Poverty in Human Capital

3

Poverty in consumption is but one dimension of deprivation in Iraq—many individuals experience poor health and education outcomes and limited access to essential services. To benchmark poverty in human development, we create a multidimensional index of human development deprivations. Poverty as measured by this index generally follows the same pattern across space as consumption poverty. But there are important differences. While the high level of consumption deprivation in the South coexists with poverty in human capital, and the low consumption poverty rates in Kurdistan are accompanied by limited deprivation in human development; in the Centre, while welfare as measured by consumption has rebounded, significant deprivations in human capital remain. Unequal access to basic human development outcomes is shaped by both gender and space, in addition to household wealth and family characteristics. Inequality in access to educational attainment is primarily explained by gender whereas unequal access to quality housing and other basic services is driven by the place of residence.

Early childhood nutrition, the lack of which can have irreversible long term consequences, is correlated not only with the household's ability to consume adequate food, but also with space, reflecting differential access to essential services, and with maternal nutrition, proxied by early motherhood. Stunting and child underweight rates vary in Iraq with wealth, with the highest prevalence rates among households belonging to the poorest quintiles. Governorates with higher per capita consumption expenditure, higher total caloric intake, and a smaller share of food calories from the Public Distribution System also have lower rates of stunting. The negative relationship between mean consumption levels and nutrition is directly related to food expenditures and caloric intake. Stunting is more prevalent among the children below 36 months, suggesting that perhaps malnourished mothers may be giving birth to malnourished children. Indeed, early motherhood is associated with poor nutritional outcomes for children, even after accounting for lower food consumption associated with the household's income and expenditure levels, the place of residence and parental education.

Education, one of the strongest correlates of poverty, varies widely across Iraq, by division and by gender. The median education level for Iraqis is primary schooling, and for the majority of children, schooling ends after primary education. Very little has changed in terms of educational outcomes between 2007 and 2012 in Iraq. One exception is the cohort of young females, who are catching up with the relatively low attainment of their male counterparts. Both gross and net enrollments display a sharp decline after primary school. The sole exception is Kurdistan, where gross enrollment rates are above 100 percent even at the intermediate and secondary levels, the highest in the country. There exist significant gender disparities in gross enrollment at each level. Despite these odds, among the few girls who make it to secondary and tertiary level, net enrollment rates are slightly higher among girls than among boys, suggesting that they are more successful in completing each level on time.

The lack of access to schools, the pressure to support the family by working and the unaffordability of schooling, social norms about the value and appropriateness of girls' education, and a significant lack of interest; all contribute to poor educational outcomes for children. The latter may reflect poor education quality, but these education outcomes are more broadly also likely reflecting limited returns to education on the labor market.

Finally, turning to measures of housing quality and access to basic services, while there have been some measurable improvements in access, there are little improvements in quality, with some significant variations across space and by household wealth. A substantial portion of households who use the public network as the main source of water consider it to be insufficient. Only 3 percent of households in Baghdad, and around a tenth of households in the Centre and the South receive power for more than 12 hours. Housing quality is also perceived to be low, with a large share of Iraqi households reporting inadequate space and inadequate utilities. In fact, on average, households have only 1 bedroom for every 3 to 4 members. Overall, in Iraq, three decades of violence and insecurity have stalled progress in human development and service delivery, and the nation faces a significant deficit, with far-reaching consequences for the economy and for future generations.

Across the world, consumption poverty is associated with poorer education and health outcomes and limited access to and lower quality of basic services. Iraq is no exception—education is a strong determinant of higher per capita consumption expenditure and of lower poverty. More than four-fifths of the poor belong to households with heads having completed primary education or less, and poverty rates increase systematically with lower levels of education of the head of household. In this chapter, we analyze a range of human development outcomes; explore their links to poverty and welfare, with a particular focus on children. We begin with some aggregate indices of deprivation and opportunity in human development in Iraq and examine how they correlate with welfare.

Multidimensional Poverty in Human Development

Poverty in consumption is but one dimension of deprivation in Iraq—many individuals experience poor health and education outcomes and limited access to essential services. In part, this is a legacy of years of violence and instability, which have led to the neglect and destruction of infrastructure, the diversion of public resources away from these types of investments, and the loss of qualified personnel (see Chapter 4 for a more detailed analysis of the role of conflict in explaining stalled progress in key human development outcomes). To benchmark poverty in human development, we create a multidimensional measure that builds on three equally weighted dimensions of deprivation in human development: education, health and standards of living. Each dimension is composed by the following deprivation indicators (each taking the values 0 or 1):[20]

Education

1. Illiterate household head: Deprived if household head is illiterate
2. School attendance: Deprived if any child under 12 in the household is not currently in school

Health

1. Nutrition: Deprived if there is a malnourished child in the household (suffering from either stunting or wasting)

Standard of living

1. Electricity: Deprived if household has less than 12 hours a day of electricity from the public network
2. Assets: Deprived if the household does not own more than one TV, motorbike or fridge and does not own a car

---

[20] The dimensions were defined so as to be as comparable as possible to the Global MPI (2013), with a focus solely on human development.

3. Flooring: Deprived if household has a brick, earth or other flooring
4. Water: Deprived if household has insufficient supply of water from network
5. Sanitation: Deprived if household does not have flush toilet or if the toilet is shared

Based on the indicators presented above, each household is assigned a deprivation score, which is the weighted sum of the number of deprivations (all three dimensions are equally weighted as is each indicator within each dimension). In computing the Multidimensional Poverty Index for human development, the larger the number of deprivation indicators in each dimension, the smaller the weight of each indicator individually. A given household is considered multidimensional (MPI) poor if their deprivation score lies above the poverty cutoff of 0.33.

Figure 41 displays a comparison among the figures for consumption and MPI poverty. While estimates of poverty in multiple human development dimensions are higher than consumption poverty in 2012, both measures suggest similar spatial patterns in poverty, with the Southern division having the highest MPI and consumption poverty, and Kurdistan having the lowest. While consumption poverty in Iraq is approximately 20 percent in 2012, MPI poverty is 35 percent. But the gap between consumption poverty and poverty in human development is the largest in the Centre, 21 percentage points, and in urban areas, 16 percentage points. This suggests that improvements in welfare as measured by consumption, which are relatively high in the Centre and in urban areas, do not always go hand in hand. The exception is Kurdistan, where low rates of consumption poverty are accompanied by low rates of multidimensional poverty in human development.

Poverty in human development goes beyond consumption poverty—this is evident in Table 11: only 10.4 percent of the country´s population is both MPI poor and consumption poor, while 55.3 percent are neither consumption poor nor MPI poor. Among the consumption poor, more than half are also MPI poor. In contrast, poverty in human development, as measured by this index, is more wide-ranging in that more than 70 percent of the MPI poor are non-poor in terms of consumption.

Figure 42 shows the incidence of deprivations along the dimensions of living standards, health and education. Lack of sanitation, inadequate electricity and poor nutrition are the most prevalent deprivations

FIGURE 41: Comparison Among Poverty Measures: Consumption Poverty and MPI in Human Development
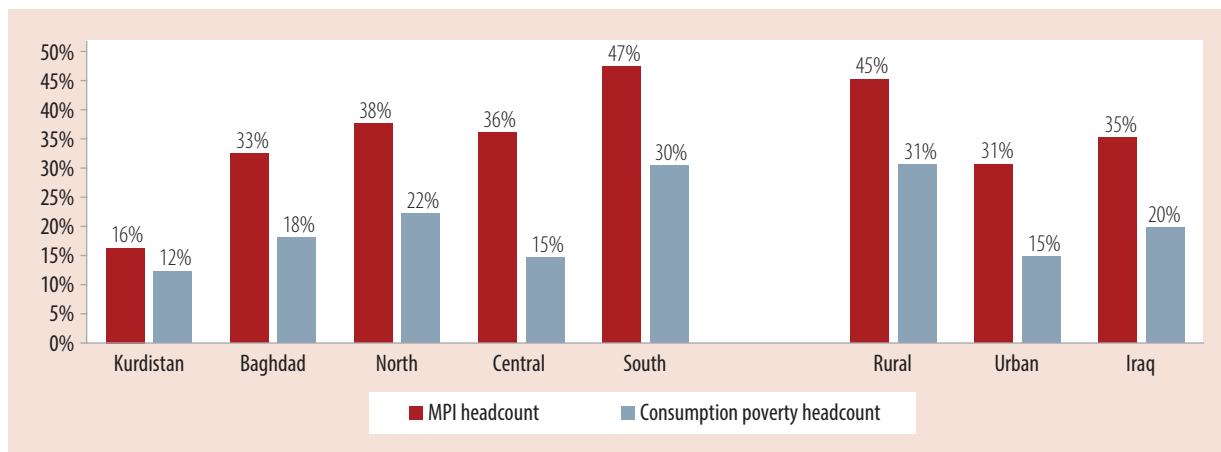
Source: Authors' calculations, IHSES 2012.

TABLE 11: Consumption Poor Versus MPI Poor

	Consumption non-poor	Consumption poor
MPI non-poor	55.3%	9.4%
MPI poor	24.9%	10.4%

Source: Authors' calculations, IHSES 2012.

in Iraq, followed by water and school attendance. Among these, malnutrition is the deprivation with the highest weight in the index, since it is the only indicator for the Health dimension.

Moreover, the vast majority of households across Iraq suffer not one but multiple deprivations in human development; only a tiny fraction of households suffer no deprivation on these human development indicators. Figure 43 shows the incidence of overlapping dimensions of deprivation in each division, as well as rural and urban Iraq. Overall, in Iraq, 63 percent of households suffer from two or three simultaneous deprivations; while 11 percent experience four or more. In line with the higher rates of MPI poverty in rural areas, 51 percent of rural households are deprived in three or more dimensions, while 21 percent experience four or more, as compared to 33 percent and 8 percent of urban households. Not surprisingly, Kurdistan stands out with the highest incidence of households

free of deprivation (8%). In contrast with the trends in consumption poverty, the Central division appears to be performing the worst in terms of the presence of multiple dimensions of deprivation, with 86 percent of households experiencing two or more deprivations, and 21 percent having four or more. This may suggest that while welfare as measured by consumption has been quicker to rebound in the Centre with the improvements in security and revival of economic activity, the quality of infrastructure and services has not yet caught up to a commensurate level.

The MPI can also be decomposed to quantify the contributions of each of the different dimensions and of each indicator (Figure 44). Looking at the aggregate dimensions, poverty in human development is being driven mostly by deprivation in health (61%), followed by living standards (27 %) and education (12%). When turning to the individual indicators, deprivation in nutrition is the main driver of MPI poverty, followed by sanitation, electricity and school attendance.
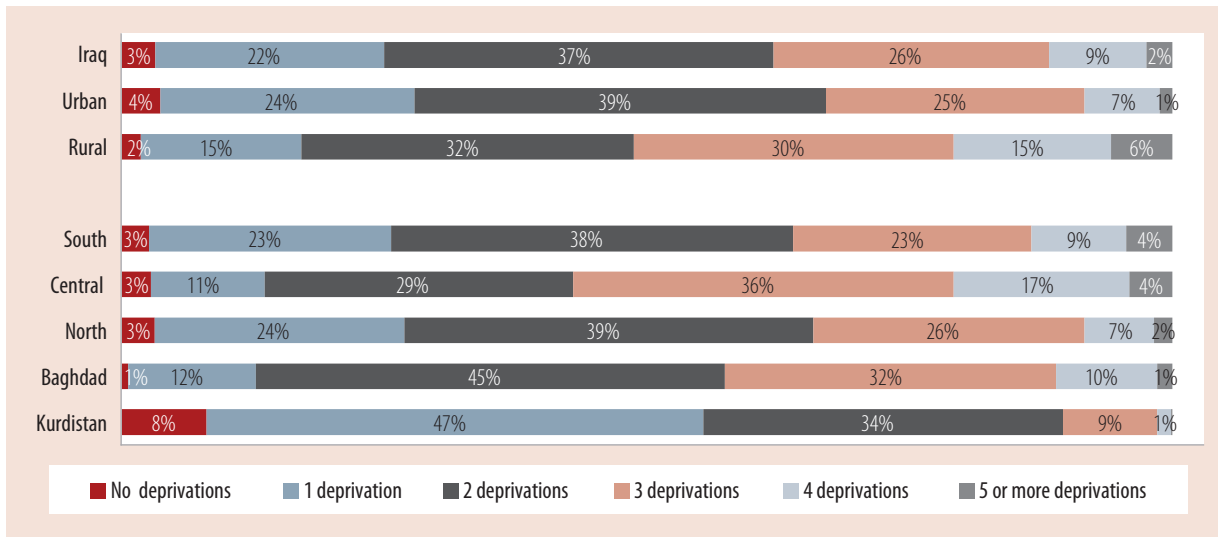
Human Opportunity Index

Access to basic goods and services—such as education and health—can be encompassed by the term opportunity, as described in the 2006 World
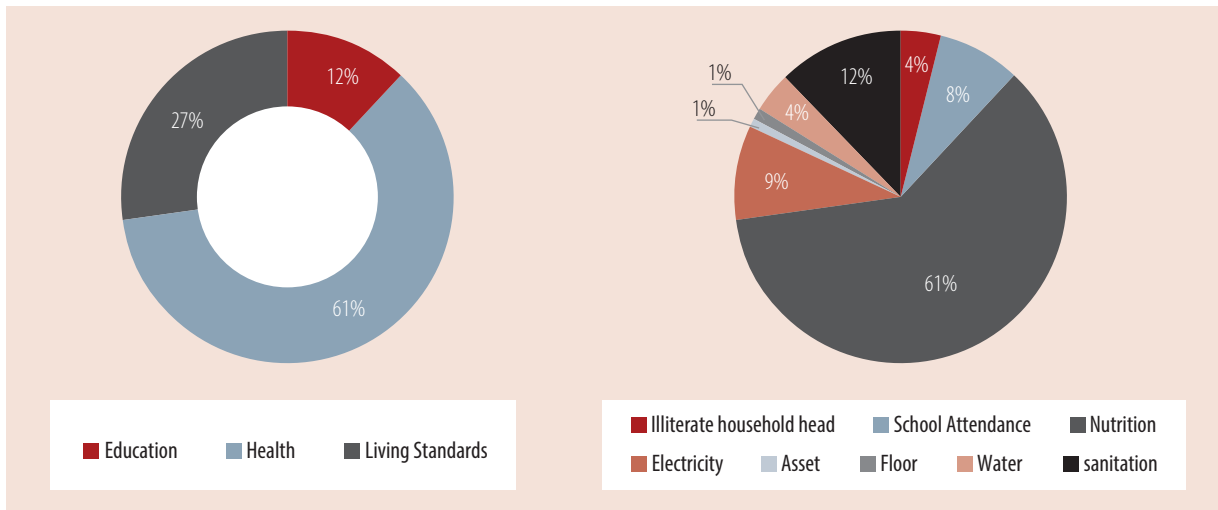
FIGURE 42: Dimensions of Deprivation
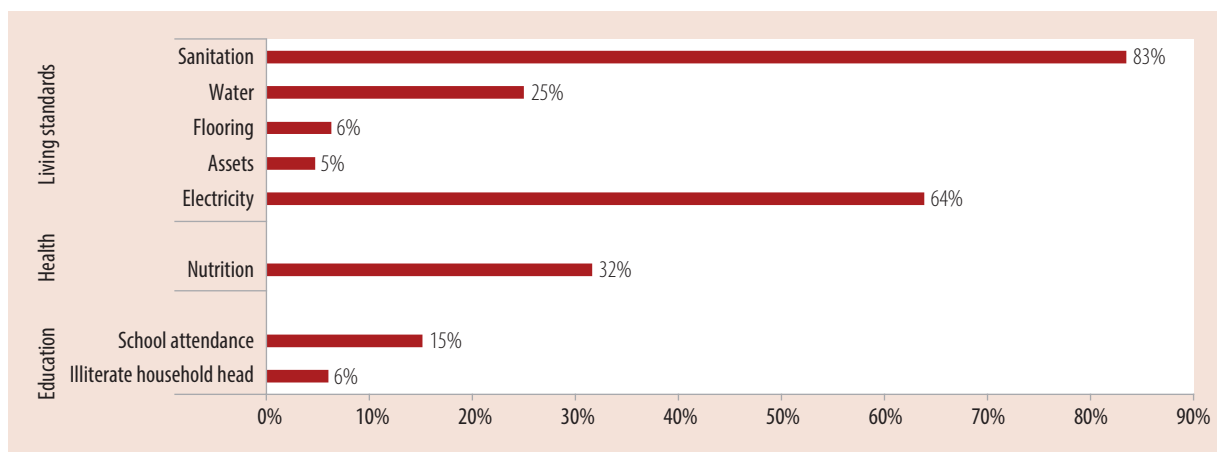
Source: Authors' calculations, IHSES 2012.

FIGURE 43: Overlapping Dimensions of Deprivation

Source: Authors' calculations, IHSES 2012.

FIGURE 44: Contribution of Each Dimension to Iraq´s MPI

Source: Authors' calculations, IHSES 2012.

Development Report.[21] Unlike the notion of equality in earnings or income, there is widespread consensus that such opportunities to access basic goods and services should be made universal and that inequality in children's opportunities propagates deprivation and weakens overall prosperity and economic growth. While it is true that more developed countries will have more resources to deliver basic goods and services to their citizens, developing countries will face important tradeoffs as additional access can be allocated in many different ways. These tradeoffs can be particularly important in countries such as Iraq that face a huge human capital deficit. Analyzing the pattern of allocation, and whether it is being influenced by the circumstances of the beneficiaries is therefore important and lies at the core of the concept of equality of opportunity.

[21] World Bank (2006) "Equity and Development".

BOX 1: A Stylized Example of the HOI

Consider two countries, A and B, each with a total population equally distributed in 10 western communities and 10 eastern communities. The coverage rate of school enrollment (or the average enrollment rate) for both countries are 0.6, i.e. children in 60 percent of the communities attend school in each country. In the figure, red-colored communities illustrate covered communities. It is evident that access to school is distributed differently among the population in country A and B. In country B, children in western communities have a 20% probability of access to schooling, whereas the probability is 100% for eastern communities.

Equality of opportunity will hold true for each country if western and eastern communities have the same rate of coverage. However, while in country A school coverage is 60% in western and eastern communities, this is not true in country B. This suggests that inequality of opportunities is higher in country B. The D-index is the share of total enrollment that is "misallocated", namely 0/12 and 4/12 for A and B, respectively. The HOI is then calculated as the coverage rate multiplied by 1 minus the D-index (the share that is equitably allocated). In other words, the HOI penalizes country B for its inequitable coverage rate relative to country A. Therefore, $HOI_A = C0 (1-D) = 0.6 * (1-0) = 0.60$; $HOI_B = C0 (1-D) = 0.6 * (.33) = 0.40$.

Country A

Country B
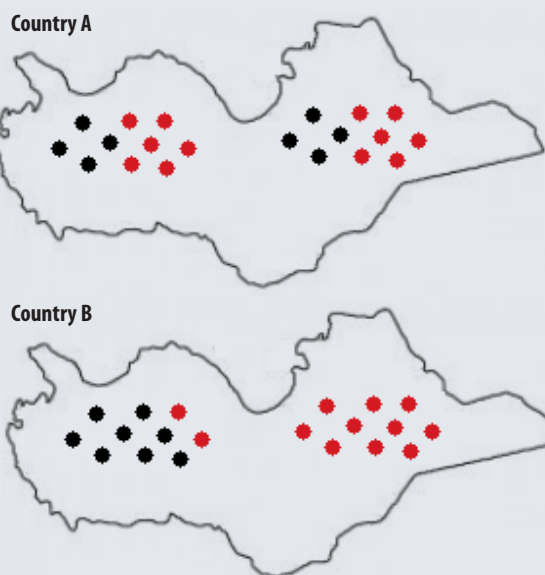
The Human Opportunity Index or HOI (developed by the World Bank and external researchers) is an intuitive measure of the availability of an opportunity in a society (measured by the average coverage rate) that also takes into account the extent to which opportunities are distributed inequitably among individuals of different circumstances (through the calculation of a penalty). In particular, the HOI calculates how personal circumstances influence the probability of a child to access the goods and services necessary to succeed in life. In other words, the HOI is an inequity-penalized estimate of the coverage rate of an opportunity in a society (see Box 1). The penalty increases as the coverage rate among children with different circumstances increases. Opportunities can be defined as any good or service that any society would consider should be provided universally, such as basic education, access to water or absence of malnutrition. Circumstances are all the characteristics into which a child is born and which control are, by definition, outside his/her. Examples of circumstances are the gender of the child, the

wealth of his/her household, or the education of his/her parents, among others.

We estimate results for three types of opportunities. For education-related opportunities, we define two opportunities: attending school (for children 10–14 years old) and having finished primary school (for children ages 12–16). Housing-related opportunities include (all for children ages 0–16) considering the water supply from the public network sufficient, having a public hospital within 5 km of the household, and having electricity available from the public network for at least 20 hours per day. Finally, for health-related opportunities we include the absence of the stunting, wasting, or being underweight—all recorded for children 0–60 months old (Table 12). Health-related opportunities seem to be relatively better. The percentage of children who are not wasted or underweight is above 90%. On the other hand, the percentage of children who are found not stunted is just over 70%. It is notable that all three health-related opportunities registered relatively low levels of

TABLE 12: Coverage Rates and Human Opportunity Index

Group	Opportunity	Coverage	D-Index	HOI
Education	Attending School (10–14 yrs)	82.7%	6.5%	77.3%
	Finished primary (12–16yrs)	80.6%	6.5%	75.4%
Housing	Water supply sufficient	58.3%	17.6%	48.0%
	Public Hospital <5km	56.5%	23.4%	43.3%
	Electricity available >20h	8.8%	62.2%	3.3%
Health	Not Stunted (0–60 months)	72.6%	3.4%	70.1%
	No Wasting (0–60 months)	92.1%	1.0%	91.2%
	Not Underweight (0–60 months)	90.0%	1.9%	88.3%

Source: Authors' calculations, IHSES 2012.

inequality, with no stunting being the most unequal (D-Index of 3%). This result indicates that, overall, children with different circumstances[22] face relatively small differential likelihoods of experiencing bad health outcomes.[23]

In terms of education, we find that among 10–14 year olds almost 1 in every 5 children is missing school, and among those between 12–16 years old there is 1 in every 5 who has not completed primary school. Also, we find moderate levels of inequality in access to these opportunities. The D-Index is estimated to be 6.5 % in both cases. A third of that inequality is due to the gender of the child. The coverage and estimated HOI among housing-related opportunities are the worst. Around 58% of children have access to sufficient water supply from the public network, and about 57% have a public hospital within 5 km of their household. Moreover, the level of inequality of having access to these opportunities is high: water registers a D-Index of 17.6%, whereas public hospitals register an index 23.4%. This last result reflects that almost a quarter of public hospitals should be reallocated so that all children have the same probability of being near a hospital. The most worrisome opportunity is that less than 10 percent of the population has continuous access (i.e. at least 20 hours a day) to electricity. Moreover, this access is large unequally distributed.

We next look at the circumstances that help explain the estimated inequality among the opportunities analyzed (Figure 45). In line with previous results, the gender of the child seems to explain about a third of the inequality in the education-related opportunities. Next in relative importance, we find that household wealth and the father's educational attainment together explain slightly more than a third of the inequality. In terms of housing-related opportunities, we see that location (i.e. urban or rural) and divisional differences explain more than 70% of the estimated inequality.

These results highlights the significant differential access to opportunities experienced by children due to having born in a particular region of the country when it comes to accessing basic services. In addition, inequality in educational attainment is also explained by the gender of the child, in line with the significant gender gaps in enrollment noted later in this chapter. Next, we take up each of these separate aspects of human development—health, education, and basic services—in greater detail.

---

[22] Specifically children from different groups of the population according to the circumstances we use in the estimation of the HOI: gender, household wealth, family demographics, education of the household head, economic sector where the household head works, region (aggregated in 5 divisions), and location (either urban or rural). Other characteristics missing from our analysis may affect the likelihood of having an opportunity.

[23] This result does not contradict the findings in Table 1 of the Annex, where stunting levels are statistically significant for households with certain characteristics. The reason is that the two methods offer answers to different and complementary questions. Regression estimates provide the expected differential likelihood of a determined group of the children population (i.e. those living in urban settings) to experience stunting with respect to a base group. The HOI methodology provides a summary measure of the differences in the likelihood of experiencing stunting across all groups of the children population (based on a set of circumstances).

FIGURE 45: Contribution of Circumstances to Inequality Index – Selected Opportunities
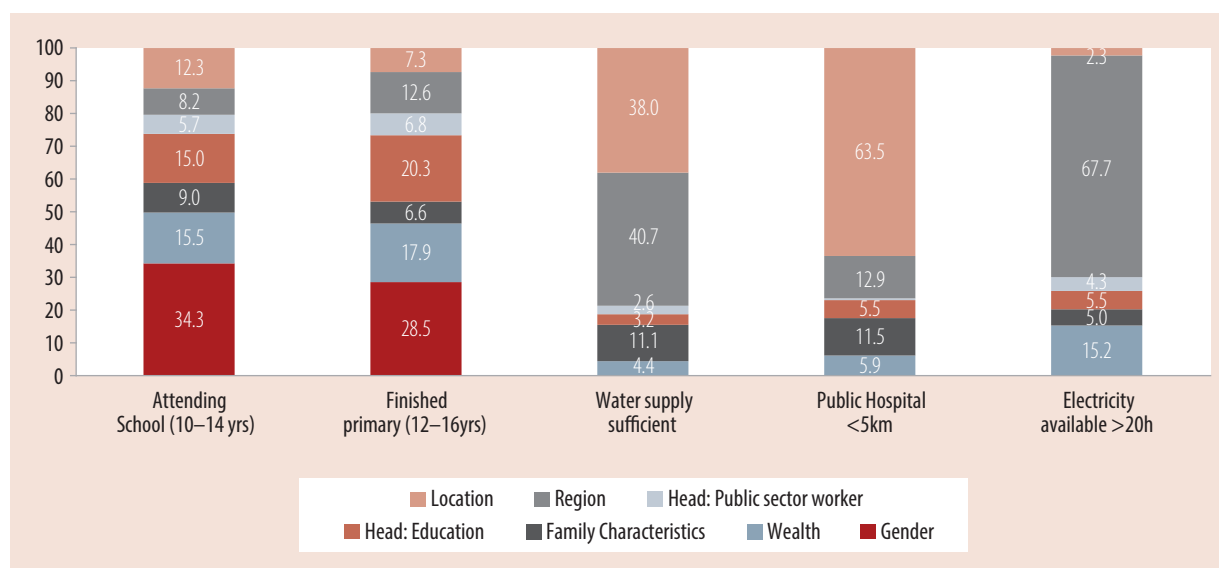
Source: Authors' calculations using IHSES – 2012.

Lagging Behind in Health and Nutrition

We begin by examining a set of indicators that measure long-term and short-term inadequacy in nutrition—stunting and wasting rates—among children. Panels A and B of Figure 46 plot these different anthropometric measures against GDP per capita (PPP 2005) for a sample of countries, including Iraq, with available WHO data between 2007 and 2012. While stunting (which measures height-for-age) refers to past inadequate malnutrition and is closely associated with socioeconomic conditions for the population as a whole, capturing mostly long run effects, wasting (weight-for-height) refers to short run effects, usually related to recent and severe weight loss, often associated with starvation or severe disease.

For both measures, stunting and wasting rates among children aged 0–60 months, the overall relationship with GDP is negative as expected: poorer countries with low levels of GDP per capita are more severely affected by adverse nutritional outcomes. While Iraq's stunting rates are slightly below the average rates commensurate with its GDP level, the country underperforms in terms of wasting when compared to the mean performance of the sample of countries with similar GDP. For instance, wasting rates in Iraq are more than twice the rates in Mongolia, which has a similar level of per capita GDP, and substantially higher than in Vietnam, which has slightly lower per capita GDP. The fact that Iraq performs relatively worse on metrics of short term nutritional deprivation—wasting—may indicate that the health status of the Iraqi population has deteriorated in the recent past.

Iraq once had some of best health indicators in the region. According to a WHO (2001) briefing, "the large investments in infrastructures and in human resources development carried out during the sixties and seventies had led to the development of an efficient health system that was considered one of the best in the Middle-East Region. Malnutrition was virtually not seen, as households had easy and affordable access to a balanced dietary intake."[24] Today, Iraq underperforms compared to other MENA countries (Table 13). At 22.6 percent, stunting rates in Iraq are above the regional average of 21.1 percent. In both stunting and wasting, Iraq ranks 7th among a sample of 11 MENA countries. The effect

---

[24] Kreisel W: Health situation in Iraq. 2001. www.who.int/disasters/repo/6386.doc.

FIGURE 46: Stunting and Wasting (0–60 Months): Iraq Versus other Countries
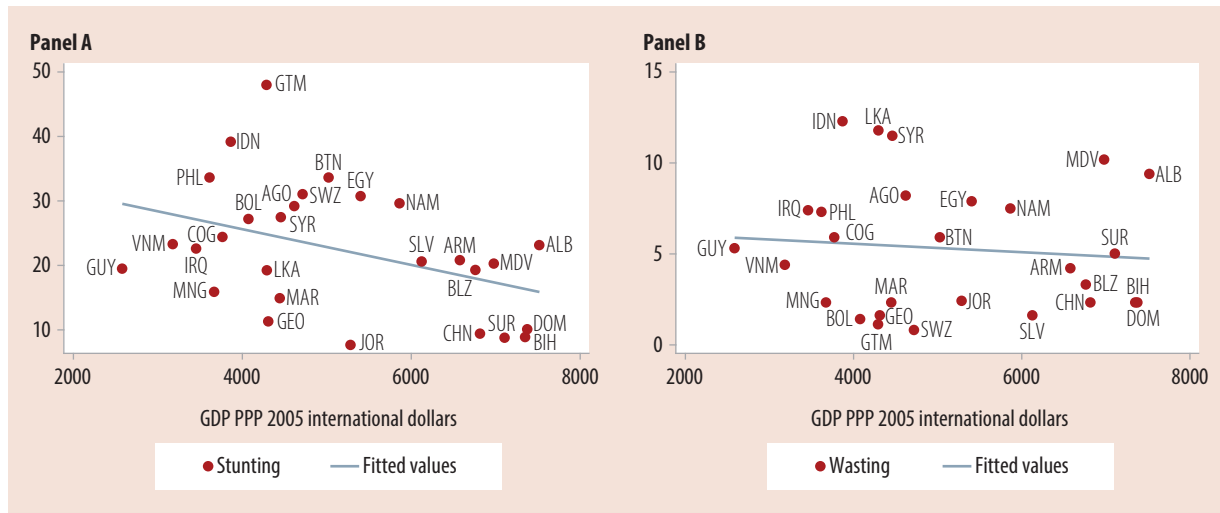
Source: WHO Global Database on Child growth and Malnutrition and WDI, 2013.

of inadequate nutrition on early childhood can be devastating, with severe adverse long run effects, as shown in Box 2.

While the international comparisons for anthropometric measures were made using WHO's global database, the IHSES 2012 survey also collected data on anthropometric nutritional measures and was designed to be representative for the governorates within Iraq. National estimates from both sources are fairly consistent (although stunting estimates are higher using IHSES 2012 data), and as IHSES data allows us to further disaggregate the analysis and link it to individual and household characteristics, the following section uses survey based estimates from IHSES (Table 14).

BOX 2: Long Term Implications of Malnutrition in Early Childhood

Health in the earliest years—actually beginning with the future mother's health before she becomes pregnant—lays the groundwork for a lifetime of well-being. Health is directly influenced by nutrition, beginning with the mother's pre-conception nutritional status, extending through pregnancy to early infant feeding, and continuing with diet and activity throughout childhood and into adult life. Adequate intake of both macronutrients and micronutrients is particularly important in the early months and years of life, when body growth and brain development are more rapid than during any other period. Malnourished children score poorer on tests of cognitive function, have poorer psychomotor development and fine motor skills, have lower activity levels, interact less frequently in their environments, and fail to acquire skills at normal rates.

The causal nature of such a relationship is indicated by several studies linking the improvement of diets to better motor and mental development for children. A randomized study of supplement distribution during pregnancy and early childhood in Guatemala showed that, not only were treated children observed to have improved cognitive development in preschool years (Martorell 1997), when the cohort was followed into adult years, the treatment group gained significantly higher schooling and wages (Maluccio et al. 2005). Glewwe, Jacoby, and King (2001) track children from birth through primary school and find that better nourished children start school earlier and repeat fewer grades, controlling for family characteristics. Alderman, Hoddinott, and Kinsey (2006) show that increased stunting of children younger than age 2 in Zimbabwe has a causal impact on years of schooling completed 15 years after the nutritional shock. In Colombia, infants born to families at risk of malnutrition that received nutritional supplementation performed better than those who did not, especially on subtests that were primarily motoric (Super et al, 1990).

Childhood nutrition not only reduces child mortality but has major economic returns coming from reduced cost of health care and increased productivity of the population over a lifetime. Nutrition impacts not only on survival, but on child development, school retention and achievement.

Source: Center on the Developing Child, Harvard University, The Lancet child development in developing countries series, World Bank´s Early Childhood Care and Development in Sub-Saharan Africa.

TABLE 13: Nutritional Indicators in the MENA Region

Rank		Country	Year	Stunting	Wasting	GDP per capita (PPP 2005)
Stunting	Wasting					
1	5	IRAN	2011	6.8	4.0	
2	2	JORDAN	2012	7.7	2.4	5288.988
3	3	TUNISIA	2010	10.0	3.0	8441.619
4	4	PALESTINIAN TERRITORIES	2010	10.6	3.3	
5	1	MOROCCO	2011	14.9	2.3	4453.112
6	6	LIBYA	2007	21.0	6.5	15699.07
7	7	IRAQ	2011	22.6	7.4	3461.817
8	9	SYRIA	2009	27.5	11.5	4466.081
9	8	EGYPT	2008	30.7	7.9	5411.725
10	11	DJIBOUTI	2012	33.5	21.5	
11	10	YEMEN	2011	46.6	13.0	2192.513

Source: WHO and WDI.

TABLE 14: Nutrition Indicators in Iraq According to Different Data Sources

	Year	Stunting	Wasting
IHSES	2012	27.35%	7.97%
WHO	2011	22.6%	7.4%

TABLE 15: Nutritional Outcomes by Wealth Quintiles

Share of children 0–60 months	Stunted	Wasting	Underweight children
1 (poorest)	0.31	0.09	0.13
2	0.29	0.07	0.10
3	0.26	0.08	0.10
4	0.26	0.07	0.07
5 (richest)	0.22	0.08	0.08
Overall	0.27	0.08	0.10

Source: Authors' calculations, IHSES 2012.

Nutritional Outcomes Within Iraq

Stunting is a primary manifestation of malnutrition in early childhood, including malnutrition during fetal development brought on by the malnourishment of the mother, both of which are likely correlated with the income level of the household. Stunting and child underweight rates vary in Iraq with consumption quintiles, with the highest prevalence rates among the poorest quintiles, as shown in Table 15. However, stunting rates are high even for the richest portion of the population, with more than a fifth of children having low height-for-age, suggesting widespread malnutrition in the past among all segments of the population.

Stunting is more prevalent among the children below 36 months, suggesting that perhaps malnourished mothers may be giving birth to malnourished children, with some of the nutritional deficit being bridged with time as infants move from breastfeeding to a food diet (Table 16). 35 percent of Iraqi children below the age of 1 are stunted, compared to a third of children aged 12 to 35 months, and approximately a fourth of children aged 26 to 60 months. A similar pattern is evident for wasting and low weight children, but there is a sharp decline for children ages 12 months and above relative to those less than a year old.

Household incomes are also correlated with the employment status of the head of household. While

TABLE 16: Nutritional Outcomes by Age Group

Share of children 0–60 months	Stunted	Wasting	Underweight children
0–11 months	0.35	0.13	0.22
12–23 months	0.31	0.07	0.08
24–35 months	0.30	0.06	0.08
36–47 months	0.22	0.06	0.06
48–60 months	0.18	0.08	0.07

Source: Authors' calculations, IHSES 2012.

there is little difference in wasting and child underweight rates by the employment status of the head of household, stunting rates are 4 to 5 percentage points higher in households with unemployed heads, perhaps because those actively seeking work have no other source of income and cannot afford to be out of the labor force (Table 17).

Just as poorer countries and poorer households within countries tend to have worse nutritional indicators, spatial disparities in welfare are also correlated with differences in nutritional markers. Figure 47, Figure 48 and Figure 49 plot stunting, wasting and child underweight rates in each governorate against their average per capita expenditures. The negative relationship between nutrition and consumption is, particularly pronounced for stunting and underweight rates, while it is weaker for wasting rates.

Three southern governorates, Muthanna, Thi-Qar and Missan, have the highest incidence of stunting, wasting and underweight children, and all three

TABLE 17: Stunting and Wasting by Employment of Head

|	Stunted	Wasting	Underweight children
Employed	0.27	0.08	0.10
Unemployed	0.32	0.09	0.12
Out of force	0.28	0.09	0.11

Source: Authors' calculations, IHSES 2012.

perform worse than would be expected even at their low levels of per capita consumption expenditure. These are among the governorates with highest poverty headcount rates (48.4, 36.8 and 38.2 percent respectively) in 2012 and also among the five governorates in which poverty increased between 2007 and 2012. In general, the Southern governorates experienced the highest rates of stunting, wasting and underweight children.

Kerbela, Salahadin, Basra and Baghdad also stand out, with higher stunting rates than would be predicted based on their mean consumption level. However, all except Basra perform better in terms of wasting and underweight children. This pattern is consistent with sharp poverty reduction in Kerbala and Salahadin between 2007 and 2012, of 23.1 and 24.3 percentage points respectively, which makes these two governorates the most successful in the country in terms of poverty reduction. Since stunting refers to past inadequate nutrition while wasting refers to more recent disease and starvation, governorates that have experienced recent welfare improvements perform relatively better in terms of more the short term indicators of wasting and underweight rates but continue to lag in terms of the longer term stunting measure. Basra however, remains somewhat of an exception to this pattern, with relatively high estimates of stunting and underweight rates despite significant poverty reduction.

On average, the Kurdistan region has the best performance in terms of nutritional measures, with the exception of the wasting measure for Erbil, which seems to be an outlier. The governorate of Sulaimaniya in Kurdistan, displays the lowest rates of stunting and underweight children, and the second lowest in terms of stunting in the country. Indeed, Sulaimaniya has had the lowest poverty headcount rates, both in 2007 and 2012, only 7.6 and 7.4 percent respectively. The relationship between underweight adult measures (not reported here) and per capita expenditure display a similar negative relationship with per capita consumption as underweight children, with the Southern division underperforming relative to the rest of the country.
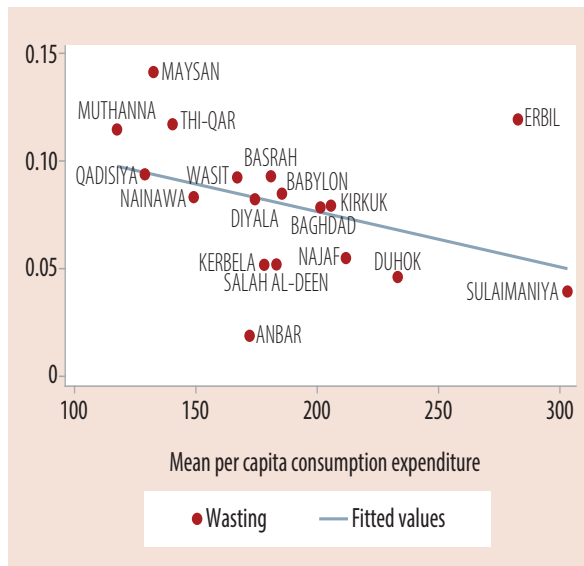
4

4

2

2

2

1

FIGURE 47: Stunting Rates and Governorate Consumption Expenditure
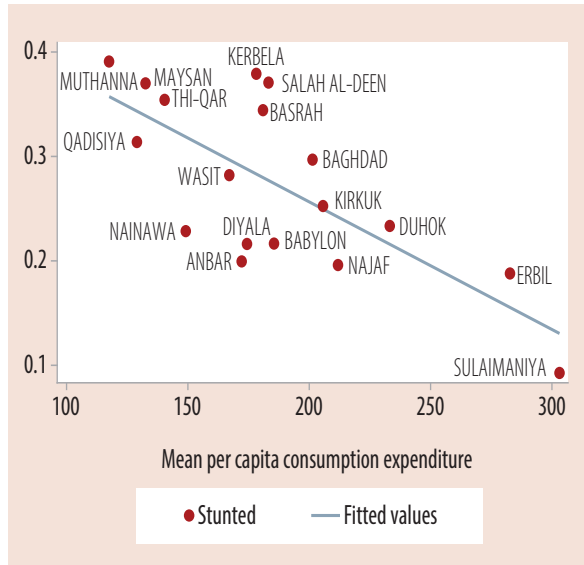
Source: Authors' calculations using IHSES 2012.

The negative relationship between mean consumption levels and nutrition is directly related to food expenditures and caloric intake. In Figure 50, we plot governorate level stunting rates against per capita expenditure, per capita caloric intake, per capita expenditure based on consumption of food rations

and per capita caloric intake from rations. The first plots, shown in panels A and B, display a negative relationship between stunting and expenditures and per capita caloric intake showing that, governorates with higher per capita expenditure and higher total caloric intake are the ones with lower rates of stunting. On the other hand, the last two plots (panels C and D) show a positive relationship between stunting and consumption based on food rations and caloric intake from rations. Thus, higher stunting rates appear to be correlated with lower levels of food expenditure per capita and potentially with a higher level of food insecurity, and a greater dependence on the Public Distribution System. Not coincidentally, the governorates highly dependent on consumption based on rations and displaying high stunting figures are the governorates on the South, in particular Muthanna, Thi-Qar, Qadisiya and Missan, where poverty increased the most between 2007 and 2012.
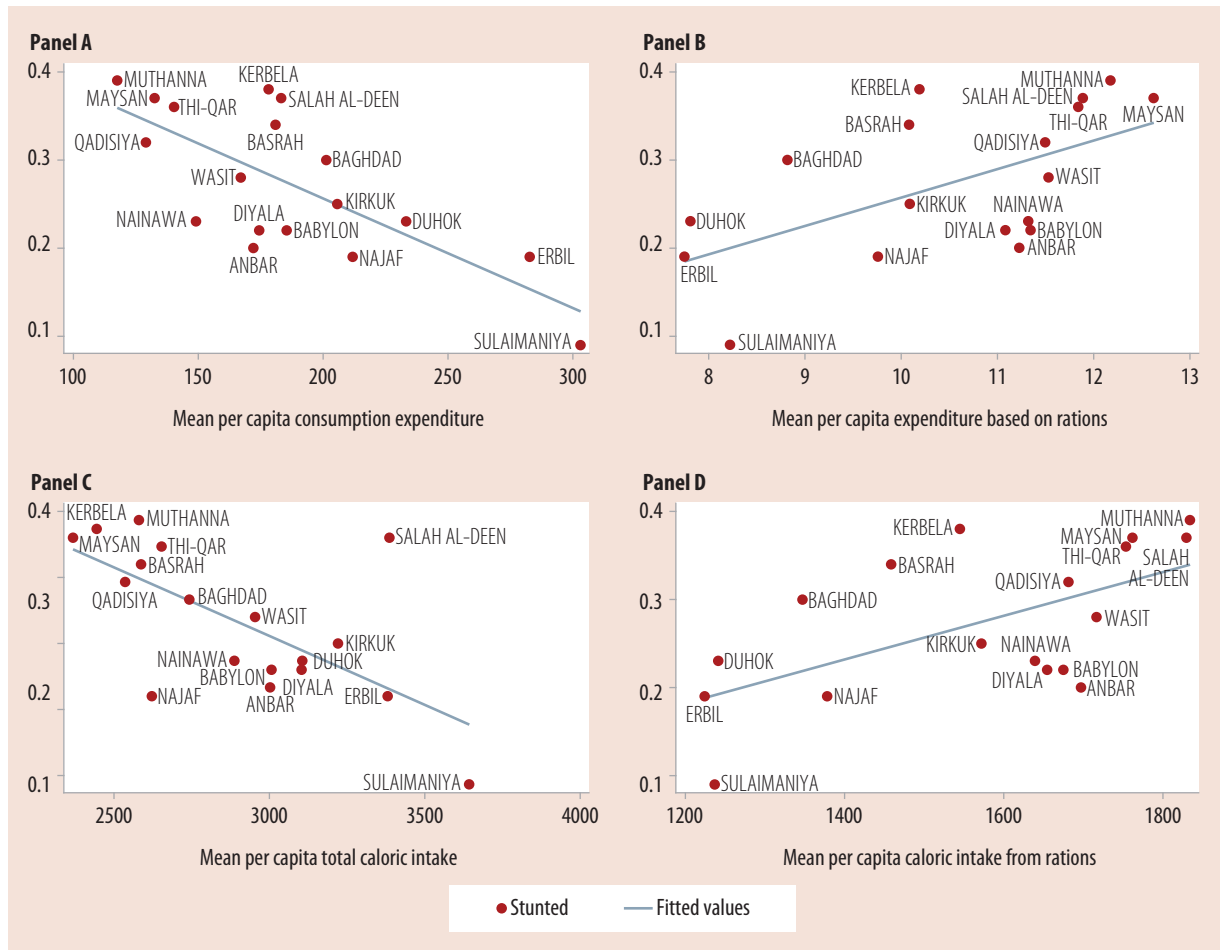
Early Motherhood and Child Nutrition

In this section, we explore the relationship between child nutrition and maternal health, and in particular the hypothesis that early motherhood is

FIGURE 48: Wasting Rates and Governorate Consumption Expenditure

Source: Authors' calculations using IHSES 2012.

FIGURE 49: Underweight Rates for Children and Governorate Consumption Expenditure
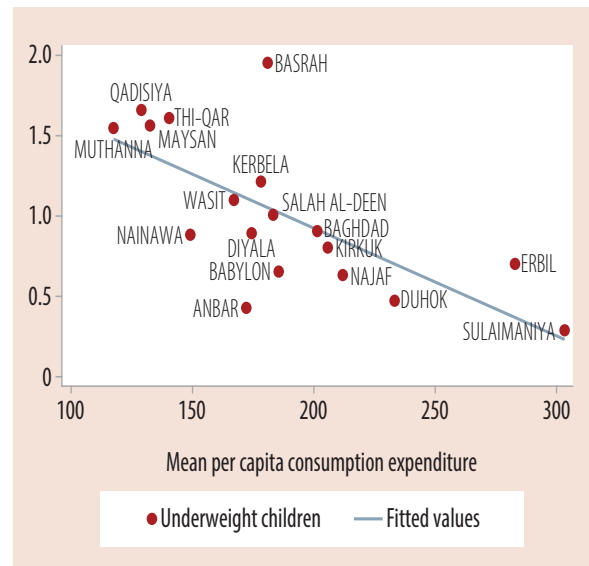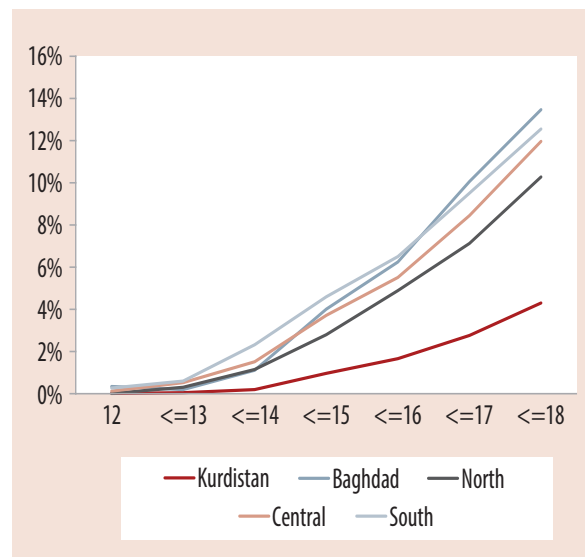

Source: Authors' calculations using IHSES 2012.

FIGURE 50: Stunting, Expenditures and Caloric Intake and the PDS

Panel A — Mean per capita consumption expenditure
Panel B — Mean per capita expenditure based on rations
Panel C — Mean per capita total caloric intake
Panel D — Mean per capita caloric intake from rations

● Stunted   — Fitted values

Source: Authors' calculations, IHSES 2012.

associated with poor nutritional outcomes for children. The legal minimum age of marriage in Iraq is 18 years for both men and women (Article 7 (1)), although a judge can allow marriage at the age of 15 years, if the person is deemed physically eligible. According to the National Strategy of Combating Domestic Violence in Iraq of 2013, 5% of girls get married before the age of 15 years old, and 23% of girls get married before the age of 18 years old. In both 2007 and 2012, around 12 percent of 16 year old girls and 30 percent of 18 year old girls report being married. In other words, by age 16, 5 percent of girls are married; and by age 18, 11 percent of all girls are married. When we look at early marriage across the five divisions in 2012 (Figure 51), a clear pattern emerges. In Kurdistan, where poverty

FIGURE 51: Ever Married Females by Division: Percentage by Age (12–18)

— Kurdistan   — Baghdad   — North
— Central   — South

Source: Authors' calculations using IHSES 2012.

and stunting and wasting are lower, the incidence of early marriage is also the lowest, with 4 percent of girls being married by age 18 (and 12 percent of 18 year old girls being married married). Early marriage rates are higher in every other division, and especially in the South, which has the worst nutritional indicators, with 34 percent of 18 year old girls being married, and 13 percent of all girls being married by age 18.

Overall, 11 percent of all girls below the age of 18 in the 2007 and 2012 surveys report being married (Figure 52). While this share has decreased in the South, Centre and Kurdistan, it has increased in the North, and especially in Baghdad, from 10 percent in 2007 to 13 percent in 2012. In 2007, Baghdad had a lower share of underage girls married when compared to the national average, while in 2012 its share has substantially increased, surpassing the national rate. The North division had in 2007 also a smaller percentage of underage married girls than the average of the country, but in 2012 its share is coming closer to the country's mean. Figure 53 shows the share of girls married by the age of 18 in each governorate. In the North, the share of underage married girls has increased in every governorate, and in Anbar, has increased from 4 percent to 10 percent.

FIGURE 52: Ever Married Females Under 18 Across Time: Percentage by Division
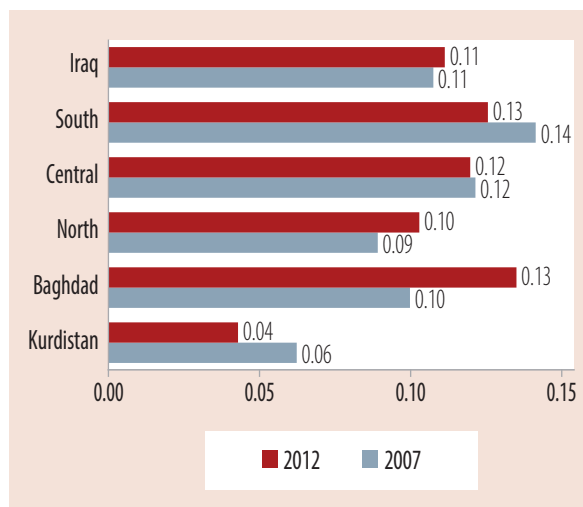
Surprisingly, the highest rates of underage marriage in 2012 are in relatively well-off Basra, where 16 percent of girls under the age of 18 are married.

Figure 54 shows the proportion of under-18 married girls who have ever given birth to a child in Iraq and in each division in 2007 and 2012. While there is some variation across divisions, on average, between 40 and 50% of those who get married before the age of 18 also bear a child by that age. Early childbirth is not only more risky for the mother and the child, childbirth at an early age can negatively affect the mother's nutrition; and in turn, poor nutrition of mothers can increase the likelihood of anthropometric failure (stunting, wasting and underweight) (Box 3).[25]

In fact, it appears that the relatively high stunting rates in some of the better off governorates, i.e., governorates where stunting was high despite relatively high per capital consumption and food expenditure, may be correlated with the relatively high rates of early marriage and correspondingly, early motherhood in those governorates. Figure 55 plots the share of girls below the age of 18 who have ever been married in each governorate with the stunting rates in that governorate. Many southern governorates, which have relatively low consumption, also have relatively high early marriage rates, and both factors are correlated with higher stunting rates. In other cases, such as Basra and Salahadin, high stunting is correlated not with lower consumption but with higher prevalence of early marriage.

Over and above poverty and its household (lower education, poorer health, and lower food intake and nutrition) and community level correlates (limited access to quality healthcare), early motherhood is associated with a higher likelihood of adverse anthropometric outcomes for children. When we consider the set of mothers aged 12–23 who have children at 18 or younger who would be covered in the anthropometrics module (children aged 0–60 months) of the 2012 IHSES, they make up
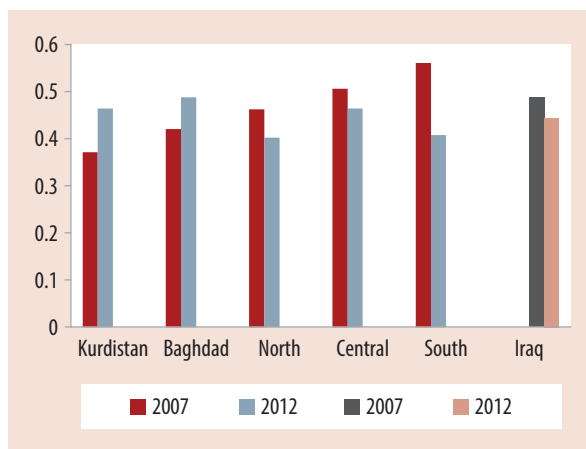
---

[25] http://www.ncbi.nlm.nih.gov/pubmed/21628349.

FIGURE 53: Ever Married Females Under 18: Percentage by Governorates
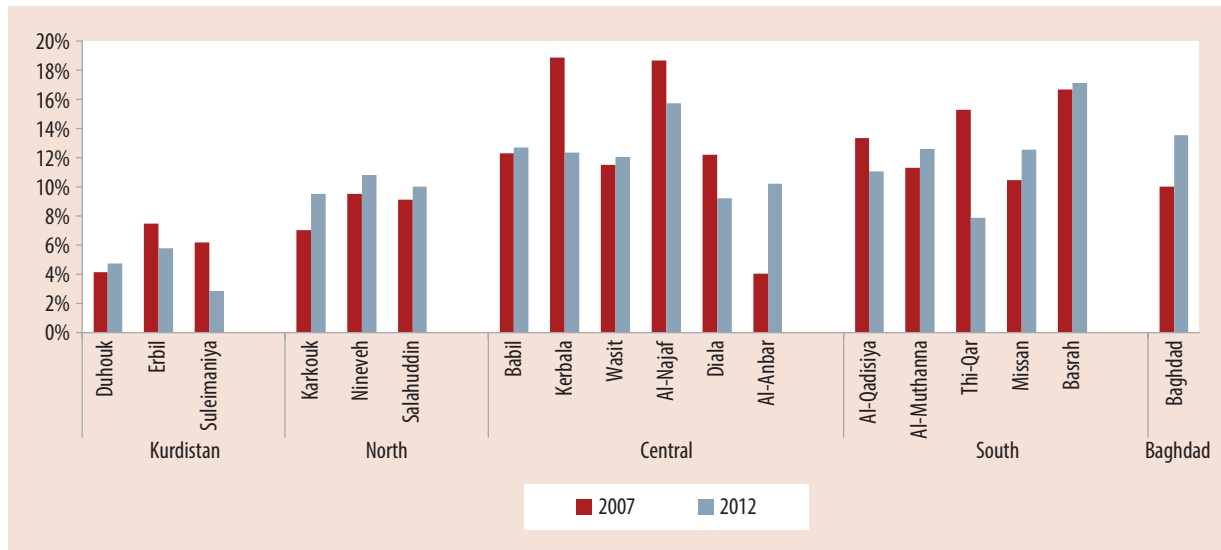
Source: Authors' calculations, IHSES 2007 and 2012.

FIGURE 54: Ever Given Birth to a Child: Share of Married Females Under 18

Source: Authors' calculations, IHSES 2007 and 2012.

8.4% of their age group, but have a higher share of children who are stunted relative to older mothers (29 percent relative to 26 to 27 percent for older mothers).[26]

We examine the role of these factors in a probit regression model in predicting the presence of a stunted child at the household level (Annex Table 3.1). The model includes location, household size, the age group of the mother, percapita expenditures

and caloric intake from PDS rations, education of the mother, work status of the head of household and per capita expenditure quintiles. The results show that living in an urban area reduced the likelihood of having a stunted child in the household by 5.2%. All division specific effects are significant and all of the divisions are more likely than Kurdistan to have a stunted child in the household. The effects are largest in Baghdad and the South, and households living there are 17.6 and 20.4 percent more likely to have stunted children. Children belonging to households at the bottom of the wealth distribution are more likely to be stunted. Households belonging to the top 4th and 5th quintiles are 5 and 10 percent less likely to have a stunted child. Neither per capita PDS expenditures on food nor the daily caloric intake per person from PDS rations is a significant correlate of stunting. This suggests that the governorate level correlations

---

[26] We consider the 12–23 age group category to cover 12 year olds who have just given birth and 23 year olds with 60 month old children who would have given birth when they were 18. The IHSES survey does not contain information on the mother's age at first birth, and so we use the group of 12–23 year old mothers with 0–60 month old children as a proxy for motherhood by age 18.

BOX 3: Early Motherhood and Child Outcomes

Early motherhood is often believed to cause adverse outcomes for children, such as lower birth weights, education, work experience and wages, more persistent poverty and welfare dependency, and higher rates of infant mortality. Evidence on this subject is, however, mixed. While on the one hand there are several studies arguing that the adverse effects of teenage childbearing primarily reflect unmeasured family background rather than the true consequences of a teen birth, other contributions show that controlling for family background does not fully eliminate the adverse consequences of early motherhood for children.

Levine et al (2001) find that find that early motherhood's strong negative correlation with children's test scores and positive correlation with children's grade repetition is almost entirely explained by pre-birth individual and family background factors of teen mothers themselves. However, controlling for maternal background, the authors show that children of teen mothers in the United States are more likely to initiate early sexual activity and to display problem behaviors such as truancy and fighting.

Based on 1991 and 1999 data for the UK, Francesconi (1997) finds that being born to a teenage mother is usually associated with worse outcomes as young adults: lower chances of higher educational attainment, greater risks of inactivity and teenage childbearing, smaller probability of being in the top decile of the income distribution and greater probability of being in the bottom decile of the earnings distribution. These results hold true even after controlling for common family or maternal background factors.

Geronimus et al (1992) estimates the relationship between maternal age and low birth weight, preterm birth, indicators of prenatal care utilization, smoking and alcohol use during pregnancy, breastfeeding, and well-child visits. The study controls for pre-pregnancy family background differences between teen and older mothers by comparing sisters who experienced their first births at different ages. The findings show evidence that maternal family background accounts for many of the health-related disadvantages of the firstborn infants of teenage mothers.

Raj et al (2010) find that, in a nationally representative sample for India, children born to women married as minors are significantly more vulnerable to malnutrition than those born to women married at 18. The authors show that these associations were not simply a consequence of socioeconomic vulnerabilities of mothers, or of maternal malnutrition as indicated by low BMI. They hypothesize that perhaps young mothers may be unable to ensure adequate nutrition for their children, and that combined with the limited nutritional reserves stored within the bodies of adolescent mothers probably places their offspring at substantial risk for low birth weight and inadequate access to breast milk. The findings suggest that the effects of inadequate fetal nutrition and reduced breastfeeding among neonates born to adolescent mothers extend into infancy and early childhood, maintaining their ongoing risk for malnutrition related health problems and suggesting that such vulnerabilities accumulate over the lifespan.

Source: Geronimus et al (1992), Levine et al (2001), Francesconi (1997), Raj et al (2010).

FIGURE 55: Stunting Rates and Early Marriage by Governorate, 2012
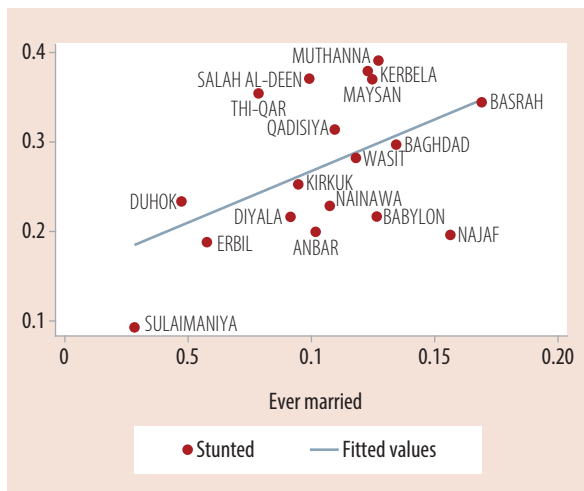
Source: Authors' calculations, IHSES 2012.

with dependence on PDS for food, and lower food expenditures with stunting rates reflect the role of location and stunting rather than that of the PDS.

Although the education of the mother and the employment status of the head of household head does not appear to have a significant effect, the co-efficients for the mother age groups' variables are significant and confirm our hypothesis that younger mothers are more likely to have stunted children. A mother aged 12–23 is 12 percent more likely and a mother aged 24–30 is 7 percent more likely to have a stunted child relative to mothers aged 31 or above. These results suggest that low welfare levels (as measured by the consumption quintiles and the division dummies) for certain households and early motherhood both adversely impact nutritional outcomes for children in Iraq.

Evidence from the Multiple Indicator Cluster Surveys

The Multiple Indicator Cluster Survey is a survey program developed by the United Nations to provide internationally comparable data on the

situation of children and women. In Iraq, the survey was conducted in 2006 and 2011. Although there is some content overlap between MICS and IHSES surveys, the MICS covers women and child outcomes in greater detail. This section summarizes the highlights from the MICS findings based on UNICEF´s 2012 report.

Over 55,000 women in their reproductive age were interviewed to collect MICS 2011 data. Survey estimates suggest a national population of 33.4 million, of which 16.6 million are children and adolescents. One in every five Iraqis in 2011 was a child under the age of 5. Around 800,000 children in Iraq have lost one or both parents. On the health dimension, the survey findings show that around 35,000 infants die every year, which is equivalent to approximately 37 deaths out of every 1000 live births for children under 5. Only 1 in 10 children are exclusively breastfed after three months of life, and 1 in 4 children experience stunted growth. Only 5 out of 10 children aged 18–29 months received all recommended immunizations at the correct time and acute respiratory infections and diarrhea remain two of the biggest killer diseases of children in Iraq. Taking a closer look at women, results show that early marriage is pronounced; with 1 in 5 young women aged 15–19 being married, with a fertility rate of 4.4 on average.

Compared to 2006, the MICS 2011 show that in some areas there has been progress in Iraq: birth registration, gender parity in primary school and registration and attendance in primary school have improved substantially. Slight progress was found in under 5 mortality rates, immunization coverage and child labor. On the other hand, other dimensions have experienced stalling or even regression. Not much has changed between 2006 and 2011 in terms of under nutrition, low weight rate at birth, primary school completion on time, iodized salt consumption and attitude towards domestic violence.[27] Worse outcomes were registered in 2011, when compared to 2006, in terms of breastfeeding, treatment of diarrhea, treatment of pneumonia and early marriage.

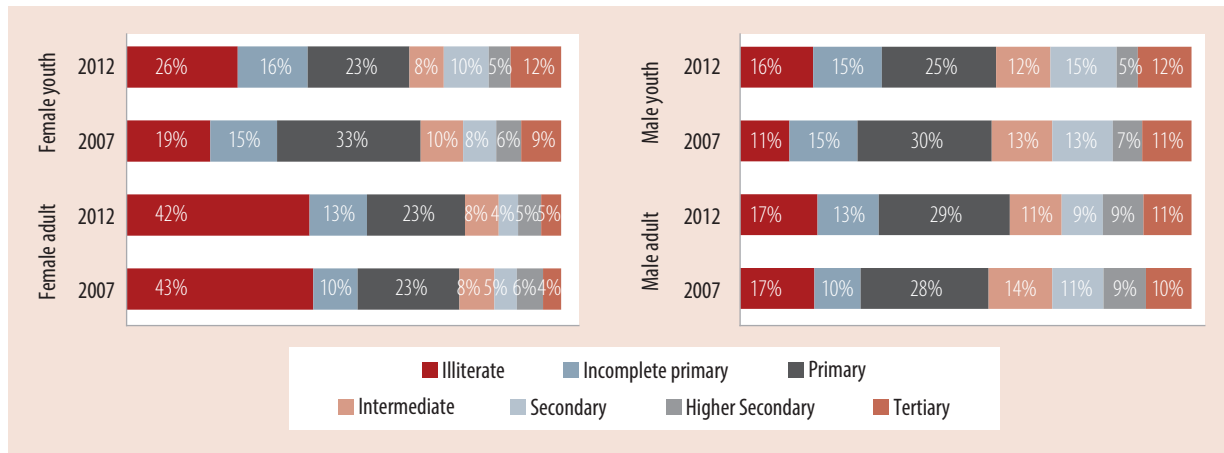## Stagnation in Education Among Men; Some Improvement for Young Women

Education, one of the strongest correlates of poverty, varies widely across Iraq, by division and by gender. While there are a few signs of improvement, on average, very little has changed in terms of educational outcomes between 2007 and 2012 in Iraq. The overall median educational level in Iraq is complete primary school, which is also the median level for adult and youth male cohorts as well as for young females. For the female adult population, the median education is incomplete primary.

This relative stagnancy in education overall and for men, and the pattern of limited improvement for young women is evident in Figure 56 which looks at the educational level for young (18–29) and adult (30–64) cohorts in the 2007 to 2012 period. While for the adult male population, illiteracy remained at 17%, for the younger male cohort, the distribution has worsened as there is a higher share of illiteracy between 2007 and 2012 and also a smaller share of young males are completing primary school. This pattern of little movement in education among younger male cohorts is repeated in almost every division, except for Kurdistan, where illiteracy rates are much smaller and the tertiary level rates are much higher for the younger cohorts, suggesting rapid improvements within the last five years (Figure 57).

For the female adult cohort, outcomes have not improved much over time. However there is a significant difference in educational attainment across the younger and older cohorts, with young women catching up with their male counterparts. Between 2007 and 2012, the share of the youth cohort continuing their studies after primary school has also registered a small increase. Unlike the stagnant picture among

---

[27] Overall, 51 percent of women in Iraq feel that a husband has the right to beat his wife for at least one of five reasons: (i) if she goes out without telling him; (ii) if she neglects her children; (iii) if she argues with him; (iv) if she refuses sex with him and (v) if she burns the food.

FIGURE 56: Educational Level by Generation Over Time: Female and Male Population in Iraq

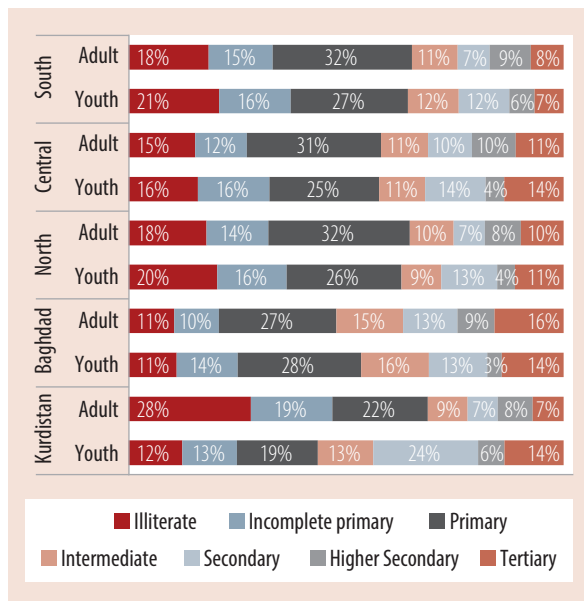|		Illiterate	Incomplete primary	Primary	Intermediate	Secondary	Higher Secondary	Tertiary
Female youth	2012	26%	16%	23%	8%	10%	5%	12%
Female youth	2007	19%	15%	33%	10%	8%	6%	9%
Female adult	2012	42%	13%	23%	8%	4%	6%5%	5%
Female adult	2007	43%	10%	23%	8%	5%	6%	4%
Male youth	2012	16%	15%	25%	12%	15%	5%	12%
Male youth	2007	11%	15%	30%	13%	13%	7%	11%
Male adult	2012	17%	13%	29%	11%	9%	9%	11%
Male adult	2007	17%	10%	28%	14%	11%	9%	10%

Source: Authors' calculations, IHSES 2007 and 2012.

men, improvement in education among younger generations of women is evident in each division, but especially in Kurdistan (Figure 58). Illiteracy rates and incomplete primary schooling are much lower among young women and the percentage of young females with tertiary education is quite large, particularly in Baghdad, the Centre and Kurdistan (17 percent, 12 percent and 13 percent respectively).

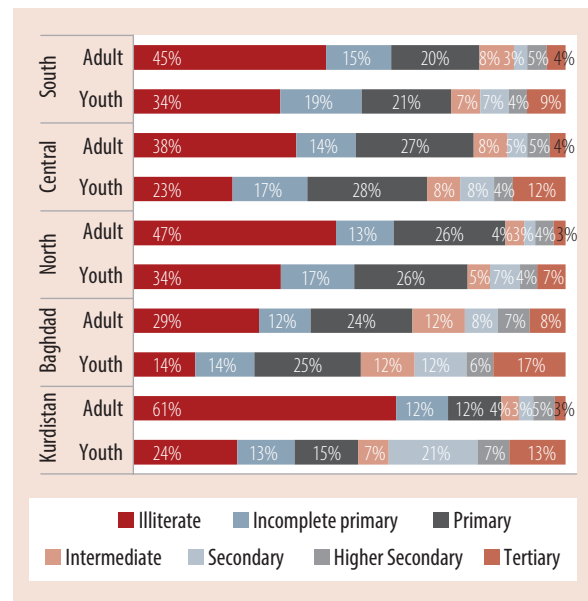## *Enrollments decline sharply after primary school*

To better understand education dynamics and gender disparities across Iraq, in in particular, to see why education does not go beyond primary schooling for the majority of the population, we now examine patterns and trends in enrollment. The net enrollment rate at any educational level is the share

FIGURE 57: Educational Level By Generation of Male Population and Divisions: 2012

		Illiterate	Incomplete primary	Primary	Intermediate	Secondary	Higher Secondary	Tertiary
South	Adult	18%	15%	32%	11%	7%	9%	8%
South	Youth	21%	16%	27%	12%	12%	6%	7%
Central	Adult	15%	12%	31%	11%	10%	10%	11%
Central	Youth	16%	16%	25%	11%	14%	4%	14%
North	Adult	18%	14%	32%	10%	7%	8%	10%
North	Youth	20%	16%	26%	9%	13%	4%	11%
Baghdad	Adult	11%	10%	27%	15%	13%	9%	16%
Baghdad	Youth	11%	14%	28%	16%	13%	3%	14%
Kurdistan	Adult	28%	19%	22%	9%	7%	8%	7%
Kurdistan	Youth	12%	13%	19%	13%	24%	6%	14%

Source: Authors' calculations, IHSES 2012.

FIGURE 58: Educational Level By Generation of Female Population and Divisions: 2012

|		Illiterate	Incomplete primary	Primary	Intermediate	Secondary	Higher Secondary	Tertiary
South	Adult	45%	15%	20%	8%	3%	5%	4%
South	Youth	34%	19%	21%	7%	7%	4%	9%
Central	Adult	38%	14%	27%	8%	5%	5%	4%
Central	Youth	23%	17%	28%	8%	8%	4%	12%
North	Adult	47%	13%	26%	4%	3%	4%	3%
North	Youth	34%	17%	26%	5%	7%	4%	7%
Baghdad	Adult	29%	12%	24%	12%	8%	7%	8%
Baghdad	Youth	14%	14%	25%	12%	12%	6%	17%
Kurdistan	Adult	61%	12%	12%	4%	3%	5%	3%
Kurdistan	Youth	24%	13%	15%	7%	21%	7%	13%

Source: Authors' calculations, IHSES 2012.

of children of official school-going age for that level who are enrolled in the level, while the gross enrollment ratio is the share of children of any age who are enrolled in that level. Thus, gross enrollment is always at least as large as (and typically larger than) net enrollment as the former measure also accounts for all the students outside the official age groups enrolled in a particular grade or level.

In Iraq, both gross and net enrollments display a sharp decline after primary school. In primary school, gross enrollment rates were 104 and 106 percent in 2007 and 2012 respectively, i.e., for every 100 students of primary school going age, 105 students were enrolled in primary school (Figure 59 and Figure 60). Net enrollment rates in primary school are also quite high: 88 percent of students of primary school age were in fact enrolled in primary school in 2012. However, at higher levels of education, gross enrollment rates decline rapidly, and net enrollment rates fall even more sharply. For every 100 students of intermediate-level school-going age, 76 students of any age were enrolled in intermediate school in 2012, but only 43 of them were of intermediate school going age. Similarly, while

FIGURE 59: Gross Enrollment by Educational Level in Iraq: Population Aged 6 and Above

	Primary	Intermediate	Secondary	Tertiary
2007 gross enrollment	104%	65%	46%	12%
2012 gross enrollment	106%	76%	56%	15%
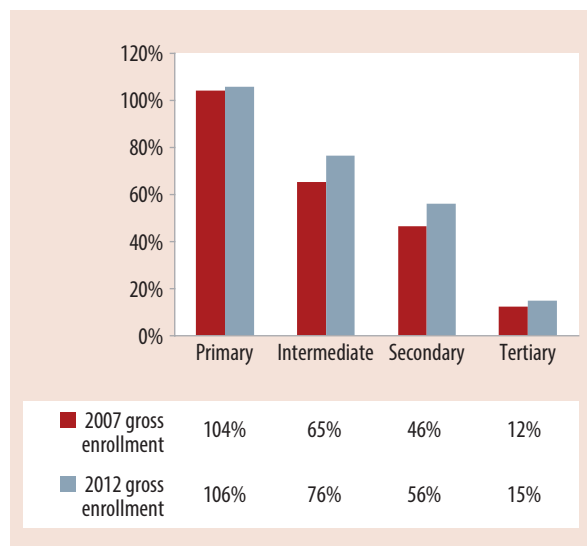
Source: Authors' calculations, IHSES 2007 and 2012.

FIGURE 60: Net Enrollment by Educational Level in Iraq: Population Aged 6 and Above

|	Primary	Intermediate	Secondary	Tertiary
2007 net enrollment	87%	38%	23%	8%
2012 net enrollment	88%	43%	23%	10%
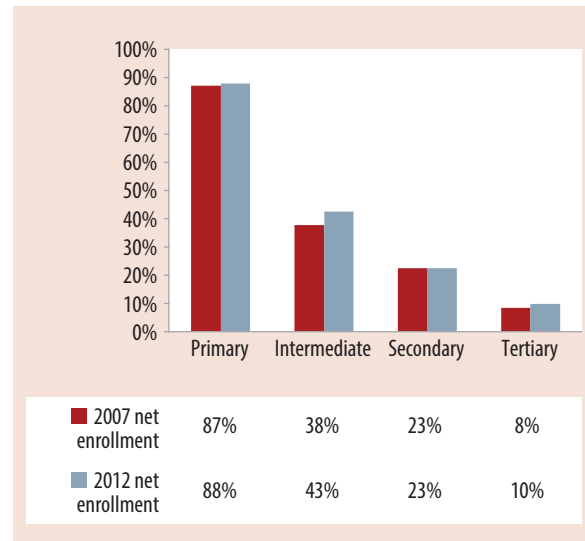
Source: Authors' calculations, IHSES 2007 and 2012.

secondary gross enrollment rates were 56 percent in 2012, this figure drops to 23% in terms of net enrollment. Between the 2007 and 2012 period, while there have been some increases in intermediate and secondary gross enrollment, there has been little change in net enrollment rates.

The same pattern holds in each division in Iraq, with gross and net enrollment rates decreasing sharply as the level of schooling goes up (Figure 61). The sole exception is Kurdistan, where gross enrollment rates are above 100 percent even at the intermediate and secondary levels, the highest in the country. Moreover, net enrollment rates for post-primary education have increased substantially in Kurdistan, from 48 to 61 percent at the intermediate level, and from 23 to 38 percent at the secondary level (Figure 62).

Typically, large differences between gross and net enrollment rates signify the presence of overage children at that education level, because of grade repetition or late entry into the level. While these differences typically appear in other countries at higher levels of education, these are evident even in primary school in Iraq. Figure 63 and Figure 64 show that, in

FIGURE 61: Gross Enrollment by Educational Level and Division: Population Aged 6 and Above
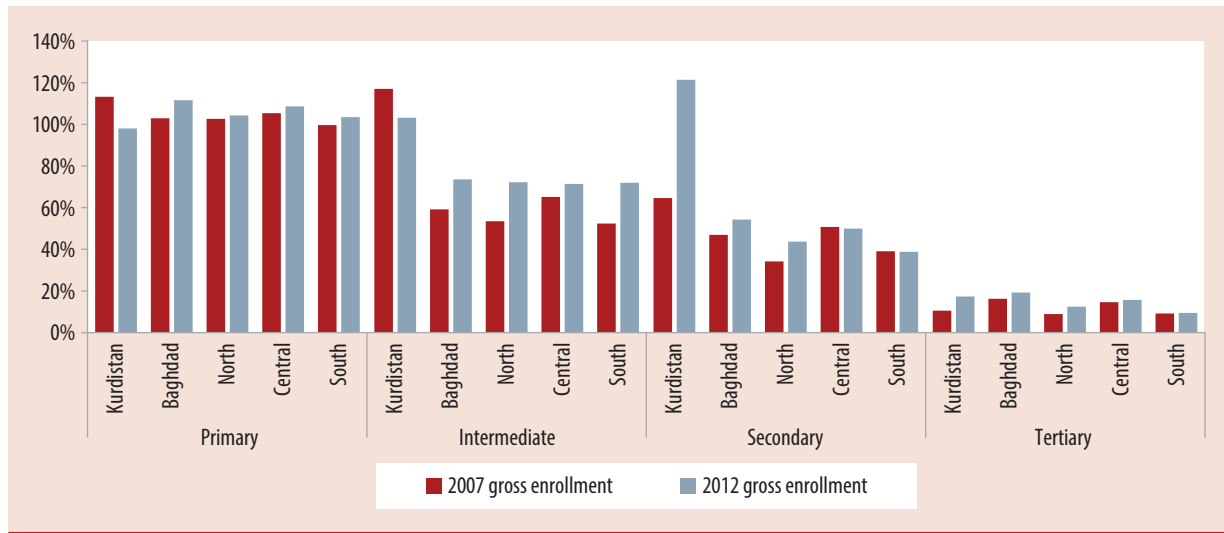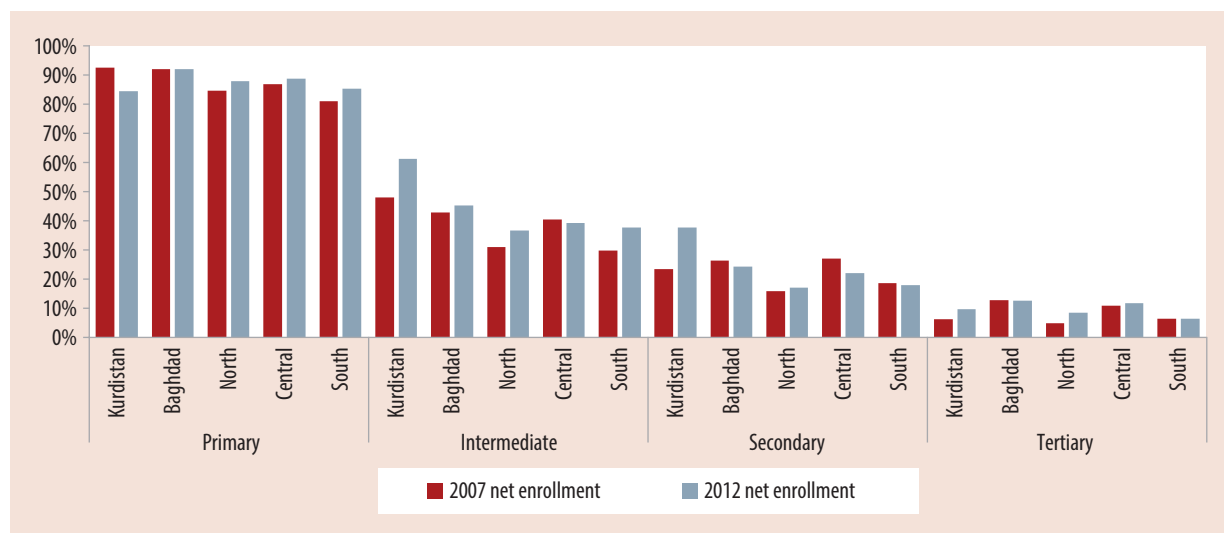

Source: Authors' calculations, IHSES 2007 and 2012.

2012, 17% of those enrolled in primary school were outside the official primary school age group (6–11 years) and, among these, 93 percent are under the age of 15. Thus, the large differences between primary school gross and net enrollment are primarily explained by the presence of a significant number of overage students in primary school (rather than for instance, adult remedial education). These gaps get larger with education until secondary education.

At the same time, there exist significant gender disparities in enrollment. Figure 65 plots the difference between male and female gross enrollment rates, which are expressed as the difference that is due to gender gaps in net enrollment rates and gender gaps in overage enrollment rates. Note that a negative net enrollment rate implies higher net enrollments among boys relative to girls while a negative overage rate implies a smaller share of overage girls at

FIGURE 62: Net Enrollment by Educational Level and Division
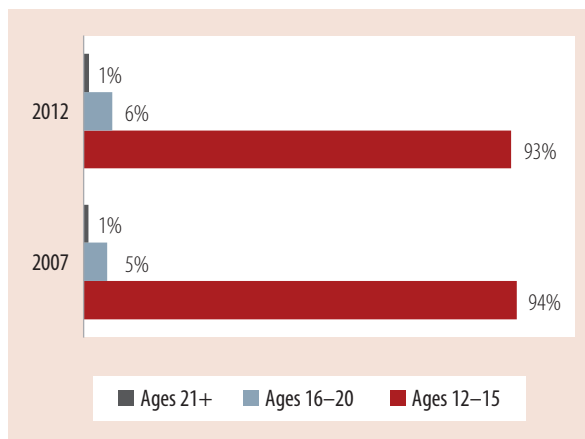

Source: Authors' calculations, IHSES 2007 and 2012.

FIGURE 63: Age Distribution of Those Enrolled in Primary School

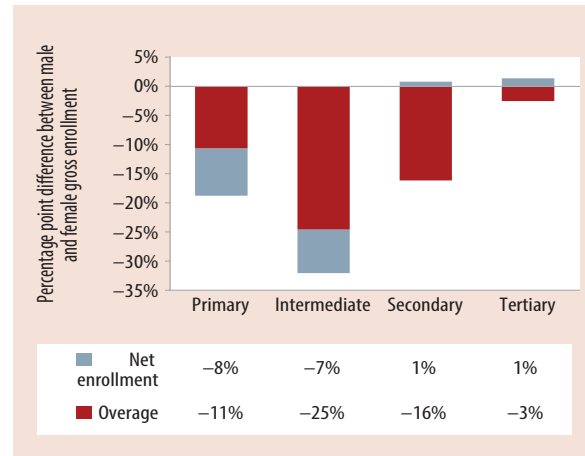*Source*: Authors' calculations, IHSES 2007 and 2012.

FIGURE 65: Gender Gaps in Enrollment in Iraq: Female Relative to Male Gross Enrollment – 2012

	Primary	Intermediate	Secondary	Tertiary
Net enrollment	−8%	−7%	1%	1%
Overage	−11%	−25%	−16%	−3%
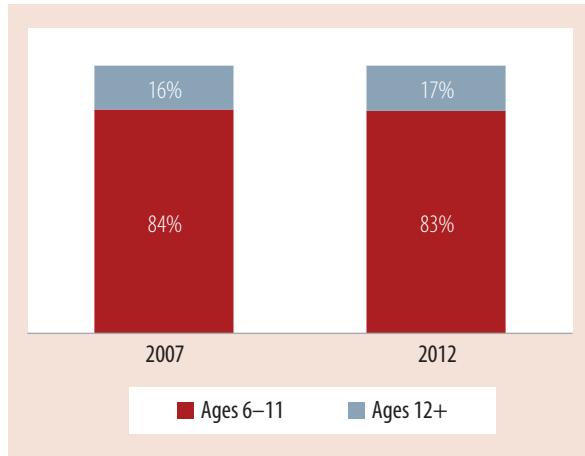
Source: Authors' calculations, IHSES 2012.

that level relative to overage boys. For the country as a whole, in primary, intermediate and secondary school, gross enrollment rates are much lower for girls than for boys: by 19, 32 and 15 percentage points respectively. Disparities between boys and girls in net enrollment are pronounced on the primary and intermediate level; lower female net enrollment by 7–8 percentage points. However, the difference between gross and net enrollments, of 11 and 25 percentage points respectively, represents the significantly higher rate at which overage boys are enrolled in primary and intermediate education grades relative to girls.

FIGURE 64: Overage Students Enrolled in Primary School by Age Group

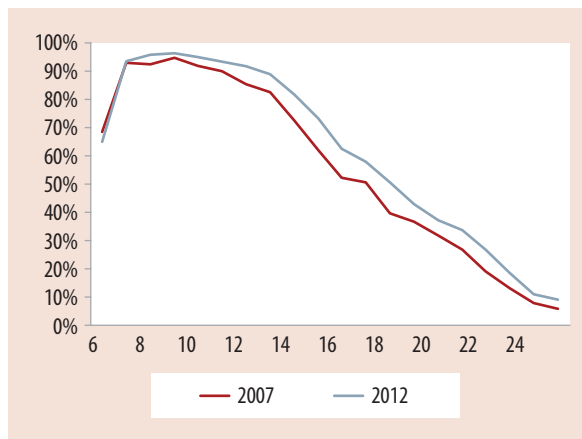

Source: Authors' calculations, IHSES 2007 and 2012.

Despite these odds, among the few who make it to secondary and tertiary level, net enrollment rates are slightly higher among girls than among boys. This suggests that while girls are less likely than boys to make it to higher education (because of gender gaps that begin early in the education process), once they reach a higher level, girls are slightly better in completing each level on time and tend to lag behind less.

Looking across divisions, females outperform males in terms of secondary and tertiary net enrollment except in the North, meaning that a higher share of girls of the correct age group are enrolled on secondary and tertiary school, particularly in Kurdistan and Baghdad. However, for intermediate and primary levels, female enrollment is lower than male enrollment in all divisions, particularly in the North and South. This indicates that a lower share of the girls enter school and continue on to higher education, but among those few who enter, a larger share of them achieve higher levels of education.

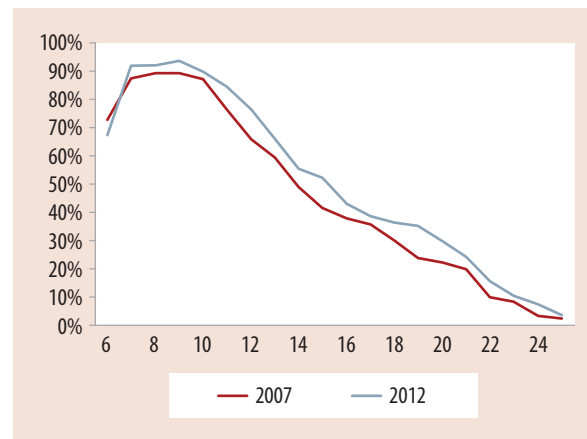## Why does education end with primary school for so many?

Median education levels among Iraqis are low because some children never enroll in school, and few

FIGURE 66: Enrollment by Age: Male

Source: Authors' calculations, IHSES 2007 and 2012.

**FIGURE 67:** Enrollment by Age: Female

Source: Authors' calculations, IHSES 2007 and 2012.

children continue on beyond primary school, for a range of economic and social reasons. Figure 66 and Figure 67 plot the share of boys and girls ages 6–24 who are currently enrolled in school. While enrollment rates have increased at all ages between 2007 and 2012, dropouts begin as early as 12 years for boys and 9 years for girls. Enrollments begin to fall sharply below 90 percent by age 13 for boys and by age 10 for girls. Only 60 percent of 16 year old boys are enrolled in school, and only 43 percent of girls. In addition, among those who stay enrolled, absenteeism increases at the age of 11 for boys and again from age 15 as they start to miss school systematically more than girls, although absenteeism among girls begins to increase from age 16 (Figure 68).

13 percent of the Iraqi population aged 7–79 have never attended school. The reasons vary substantially across gender and generation. Although the majority of the adult males who never attended school state that it was because there was no easily accessible school (43%), and because they had to work to support their families (25%), the younger generation that has never attended school declare mostly they are not interested (23%), or because of sickness or disability (20%). Worryingly, issues of physical access and the affordability of education remain relevant for the younger cohorts. More than 50 percent of 7 to 25 year old males who never attended school did so

because there was no easily accessible school (19%); they had to work to support their family (13%) or because the household could not afford school expenses. The need to work to support the family and the unaffordability of education expenses are also important in explaining male dropouts, accounting for 63 percent of male dropouts above the age of 25 and 41 percent of male dropouts ages 7–25 (Figure 69 and Figure 70). However, the single largest reason for boys dropping out of school is that they no longer want to attend, which makes up more than 40 percent of dropouts of boys ages 7–25.

FIGURE 68: Percentage of Students Missing at Least 4 School Days in the Previous Month by Gender and Age, 2012
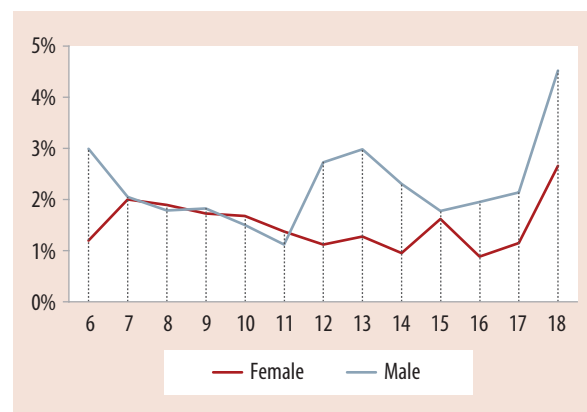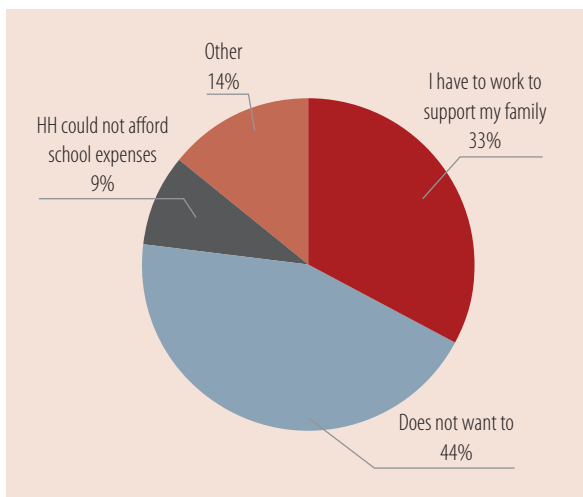

Source: Authors' calculations, IHSES 2012.

For women, social reasons are the most important factor in never attending school and dropping out, accounting for almost half the adult female population that never attended school or dropped out, and for around 40 percent of the younger cohort (Figure 71 and Figure 72). While there is some improvement in access to schools, with 18 percent of females ages 7–25 who never attended school reporting the lack of access as the main reason, compared to 29 percent of females aged 25 and above, 11 percent of the younger cohort report that their households could not afford the costs of schooling. Almost a quarter of young women who drop out of school state that they did not want to continue their education; early marriage and having to help with household chores account for a further 13 percent; and unaffordability and the lack of access for an additional 12 percent.

When we look at across the different divisions, the main reason for female school dropout is "social reasons", which are cited by more than 44 percent of respondents, with the exception of Kurdistan, where most women drop out of school because they do not have the desire to continue studying. For men, in every division boys drop out of school mainly because they have to work to support their family, which varies from 39 percent in Kurdistan to 57 percent in Baghdad.

FIGURE 69: Reasons for Dropping Out of School: Male Ages 7–25

Source: Authors' calculations, IHSES 2012.

### FIGURE 70: Reasons for Dropping Out of School: Male Above the Age of 25
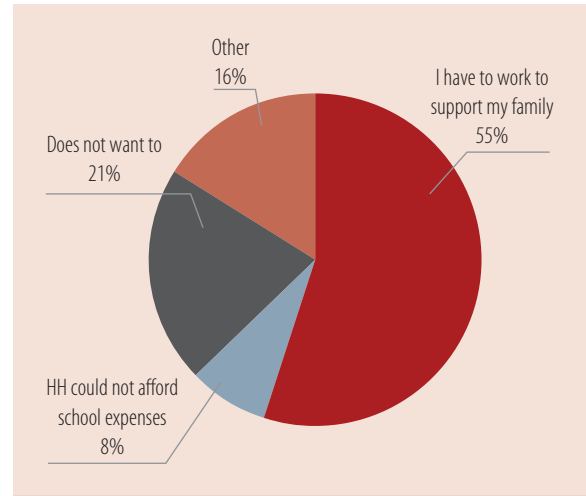
Source: Authors' calculations, IHSES 2012.

Broadly speaking, these self-reported reasons for non-attendance and drop-out point to significant differences for boys and girls, with girls being subject to social pressures and the unwillingness of the family to continue their education, and boys succumbing to economic pressures faced by the household that require them to look for work or to quit school because of the unaffordability of expenses. While the presence of an accessible school has improved between older and younger cohorts, it still remains an issue. Not wanting to go to school or to continue education also accounts for a substantial share of responses, which could imply poor quality of schooling or little perceived value and returns to education.

To understand the influence of these different factors in determining whether an individual completes primary school on time or not, we estimate a model that quantifies the marginal effects of wealth (as proxied by consumption quintiles), parents' education, place of residence, and the gender of the individual. We restrict the analysis to young people between the ages of 12 and 25, who are above the age by which primary education should be completed; and we also include terms to capture gender specific differences in the role of household wealth and place of residence in determining primary school

FIGURE 71: Reasons for Dropping Out of School: Female Ages 7–25
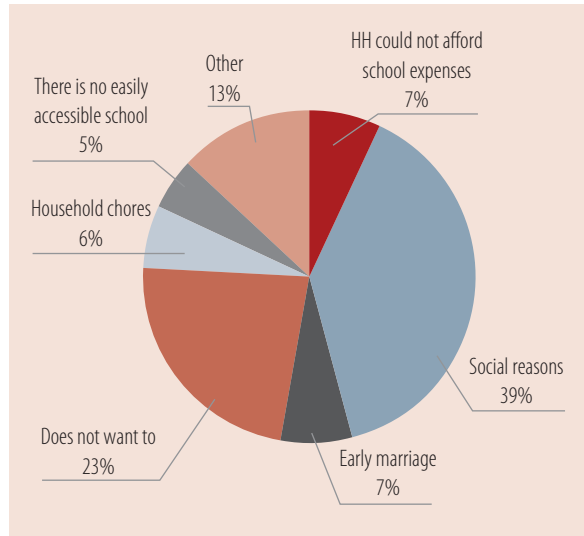
Source: Authors' calculations, IHSES 2012.

completion (Annex Table 3.2). Parental education is strongly correlated with primary school completion. An individual whose mother has completed intermediate or secondary school is 20 percent more likely to complete primary school by the age of 12 relative to one whose mother has primary or lower education. Children from wealthier households are also more likely to complete primary school on time:

FIGURE 72: Reasons for Dropping Out of School: Female Above the Age of 25
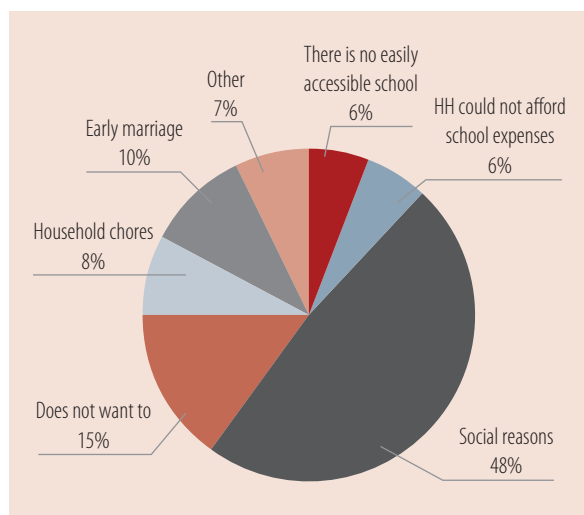
for instance, children belonging to households in the top consumption quintile are 14 percent more likely relative to those belonging to the bottom consumption quintile. Place of residence also matters: Living in an urban area increases the odds of on-time primary school completion by 8.5 percent; while living in any division lowers the odds relative to living in Kurdistan. Girls are 14 percent less likely to achieve this outcome relative to boys, except girls in the top quintile and those who live in Baghdad.

Thus, while poverty is higher among less educated households, poorer households are also less likely to have completed the median level of education. Self-reported reasons for dropping out and non-attendance are also consistent with this finding. Over and above the affordability of education expenses, certain geographic areas—urban Iraq and Kurdistan—are more favorable towards primary school completion, either because of relatively better accessibility or better quality schooling. After controlling for household wealth, parents' education, and location, girls are still less likely to complete primary school than boys, unless they belong to the wealthiest households or live in Baghdad.

Widespread Access to Basic Services, but Little Improvement in Quality

Basic health and education services appear to be easily accessible for the households and reachable within minutes in every division of Iraq (Figure 73). The average Iraqi household takes 23 minutes to reach a public hospital (using the usual means of transport available to them). Public hospitals are closer on average in Kurdistan (19 minutes away) than in the North (29 minutes away). In terms of education services, both elementary and high schools are within easy reach everywhere, particularly in Kurdistan, where elementary and high schools are reachable within 6 and 10 minutes respectively. These distances are more pronounced in rural than in urban areas, but rural areas do not appear to be completely isolated from health and education services.