IEO   Inequality of Economic Opportunity
LAC   Latin America and the Caribbean
MNA   Middle East and North Africa
OECD   Organisation for Economic Co-operation and Development
PISA   Program for International Student Assessment
TIMSS   Trends in Mathematics and Science Study
WDI   World Development Indicators

Inequality, Mobility, and Opportunity—Setting the Context

Is There an Arab Inequality Puzzle?

The Middle East and North Africa (MNA) region is in turmoil, even by its own recent historical standards. With the rise of the Islamic State, what started as a civil war in the Syrian Arab Republic has completely engulfed Iraq and deeply affected others in the neighborhood, in particular, Jordan, Lebanon, and Turkey. The destruction of life and property, disruption of economic activity, and displacement of people have reached alarming levels.[1] The Arab Republic of Egypt is in the midst of a difficult transition; Libya is heavily polarized; and the Republic of Yemen is effectively at war. Morocco and Tunisia have been rare beacons of stability. But discontent simmers not far from the surface in Morocco, and Tunisia bears the increasingly heavy burden of managing a fragile political transition in the face of the violent and highly contagious regional war on the one hand and a difficult global economic environment on the other.

Although it is distinctly political in its manifest form, the current situation in the region has deep structural, socioeconomic roots. There is no doubt that the mass uprisings in several countries in 2011—optimistically labeled the Arab Spring in its immediate aftermath—were defining moments for several countries in the region. But this "awakening" itself was fueled in large part by the chronic disenchantment with the structure and performance of economies, and the implications that had for prospects of economic mobility, especially for the growing youth population. For example, in a survey in Egypt, of the 28 percent of respondents who claimed to have taken part in the demonstrations in Tahrir Square, an overwhelming 64 percent stated "low living standard/lack of jobs" as their primary influencing factor. In comparison, 19 percent cited lack of democracy and political reform, and 6 percent cited events in neighboring Tunisia.[2]

And yet, there appears to be an inconsistency between these expressed views and conventional economic data on living standards. Using growth as the primary yardstick, economic performance in MNA has been moderately good in the past two decades. Emerging from prolonged stagnation in the 1980s, the region's

average per capita gross domestic product grew at a rate of 2 percent per year in the 1990s and 2000s. Although the rate was lower than growth rates seen in East and South Asia, by about 2–3 percentage points, it was comparable to developing country averages. MNA's growth rate was better than the growth in Eastern Europe and Central Asia, Latin America and the Caribbean (LAC), and Sub-Saharan Africa. MNA's respectable growth, which was driven to a large extent by demographic changes, occurred when growth of aggregate productivity was the lowest among all regions (Schiffbauer et al. 2015). This situation had important implications for overall economic dynamism and, critically, for labor demand.

Using poverty reduction as another measure of progress, the region has performed well. Extreme poverty rates in the MNA region dropped from 2.1 percent in 2005 to 1.7 percent in 2011,[3] making MNA the region with the second lowest poverty rate after the Eastern Europe and Central Asia region. Of course, there has been significant variation within the MNA region, with extreme poverty rates in Djibouti and the Republic of Yemen being much higher than in the other countries (figure 1.1). Taking the $2/day poverty line, poverty rates in Djibouti, Egypt, Iraq, the Islamic Republic of Iran, Morocco, and the Republic of Yemen are significantly higher, suggesting a large concentration of vulnerable population near the $1.25 line for each country. During roughly the same period, for those in the bottom 40 percent of the income distribution, the growth rate

Figure 1.1 Poverty in the Middle East and North Africa
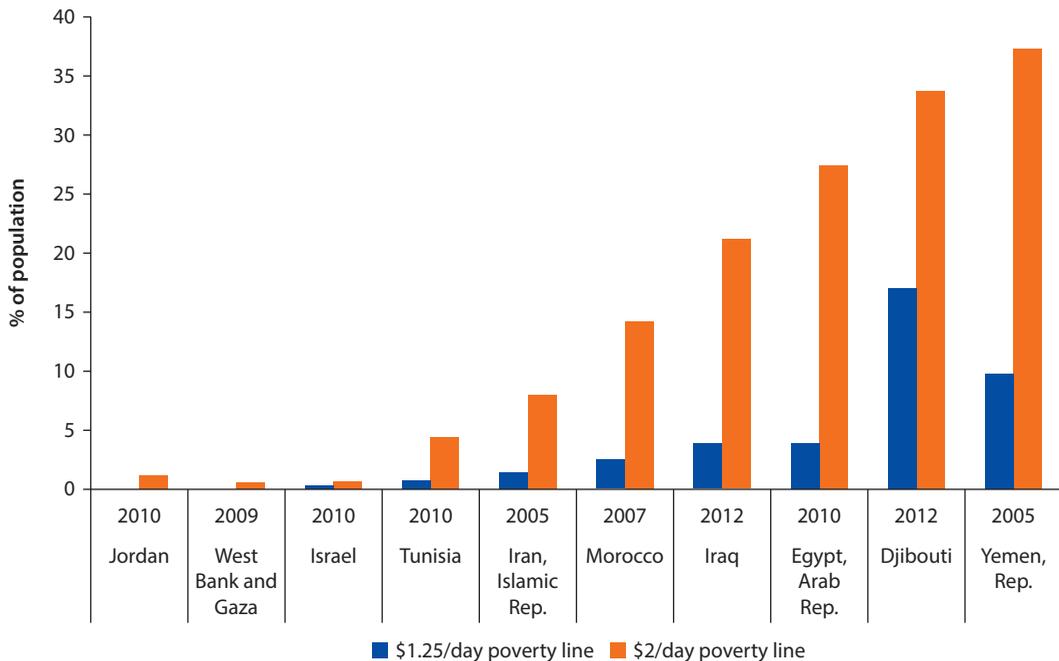
Sources: PovcalNet and World Bank Global Poverty Group.
Note: Poverty rates for the Arab Republic of Egypt and Djibouti are based on the World Bank's Middle East and North Africa Poverty database and are different from the PovcalNet numbers.

of consumption has been marginally higher than the growth in mean consumption in Egypt, Jordan, Tunisia, and West Bank and Gaza, but the differences are miniscule and in none of the cases is the growth rate greater than 4 percent.

Several commentators have attributed the citizen discontent witnessed in countries such as Egypt, the Republic of Yemen, and Tunisia to economic inequality.[4] This discourse was more common in the press commentary on the issue and, at face value, not without foundation. If there is any characteristic of a society or an economic system that has the strongest resonance with the disenchantment seen during the Arab awakening, it is inequality. There are some clear links between a widening distribution of income and civil conflict or political instability, at least conceptually. Inequality leads to greater polarization, which, absent political or electoral recourse, necessitates contestation. The contestation can, in turn, take a violent form if the inequality is extreme enough. At the root of this argument is an inherently grievance-based notion of relative deprivation, or the gap between a group's expected and actual living standards, driving civil unrest (Gurr 1970).

But conventional measures of inequality appear to provide very little grounds to support this hypothesis. Inequality in MNA countries (as measured by the population-weighted mean-log deviation of per capita consumption), by and large, remained stable (between 0.3 and 0.45) over the decade of the 2000s.[5] Taking the Gini coefficient of per capita consumption, inequality in countries in the MNA region was markedly lower compared with that in some other countries known for historically high inequality (such as Brazil, Colombia, and South Africa) and countries with growing prosperity (such as China and the Philippines) (figure 1.2).

In addition to the mean-log deviation and the Gini, an alternative way to look at inequality is by examining the income/consumption ratio of individuals at various points in the distribution. This measure, commonly known as the quantile ratio, is easy to calculate as well as interpret. If the 90/10 ratio is 4, for example, then the poorest person of the richest 10 percent of the society earns or consumes four times as much as the richest individual in the bottom 10 percent. Because they are insensitive to outliers in the data, quantile ratios are desirable in specific instances. With the exception of Djibouti in 2012, the 90/10 ratio for most MNA countries appears to hover between 3 and 6 (figure 1.3). In addition, the ratio appears to have declined or stayed the same in all countries except Iraq. Roughly equal values for the 90/50 and the 50/10 ratios suggest a broadly symmetrical distribution above and below the median for most countries.

This apparent disconnect between real expressions of disenchantment with the economic and social systems and the inability of available measures of inequality to capture this discontent has been posed by some as the Arab inequality puzzle. Efforts to resolve this puzzle have led researchers to look in various directions. Is inequality being measured correctly? In particular, are the surveys that are the primary sources of information on conventional measures of inequality adequate, given that the wealthy are often reluctant to participate in household surveys, or known to underreport incomes and expenditures when

Figure 1.2 Inequality in the Middle East and North Africa from a Global Perspective (Gini Index)
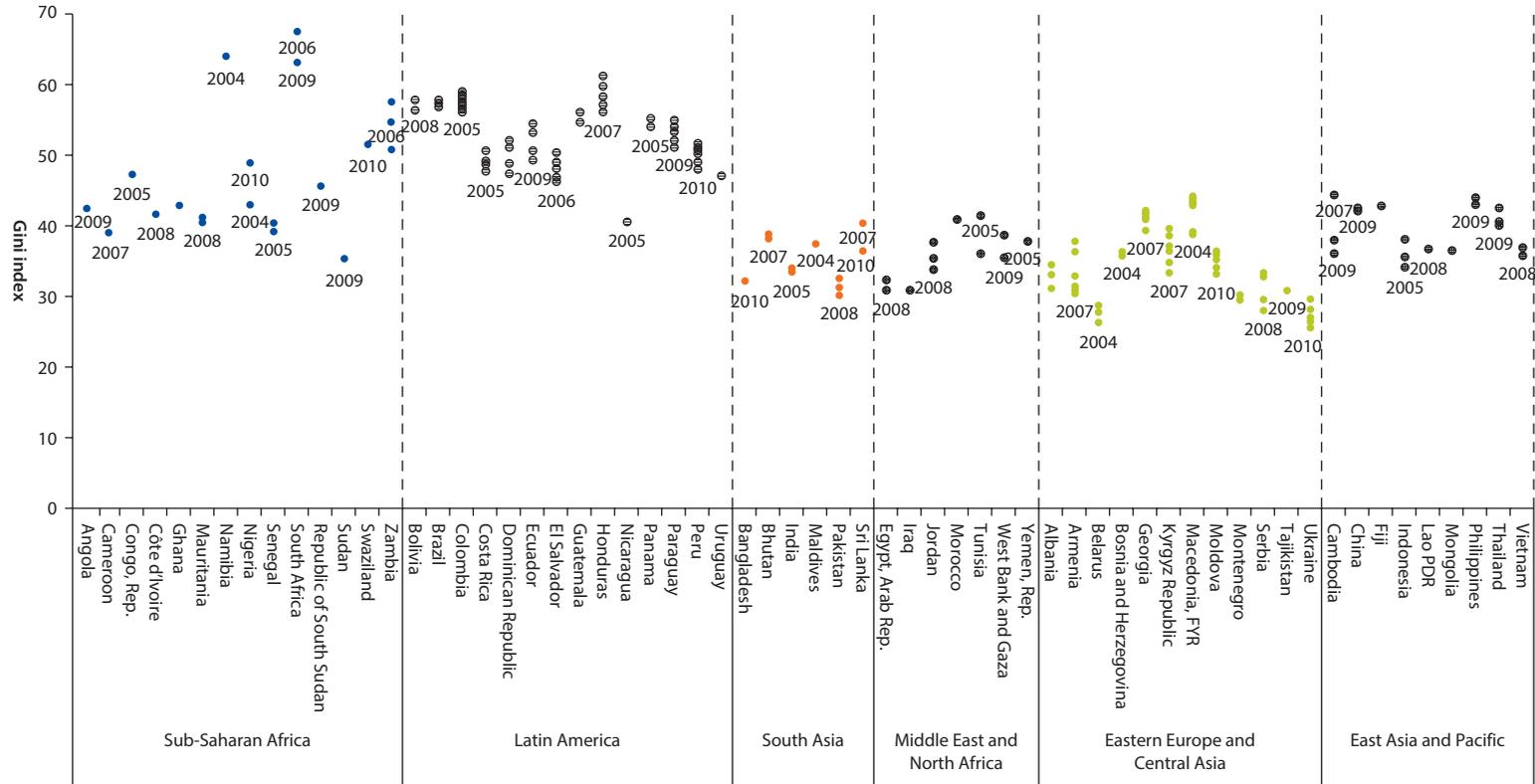
Figure 1.3 Quantile Ratios—An Alternative Look at Inequality
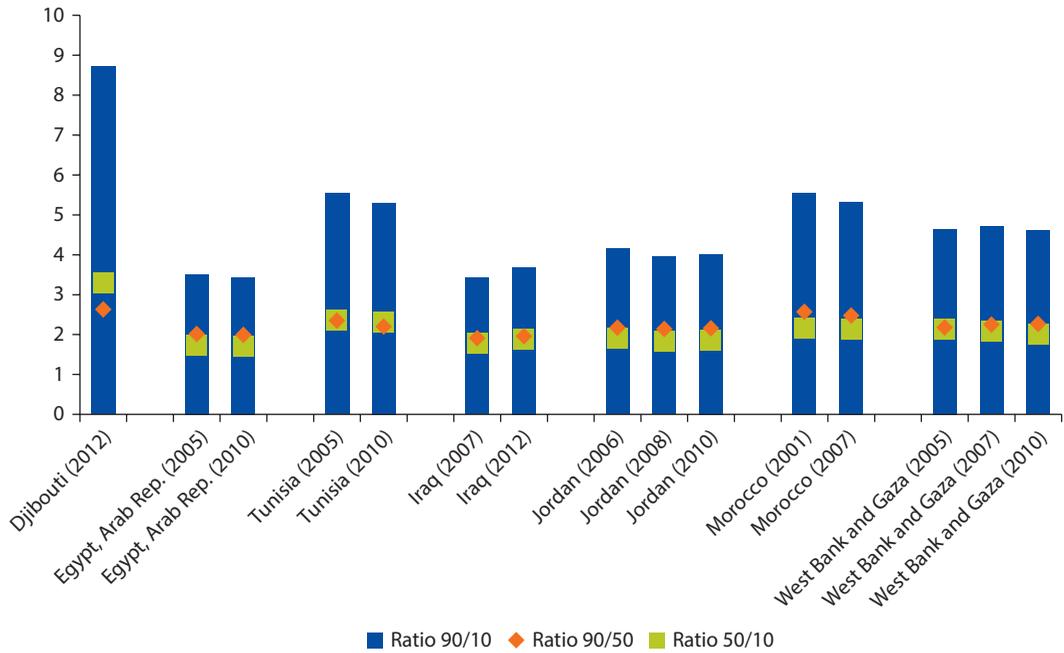
Source: Calculations using data from various surveys.

they do participate? Are wealth inequalities more accurate measures of inequality than income/expenditure inequalities? Does the increasing polarization that is witnessed in the region between various ethnic groups make the differences between these groups more salient than what is usually captured by measures of interpersonal inequality, such as the Gini?

There is certainly some merit to the idea that reported Ginis and other measures of inequality may be biased downward. First, inequality is often calculated on the basis of household consumption, at least in the context of the majority of low- and middle-income countries. There are some good reasons for working with consumption as opposed to income. Income is more difficult to measure than consumption, particularly when the informal sector is an important source of income. And although income can be volatile, households are more likely to smooth their consumption, which provides a more robust measure of inequality. As a result, the measure of inequality obtained for any population using consumption will almost always be lower than the corresponding measure using income. For example, in Iraq, where income and consumption are measured in the 2012 household survey, the income Gini is 10 percentage points higher than the consumption Gini.

Inequality measures may potentially be underestimated also because the top income groups are not adequately captured in standard living standards surveys. Most living standards surveys in low- and middle-income countries are designed

to capture rich information on households at the lower end of the distribution. Even when the wealthier segments of the population are sampled, nonresponse rates are high. Researchers have started creatively using alternative sources, such as tax data and data from national accounts, to get a sense of the extent to which inclusion of the top income groups would influence inequality measures (Alvaredo et al. 2011). Unfortunately, such data do not exist for countries in the MNA region. Still, Alvaredo and Piketty (2014) estimate the *regional* inequality (as opposed to within-country inequality) to be quite high in the MNA region. In particular, their estimates suggest that the top 10 percent of the income distribution commands 55 percent of the total income in the region. This number is higher than the corresponding figure for South Africa (54 percent), the United States (48 percent), and Western Europe (36 percent).

Hlansy and Verme (2013) attempt to account directly for item nonresponse, unit nonresponse, and the role of extreme observations among wealthier households, using a variety of statistical techniques for Egypt. They conclude that correcting for these biases would increase the Gini in Egypt by 1.3 percentage points. This number, while significant statistically, is not large enough to account for the Egyptian version of the inequality puzzle. However, an application of the same methodology to a more recent version of the data for Egypt suggests that the Gini would go up by as much as 3–4 percentage points (World Bank 2015). This suggests that this is an evolving knowledge agenda and more work should be done in other countries in the region to come up with a definitive answer.

But irrespective of the extent of mis-measurement or bias in the conventional measures of inequality, an alternative view is that *perceptions* about inequality (for any given level of inequality) could be the driver of the recent discontent with the economic and social systems in the region. The evidence on this view is explored in the following section.

Perceptions about Inequality

Perceptions have been studied extensively in the context of subjective well-being. Surveys of living standards routinely collect information on subjective poverty, that is, household self-assessments of their own poverty status. Subjective poverty measures are essentially perceptions of welfare and may capture notions of absolute standard of living as well as relative comparisons with others in society. These measures are also found to correlate not just with the objective monetary measures of poverty, but also with deprivations in education, health, work, and other dimensions in several countries, including two in the region where such data are available (Iraq and West Bank and Gaza). This finding suggests that perceptions of poverty are influenced not just by income, but also by other deprivations.

The key question is whether perceptions about inequality are significantly different from what objective measures of inequality might suggest. An emerging body of research shows that perceptions about the distribution of income and the measure of inequality for that perceived distribution can be significantly

different from reality. Norton and Ariley (2011) show that in the United States, people perceive inequality to be much lower than what it actually is. Niehues (2014) reports on a unique survey in several European countries and shows routine divergence between the actual and perceived distribution of income.[6]

Perceptions may differ from reality, but in the case of inequality, there are good reasons to care about perceptions just as much as actual measured inequality. There are several ways in which actual (as opposed to perceived) inequality may affect development. First, in the classic model of development, where occupational mobility through investment in human capital is the primary vehicle for intergenerational mobility, an unequal distribution of (initial) wealth interacts with credit market imperfections to impede welfare growth at the bottom of the distribution, primarily by constraining human capital accumulation and occupational choice (Galor and Zeira 1993; Banerjee and Newman 1993). Second, inequality affects development through its effect on the political economy of the provision of public goods. The initial distribution of income can lead to the creation of classes or constituencies that are wealthy, large, and powerful enough to draw in public goods and services, albeit ones they value. This same group could also "opt out" in favor of private alternatives they can afford, leading to secular deterioration of services for the poor.[7] More generally, this evidence links with a larger literature on the relationship between institutions and development and, in particular, on how structural inequality (as opposed to "market inequality") creates distortions that lead to underinvestment in human capital, thus hurting growth (Easterly 2007).

But there are several ways in which perceptions of inequality could matter just as much for the development outcomes we care about. Some examples are as follows. First, inequality—particularly when it is deeply entrenched in the social order—can affect the long-term motivations and aspirations of individuals, rendering them incapable of transforming their situations, which they regard as fundamentally unchangeable (Hoff and Pandey 2006; Bryan, Chowdhury, and Mobarak 2014). Second, perceptions about the distribution of income and other dimensions of welfare can have a profound impact on social cohesion, harmony, trust in public institutions, and the ability of the society to collectively solve its problems. Third, and on a related point, popular perceptions about income or welfare distribution, regardless of what the true distribution might be, could very well amplify demands for redistribution, which can in turn interact with political incentives to produce populist and distortionary economic policies that constrain growth and development.

Perceptions can differ from reality and perceptions about inequality can have consequences for development. But what are the factors that determine how large the differences between the perceptions and reality are? Some important ones could be (a) the individual's own preferences, values, and belief systems, particularly as they pertain to the distribution of income and wealth; (b) the individual's rank or position in the income/wealth distribution at any given time relative to where he/she was in the past and how that *mobility* compares with mobility among others in the individual's reference group; and (c) the underlying

processes that generate the observed inequality and the extent to which these are considered fair (figure 1.4).[8]

Attitudes, Beliefs, and Norms

Core beliefs about ideas of justice and fairness are important factors influencing how inequality is perceived by society. If individuals subscribe to value systems that are rooted strongly in egalitarian principles, their aversion to inequality (for any given level of actual inequality) may be higher than that of others and may drive perceptions. An illustrative example on the salience of "culture" (that essentially encapsulates these attitudes, beliefs, and norms) is the question of why the United States does not have a large European-style welfare state. Among several hypotheses to explain this phenomenon, an influential one invokes differences in political institutions and individual attitudes and ideologies between the United States and Europe (Alesina and Glaeser 2004).

Although it is impossible to come up with quantitative measures for these behavioral and cultural traits, Gallup and World Values Surveys for countries in the MNA region provide some insights. The World Values Survey asks respondents to place themselves on a 1–10 scale, where "1" represents extreme aversion to inequality ("incomes should be made more equal"), while "10" represents a more tolerant view ("income differences should be larger to provide incentives for individual effort"). These preferences or attitudes are likely to be influenced strongly by self-interest: those at the higher rungs of the economic ladder may prefer higher inequalities to preserve the status quo, while those at the lower rungs may prefer more equal societies, since they have more to gain from redistribution.

Surprisingly, most MNA countries, with the notable exception of Egypt, appear to harbor a fairly tolerant view of inequality, a pattern that is by and large uniform across the income distribution (figure 1.5). Aversion to inequality is higher at lower income deciles and lower among the wealthier groups in some countries, but not in all. In Iraq, Jordan, Tunisia, and the West Bank and Gaza, the line is relatively flat. Jordan uniformly appears most tolerant to inequality, while Egypt and Morocco (particularly at the lower income groups) appear to be have the least tolerance for inequality.

Figure 1.4 What Determines How Inequality Is Perceived?
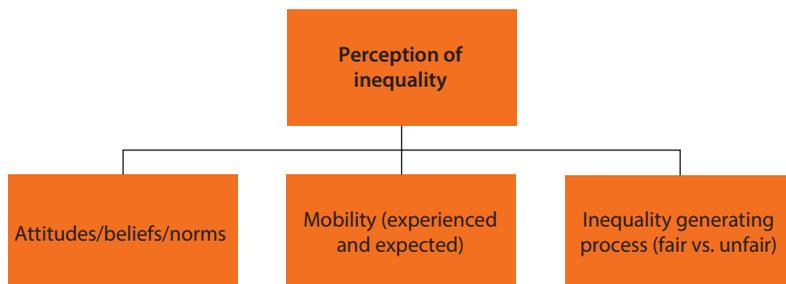
Figure 1.5 Tolerance for Inequality in Six MNA Countries
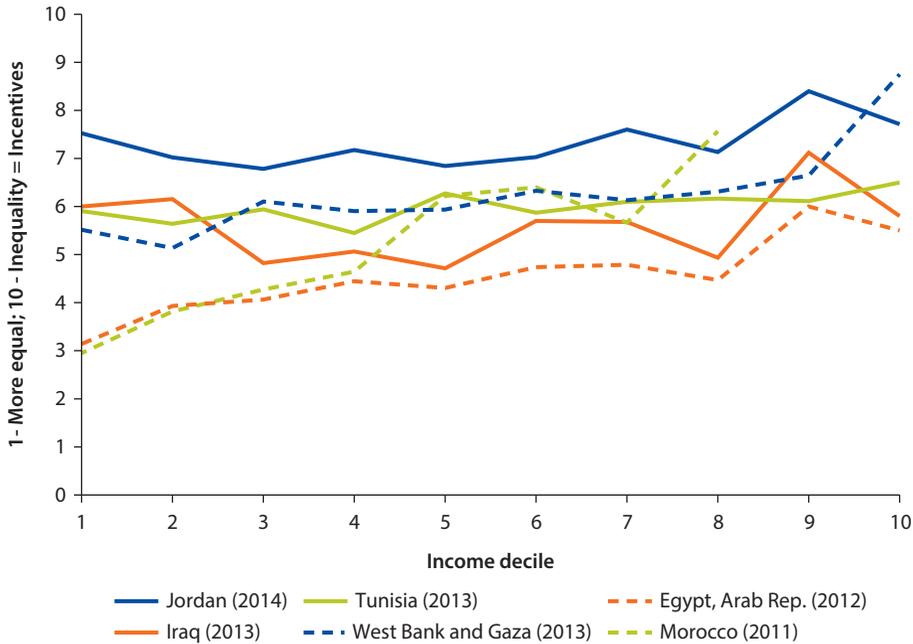
Source: World Bank calculations based on data from the World Values Survey.

For Egypt and Morocco, the relatively high degree of inequality aversion in recent years seems to represent a significant increase since the early 2000s (figure 1.6). In 2001, close to 77 percent of those surveyed in Egypt said they believed that "income differences should be larger to provide incentives for individual effort" (or answered "8" or above on the scale), which fell to 47 percent in 2008 and 25 percent in 2012. Conversely, only 6 percent of Egyptians said income should be made more equal (answering "3" or lower) in 2001, compared with 22 percent in 2008 and 59 percent in 2012. Similar trends of falling tolerance for inequality and rising demand for more equality are seen in Morocco as well. Thus, even in countries with high inequality aversion, tolerance to inequality was pretty high in the early 2000s. The trend of rising aversion to inequality seems to have preceded the Arab Spring events, which suggests that these events were a consequence rather than the cause of whatever phenomenon might have driven the reversal of preferences. It is also worth reiterating that actual measured inequality changed very little during this period in most countries.

Mobility, Experienced or Expected

Perceptions are likely to be formed in a distinctly dynamic manner. As societies evolve, creating opportunities for some and not for others, an individual's own experience with such mobility may determine how he/she perceives inequality. An individual who is able to "ride the wave" and realize rank improvements despite a widening income distribution may perceive inequality to be lower than

Figure 1.6 Trends in Preference for Inequality in MNA Countries
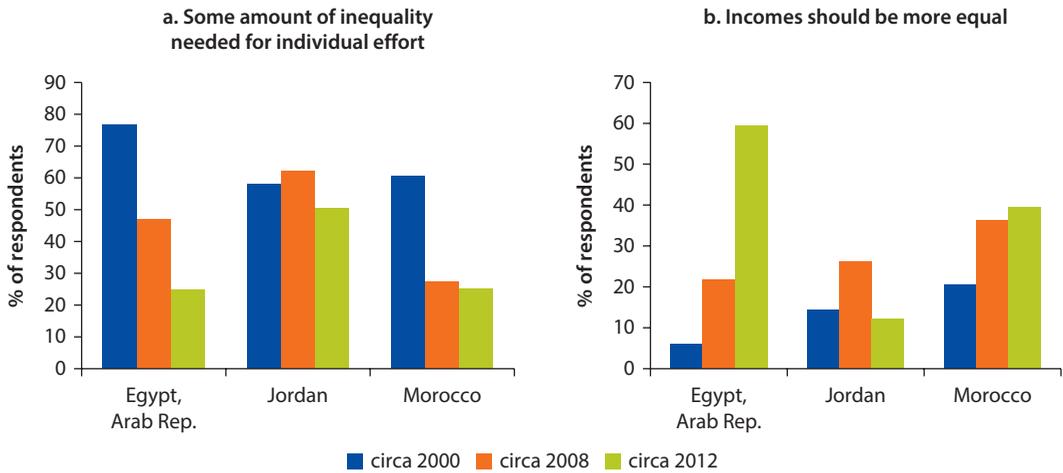
a. Some amount of inequality
needed for individual effort

b. Incomes should be more equal

■ circa 2000   ■ circa 2008   ■ circa 2012

Source: World Bank calculations based on data from the World Values Survey.
Note: Tunisia has only one data point. The World Values Survey is administered in different years in different countries, sometimes even when it is the same wave.

someone else in a different society with lower inequality but with limited prospects for upward mobility. As growth takes off and inequality begins to rise, in these early stages the tolerance for inequality, even among the poor, tends to be fairly high, because in the growing inequality they see an opportunity for a better life for themselves and their children. However, disenchantment with the overall process can set in if the process of growth is such that it cannot deliver income growth for those at the bottom of the income distribution or, in the extreme case, if the attendant rise in inequality ends up stifling prospects for economic betterment at the bottom of the distribution (the so-called "Great Gatsby" effect).

These mobility experiences accumulated over several generations can create persistent differences in perceptions about social mobility that is in turn associated with persistent differences in the preference for redistribution across countries (Piketty 1995). If there is mobility for everyone or the prospect of mobility for everyone, even high levels of inequality may be tolerated or perceived to be low by a society.[9] Conversely, if there is very little opportunity for mobility within and between generations, then even smaller disparities may evoke stronger reactions.

To probe a little deeper into this in the MNA context, another question in the World Values Survey is useful. The question asks respondents to identify the social class in their country in which they think they belong, of five classes: lower, working, lower middle, upper middle, and upper. In figure 1.7, the upper-middle and upper classes are aggregated into upper class, and the lower and working classes are aggregated into lower class. In all three countries, the share self-identified as upper class among respondents decreased, and that as lower class increased between 2001 and 2012. The trends are more consistent for Egypt and

Figure 1.7 Self-Specified Class Affiliations in the Arab Republic of Egypt, Jordan, and Morocco
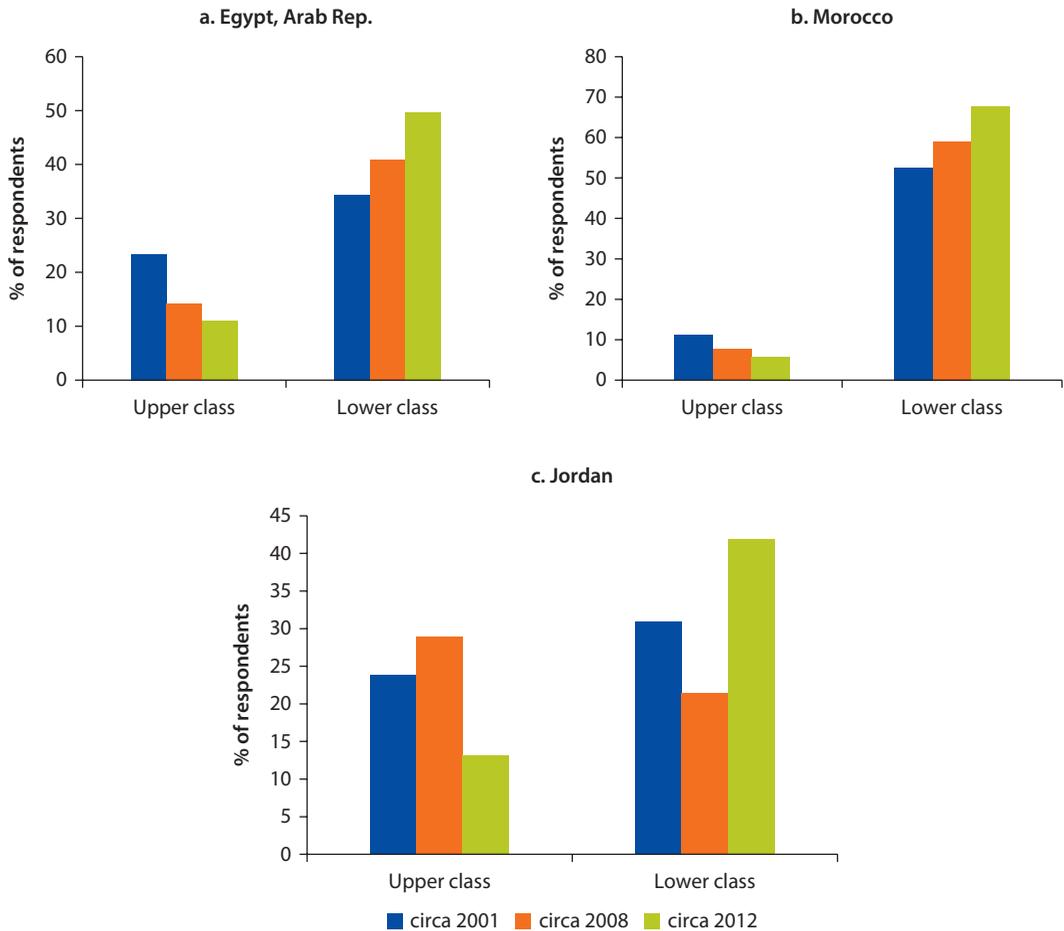
Source: World Bank calculations based on data from the World Values Survey.
Note: Tunisia has only one data point. The World Values Survey is administered in different years in different countries, sometimes even in the same wave.

Morocco than for Jordan. In Egypt, the share of self-described upper class declined steadily, from 23 percent in 2001, to 14 percent in 2008 and 11 percent in 2012, while that of the lower class increased from 34 to 41 percent, and then to nearly 50 percent. Likewise, in Morocco, the self-identified upper class has consistently shrunk over the three survey years, almost halving in size between 2001 and 2012, while the lower class has grown by roughly 15 percentage points.

Since the World Values Survey does not track individuals through time, what is reported here is not the true measure of mobility. To the extent that the underlying sample composition does not change much over time, the numbers are indicative of perceived mobility, suggesting net (perceived) downward mobility in all three countries. The perceptions of mobility are in turn likely to be associated with the subjective well-being of households and their optimism

about the prospects for economic betterment in the near future. Data from the Gallup surveys confirm that people in several countries in the MNA region have a very dim view of their current economic situation and future prospects of economic betterment (figure 1.8). A comparison with some countries in the LAC region reveals the extent of dissatisfaction and pessimism in the MNA region. Despite having much higher inequality compared with Egypt, Jordan, Morocco, and Tunisia, a significantly larger share of the population in the selected countries in LAC considers their current situation to be the best possible for them, or think that they will be at the best possible state of their lives in the future. For example, more than 40 percent of respondents in Brazil and Colombia think that they will be at the best possible state of their lives in the

Figure 1.8 Subjective Assessment of Life Today versus Life in the Future, FY2008/10 and FY2010/12

a. Life today is the best possible

b. Life in the future will be the best possible

■ 2008/10   ■ 2010/12
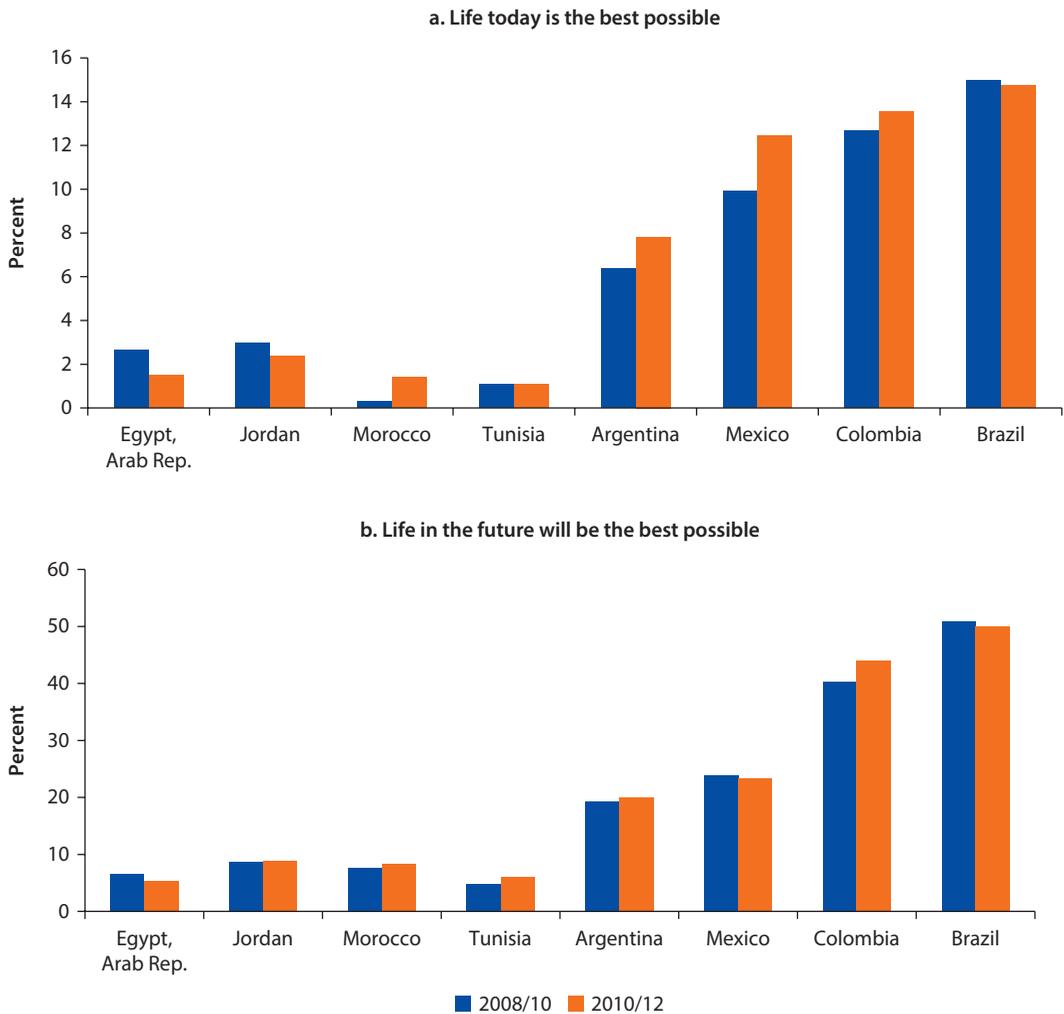
Source: World Bank calculations based on data from Gallup.

future, compared with less than 10 percent of respondents who think so in Egypt, Jordan, Morocco, and Tunisia.

Optimism about future well-being has a close association with prospects of mobility. It is also very closely correlated with preference for redistribution: individuals who are less optimistic about their future are more likely to be in favor of equalizing everyone's income (Alesina and Giuliano 2009). Optimism is also associated with the availability of good jobs, and this is an area where countries in the MNA region lag quite a bit. Again, data from Gallup surveys show that a very small proportion of the surveyed population in Egypt, Jordan, Morocco, and Tunisia are satisfied with the availability of jobs in their countries. Examining the trend over time, it appears that in most MNA countries this satisfaction is declining over time (figure 1.9). In contrast, satisfaction with overall labor market conditions in selected countries in LAC is not only higher, but also increasing over the same period.

Inequality of Opportunity

Finally, perceptions about inequality may depend on the underlying inequality-generating process and how fair that process is considered to be. The hypothesis here is that inequality generated by growth processes that are dynamic, broad-based, and rooted firmly in the meritocratic principles of rewarding effort, talent, and superior life choices (for example, going to college) are less likely to be objectionable to most people. Some may even say such inequalities are necessary to create the right incentives for enterprise, industry, innovation, and risk taking.

Figure 1.9 Perceptions about the Job Market Situation in LAC and Comparator MNA Countries, 2010–2012
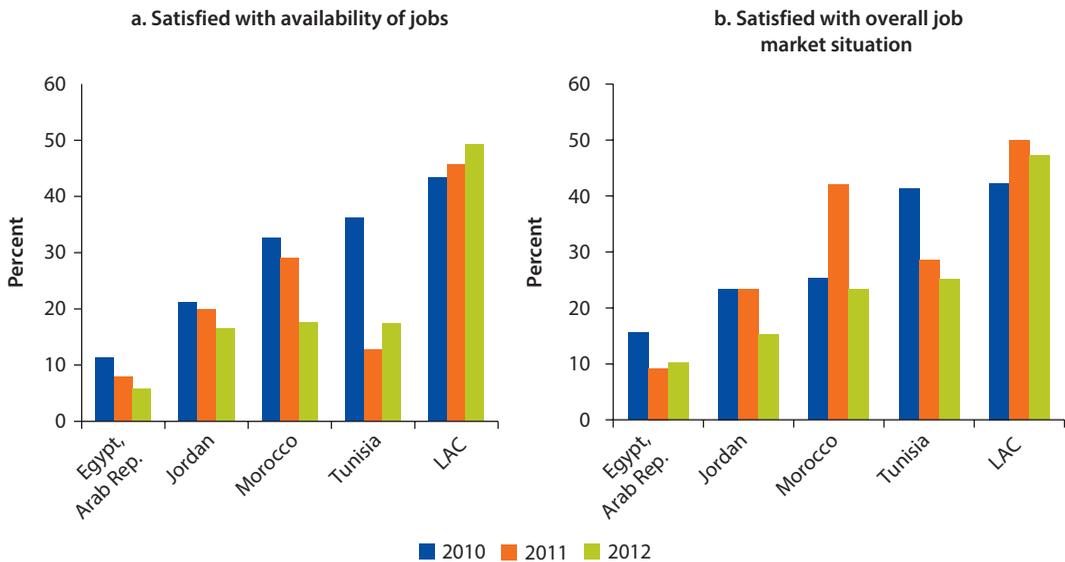
Source: World Bank calculations based on data from Gallup.
Note: LAC = Latin America and the Caribbean.

But inequality generated by special privileges (or the lack thereof) associated with circumstances determined by and large by the lottery of birth (gender, ethnicity, race, parental wealth, etc.) is likely to be regarded very differently. For the same level of inequality, the perception of inequality may be entirely different, depending on which of these processes dominates (Alesina and Glaeser 2004; Alesina and Angeletos 2005). This dichotomy is fundamentally about inequality of outcomes versus inequality of opportunities. Inequality of outcomes in and of itself would be less problematic if there was relative equality of opportunities, or if everyone operated on an even playing field. Conversely, even when inequality of outcomes is not particularly high, if the distribution of opportunities is skewed in favor of some individuals or groups in a society, the lack of fairness could amplify how overall inequality is perceived.

In the context of the MNA region, nothing constrains opportunities as much as persistently weak labor markets. In almost all countries in the region, the pace of job creation has been chronically low and nowhere at the level required to absorb the growing and increasingly better educated workforce. Unemployment in most MNA countries has been well above the average for low- and middle-income countries, and averaged above 10 percent in recent years. Libya, the Republic of Yemen, and Tunisia have had the highest unemployment rates (figure 1.10). High unemployment, coupled with growth rates that are lower than the average for low- and middle-income countries, suggest that MNA countries share structural problems that have been preventing their economies from moving to a higher, sustainable, and job-creating growth path. One estimate from

Figure 1.10 Unemployment Rates in MNA Countries
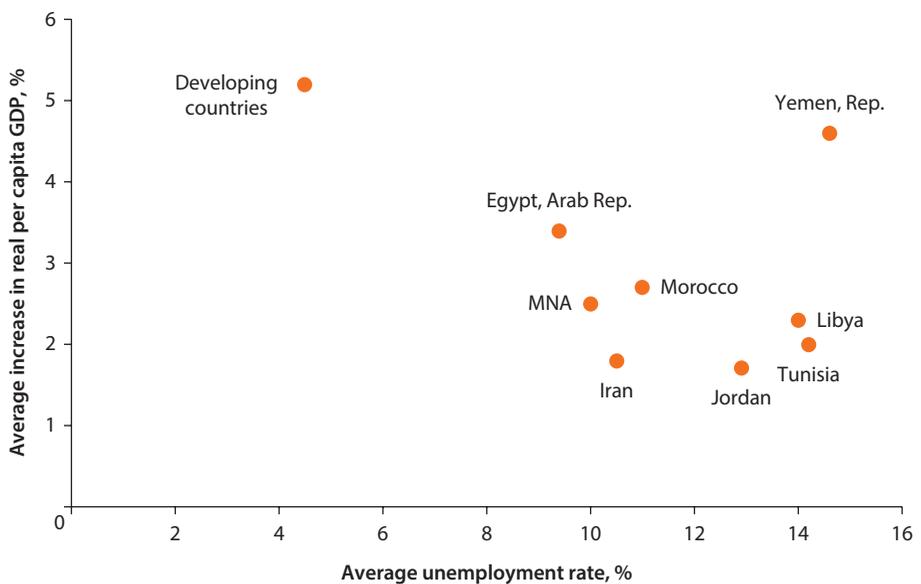
Source: World Bank calculations based on World Bank World Development Indicators data.
Note: GDP = gross domestic product; MNA = Middle East and North Africa.

the World Bank shows that over the period of 2014–20, the region must create about 28 million jobs just to keep the unemployment rate from rising (Devarajan and Mottaghi 2014). This may become an insurmountable challenge, given the lack of meaningful reforms in the private sector and the labor market environment, and the confluence of security shocks that makes the outlook for growth significantly bleaker.

It has also been well documented that job markets in almost all countries in MNA are segmented, with a sharp division between the protected and the excluded. The demographic groups that appear to be the most disadvantaged are youth and women (figure 1.11). Youth (those ages 15–24 years) unemployment in MNA is among the highest in the world. The difference between unemployment rates among youth and the overall unemployment rate—the so-called "youth unemployment gap"—is higher in Egypt, Jordan, the Republic of Yemen, Tunisia, and West Bank and Gaza than the median figures for all other regions, which includes numbers as high as 22 percent in Egypt in 2005 and 16–18 percent in Tunisia in 2009 and 2010. Although there is fluctuation in this number for all countries, the trends in Tunisia and West Bank and Gaza suggest a widening youth unemployment gap.

Gender is another important dimension along which significant unemployment gaps exists in the region, the economic significance of which is amplified, considering the fact that the labor force participation of women is already very

Figure 1.11 Unemployment among Youth and Women in MNA Countries

a. Youth unemployment gap in MNA and the world
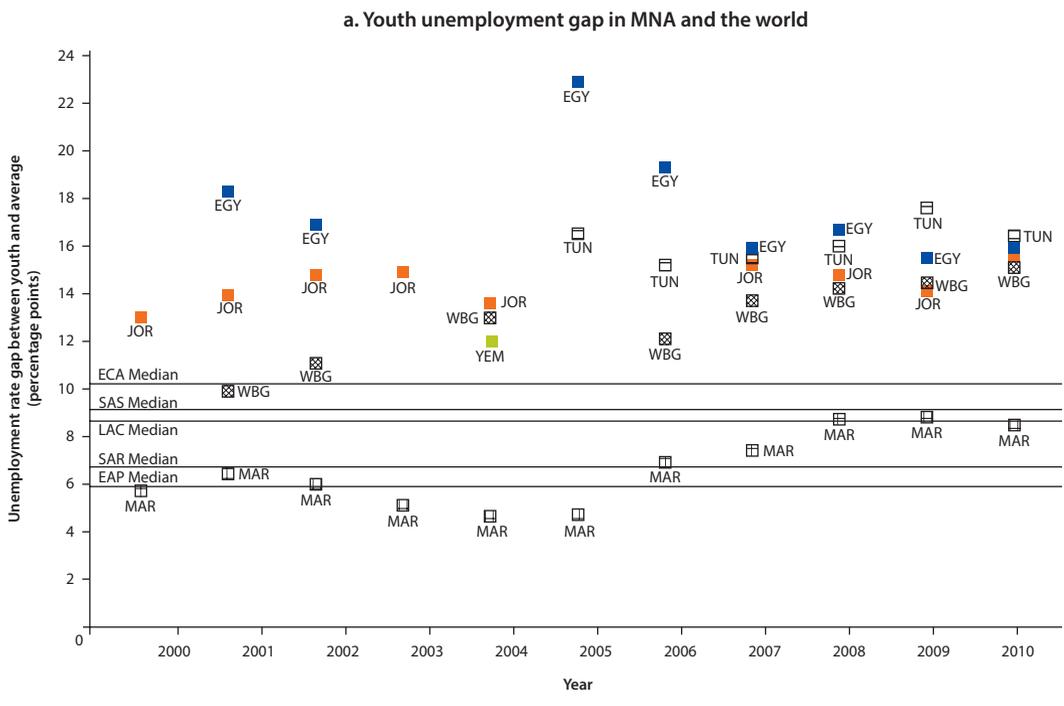
figure continues next page

Figure 1.11 Unemployment among Youth and Women in MNA Countries *(continued)*

b. Gender gap in unemployment

c. Gender gap in unemployment among youth
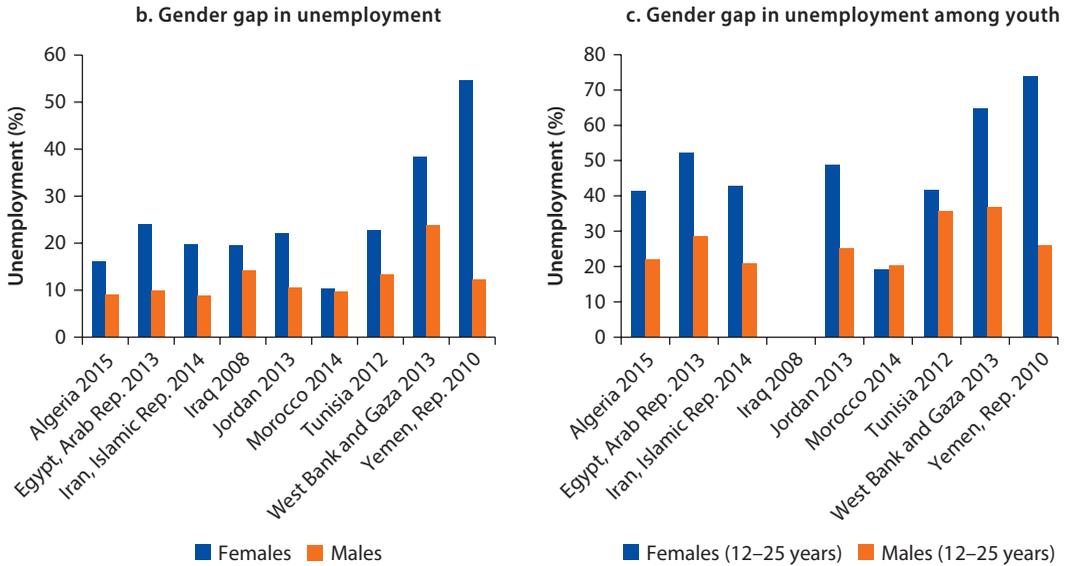
Source: World Bank calculations based on World Development Indicators data.

low in the region, partly because of discouragement. The available estimates suggest that only a fourth of working-age women in MNA participate in the labor force. The rates are much lower in some of the fragile states, such as Iraq, the Republic of Yemen, and West Bank and Gaza (World Bank 2013).

Meanwhile, several features of the labor market in the region accord distinct advantage to individuals of a certain type. Among others, the culture of *wasta*—an Arabic word that roughly translates to "connection" or "clout" in English—is ubiquitous in all aspects of Arab life, including labor markets. Data from the 2013 Gallup World Poll suggest that over 60 percent of respondents in all MNA countries (with the exception of Qatar) agreed to the salience of *wasta* in their respective economies (figure 1.12). The agreement rate appears to have been the strongest in Jordan and Lebanon. To the extent that *wasta* represents the use of connections and networks to get ahead in the labor market, it is not a particularly unique feature of the MNA region; similar practices exist in other parts of the world as well, formally or informally. It is also imaginable that to some extent individuals can cultivate such connections and networks. But the fact that these networks are deeply embedded in familial and tribal connections implies that these are advantages that come largely as a consequence of the endowments allocated essentially by the lottery of birth.

If parental position in society can be leveraged to give children access to scarce opportunities in the labor market, then the income distribution of children is likely to be correlated with that of their parents. This association between parental characteristics and income implies that the society is not an equal opportunity society. The culture of *wasta* embedded firmly in family networks and the age

Figure 1.12 Youth Perceptions of the Role of *Wasta* in Getting Jobs in MNA Countries

Question: "In general, do you mostly agree or disagree with the following statement? Knowing people in high positions is critical to getting a job (wasta)."

■ % in agreement   ■ % in disagreement
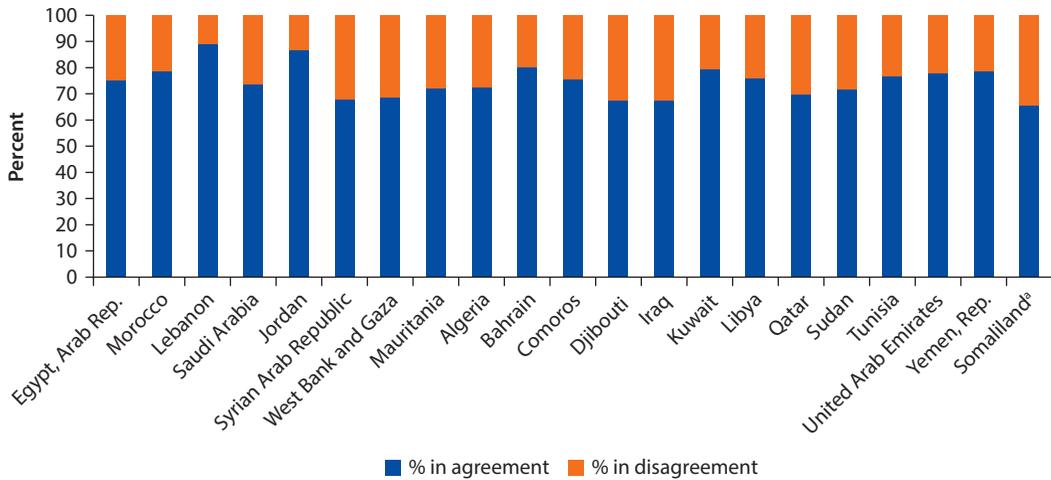
Source: World Bank calculations based on the 2013 Gallup World Poll Survey.
a. Somaliland is an unrecognized self-declared state that claimed independence from Somalia following the start of the civil war in 1991. It is run by a self-governing administration with an elected President and Parliament.

and gender gaps in employment rates suggest the possibility that the MNA region may be characterized not just by low opportunities for mobility in the labor market, but also high inequality in access to these opportunities.

Objectives of This Report

Focus on Inequality of Opportunity—Among Children and in Labor Markets

A combination of complex factors is typically responsible for how unequal a society is and how that inequality is perceived. In part, inequalities in a society may reflect individual-level choices, such as whether the individual chooses to attend college or the effort he/she puts into work and, sometimes, pure luck, which many find to be less objectionable and even necessary to some extent for creating the incentives for individual enterprise and effort. Inequality of opportunity—the part of inequality that is linked to the circumstances individuals are born into—by contrast, is regarded quite differently, as it violates fundamental notions of fairness and mobility in most societies.

Although the most intense debates in development coalesce around overall inequality of income or wealth, the notion of inequality of opportunity has an intuitive appeal that can transcend ideological differences where people across the political spectrum can at least agree on the extent of the problems, if not on the policy measures. To see why, consider a group of people with vastly different sets of opportunities, to begin with, who end up with vastly different outcomes—despite exerting the same amount of effort or making similarly sound life choices. Then consider the converse scenario where a group of individuals, despite having

similar opportunities, achieves vastly different outcomes because of differences in effort and life choices, and some element of random luck. If opportunities (and the eventual outcome) in the first scenario strongly favored those born into circumstances of privilege, most people would regard that scenario to be much more problematic than the second one, because the first scenario is unfair and causes enormous losses to society in wasted human potential. Thus, inequality of opportunities is likely to be objectionable by itself, whereas inequality of outcomes would be objectionable largely to the extent that it is caused by inequality of opportunity. When the distribution of opportunities is linked to circumstances like ethnicity, gender, or family background, the upward mobility of an entire group of people can be impeded. For all these reasons, shifting the policy debate to inequality of opportunities can facilitate a political consensus on the nature of the problem and its underlying causes, which provides a common platform to debate the solutions.

It makes sense, therefore, to focus on inequality of opportunities in MNA, where income inequality, as measured using standard tools, appears to bear little relationship to the low (and worsening) perceptions on fairness, mobility, and life satisfaction in several countries. This report starts with the question: how high are the inequalities embedded in the opportunities for economic mobility—or the proportion of inequality attributable to "circumstances"—in MNA countries, and how do these inequalities help contextualize the perceptions? In other words, to what extent are the circumstances that an individual is endowed with by the lottery of birth responsible for the life chances of individuals? Following from that, in which types of opportunities and at what stages of life are these inequalities most prominent? What are the circumstances that contribute the most to inequality of opportunity of different types (associated with the widest gaps in opportunities), and can these help in understanding how citizens in MNA countries perceive their lives and societies?

Even as labor markets represent a critical source of unequal opportunities, disadvantages appear much earlier for children in the MNA region, albeit with a lot of variation across countries. Since 1970, countries in the MNA region have recorded the world's fastest progress in human development, and many have made great strides toward gender parity in health and education outcomes. In several countries, there has been strong progress in addressing some of the gaps in childhood—for instance, in primary and secondary school enrollments and access to immunizations and other basic health services that have contributed to declining infant mortality rates. Substantial improvements in school enrollment/attendance rates among children ages 11–15 years have been seen in Egypt, Jordan, and Morocco in the past decade, which has also led to narrowing urban-rural gaps, indicating a reduction in inequality of opportunity.

But progress has been uneven: low-income countries Djibouti and the Republic of Yemen continue to face challenges in ensuring basic access to schools and health care. A limited but growing literature on MNA countries documents large disparities in education and health opportunities. Data from scores on the Program for International Student Assessment suggest that countries in the region have poorer performance on learning outcomes, on average, in comparison

with other countries at similar income levels (figure 1.13). Salehi-Isfahani, Belhaj-Hassine, and Assaad (2014), using data from the 2014 Trends in Mathematics and Science Study, find that inequality of opportunity—the share of total inequality that is attributable to differences in children's circumstances at birth—explains a significant share of total inequality in test scores among children in several MNA countries. Assaad et al. (2012) report prominent inequality of opportunity in early childhood health indicators (height-for-age and weight-for-age) among children in Egypt, Jordan, Morocco, the Republic of Yemen, and Tunisia. Ersado and Gignoux (2014) finds at least a quarter of inequality in eighth graders' standardized test scores in Egypt to be attributable to predetermined circumstances of the children. Learning gaps (as revealed by official test scores) between students from different backgrounds in Egypt also appear at early grades, are already substantial at completion of primary level, and increase at higher levels.

Thus, in addition to inequality of opportunity in the labor market, analyzing opportunities for children to reach their full potential in MNA countries is important, as it can help in understanding better the nature and causes of the

Figure 1.13 Percentage of Children Demonstrating Basic Proficiency in Math, Reading, and Science by GDP per Capita
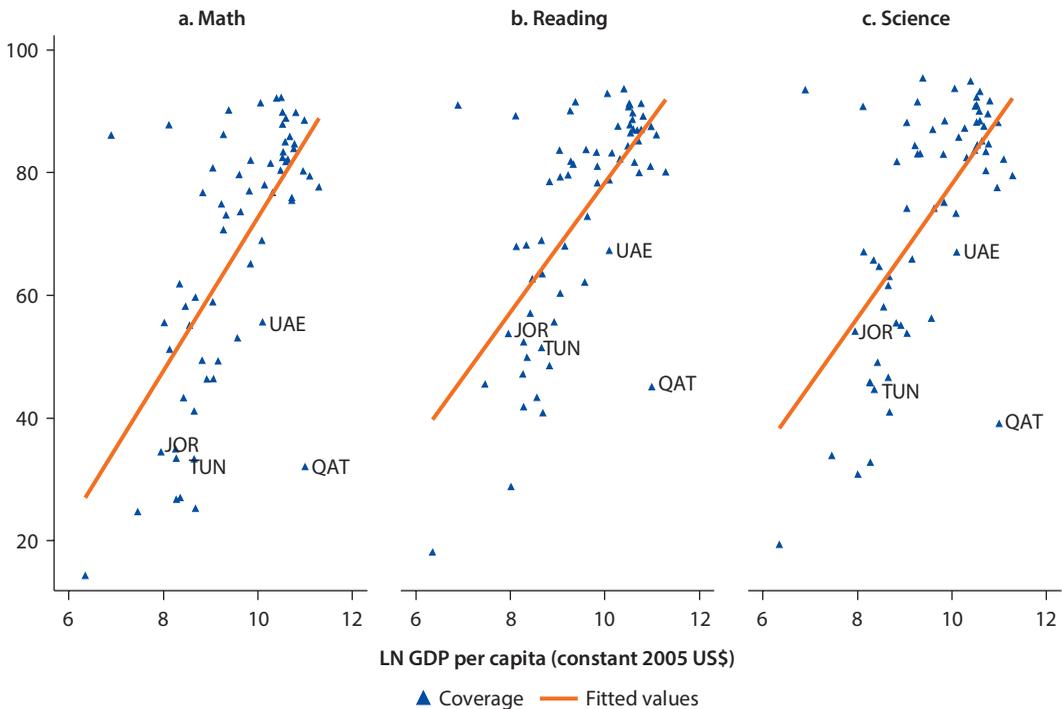
Source: Calculations using data from 2009 and 2012 PISA and the WDI.
Note: GDP = gross domestic product; JOR = Jordan; LN = natural log; PISA = Program for International Student Assessment; QAT = Qatar; TUN = Tunisia; UAE = United Arab Emirates; WDI = World Development Indicators.

Uneven Odds, Unequal Outcomes • http://dx.doi.org/10.1596/978-1-4648-0786-2

inequality of outcomes that is observed among adults, and provide reliable predictors of economic mobility. For example, if opportunities in a country or region were to favor children with certain types of circumstances—such as having more educated or wealthier parents, or being born in a certain geographic region—this would have important implications for how economic inequality is perpetuated across generations and over the life cycle of a generation.

Equality of Opportunities and Growth of Opportunities

The analysis of inequality of opportunities must recognize the importance of the overall (or average) level of opportunities in a country, however defined. When opportunities are embedded in access to basic services (such as education, health, or being well-nourished) or jobs, the distribution of opportunities is closely linked to that of overall availability. Inequality of opportunity is much more likely to exist when good jobs are rare or when high-quality schools or health facilities are limited in supply. These scarce opportunities are then likely to be available only to those born into privileged circumstances who have the means, connections, or power to capture access. But if economic growth creates good jobs at a high rate, although that does not guarantee that everyone will have equal access to a good job regardless of family background, ethnicity, or location, the normal forces of supply and demand in the labor market are likely to reduce the salience of these circumstances over time. In other words, equality of opportunity is often as much about the total stock of opportunities available in a society as it is about the distribution of opportunities. Consistent with this, the Human Opportunity Index (HOI), which is used extensively in this report to measure opportunities, has the feature that it "rewards" improvements in the average availability and distribution of opportunities.

The role of scarcity in producing inequalities is particularly important in the MNA context, as the average availability of certain types of opportunities is highly inadequate in many countries. Promoting equality of opportunity in MNA, therefore, becomes as much about expanding the overall stock of opportunities (such as jobs and quality services) in society as it is about de-linking their distribution from individuals' circumstances at birth. The need for economic growth and institutional improvements for accountability and transparency in public service delivery therefore takes center stage in the discourse on how to level the playing field for citizens at different stages of life, as this report will show.

Methodological Approaches toward Inequality of Opportunity

Inequality of opportunity has been studied in the literature using three main techniques. The first is an assessment of the degree of association between a father's and son's income (or earnings or other measure of welfare). Mobility statistics, such as the intergenerational income elasticity or the average percentile rank of children whose parents were in the bottom half of their respective income distributions, are used to infer inequality of opportunity. The higher is the persistence or stickiness between parental income (in magnitude or rank) and

children's income, the lower is the equality of opportunity. Some prominent examples of applications of these methods are Chetty et al. (2014) and Corak (2006). Given the demanding data requirements, these applications are largely limited to high-income countries and, given the data available for MNA countries, unsuitable for the analysis in this report.

The second method commonly used has its roots in the "model of advantage" developed by Bourguignon, Ferreira, and Menéndez (2003, 2007) and scaled for wider application in Ferreira and Gignoux (2011). The method, also known as "inequality of economic opportunity" (IEO), is closest in its relationship with Roemer's notion of "good inequality" and "bad inequality." The exact methodology is described in detail in chapter 2. Broadly, it entails taking a vector of an outcome variable (say, income or expenditure) and extracting from it the part of the inequality that is due to circumstances that society agrees should have no bearing on income.

The second method is similar to Chetty et al. (2014) and Corak (2006) in the sense that the measure of inequality of opportunity is inferential as opposed to direct, but less demanding in terms of data.[10] It has been applied extensively in low- and middle-income country settings, and has also been subject to some criticisms. First, it has been noted that for the limited set of circumstances that are typically observed in standard socioeconomic data sets, the reported measures of inequality of opportunity have been fairly low. The standard argument that it would be higher if data on more circumstances were available is true. But it is also true that this technicality is often likely to be lost on policy makers, who may take low values to absolve themselves of their responsibilities toward a more equitable society. Second, although the inequality of opportunity measure calculated using this methodology provides a useful characterization of society, it is not amenable to an easy translation into policy. Even if inequality of opportunity is high, the policy measures that should be taken to address it are not immediately clear.

The third method for analyzing equality of opportunity—using the HOI—approaches this from the opposite end. Instead of taking an outcome variable, such as income or earnings, and inferring the embedded inequality of opportunity, this method focuses on a set of basic goods and services for children that might be inputs to an individual's income-generation capacity. Developed by World Bank staff and external researchers, the HOI has been primarily motivated and used as an intuitive measure of a society's progress toward equitable provision of opportunities for all children and the implications that may have for public policies. The HOI takes into account how the personal "circumstances" for which a child cannot be held accountable—like location, gender, household composition, or parental wealth—can affect the child's probability of accessing basic services that are necessary to succeed in life, like timely education, vaccination, running water, electricity, or telecommunication.

The HOI approach is direct in the sense that it takes as "opportunities" good and services that are (a) typically accepted as critical human capital inputs, and (b) agreed by most societies as things that should be available to everyone.

In addition, the approach combines universality as well as equity in a single measure. An HOI for timely school completion, for example, carries information not just on the fraction of children of a certain age who complete school on time in a society, but also how school completion is distributed among children of different "circumstances" (such as gender, parental wealth, region of birth, etc.). In other words, the HOI accounts for two sources of inequality: the coverage rate of a service that differentiates between the "haves" and "have-nots" (for example, the proportion of children of a certain age who complete school), which is then discounted by an additional "penalty" that is proportional to the extent to which coverage of the service is unequally distributed between children of different circumstances (for example, a higher share of urban boys complete school by a certain age than rural girls). And the HOI approach has a closer link with policies that matter for delivery of basic goods and services, which makes it appealing to policy makers.

Among several critiques of the HOI approach, perhaps the most important one is that by focusing (for practical reasons, including data availability) on a relatively narrow set of "opportunities," the approach would significantly underestimate the extent of inequality of opportunity in a society. In other words, given the minimalist set that is typically considered among the vast range of goods and services that constitute the full opportunity set for a child, even universal access to this set would not guarantee equal opportunities in a real sense. In the light of this criticism, the results of HOI analysis are best interpreted as a measure of access to a *minimum* set of opportunities that every society would agree must be universally available, rather than a measure of overall equality of opportunity in a society. Even with this restrictive interpretation, the HOI can be a useful *starting point* for measuring equality of opportunity among children and identifying the circumstances that are most closely associated with the observed inequalities, which can have useful policy implications.

Although this report primarily uses the HOI methodology, it also presents results on applications of the IEO method to complement the analysis wherever applicable and allowed by the available data. Since systematic evidence on inequality of opportunities is scarce in most MNA countries, with the possible exception of Egypt, the report extends the HOI analytical framework from its standard application to children's human development opportunities, to labor markets, to infer inequality of opportunity in access to jobs from labor outcomes.

The rest of the report is organized as follows. Chapter 2 introduces the methodology to measure and analyze inequality of opportunity in some detail. Chapter 3 reports on some of the key results of the application of these methodologies to opportunities for children in the region. The chapter includes cross-country and cross-regional comparisons, discusses the patterns that emerge, and concludes with a discussion of the factors that constrain the quality of basic services in the region. Chapter 4 extends the methodology to apply it to labor market outcomes, discussing the approach and its limitations and the results. Section 5 synthesizes, summarizes, and concludes with a discussion of policy implications.

Notes

1. One estimate suggests that the war could have cost the greater Levant region as much as US$35 billion in the three years between 2011 and 2014 (Ianchovichina and Ivanic 2014). The Arab countries are possibly in the midst of the largest human displacement in history, with an estimated 14 million to 15 million refugees and internally displaced persons. (http://blogs.worldbank.org/arabvoices/middle-east-refugees).

2. International Republican Institute of Egypt, "Egyptian Public Opinion Survey," http://www.iri.org/sites/default/files/2011%20June%205%20Survey%20of%20Egyptian%20Public%20Opinion,%20April%2014-27,%202011_0.pdf.

3. The calculations use international poverty lines based on 2005 purchasing power parity (PPP). The numbers are slightly different when using the 2011 PPPs, which are not shown here, since regional estimates for MNA using the 2011 PPP were not available at the time of writing this report.

4. For example, Ncube, Anyanwu, and Hausken (2013) explain that "…the 'revolution' in the MNA region had been sparked by a refusal to any longer tolerate the gross socio-economic inequality perpetuated by long-entrenched 'elite' in power…."

5. World Bank calculations, MNA Team for Statistical Development, World Bank.

6. Germans, as it turns out, overestimate the size of their lower classes and underestimate the size of their middle class. Swedes appear to put more people at the extremes of the distribution than those who actually belong there. Italy and Spain are two countries for which Niehues (2014) reports fairly close correspondence between perceptions and reality.

7. Mansuri (2013) tests this hypothesis in Pakistan. Ferreira et al. (2008) show that local inequality in Ecuador determines the extent to which the poor are provided with excludable private goods.

8. Several other factors may also explain why the actual perception of inequality is different from measured inequality. First, although measures such as the Gini capture relative income differences, people may have mental frames that lead them to think about differences and gaps in an absolute sense. Second, active political indoctrination (for example, under communism) may also affect perceptions, as shown by Alesina and Fuchs-Schundeln (2007) in the context of Germany. Third, parents may sometimes deliberately transmit "distorted" views about the reality of inequality and social mobility to their children, to influence their incentives (Benabou and Tirole 2006). Finally, the inherent structure of families may make them more or less dependent, thereby affecting how they interact with government programs and how they come to regard redistribution generally (Alesina and Giuliano 2009).

9. In the United States, for example, this narrative is debated vigorously. Historically, the tolerance for inequality has been fairly high, in part because the perceived mobility enshrined in ideas such as the "American Dream" have been high. New research is beginning to suggest that mobility in fact is highly heterogeneous, and there is strong emerging evidence on the existence of the "Great Gatsby curve"—growing inequality in high-income countries lowering mobility prospects for many. (See Chetty et al. 2014 and Corak 2013.)

10. This method is less stringent on the data requirements, because instead of the entire series of income for the father, what is often required is just the information on his characteristics, such as level of education, occupation, or any other characteristic that might qualify as a "circumstance" for the son.

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Equality of Opportunity: Concept, Methodology, and Application

Summary

This chapter makes precise the concepts and definitions necessary to apply the analytical tools that are used in this report. In particular, the Human Opportunity Index (HOI) methodology is introduced together with other methods that have been used in the literature to measure and analyze inequality of opportunity. The chapter also discusses extensions of the standard methodology as well as its limitations and shortcomings. The data sets that are used in the analysis for the various countries in the region and the specific definitions of opportunities and circumstances are also discussed in significant detail.

   The chapter describes the conceptual foundations of the approach taken in the analysis of equality of opportunity throughout the report and provides a succinct discussion of some of the recent literature on the methodology, its advantages, and its limitations. The specific adaptations required to apply the methodology to the context of the Middle East and North Africa (MNA) region are identified and described. The chapter draws heavily from the corresponding section of the companion book on equality of opportunities in the Africa region (Dabalen et al. 2015).

Conceptualizing Equality of Opportunity

Equality of Opportunity, Not Outcomes

Around the 1970s, an important change in emphasis occurred in the literature on fairness. Rawls (1971) and Nozick (1974) argued for greater emphasis on fairness of process rather than fairness of outcomes. Although the concept has been referred to in slightly different ways by other authors (Arneson 1989; Cohen 1989; Dworkin 1981; Sen 1985), a general agreement seemed to emerge that the focus of distributional analysis should be on the underlying forces (advantages, access, primary goods, capabilities, etc.) that affect individuals and influence outcomes later in life. The idea is that policy makers should pay attention to leveling

the playing field and promoting an equal starting point for everyone. In Roemer's (1993, 1998) characterization, policies should attempt "to equalize opportunities, rather than outcomes."

The development debate on inequality was often informed on the analysis of some measure of the distribution of incomes, expenditures, or wages. The nuanced analysis of inequality and fairness by social scientists in recent decades has been possible in large part because of the formalization of the equality of opportunity principle in Roemer (1993, 1998) and studies by other authors, and its application in the 2006 *World Development Report* (World Bank 2005).

The concept of equality of opportunity has a strong intuitive appeal. For instance, two people may be born in very similar environments: similar household wealth, same location, same ethnic group, etc. Following them through life and observing differences in, say, labor earnings, most people would probably agree that these are at least partly caused by differences in life choices, innate abilities, or effort. Instead, considering two people with identical innate ability but different environments at birth, it is entirely possible that they end up with different outcomes even after making sound life choices and exerting the same effort. The latter scenario would be regarded as inequality of opportunity, which most people would intuitively find to be unfair and fundamentally objectionable. In other words, inequality of outcomes becomes objectionable *to the extent it is caused by inequality of opportunity*.

Empirical measurement of inequality of opportunity poses challenges, the most significant of which is the difficulty in separating the effects of innate ability, effort, and life choices from the effects of circumstances on observed outcomes. Setting equality of opportunity as a goal requires the adoption of a valid and reliable way to measure and track the inequality attributable to circumstances at birth, as well as a precise definition of what constitutes opportunity. Furthermore, for a holistic understanding of how circumstances affect individuals' life paths, a careful analysis of the opportunities at different stages of life is warranted.

Definition of Opportunity for Children

Following an approach of similar World Bank reports for the Latin America and the Caribbean and Sub-Saharan Africa regions, "opportunities for children" are defined as access to basic goods and services in education, health, and infrastructure—which are deemed necessary for an individual to realize his/her human potential. Although the concept of opportunity can best be understood as the possibility to choose effectively among (or take advantage of) the available options in a set to enhance a person's life achievement potential, such "functionings" (Sen 1979, 1985) are extremely difficult to measure. Instead, this report considers "access" as synonymous with opportunity.[1]

Although the opportunities affecting life outcomes can be infinite, this report focuses on a set of "basic" opportunities for children. The universal provision of the set of basic opportunities is considered to be a moral imperative in most societies, and necessary to achieve society's economic potential. Identifying these

early life opportunities and the efforts to equalize them has been found to be cost-effective and successful. For instance, there is evidence that preschoolers with low levels of cognitive development have lower school achievement and earn lower wages in adulthood (Case and Paxson 2006; Currie and Thomas 1999), and that interventions in early childhood education have substantial long-term impacts, ranging from adult earnings to retirement savings (Chetty et al. 2010). Given the far-reaching consequences of these opportunities, the report focuses on the provision of basic education, health, and services such as water and sanitation.

The definition of the set of opportunities must be accompanied by a clear definition of "access." For example, when access to schooling is the opportunity of interest, would merely having a school nearby be considered access, or should actually attending school be required to consider the child as having access? Would the quality of the education obtained in the school matter? In estimating equality of opportunity for children, access to and utilization of a service are treated as equivalent. In access to schooling, for instance, if a child does not attend a school that is close to the child's home, for our effective purpose, the child does not have access to schooling. For all the services that society considers basic, it must provide the service *and* ensure that the child uses it. In this example, a situation where the child's parents do not value education or cannot arrange an affordable means of transportation to school is treated as if there is no school to attend. In the case of a basic good or service, the society—and not just the government—is responsible for establishing all the necessary conditions for the child to actually benefit from it.

Quality is another key consideration in defining access. Not all schools provide the same quality of instruction, and not all clinics have the same stock of supplies. In a study of equality of opportunity, it is important to assess what would be the minimum threshold of quality for each basic good or service. Sanitation may be considered a basic good, but the onus is on the researcher to determine what would be the level of sanitation that can be deemed to meet a minimum standard. In education, test scores sometimes allow for the analysis of quality, but in their absence, imperfect proxies, like completion of primary school on time (which may be related to learning outcomes or student achievement), have to be applied. The description of what is considered access in this report is detailed in this chapter.

Moving from Concept to Measurement

Provided that the concept of opportunity follows the provision of or access to a good or service, the coverage rate of such good or service is a natural candidate as an indicator. The coverage rate measures the proportion of the population with access to a given opportunity, which essentially differentiates between those who have access and those who do not. However, the coverage rate overlooks whether coverage is more (or less) concentrated among individuals of a particular circumstance or trait. For example, if half the people in a country have access

to clean water, the coverage rate is 50 percent; but this proportion is not sensitive to whether coverage is evenly distributed among the population or concentrated in households with certain characteristics to the detriment of groups with other characteristics.

The appeal of the idea of measuring equality of opportunity is in *combining* the coverage rate with a measure of how equitably a good or service is distributed among covered individuals with different circumstances (to see why, refer to the simple example in box 2.1). The foundations of the methodology and the measures applied in the report lie in the basic concepts defined in Roemer (1998). (In)equality of opportunity is measured following this framework and the HOI is used to measure the equality of each opportunity (see Barros et al. 2009; Barros, Vega, and Saavedra 2010).[2] The HOI provides a scalar measure of how far a society is from universal coverage and equality of opportunity, as explained in the following subsection.

Construction of the Human Opportunity Index

The HOI of a given opportunity provides in a single indicator a measure of the level of coverage in the society and how equitable the coverage is among groups with different circumstances. It is an inequality-sensitive coverage rate, where the index decreases or is "penalized" based on the extent to which groups in the population with different circumstances have different coverage rates. In countries where all circumstance groups have the same coverage, the penalty is zero.

We estimate the HOI by aggregating circumstance-specific coverage rates in a scalar measure. This measure increases when the coverage rate increases and decreases when differences in coverage among groups with different sets of circumstances are present. This implies that two societies with the same access rate or coverage of a particular service may have different HOIs if the access to the service in one country is more concentrated among individuals with a certain set of circumstances. We define the HOI (H) for a particular opportunity as the average coverage rate of access to that opportunity ($\bar{C}$) discounted by a penalty (P) for inequality in coverage between children of different sets of circumstances. That is,

$$H = \bar{C} - P \qquad (2.1)$$

where the maximum value of the HOI for a particular opportunity is the average coverage rate for that service ($\bar{C}$) and the HOI can only be 1 when there is universal access. The penalty (P) is directly related to the set of circumstances considered. When the circumstances analyzed change, the penalty will change. Conversely, if no circumstances are used, the penalty is estimated to be zero. The HOI can also be expressed as the coverage rate multiplied by a factor of equality.

$$H = \bar{C}\left(1 - \frac{P}{\bar{C}}\right) = \bar{C}(1 - D) \qquad (2.2)$$

where D can be interpreted as the *share of the total number of opportunities that needs to be reallocated among all groups of the population with different circumstances to ensure equality of opportunity, that is, an equal coverage rate for all groups.* D is commonly referred to as the dissimilarity index (henceforth, D-index), or the inequality of opportunity index. To compute D, we first define the k circumstance groups (that is, groups of children who share a specific set of circumstances) in the society. Using these disjoint circumstance groups, D can be computed as follows:

$$D = \frac{1}{2\overline{C}} \sum_{k=1}^{m} \alpha_k \left| \overline{C} - C_k \right| \tag{2.3}$$

Where C_k is the coverage rate of group k; α_k is the share of group k in the total population of children; and m is the number of mutually exclusive groups of children based on their circumstances. D will be equal to zero when coverage is the same across all circumstance groups ($C_k = \overline{C}$), whereas the HOI will take the maximum possible value equal to the coverage rate $\overline{C}$. Box 2.1 outlines a simple example of how the HOI is measured for two hypothetical countries with identical populations of children and the average coverage rate of primary school enrollment.

Box 2.1 Stylized Example of the Human Opportunity Index

Two countries, A and B, each has a child population of 20 who are equally distributed in 10 boys and 10 girls. The coverage rate of school enrollment (or the average enrollment rate) for both countries is 0.6, that is, children in 60 percent of the communities attend school in each country. In figure B2.1.1, children attending school are shown in blue, and children not attending are shown in black.

It is evident that access to school is distributed differently among the child populations in countries A and B. In country A, all children have a 60 percent probability of access to schooling. In country B, girls have a 20 percent probability of access to schooling, whereas boys have a 100 percent probability of attending school. Although the overall coverage is 60 percent in both cases, it should not be controversial to argue that inequality in access is higher in country B. It is such inequality that the Human Opportunity Index (HOI) aims to capture in addition to the coverage rate.

It can be shown that the dissimilarity index (D-index) is equal to the share of total opportunities that are "misallocated" in favor of (against) circumstance groups that have coverage rates higher (lower) than the average coverage rate ($\overline{C}$). Thus, any reallocation of opportunities from "non-vulnerable" groups (with coverage more than $\overline{C}$) to "vulnerable" groups (with coverage less than $\overline{C}$) will reduce D and increase the HOI. Here, the D-index is the share of total enrollment that is misallocated, namely 0/12 and 4/12 for countries A and B, respectively. Therefore,

box continues next page

Box 2.1 Stylized Example of the Human Opportunity Index *(continued)*

Figure B2.1.1 School Enrollment in Countries A and B
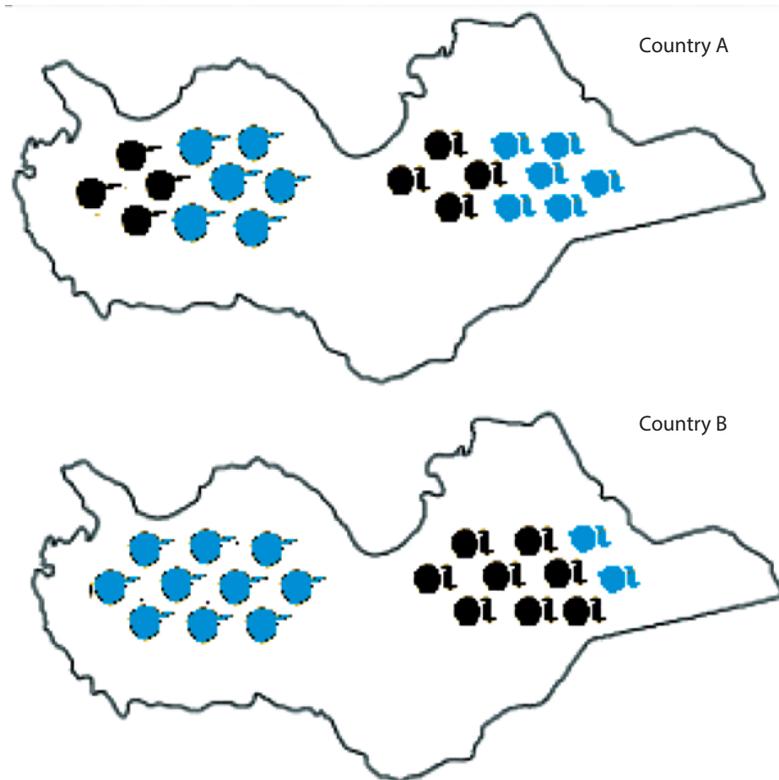
$\text{HOI}_A = \bar{C}_A(1-D) = 0.6 * (1-0) = 0.60$; $\text{HOI}_B = \bar{C}_B(1-D) = 0.6 * (1-0.33) = 0.40$. Finally, it should be noted that even with an equal coverage rate for boys and girls in country A, the HOI is not 1. Since the coverage rate is below 100 percent, there is still inequality between the children who have access to schooling and those who do not. As a consequence, the HOI must also be less than one.

Characteristics of the HOI as an Equality of Opportunity Measure

The HOI has three key properties: (a) *sensitivity to scale*: if coverage for all groups changes additively or multiplicatively by some factor λ, the HOI also changes (additively or multiplicatively) by the same factor λ; (b) *sensitivity to Pareto improvements*: if coverage for one circumstance group increases without decreasing the coverage rates of the remaining groups, the HOI increases; and (c) *sensitivity to redistribution*: if the coverage rate of a vulnerable group increases, holding the overall coverage rate constant, the HOI also increases. These are all attractive properties for a measure like HOI to have, as the properties ensure that improvements in overall coverage, as well as a move toward greater equality in coverage among groups, result in a higher HOI for the country.[3] At the same time, the HOI is insensitive to any redistribution among vulnerable groups,

regardless of whether such redistribution favors the more (or less) vulnerable group, which is an important limitation for a distributional measure.[4]

Changes in the HOI over time can be analyzed to assess progress in access to opportunity in a society, taking into account changes in coverage and inequality in access among different circumstance groups. A change in the HOI can be decomposed into: (a) a *composition* effect, which refers to changes in the distribution of circumstances (such as the distribution of wealth or urban/rural share of the population); (b) a *scale* effect, which refers to proportional change in the coverage rate of all groups; and (c) an *equalization* effect, which refers to change in the coverage of vulnerable groups (groups with coverage below the national average), with the average coverage rate held unchanged. The composition effect shows how the underlying circumstances that children are born into change over time—for example, because of demographic changes, economic growth, or social progress. The scale effect shows how opportunities change for all groups in the society, perhaps as a result of public policy or increased awareness among all households. The equalization effect indicates the trend in equity in the society, showing whether available opportunities are distributed more equitably among its members, so that the circumstances a child is born into matter less for access to basic goods and services.

Use of Household Data to Calculate the HOI

To compute the HOI for a particular opportunity for the individuals in a country, household survey data are essential, with a minimum set of information, at the individual or household level as appropriate. Examples for children's opportunities would be whether the child is attending school, grade level, last grade completed, and health indicators such as the child's weight and height and whether the child has been immunized. Computing the HOI for access to basic infrastructure, such as safe water, electricity, and sanitation, would require that household-level information on these indicators is available. Employment status and other labor market information allows extending the analysis to individuals in the working-age group. For circumstances, the information needed to make the analysis meaningful would be gender, age, and location (urban/rural and/or regional) of the individual; demographic characteristics of the household (size and composition); characteristics of parents (gender, age, and education); and some measure of household income, consumption, or wealth.

In practical terms, computing the HOI for a particular opportunity when the number of circumstances is relatively large requires an econometric exercise,[5] which involves obtaining a prediction of the D-index from observed access to opportunities and circumstances among children. In simple terms, the exercise consists of running a logistic regression model to estimate the relationship between access to a particular opportunity and the circumstances of the child, on the full sample of children for whom the HOI measure will be constructed. The estimated coefficients of the regression are used to obtain for each child his/her predicted probability of access to the opportunity. The predicted probability is then used to estimate the D-index, the coverage rate, and eventually the HOI (see box 2.2).

Box 2.2 Estimating the Human Opportunity Index from Household Survey Data

To obtain the conditional probability of access to an opportunity for each individual in the sample based on his/her circumstances, a logistic model is estimated. The model is linear in the parameters β, where the event I corresponds to accessing the opportunity, and x is the set of circumstances:

$$\ln\left(\frac{P\{I=1|X=(x_1,\ldots\ldots,x_n)\}}{1-P\{I=1|X=(x_1,\ldots\ldots,x_n)\}}\right)=\sum_{k=1}^{n}x_k\beta_k \tag{B2.2.1}$$

where x_k denotes the row vector of variables representing n circumstances and β_k is a corresponding column vector of parameters. Estimation of regression B2.2.1 yields estimates of the parameters $\{\beta_k\}$, denoted as $\left\{\hat{\beta}_{k,m}\right\}$, where m denotes the sample size. The estimated coefficients can be used to obtain for each individual in the sample his/her predicted probability of the opportunity in consideration:

$$\hat{p}_{i,m}=\frac{Exp\left(x_i\hat{\beta}_m\right)}{1+Exp\left(x_i\hat{\beta}_m\right)} \tag{B2.2.2}$$

The predicted probabilities ($\hat{p}$) and sample weights from the survey (w_i) can be used to find the predicted overall coverage rate $\hat{\bar{C}}$ and D-index $\left(\hat{D}\right)$ as:

$$\hat{\bar{C}}=\sum_{i=1}^{m}w_i\hat{p}_{i,m} \tag{B2.2.3}$$

$$\hat{D}=\frac{1}{2\hat{\bar{C}}}\sum_{i=1}^{m}w_i\,|\,\hat{p}_{i,m}-\bar{C}\,| \tag{B2.2.4}$$

$$(\text{Note}:\hat{\bar{C}}=\bar{C})$$

$$\hat{H}=\bar{C}(1-\hat{D}) \tag{B2.2.5}$$

A comprehensive application of the D-index, as in equation 2.3 in the text, would require the list of regressors to include interaction terms between circumstances (for example, between parental education and location). Given the number of circumstances, limited sample sizes, and number of countries and opportunities for which these regressions have to be run, including interactions would lead to intractable problems in at least some of the cases. The interaction terms are thus omitted. Including such additional regressors in the estimation would result in a higher D-index (and lower HOI). Thus, the estimated D-index for all countries and opportunities is the *lower bound* of inequality of opportunity (and the estimated HOI is the upper bound) for the set of circumstances used in this report.

Source: Adapted from Barros, Vega, and Saavedra 2010.

Calculating Inequality of Opportunity for Non-Binary and Monetary Outcomes

Attitudes about inequality vary for several reasons, but an important factor is whether inequalities are seen to be driven by differences in factors for which the individual can be held accountable, or by factors that lie beyond the individual's responsibility. Roemer (1998) describes equality of opportunity as a situation in which important outcomes are distributed independently of an individual's circumstances. Although the distribution of economic welfare may vary because of different degrees of effort within a type, equality of opportunity would require that between-group differences play a negligible role in total observed inequality.

To measure inequality of opportunity, Bourguignon, Ferreira, and Menéndez (2003, 2007) parametrically estimate inequality of opportunity using information from various cohorts in Brazil (box 2.3). Checchi and Peragine (2005) apply a nonparametric decomposition to measure inequality of opportunity for income and educational achievement in Italy. And Lefranc, Pistolesi, and Trannoy (2006) use stochastic dominance rankings to compare the degree of inequality of opportunity among a set of mostly high-income countries. Ferreira and Gignoux (2011) present a methodology that defines a scalar measure, which allows for inequality of opportunity and a quantification of how far groups are from each other.

Box 2.3 Estimating Inequality of Economic Opportunity from Household Data

The starting point of this framework is the Bourguigon, Ferreira, and Menéndez (2007) "model of advantage" of the general form:

$$y = f(C, E, u) \tag{B2.3.1}$$

where y denotes the outcome of interest (the opportunity); C denotes a vector of circumstance variables; E is a vector of effort variables; and u denotes pure luck or random factors. Roemer's definition of equality of opportunity essentially requires that $F(y|C) = F(y)$, and to measure inequality of opportunity is therefore to measure the extent to which $F(y|C) \neq F(y)$.

Scalar indices of inequality of opportunity are constructed by partitioning the population into circumstance categories. Given agreement on a particular vector of circumstance variables **C**, we can define $\{y_i^k\}$ as a partition of the distribution so that the population is split into K groups, such that the members of each group are identical with respect to all circumstances in the vector **C**. Defining the partition $\{y_i^k\}$ requires agreement on a vector **C**, for which the joint distribution F(y, C) is observed, as well as agreement on the specific partitioning within each variable. To capture the degree of inequality of opportunity in the partition, the focus should be on the degree of between-group inequality from the partition of

box continues next page

Box 2.3 Estimating Inequality of Economic Opportunity from Household Data *(continued)*

the population. A natural candidate index would be $\theta\left(\left\{y_i^k\right\}\right) = \dfrac{IB\left(\left\{y_i^k\right\}\right)}{I(F(y))}$. This index is the ratio of between-group inequality of the partition $\left\{y_i^k\right\}$ to the overall inequality in the population. As a relative measure, $\theta\left(\left\{y_i^k\right\}\right)$ maps to [0,1], for any decomposable inequality measure I(). The mean log deviation is used as the inequality measure.

The estimate of the inter-group or between-group inequality $IB\left(\left\{y_i^k\right\}\right)$ can be obtained from a *smoothed distribution* $\left\{\mu_i^k\right\}$ that corresponds to the predefined partition $\left\{y_i^k\right\}$, but where all y_i^k are replaced with the group-specific mean μ_k. Thus, θ can be calculated from $I\left(\left\{\mu_i^k\right\}\right)\big/I\left(\left\{y_i^k\right\}\right)$, where this is simply the ratio of inequality in the smoothed distribution to the inequality in the original distribution.[a]

For an overall estimate of $\theta\left(\left\{y_i^k\right\}\right)$ and if the sample is sufficiently large relative to the number of cells in the partition $\left\{y_i^k\right\}$, this nonparametric approach will suffice. Unfortunately, with the information typically collected in household surveys, individuals' circumstances can often be partitioned in many cells, but as the number of cells increases, the size of the cells (the number of individuals sharing that specific set of circumstances) diminishes, leading to the problem of data insufficiency.

As an alternative to nonparametric estimation, Bourguignon, Ferreira, and Menéndez (2007) use a log linear specification of the form:

$$\ln(y) = C\alpha + E\beta + u \qquad\qquad (B2.3.2)$$

$$E = BC + \upsilon \qquad\qquad (B2.3.3)$$

The reduced form is $\ln(y) = C\,(\alpha + \beta B) + \upsilon B + u$ and can be estimated by ordinary least squares as

$$\ln(y) = C\psi + \epsilon \qquad\qquad (B2.3.4)$$

Under these functional form assumptions, the *parametrically smoothed distribution* $\{\tilde{z}_t\}$ arises from replacing each y_i with $\tilde{z}_t = f[C, E(C)]$, where the error terms of the model are suppressed. That is, the counterfactual distribution is obtained by estimating a specific parametric model for equation B2.3.4 and suppressing within-group inequality by replacing y_i with its prediction, given the vector of circumstances **C**. In a reduced-form framework, and under the functional form assumptions described, the parametrically smoothed distribution is estimated by $\tilde{z}_t = \exp[C_i\hat{\psi}]$. Thus, a parametric alternative to the estimate of inequality of opportunity would be $I\left(\left\{\tilde{z}_t\right\}\right)\big/I\left(\left\{y_i^k\right\}\right)$.

a. This estimate is also called the *direct* measure. An alternative measure is the *residual* approach, where individuals in the same type *k* have their incomes adjusted by a factor equal to the ratio of the overall mean and the group-specific mean to create a standardized distribution where all between-group inequality is eliminated. Inequality of opportunity is then calculated as one minus the ratio of inequality of the standardized distribution to total inequality. The advantage of using the mean log deviation is that it will produce the same estimate irrespective of whether the smoothed or standardized distribution is used (Foster and Shneyerov 2000).

Considering the Empirical Limitations of the Measurement of Inequality of Opportunity

The HOI, as an imperfect measure of equality of opportunity, does not escape having caveats that must be explicitly recognized before turning to the results. The first caveat is that, by construction, the D-index (and therefore the HOI) is a function of the set of circumstances and can change if a different set of circumstances is considered. Although a true measure of equality of opportunity requires that all relevant circumstances are included in partitioning the population in types, this is an unlikely scenario. In reality, we will observe only a subset of relevant circumstances, and an even smaller subset could be measured in any given survey. The set of circumstances included in the estimation, as well as the specific partitioning of the vector variables, will affect the results. This situation implies that there is not a unique HOI for a given opportunity.[6]

The second caveat relates to the *sensitivity* of the index to inequality—the D-index does not change with redistribution of opportunities *among* vulnerable (or non-vulnerable) groups, namely among groups that have below (or above) average coverage rate—an important limitation.

A third caveat is that the index is not *subgroup consistent*. This caveat implies that the D-index (and the HOI) for a population cannot be decomposed into similar measures for subgroups of the population, which means that the change in the HOI over time for the whole population may not be consistent with the change in the HOI for subgroups of the same population.[7]

Of these limitations, the first caveat has received the most attention because of the potential to mislead instead of inform policies. Kanbur and Wagstaff (2014) note that the literature has used a decomposable measure of inequality and conducted inequality decomposition analysis for a long time. For instance, the percentage of inequality accounted for by caste has been an empirical regularity in India. However, interpreting and labeling the between-group component in the inequality decomposition as inequality of opportunity is newer and requires caution when relating it to policy recommendations. Given the data requirements that an accurate application of Roemer's equality of opportunity needs, it is unknown how far the Inequality of Economic Opportunity (IEO) or HOI of a specific country at a specific date falls short of its "true" value, which could make the measures potentially misleading by systematically underestimating what we are trying to measure by an inherently unknown amount.

Furthermore, given the specificity of these indicators for each combination of circumstances, the availability of comparable estimates across countries will be determined by what is the "lowest common denominator" of circumstances. Cross-country comparisons on the basis of the HOI (or the IEO) are best interpreted as a comparison of the upper (or lower) bound of the relevant measure for a common set of circumstances across all countries.[8] Data requirements also often make it impractical to tease out any effects of circumstances in

an individual's effort, which, based on Roemer's definition of a circumstance, are outside the individual's control and are factors for which the individual should not be held accountable.

Another critique of the authors is related to a perceived gap between the conceptualization and implementation of inequality of opportunity. In the case of children, the authors perceive a disconnect between the view that all inequality in childhood matters and the fact that the HOI takes into account only the part of the observed inequality that can be extracted from the observed circumstances. This critique would be more of a concern if the dissimilarity or inequality of opportunity index were used as the *only* measure, instead of the HOI. By construction, the HOI first takes into account *any* inequality in access to childhood services, by considering the coverage rate that differentiates between the "haves" and "have-nots," on which it imposes an additional penalty (using the dissimilarity index) that is proportional to the extent to which coverage varies across children of different circumstances. The fact that this additional penalty is a function of the observed circumstances makes it a partial measure of the "true" inequality of opportunity—if more circumstances were observed, the HOI could be lower. But that does not imply that the measure ignores all other sources of inequality, given that the starting point is the coverage rate that is itself a measure of overall inequality, which is then discounted by an additional penalty for inequality between groups.[9]

Finally, differences in luck or talents are treated as outside the scope of inequality of opportunity. But given that endowed talents are beyond the individuals' control, it could be argued that they should affect our estimation of inequality of opportunity. Although this is an interesting academic debate, most societies are likely to be more tolerant of inequality induced by rewards to innate talents of individuals—even if they were genetically inherited—than by circumstances such as parental wealth, ethnicity, gender, and so on.

These critiques help to illuminate the limitations to operationalization of the equality of opportunity framework when using household data.[10] Nonetheless, it is also important to recognize the strides in the broader literature that have been made to address these problems. For instance, Niehues and Peichl (2012) take advantage of the availability of longitudinal data and propose a methodology to estimate an upper bound for the contribution of circumstances to inequality. In this methodology, rather than taking effort as a residual component after specifying the relevant circumstances, the authors use explicit measures of effort (such as years of education) and provide upper bounds for the estimate of inequality of opportunity in Germany and the United States. This methodology is replicated by Tiwari, Lara Ibarra, and Narayan (2015) for the case of the Russian Federation. In the related literature on intergenerational mobility, Chetty et al. (2014) provide a compelling example of the great potential of collecting and accessing detailed data. Using information from millions of earnings records from two generations in the United States, the authors compare how the distribution of one generation influences the earnings distribution of the children.

Including Inequality of Opportunity in the Policy Debate

Despite the shortcomings, there is a pressing need to seek evidence to shed light on the most relevant aspects of inequality that vulnerable populations face. Although they are not perfect, the HOI and IEO frameworks have proven to be informative to the policy debate and the understanding of development paths. The 2006 *World Development Report* argues that inequality of opportunity, within and among nations, weakens prospects for overall prosperity and economic growth. In addition, the cross-country literature linking economic growth with human capital has relevance for this hypothesis. For example, Barro (2001) finds growth to be positively related to the average years of school attainment of adult males at the secondary and higher levels at the beginning of the period, in a panel of 100 countries observed from 1965 to 1995. Although the "quantity" of schooling is important, the quality of schooling as measured by internationally comparable test scores is even more so. Several studies in recent years have shown the effect of health on economic growth to be important (see Grimm 2011 for an overview).[11] Recent literature has also assessed the effect of *inequality in health* on economic growth. Grimm (2011, 6) uses a cross-national panel data set of 62 low- and middle-income countries between 1985 and 2007, and finds a "substantial and relatively robust negative effect of health inequality on income levels and income growth."

Although research establishing a causal link between *inequality of opportunity* and growth at the macro level is still at a nascent stage, the evidence so far seems to favor the hypothesis that inequality of opportunity has an adverse impact on growth and development. In a historical data set of nearly 100 countries, Molina, Narayan, and Saavedra-Chanduvi (2013) find that inequality of opportunity—attributable to circumstances an individual is born into—in education among children has a negative impact on per capita income. Marrero and Rodriguez (2013), using data from states in the United States, finds a negative relationship between the component of income inequality attributable to circumstances and economic growth. Therefore, improving opportunities for children—by improving coverage and reducing inequality of opportunity—seems to be not just about "fairness" and building a "just society," important as these principles are, but also about realizing a society's aspirations of economic prosperity. Notably, the dividends of investing in opportunities among children, as suggested by micro- and macro-level evidence, are likely to accumulate over time and across generations.

Finally, in a society that attempts to provide equitable access to basic services, progress is sought toward two objectives: ensuring that as many people as possible get the opportunities, and allocating new opportunities first to those who are at a disadvantage because of their circumstances. The HOI can be used to monitor progress toward these simultaneous objectives and help identify possible trade-offs between the two objectives. Such trade-offs can easily occur when the marginal cost of providing the same service is different for different groups, for example, when the cost of covering an additional child with a service is higher in remote areas of a country than urban areas. To the extent that

the HOI is consistent with the policy maker's social welfare function, maximizing the HOI—subject to some budget constraint—can be a possible objective that can guide policy makers by helping to resolve such trade-offs. In practical terms, this will come down to identifying the different groups (as defined by their circumstances), allocating appropriate amounts, and deciding on the strategy for improving the coverage of the particular good or service among the targeted groups.

Applying Inequality of Opportunity to the MNA Region

We include in the analysis six countries from the MNA region. The selection of countries was based on the following criteria: (a) nationally representative household surveys are available; (b) household surveys are available for at least two (recent) time periods, and the surveys are statistically comparable; and (c) the household surveys contain a similar set of modules and questions that allow cross-country comparability. The countries included in the estimations are the Arab Republic of Egypt, Iraq, Jordan, Morocco, Tunisia, and the West Bank and Gaza. For each country, the analysis uses information from two time periods. The first period refers to surveys collected circa 2005, and the second period is circa 2010. The only exception is Morocco, for which the data are from 2001 for the first period, and 2007 for the second period. Whenever possible, data from the Demographic and Health Surveys are also used to bolster the opportunities related to child health.

Defining a Set of Opportunities for Children in MNA Countries

Table 2.1 provides a list of the indicators used as opportunities throughout the analysis. Although the indicators are mostly about access to services and do not fully satisfy the definition of opportunity, they are considered as representing opportunities in this study. The short list of indicators in the table is not in any way intended to represent all opportunities that should be available to a child to achieve his/her potential in life. A comprehensive list of key opportunities would cover several other indicators. These include indicators of early childhood development, learning achievement among children of different ages, children's access to preventive and curative health care and intake of key nutrients, health of the child at birth, access to key services for the mother at birth, and pre- and postnatal care for mothers. All these basic goods or services (and others) would play some role in influencing the child's likelihood of achieving his/her potential in life and therefore the outcomes in adult life. Many of these would also be country- and context-specific; in other words, some goods and services matter more for some countries and/or periods than for others.

Of the long list of potential opportunities, the much shorter list in table 2.1 was selected mainly because the list represents key opportunities that are likely to be important for all the countries in the analysis.

For education, one indicator of attendance and one for achievement are included. For attendance, the focus is on the range of ages when investments in

Table 2.1 Opportunities Analyzed for Children in the MNA Region

Category	Opportunity	Definition	Countries with information
Education	Attending school	Child is currently attending school (children ages 10–14 years)	All
	Complete primary-basic education on time	Child completed at least six years of education (children ages 12–16 years)	All
Health	No wasting	Child is not considered wasted (children ages 0–4 years)	Iraq
	No stunting	Child is not considered stunted (children ages 0–4 years)	Iraq
	No underweight	Child is not considered underweight (children ages 0–4 years)	Iraq
	Assisted birth	Doctor, midwife, or nurse assisted during birth (children ages 0–4 years)	Morocco
	Any prenatal care	Mother went to a prenatal visit (children ages 0–4 years)	Morocco
Basic housing services	Water	Household has access to tap water in the dwelling (children ages 0–16 years)	All
	Sanitation	Household is connected to the public sewerage network (children ages 0–16 years)	All
	Waste correctly disposed	Garbage deposited in designated collectors or picked up by municipal truck (children ages 0–16 years)	Egypt, Arab Rep.; Morocco
	Electricity	Dwelling has electricity (children ages 0–16 years)	Morocco
	Reliable electricity	Dwelling reports at least 20 hours per day of electricity supply (children ages 0–16 years)	Iraq
	Water supply sufficient	Respondent considers the water supply sufficient (children ages 0–16 years)	Iraq
	Frequent interruptions of water supply	There are no daily interruptions in water supply (children ages 0–16 years)	Iraq

Note: Information in the table was compiled from various surveys.

human capital accumulation are of most importance. To get a better sense of the ability of children to transform the education received into learning, completion of primary education on time is used as a measure of educational achievement. The relevant range of children is defined as ages 12–16 years. It is important to note that achievement indicators are a proxy for school quality and a child's ability to use education to attain a basic level of learning. To get at learning more directly, the analysis is supplemented with data from student achievement on international standardized tests, such as the Program for International Student Assessment.

For health, two or three indicators are defined as opportunities whenever data are available. In Iraq, for children younger than 5 years, the analysis uses an indicator for whether the child is stunted (low height for age), wasted (low weight for height), or underweight. The opportunity to be adequately nourished is a key

measure of health status in childhood, with implications for human potential and lifelong earnings. As opposed to the other opportunities considered here, which are in most cases inputs that can be directly influenced by sector policies and programs, not being stunted or wasted is a function of the availability of a complex bundle of inputs, which includes access to safe water and adequate sanitation, breastfeeding, and food intake with adequate calories and micronutrients, mapping to different sectors, such as infrastructure and health. Moreover, unlike the other opportunities that are about access to services, not being stunted (a proxy for being nourished) involves a "functioning"—namely a previous process through which nourishment is achieved. In Morocco, information on the care received by the mother while pregnant provides two opportunities: received any prenatal care and assisted birth. Research has shown the importance and far-reaching effects of good health while the fetus is in utero.

For basic infrastructure facilities, the indicators selected as opportunities are access to a safe source of drinking water, and appropriate sanitation facilities for children between ages 0 and 16 years. Water and sanitation are primary drivers of public health, improvements in which have been shown to reduce the incidence of diarrhea and its serious long-term consequences, such as malnutrition, pneumonia, and physical or mental stunting. Access to electricity is an important contributor to the quality of life and facilitates access to other opportunities, as it facilitates studying, improves access to information, and reduces the time spent on physical chores (Barros et al. 2009). For Morocco, access to electricity is observed, while for Iraq the opportunity is further defined as having reliable electricity supply (measured as more than 20 hours per day of supply). In addition, the Iraqi data allow for the analysis of the quality of water supply by collecting information on whether the household deems the water supply to be sufficient, and whether there are frequent interruptions in the supply.

Finally, one part of the analysis in the subsequent chapters uses a particular definition of opportunities, which yields a "composite HOI" that reflects access to multiple goods and services for the same child. For this part of the analysis, "opportunity" refers to a child being covered by *all* the goods and services that are relevant for a child of that age, and this definition is then used to compute the HOI. For each country, the composite HOI has an intuitive interpretation: it reflects the extent to which children of a particular age group are covered by *all* the basic opportunities relevant for their age, and how unequal the coverage between different groups of children is. The composite HOI is derived from the idea that none of the basic opportunities listed earlier is a substitute for another, and the absence of any one opportunity constitutes an inadequacy in human opportunities that society must care about.

Defining a Set of Circumstances for Children in MNA Countries

Circumstances are exogenous characteristics of the child, which, to satisfy the principle of equality of opportunity in a society, should not be correlated with having access to a basic good or service. In reality, however, several such characteristics could matter for access, and the analysis in this report attempts to

identify how much they actually matter. The exact criteria for determining which characteristics should be considered "circumstances" is complex. Ideally, each society should choose its own set of circumstances that it believes should not interfere with access to basic goods and services. At the same time, for results of a multi-country analysis to be comparable across countries, the circumstances chosen should be identical for all countries. For the purposes of this analysis, a set of circumstances common across all countries was selected, taking into account the characteristics that most societies would accept that they *should not* matter for a child's access to basic goods and services, but *may in fact* matter. The list of circumstances was also informed by the choices made for previous work on the HOI in the Latin America and the Caribbean region (Barros et al. 2009, 2012) and Sub-Saharan Africa (Dabalen et al. 2015), albeit with some changes reflecting differences in the regional context and the nature of the data available for each region.

The circumstances that were selected can be categorized into five main groups: characteristics of the child, household composition or characteristics of household members, location, characteristics of the household head (or mother), and socioeconomic status of the household. Table 2.2 shows the complete list of circumstances in each category considered for every type of opportunity. Although the categories are the same for all types of opportunities, five of the

Table 2.2 List of Circumstances Considered for HOI Estimation

Category	Circumstance	Description
Child characteristics	Gender[a]	Binary variable equals one if child is male
Household members' characteristcs	Children in the household[a]	Number of members ages 0–15 years living in same household
	Elderly presence	Binary variable equals one if there is at least one household member age 65 years or older[b]
	Single parent household[a]	Binary variable equals one if household head's partner is not present
Household head characteristics	Age	Age of household head (years)
	Educational attainment[a]	Education of household head broken in five or six categories by level of attainment[c]
	Public worker	Binary variable equals one if household head works in the public sector
Location	Rural[a]	Binary variable equals one if household is located in a rural community[d]
	Region	Series of binary variables that refer to governorate of residence or region
Socioeconomic status	Consumption quintile	Household consumption per capita mapped to a quintile of the consumption per capita distribution in the country[e]

Source: World Bank compilation.
Note: HOI = Human Opportunity Index.
a. Regional and international comparisons include this common set of circumstances.
b. Not included in the HOI estimations for Iraq.
c. Categories vary because of differences in each country's educational system.
d. For the West Bank and Gaza, categorical variables for urban, rural, and refugee camp are included to account for location.
e. For the Arab Republic of Egypt, quintiles are based on household wealth.

individual circumstances—gender of the child, number of children (ages 0–15 years) in the household, whether the parent is single, education of the household head, and location (urban or rural) of the household—are identical across all opportunities. For the rest, *there are some differences in the definitions of the circumstances used for education and infrastructure opportunities versus those used for health opportunities*. These differences occur because of a combination of two factors, data availability and the relevance of a particular circumstance for an opportunity.

The list of circumstances selected for constructing the HOI for an opportunity matters a great deal for the measure. Therefore, all the results that follow in subsequent chapters are subject to the caveat that the HOI is estimated for a specified list of circumstances and subject to change if this list were to change. This is quite different, for instance, from a standard inequality measure (like the Gini coefficient of income), which has a unique value for a given distribution of income. Although the HOI for an opportunity is not unique and depends on the number of circumstances considered, it cannot be higher if more circumstances are added to the existing list. In other words, if a society wants to measure equality of opportunity with reference to a *larger* number of groups than what is considered here, the measure of the HOI that is provided will serve as an *upper bound* to the "true" HOI that would consider all circumstance groups.

Having a common set of circumstances for a given opportunity across all countries also implies that certain circumstances that are important for inequality in a particular country are absent from the list. This situation could lead to the HOI (D-index) that is estimated for that country to be overestimated or underestimated and not reflect the "true" inequality of opportunity in the country. Ethnicity, for example, is a notable example of such an omitted circumstance. Given this potential issue, the results throughout this report should be interpreted as the upper (lower) bounds of the HOI (D-index) for an opportunity in a particular country, computed for a set of circumstances common to all countries. In other words, country specificity is sacrificed for comparability across countries, a trade-off that seems appropriate for a multi-country study.

Taking these factors into account, the analysis for MNA countries takes two distinct tracks. In the first instance, to benchmark countries in this region against others in the world, the analysis uses a minimum common set of opportunities as well as circumstances. Ensuring this consistency enables making valid cross-country comparisons. Once that has been done, the list of opportunities as well as circumstances is expanded for each country in the region to tease out issues of quality of opportunity and the role of country-specific circumstances, such as region of birth. Region of birth or residence is an important circumstance for each country in the region, but the only space-related variable that can be included in the analysis at the regional or global level is urban/rural.

Finally, it is important to take into account the effect of excluding any interaction between circumstances from the logit estimation model to compute the predicted probability of access. The simplified specification is essential for the analysis to be tractable, and implies that the HOI (D-index) should

be interpreted as the upper (lower) bound of what the estimates would be if interactions were included. The omission of interactions also means that the additional effect of "double disadvantages" on access to a service cannot be taken into account. This effect could occur, for example, when the cumulative disadvantage of being a girl child in a rural area is different from what is suggested by the marginal effects of gender and location on school attendance. Such disadvantages have been analyzed in the literature in various contexts—Lewis and Lockheed (2008), for example, show that girls in rural areas are doubly disadvantaged in access to education in several countries.[12] Although the inability to account explicitly for double disadvantage in the analysis is no doubt a limitation, its effects on the HOI and D-index measures are likely to be small in most cases. However, the caveat would apply more strongly to the analysis of how each individual circumstance contributes to inequality, which is the subject of chapter 4 of this volume.

Notes

1. Transforming such access into functionings and ultimately taking advantage of opportunities depends on the context of such transformation. As has been noted in other HOI reports, it is important to recognize that judgments about social states goes beyond access to goods and services and should involve the processes through which equality of opportunity is achieved. The HOI estimates should not be interpreted as a tool to rank the state of societies, but only the implication of greater access to a good or service across subgroups of each country's population.

2. Bourguignon et al. (2007), Checchi and Peragine (2005), and Lefranc, Pistolesi, and Trannoy (2008, 2009) among many others provide other measures of equality of opportunity. However, our preferred measure can be characterized as a simple *scalar* measure and, at the same time, is computable from data readily available, such as household surveys.

3. HOI also has the property to be bounded (its range) by $\bar{C}$ and $\bar{C}^2$ (see Barros, Vega, and Saavedra 2010 for detailed discussion of all properties).

4. Consider, for example, a case where the only circumstance is quintiles of household income; the coverage rates of a service among the first and second quintiles are C_1 and C_2, respectively; the average coverage rate for the two quintiles is C_{12}; and the average coverage rate for the population is C^*, where $C_1, C_2 < C^*$. For a given C^* and C_{12}, no change in C_1 and C_2 will have an impact on the D-index or the HOI for this service. In other words, any reallocation among vulnerable groups (ones with coverage less than the average for the population) has no effect on the HOI.

5. It is easy to see that the number of circumstance groups multiplies rapidly as the number of circumstances (and the number of categories within each circumstance) increases. When the number of circumstance groups becomes large, the nonparametric method of computing the index, which will require computing D as given by equation 2.3, becomes unwieldy and runs into problems because of the extremely small sample size for some of the groups.

6. It must be noted that this caveat also affects the estimation of inequality of opportunity in labor earnings. It makes little difference whether the estimates are direct or residual, or nonparametric or parametric. All estimates should be interpreted as lower bounds.

7. The second and third caveats can be avoided by considering an alternative measure of the HOI, the "geometric HOI." Combining the use of the HOI and geometric HOI (GHOI) can allow the analysis to benefit from the relative strengths of these two indexes that share the basic idea and many of their properties. The advantages of the GHOI are its sensitivity to any change in the distribution of circumstance-specific coverage rates and its subgroup consistency. But the GHOI is less intuitive than the HOI and does not have an easy graphical interpretation. For these reasons, the GHOI is typically used in HOI analysis only when subgroup consistency is a requirement, which is not the case in this study, since subregional- or subgroup-level analysis is not attempted for any country.

8. This is true because adding additional circumstances, if they were available, would change each measure in one direction only, reducing the HOI and increasing the IEO.

9. To take an example, in a country where 50 percent of children ages 6–11 years go to school, the HOI will never exceed 0.5 regardless of whether the enrollment rate is different between groups with different circumstances. Suppose now that on the basis of one observed circumstance X, the penalty for inequality between groups is such that the HOI becomes 0.45. It is incorrect to suggest that the figure of 0.45 ignores all inequality that is not attributable to X. Rather, it takes the 0.5 that itself reflects the fact that half the children are not enrolled, and then discounts it with an additional 0.05 for inequality between children with differences in the circumstance X.

10. Lara Ibarra and Martinez-Cruz (2015) use Monte Carlo simulations to provide some quantification of the downward bias that the measures of inequality of opportunity will have under various scenarios. The preliminary results show that the bias of not observing even one key circumstance can be substantial, at around 50 percent.

11. Estimating health effects on income is difficult because of the problems in measuring health and the potential endogeneity of health (see Deaton 2006). Studies such as Bloom, Canning, and Fink (2009); Bloom, Canning, and Sevilla (2004); Cervelatti and Sunde (2009); Lorentzen, McMillan, and Wacziarg (2008); and Weil (2007), using different methods, have shown health effects on income or growth to be important and probably exceeding the reverse effect, namely that of income on health. The debate is however not fully settled yet, because of the difficulties mentioned.

12. See also Lockheed (2008). Filmer (2008) analyzes education inequality in a large number of countries along dimensions such as income quintiles, gender, and orphan-hood, and documents some of the effects of double disadvantages. For example, when being female is associated with lower educational attainment, the shortfall is largest among the poor.

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Opportunities for Children

Summary

This chapter examines inequality of access to basic services, such as quality education, health, and infrastructure among children in the Middle East and North Africa (MNA) region. These basic services are critical human capital investments and constitute the fundamental building blocks of opportunities in life. On average and benchmarked against other regions of the world, the MNA region does reasonably well on basic measures of children's access to education and health, based on the human opportunity indexes (HOIs) for school attendance, timely school completion, full immunization, and child malnutrition. The coverage rates are high and these opportunities are fairly equitably distributed among children of varying birth circumstances. But opportunities are far from universal in access to basic infrastructure, when opportunity is defined as access to a *bundle* of basic services, or when the *quality* of services is taken into account. Coverage of infrastructure services such as improved sources of drinking water and (especially) adequate sanitation are markedly lower, with significant disparities in how they are distributed. Location of residence explains more than half the variation, with spatial advantages accruing to capital cities and large metropolitan areas that coincide with poles of economic activity. Coverage is also lower and inequality of opportunity is higher when "opportunity" is defined as having access to a bundle of basic services, such that no single one is a substitute for another, rather than taking them separately or one at a time.

When the standard for what constitutes an actual opportunity takes into account the *quality* of services, coverage rates drop and inequality of opportunity rises across all indicators for which data are available. Children in the MNA region demonstrate lower basic proficiency on learning assessment tests than in other countries with comparable income levels; the quality and reliability of public services in water, electricity, and sewerage are much lower than what the access figures would suggest. Low average quality of learning and infrastructure services translates to deep inequalities among children differentiated by circumstances such as socioeconomic background and location. When quality services are at a premium, those who are most likely to be excluded are children

born in households that have inadequate means to access private sources and the least access to informal channels, such as social networks that substitute for weak institutions. These findings are consistent with a social contract in which the state promises to provide certain basic services to its citizens, but is unable to adapt and evolve with citizen engagement and accountability mechanisms at all levels to deliver quality services in an equitable manner. With low trust in public institutions, citizens tend to disengage from formal institutions and processes, which further erodes accountability and norms of public service, and widens inequality of opportunity.

Introduction

This chapter discusses the main findings on the state of inequality of opportunities for children in the MNA region. The analysis facilitates the benchmarking of the region's performance against others in the world and also goes in-depth into country-specific discussions of particular dimensions of inequality. Whenever permitted by the availability of data, a special effort is made to present a richer discussion of the quality of opportunities. The chapter is organized as follows. The first part compares countries in the region with Sub-Saharan Africa and Latin America and the Caribbean, the two other regions for which comparable estimates are available. That discussion is followed by a country-specific exploration of the role of geographic space or region of birth in determining access to opportunities. The following sections explore what happens when opportunities are defined as access to a bundle of services, and when the quality of services is taken into account, respectively.

Inequality of Opportunities in MNA in the Global Context

How Does MNA Fare?

This stage of the analysis uses a limited set of comparable circumstances to calculate the inequality of opportunities. The focus is on four key opportunities: school attendance at ages 10–14 years, completion of at least six years of education for children ages 12–16 years, and growing up in a household with access to improved water and adequate sanitation. Using the methodology described in chapter 2, this chapter produces estimates of the coverage rates and HOI for the four opportunities for MNA and presents them alongside comparable estimates for selected countries in Sub-Saharan Africa and Latin America in figures 3.1, 3.2, 3.3, and 3.4.

In line with the findings for other regions, the opportunity to attend school for children ages 10–14 years registers very high levels of coverage and HOI. In Latin America, about two-thirds of the countries analyzed have coverage and HOI above 90 percent, whereas in MNA this is true for the Arab Republic of Egypt, Tunisia, and the West Bank and Gaza. In 2010, Jordan registered coverage and HOI comparable to the levels in Ghana and Zambia. At the lower end, Iraq and Morocco have coverage rates around 80 percent and associated HOIs of

Figure 3.1 Coverage and HOI for School Attendance for MNA versus Other Regions
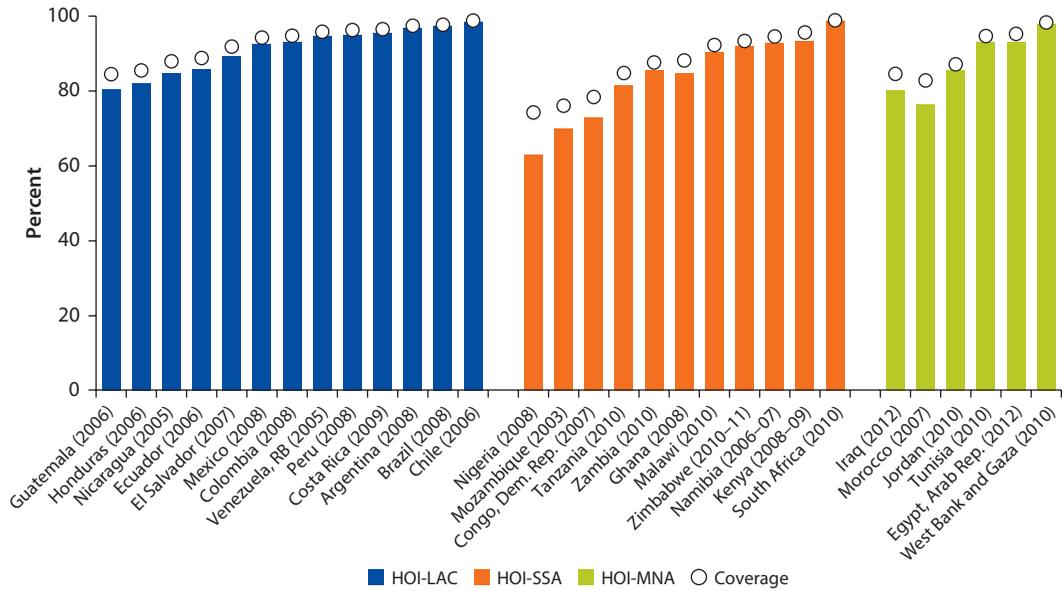
Legend: ■ HOI-LAC ■ HOI-SSA ■ HOI-MNA ○ Coverage

Source: World Bank calculations based on various surveys.
Note: HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SSA = Sub-Saharan Africa.

76 percent. The gap between coverage and HOI, which is a measure of the penalty for unequal coverage, is relatively low in the region. There are regional heterogeneities, with Iraq and Morocco having higher levels of inequality than Egypt and the West Bank and Gaza.

For the opportunity to finish primary school on time, the results show lower levels of coverage and HOI than for attendance across the board. The one exception is Jordan, with a recorded coverage rate and HOI above 99 percent.[1] From figure 3.2, it seems that the average coverage rate and HOI in the MNA countries are higher than those found in Sub-Saharan Africa, and closer to the higher end of the results found for Latin America. The coverage rate and HOI in the West Bank and Gaza was around 90 percent, a level comparable to Mexico in 2008, while the figures for Egypt, Iraq, and Tunisia are closer to the median for Latin American countries. Of all the countries analyzed in MNA, Morocco had the lowest rate for the educational achievement opportunity, with a coverage rate of about 50 percent and an associated HOI of 41 percent. This measure is a crude and somewhat partial measure of the quality of education, in the sense that it takes into account not just school attendance, but learning that is adequate enough to ensure timely grade progression.

Moving from education to the opportunity related to growing up in a household with adequate sanitation, the coverage rates are lower not just in the MNA countries, but also in the other regions (figure 3.3). For the sake of comparability, the sanitation variable is defined in the same way across all countries and regions, and children are considered to have the opportunity if they live in a household

Figure 3.2 Coverage and HOI for Finishing Primary School on Time for MNA versus Other Regions
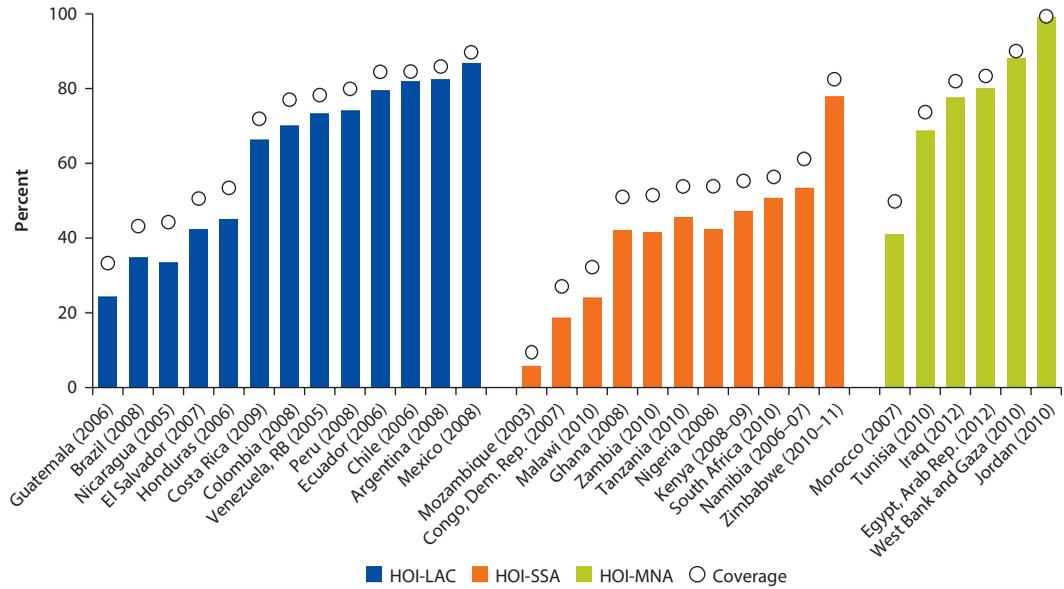
Source: World Bank calculations based on various surveys.
Note: HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SSA = Sub-Saharan Africa.

Figure 3.3 Coverage and HOI for Access to Sanitation for MNA versus Other Regions
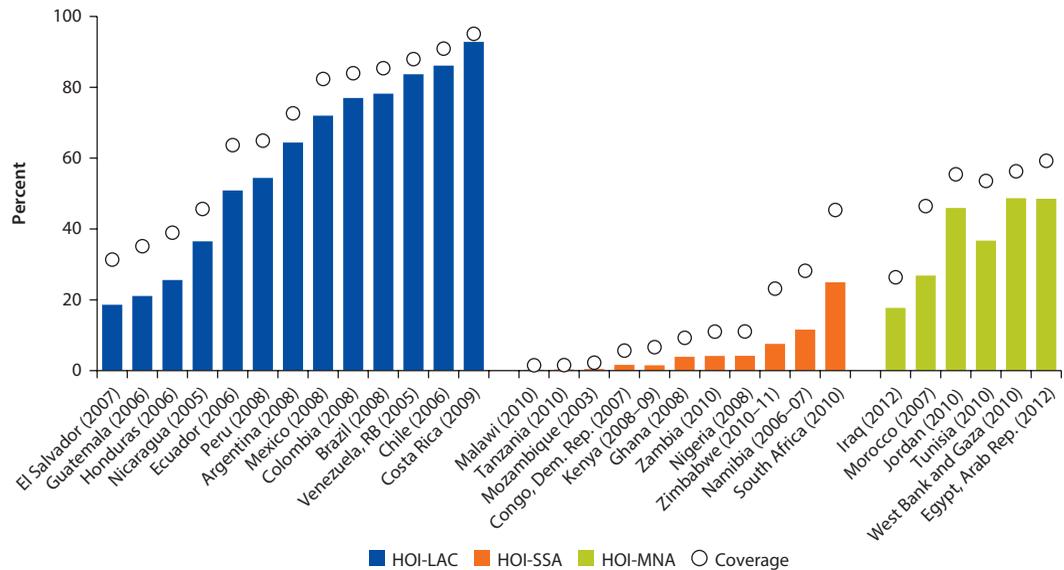
Source: World Bank calculations based on various surveys.
Note: HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SSA = Sub-Saharan Africa.

with a flush toilet or pit latrines. The results show that, excluding Iraq, children in the MNA region enjoy coverage rates between 50 and 60 percent. Coverage for Iraq is just above 25 percent. Compared with the other regions, MNA fares better, on average, than almost all countries in Sub-Saharan Africa for which data are available, but MNA does relatively poorly compared with the Latin American countries. The inequality in coverage implied by the gap between the HOI and coverage for this opportunity is also higher than the inequality for the schooling opportunities.

For access to water, the MNA region fares distinctly better than all the countries in Sub-Saharan Africa for which data are available, but there is large variation in access within the region. Egypt and the West Bank and Gaza show the highest coverage rate and have levels comparable to countries in the high end of Latin America, such as Argentina, Chile, and Costa Rica (figure 3.4). By contrast, Iraq, Jordan, and Tunisia have rates of coverage and HOI in the range of 60 to 70 percent at levels roughly comparable to those found in Ecuador and Guatemala. Morocco shows the lowest coverage rate, at about 50 percent, which is higher than the rates in Central American countries, such El Salvador, Honduras, and Nicaragua, and comparable to the level in Peru.

The analysis uses comparable demographic and health surveys to do the same international benchmarking of countries in the region for opportunities related to child health. The focus is on childhood free of stunting and with full immunization, which is basic protection against deadly but easily preventable diseases. The stunting indicator, which is the opportunity to be adequately

Figure 3.4 Coverage and HOI for Access to Water for MNA versus Other Regions
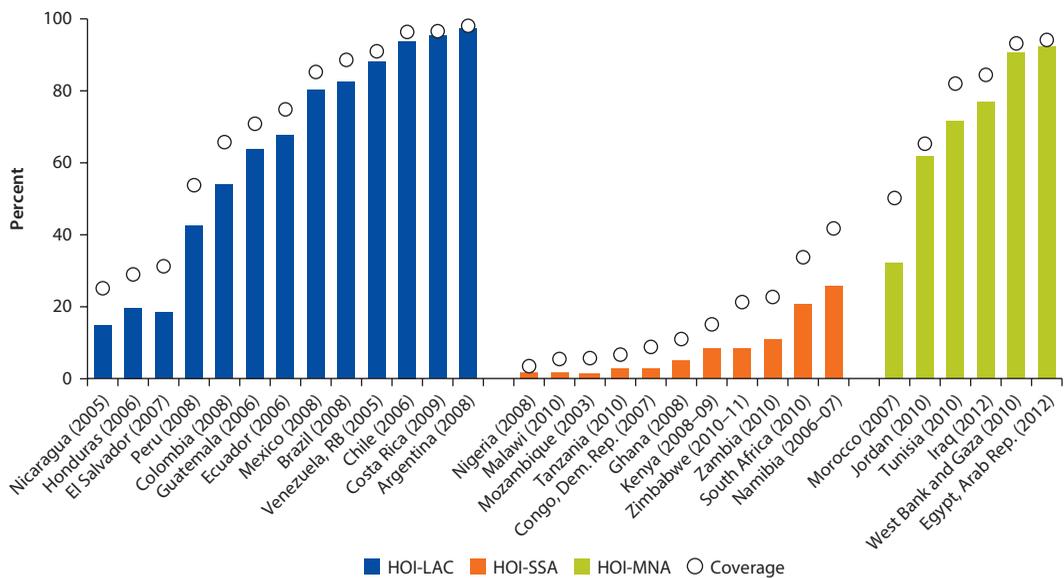
Source: World Bank calculations based on various surveys.
Note: HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SSA = Sub-Saharan Africa.

nourished, is a key measure of health status in childhood, with implications for human potential and lifelong earnings. As opposed to the other opportunities considered here, which are in most cases inputs that can be directly influenced by sector policies and programs, not being stunted is a function of the availability of a complex bundle of inputs, which includes access to safe water and adequate sanitation, breastfeeding, and food intake with adequate calories and micronutrients, mapping to sectors such as infrastructure and health. Moreover, unlike the other opportunities that are about access to services, not being stunted (a proxy for "being nourished") involves a "functioning"—namely, a previous process through which nourishment was achieved.

The results presented in figures 3.5 and 3.6 suggest that although there is some within-region variation, with coverage being distinctly better in Jordan than in the case of Egypt and Morocco, on average, these numbers appear better than the averages for Africa and on par with the averages for the Latin America and Caribbean region. However, some of the poorer and currently fragile countries in the MNA region, where health-related opportunities are likely to be worse (such as Djibouti and the Republic of Yemen), are not covered in the analysis presented here because of the lack of available data.

Contributors to Inequality

This section takes a closer look at the coverage rates, estimated HOIs, and D-indexes for the MNA countries. It is important to remember that, as the set

Figure 3.5 Coverage and HOI for Not Stunted Children for MNA versus Other Regions
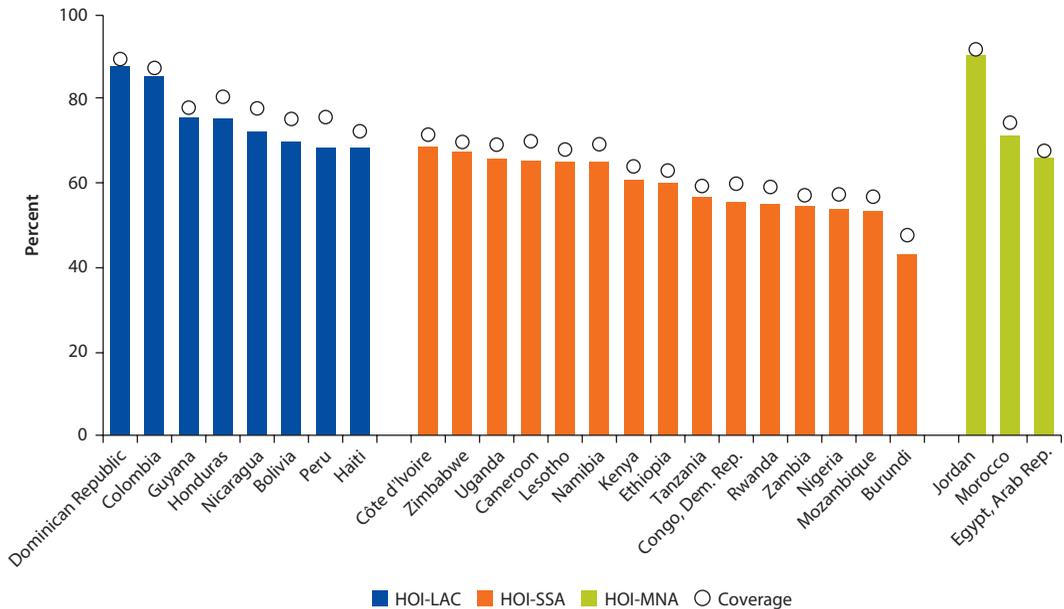
Source: World Bank calculations based on various rounds of Demographic and Health Surveys.
Note: The results presented here are from the most recent survey for each country. HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SSA = Sub-Saharan Africa.

Figure 3.6 Coverage and HOI for Full Immunization for MNA versus Other Regions
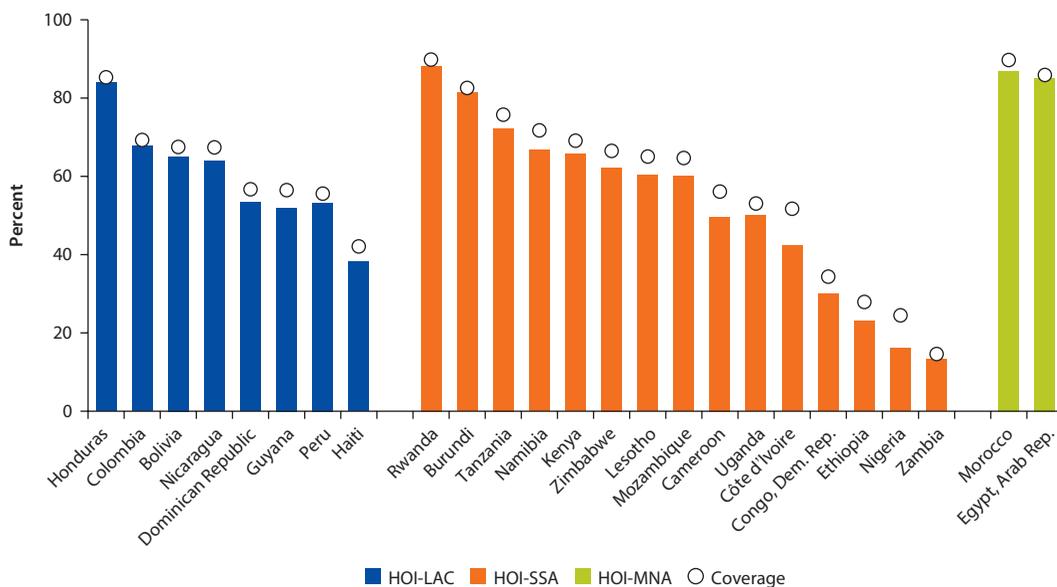
Source: World Bank calculations based on various rounds of Demographic and Health Surveys.
*Note:* The results presented here are from the most recent survey for each country. HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SSA = Sub-Saharan Africa.

Table 3.1 HOI and D-Index Estimations by Opportunity and MNA Country

percent

Country	Attending school			Finish basic education			Access to water			Access to sanitation		
	HOI	D-index	Coverage	HOI	D-index	Coverage	HOI	D-index	Coverage	HOI	D-index	Coverage
Egypt, Arab Rep.	93.2	2.2	95.2	80.2	3.8	83.4	92.3	2.0	94.2	48.5	18.1	59.3
Jordan	85.9	1.8	87.5	99.1	0.2	99.3	63.2	5.2	66.6	43.6	18.3	53.4
Morocco	76.5	7.6	82.8	41.0	17.7	49.8	32.1	36.2	50.2	26.9	42.3	46.5
Iraq	76.3	4.8	80.1	76.2	5.5	80.6	76.4	9.5	84.4	14.7	36.9	23.4
Tunisia	93.0	1.8	94.7	68.9	6.5	73.7	71.6	12.7	82.1	36.7	31.5	53.6
West Bank and Gaza	97.9	0.4	98.3	88.3	1.9	90.0	90.7	2.7	93.3	48.7	13.5	56.3

Source: Calculations using household surveys with the most recent data available.
Note: The years available for each country are as follows: Arab Republic of Egypt (2012), Iraq (2012), Jordan (2010), Morocco (2007), West Bank and Gaza (2010), and Tunisia (2010). D-index = Dissimilarity Index; HOI = Human Opportunity Index.

of circumstances is the same and opportunities are similarly defined, the results are comparable across countries.[2] Table 3.1 presents a summary of the results for all the MNA countries included in the analysis and all the opportunities, using information from the latest surveys available.

Among the education opportunities, attending school shows the highest levels of coverage and HOI. For all the countries, coverage is above 80 percent. The distribution of opportunities seems to be distributed fairly equally across

circumstances, as evidenced by the low level of the D-index. Iraq and Morocco had the highest inequality levels, with D-indexes of 4.8 and 7.6 percent, respectively. Finishing basic education also shows a fairly high level of coverage, although the rates are lower than those for the opportunity related to basic school attendance. This opportunity also appears to be less equally distributed than attending school in the MNA region. The estimated D-indexes are higher than for the opportunity to attend school, for all countries, and over 5 percent for Iraq (5.5 percent), Tunisia (6.5 percent), and Morocco (17.7 percent).[3] Jordan is the only country with a higher coverage rate on finishing basic education as well as having a very small estimated unequal distribution (D-index 0.2 percent).

Basic infrastructure opportunities in the MNA region show lower coverage rates and more unequal distributions than opportunities related to education. Within the region, access to water varies widely in coverage, with Egypt and the West Bank and Gaza registering 93 to 95 percent coverage rates. Given these high rates, inequality is low, with estimated D-indexes of 2 and 2.7 percent for Egypt and the West Bank and Gaza, respectively. Iraq and Tunisia have coverage rates of about 80 percent, with fairly high underlying inequality in access. This inequality translates to an estimated HOI for access to water at 76.4 percent for Iraq and 71.6 percent for Tunisia. Finally, Morocco has the lowest coverage rate estimated for access to water, at just over 50 percent. Moreover, Morocco shows high inequality in the distribution of this opportunity, with an estimated D-index of 36.2 percent.

The provision of access to sanitation is the opportunity for which all countries in the region perform the worst. The highest coverage rate is found in Egypt, but it is less than 60 percent. Coverage is lower for the other countries, and lowest in Iraq, at 23.4 percent. Equally worrying, the distribution of this opportunity is highly unequal across children with different circumstances. The D-indexes for this opportunity are the largest among all opportunities analyzed in this section. Values of the D-index range from 13.5 percent in the West Bank and Gaza to as high as 42.3 percent in Morocco. The estimated HOI for countries in the MNA region is always less than 50 percent, with Iraq showing the lowest value, at 14.7 percent.

For a better understanding of the inequalities in the distributions of opportunities, a decomposition method is applied to the estimated D-indexes (see box 3.1) and the share of the D-index that is explained by the set of circumstances included in the HOI estimations is calculated.

One of the most striking findings that emerges from this analysis is the dominant role of the location variable in the D-index for basic infrastructure opportunities (see figure 3.7 for details). It is useful to note that the location variable here simply records whether the child lives in an urban or rural area in each country, to ensure cross-country comparability. In the subsequent section, the regions in each country are included in the analysis. Still, with just the urban/rural classification, it is quite remarkable that in the case of access to sanitation, the share of the D-index that is attributable to location is over 50 percent in all cases. This means that, in all the countries, the coverage of access to sanitation is

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Box 3.1 Decomposing the D-Index

One approach to decompose the D-index into the contribution of each circumstance included in the analysis is based on the decomposition proposed by Shorrocks (1999) and implemented by Hoyos and Narayan (2011). Intuitively, the decomposition measures the estimated change in the D-index given the addition of a circumstance or a set of circumstances. Thus, the change in the index that results from adding a characteristic is interpreted as an indication of the "contribution" of that circumstance to the inequality of opportunity. The approach must recognize that adding a characteristic to the estimation of the D-index can be done in several ways and depends on the "initial" set of characteristics to which the circumstance of interest is added.

An example is the case where gender, location, and wealth are all the circumstances in the data and the objective is to estimate the contribution of gender to the D-index. The analysis obtains an estimate from the change in the D-index from calculating inequality using location only, and then adding gender as a circumstance. But this process would yield a (potentially) different estimate from the change in the D-index from calculating inequality using wealth only, and then adding gender as a circumstance. Thus, the estimate of the contribution of a circumstance is the average of all the possible changes in the D-index that occur when the variable of interest is added to all the possible subsets of preexisting variables.

To see how this is implemented, consider a D-index given by D(x), where x is the vector of circumstances. Next, take two sets of circumstances, A and B, which do not overlap (D(A, B) $\geq$ D(A)). The impact of adding the set of circumstances A is given by:

$$Cont_A = \sum_{S \subseteq N \setminus \{A\}} \frac{|s|!(n-|s|-1)!}{n!}[D(S \cup \{A\}) - D(S)]$$

where N is the set of all circumstances and n is the number of variables in total; S is a subset of N (containing s circumstances) that does not contain A. D(S) is the dissimilarity index estimated with S. D($S \cup \{A\}$) is the dissimilarity index calculated with the set S and the set of variables A. The contribution of the set of variables A to the dissimilarity index can be defined as:

$$M_A = \frac{Cont_A}{D(N)}$$

$$where \sum_{i \in N} M_i = 1$$

Thus, the sum of the contributions of all the circumstances to D is 100 percent.

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unequally distributed, with children residing in rural communities suffering from much worse coverage rates than those residing in urban areas. Access to sanitation is also differentially provided between households whose heads have different levels of education.

Location also seems to explain the majority of the inequality in access to water: in four countries, the contribution of location explains about two-thirds of

Figure 3.7 HOI Decomposition by MNA Country for Most Recent Year

a. Attends school (%)

Egypt, Arab Rep. (2012)   Morocco (2007)

Iraq (2012)   West Bank and Gaza (2010)

Jordan (2010)   Tunisia (2010)

■ Gender   ■ Children household   □ Single parent household
■ Rural community ⊟ Household head education

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Figure 3.7 HOI Decomposition by MNA Country for Most Recent Year *(continued)*

b. Finish primary (%)
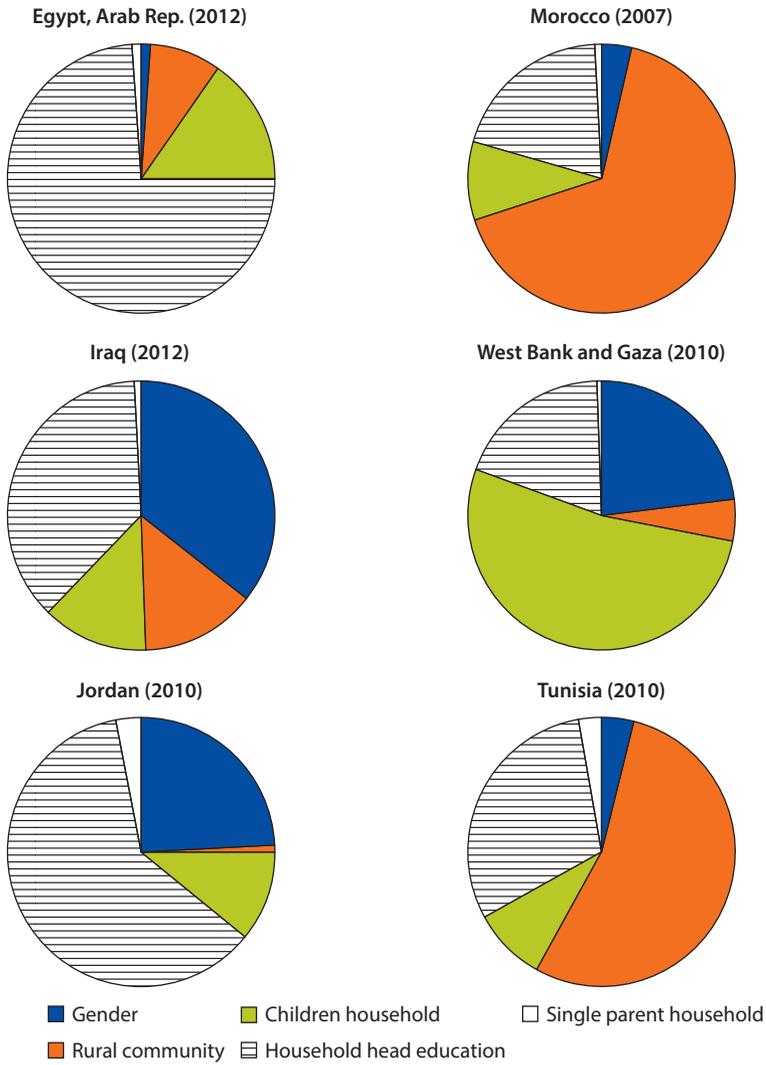
Egypt, Arab Rep. (2012)   Morocco (2007)

Iraq (2012)   West Bank and Gaza (2010)

Jordan (2010)   Tunisia (2010)

■ Gender	■ Children household	□ Single parent household
■ Rural community	▤ Household head education	

figure continues next page

Figure 3.7 HOI Decomposition by MNA Country for Most Recent Year *(continued)*

c. Access sanitation (%)

Egypt, Arab Rep. (2012)

Morocco (2007)

Iraq (2012)

West Bank and Gaza (2010)

Jordan (2010)

Tunisia (2010)

■ Gender   ■ Children household   □ Single parent household
■ Rural community ⊟ Household head education

figure continues next page

Figure 3.7 HOI Decomposition by MNA Country for Most Recent Year *(continued)*

d. Access water (%)

Egypt, Arab Rep. (2012)   **Morocco (2007)**

Iraq (2012)   **West Bank and Gaza (2010)**

Jordan (2010)   **Tunisia (2010)**

■ Gender   ■ Children household   □ Single parent household
■ Rural community   ⊟ Household head education
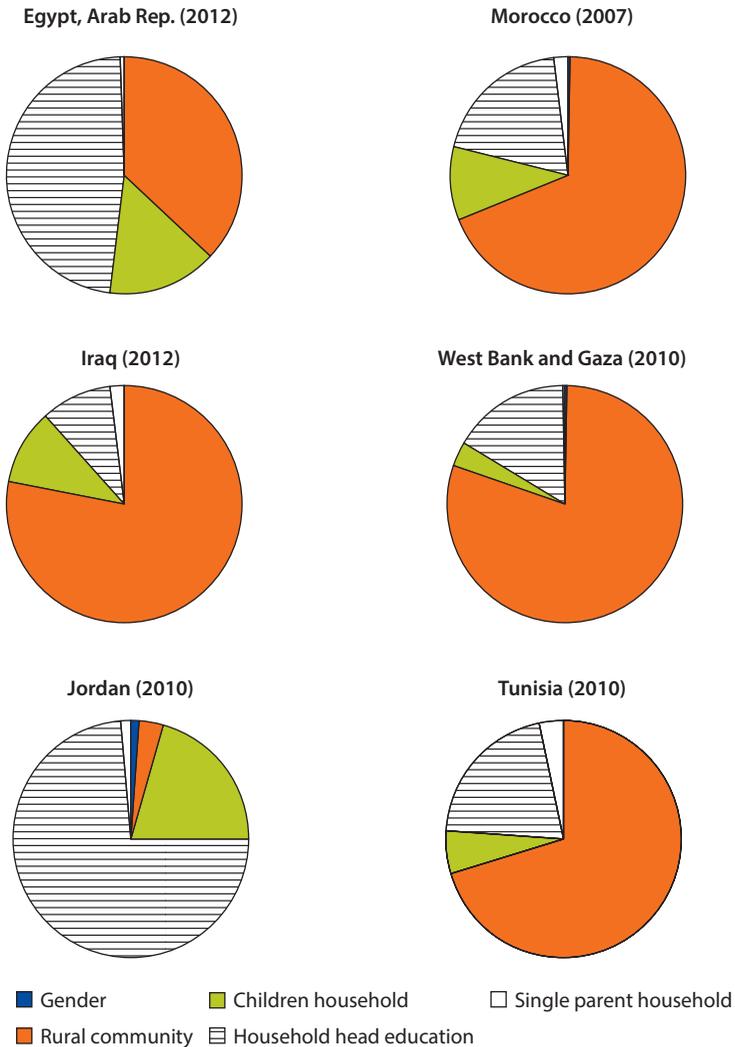
Source: World Bank calculations using various surveys.
Note: HOI = Human Opportunity Index.

the estimated inequality. In Egypt, location only accounts for about 37 percent, whereas the educational attainment of the household head accounts for about half. For the other countries, the share of the D-index explained by the education of the head is about 20 percent. A notable exception in the estimation of the contribution of circumstances is Jordan. Over 75 percent of the inequality in access to water is attributable to the household head's education, while the number of children in the household explains about 15 percent.

For the D-index related to education, only Iraq, Morocco, and Tunisia show levels of inequality of opportunity above 5 percent. In Iraq, inequality in the opportunity to attend school is attributable mostly to the gender of the child and the education of the household head. Location (20 percent) and the number of children in the household (15 percent) explain lower but still important shares of the inequality of opportunity. For finishing primary school on time, the analysis finds a large difference in access between boys and girls, as the gender of the child explains just over 40 percent of the estimated inequality. The household head's level of education accounts for a third of the inequality. In Morocco, inequality in access to both opportunities is mainly explained by location, with urban-rural differences accounting for 55 percent (attend school) and 66 percent (finish primary). The education level of the household head accounts for about 20 percent for both opportunities as well. Tunisia was found to have high levels of inequality of opportunity in the opportunity to finish primary school. The largest contributor to the inequality of opportunity is location, accounting for about half the differences in coverage. In line with the findings for other countries, the education level of the household head also plays an important role in differential access. The educational attainment of the household head explains about a third of the inequality in this opportunity in Morocco in 2007.

Overwhelming Role of Geography

One question that may immediately arise at this point is the role of geographic location within each country when more regional variables are included as circumstances. In the preceding analysis, the only geographic circumstance that was included was the urban/rural location of the child. Although this was a necessary practical step to ensure the comparability of the results across countries, the role of space in MNA, as in all other regions, is much more complicated and transcends the urban/rural divide. The Upper Rural region of Egypt, for example, is vastly different from the region that includes Cairo. Similarly, there are several highly urbanized countries in the region where the urban/rural divide is less important than regional differences, for example, Tunisia and the West Bank and Gaza.

This section hones in on the role of geography in the availability and utilization of basic opportunities for children in the MNA region. To focus on this role, the analysis needs to set aside the regional lens and go country by country. It also capitalizes on going country by country for this part of the analysis to expand the list of opportunities. For Egypt, in figure 3.8, from a fifth to over half of the total observed inequalities in access to some of the basic opportunities is attributable to the region of birth of the child. The region of residence makes a stronger contribution to inequality in sanitation services than the wealth status of the family in which the child is born. The same pattern emerges for the opportunity related to being born in a household that has a reasonably good way to dispose of waste. Not having to burn, bury, or throw waste in local roads and streams improves the

Figure 3.8 Main Contributors to Inequality in the Arab Republic of Egypt
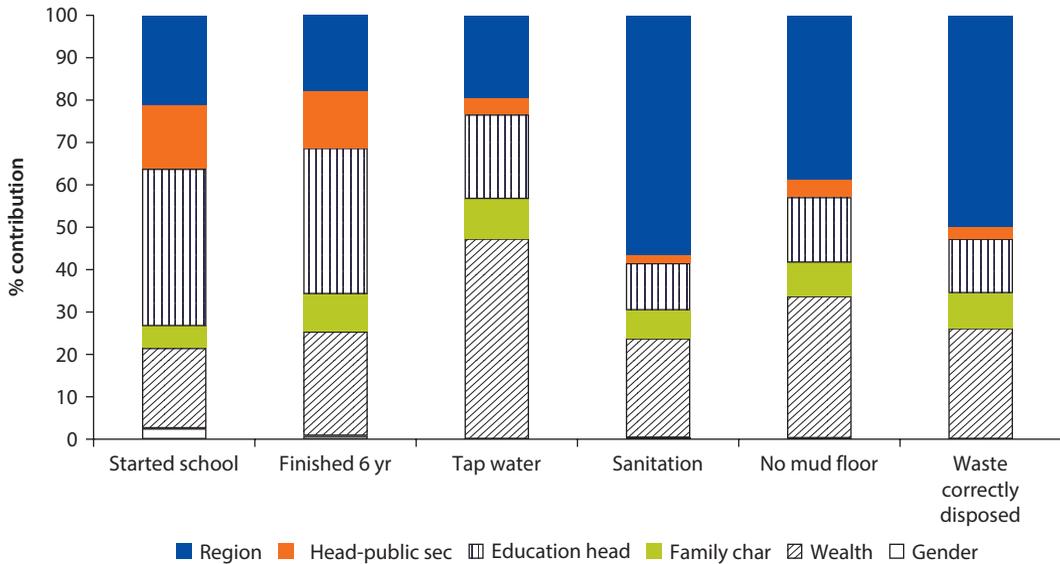
Source: World Bank calculations.

hygiene of the environment in which children grow up and lowers the risk of their exposure to communicable diseases in childhood.

Similar patterns emerge for the other countries. In Tunisia, the largest disparities manifest in the opportunities related to access to water and sanitation facilities (figure 3.9). In both cases, the governorate and the urban/rural location of birth account for over 60 percent of the total inequalities observed. In contrast, the share accounted for by other factors, such as household wealth, is smaller by a factor of four. The household head's employment in the public sector contributes over 5 percent to the total inequality in the opportunities related to education and, as would be expected, the wealth of the household head is the second most important factor after the variables related to location.

In Iraq, the infrastructure variables that are available for analysis in the survey are slightly atypical. Instead of whether or not the household has access to this or that opportunity, the information that is collected is whether or not the household is connected to the public architecture/system for the delivery of these services (water network, electricity grid, municipal garbage collection, etc.). This information is useful as a starting point. It also reinforces the point about supplementing the definition of opportunities to incorporate notions of quality whenever there are data to do so. Connection to the public water delivery architecture may be necessary to get tap water to drink, but it is often not sufficient and this may especially be true in the case of Iraq. Fortunately, the Iraq survey includes additional questions to provide information about the quality of and respondent satisfaction with these services.

Figure 3.9 Main Contributors to Inequality in Tunisia
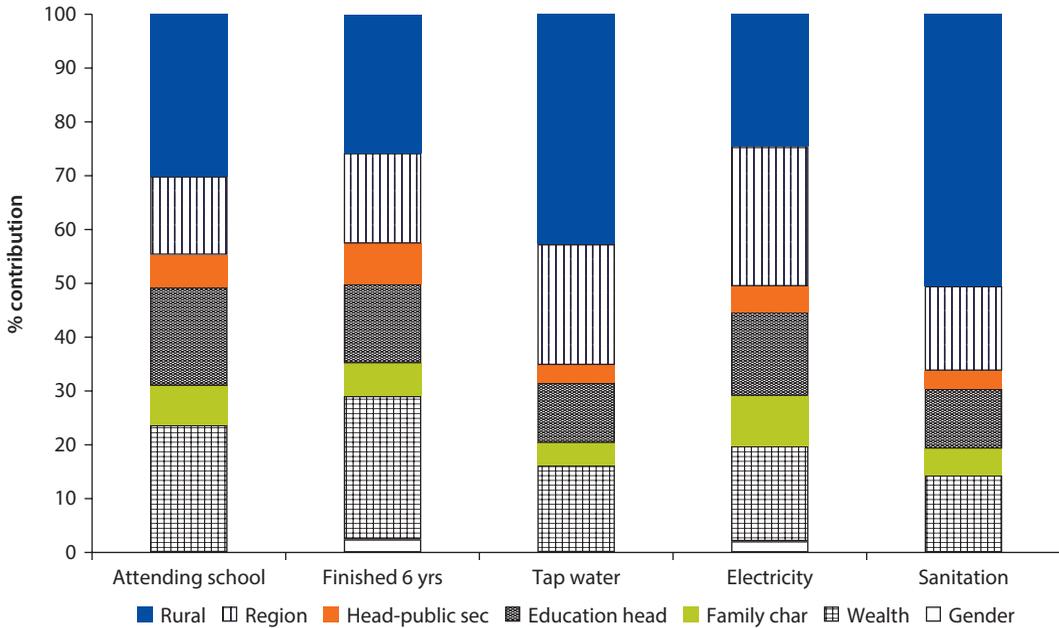
Source: World Bank calculations.

For the drivers of inequality in basic access to these opportunities, the results for Iraq again confirm the same pattern of dominance of the geographic variables—division and urban/rural area of birth—in particular for opportunities related to infrastructure services, such as drinking water and sanitation (figure 3.10). For the opportunities related to education, there is less of a dominance of variables related to space/geography, which is possibly a reflection of the displacement and turbulence that has characterized Iraqi society in the past decade or so. Still, it is interesting to note the relatively high significance of gender, wealth, and father's education, not just in attendance, but also in the timely commencement and completion of basic education in Iraq.

The case of Morocco presents an interesting contrast to the other cases discussed for the region as a whole, in the sense that across all the opportunities analyzed, the contribution of urban/rural area of residence appears to trump the contribution of the regions (figure 3.11). This finding is an interesting counterpoint to the narrative that has been central to this subsection, and reflects the fact that even with a small group of countries in a single region, it is often difficult to find a generalizing pattern. Although for the majority of the countries the region of birth appears to be the primary contributor to disparities in opportunities, there is one country (Morocco) for which the urban/rural divide appears more important than the region itself. Nonetheless, it is worth noting that *together* these spatial variables consistently account for at least half of all the reported variation in opportunities related to infrastructure in most MNA countries.

Figure 3.10 Main Contributors to Inequality in Iraq
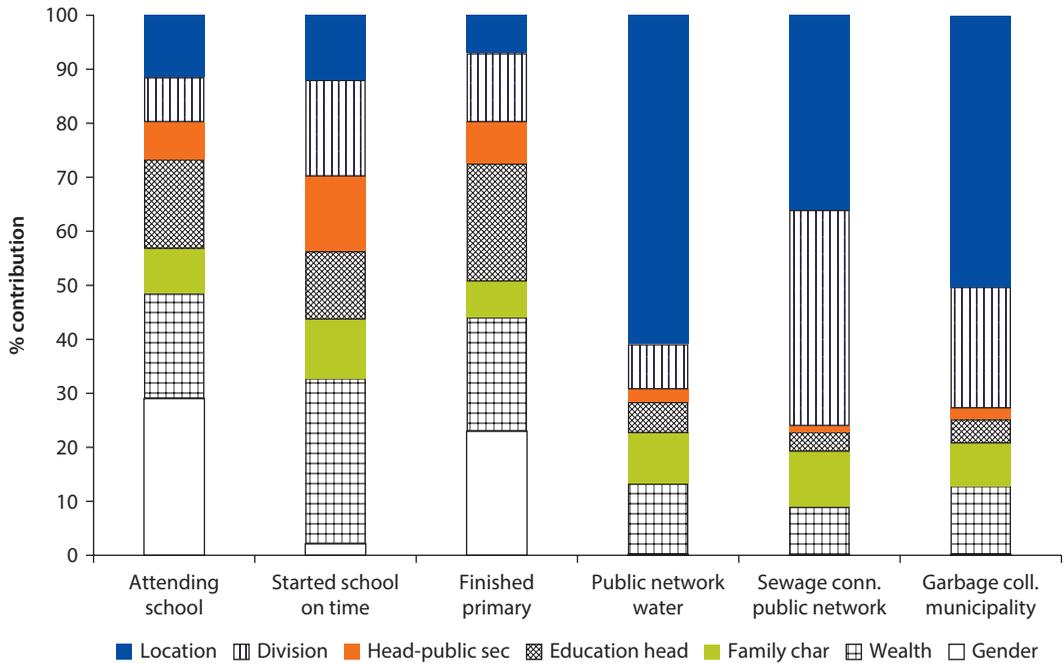
Source: World Bank calculations.

Figure 3.11 Main Contributors to Inequality in Morocco
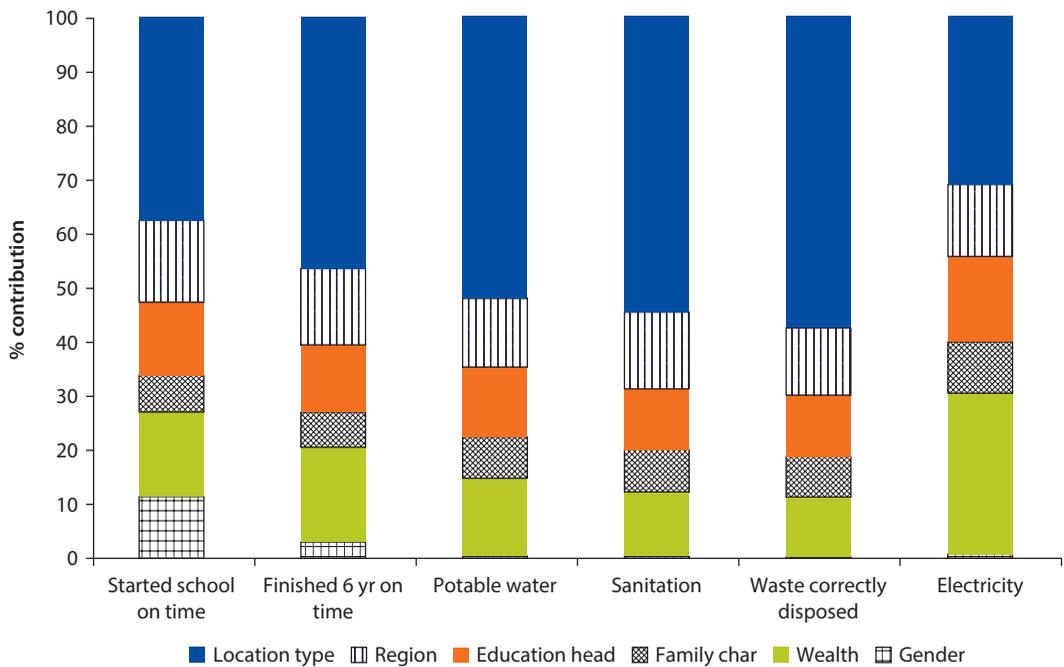
Source: World Bank calculations.

Complementarity of Opportunities and Overlapping Deprivations

So far, this chapter has focused on the coverage and inequality in opportunities taken individually or one at a time. This section turns to an important and related question: what can be said about children's opportunities in a country when "opportunities" are defined as the relevant *set* or basket of basic goods and services that should be available to a child of a particular age? Implicit behind this question is the idea that basic services, such as school attendance (for a child of school age), water, and sanitation, are not substitutes for one another, but complement each other and should be seen as a minimal bundle of opportunities that a child must have to have a fair chance to fulfill his/her potential in life.

To look at the extent to which access to (or deprivation of) different services overlaps, the first step of the analysis considers three individual opportunities—attending school and living in a household with adequate access to clean drinking water and sanitation facilities—and categorizes children into four groups. Children lacking in all three opportunities are considered "severely deprived," children with access to only one of the three opportunities are considered "deprived," those with access to two of the three opportunities are considered "vulnerable," and those with access to all three opportunities are categorized as "not vulnerable." Figure 3.12, presents the fraction of children ages 10–14 years who fall into these four categories. Egypt, followed closely by Tunisia, has the largest proportion of children who are non-vulnerable and the smallest fraction of children who would be considered severely deprived. In Iraq, the fraction of those who are vulnerable (at least one deprivation) is greater than the fraction of those who are non-vulnerable. Deprivation and severe deprivation are highest in Morocco, suggesting strongly overlapping deprivations, although the proportion of children who are non-vulnerable is higher in Iraq.

The second step of the analysis uses non-vulnerability as an opportunity. This step is tantamount to considering a composite bundle of goods and services (education, water, and sanitation) and categorizing a child has having the opportunity if and only if he/she has all three of the services. Then the same analytical machinery can be employed to calculate the universality of access and the underlying inequality of this composite bundle. This method of computing a composite HOI, which can be loosely described as "aggregating" across different opportunities, has a practical and attractive feature: it yields a single, country-level scalar that is a composite measure of "human opportunity," indicating access to a bundle of critical goods and services. Thus, the scalar has an intuitive interpretation linked to how "opportunity" is defined for every individual child.[4]

Before discussing the results, it is important to mention a couple caveats of this extension. The first caveat relates to the subjective *choice* of goods and services that goes into the definition of a composite HOI. The choices that have been made are not intended in any way to suggest that *other* goods and services do not matter or matter less for a child. Rather, the choice of goods and services

Figure 3.12 Overlapping Deprivations in Selected MNA Countries
percent

a. Egypt, Arab Rep.

Severely deprived, 1
Deprived, 7
Not vulnerable, 56
Vulnerable, 36

b. Tunisia

Severely deprived, 2
Deprived, 17
Not vulnerable, 52
Vulnerable, 29

c. Iraq

Severely deprived, 5
Not vulnerable, 22
Deprived, 22
Vulnerable, 51

d. Morocco

Severely deprived, 14
Not vulnerable, 41
Deprived, 33
Vulnerable, 12
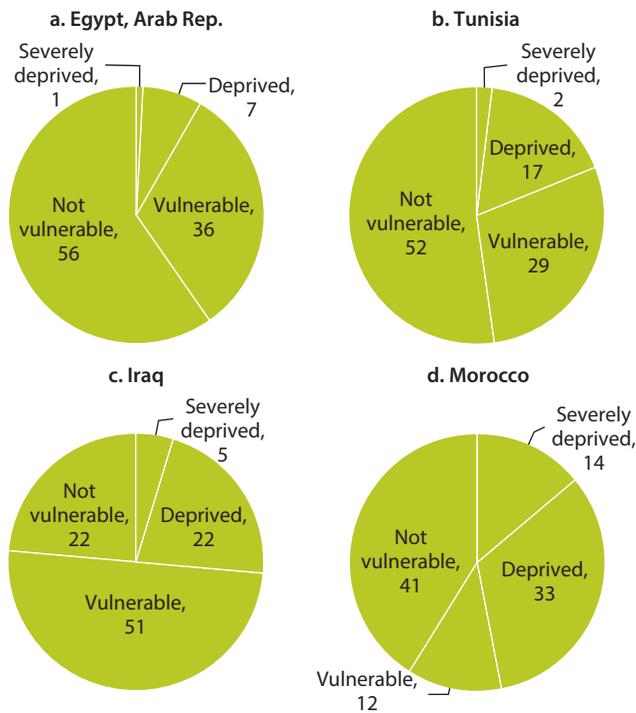
Source: World Bank calculations.

is motivated by common sense and expediency. More precisely, the motivation has been to define a set of goods and services that most societies would agree are essential for a child and, equally important, for which data are available from the surveys. Safe water and adequate sanitation satisfy these criteria for all age groups of children, as does school attendance for children of school age. Clearly, more comprehensive surveys, if they were to become available, would allow the construction of more complete composite indexes for all age groups of children; more frequent surveys would ensure that these measures could be tracked over time for a cohort of children. The choice of indicators is also guided by the fact that these should be as "different" from each other as possible, to ensure that the composite HOI reflects access to a true *combination* of basic goods and services, as opposed to access to multiple similar or interrelated services.

The second caveat relates to the "weighting" of the different components that is implicit in how the composite HOI is defined. By construction, the absence of *any* one of the opportunities in the composite HOI for a child (for example, water, sanitation, or school attendance for children ages 6–11 years) counts as a "zero" in terms of access to the "bundle of opportunities." This setup is somewhat arbitrary and does not allow for any cross-country variation in how the components of the bundle are weighted. Although these are valid criticisms, the simple assumption has two advantages: it allows for cross-country comparison by

composite HOI and does not suggest any hierarchy of importance or substitution among opportunities included in the bundle. This approach seems to be the most intuitive, given that each composite HOI refers to a minimal list of basic goods and services that most countries agree should be universally available to children (and the lack of any one of these cannot be compensated by the others).

Figure 3.13 shows the coverage rate and the associated HOI for the composite opportunity for children ages 6–11 years in Egypt, Iraq, Morocco, and Tunisia.

Figure 3.13 Composite Opportunity for Children Ages 6–11 Years: Coverage, HOI, and Circumstances Associated with Inequality
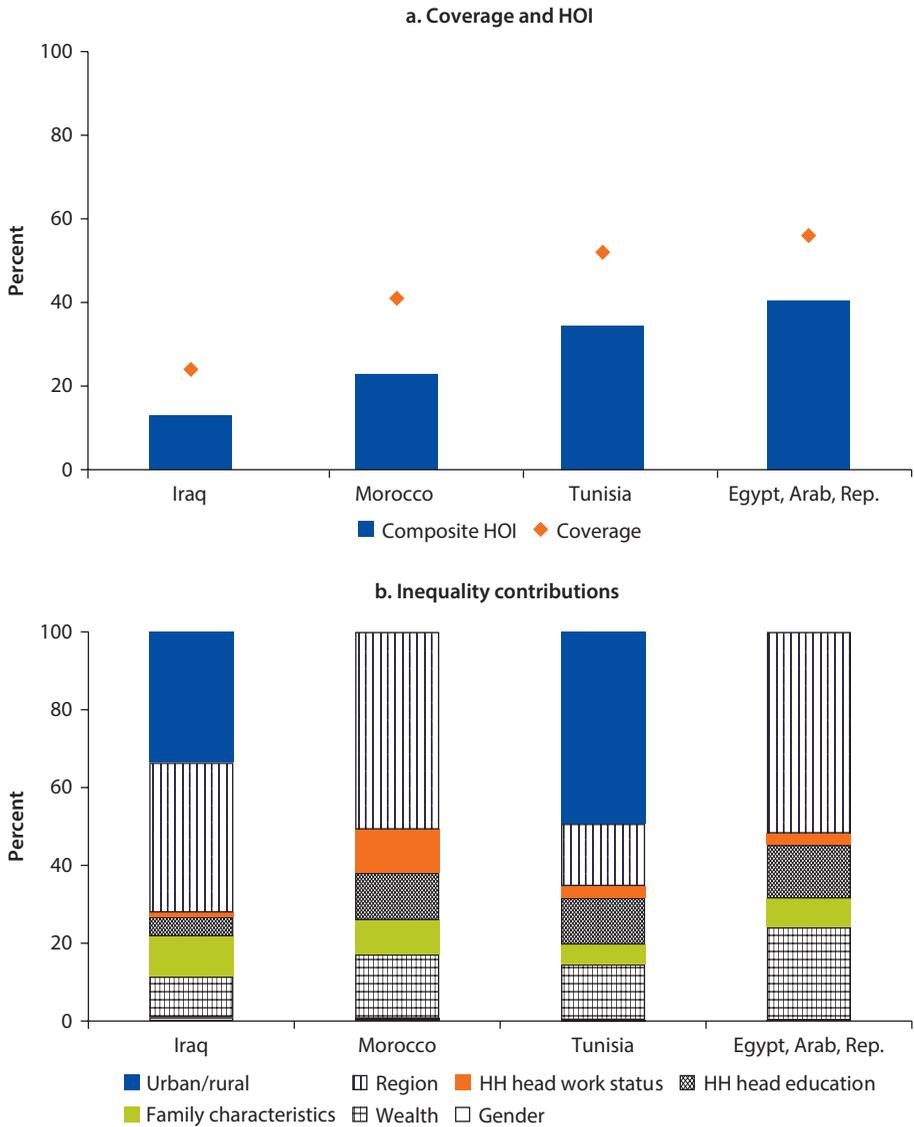
a. Coverage and HOI

b. Inequality contributions

The coverage rate for the opportunity to be "non-vulnerable" or to have all three opportunities simultaneously is lowest in Iraq. Only 24 percent of children of ages 6–11 years in Iraq have access to the composite opportunity bundle, compared with 41, 52, and 56 percent for Morocco, Tunisia, and Egypt, respectively. The corresponding HOIs are 13, 23, 35, and 40 percent. The relatively large penalty (the difference between coverage and HOI) for all four countries suggests that inequalities are larger if basic opportunities are considered to be a package of complementary inputs. The inequality of opportunity (D-index) is in the range 27–45 percent across the four countries. Geographic location (region of residence and/or urban/rural division) consistently accounts for a larger than 50 percent share of total inequality in all cases; parental wealth, education level of the household head, and other family characteristics are important contributors as well.

Thus, deprivations and inequalities between children born in different circumstances are more acute when opportunity is defined as a combination of basic services rather than one at a time. When an "opportunity bundle" is characterized as access to improved sources of water and sanitation and school attendance for children ages 6–11 years, the HOI for Egypt, Iraq, Morocco, and Tunisia drops to 0.4 or less, which is still lower than the lowest HOI among the individual services for each country.[5] These results are consistent with the extent of overlap between deprivations shown in figure 3.12: although the share of "severely deprived" (on all three dimensions) is rare in all four countries, much larger shares of children are deprived (on any two dimensions) or vulnerable (on any one dimension). To put it differently, between 21 and 56 percent of children ages 6–11 years in these four countries are covered by all three services, and between 27 and 44 percent of the coverage is distributed inequitably between groups, favoring those born into households with advantages such as greater wealth, educated parents, being in urban areas, and so on.

Many would argue that the composite bundle provides the most intuitively compelling snapshot of opportunities for children in a society, since these services are not substitutes but complements for each other in multiple ways. To use just one example, schooling is more likely to result in learning when the child has access to safe water and sanitation, which reduce the chance of contracting communicable diseases and improve health. Even when the composite bundle is defined to be so minimal as to include just these three indicators, the HOI results present a sobering picture, suggesting a significant level of deprivation and inequities even in those MNA countries (Egypt, Morocco, and Tunisia) where access to some of the individual services is significantly higher.

Access Does Not Equal Opportunity: The Quality Dimension

The opportunities analyzed so far are primarily associated with access to services. Basic access is a useful starting point, but does not translate into opportunities unless the services meet a standard of acceptable quality. An individual can go to school and not learn anything, be connected to the power grid of the country but

get electricity for only a couple hours a day, and have a tap that produces irregular or poor quality running water. The quality dimension is particularly important when talking about inequalities, since poor or vulnerable families are likely to have lower quality services. Failing to take into account quality differences will therefore underestimate the actual extent of the disadvantages suffered by such groups in society.

However, accounting for the quality of services is difficult in the analyses that have been presented so far. Most standard surveys do not collect much data on service quality. And specialized surveys with detailed information on quality at the facility level (such as schools or hospitals) collect very few data on the socio-economic characteristics of the service recipient. This section examines inequality of opportunity by taking the quality of services into account, gleaning relevant data from specific country surveys as well as standardized international test scores, such as the Program for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS), which assess student learning achievements that indicate the quality of education that children receive.

Quality in Education Opportunities

The quality of education a child receives can vary significantly across children from different socioeconomic backgrounds. A minimalist approach would be to use attendance as a measure of quality. A slightly more demanding threshold might be progression through school on time. Although with attendance, just going to school might have been adequate, the more demanding measure reflects whether a child learns the content sufficiently well to progress from one grade to another. A more stringent but by no means a comprehensive measure of learning in schools would be direct measurement of learning through standardized test scores.

Data from the PISA are used to assess the quality of learning among students. The 2012 version of PISA that is used here covered 65 countries and economies. PISA is a standardized assessment of skills in mathematics, reading, and science, which aims to measure learning rather than mastery of specific school curricula for students who are roughly 15 years old and have attended at least six years of formal schooling. PISA also provides information on several socio-demographic characteristics of students, many of which are socially inherited factors. The circumstances used in the analysis are gender, presence of both parents in the household, immigration status of the family, parent's educational attainment, wealth, and city size, which is a proxy for location and may partly capture urban/rural differences. The countries in the region that participated in the most recent round of PISA are Israel, Jordan, Qatar, Tunisia, and the United Arab Emirates. The analysis mainly focuses on Jordan and Tunisia.

Unlike others who have used the raw scores for similar purposes (Ferreira and Gignoux 2014), the analysis here constructs a binary variable of proficiency using cutoffs defined by the Organisation for Economic Co-operation and Development (OECD). Level 2 proficiency was chosen as the cutoff, which, according to the

OECD, is a baseline proficiency level at which students are able to demonstrate the skills that will enable them to participate effectively and productively in life. Scoring at or above level 2 is a socially desirable minimum standard, consistent with the notion of opportunity used in this report.

Figure 3.14, panels a, b, and c, presents the coverage as well as the HOI for reading, mathematics, and science proficiency for children in Jordan and Tunisia alongside the same figures for a selection of countries in East Asia, Europe and Central Asia, and Latin America and the Caribbean. Although the basic school enrollment indicators for Jordan and Tunisia are close to universal, the test scores tell a very different story. Less than 35 percent of children in Jordan and Tunisia, for example, demonstrated basic competency in mathematics. And inequality between children of different circumstances resulted in HOIs of around 27 percent in both countries. Performance in reading and science appears to have been only slightly better. On the whole, student learning achievement (as indicated by the HOI in level 2 proficiency) in Jordan and Tunisia is distinctly lower than that of children in countries such as the Czech Republic, Latvia, Poland, the Republic of Korea, and Singapore; and higher than countries such as Azerbaijan, Indonesia, the Kyrgyz Republic, Panama, and Peru.

The gaps between the coverage rate and HOI also suggest significant inequality between children with different circumstances. Combining the measure of inequality for basic access to education with the total inequality in the opportunity related to basic proficiency in science, math, and reading from the PISA, inequality is seen to become increasingly larger as an increasingly robust standard for quality is employed. In Tunisia, for example, the dissimilarity index is a low 2 percent for school attendance, rises to 8 percent for completion of elementary school on time, and then to over 27 and 46 percent for basic competency in math and reading, respectively (figure 3.15).

Parental education and wealth and place of residence are the biggest contributors to inequality of opportunity in learning achievement (figure 3.16). The large contribution of wealth to inequality in these opportunities related to achievement hint at a potential public-private learning achievement gap, for which this study has no direct evidence. The salience of area of residence is consistent with the pattern of spatial disparity seen for access to several opportunities in the MNA region. Interestingly, gender is not an important contributor to inequality in these opportunities. Although gender disparities are generally stark in the MNA region, the gaps are not as pronounced in opportunities related to learning achievements, with the possible exception of science proficiency in Jordan and reading proficiency in Jordan and Tunisia. Gender inequality in reading proficiency actually takes the form of female students doing better than their male peers, which is similar to what is seen in many other countries across the world.

Evidence on inequality of opportunity in learning achievements is also available from a recent study using the TIMSS, which provides internationally comparable data on students' achievement in mathematics and science at the fourth and the eighth grade levels (box 3.2) (Salehi-Isfahani, Belhaj Hassine, and Assaad 2014). Employing the Inequality of Economic Opportunity (IEO) methodology

Figure 3.14 Coverage and HOI for Basic Proficiency in Math, Reading, and Science, Based on PISA Scores of Selected Regions

a. Mathematics

b. Reading

c. Science

Legend: ■ HOI-EAP   ■ HOI-ECA   ■ HOI-LAC   ○ Coverage   ✳ HOI-MNA
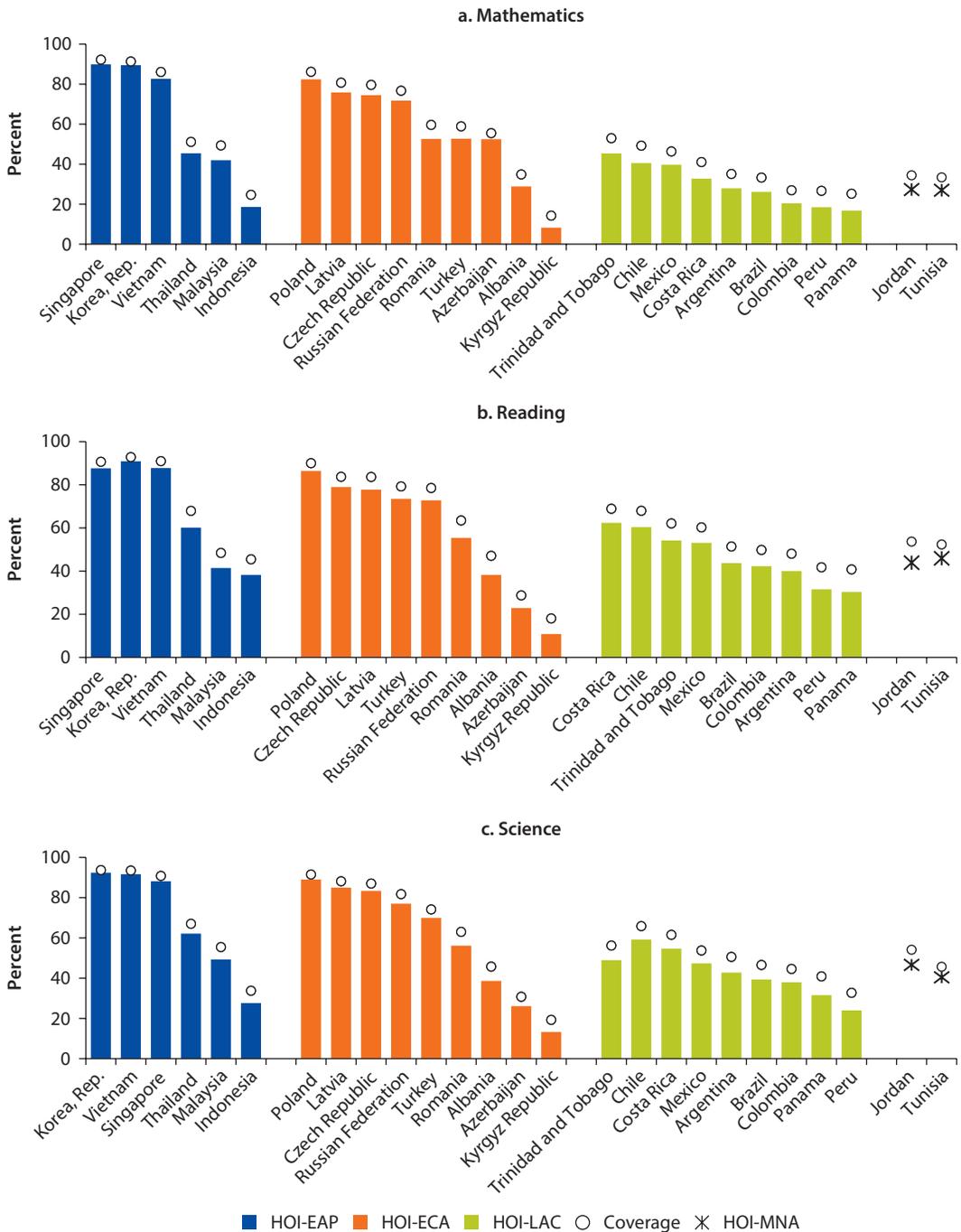
Source: World Bank estimates using data from PISA.
Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; HOI = Human Opportunity Index; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; PISA = Program for International Student Assessment.

Figure 3.15 Inequality of Opportunity and Quality in Tunisia

Figure 3.16 Contributors to the Inequality in PISA Test Scores in Tunisia and Jordan
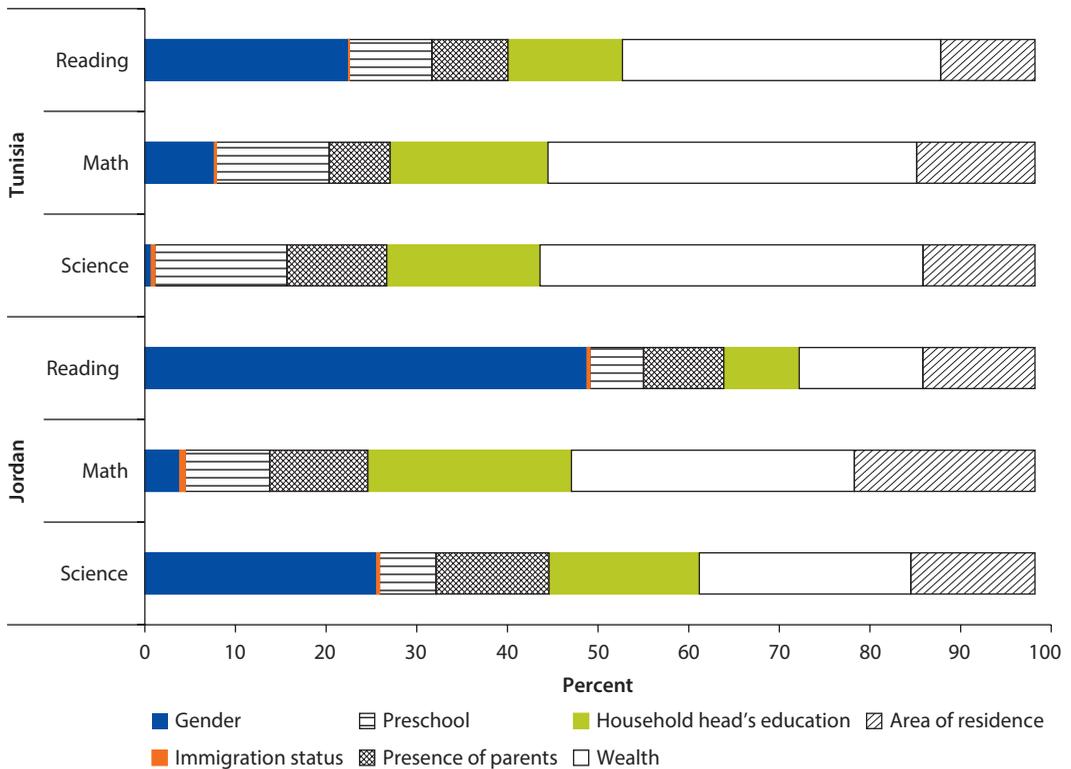
Box 3.2 Inequality in Test Scores Using the Trends in Mathematics and Science Study

Salehi-Isfahani, Belhaj Hassine, and Assaad (2014) examine the degree of inequality of opportunity in educational achievement in an entirely different data set, using the Ferreira and Gignoux (2014) methodology and the Trends in Mathematics and Science Study (TIMSS). The TIMSS provides internationally comparable data on students' achievement in mathematics and science at the fourth and the eighth grade levels. Overall inequality and the inequality caused by a specific set of circumstances are measured using the Inequality of Economic Opportunity method (chapter 2, this volume), where the share of total inequality attributable to circumstances is defined as the inequality of opportunity. The specific circumstances these authors consider are gender, mother's and father's education, number of books at home, school's community location, computer at home, and a "family background" variable. The key results they report on the size of the inequality for some countries in the region are presented in table B3.2.1. These results correspond to 2007 and are taken from table 3 in the original paper. Although there is quite a bit of heterogeneity in the extent of inequality of opportunity in the math and science scores, these lower-bound estimates suggest that inequality of opportunity accounts for 9 to 35 percent of total inequality in test scores in the region.

Table B3.2.1 Results on the Size of Inequality for Math and Science

Country	Math	Science
Morocco	0.13	0.09
Syrian Arab Republic	0.16	0.16
West Bank and Gaza	0.18	0.18
Jordan	0.20	0.24
Tunisia	0.21	0.16
Egypt, Arab Rep.	0.28	0.26
Iran, Islamic Rep.	0.30	0.31
Lebanon	0.30	0.35
Turkey	0.34	0.31

Source: Salehi-Isfahani, Belhaj Hassine, and Assaad 2014.

(see chapter 2), Salehi-Isfahani, Belhaj Hassine, and Assaad find that inequality of opportunity—the share of total inequality attributable to circumstances such as gender, parental education, family background, and location—accounts for between 9 and 35 percent of total inequality in mathematics and science test scores across nine countries in the region. Like the HOI, the IEO yields lower-bound estimates, which implies that the "true" inequality of opportunity, if all relevant circumstances could be taken into account, would be higher. Although these estimates are not directly comparable with the HOI estimates using the PISA scores of 15-year-olds, the estimates support the broader point that

significant inequality of opportunity exists in learning outcomes in the MNA region. (See Annex 3A for full results.)

Quality of Infrastructure Opportunities

Quality is important for opportunities related to infrastructure as well. Although an ideal way to get at this would be through specifically targeted audit surveys, some light can be shed on the magnitude of quality-adjusted gaps or inequalities in the specific instances in which data exist for some countries.

In Iraq, close to 90 percent of children ages 0–18 years live in households with access to electricity when access is measured by whether households are connected to the power grid. But with the additional filter of whether the household gets electricity for at least 20 hours a day, the number drops to 10 percent. The HOI correspondingly drops from 99 to 3 percent, suggesting that the quality of electricity available to children is far from universal, and inequalities are significantly higher when some notion of the quality is taken into account. The pattern is similar for water services in Iraq and Jordan (figure 3.17). Coverage of uninterrupted water access is below 50 percent in Iraq, although 84 percent of children grow up in households connected to the public network. In Jordan, only 7 percent of children live in households that get water service daily, despite the fact that over 60 percent of children live in households that are connected to the network.

Quality of Services—A Challenge in the MNA Region[6]

Opportunities among children in MNA present a starkly different picture when the quality of services is taken into account as opposed to mere availability. This finding is consistent with the findings of a recent World Bank study (Brixi, Lust, and Woolcock 2015) on service delivery in the region, which reports that although outcomes such as school enrollment or child mortality in most MNA countries have converged to their expected levels for the level of economic development, the quality of services has not kept pace with the broader socioeconomic transitions. Students in most MNA countries score low on international competency tests in comparison with countries with similar levels of development (see figure 1.13 in chapter 1). Student performance (on international tests such as the TIMSS) tends to be associated more closely with students' socioeconomic backgrounds in MNA countries, and high out-of-pocket health expenditure by international standards creates disparities in access by economic status.

The 2013 Gallup World Poll found that on average nearly 40 percent of respondents in MNA countries are dissatisfied with the education services in their country. And 45 percent are dissatisfied with the availability of quality health care. These figures include a majority of citizens in Egypt, Iraq, Morocco, and the Republic of Yemen. Overall in the MNA region, levels of satisfaction with services across sectors appear lower than those in other regions, other than Africa. The 2010–11 Arab Barometer found that about two-thirds of MNA respondents perceived the performance of their government in improving basic

Figure 3.17 Poorer Access to Better Quality Infrastructure in Iraq and Jordan

a. Iraq

b. Jordan
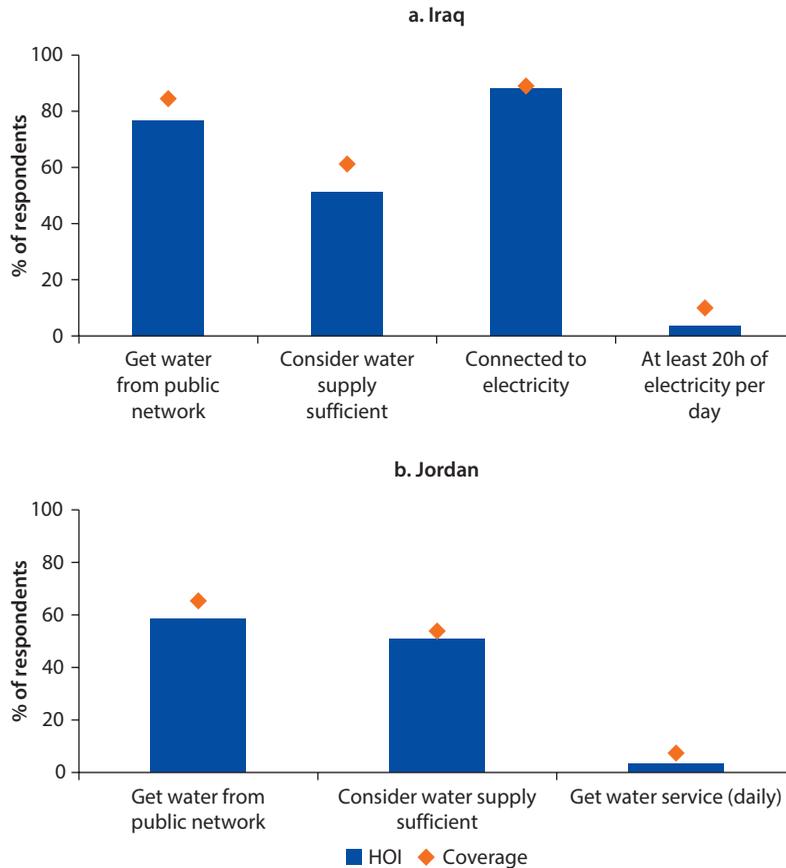
Source: World Bank calculations.
Note: HOI = Human Opportunity Index.

health services as "bad" or "very bad." According to the 2013 Global Corruption Barometer, the majority of citizens in Algeria, Egypt, Lebanon, Morocco, and the Republic of Yemen perceive their education and health systems to be corrupt.

The World Bank study (Brixi, Lust, and Woolcock 2015) finds that the poor quality of public education and health care is related to weaknesses in the effort and capacity of providers. Surveys suggest that providers may not possess the qualifications and professional autonomy needed to deliver quality services, particularly in rural areas, as well as key resources, such as teaching materials and medicines. Weak effort is reflected in the statistic that 30 percent of students in MNA countries attend schools in which principals reported that teacher absenteeism is a serious problem. Similarly, absenteeism among health professionals surpasses 30 percent in the three countries for which data exist.[7]

Low effort on the part of the providers is mainly attributable to the limited ability of citizens to hold service providers accountable. Citizens typically find little information publicly available about the performance of schools and health facilities (including fees). This lack of information can give rise to informal user fees, which about one-third of citizens in MNA countries have reportedly paid in the education sector and especially in the health sector. Brixi, Lust, and Woolcock (2015) suggest that such weaknesses reflect the weak accountability mechanisms facing policy makers, public servants, and service providers, and that the interplay of formal and informal pressures and norms at the national and local levels influences the efforts of providers.

Lack of Institutions for Accountability

Institutions in most MENA countries do not offer their citizens adequate opportunities to encourage better service delivery through choice of providers, voice (giving feedback to providers and holding them accountable), and voting (choosing political leaders committed to ensuring better services). By and large, political institutions lack accountability mechanisms that allow citizens to obtain adequate information, voice demands, and influence the incentives of policy makers and service providers through formal channels. Authoritarian regimes dominate the region, and directly elected local governments are found in only a small minority of countries, which have limited budgets and responsibilities.[8] Lack of openness further undermines accountability. On the 2009 Global Integrity Index, the region ranks among the lowest on public access to information, the legal right to access information, and whether the right of access to information is effective. According to the 2013 Open Data Barometer, most MNA countries ranked below the world average on their readiness to implement reforms that empower citizens to use data to hold governments accountable. Accountability institutions, such as judicial services, independent audit agencies, and ombudsmen, are underdeveloped in the region.

The public service delivery systems also lack the information needed to monitor and evaluate performance. As a result, there are few consequences when violations occur and very few performance-oriented incentives and norms for providers and administrators. Local administrators and service providers have little influence on policy formulation and implementation, and they lack autonomy to manage human resources, make financial decisions, enforce rules, or bring about change on their own without the blessing of the central authority. At the same time, they face little oversight of their own performance. For example, surveys in Egypt and Morocco suggest that teachers appear to be minimally assessed, and school inspections generate little action.

Growth of the Private Sector, but Limited Choices Perpetuate Inequities

Access to private education and health services is becoming increasingly common in MNA countries. MNA citizens on average perceive the quality of education and health care to be higher from private providers, especially in education.

In the health sector, private facilities outperformed public facilities in some elements of quality, such as waiting times and the availability of medicines and advanced equipment.

In health, the demand for private care is particularly high in the more specialized services, such as mental health and dental care, where often long wait times and quality limitations in public provision push users into the private realm (Kronfol 2012). In Egypt, nearly half the respondents in the 2010 Egypt Health and Governance Study used a private service in the last six months. In education, private providers have played a strong role, especially in the expansion of technical and higher education and in preprimary education, where the majority of enrolled children attend private facilities in most MNA countries.

Although the growth of formal private services has improved choices in education and health care, it has also compounded the disparities between urban and rural and rich and poor (Phillimore et al. 2013). In most countries, private schools cater to students from more affluent backgrounds. Few private schools serve rural areas, as the 2010 System Approach for Better Education Results surveys in Egypt and the Republic of Yemen have shown.[9] Choice seems to be limited in health care as well, particularly in rural areas.

Beyond formal private health facilities and schools, private service provision in education and health in the MNA region includes a shadow market driven in part by distortions in provider incentives and the absence of regulatory mechanisms. This shadow market includes public sector teachers who engage in tutoring and health professionals who operate dual practices, with the potential for conflict of interest. In Egypt, 89 percent of private physicians also work in public facilities where they may be absent or extend little effort during official hours while saving their best performance for their private practice.

Quality of Services Matters for Citizens' Trust in Public Institutions

The low and uneven quality of public services (and the inequities in ability to access the private sector) erode citizens' trust and perception of the fairness of public institutions, which further undermines the strength of these institutions in many MNA countries. There is evidence to suggest that trust in government is associated with citizens' satisfaction with education and health services, and with their perceptions of corruption and nepotism. For those MNA countries with available data, Brixi, Lust, and Woolcock (2015) report that the probability of trusting the national government increases by 13 and 11 percentage points when respondents are satisfied with education services and health care, respectively. Trust in national governments is 10 percentage points higher when citizens believe that qualifications are more important than connections; conversely, trust in public institutions declines by 35 percentage points when citizens believe that corruption is widespread within their governments. Evidence from other parts of

the world also suggests that openness and transparency tend to improve trust in public institutions.[10]

In the face of low trust in public institutions and perceived powerlessness over the decision-making processes, citizens tend to disengage from formal institutions and processes and take recourse to informal channels. In much of the region, people believe they have little chance of succeeding by following the rules. In surveys in Algeria and Morocco, only a quarter of the respondents considered it effective to seek services or file complaints directly through the relevant government agency; higher numbers believed it was more effective to go through social networks. When citizens need services from the state, try to resolve grievances, or have to deal with administrative procedures, they often do so through informal channels, such as *wasta*—a form of clientelism—or informal payments. These practices further erode formal accountability and norms of public service, and widen inequality of opportunity, since the weakest groups are also the least able to utilize the informal channels.

Breaking the Cycle of Low Quality of Services and Inequality of Opportunity

Citizens in MNA countries expect their government to provide services, reflecting the promises made by Arab leaders at the outset of independence five decades ago, that the state would provide better living conditions. Since then, MNA citizens in most countries have gained nearly universal access to education and health care, an impressive achievement. But while fulfilling its part of the social contract in terms of basic provision of services, the state in most MNA countries appears to be unable to adapt and evolve to deliver quality services equitably. This is because although the region's societies have excelled at building schools, constructing hospitals, and training staff, they have fallen short in building institutions that foster the accountability and values needed to motivate public service providers to deliver quality services that are accessible to all, regardless of socioeconomic background, place of birth, or privilege. This situation limits citizens' trust in and formal engagement with public institutions and leads them to rely on private sources, relationships, or informal fees, all of which deepen inequities and perpetuate a culture of clientelism. When quality services are scarce, those who are most likely to be excluded are children born in households that have the least means to access private sources, or with the least access to informal channels like social networks that substitute for weak institutions.

Improving the quality of public services will require breaking this cycle, by making politicians, public servants, and providers accountable to citizens and promoting citizens' trust in and engagement with state institutions. Because state institutions lack internal and external accountability, social norms and regulations within society and communities can play a vital role in motivating policy makers, public servants, and service providers, as they have in several instances of service delivery success documented in the study by Brixi, Lust, and Woolcock (2015).

Annex 3A

Table 3A.1 Basic Proficiency in Mathematics, Jordan and Tunisia

	Mathematics	
Variables	Jordan	Tunisia
Woman	0.324***	−0.377***
	(0.0666)	(0.0739)
Student not living with his/her parents	−0.553***	−0.281*
	(0.106)	(0.147)
Immigrant	0.0365	−17.64
	(0.186)	(0.232)
Student attended preschool	0.369***	0.200**
	(0.0824)	(0.0841)
Max education of parents/guardians		
Secondary education	0.140	0.426**
	(0.231)	(0.167)
Technical or technician	0.403	0.415**
	(0.249)	(0.177)
Undergrad or postgrad	0.314	0.736***
	(0.252)	(0.208)
Wealth quintile		
2	0.120	0.284*
	(0.124)	(0.165)
3	0.456***	0.951***
	(0.126)	(0.191)
4	0.875***	1.297***
	(0.139)	(0.193)
5	1.202***	2.182***
	(0.148)	(0.215)
Location		
Small town (3,000–15,000 inhabitants)	−0.0140	0.298
	(0.132)	(0.222)
Town (15,000–100,000 inhabitants)	0.0826	0.570***
	(0.127)	(0.214)
City (100,000–1 million inhabitants)	0.363***	0.685***
	(0.128)	(0.222)
Large city (more than 1 million inhabitants)	0.902***	1.267***
	(0.125)	(0.306)
Constant	−2.141***	−1.707***
	(0.248)	(0.227)
Observations	6,000	3,963
Pseudo R-squared	0.0952	0.0954

Source: World Bank estimates.
Note: Robust standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3A.2 Basic Proficiency in Reading, Jordan and Tunisia

Variables	Reading	
	Jordan	Tunisia
Woman	1.626***	0.683***
	(0.0689)	(0.0702)
Student not living with parents	−0.436***	−0.496***
	(0.0964)	(0.134)
Immigrant	−0.113	0.901
	(0.201)	(1.396)
Student attended preschool	0.303***	0.0561
	(0.0790)	(0.0771)
Max education of parents/guardians		
Secondary education	0.173	0.290**
	(0.195)	(0.147)
Technical or technician	0.410*	0.543***
	(0.219)	(0.158)
Undergrad or postgrad	0.220	1.119***
	(0.223)	(0.203)
Wealth quintile		
2	0.235**	0.549***
	(0.110)	(0.145)
3	0.453***	1.007***
	(0.120)	(0.169)
4	0.760***	1.225***
	(0.136)	(0.175)
5	1.171***	2.491***
	(0.152)	(0.215)
Location		
Small town (3,000–15,000 inhabitants)	0.0299	−0.401**
	(0.118)	(0.184)
Town (15,000–100,000 inhabitants)	0.122	−0.115
	(0.117)	(0.179)
City (100,000–1 million inhabitants)	0.650***	−0.00197
	(0.119)	(0.190)
Large city (more than 1 million inhabitants)	0.948***	0.112
	(0.124)	(0.299)
Constant	−1.946***	−0.655***
	(0.200)	(0.188)
Observations	6,000	3,963
Pseudo R-squared	0.153	0.0841

Source: World Bank estimates.
Note: Robust standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3A.3 Basic Proficiency in Science, Jordan and Tunisia

Variables	Science	
	Jordan	Tunisia
Woman	0.907***	−0.00990
	(0.0653)	(0.0684)
Student not living with parents	−0.542***	−0.294**
	(0.0940)	(0.133)
Immigrant	−0.142	−19.03
	(0.189)	(0.192)
Student attended preschool	0.195***	0.129*
	(0.0752)	(0.0760)
Max education of parents/guardians		
Secondary education	0.283	0.118
	(0.196)	(0.146)
Technical or technician	0.552**	0.327**
	(0.218)	(0.157)
Undergrad or postgrad	0.490**	0.580***
	(0.221)	(0.193)
Wealth quintile		
2	0.210**	0.220
	(0.105)	(0.145)
3	0.420***	0.850***
	(0.114)	(0.168)
4	0.652***	1.007***
	(0.131)	(0.172)
5	1.099***	1.714***
	(0.145)	(0.199)
Location		
Small town (3,000–15,000 inhabitants)	−0.0787	0.00431
	(0.118)	(0.179)
Town (15,000–100,000 inhabitants)	0.166	0.190
	(0.114)	(0.173)
City (100,000–1 million inhabitants)	0.396***	0.196
	(0.117)	(0.184)
Large city (more than 1 million inhabitants)	0.640***	0.664**
	(0.120)	(0.283)
Constant	−1.442***	−0.865***
	(0.209)	(0.183)
Observations	6,000	3,963
Pseudo R-squared	0.0914	0.0518

Source: World Bank estimates.
Note: Robust standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Notes

1. This opportunity is defined as having completed six years of education for children ages 12–16 years.

2. Additional country-level analysis using an expanded set of circumstances to exploit more information available in each country's household surveys will be presented later in the chapter.

3. The 5 percent threshold has been used as a cutoff point for D-indexes in similar previous studies to mark a level after which inequality may be a major issue in how access to goods and services is distributed.

4. One method of aggregation, seen in some publications, is to compute a weighted average of HOI measures for different opportunities, to create an "average" HOI for a country (see the original application to Latin America and the Caribbean in Barros et al. 2009). This approach, while having the advantage of simplicity, yields an average measure that does not have an intuitive interpretation in its own right, and can only be understood as an average of multiple HOIs.

5. For Iraq, Morocco, Tunisia, and Egypt, the composite HOIs are 0.13, 0.23, 0.35, and 0.40, respectively, compared with 0.15, 0.27, 0.37, and 0.49, respectively, for sanitation (table 3.1), which has the lowest HOIs among the three services.

6. This subsection draws significantly on and paraphrases findings from a recent World Bank Group study by Brixi, Lust, and Woolcock (2015).

7. These are Egypt, Morocco, and the Republic of Yemen.

8. With the exception of Egypt, Morocco, and the West Bank and Gaza, local council budgets are less than 5 percent of total public expenditures, far behind the world average of 38 percent for federal systems and 22 percent for unitary ones (Brixi, Lust, and Woolcock 2015).

9. In Egypt, private schools comprised less than 2 and 6 percent of primary and secondary schools, respectively, in rural areas, compared with nearly 20 percent of primary and secondary schools in urban areas. In the Republic of Yemen, 24 percent of primary schools in urban areas were private, compared with just nine of more than 10,500 primary schools in rural areas (SABER 2010).

10. For example, a pilot project in the Dominican Republic that raised citizen's demand for information and made municipal governments more responsive to that demand significantly improved trust in local governments among citizens (Skoufias, Narita, and Narayan 2014).

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Inequality in the Labor Market

Summary

How do the advantages or disadvantages accorded by the lottery of birth in the early stages of life interact with advantages in youth and adulthood when an individual enters the labor market? Does the labor market compound past inequalities, or does it mitigate their effects? Answers to these questions constitute a critical part of understanding inequality of opportunity over the life cycle of an individual. This chapter extends the Human Opportunity Index (HOI) methodology and applies it to several labor market indicators in the Middle East and North Africa (MNA) region. The rapid progress on investment in human capital of the population has not been matched by growth in jobs. In particular, the private sector has not grown fast enough to create enough jobs to compensate for the receding public sector. And the jobs that do exist appear to be distributed fairly unevenly among individuals of varying circumstances.

Data limitations constrain the ability to push the analysis through and adequately cover the entire region. But for the countries for which data permit, the study finds that (a) access to jobs with desirable characteristics is fairly low; (b) birth circumstances play a significant role in determining who has access (for example, in the Arab Republic of Egypt over 50 percent of the inequality in being employed, employed full time, or employed in a job with a contract is attributable to circumstances over which individuals have no effective control); and, (c) consistent with large youth unemployment gaps reported for the region, there appears to be a distinct generational disadvantage, with the younger cohorts facing poorer opportunity profiles than the older groups as well as similar age cohorts in the past. Gender, parental education, and region of birth appear to be the circumstances that contribute most to the observed inequalities.

The ability of working-age individuals to access labor markets through jobs that befit the acquired human capital irrespective of their circumstances is a critical determinant of economic mobility and reduction in inequality in the long run. This chapter applies the technique that was used in chapter 3 to analyze basic opportunities for children, to examine inequality in employment outcomes in the MNA region. The chapter analyzes the extent to which an individual's

ability to access an opportunity (such as a job of a certain characteristic) depends on "circumstances" that he/she is born to and has no control over versus characteristics such as education and age.

The chapter is organized in the following manner. The section "Labor Markets in the MNA Region" motivates the need to analyze inequalities in the labor market. The following section describes the methodological aspects of extending the HOI framework to the analysis of labor market opportunities, making explicit the assumptions, weaknesses, and caveats. The following section describes the findings of the application of this methodology to data from a set of countries in MNA where the necessary information is available. The next section presents some results on the application of the inequality of economic opportunity methodology to wage earnings. The final section summarizes the chapter.

Labor Markets in the MNA Region

From a historical perspective, the MNA region has seen remarkable improvement in investment in human capital. Data from Barro and Lee (2010) on schooling attainment around the world show that MNA countries have a sizable representation in the list of countries that saw the largest expansion of completed years of schooling between 1980 and 2010.[1] The overall number of years of completed schooling among individuals ages 15 years or older in Egypt, Iraq, the Islamic Republic of Iran, Jordan, and Tunisia increased by more than four years during this period. Although there is quite a bit of variation within the region, the improvements have come primarily as a result of a strong expansion of public spending on education. Whether quality of learning has kept pace with increasing access is a moot point; purely from the perspective of expanding human capital accumulation, MNA has done a reasonably good job.

But employment has not expanded on a scale large enough to accommodate the growing population of youth. In no other region of the world is the disconnect between the growing aspirations of an emerging youth population that is more educated than their preceding generations and the relative lack of opportunities in the labor market more apparent than in the MNA region (see figure 4.1). Outside the Gulf Cooperation Council and Israel, less than 50 percent of individuals over age 15 are employed. It is not that the region has not created jobs—job creation has been commensurate with the growth realized. But this growth, which has mostly come in low-value-added sectors (such as construction), has not kept pace with the growth in the number of labor market entrants, creating a sort of a youth bulge among those who are not employed.

Several peculiar aspects of the nature of structural transformation and a chronic lack of appropriate reforms to breathe necessary dynamism into the private sector are responsible for limiting the overall rate and quality of job growth in the region. First, although there are significant country-specific heterogeneities, the growth engines in many of the countries in the region are dependent on natural resources. Despite being high value-added, extractive industries are typically capital intensive and create very few jobs directly. Meanwhile,

Figure 4.1 Employment Rates and Educational Attainment in the Middle East and North Africa Region
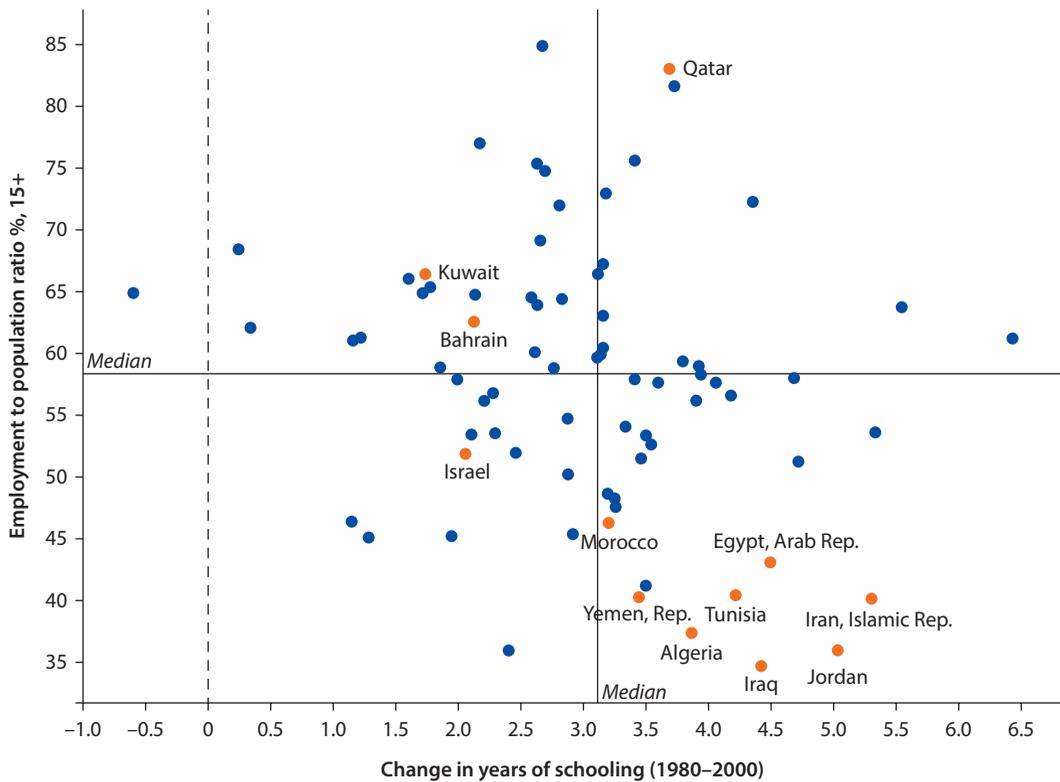
Sources: World Bank staff estimates based on Barro and Lee 2010 and the World Bank World Development Indicators, adapted from Campante and Chor 2012.

although the size of the contribution of agriculture to employment has declined, manufacturing and services (particularly of the higher-value-added type) have not taken a strong enough hold. Figure 4.2 shows that a majority of domestic private sector jobs are in small-scale, low-productivity service sector activities. In Egypt and West Bank and Gaza, around 40 percent of all jobs outside agriculture are in these sectors (see World Bank 2015).

Often dominated by micro-establishments, these sectors are comprised of one- or two-person firms. In retail trade, for instance, the average establishment size varies from 1.2 in Tunisia to 1.9 in Egypt. Moreover, most of the jobs are likely to be informal: 70 percent of the jobs in retail trade in Egypt are without a formal contract or social insurance. The investment and regulatory environment, which is not conducive to the growth of these small establishments, is one of the major challenges to job growth in the region. The available data suggest that small firms remain small or disappear from the scene entirely, while medium-size firms face low odds of growing above the size of 50 employees (figure 4.3) (World Bank 2015).

Against this backdrop, public sector jobs have pretty much been the only avenues for secure formal employment with decent benefits and high job security.[2]

Figure 4.2 Distribution of Employment outside Agriculture in the Middle East and North Africa Region
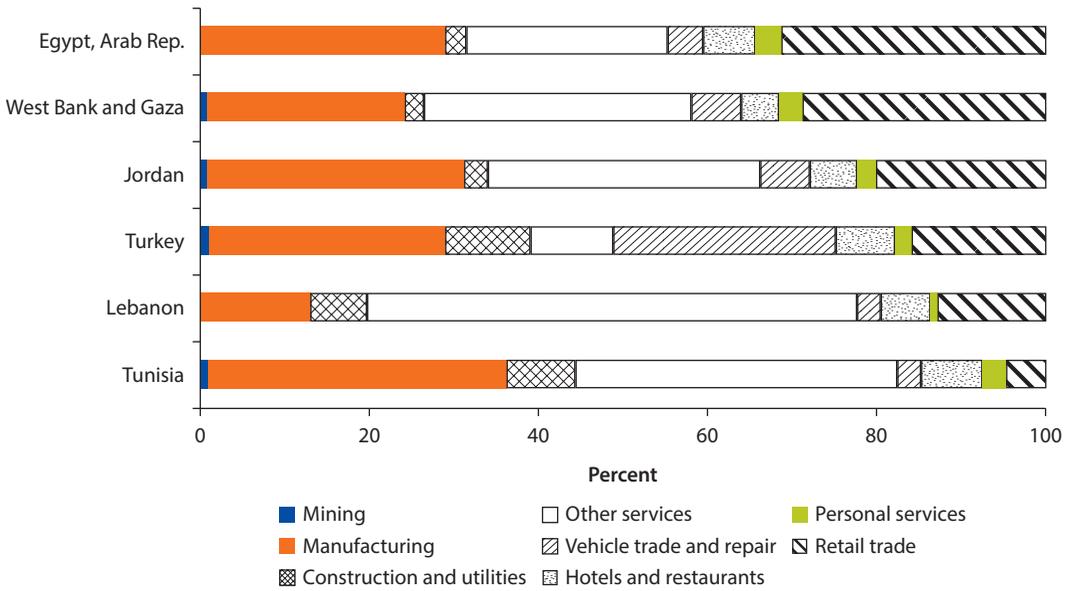
Source: World Bank 2015, figure 1.6.

Figure 4.3 Transition Probabilities for Small and Medium Firms in the Middle East and North Africa Region
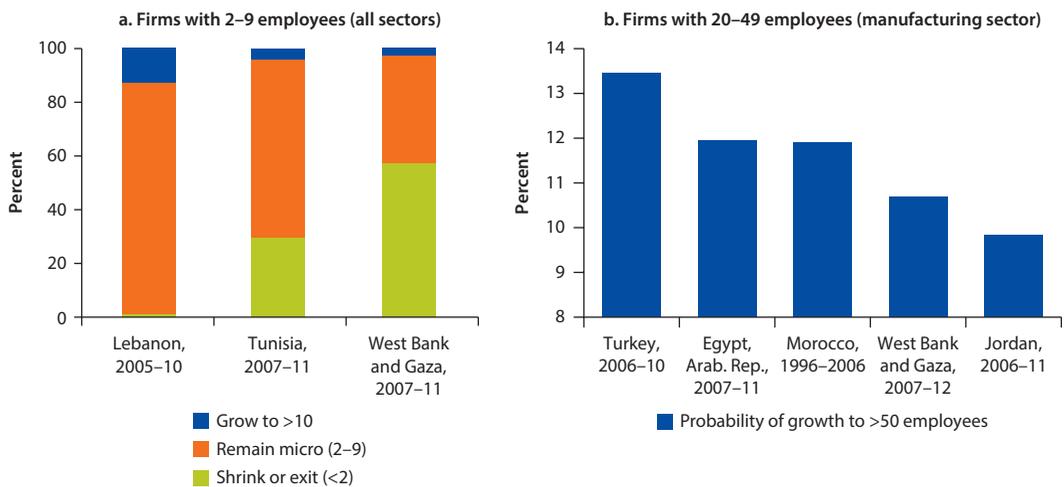
Source: World Bank 2015, figure 1.8.

Historically, several countries in the region had a system of guaranteed public sector employment for university graduates. In recent years, however, faced with ballooning wage bills and growing pressures to improve the management of human resources in the public sector, many in the region have undergone public sector workforce rationalization. Egypt and Morocco have instituted

a recruitment freeze across the board, and several other countries have put in place similar measures more selectively. In Jordan, for example, the freeze exempts specific ministries, such as education, health, and social development. Coupled with the curtailment of opportunities in the public sector, the lack of opportunities in the formal private sector has meant that the younger and more recent entrants find themselves at a disadvantage compared with the earlier cohorts.

In addition to this scarcity of opportunities in the labor market, the region also has a unique legacy of reliance on *wasta*, or roughly connection or clout, for the allocation of these jobs. Although historically it has been an informal form of institution or social network that played an important role in mediation and conflict resolution between tribes, the culture of *wasta* pervades all aspects of life in Arab countries today. The labor market is no different. Families frequently call on their *wasta* to look for employment opportunities for male relatives (World Bank 2013). The Arab Democracy Barometer Wave II 2010–11 poll found that a vast majority of citizens believe that knowing people in high places is important for obtaining a government job. In 6 of the 10 countries surveyed, the majority of citizens felt that political affiliations were more important than or as important as qualifications and experience in obtaining government employment. More than half of the respondents in all countries believed that family and tribal identities were more important than or as important as qualifications in obtaining a government job (Brixi, Lust, and Woolcock 2015).

In many ways, the culture of *wasta* is not very different from institutions like the *guanxi* in China or general reliance on social networks to get things done in many other societies, including high-income countries. Networks and connections serve an important purpose in the labor market matching process, especially in the absence of complete information on the part of the employers as well as potential recruits. But to the extent that access to these networks is strongly influenced by or rooted in the families that individuals are born into, such access represents a fundamental disadvantage to those who are not born to parents with the appropriate amount of social capital, and thereby unable to penetrate these networks.[3] The cost of this system is not just in "fairness." Given that there is no reason to expect family ties to be an effective signal for productive potential in a job seeker, excessive reliance on family connections for matching candidates to jobs is likely to be inefficient and impose deadweight losses that are harmful for economic growth. What makes the salience of *wasta* a particularly thorny issue in the MNA region is the dominance of the public sector in the total number of jobs that have historically been available to entrants.

In a milieu with limited opportunities in the labor market and a historically heavy reliance on networks to access to those opportunities, the central questions of enquiry in this chapter are the following: to what extent are the jobs that are available distributed equitably in the population? Are individuals with certain family or parental characteristics more likely to have access to the opportunities? How fair are labor markets in the region in how the scarce labor market opportunities are allocated?

Inequality in Labor Market Outcomes

Concept

Before embarking on the exercise, it is useful to delineate what exactly is meant by labor market opportunity for this study. Although in the case of children, in earlier chapters, opportunities were defined as access to services such as decent quality of education, adequate health, clean drinking water, and sanitation, the definition of opportunities in the labor market is slightly less straightforward. The most basic indicator of labor market opportunity as representing the state of being employed is an obvious first choice candidate. But is the employment status of an individual an outcome or an opportunity?

Any observed labor market state is a function of a set of accumulated "opportunities"—in the purest sense—as well as what an individual makes of those opportunities through hard work and enterprise. It is also true that the realm of individual responsibility grows as the individual progresses from early childhood to the point of entry into the labor market (see figure 4.4). There is a certain appeal to the universality of opportunities, such as education, when they are applied to children—the statement that all children should have access to primary schools, for example, is generally acceptable in most societies. But the same cannot be said for employment and other indicators related to the labor market. Perhaps the most reasonable normative statement that can be made is that everyone with the same combination of skills and experience and aspiring to a job of a certain type should have an equal chance of getting that type of job.

Even with this qualification, which essentially accounts for the role of other factors, such as schooling and experience in the state of being employed (in a job of a certain type), it is not always obvious that being employed is a superior or a more desirable state. For example, an individual who is waiting for a better job

Figure 4.4 Life Cycle of Opportunities
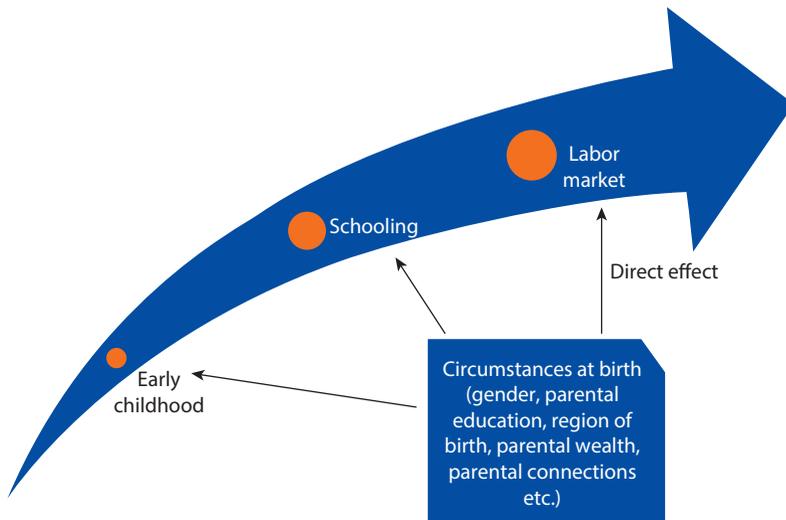
(for example, queuing for a public sector job, a phenomenon all too common in the MNA region) and presumably has a higher reservation wage is decidedly better off than an individual not having a job because none is available, although both individuals appear identical in the data. Furthermore, the former would also be better off than someone who appears to be employed but is in fact doing a job of absolute drudgery and doing it simply because there is no other alternative. So in some sense, the idea of a universal "good" that is often encapsulated in an "opportunity" is violated in the case of jobs.

In sum, "having a job" is essentially an equilibrium phenomenon that encapsulates individual motivations, choices, and decisions, some of which can be observed in the data and controlled for and many that cannot. To apply the inequality of opportunity analysis, perhaps the appropriate "opportunity" to use would be employability. How employability depends on circumstances beyond an individual's control would be the question of interest. However, it is difficult to observe and measure employability in the typical labor force surveys used for this study. This is one of the fundamental challenges in using the HOI methodology to analyze inequality of labor market "opportunities."

This chapter deals with this challenge in two ways. First, in addition to standard circumstances, the analysis includes individual characteristics, such as education and age. The reason for doing this is to account for skill and experience, two important correlates of any labor market variable in the standard Mincer framework. The exercise then is to determine the role of circumstances on labor market variables, net of age and experience. This method only captures the *direct* contribution of circumstances to inequalities in the labor market variables; it misses the role of circumstances through their effect on earlier human capital accumulation, or the *indirect* channel. This omission would seem to be important, since quite a bit of the earlier part of the report documents inequalities earlier in life. But the omission is a forced one as well, because the data requirements to quantify this indirect channel are huge, and none of the data sets used here for the MNA region is able to meet them.

Second, instead of using the basic state of being employed as the relevant metric, the analysis uses finer, more enhanced definitions of labor market outcomes (see figure 4.5). The motivation is to keep the focus on outcomes for which the state of having them is unambiguously better than the state of not having them. Compared with being employed, the state of being employed in a job with certain characteristics, such as a job with a contract or a job in the public sector, is arguably more desirable. So to adhere to the "opportunity" language, those with an opportunity are those with jobs that have these desirable characteristics, while those without the opportunity are those without jobs with the desired characteristics, including those who are unemployed. Whenever the data allow for identifying individuals who are neither currently employed nor looking for work just because they do not expect to find any, these discouraged workers are included in the universe and classified as those without a job of the desired quality.

Figure 4.5 What Constitutes an "Opportunity" in the Labor Market?
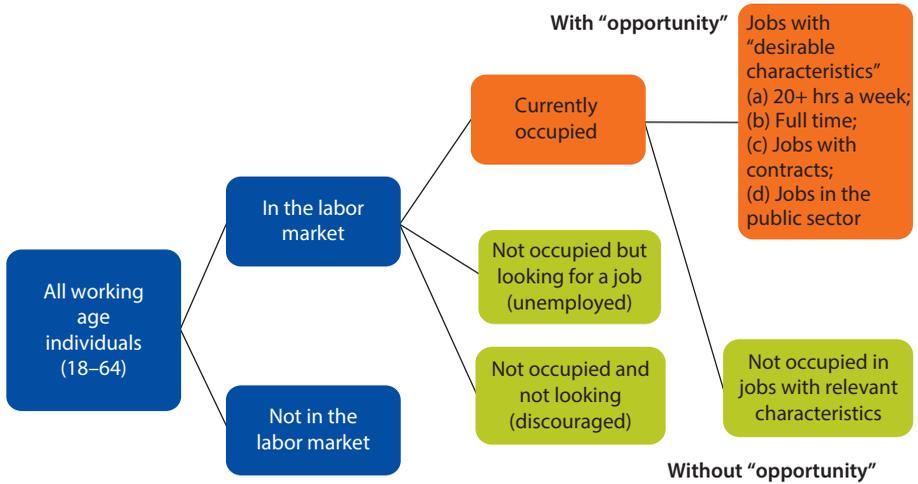
As in the application of the HOI methodology for children, an unknown number of characteristics are missing from the regressions that are implemented. In the case of children, all the missing characteristics could be categorized as circumstances, and the estimated inequality was a lower bound of the true inequality. However, the same is not the case for adults in the labor market. The omitted characteristics could include "circumstances" that everyone agrees should not affect labor market status just as well as other characteristics, such as how hard the person worked to try and get a job of that kind. Distinguishing between the two different types of characteristics and how they interact with the circumstances included in the analysis is not possible with the available data sets. Thus, the interpretations of the key outputs of the analysis are adjusted in the following manner. The dissimilarity index, which would be interpreted as the inequality of opportunity index for children, is simply "overall inequality in a labor market outcome," and what is known as HOI for children's opportunities becomes the "inequality-adjusted coverage" (IAC) rate (see table 4.1 for a summary).

Application of the standard HOI methodology to these labor market outcomes (jobs with desirable characteristics) provides a sense of the extent to which the outcomes are allocated equitably among individuals of different parental endowments, education, and age. Further parsing out the role of education and age reveals the part of the inequality that is purely caused by circumstances and thus unfair. Although the analysis sidesteps the opportunity language that a similar application to child-related opportunities would carry, with the IAC it is essentially possible to capture the degree of association between parental characteristics and labor market outcomes.

After sorting out these conceptual issues, there are methodological challenges to overcome as well. First, unlike the case of children, parental information for

Table 4.1 Differences between the Application of the HOI Methodology to Children and Adults in the Labor Market

Concept or measure	Children	Adults in labor market
Opportunities	Basic services that everyone agrees all children should have: quality education, good health, access to clean water, etc.	Jobs with certain desirable characteristics
Circumstances	All parental and household characteristics determined by birth over which children have no control	All parental and household characteristics that are determined by birth and over which the individual has no control, plus education and age
Dissimilarity index	Interpreted as the measure of "inequality of opportunity"	Interpreted as the "overall inequality in labor market outcomes"
		The share of this inequality that is attributable just to the circumstances is "inequality due to circumstances"
Human opportunity index	Interpreted as the overall coverage discounted by the extent of inequality of opportunity	Interpreted as the "inequality-adjusted coverage" rate

working age adults (say, ages 16–64) is not readily available in most surveys of household living standards or the labor force. Since parental information is what gives this kind of analysis its association with notions of intergenerational mobility, it is the most critical element of the analysis. In a region that is already data scarce, this is a particularly difficult challenge to overcome.

Second, some circumstances that are truly immutable for children—for example, the location in which they are observed—are not necessarily so for adults. For example, a job seeker in a particular region could actively exercise the choice to move to a neighboring region or the nearest urban center to look for work. There may well be other restrictions to this mobility, but the general point is that adults can respond to circumstances in ways that children cannot. For adults, the relevant circumstance then becomes not the location in which they are observed in the survey, but the location where they were born. This information puts further restrictions on the data.[4]

With these restrictions in mind, the analysis focuses on four countries in the region for which the data are amenable to this analysis: Egypt (multiple rounds of the Egypt Labor Market Panel Survey [ELMPS]), Jordan (Jordan Labor Market Panel Survey 2010), Iraq (Household Survey 2012), and Tunisia (Youth Employment Survey 2012). The set of labor market outcomes that characterize the opportunities, together with the set of circumstances available in each country, are presented in table 4.2.

The labor market outcomes used in the analysis start from the basic state of being employed, and progress to the state of being employed in a job that is more desirable. First, although there may be exceptions, such as female workers deliberately opting for jobs with fewer hours, full-time jobs are preferred to part-time jobs. Therefore, the analysis uses as opportunity a job that allows the individual to work more than 20 hours a week as well as a job that is full time. Second, formal jobs that provide health insurance, social security,

Table 4.2 Definition of Opportunities and Circumstances

Category	Definition	Countries
Opportunity		
Employed	Individual worked the previous week at least 1 hour	All
Employed full time	Individual worked at least 40 hours in the previous week	All
Employed 20 hours a week	Individual worked at least 20 hours in the previous week	All
Formal	Job provides health insurance/social security	Iraq
Contract	Individual has a contract with the company	Egypt, Arab Rep.; Tunisia
Has a public sector job	Individual employed in a public entity	All
Circumstance		
Gender	Binary variable to identify male individuals	All
Father's education	Series of binary variables to identify different levels of educational attainment of individual's father	All
Mother's education	Series of binary variables to identify different levels of educational attainment of individual's mother	Tunisia, Iraq, Jordan
Father's occupation	Binary variable if father worked in the public sector when respondent was 15	Egypt, Arab Rep.; Jordan
Region of birth	Series of binary variables to identify the individual's region of birth	Tunisia, Jordan
Region of residence	Series of binary variables to identify the individual's region of residence 14 years prior to the survey	Egypt, Arab Rep.
Characteristic		
Age	Individual's age	All
Education	Series of binary variables to identify the maximum educational level attained by the individual[a]	All

a. In the Arab Republic of Egypt, the variable entered as years of schooling. Calculations for Iraq only capture the universe of wage workers.

leave time, and other forms of benefits are also likely to be more desired than jobs without these characteristics. Likewise, jobs with a contract come with minimal security of tenure at least up to the duration of the contract, and are more likely to be found in formal sector jobs. Those jobs are also deemed more desirable than any ordinary form of employment. Finally, public sector employment is something that many in the region have aspired to and continue to aspire to, which is why it is included as an opportunity, and not because the analysis intends to promote public sector employment as more desirable than private sector employment.

For circumstances, the analysis considers variables such as the individual's age and education, father's education, mother's education (in the case of Iraq and Tunisia), father's occupation (for Egypt), and place of birth (Tunisia). For Egypt, the analysis compensates for the lack of information on place/region of birth by using the place of residence of the individual in an earlier period of his/her life as a proxy. To be precise, although most of the analysis is based on the 2012 round of the survey, the analysis exploits the panel element of the ELMPS to figure out the region of residence of the individual in 1998, and uses that instead of the current period residence.

To recap the methodology before describing the results, first, every individual in the sample is grouped into types based on their circumstances, as well as their education and age. The between-group inequality in access to each of the labor market opportunities is computed using the dissimilarity index as the measure of this inequality. Like the HOI for children, an IAC is calculated for each opportunity. The gap between the coverage and the IAC represents the penalty for unequal coverage between the types of individuals. The dissimilarity index is further decomposed to isolate the share of inequality attributable to circumstances and the shares attributable to education and age. The share of inequality attributable to circumstances is interpreted as the part of inequality that is unfair, although most would view it as underestimating the "true" extent of inequality caused by circumstances, since educational attainment itself is likely to be affected by the very same circumstances. Although this is a legitimate concern, this share in our view is a reasonable measure of "fairness" in the labor market from the perspective of an entrant or participant. From the point of view of the policy maker as well, the share provides useful information, as it suggests the extent to which the job market might be not just unfair, but also inefficient in its allocation of jobs, whereby better signals for skills (education and experience) are dominated by the effect of factors (like the kind of parents one has) that are less likely to be correlated with the productive potential of a job seeker.

Measurement

This section describes the key results of the analysis. It starts by showing the coverage and the IAC of the five key opportunities for Egypt, Iraq, Jordan, and Tunisia. In figure 4.6, blue circles depict the overall coverage—that is, the fraction of those in the labor force with a particular set of opportunities—and the red bars depict the IAC. As would be expected, the IAC rate for all opportunities is always lower than the coverage for all countries.

**Figure 4.6 Overall Coverage and Inequality-Adjusted Coverage of Various Labor Market Opportunities**
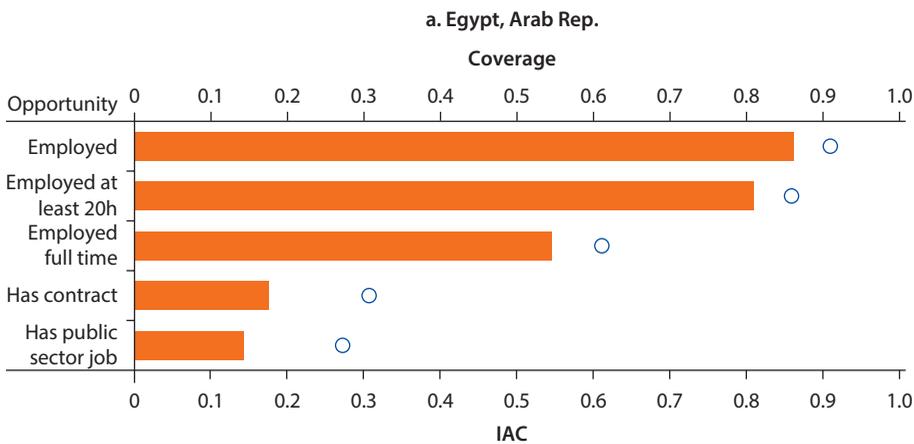
figure continues next page

Figure 4.6 Overall Coverage and Inequality-Adjusted Coverage of Various Labor Market Opportunities *(continued)*

b. Tunisia

Coverage

c. Jordan

Coverage

d. Iraq
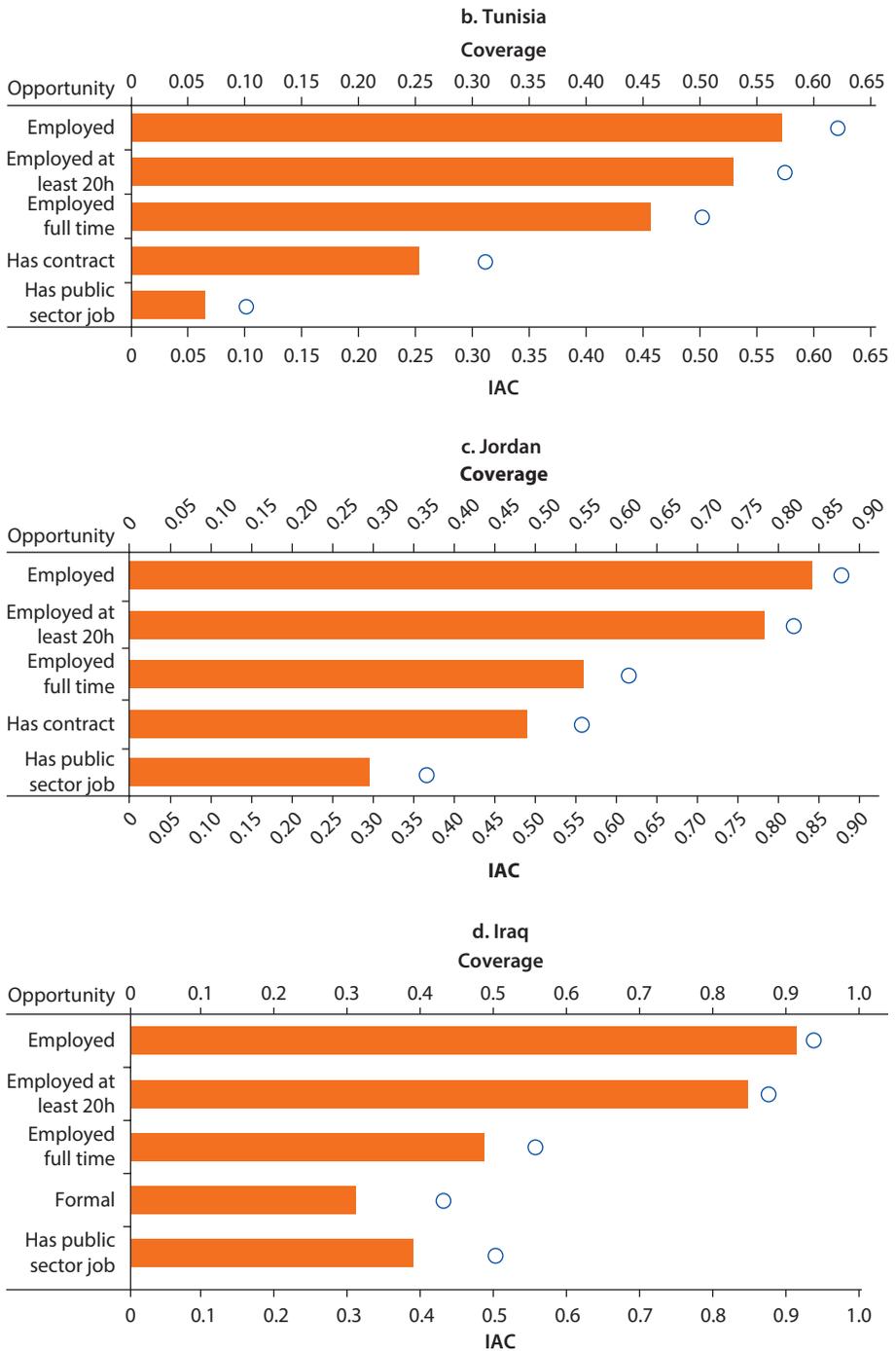
Coverage

Source: World Bank estimates.
Note: IAC = inequality-adjusted coverage.

Coverage rates are highest for the basic employment outcome, but become progressively smaller when desirable characteristics are considered. For example, in Egypt, although the overall employment rate in the sample is over 90 percent, only about 64 percent are employed full time, 36 percent have a job with a contract, and 33 percent are in the public sector. The same pattern is observed for Iraq, Jordan, and Tunisia to various extents.

Not all of the inequality is of the unfair kind, however. Most societies would not necessarily find it objectionable that more educated or experienced workers have better likelihoods of being in better or more desirable jobs. In fact, rewarding superior effort throughout school to obtain a good education and making smart and informed choices to accumulate experiences that are relevant and likely to be valued in the labor market are hallmarks of meritocratic societies. But inequality that is associated with circumstances, such as region of birth or parental education or whether the father was a public sector employee, is of a more pernicious kind and is directly antithetical to the idea of an equal opportunity society. Of course, there may be inequalities in the attained education, and the quantity as well as quality of experience may have significant path dependence with earlier opportunities in life. But abstracting from these indirect channels, the question of how much of the total inequality in labor market outcomes—controlling for education and experience—comes from an admittedly incomplete set of circumstances is also likely to be of tremendous interest.

The IAC, by definition, adjusts the coverage by the inequality between groups, where the groups are based on the circumstances and characteristics described in table 4.2. The gap between the coverage and the IAC thus represents a measure of the penalty for unequal distribution of outcomes across the various groups. The fact that this penalty is also larger for labor market outcomes that incorporate some notion of job quality suggests the inequality is larger for jobs that are likely to be more desirable.

The Shapley decomposition technique is used to break down total inequality into the contributions made by age (proxy for experience), own educational attainment, and circumstances. Although the labor market indicators used are broadly similar across the four countries, the sets of circumstances used in the analysis are not entirely the same (see table 4.2). Thus, although the charts are presented together (in figure 4.7), caution is recommended in interpreting the size of the shares, especially in comparing across countries.

The first thing to note from figure 4.7 is that circumstances account for a sizable portion of the total inequality. In Egypt, the contribution of circumstances to total inequality ranges from close to 90 percent for full-time employment, to about 33 percent for having a job with a contract. The share of inequality associated with circumstances for public sector employment is also close to a third. Jobs with more desirable attributes (full time, contract, and public sector) also have higher total inequality to begin with, so although the *shares* associated with circumstances may appear smaller, they are large in absolute terms.

In Tunisia, the contribution of circumstances to total inequality ranges from close to 80 percent for full-time employment, to 53 percent for holding a job

Figure 4.7 Inequality Contributors in Selected MNA Countries—Education, Age, and Circumstances
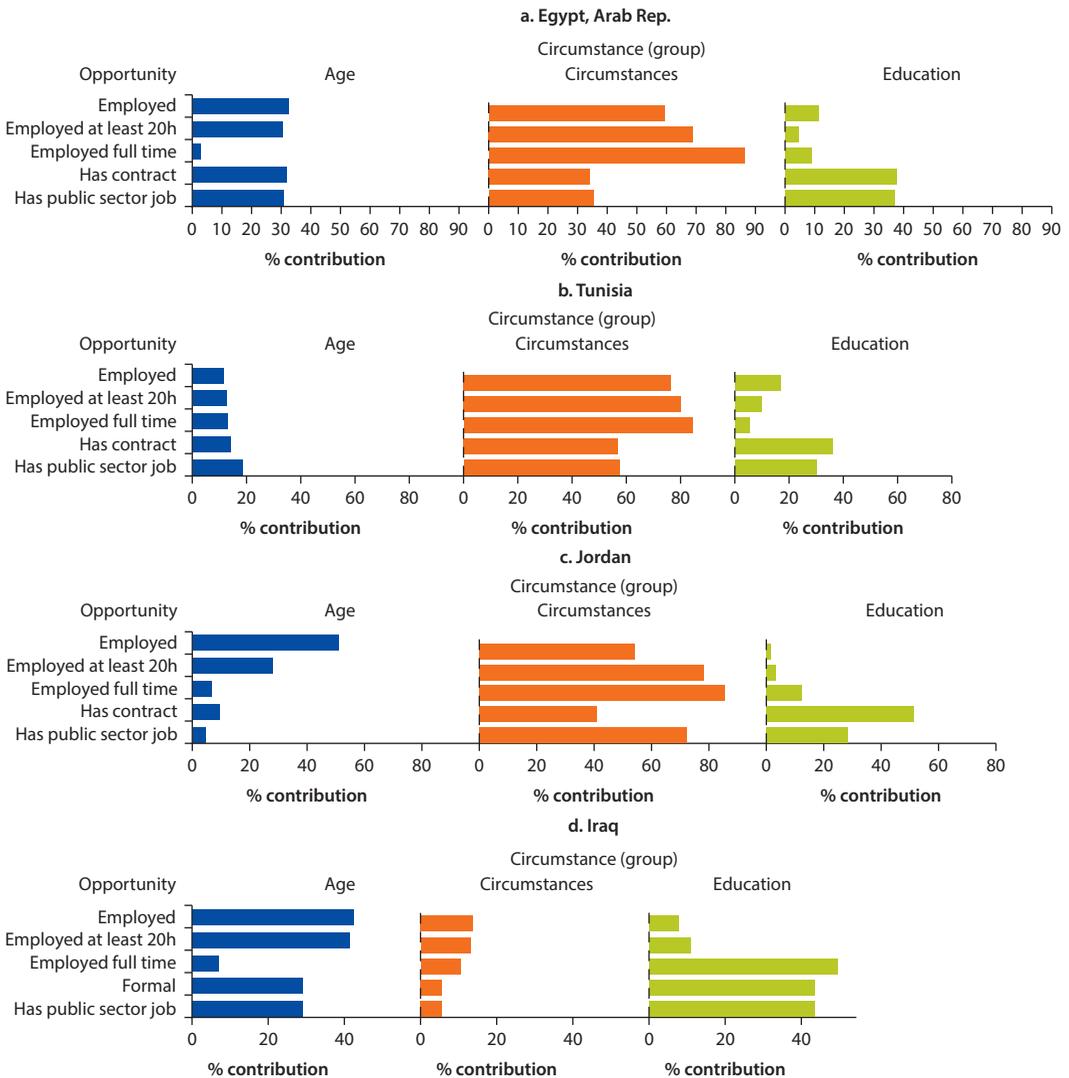
Source: World Bank estimates.

with a contract. The pattern is similar in Jordan, with as much as four-fifths of the total inequality in having full-time employment being explained by circumstances. Circumstances contribute close to 70 percent of the inequality in public sector employment in Jordan. The role of circumstances comes out much lower in Iraq compared with the other countries in the region. One possible reason for that could be that the political, social, and structural upheavals the country has witnessed in recent years have fundamentally altered the demographic composition of the country, and fundamentally dismantled the traditional structure of advantage in the society.

The contribution of education to inequality is higher for jobs with a contract and jobs in the public sector across all four countries. This is expected, because these are the two attributes that make for a "white collar" job and, as such, these jobs are likely to be more "discriminating" by the level of education. But what is noteworthy is that even for these jobs, in Egypt, Jordan, and Tunisia, the contribution of circumstances to the inequality is almost as large as, if not larger than, the contribution of education.

Box 4.1 What Do Similar Decompositions in Countries outside the Region Look Like?

Abras et al. (2013) carried out a similar decomposition exercise on several labor market outcomes in the Europe and Central Asia (ECA) region (figure B4.1.1). The data used for that analysis came from the 2012 round of the Life in Transition surveys. The set of individual characteristics used in that analysis was very similar to the characteristics used for this study: education and age of the individual as well as a set of circumstances. The specific circumstances used in that analysis were gender, father's education, parent's political party affiliation (which is an important marker of privilege in a majority of post-communist countries), and individual minority status. This study presents a similar decomposition for having a job with a contract. Although the results are not comparable (labor markets are much more formalized in ECA than in MNA, and the set of circumstances used in the analysis as well as the definition of the variables are not done strictly in the same way), the reason for presenting it here is to demonstrate the application of a similar exercise in another setting, and to convey a sense of the relative contributions due to various characteristics.

Figure B4.1.1 Decomposition for Labor Market Outcomes in Countries in Europe and Central Asia
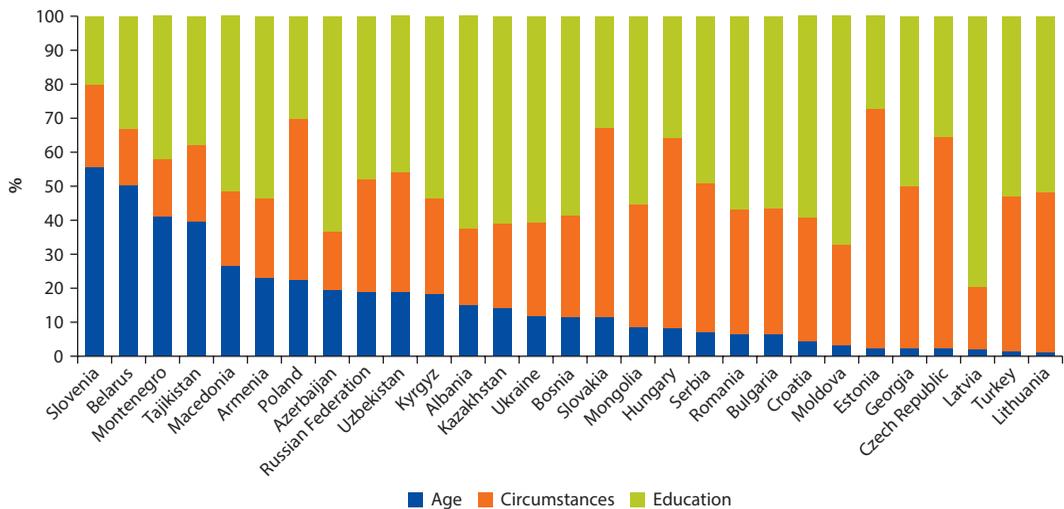
Source: Abras et al. 2013.

The contribution of age, a reasonable proxy for experience, to total inequality varies in interesting ways among the countries analyzed here. In Egypt, the contribution of age hovers around 30 percent for most opportunities, except for full-time employment, for which the contribution is negligible. In Tunisia, age uniformly contributes between 15 and 20 percent of the total inequality, while in Jordan the share is over 40 percent for overall employment but decreases sharply when jobs with other desirable attributes are considered. In Iraq, the contribution of age is above 30 percent in almost all cases, except full-time employment. It is important to heed the earlier caution of the lack of full comparability of these results across countries, but even considering individual country cases separately, the share associated with age is almost as large as the share due to education and circumstances for some opportunities.

The relatively large contribution of age is potentially consistent with what many have called the generational disadvantage that young people face in the MNA countries (figure 4.8). Youth unemployment gaps have been high in several countries in the region. In Egypt, for example, although it has been declining over the past decade or so, youth unemployment has been a structural feature of the labor market: every 20-year-old entering the Egyptian labor market in the past 14 years has faced unemployment rates above 10 percent. It is possible that the picture actually looks worse considering the fact that growth in the construction sector has absorbed many youth, particularly those with lower skills, while older workers remain predominantly in the social services and public administration. The age profile of jobs with a contract and jobs in the public sector in Egypt shows a distinct advantage in favor of the older cohorts. In 2012, 19 percent of those ages 19–28 years had a job with a contract, compared with 54 percent for those ages 43–60 years. In general, access to these jobs has worsened over time. In 1998, roughly 52 percent of those ages 28–42 years had a job with a contract, and about 50 percent had a job in the public sector. By 2012, those numbers had declined to 34.7 and 28.8 percent, respectively.

In addition to having lower opportunities, the younger cohorts also face a more unequal labor market. The dissimilarity index—the measure of the overall inequality between the types—is the highest for the youngest cohort for jobs with a contract as well as jobs in the public sector. This implies that although age contributed about a third of the inequality considering the entire sample, sizable inequality still exists even in the analysis within age groups, and those inequalities are highest for the youngest group and decline for the older cohort. In addition, what is also interesting and significant is that, of the total inequality, the inequality that is due to circumstances—or the unfair kind of inequality—is also the highest for the younger Egyptians. The share of circumstances goes from 54 percent for the youngest cohort to 32 percent for the oldest, for having a job with a contract, and from 57 to 38 percent, respectively, for public sector employment. Potential labor market entrants in Egypt face not just lower overall opportunity for jobs with desirable characteristics, but also a more discriminating labor market, especially on the basis of circumstances such as parental education, parents' employment in the public sector, region of birth, etc.

One possible reason for these differences is the central role that personal connections play in the labor market, as those lacking connections may face a long and drawn out job search process. For example, Egyptians directly report that they frequently use personal connections to search for and find jobs. The ELMPS collects data on connections by asking employed wage workers about the primary method they used to acquire their current job, and by asking the unemployed about the methods they are using to search for jobs. Table 4.3 lists the most commonly reported methods. The table shows that 32.1 percent of workers reported that the primary method they used to acquire their current job was by asking friends or relatives for help, and 47 percent of the unemployed reported asking friends or relatives for help in finding a job. However, these numbers are likely to understate the true importance of connections for employment, as public sector workers are probably underreporting their use of connections. Among public sector workers, 59 percent reported that registration in a government employment office or entering into a job lottery was the primary way they found their current job, but these methods may be accompanied by using connections. In the private sector, the use of connections appears to be the primary method to find a job, with more than 45 percent of those employed reporting the use of *wasta*.

In Egypt, the use of connections is high across many different types of workers and jobs, but certain personal and job characteristics are associated with higher use of connections. Gender is a clear example. Men are slightly more likely to have found a job through contacts than women (4.8 percentage points). However, unemployed men are much more likely to search for jobs using connections than are unemployed women: more than one-half of men compared with one-third of women. This finding is consistent with findings from previous World Bank reports (World Bank 2014), and may be an issue inhibiting women's access to high-quality jobs. The importance of connections for finding a job seems to decrease slightly with age. Lastly, among personal characteristics, there is notable variation at the regional level. Those from metropolitan Egypt are somewhat more likely to have found jobs using connections and much more likely to be looking for jobs using contacts.

For job characteristics in Egypt, there are two noteworthy details. First, the rapidly growing construction industry also appears to be the industry in which contacts matter the least. Second, unlike in many other economies, connections do not appear to lose importance after the first job, and in fact seem to become more important for workers in their second or third jobs. This finding is somewhat unusual. A reasonable assumption would be that an individual's ability as a worker becomes more well known (and can be signaled more efficiently) by the time he/she is looking for a second or third job, which should reduce the role of connections in facilitating "matches" between candidates and jobs. The fact that this does not happen seems to suggest that the use of connections in Egypt reflects underlying problems of nepotism in the labor market, as opposed to the more benign feature of social networks performing the role of "matching" to reduce frictions in an imperfect market.

Figure 4.8 Pattern of Generational Disadvantage in the Arab Republic of Egypt, by Opportunity Age Group

a. Age profile of basic coverage (2012)

Average coverage

b. Age profile of basic coverage (1998)

Coverage

c. Overall inequality (2012)


Average dissimilarity index
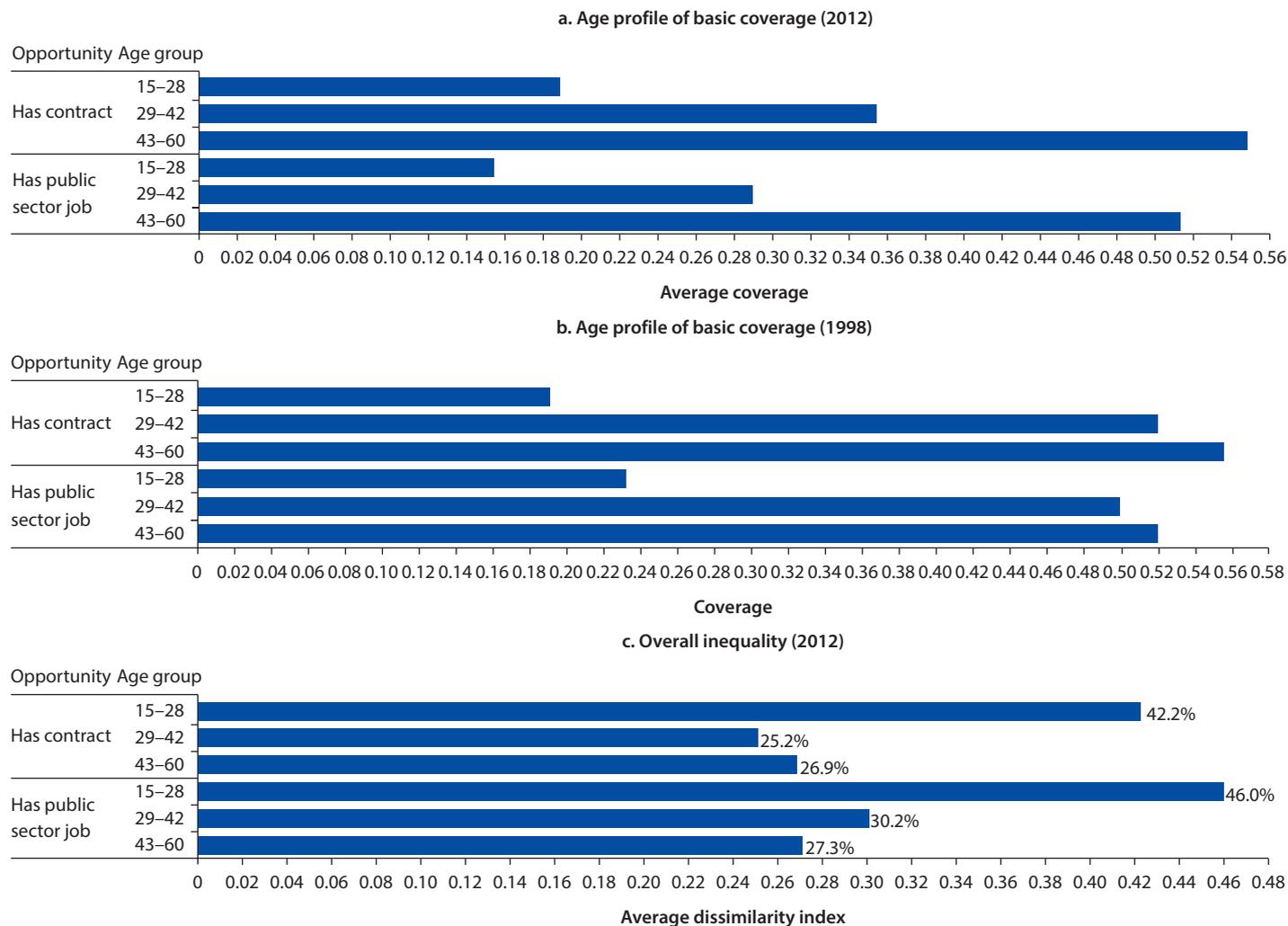
figure continues next page

Figure 4.8 Pattern of Generational Disadvantage in the Arab Republic of Egypt, by Opportunity Age Group *(continued)*

d. Inequality due to circumstances (2012)

Circumstance (group)
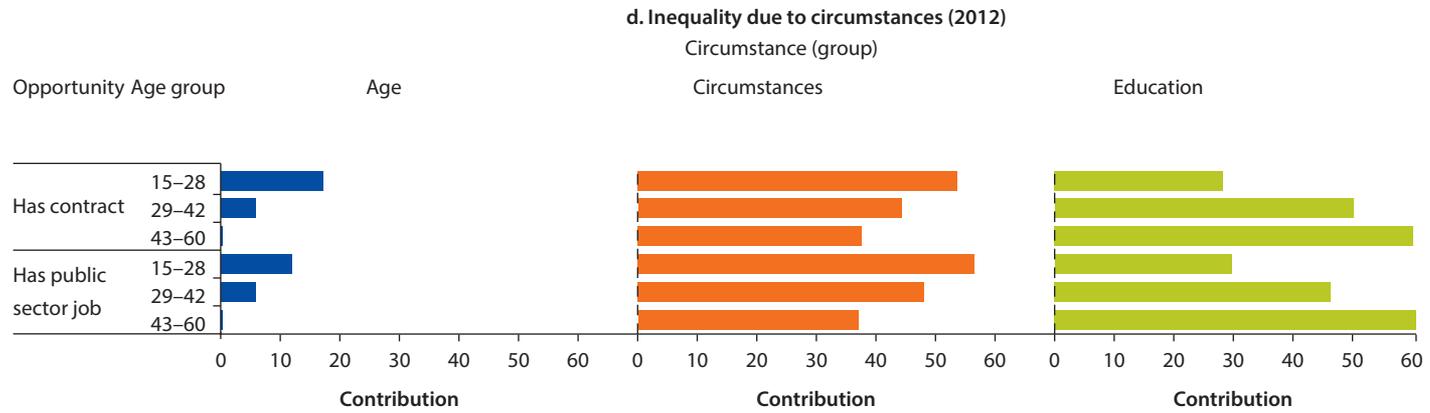
Source: World Bank estimates.

Table 4.3 Methods Used in Searching for Jobs in the Arab Republic of Egypt

	By activity		By type		
Method	Finding current job	Searching for job	Public	Formal private	Informal private
Registered in government employment office	12	34.1	28	3.3	0.2
Entered government employment office	13.5	38.4	31.1	5.1	0.2
Sent job application	11.1	34.3	18.5	17	1.9
Asked friends or relatives for help	32.1	46.9	11.4	45.3	46.4
Contacted employer/contractor	13.7	9	0.1	9.7	28
Solicited by employers	7.7	—	0.7	5.5	15.2
Other	9.9	47.7	10.2	14	8.1

Source: World Bank estimates based on 2012 Egypt Labor Market Panel Survey.
Note: — = not available.

Box 4.2 Equity and Efficiency of Networks for Job Search

Labor markets are imperfect and that is a fact that has been well acknowledged by the eco-
nomics profession for at least half a century. A particular imperfection comes from incomplete
and asymmetric information among the key players in the market: those that seek employ-
ment and those that are looking to hire. For example, Stigler (1952) noted that the New York
City market for domestic services in 1952 was "imperfect because some maids are working at
less than some prospective employers would be willing to pay and some maids are receiving
more than unemployed maids would be willing to work for." Such information asymmetries
pervade almost all labor markets today. The large body of research on the role of signaling,
labor market intermediation, etc., is in some ways (directly or indirectly) related to mechanisms
that try to resolve these information constraints.

   As such, the role played by information networks, formal (employment services, recruit-
ment agencies, newspaper adverts, placement bureaus, etc.) and informal (referrals through
friends, family, and other employees), can be regarded as having a distinctly useful "matching"
function. The role of informal connections in particular has been studied extensively by social
scientists. Prominent American sociologist Mark Granovetter (1975) demonstrated the central
role played by contacts in linking people to jobs. Central to the argument is the observation
that information about job opportunities and influence vis-à-vis references, travels along
social networks privileging those whose biographies have provided them with a large number
of "weak ties" who can deliver news of job possibilities they would not otherwise encounter.
"Weak ties" refer to networks whose members are dispersed and dissimilar, as opposed to
"strong ties," which characterize personal friendships. Granovetter's central proposition has
been confirmed by several empirical studies and is now well established.

   But there is a flip side to the efficiency argument of using connections for job search. At the
root of the flip side is another idea that is also credited to Granovetter: social embeddedness
or the idea that rational agents make choices that are refracted by the social contexts in which
they live. In other words, if weak ties matter for access to jobs and the superset of weak ties

box continues next page

**Box 4.2 Equity and Efficiency of Networks for Job Search** *(continued)*

(networks) available to, for example, women, are disproportionately drawn from nonworking neighbors, then this may represent a distinct disadvantage. Likewise, in countries with a legacy of racial/spatial segregation (such as South Africa and the United States), members of the disadvantaged group with weak ties drawn extensively from their own social groups/types may find themselves trapped in a low occupational state. In the case of countries in the Middle East and North Africa, the overhang of relational recruitment in public sector jobs that occupy a dominant space in the overall labor market is potentially a critical driver of the observed inequality in the labor market even today.

This phenomenon is not limited to Egypt. In a recent survey conducted to understand the role of governance and local development in Jordan, more than 50 percent of the respondents in all municipalities reported the role of *wasta* to be very useful or absolutely essential for finding a public sector job (figure 4.9) (Brixi, Lust, and Woolcock 2015).

How much do specific circumstances matter? The Shapley decomposition techniques are used to decompose the total share of the circumstance-induced inequality into the contributions of specific circumstances. The results are presented in figure 4.10 for Egypt, Jordan, and Tunisia, for being employed, employed full time, and in a job with a contract. Starting from the most basic labor market indicator—being employed—represented in the innermost donuts in the figure, age and gender contribute more than half of the inequality in all regions. The share of gender is 30, 23, and 60 percent, respectively, in Egypt, Jordan, and Tunisia. Considering full-time employment as the relevant metric, gender remains the most important circumstance, with its contribution ranging from a third of the total inequality in Tunisia to roughly two-thirds in Egypt. The salience of gender, with women being distinctly disadvantaged in the labor market, is consistent with other features of the labor market, in particular, low participation and selection mostly into low-productivity sectors, such as agriculture and personal services where the engagement is casual and flexible.

Education begins gaining prominence as a characteristic when the analysis considers jobs with a contract. Age and years of education together account for 67 percent of the inequality in Egypt, 60 percent in Jordan, and only 38 percent in Tunisia. The remaining inequality is associated with circumstances, with varying importance across countries. In Egypt, the unfair part of the inequality that accounts for about a third of overall inequality is roughly divided almost evenly between region of birth, father's education and employment characteristics, and gender. Region of birth becomes a more dominant contributor to unfair inequality in Jordan and Tunisia, commanding 27 and 35 percent of the total inequality, respectively. These findings suggest that there are significant spatial aspects to the inequality as well, which may be linked not just to the availability of opportunities in different regions of the country, but also in the creation of these opportunities.

Figure 4.9 Perceived Role of *Wasta* in Public Sector Employment in Jordan

Legend: Essential ■ Very useful ■ Moderate use ■ Some use □ No use ▨
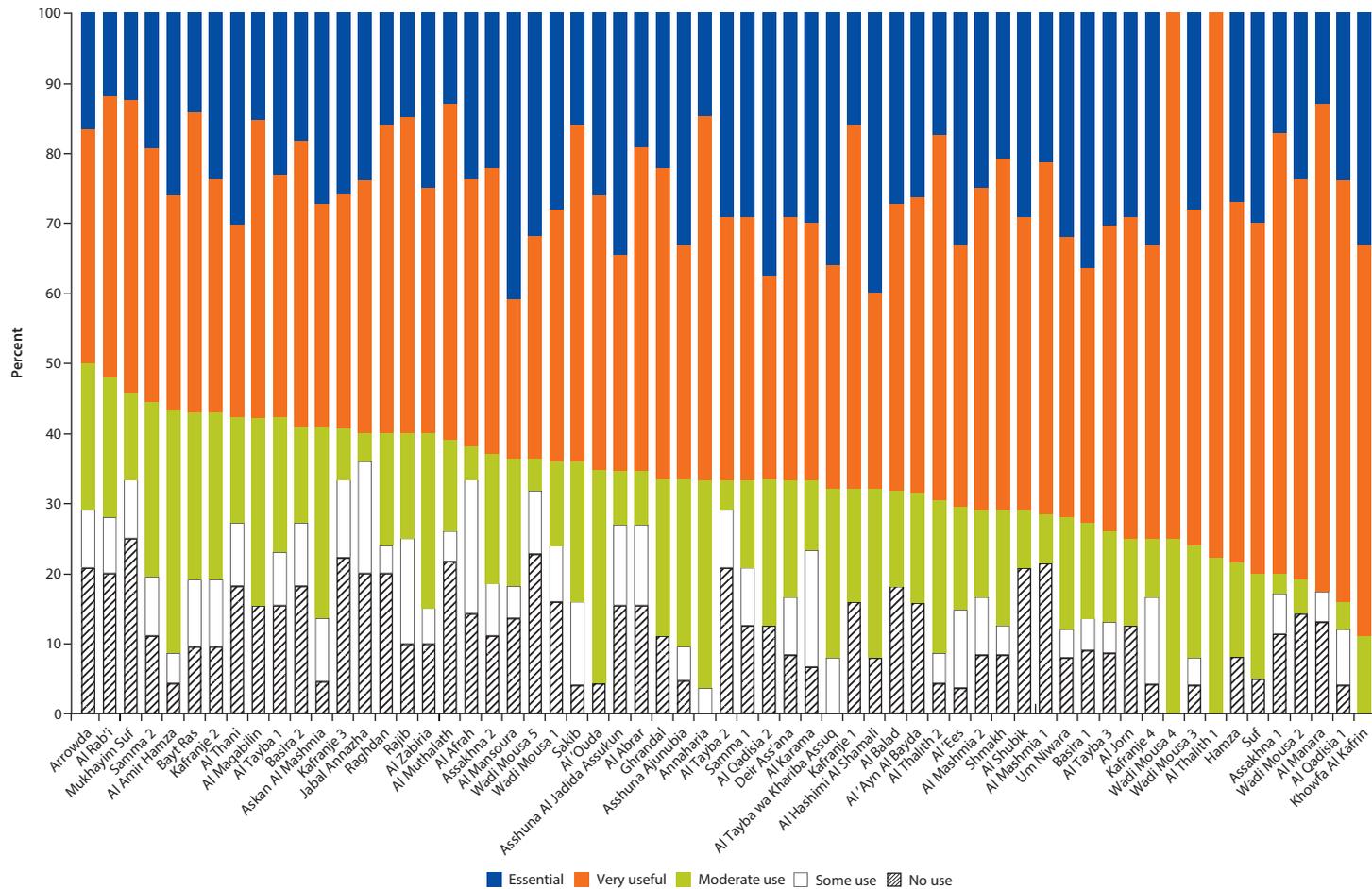
Source: Jordan GLD Post Election Survey from Brixi, Lust, and Woolcock 2015.

Figure 4.10 Contributors to Inequality in Being Employed, Employed Full Time, and in a Job with a Contract in the Arab Republic of Egypt, Jordan, and Tunisia

a. Egypt, Arab Rep. (being employed—innermost donut and job with contract—outermost donut)

- Age
- Gender
- Region of birth
- Education
- Father's education
- Father in public sector
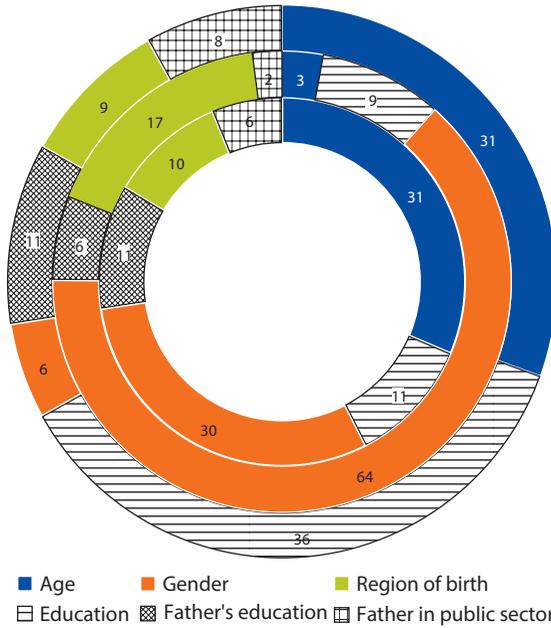
b. Jordan (being employed–innermost donut and job with contract–outermost donut)

- Age
- Gender
- Region
- Education
- Father's education
- Mother's education
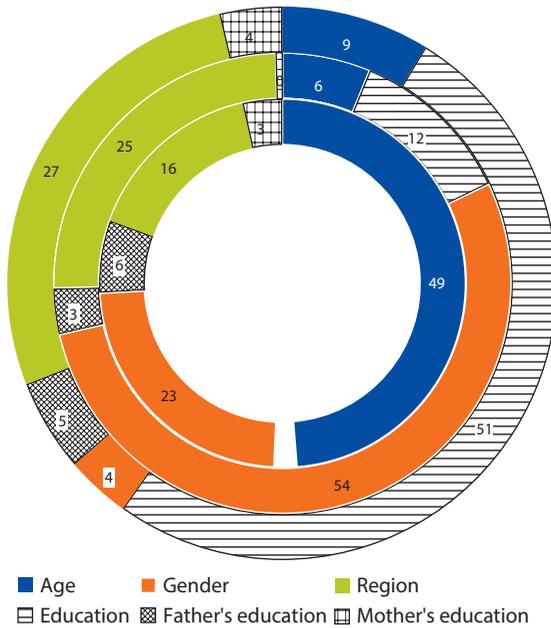
figure continues next page

Figure 4.10 Contributors to Inequality in Being Employed, Employed Full Time, and in a Job with a Contract in the Arab Republic of Egypt, Jordan, and Tunisia *(continued)*

c. Tunisia (being employed–innermost donut and
job with contract–outermost donut)

■ Age   ■ Gender   ■ Region of birth
⊟ Education ☐ Father's education ▨ Mother's education
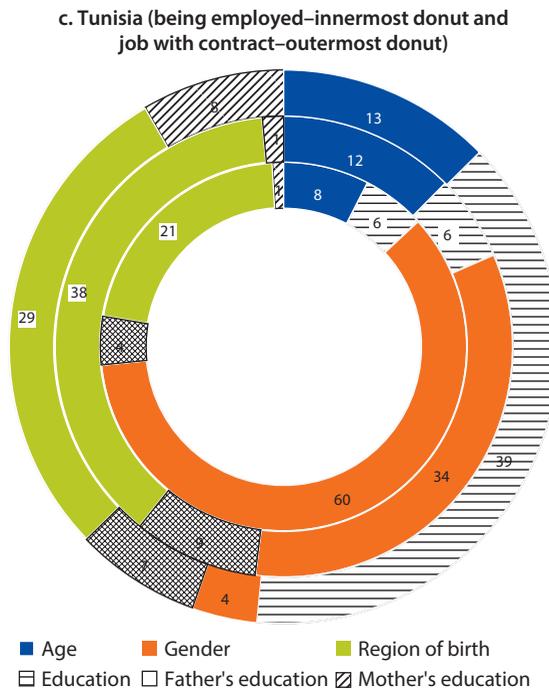
Source: World Bank estimates.

Inequality in Wages and Earnings

So far, this chapter has focused on inequality in the ability to *access* jobs of certain desirable characteristics. This section complements that analysis with analysis of inequality in wages or earnings. How unequal are outcomes such as wages or earnings? In particular, how much of these inequalities is associated with characteristics that, from a normative, justice point of view, should deliver no premium in the labor market? The analytical approach is to try to separate out the justifiable inequality due to differences in efforts from the inequality due to circumstances. Since the possible set of effort variables is unobserved in practice, the analysis proceeds in the "opposite" direction, that is, instead of netting out the inequality due to effort, the analysis accounts for the inequality that is associated with circumstances that are observable.

As discussed at length in chapter 2, the methodology essentially relies on the calculation of between-group inequality using a class of additively decomposable inequality indexes. The application restricts attention to GE(0), which is also commonly known as the mean log deviation or the Theil-L. Two notes on the methodology are important to emphasize at the outset. First, the application of this method to the MNA region is fairly limited and

exploratory in nature, because of the lack of appropriate data. The region has very few surveys that are comparable across countries and also contain information on the variables that are of interest here, namely, wages or earnings, information on parental education, and other critical circumstances. Essentially country-level analysis is done for the four countries for which there are satisfactory data. Second, even when the data are present, the fact that the set of circumstances that can be analyzed is likely to be a subset of all circumstances that, normatively, should not affect an individual's wages suggests that what is measure may be a lower bound of the true inequality. The inequality due to circumstances is not interpreted as "inequality of opportunity," as it is typically in the literature. Figure 4.11 reports the share of inequality that is due to circumstances.

The analysis is restricted to individuals ages of 25–49 years and takes average monthly wages as the key variable of interest. In the case of Iraq, information on wages is not available, so labor income is used. The set of circumstances is not entirely the same for all countries. For Egypt, the set includes gender, father's education, mother's education, region of birth, and father in public sector; for Tunisia,[5] gender, father's education, mother's education, and region of birth; for Morocco, gender, father's education, mother's education, father's employment in agriculture, and region of residence; and for Iraq, gender, father's education, mother's education, and division of residence. Although the results are in the same figure, the between-group inequality where groups are defined on the basis of these circumstances is not strictly comparable across countries.

The total inequality in wages (labor income for Iraq) as measured by the mean log deviation ranges from 0.20 to 0.33. Of the total, the values of inequality between groups, where groups are defined based on the selected circumstances, range from 0.02 to 0.05. The share of total inequality accounted for by the inequality due to these circumstances is about 5 percent for Iraq, 9 percent for Egypt, and 15 percent for Tunisia and Morocco. These shares are interpreted—broadly in the literature as the inequality of opportunity—simply as "circumstance-induced inequality" or CII.

Box 4.3 Contrasting Profiles of Amr and Mustafa: Two Hypothetical Individuals

Amr is a 28-year-old Egyptian man who was born and grew up in Menia village in rural Upper Egypt. Mustafa is also 28 years old and was born and brought up in an affluent greater Cairo neighborhood. Amr's father was an illiterate farm worker for most of his life, while Mustafa's father went to university and had a job in the government. Amr and Mustafa have completed about 11 years of formal education and are looking for a job. Although Amr and Mustafa look very similar on their curriculum vitae, the likelihood that Amr will end up in a job with a contract is about 17 percent, compared with a 42 percent likelihood that Mustafa will end up with a similar job.

Figure 4.11 Total Inequality and Inequality Due to Circumstances in Wages and Earnings in MNA
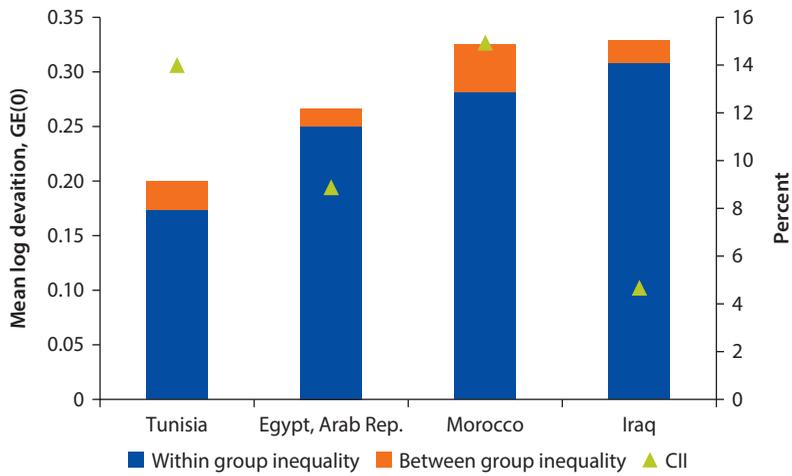
Source: World Bank calculations using labor force survey data.
Note: The set of circumstances considered in the analysis is different for each country, so the size of the inequality between groups is not strictly comparable. Inequality induced by circumstances (CII) is plotted on the right axis. CII = circumstance-induced inequality.

Although a strict comparison may not be entirely correct, as the primary outcome variable and the circumstances used in the analysis may be different, a crude benchmarking of these results with what has been reported for a few countries in other regions appears to suggest that these numbers are a bit on the lower side. For example, the available evidence from Latin America and the Caribbean (Ferreira and Gignoux 2011) puts total inequality (measured again by the mean log deviation) between 0.57 and 0.78, and inequality due to circumstances in labor earnings between 20 percent (Colombia) and 35 percent (Brazil). As might be expected, the Nordic countries together with Germany and Holland depict the lowest total inequality as well as the lowest share contributed by circumstances. In this spectrum, countries in the MNA region appear to have overall inequality levels roughly on par with Greece, Italy, Latvia, and Spain (figure 4.12).

It is commonly acknowledged that at the conceptual level, a discussion of inequality of opportunity (as opposed to, for example, inequality of outcomes) is often a certain conversation starter that could eventually lead to concrete policy action. However, providing policy makers with accurate estimates of inequality of opportunity has proven difficult, because of the limitations of the circumstance-induced inequality approach presented here. In a recent study, Lara Ibarra and Martinez-Cruz (2015) explore the extent to which the estimation of inequality of opportunity is biased downward under several scenarios, and highlight three key results. First, the omission of a relevant circumstance from the CII estimation could bias the estimates by anything between 1 percent to as much as

Figure 4.12 Inequality and Inequality Attributable to Circumstances around the World
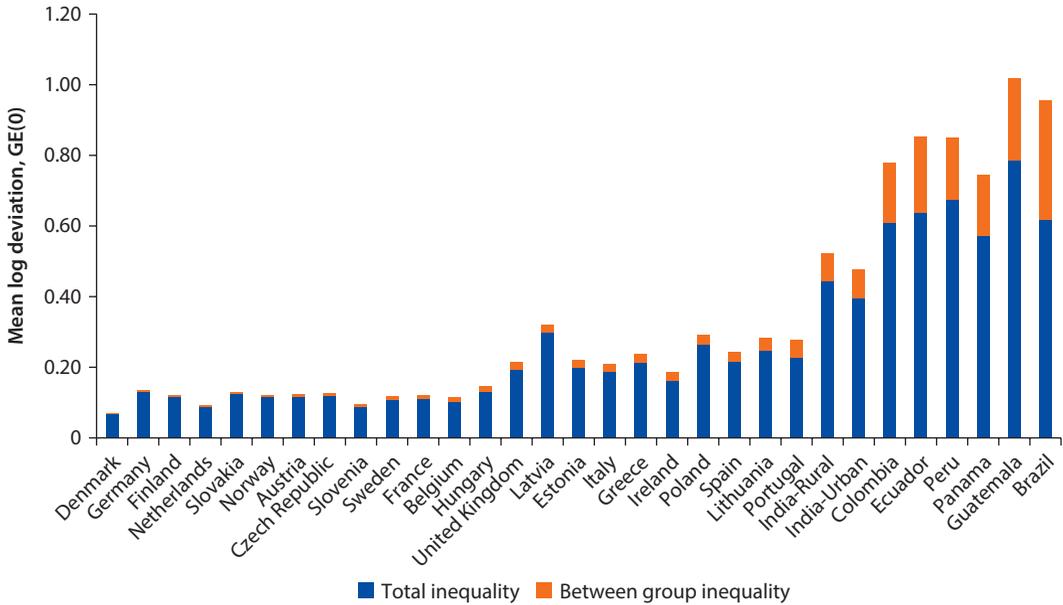
Sources: Ferreira and Gignoux 2011; Marrero and Rodriguez 2010; Singh 2012; and Cogneau and Mesple-Somps 2008.

80 percent, depending on how much of the variation in the outcome such cir-cumstance explains. For instance, this means that failing to account for a circum-stance that explains less than 10 percent of the variation in earnings can translate into an estimate about 7 percent lower than the "real" CII. This result holds true regardless of the real level of CII.[6] A second result is that, in a sample of cases analyzed, the CII estimate can be roughly approximated using simple economet-ric techniques. There appears to exist a close relationship between the CII esti-mate and the overall variation in earnings (wages or household income) explained by the circumstances used in the CII calculation. Thus, only to the extent that the variables found in a given survey can explain a larger share of the variation in the outcome of interest, a higher CII estimate will be reached (figure 4.13).

The third and final result is related to a shortcoming of survey data that has been overlooked in previous studies: the possibility for the systematic higher nonresponse rates of high-income (or "top") individuals. Although a related lit-erature has studied the implications of this well-known issue on measures of inequality of outcomes and possible methods to address it (Hlasny and Verme 2013; Korinek, Mistiaen, and Ravallion 2007), the consequences for the CII framework are less documented. The study illustrates that missing, say, the top 5 percent of the income distribution can lead to CII estimates that are anywhere between 12 and 35 percent lower than the real CII. Moreover, the more "typical" situation where a researcher is faced with the combination of missing the top incomes with omitting as little as one variable leads to even higher biases (that is, further underestimation of the CII).

Figure 4.13 Correlation between Overall Variation Explained and the Inequality of Opportunity Estimate
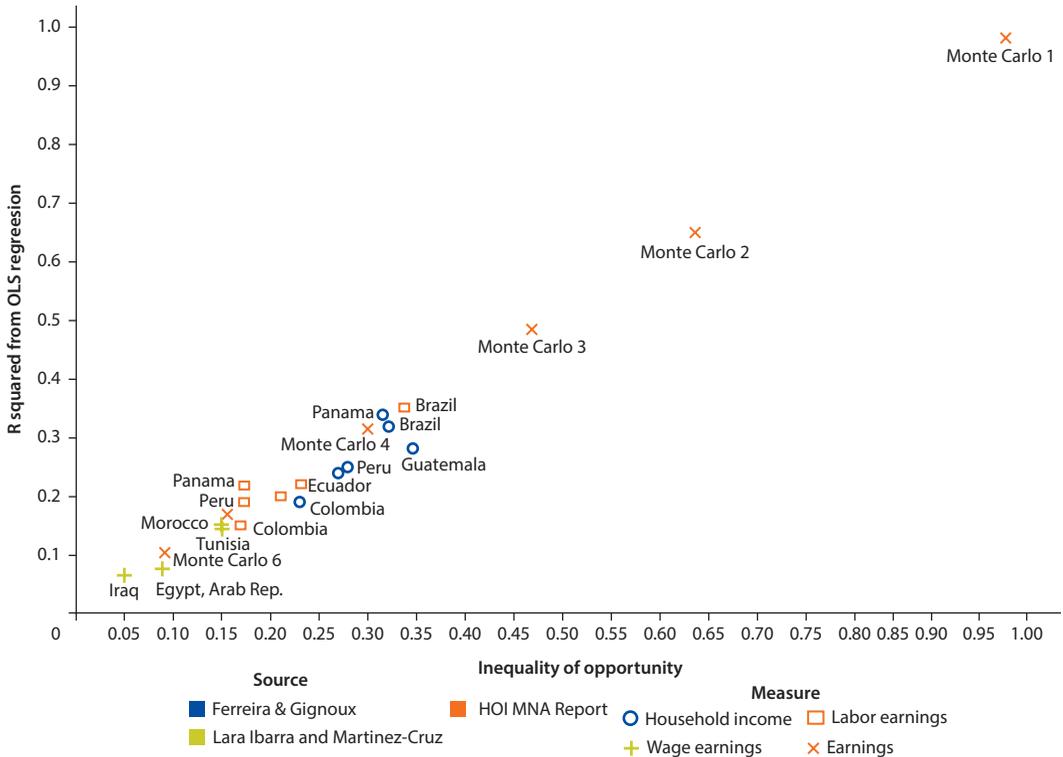
Source: Compilation using data from Ferreira and Gignoux 2011, Lara Ibarra and Martinez-Cruz 2015, and this study.
Note: The R² is obtained from running ordinary least squares regression of the outcome of interest ("measure") on all circumstances used in the calculation of inequality of opportunity as regressors. HOI = Human Opportunity Index; MNA = Middle East and North Africa.

Recognizing these empirical limitations, it is understandable that several researchers have questioned the extent to which the interpretation of the share of inequality due to circumstances as inequality of opportunity is at all useful for policy (Kanbur and Wagstaff 2014). Since the analyses provide only systematically low magnitudes for the purported "inequality of opportunity," would emphasizing these estimates end up having the opposite effect? Low inequality of opportunity could in a way absolve a society and lead policy makers to ask why they should bother changing anything at all, if indeed the numbers are so low. Before disregarding the usefulness of the CII calculations, applying a mobility lens to this framework seems to provide a final insight.

Taking the "low" values of the CII estimates found here and in other related studies at face value, would it be possible to quantify the implications of certain values of the CII for mobility? That is, if small variations in the CII lead to relatively large variations in mobility, it should not be expected that larger values of the CII would be observed.

To explore this possibility, information was collected from previous studies that have analyzed separately the issues of intergenerational mobility and inequality of opportunity. Corak (2006, 2013) provides a compilation of

mobility results for several European countries, three Latin American countries, and China, where mobility is measured as the elasticity between paternal earnings and a son's adult earnings,[7] with a higher elasticity indicating a less mobile society. Zhang and Eriksson (2009), Marrero and Rodriguez (2010, 2013), and Ferreira and Gignoux (2011) provide estimates of inequality of opportunity for the same list of countries. The two measures have a positive correlation of 0.6398, which is intuitive. The relationship between the two (figure 4.14) also suggests that relatively small differences in inequality of opportunity can be associated with large differences in mobility between countries.

To take a simple example, Sweden registers very low levels of inequality of opportunity (7.95 percent) and high levels of intergenerational mobility (elasticity is 0.27). In contrast, the United Kingdom is estimated to have an only slightly higher inequality of opportunity of 10.95 percent, but its intergenerational elasticity is almost twice as high as Sweden's, at 0.5. No direct causal relationship should be inferred from these numbers, as they are just rough correlations.[8] However, the numbers suggest that even if estimates of inequality of opportunity are "low" in absolute terms (which is partly a result of the set of observable circumstances being too limited to reflect all the advantages at birth that matter for opportunities), even slight increases in these levels could be associated with large reductions in mobility, which should be a cause for concern among policy makers.

Figure 4.14 Relating Intergenerational Mobility and Inequality of Opportunity
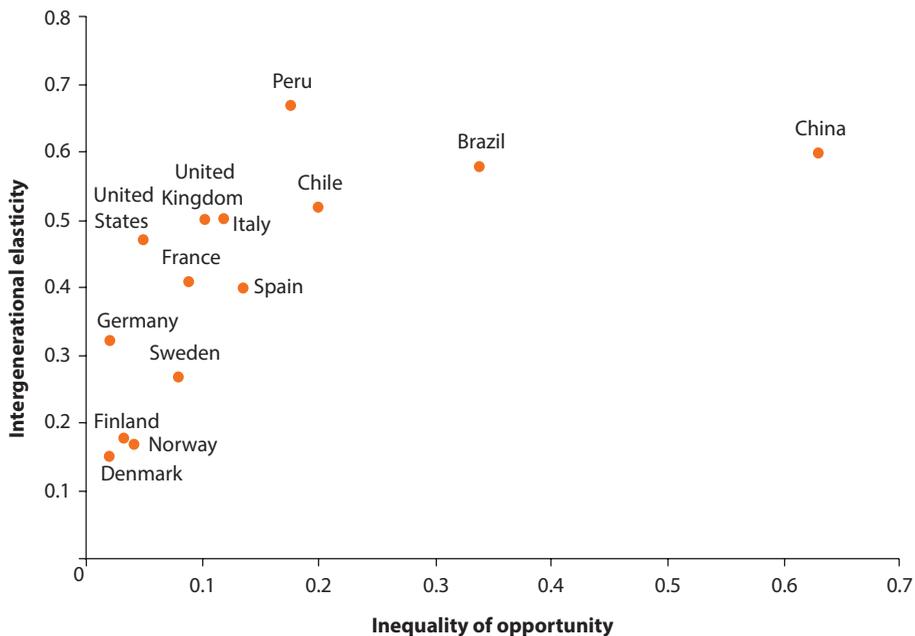
Annex 4A Employment Regressions

Table 4A.1 Correlates of Various Employment Outcomes: Arab Republic of Egypt

Variable	*(1)* Employed	*(2)* Employed full time	*(3)* Public sector job
Age in years	0.111***	0.005	0.091***
	(0.009)	(0.003)	(0.005)
Years of school	−0.096***	−0.034***	0.253***
	(0.018)	(0.009)	(0.013)
Dummy = 1 if male	1.928***	1.380***	−1.161***
	(0.152)	(0.085)	(0.106)
Father's education: literate	−0.353*	−0.023	−0.074
	(0.198)	(0.111)	(0.129)
Father's education: less than intermediate	−0.506**	−0.170	−0.216
	(0.204)	(0.122)	(0.167)
Father's education: intermediate	−0.345	−0.326**	0.340*
	(0.259)	(0.151)	(0.191)
Father's education: higher than intermediate	−0.036	−0.182	−0.452
	(0.500)	(0.255)	(0.353)
Father's education: university or higher	−0.201	0.015	0.180
	(0.327)	(0.182)	(0.206)
Region: Alexandria or Suez Canal	0.010	−0.103	0.097
	(0.290)	(0.156)	(0.200)
Region: urban lower	−0.550**	−0.473***	0.512***
	(0.257)	(0.137)	(0.161)
Region: urban upper	−0.141	−0.738***	0.793***
	(0.255)	(0.131)	(0.156)
Region: rural lower	−0.540**	−0.917***	0.792***
	(0.252)	(0.137)	(0.169)
Region: rural upper	0.499*	−0.887***	0.888***
	(0.295)	(0.144)	(0.179)
Dummy = 1 if father was government employee	−0.164	0.005	0.463***
	(0.164)	(0.092)	(0.117)
Constant	−0.731**	0.433*	−6.794***
	(0.343)	(0.221)	(0.339)
Observations	5,524	5,524	5,035

Source: World Bank estimates.
Note: Robust standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4A.2 Correlates of Various Employment Outcomes: Jordan

Variable	(1) Employed	(2) Employed full time	(3) Public sector job
Age in years	0.079***	0.013***	0.008**
	(0.008)	(0.004)	(0.003)
Years of education	0.018	−0.026**	0.125***
	(0.016)	(0.010)	(0.011)
Dummy = 1 if male	0.943***	1.222***	0.261***
	(0.102)	(0.085)	(0.087)
Father's education: literate	0.057	−0.276**	0.385***
	(0.160)	(0.132)	(0.130)
Father's education: university or higher	−0.216	−0.149	−0.299
	(0.231)	(0.178)	(0.188)
Mother's education: less than secondary	−0.043	0.319**	−0.473***
	(0.176)	(0.141)	(0.140)
Mother's education: secondary or higher	0.167	0.282**	−0.296**
	(0.162)	(0.118)	(0.115)
Region: Balqa	−0.164	−0.425***	0.821***
	(0.200)	(0.127)	(0.130)
Region: Zarqa	−0.230	0.143	0.525***
	(0.178)	(0.117)	(0.121)
Region: Madaba	−0.605***	−0.940***	1.394***
	(0.230)	(0.164)	(0.168)
Region: Irbid	−0.523***	−0.524***	1.125***
	(0.154)	(0.100)	(0.104)
Region: Mafraq	−0.264	−0.438***	1.811***
	(0.202)	(0.132)	(0.136)
Region: Jarash	−0.649***	−0.387***	1.174***
	(0.191)	(0.138)	(0.140)
Region: Ajloun	−0.321	−0.551***	1.550***
	(0.256)	(0.171)	(0.176)
Region: Karak	−0.928***	−0.723***	1.575***
	(0.171)	(0.126)	(0.131)
Region: Tafileh	−0.887***	−0.524***	1.688***
	(0.219)	(0.180)	(0.187)
Region: Ma'an	−0.944***	−0.642***	1.621***
	(0.208)	(0.155)	(0.161)
Region: Aqaba	−0.643**	−0.524**	1.141***
	(0.279)	(0.214)	(0.224)
Constant	−0.981***	−0.369*	−3.208***
	(0.294)	(0.214)	(0.227)
Observations	5,664	5,664	5,664

Source: World Bank estimates.
Note: Robust standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4A.3 Correlates of Various Employment Outcomes: Iraq

Variable	(1) Employed	(2) Employed full time	(3) Public sector job
Age in years	0.080***	−0.003	0.053***
	(0.006)	(0.002)	(0.003)
Education: primary incomplete	−0.092	−0.051	0.281***
	(0.178)	(0.094)	(0.100)
Education: primary complete	−0.086	0.025	0.814***
	(0.178)	(0.092)	(0.098)
Education: intermediate incomplete	1.986***	−0.232	−0.320
	(0.529)	(0.282)	(0.407)
Education: intermediate complete	0.198	0.041	1.183***
	(0.224)	(0.107)	(0.113)
Education: secondary incomplete	0.681	−0.733***	0.055
	(0.568)	(0.266)	(0.275)
Education: secondary complete	0.275	−0.372***	1.535***
	(0.226)	(0.111)	(0.121)
Education: institute complete	−0.463**	−1.067***	2.440***
	(0.201)	(0.108)	(0.127)
Education: bachelor and higher	−0.360*	−1.206***	2.607***
	(0.191)	(0.110)	(0.127)
Dummy = 1 if male	0.594***	1.459***	−0.971***
	(0.095)	(0.087)	(0.094)
Father's education: less than primary	−0.338***	0.074	0.003
	(0.124)	(0.061)	(0.067)
Father's education: primary	−0.263**	0.027	0.117*
	(0.129)	(0.064)	(0.071)
Father's education: above primary	−0.498***	−0.070	0.074
	(0.161)	(0.097)	(0.111)
Father's education: secondary	−0.270*	0.082	0.092
	(0.149)	(0.093)	(0.106)
Father's education: bachelor or higher	−0.470***	−0.018	0.275*
	(0.179)	(0.133)	(0.153)
Mother's education: some education	−0.335***	−0.030	−0.103*
	(0.089)	(0.055)	(0.062)
Constant	0.362	−0.729***	−1.880***
	(0.238)	(0.145)	(0.154)
Observations	38,198	28,071	26,074

Source: World Bank estimates.
Note: Robust standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4A.4 Correlates of Various Employment Outcomes: Tunisia

Variable	(1) Employed	(2) Employed full time	(3) Public sector job
Age in years	0.021**	0.025**	0.070***
	(0.010)	(0.011)	(0.016)
Education: basic	0.563	1.024	16.545***
	(0.560)	(0.725)	(0.650)
Education: institute	0.730	1.124	17.483***
	(0.566)	(0.725)	(0.650)
Education: vocational	0.468	0.975	17.094***
	(0.590)	(0.747)	(0.702)
Education: university or higher	0.539	0.939	17.901***
	(0.564)	(0.723)	(0.668)
Dummy = 1 if male	0.903***	0.530***	0.817***
	(0.131)	(0.134)	(0.196)
Father's education: basic	−0.210	−0.329*	−0.560**
	(0.165)	(0.169)	(0.285)
Father's education: institute	−0.143	−0.229	0.620*
	(0.223)	(0.224)	(0.322)
Father's education: vocational, university or higher	−0.453*	−0.417	0.388
	(0.273)	(0.275)	(0.404)
Mother's education: basic	0.011	0.076	−0.018
	(0.242)	(0.228)	(0.322)
Mother's education: above basic	−0.042	−0.054	−0.109
	(0.257)	(0.248)	(0.350)
Region: North East	0.308	0.113	0.564*
	(0.231)	(0.226)	(0.335)
Region: North West	−0.120	−0.239	0.535*
	(0.221)	(0.213)	(0.297)
Region: Center East	0.236	0.087	−0.394
	(0.200)	(0.193)	(0.357)
Region: Center West	−0.043	−0.183	0.617**
	(0.242)	(0.239)	(0.315)
Region: South East	−0.287	−0.616***	0.392
	(0.197)	(0.200)	(0.356)
Region: South West	−0.853***	−1.353***	0.475
	(0.216)	(0.242)	(0.336)
Constant	−1.187*	−1.793**	−22.181
	(0.703)	(0.883)	(0.000)
Observations	1,598	1,573	1,598

Source: World Bank estimates.
Note: Robust standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Notes

1. The Barro and Lee (2010) data set of schooling attainment is a harmonized data set covering 146 countries for which five-year averages from 1950 to 2010 of several education sector indicators are available. Some examples of the indicators available are years of school, years of primary schooling, years of tertiary schooling, average starting age, average finishing age, and percentage enrollment in primary, secondary, and tertiary, etc.

2. In a 2009 survey, 80 percent of Syrian graduates reported preference for public sector employment, and close to 60 percent said they would only accept a public sector job.

3. Hutchins and Weir (2006, 278) define *wasta* as follows: "*Wasta* involves social networks of interpersonal connections rooted in family and kinship [as well as other personal] ties and implicating the exercise of power, influence and information sharing through social and politico-business networks. It is intrinsic to the operation of many valuable social processes central to the transmission of knowledge and creation of opportunity."

4. Another important issue is that of a possible selection bias in labor force participation itself. If the set of individuals observed in the labor force are already a selected lot and the latent variable that defines this selection is a circumstance of interest, then this analysis would essentially be missing an important part of the inequality. For example, it is well known that labor force participation is low in the region for females. This implies that those observed in the labor market are likely to be selected by gender. The method that is described does not account for the inequality already embedded in this selection process. Since the decomposition method involves running multiple configurations of the model with all possible subsets of covariates, incorporating a first-stage selection model necessarily implies that every configuration of the model has to be run using the two-stage selection correction. This approach would be computationally intensive and unlikely to converge. Instead, one thing that could be done is a counterfactual simulation exercise in the spirit of Abras et al. (2013), to try to put a bound on the extent of this selection bias.

5. The Tunisian data surveyed only urban youth.

6. The study conducts Monte Carlo simulations where the income and demographic data are produced in a controlled environment and can be manipulated to create simulated populations with a predetermined CII. The study varies the true CII between 0.978 and 0.09.

7. The underlying data satisfy certain desirable characteristics, such as being nationally representative of the population and with enough detail to make comparisons across generations within the same family. In addition, the measure of earnings is based on some "permanent" earnings, where annual data are averaged over several years or instrumental variables are used (Corak 2013).

8. The estimates also vary by the time period for which they were calculated (mid-1990s for the elasticity to mid-2000s for inequality of opportunity for Latin American and European countries, and late 2000 for China). However, if it is assumed that the intergenerational elasticity is a stable parameter that moves slowly across time, it could be argued that the two numbers are roughly comparable.

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CHAPTER 5

Leveling the Playing Field

Economic Growth, the Twin Goals, and Equality of Opportunity

In the Middle East and North Africa (MNA) region, in the limited sample of countries where the minimum data requirements are met, there appears to be no relationship between growth of gross domestic product per capita and the Human Opportunity Index (HOI).[1] This is not surprising, because even a very inclusive pattern of growth that reduces poverty does not necessarily translate into equalizing access to opportunity. Moreover, the economic growth that has been experienced in the region over the past decade has been capital intensive in nature, and focused on large, urban metropolitan areas.

Furthermore, growth has not been driven by improvements in labor productivity or by a dynamic and growing private sector. Instead, the jobs that have been created have been primarily informal, and concentrated in small-scale and low-productivity jobs. In many countries, this type of growth has been accompanied by policies that limit competition and further constrain the employment-generating potential of private sector firms. Schiffbauer et al. (2015) document the wide-ranging role of privilege in the private sector across the region. For instance, energy subsidies in the Arab Republic of Egypt primarily accrue to politically connected, capital-intensive industries, such as steel and cement. In Tunisia, politically connected firms are protected by exclusive rights to operate in lucrative sectors and from foreign direct investment in their sectors. The report also cites findings of preferential treatment in the Republic of Yemen, where politically connected firms control the oil, telecommunications, and qat production sectors.

Thus, the primary channel through which growth could have translated into broad-based welfare gains, through employment and earnings, has been weak. In such an environment where the paucity of quality jobs is evident, birth circumstances, such as gender and place of birth, play an increasing role in explaining who gets access to the few and far between job opportunities. To some extent, an expansion of the pool of available employment will bridge some of the opportunity gaps on dimensions of gender, generation, and location. To the extent that advantage at birth translates into higher levels of access to effective social and informal networks, the existing patterns of disadvantage may continue to be

preserved. In general, absent concerted policy action, it is unlikely that economic growth alone will automatically lead to direct improvements in equality of opportunity in the labor market. Growth will need to be accompanied by fundamental governance reforms to promote and incentivize private sector–led job creation, as well as strengthened accountability for equitable delivery of services that underpin the acquisition of the human capital that is necessary for success in the labor market.

Moreover, the quick wins from economic growth in reducing extreme poverty have already been achieved in most countries. With the exceptions of Djibouti and the Republic of Yemen, what remains is the last mile for poverty reduction, a significant proportion of people vulnerable to shocks who also form a sizable portion of the lower middle class, and large spatial inequalities.

Is there a relationship between monetary measures of inequality and inequality of opportunity? Although the study acknowledges that the consumption Gini likely yields a lower estimate of true inequality in income, figure 5.1 plots its correlation with coverage rates and HOI for the four opportunities for which data are available for the six countries in the sample.[2] With the exception of school attendance, for which coverage rates are close to 100 percent across the region, there appears to be a negative relationship between the consumption Gini and coverage rates. In other words, as measured inequality increases, coverage declines. Moreover, the penalty associated with unequal coverage within a country increases with measured inequality in consumption. These findings suggest that more unequal countries in the region not only have lower access to opportunities overall, but also that access is more unequally distributed.

There is also evidence that the less well-off are more likely to suffer from lack of access to opportunities across multiple dimensions. Unequal access to opportunity overlaps with belonging to the bottom 40 percent of the welfare distribution. Moreover, the scarcity of opportunity in access to quality services can and does create conditions in the region where birth circumstances become even more important in determining access. This is especially the case for the poor, who do not have the option of going to the private sector to fulfill these basic needs. The report highlights how coverage rates decline and the inequality of coverage attributable to circumstances increases as the analysis moves from simpler measures of access to a particular service (or the basic outcome of having a job) to more detailed measures of the quality of service delivery or learning metrics (or having a formal sector job).

For example, almost 85 percent of Egypt's bottom 40 percent lives in rural Upper and Lower Egypt, and while coverage rates for finishing primary education are relatively uniform across regions, connection to the public sewerage network is roughly declining, moving from urban and metropolitan areas to rural locations. A similar pattern is evident in Iraq and Tunisia. In Iraq, the vast majority of the bottom 40 percent lives outside the capital city region of Baghdad and the relatively prosperous Kurdistan region, and have very low coverage rates in waste disposal of less than 20 percent. Similarly, only 10 percent of Tunisia's bottom 40 percent live in the largest urban metropolitan area of Grand Tunis, and

Figure 5.1 HOI, Coverage, and Inequality
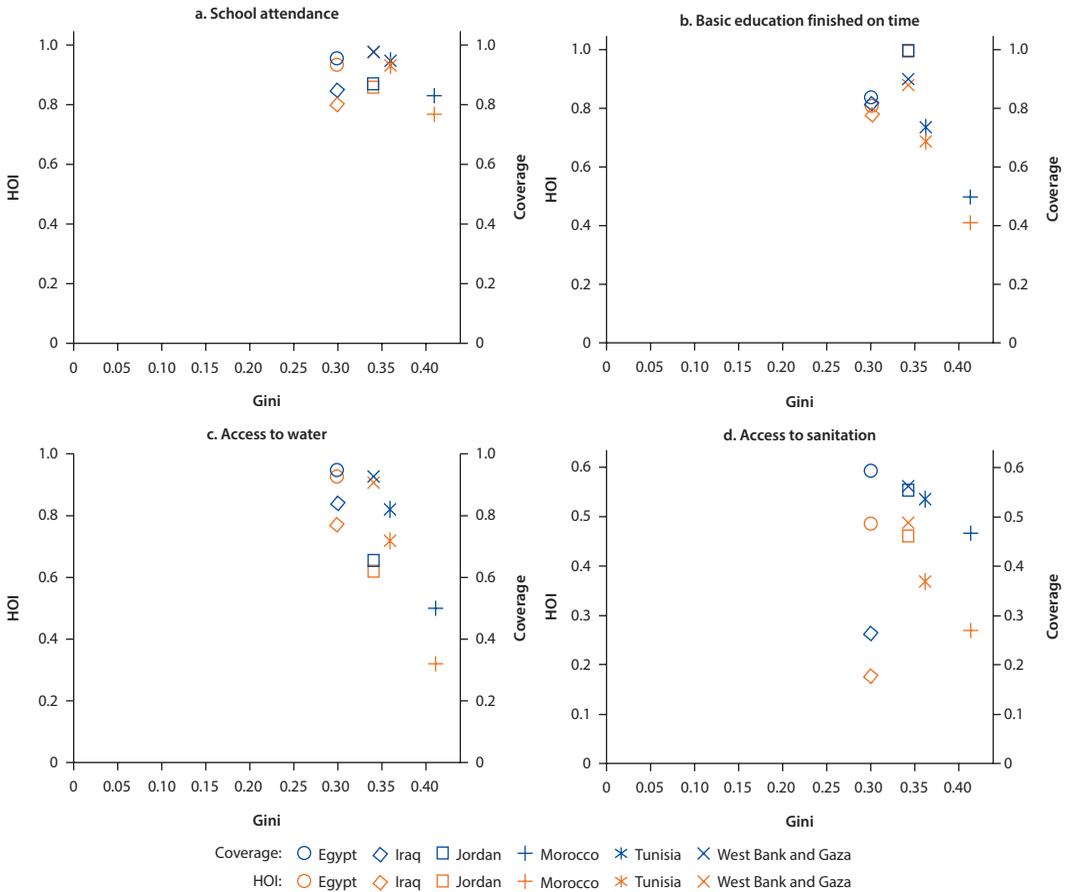
have the highest coverage rates. Overall, the pattern is one of lower coverage in areas with a larger concentration of the bottom 40 percent.

Rural-urban differences are also salient. Unlike many other low- and middle-income countries, Jordan's bottom 40 percent live mostly in urban locations. Although coverage rates for the education opportunity are equal across urban and rural areas, rural areas still have much lower access to sewerage and waste disposal services. Morocco follows the expected pattern of a higher share of the bottom 40 percent being resident in rural areas. However, even for the basic education variable, the rural-urban gap in access is much larger than in any other country in the sample. Connectivity to the public sewerage network in rural Morocco is almost nonexistent.

The concentration of the bottom 40 percent in certain regions (Upper Egypt, the south in Iraq, and rural Morocco) has been long-standing, and the overlap with low coverage of essential opportunities for children has the potential to

exacerbate inequality of opportunity and create poverty traps that can have lifetime and intergenerational repercussions. Lack of access to adequate nutrition at a young age can inhibit cognitive development and productivity and earnings later in life. To quote Heckman (2006, 1900), *"Disadvantaged early environments are powerful predictors of adult failure on a number of social and economic measures."* Moreover, growing up in disadvantaged neighborhoods can dampen the advantage of having wealthier parents and therefore inhibit mobility (Rothwell and Massey 2015). New work undertaken in the United States under the Equality of Opportunity project finds that "every year of exposure to a better environment improves a child's chances of success" (Chetty and Hendren 2015, 19).

Therefore, equalizing essential opportunities for children, irrespective of their place of residence, gender, ethnicity, or nationality, has important implications for adult outcomes, upward mobility, and the scope for intergenerational welfare improvements. Physical access to opportunities does not imply equalization of quality differences. For example, in the case of access to electricity or water, most household surveys collect information on whether a household is connected to public service delivery. Where additional information is available on the quality of service delivery, such as in Iraq, a large variation is observed. For example, in 2012, 99 percent of households were connected to the public electricity grid, but less than 10 percent of households in Baghdad and the central and southern governorates received more than 12 hours of power a day. Even when governments take concerted action to improve access to and quality of basic opportunities, the means to realize the returns on these must be assured. For instance, in Upper Egypt, school attendance is roughly on par with the rest of the country. Ensuring quality educational attainment for children there does not guarantee productive employment in a context where the bulk of job creation takes place in and around Cairo, and getting these far away jobs is contingent on having the right connections.

An equal opportunity society is integral to durable improvements in the welfare of the less well-off. Although the region is currently mired in conflict and complicated political transitions, the path forward will hinge critically on the extent to which the real and perceived unfairness in access to opportunities for service delivery and economic mobility can be remedied. The evidence in this report points to the existence of critical governance challenges and the lack of accountability systems that underlie the low levels of observed access to services and jobs, and the important role of circumstances in determining who has a fair shot at getting quality services or good jobs. This report documents the pervasive disparities in accessing labor market opportunities, especially for youth and women, and quality services, especially in peripheral regions; it also documents significant differences in access to fundamental services for children based on where there live.

The evidence generated in this report points to several policy directions. These focus on expanding the pool of opportunities, be they quality education or good jobs, and ensuring equitable access to these, regardless of gender, place of birth, or parental characteristics. This volume argues that strengthening governance and

downward and upward accountability systems is fundamental to addressing the twin challenges of access and equity. Ensuring equitable access will require, in addition, specific programs targeted at lagging regions and deep pockets of poverty, to address spatial and group-specific disparities in access to services. These programs in turn may not be sufficient to equalize opportunity in the long run if they do not directly address the mechanisms through which inequality of opportunity is transmitted and reinforced. Recent evidence from high-income countries underscores the importance of improving environments, especially for young children to alter their odds of success as adults, and systems for monitoring and learning through innovative pilots.

Building Fair Institutions and Creating Accountability Systems

The centralized and authoritarian nature of many governments in the region and the social contract that these governments have long implemented have created institutions with little accountability to citizens or incentives to deliver quality.[3] This social contract, which is coming under strain, involves the provision of public employment, generous benefits, and subsidies to citizens. The observed inequality in opportunity in the region is consistent with such a contract where the state is, by design, unable to adapt and evolve with citizen engagement and accountability mechanisms at all levels, to deliver quality services or employment in an equitable manner. In particular, the social contract has boosted public sector employment and compensation at the expense of private sector job creation.

On average, the public sector in MNA accounts for 45 percent of total employment. Public employees are offered higher pay, subsidies, and pensions, and relatively more generous working conditions than similarly qualified workers in the private sector. High rates of youth unemployment, low rates of female labor force participation, and the widespread use of networks rather than merit and qualifications for signaling and job search are perhaps symptomatic of the unequal access to the few quality jobs outside the public sector. This situation is mirrored in the reliance on personal connections to secure access to quality services.

The 2013 Gallup World Poll documents widespread dissatisfaction in MNA with education and health services. As a recent report documents, the lack of accountability and motivation on the part of policy makers, administrators, and service providers has led citizens to resort to informal payments and social networks to fulfill their needs (World Bank 2015). Neither of these mechanisms is easily accessible for the circumstance-disadvantaged, especially the poor.

A Level Playing Field for Job Creation
The spatial concentration of deprivation and inequities in access to opportunities in countries in MNA is mirrored in the concentration of economic activity in urban and metropolitan areas, and of privilege in the hands of a few firms. Although the former is a natural feature of urbanization and growth, the latter has severe consequences for competition, employment generation, and fairness in access to earning opportunities.

The lessons from the experience of the MNA region suggest that although the spatial concentration of formal private sector jobs is problematic for peripheral or remote areas, spatially targeted industrial policy has been largely unsuccessful and is unlikely to work. Superior access to domestic and international markets and economies of agglomerations are natural reasons why private sector firms locate in, for instance, coastal urban Tunisia or Cairo and Lower Egypt. As documented thoroughly in World Bank (2014), Egypt has had overwhelmingly negative experiences with industrial zones and other supply-side attempts to induce firms to spread out from metropolitan areas. For instance, as of 2006, only 483,000 jobs had been created in industrial zones, despite their potential to accommodate 2.5 million jobs (World Bank 2014). In Indonesia, Deichmann et al. (2005) found that agglomeration economies were strong enough and that increasing infrastructure in lagging regions would have only a very limited effect in attracting firms from "leading" regions.

Rather, expanding opportunities in the labor market is contingent on deep structural reforms with economy-wide benefits, and will in turn expand access to productive job opportunities, especially for youth and women. In the medium term, a dynamic labor market can also create the right signals to reorient the education system toward market-relevant skills, and limit dependence on knowing the right people.

MNA's labor markets are characterized by an uneven playing field, not only for job seekers, but also for private sector firms. Leveling the playing field for all firms and entrepreneurs will be critical to enable the spread and expansion of economic activity, and will require sustained and, in some cases, politically difficult reforms. Many of these reforms are fundamentally governance and institutional reforms. These include removing barriers to competition and firm entry; easing bankruptcy laws and other penalties for risk taking and innovation; and implementing policies and creating institutions that eradicate the space for discretionary policy implementation and privileged access to land, capital, and other critical inputs. Overall, it is essential to reorient the institutional incentive system for the private sector to value rules over discretion, and productivity over connections.

A World Bank report (Schiffbauer et al. 2015) demonstrates that weak firm entry and exit and low productivity growth underpin the lack of dynamism in the private sector in the region. These in turn are "rooted in a policy environment that favors a few dominant market players and insulates them from competition" (Schiffbauer et al. 2015, 149). This privileged access and capture of benefits by a few significantly inhibits job creation.

In such a context, government policies carrying credible signals of transparency and accountability to restore broad-based private sector confidence can have an immediate impact on firms' perception of a more equal playing field, reducing uncertainty and fostering investment. These measures have low fiscal costs, with potentially high gains, and can be implemented in a short time, if political constraints allow. Examples include public access and full disclosure of all regulations governing the private sector, and a transparent system for business license approvals and e-monitoring and disclosure of processing times.

Moreover, it is essential that rules and regulations are enforced uniformly across space and firms, and that policy reforms be accompanied by the creation of strong and independent institutions that safeguard competition and equal opportunities for all entrepreneurs. Such institutions include, but are not limited to, a strong, well-organized, and highly competent public administration; an independent competition authority; and appropriate procurement laws and implementation.

Even more important, the government needs to ensure institutional effectiveness so that the design of reforms in all policy areas signals transparency and accountability and is aligned with pro-competitive principles. Even if a comprehensive competition law were in place, the intensity of private sector competition is affected by variations in firms' access to land and public contracts, their waiting times to obtain required permits or licenses, etc. Thus, the government must play an active role to ensure that policies are designed in a way that does not distort competition. Moreover, the successful enforcement of such policies depends on government effectiveness and institutional quality. Authorities must also engage in competition advocacy targeted at consumers and policy makers to help raise their awareness of the impact of economic policies on competition.

Incentives and Accountability for Quality Service Delivery

The MNA region has made marked progress in building the physical infrastructure for service delivery and expanding basic access in health and education. However, there are also large spatial disparities in access to and the quality of infrastructure services, and deficiencies and dissatisfaction with quality is pervasive across all services. Countries in MNA by and large depend on a centralized structure for service delivery, which does not lend itself naturally to being aware of, responsive to, and accountable to local needs. In the absence of mechanisms to transmit information and build accountability top-down and bottom-up, the state is broadly able to deliver physical infrastructure and monitor the achievement of basic indicators, such as attendance and immunization, but unable to ensure quality, tailor services, and protect against the exclusion of certain groups.

Several countries have attempted to bridge this accountability gap by moving toward more decentralized political and administrative institutions, signing contracts with private providers and nongovernmental organizations, or implementing programs that induce greater community participation in service provision and quality by transferring resources directly to community organizations.

The devolution or de-concentration of funds, functions, and functionaries can help strengthen incentives for better performance, as long as it is supported by adequate accountability mechanisms to protect against local capture. Empirical evidence on the efficacy of such decentralization efforts is mixed, and suggests that a lot hinges on the strength of institutions and mechanisms for bottom-up and top-down accountability. In the case of education, the 2013 Policy Research Review on localizing development (Mansuri and Rao 2013) finds that although decentralization improves school access, and in some cases student retention and attendance, there is little evidence of any improvement in learning outcomes.

The authors also find that, in general, community-based health programs have been beneficial, and although there are few rigorous studies, these do suggest positive, significant, and economically large effects of decentralizing health service delivery to local governments (Mansuri and Rao 2013).

There is also scope for motivating and strengthening civic participation and action for bottom-up accountability toward better and more equitable service provision. Even taking the centralized structure of service delivery as given, institutional incentives need to be in place to receive and be responsive to the expressed needs of citizens. This in turn will strengthen the feedback loop, encouraging greater collective action at the local level for demanding quality services.

Formal mechanisms to channel bottom-up demands constructively and create accountable institutions are premised on citizens' awareness of their rights and responsibilities, and on access to appropriate information for redress and feedback. Across the region, freedom of information and public disclosure laws for this purpose are effectively nonexistent. Civil society can play an important role here—indeed, social movements in India, Indonesia, Latin America, and South Africa have played an important role in pushing for the rights and welfare of excluded social groups, greater democracy, and openness in government.

Making information public about the performance of a range of critical services can not only create awareness of deficiencies and disparities, but also promote competition by being linked to performance-based rewards. Similarly, information about the quality of service delivery could induce improvements in quality directly (through the entry or presence of private providers) and indirectly (through competitive pressure). A long-term study in Pakistan finds that in the presence of a public sector and a (competitive) private market for schooling, increasing information about child and school test scores positively impacts learning outcomes in public and private schools (Andrabi, Das, and Khwaja 2009). Centralized formal institutions can also bridge the accountability gap. The Republic of Korea, for instance, has institutionalized within its Superior Audit Office a complaint hotline and whistle-blower mechanism through which citizens can report areas suspected of irregularities or corruption and request audits.

Expanding Opportunities, Changing Circumstances

Finally, emerging evidence from high-income countries highlights the importance of innovative and long-term approaches for addressing intergenerational access to opportunity. Traditional interventions to improve service delivery or alleviate credit constraints only go so far. Instead, the evidence points to the importance of fundamentally altering the environment to which young children are exposed, in breaking the trap of disadvantage at birth. A first step toward understanding the potential for such policy interventions in the region is strengthening the information and evidence base on inequality of opportunity.

There are several ways in which countries have tried directly or indirectly to address the lack of or inequities in access to critical opportunities. From the

individual point of view, a range of interventions have been tried, focusing on expanding access to education, health, and other services that enhance human capital and ensure decent living conditions. Sometimes these have been combined with conditional transfers to ease credit constraints in access, as well as focused early childhood interventions in schooling and nutrition to address critical deficiencies in a timely manner.

Spatial disparities in outcomes are a feature of several low- and middle-income countries, and some attempts have focused on addressing these with spatially targeted initiatives. Other countries have experimented with altering the environment by facilitating the movement of people away from disadvantaged areas to better environments. Another set of programs that has been widely considered, used, and debated is group-specific interventions to level the playing field. Typically, these efforts have taken the form of affirmative action programs, including quotas or subsidized access for disadvantaged groups.

The following subsections consider these programs in turn, taking into account evidence from international experience. The existing body of evidence on some of these types of interventions is largely drawn from the United States, because it is predicated on the existence of a long series of data, linking generations, child circumstances, neighborhood characteristics, and adult outcomes. In the absence of such systems for rigorous learning about program effectiveness, it is difficult to assess the sustained and long-term impacts of opportunity-equalizing interventions.

Opportunities Early in Life

There is a growing consensus that non-cognitive or soft skills are as important for enhancing individual capability as cognitive skills. In addition, the evidence is compelling that investing in children's cognitive and non-cognitive skills early in life is critical. For instance, IQ is rank stable after age 10. Therefore, investing in quality access to opportunities for all children during this formative period can yield significant gains throughout their lifetime.

In the United States, a range of early childhood interventions in schooling have been implemented widely. For instance, Head Start, the largest early childhood program in the United States, enrolls roughly 1 million children ages 3–4 years annually. However, the evidence suggests that the most effective of these types of programs have been those such as the Perry Preschool programs, which feature highly qualified teachers and small group sizes (Barnett and Belfield 2006). In other words, the intensity and quality of the intervention matters for the effectiveness of the program. Arguably, increased investment in preschool not only can improve academic achievement, but also can enable upward mobility. Such programs, if targeted to disadvantaged children, would help them compete on a more equal footing in school and later in life.

Similarly, improving nutrition for young children can pay off in the long term. A study in Guatemala examined the long-term effects of a nutritional intervention that randomly assigned a nutritional supplement to children age

0–7 years (Hoddinott et al. 2008). When the supplement was provided to children younger than age 3 years, it led to a 46 percent increase in average wages for men 25–35 years later.

One of the most widely implemented interventions to address childhood deficits in education and health is transfers conditional on the child's school attendance, health visits, intake of nutritional supplements, etc. The objective of these is to ease the credit constraints that may be preventing families from undertaking the appropriate investments in child education and health. Although there is a strong empirical relationship between child educational attainment and parental income, the causal evidence for the importance of credit constraints is weak (Heckman 2006).

A well-known example of a conditional cash transfer program is Mexico's Opportunidades (previously known as Progressa, now renamed Prospera). The program provided cash transfers to households contingent on regular school attendance, health clinic visits, and nutritional support. Although the program has been widely credited with decreasing poverty and improving health and educational attainment, its long-term effects on adult outcomes have been limited. A 2005 study finds that although children who benefitted from the program for longer periods of time increased the grades of schooling attained, there were no effects on achievement tests, and there was an overall reduction in work for young men (Behrman, Parker, and Todd 2005).

In Morocco, a nationwide cash transfer program was instituted to address low rates of primary school completion in rural areas. An evaluation of the program, known as Tayssir, found that the program led to large gains in school participation and a reduction in dropout rates. However, making the transfers conditional as opposed to being framed as an educational support program had no additional benefit. That is, the latter was sufficient to provide the incentive needed to increase attendance, even in poor, rural communities. Given the multiple deprivations faced by children in rural Morocco, the program is a step in the right direction. However, it remains to be seen whether the increase in school attendance under the program translate into sustained educational attainment and higher lifetime earnings.

Conducive Environments

Building on a long tradition of programs in the United States, recent evidence highlights the long-term consequences of improved neighborhoods and local environments, which can also be interpreted as efforts to change the "circumstances" in which a child grows up. This body of work is based on a series of evaluations of a project launched in 1994 in the United States, Moving the Opportunity. Families living in high-poverty neighborhoods were assigned housing vouchers by lottery, allowing some of them the opportunity to move to a better neighborhood. The rationale behind this program was an understanding that poor and disadvantaged neighborhoods can lock families into cycles of low education, high unemployment, low earnings, and exposure to crime, and that these can have generational effects.

Early research on the experiment (conducted between 1994 and 1998 in five large U.S. cities) found no impact of moving to a better-off neighborhood on the employment or earnings of adults. However, families that moved recorded significant improvements in their mental and physical health, and felt safer and happier. Moreover, children who moved when they were younger (below age 13 years) also experienced higher rates of college attendance and higher incomes later in life. The children were also likely to live in better neighborhoods as adults, which suggests positive benefits for future generations (J-PAL 2015).

New research examines the effect of changing neighborhoods, by taking into account the duration of exposure to improved environments. Chetty and Hendren (2015, 19) show that "every year spent in a better area during childhood increases a child's earnings in adulthood." This again reinforces the importance of addressing deprivations in opportunities when children are young. The authors also find a large impact on the children's earnings as adults, on average by US$300,000 over their lifetime. These monetary benefits, the authors argue, suggest that providing assistance to families with young children to move out of poor neighborhoods is likely worthwhile, particularly in reducing the persistence of poverty across generations.

However, the location where households move is critical in assessing the benefits. In an experiment in Ahmedabad, India, slum dwellers in the center of the city were offered the opportunity by lottery to move to a new development. However, 40 percent of the lottery winners decided not to use the opportunity, possibly because the new location was far from the city center. Those who moved faced long commutes to work, and the lack of nearby medical services was another major drawback. Finally, the loss of support networks of family and friends had adverse consequences on their well-being (Barnhardt, Field, and Pande 2014). The families that moved also experienced no change in family income or human capital, and a third eventually moved out of the new development. A similar situation arises in the context of refugee assimilation in host countries. A quasi-experimental study in Denmark found that seven years after immigration, refugees who lived in an ethnic enclave earned substantially more than those who lived in non-enclave communities, which is consistent with the benefits of social networks in matching workers to jobs (Damm 2009).

These findings suggest that policies that attempt to improve the environment for children need to take into consideration not only the quality of housing, but also the proximity to work and access to services. In the context of low- and middle-income countries, where social networks often mediate market and other transactions, moving to a new neighborhood will pose challenges of assimilation, which must be carefully considered.

Group-Based Disadvantage

Many countries have instituted positive discrimination policies for certain groups, especially women and historically disadvantaged groups. Several countries have mandated representation for women in elected bodies, and many European countries have implemented quotas for women in the boardroom.

India has a long history of quotas in political bodies and educational institutions for members of two disadvantaged groups, the Scheduled Castes and the Scheduled Tribes. The aim of these types of interventions is to try to redress the historical disadvantage of these groups in participation in higher education, employment, and politics. The use of quotas is part of an ongoing debate. On the one hand, by limiting the pool of candidates and restricting competition, quotas reduce the quality of candidates on average. On the other hand, it has been argued that absent such measures, the long-term disparities in participation of these groups cannot be corrected. And a more even representation of the population can arguably lead to a better reflection of society's preferences.

Recent work on quotas or mandated representation for women in political bodies in India identifies other channels through which such policies can be beneficial. Beaman et al. (2009) find that in local government bodies in West Bengal, mandated exposure to female leaders reduces the bias against female politicians by helping villagers understand that women can be competent leaders. Based on a natural experiment in Maharashtra, Bhavnani (2009) finds that women's chances of election in constituencies that previously had been reserved for women was five times higher than in other constituencies. The author argues that even after such quotas are repealed, they can alter perceptions among voters and political parties, so they are more willing to field female candidates. This finding suggests that in this context, the demonstration effects of even short-term quotas may have helped in permanently evening the odds.

Learning and Experimenting

Understanding the mechanisms through which inequality of opportunity is transmitted and reinforced requires information on circumstances at birth, outcomes through childhood and adulthood, and intergenerational effects. This is the major challenge in measuring and addressing the types of inequalities that are beyond individual control or effort. Moreover, the complex nature of these types of deprivations may require trying and testing several alternate interventions or a combination of policies. Finding the right mix is also country specific, and the investments may only bear fruit in the long term. The existing efforts and evidence in the United States have been several decades in the making, and the issue of inequality and unfairness remains very much in the spotlight today. That being said, investment in linked systems of data (administrative and survey) and long-term tracking has enabled the insights that are available today.

Low- and middle-income countries in general lack these types of rich, linked, and long-term information systems. However, some countries are undertaking serious efforts to establish systems of unique identification linked to public program eligibility and benefits, thereby creating a unified registry akin to the U.S. Social Security data. This is an important first step, and there is a huge opportunity to build and expand these systems for learning and experimenting.

In the MNA region, the fundamental challenge is one of data access and quality, which severely limits the analysis and insights to guide policy. Only six

countries share the survey data required to measure even basic access to and coverage of essential opportunities. Even fewer countries have information linking child outcomes to parental characteristics. Given the widespread perceptions of inequality and unfairness, addressing these data gaps will go far in identifying the right policy mix.

Notes

1. Coverage and HOI are for the four opportunities for which data are available for all six countries: school attendance, finishing primary/elementary education on time, access to water, and sanitation.

2. For instance, in Iraq in 2012, measured inequality using income was almost 10 percentage points higher than the consumption Gini. Even this estimate does not take into account the non-reporting of incomes at the top tail of the distribution in standard household income and expenditure surveys. Alvaredo and Piketty (2014) argue that the share of total Middle East income accruing to the top 10 percent of income recipients could be higher than 50 percent.

3. The term "social contract" in this report refers to the definition in Yousef (2004).

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Perceptions of eroding living standards, low levels of life satisfaction, and pessimism about prospects for economic mobility are widespread in the Middle East and North Africa region today. Conventional measures of economic well-being offer little explanation for these trends; in most countries in the region, extreme poverty is low and declining, and economic inequality is lower than in other parts of the world. *Uneven Odds, Unequal Outcomes: Inequality of Opportunity in the Middle East and North Africa* investigates possible reasons for this disconnect, focusing on the role played by inadequate and unequal access to opportunities leading to economic mobility.

The inability of most countries in the region to meet the economic aspirations of citizens is closely linked to persistent weaknesses in the labor markets, where the pace of job creation has been chronically below levels required to absorb the growing and increasingly better-educated population. Opportunities and life paths can diverge early in life if access to basic services in health, education, and infrastructure are unequally distributed among children in their formative years, and this book documents sharp disparities in the quality of services available to children of varying birth circumstances in the region. Although the most intense debates in development coalesce around inequality of income or wealth, the notion of inequality of opportunity has an intuitive appeal that can bridge ideological differences. By drawing attention to the notion of equality of opportunity to create a level playing field for all sections of society, *Uneven Odds, Unequal Outcomes: Inequality of Opportunity in the Middle East and North Africa* highlights the need to critically examine the social contract and governance structures that guide the delivery of services and are instrumental for implementing necessary reforms to make labor markets more dynamic and equitable.

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