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The cost of child marriage over the life cycle of girls and women

Evidence from Egypt, Iraq, Jordan and Tunisia

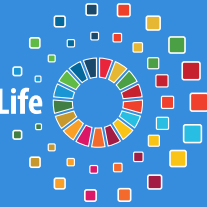


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Economic and Social Commission for Western Asia

The cost of child marriage over the life cycle of girls and women

Evidence from Egypt, Iraq, Jordan and Tunisia



United Nations
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Key messages

- ▶ Child marriage affects women in all aspects of life with costs that carry from one stage of life to the next. This not only has detrimental health consequences for women and their children but also results in lost earnings and poverty traps that translate into exorbitant costs for communities and society.

- ▶ Among the four countries featured in this study, Iraq and Egypt have the highest rates of child marriage, with 24 and 17 per cent of women between the ages of 20 and 24 marrying before age 18, respectively. Besides, a significant portion of women aged 18–49 in Iraq and Egypt were married before the age of 18, with prevalence rates of 33.8 per cent in Iraq and 20.5 per cent in Egypt.

- ▶ The minimum age for marriage in several Arab countries is not adequately enforced, while legal loopholes permit marriage before the age of 18 (especially for girls) with parental consent and/or judicial approval, rendering the legislation inadequate.

- ▶ Child marriage results in consistently high costs through its effects on fertility, including the average number of live births and use of modern contraception; education; labour force participation and earnings; and the health of the children born to these young mothers.

- ▶ In addition to women having a greater number of children, child marriage is also associated with adverse reproductive outcomes, for example, unhealthful birth spacing, unwanted pregnancies, abortion, stillbirth, miscarriage, underweight, and stunting. Girls who marry before the age of 18 lack access to modern contraception until they have their first child and do not usually have a say in how many children to have. Under-five child mortality is almost twice as high among children born to women married before the age of 18 compared to those born to women married after age 18.

- ▶ Child marriage is found to have a statistically significant negative impact on primary and secondary school completion in Iraq, Egypt and Jordan. For example, in Iraq, women aged 20–34 or 35–49 who married before age 18 are about 20 percentage points less likely to complete secondary school than those who married at 18 years old or older. Egyptian women aged 20–34 or 35–49 who married at or before age 18 are about 18 and 19 percentage points less likely to have completed primary school than those married at 18 or older, respectively.

- ▶ While low female labour force participation is a concern for most Arab countries, child marriage has a significant adverse impact on women aged 20–49 in Egypt, Jordan and Tunisia. Our findings also suggest that women who married as children engage in low-paying occupations and have lower predicted real wages overall.

Executive summary

Child marriage is a human rights violation and a development concern that hinders States from achieving the 2030 Agenda for Sustainable Development and the Sustainable Development Goals.¹ This harmful traditional practice contravenes several human rights frameworks that seek to advance the rights of women and girls, such as the Convention on the Elimination of All Forms of Discrimination against Women (1979) and the Convention on the Rights of the Child (1989).

Worldwide, the practice of child marriage has decreased in recent decades, including in the Arab region, but progress remains significantly slow.² Multiple complex and intersecting factors lead to the practice and prevalence of child marriage, including discriminatory sociocultural norms and practices, poverty, rurality, and a lack of access to education, as well as external factors such as conflict, displacement, disease or natural disasters; discriminatory or non-existent legal and policy frameworks further compound the issue. These factors, individually and in concert, contribute to an environment where child marriage is either tolerated or encouraged.

Over the last decade, research has documented some of the drivers that contribute to child marriage and its

consequences. These studies confirm that child marriage affects all aspects of a woman's life. By better understanding how women and girls are affected at critical stages of life, the immense costs of child marriage become more recognizable at the individual level, in all aspects of life for these women and girls, their families, their communities, and society at large.

This study carried out a costing exercise among select countries in the Arab region using the life-cycle skill formation model, which shows the skill formation process from conception to old age and how human capabilities are developed across the lifetime. The study focuses on four Arab countries – Egypt, Iraq, Jordan, and Tunisia – using a variety of household and labour market panel surveys.

This costing exercise is novel in several ways. First, it is the first comprehensive costing of child marriage in several Arab countries. Second, it presents quantitative evidence on the costs of child marriage in terms of human development at different stages of women's lives. And, finally, it places the costs of child marriage on human development at the forefront and provides a roadmap for an economic costing of child marriage.

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Abbreviations and acronyms

AME	average marginal effect
ASFR	age-specific fertility rate
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CRC	Convention on the Rights of the Child
DHS	Demographic and Health Survey
ELMPS	Egypt Labor Market Panel Survey
ESCWA	United Nations Economic and Social Commission for Western Asia
HIV	human immunodeficiency virus
ICRW	International Center for Research on Women
ILO	International Labour Organization
JLMPS	Jordan Labor Market Panel Survey
LMPS	Labor Market Panel Survey
MICS	Multiple Indicator Cluster Survey
NGO	non-governmental organization
OLS	ordinary least squares
SDG	Sustainable Development Goal
TFR	total fertility rate
TLMPS	Tunisia Labor Market Panel Survey
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
WHO	World Health Organization

Glossary

Average marginal effects (AMEs): The AME of a variable is the average of predicted changes in fitted values for one-unit change in X for each X value, meaning, for each group. Put simply, AME is the average change in probability when X increases by one unit and gives an effect on the probability, namely, a number between 0 and 1. AMEs are a way of presenting results as differences in probabilities, which is more informative than odds ratios and relative risks.

Child marriage: The marriage or union between two people in which one or both parties are younger than 18 years of age.

Cohort: A cohort is defined as a group of people sharing a common temporal demographic experience or characteristic who are observed over time. It is frequently applied as a method of defining a population for the purposes of research (for instance, birth cohorts or educational cohorts).

Demographic transition: The historical shift in birth and death rates from high to low levels in a population. The mortality decline usually precedes the fertility decline, resulting in rapid population growth during the transition period.

Demography: The scientific study of human populations, including their sizes, compositions, distributions, densities, growth, and other characteristics, as well as the causes and consequences of changes in these factors.

Endogeneity: Endogeneity occurs when a variable, observed or unobserved, that is not included in our models, is related to a variable we incorporated in our model. Endogeneity prevents us from making causal claims and, therefore, is a fundamental concern of social scientists.

Family planning: The conscious effort of couples to regulate the number and spacing of births through artificial and natural methods of contraception. Family planning connotes conception control to avoid pregnancy and abortion, but it also includes efforts of couples to induce pregnancy.

Fixed effects: Fixed-effects estimation uses only data on individuals having multiple observations and estimates effects only for those variables that change across these observations. It assumes that the effects of unchanging, unmeasured variables can be captured by time-invariant, individual-specific dummy variables.

Forced marriage: Any type of marriage that takes place without the free or valid consent of one or both partners and involves either physical or emotional duress. All child marriages are considered forced marriages.

Heckman two-step selection: This method provides a means of correcting for non-randomly selected samples. It is a two-stage estimation method. The first stage performs a probit analysis on a selection equation. The second stage analyses an outcome equation based on the first-stage binary probit model.

Incidence of child marriage: Refers to the rate of new cases of child marriage in a specific population over a particular period of time.

Logistic regression: Models a relationship between predictor variables and a categorical response variable. Logistic regression helps us estimate the probability of falling into a certain level of the categorical response given a set of predictors. In this study, we use the binary logistic regression, which is employed when the response is binary (meaning that it has two possible outcomes).

Marital fertility rate: The number of live births to married women per 1,000 married women between the ages of 15 and 49 in a given year.

Marriage rate (or crude marriage rate): The number of marriages per 1,000 in the population in a given year.

Nuptiality: The frequency, characteristics and dissolution of marriages in a population.

Ordinary least squares (OLS) regression: The most common method for fitting a regression line is the method of least squares. This method calculates the best-fitting line for the observed data by minimizing the sum of the squares of the vertical deviations from each data point to the line. (If a point lies on the fitted line exactly, then its vertical deviation is 0.) Because the deviations are first squared, then summed, there are no cancellations between positive and negative values.

Poisson regression: Poisson regression is also a special case of the generalized linear model, where the random component is specified by the Poisson distribution. This usually works well when the response variable is a count of some occurrence, such as the number of births in a given time interval. Unlike the binomial distribution, which counts the number of successes in a given number of trials, a Poisson count is not bounded above.

Prevalence of child marriage: Prevalence differs from incidence proportion, as prevalence includes all cases (new and pre-existing cases of child marriage) in the population at the specified time whereas incidence is limited to new cases only.

Probit regression: Also called a probit model, it is used to model dichotomous or binary outcome variables. In the probit model, the inverse standard normal distribution of the

probability is modelled as a linear combination of the predictors.

Returns to education: The private rate of returns to education is the increase in the earnings from an additional year of education for an individual who makes the investment decision on education, while the social rate of returns to education measures the increase in national income resulting from the same year of education.³

Secular decline: An observed decline in a variable that exists over a relatively long period of time and is not cyclical or seasonal.

Secular trend: A phenomenon that is not cyclical or seasonal and exists over a relatively long period of time.

Self-selection: An individual self-selects when the inclusion or exclusion in a group is determined by whether the individuals themselves agree or decline to participate in the group, either explicitly or implicitly.

Strata: Refers to a subset (part) of the population (entire collection of items under consideration) which is being sampled. Stratification thus consists of dividing the population into strata within each of which an independent sample can be chosen.

Stratified sampling: Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata.

Total fertility rate (TFR): The average number of children that would be born alive to a woman (or group of women) during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates (ASFRs) of a given year.

Introduction

Every year, approximately 15 million girls are married as children globally, of all cultures, religions and ethnicities.⁴ Child marriage is rooted in gender inequalities manifested in discriminatory laws and practices against girls and women. This harmful practice denies girls their human right to education, to choose their spouse and to live a life free from violence. It significantly diminishes their opportunities later in life to participate in political and public life and the economy, further subjecting them to lifelong poverty. This practice undermines numerous development priorities, hindering human progress towards a more equal, healthy and prosperous world.⁵ Child marriage is further exacerbated by poverty, insecurity and conflict.

Child marriage is rooted in gender inequalities manifested in discriminatory laws and practices against girls and women

In 2017, the International Center for Research on Women (ICRW) and the World Bank developed an analytical framework to measure the economic costs of child marriage.⁶ This framework classifies five domains of the impact of child marriage on lifetime outcomes. The five domains are fertility and population growth; health, nutrition and violence; educational attainment and learning; labour force participation and earnings; and decision-making and investments. This framework uses some of these impact areas to estimate aggregate or accumulated impacts and costs of child marriage.

The estimates are based on recent data from 15 countries representing all regions of the world; the only Arab State included in this research was Egypt, utilizing data from the Demographic and Health Survey (DHS) of 2014. Apart from the ICRW-World Bank cost estimate of child marriage, there is no comprehensive costing of the economic

impact of child marriage solely focused on the Arab region.

A costing approach helps researchers and policymakers understand the far-reaching economic impact of child marriage. Such an exercise can assist Governments in determining the financial resources required to address this issue comprehensively. Therefore, costing can serve as a tool to close the accountability gap between policy and practice. In this sense, it can support reform efforts to adopt and implement laws to prevent and respond to child marriage and ensure that women and girls have access to appropriate services related to health, education and livelihoods, among others.

While the costs of child marriage are often borne by women and girls who marry early, this harmful practice is likely to have far-reaching costs at the national and global levels. Child marriage not only has detrimental health consequences for girls and women, but it also results in lost earnings and poverty traps that translate into high costs for communities and society.

This report focuses on estimating the various impacts of child marriage over the life cycle of women and girls in four Arab countries with differences in the prevalence of child marriage using a life-cycle skill formation framework, similar to the dimensions applied in the ICRW-World Bank study.⁷

The analysis and findings of this study are organized around six key stages of the life cycle of females to better understand how child marriage imposes costs that carry from one stage of life to the next, subsequently causing lifelong deprivation with potentially adverse intergenerational effects.

The six dimensions are as follows:

- ▶ Fertility and modern contraceptive use
- ▶ Health (including under-five mortality and under-five stunted growth)
- ▶ Decision-making (household and marital decision-making)
- ▶ Spousal violence (both sexual and physical)
- ▶ Educational attainment (completion of primary and secondary education)
- ▶ Labour market outcomes (labour force participation and wages)

The report is divided into eight sections. The first section introduces the study, while the second section provides details on the data sources and methodological approach adopted. The third section offers an overview of child marriage in the Arab region. The fourth section describes the drivers of child marriage, and the fifth section informs on the legal frameworks on child marriage for the countries under consideration. The sixth section focuses on the analytical framework and the effects of child marriage over the life cycle. The seventh section presents the results by life-cycle outcomes, and the final section offers concluding observations.

1. Methodology

This study uses the life-cycle skill formation model, which shows the skill formation process from conception to old age, to demonstrate how human capabilities are developed over a lifetime. It provides a conceptual framework to understand how child marriage can affect women across their lifetimes. It also points out critical life outcomes that are particularly sensitive to the implications of child marriage, such as secondary school completion, health, labour market outcomes, and others. Moreover, the model shows how deprivation can be carried from generation to generation.

The cost estimates have been carried out for four countries in the Arab region, namely, Egypt, Iraq, Jordan, and Tunisia. The choice of countries was determined by the availability of recent household surveys, including the Demographic and Health Survey (DHS), Multiple Indicator Cluster Survey (MICS) and Labour Market Panel Survey (LMPS).⁸ Among these countries, Iraq has the highest prevalence of child marriage, followed by Egypt. Jordan and Tunisia have moderate to low prevalence of child marriage, respectively. Overall, these countries represent diverse settings in the region and serve as interesting case studies to explore the different drivers of child marriage and their effects across all stages of life for women and girls in these contexts.

The study relied on the following secondary sources of data/surveys for each of the countries:

Egypt

- Demographic and Health Survey (DHS), 2014.
- Egypt Labour Market Panel Survey (ELMPS), 2018.

Iraq

- Multiple Indicator Cluster Survey (MICS), 2018.

Jordan

- Demographic and Health Survey (DHS), 2017–2018.
- Jordan Labour Market Panel Survey (JLMPS), 2016.

Tunisia

- Multiple Indicator Cluster Survey (MICS), 2018.
- Tunisia Labour Market Panel Survey (TLMPS), 2014.

Analyses of the labour market were not possible for Iraq, as no recent labour force

surveys exist. In Jordan, information related to Syrian refugees and other refugees and migrants was excluded from the analysis, as they may have a very different prevalence of child marriage in their communities. However, the DHS, as well as the JLMPS, are representative of these populations.

The methodology used for this study applies regression analyses to estimate the statistical association of child marriage across several outcomes over the life cycle of women and girls. Our estimates control for other variables that may affect the outcomes of interest. Although this exercise cannot establish causality, it helps to determine associations between child marriage and several life-cycle outcomes. These associations unequivocally show the systematic hardships that married girls experience throughout their lifetimes. The regression estimates presented in the report apply predictive margins, as they allow for a powerful visual representation of the effects of child marriage.

The analysis presented in this report has several limitations, which are as follows:

- Estimations are carried out using cross-sectional data, which does not make it possible to follow the same women throughout their lifetimes. A cohort analysis is applied to provide evidence of how the outcomes of one stage affect subsequent stages of life, but this evidence is only suggestive.
- This exercise uses rigorous econometric techniques; however, understanding causal impacts is challenging. Endogeneity issues are addressed by controlling for fixed effects and other essential controls derived from the literature in the regression estimates. However, the effects are only suggestive of causation.
- Regression analysis was used to isolate, to the extent possible, the effects of child marriage. These regressions show associations between child marriage and outcomes over different stages of life. However, causation is not addressed in the estimations; all estimates should be interpreted as correlations.

2.

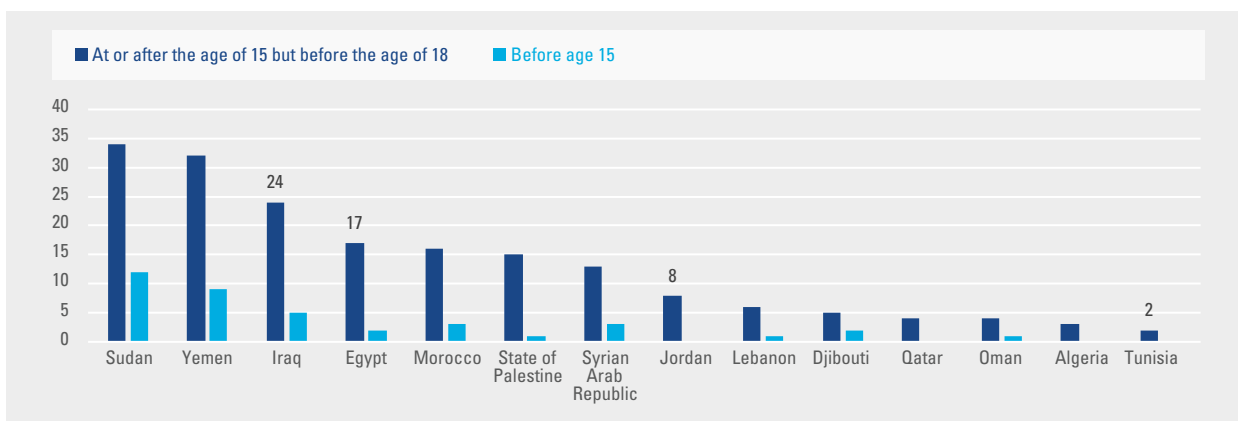
An overview of child marriage in Egypt, Iraq, Jordan and Tunisia

Child marriage has been a common practice in many locations in the Arab region. However, the average age at marriage has been steadily increasing for both men and women over recent decades, like in other parts of the world.⁹ According to the United Nations Children’s Fund (UNICEF), between 1985 and 2018, the prevalence of child marriage in the Arab region decreased from 34 per cent to 13 per cent.¹⁰

Before 2010, the highest rates of child marriage were found in the most impoverished Arab States (such as Mauritania, Somalia,

the Sudan and Yemen). The primary factors for child marriage are the persistence of patriarchal attitudes that sustain and perpetuate gender inequality and discriminatory gender norms. Most Arab countries have raised the minimum age for marriage to 18 years old. However, these laws still allow judges to marry boys and girls under 18 in certain circumstances. The margin for discretion and weak enforcement make these laws ineffective. Some countries in the region still legally allow for marriages between persons under the age of 18.

Figure 1. Child marriage prevalence in Arab countries for women aged 20–24 (Percentage)



Source: UNICEF, 2019, using the latest available DHS or MICS data.

Figure 2. Women aged 20–24 who were first married or in union before the age of 18 (Percentage)



Source: Based on Iraq (MICS, 2018); Egypt (LMPS, 2018); Jordan (LMPS, 2016); and Tunisia (LMPS, 2014).

Among the four countries featured in this study, Iraq and Egypt have the highest rates of child marriage, with 24 and 17 per cent of women aged 20–24 marrying before the age of 18, respectively. Jordan and Tunisia have lower rates of child marriage, set at 10 and 2 per cent of women in similar age brackets marrying before the age of 18, respectively.¹¹

Women and girls in conflict-afflicted countries in the Arab region, such as Iraq, face growing adversities. Younger girls are increasingly disadvantaged due to exposure to violence in their communities and heightened perceptions of insecurity.¹² In some humanitarian and displacement contexts, the prevalence of child marriage is increasing, for instance, among Syrian refugees in Iraq, Lebanon and Jordan.

A recent report by the United Nations Economic and Social Commission for Western Asia (ESCWA) reveals that exposure

to conflict affects subnational patterns in child marriage and fertility in detrimental ways.¹³ In Iraq, exposure to the conflict appears to be positively correlated with both child marriage and an increase in adolescent fertility. In Yemen, where child marriage is prevalent, it seems that higher levels of violence are disrupting the previously observed downward trend in the occurrence of child marriage.

The primary factors for child marriage are the persistence of patriarchal attitudes that sustain and perpetuate gender inequality and discriminatory gender norms

Through examining the available data, the present report attempts to add another dimension to better understand the link between conflict, marriage patterns and fertility behaviours for young women. It also examines the role of public policies in mitigating such practices in conflict-afflicted countries. Likewise, the results add to the understanding that child marriage can generate exclusionary social dynamics in humanitarian and displacement settings, leading to self-perpetuating poverty traps and the long-term disempowerment of women and girls.

3.

Drivers of child marriage in the Arab region

The drivers of child marriage are complex, varied, interrelated, and context-specific and exist at the micro and macro levels. They include discriminatory sociocultural norms and practices, poverty and economic factors, and a fear of girls' sexuality and a perceived tarnishing of so-called "family honour".¹⁴ Some external factors may exacerbate this such as conflict, displacement, disease, or natural disasters. All these drivers affect women's lives at the individual, household and community levels.

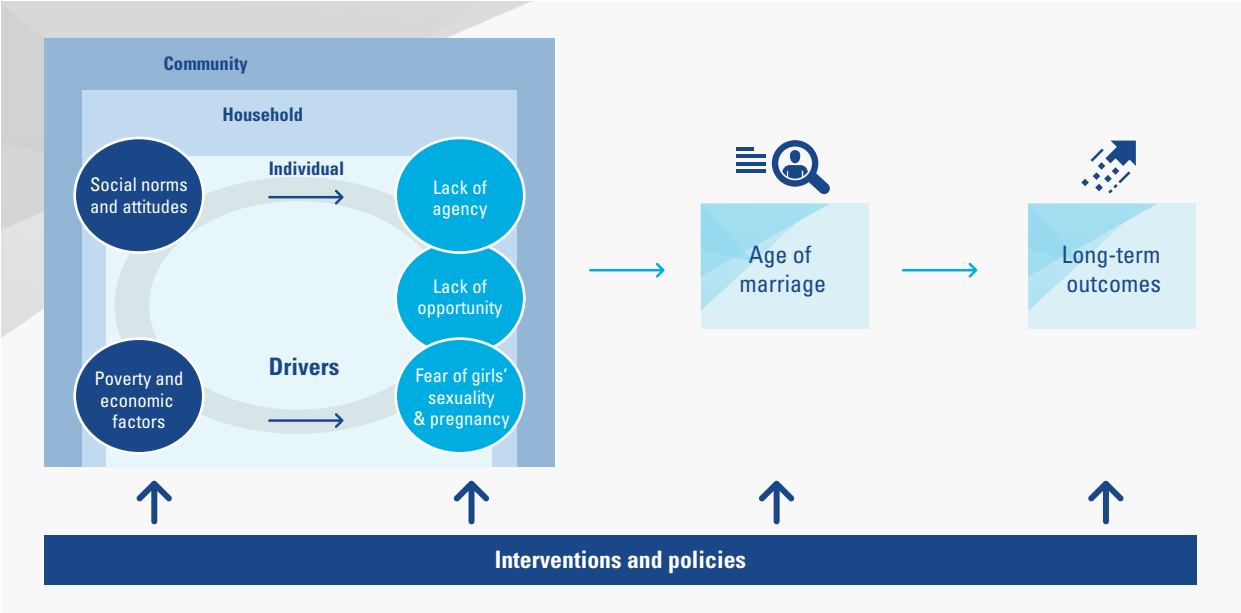
The intersection of these drivers cannot be understated, as they simultaneously contribute to and enable child marriage, perpetuating a cycle of poverty and discrimination against women and girls.¹⁵ Psaki and others recently developed a conceptual framework describing the critical drivers of child marriage for girls and how these drivers interact with one another.¹⁶

In the Arab region, sociocultural norms play a significant factor in allowing child marriage to persist

In the Arab region, sociocultural norms play a significant factor in allowing child marriage to persist. Research by UNICEF and ICRW found that "child marriage serves multiple social and cultural functions which together reinforce gendered social roles: that of maintaining kinship and securing inheritance/economic stability; marking a transition to adulthood; providing financial security; protection from (sexual) violence; and promoting social cohesion in the community; amongst others".¹⁷

More recently, the humanitarian context in the region has contributed to an increase in child marriage, especially in countries experiencing protracted conflict and displacement and among refugee communities in host countries.¹⁸ For many families, this practice is perceived to protect girls from insecurities during displacement, as witnessed during the last decade among Syrian populations in Lebanon, Jordan and Egypt.¹⁹

Figure 3. Conceptual framework showing the hypothesized drivers of child marriage



Source: Psaki and others, 2021.

4.

Legal frameworks on child marriage in Egypt, Iraq, Jordan and Tunisia

Most Arab countries have ratified international human rights treaties and covenants prohibiting child marriage.²⁰ Egypt, Iraq, Jordan and Tunisia are parties to the International Covenant on Civil and Political Rights (1967) and the International Covenant on Economic, Social and Cultural Rights (1967), but only Tunisia and Jordan only parties to the Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages (1962). Egypt, Iraq, Jordan, and Tunisia have acceded to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1979); however, Egypt, Iraq and Jordan hold reservations on article 16 on equality in marriage and family life.²¹ Under article 16 (2), CEDAW provides that States shall set a minimum age for marriage and that the marriage of a child will have no legal effect. All member States in the Arab region have ratified the Convention on the Rights of the Child (CRC), (1989), which sets a minimum age for marriage at 18 years old.

Given that the four countries under review are signatories to the most prominent human rights treaties and engaged in relevant reporting frameworks, it is no surprise that each country has ensured 18 years old as the minimum age for marriage. However, legislation is often not appropriately enforced, and several

legal loopholes remain. For example, in Egypt, Child Law No. 126 (2008) outlaws child marriage by setting the minimum age for marriage at 18 years old; yet, under exceptional circumstances and with the authorization of a judge and legal guardian, marriage may be allowed below that age. Furthermore, the law does not formally penalize the adult perpetrator for participating in the marriage, although such marriages are criminalized under article 227 of the Penal Code, article 31 bis of Act No. 143 (1994) on civil status, as amended by Act No. 126 (2008), and Minister of Justice Decision No. 6927 (2008).²²

In Iraq, article 7.1 of the Personal Status Act No. 188 (1959, amended) lists the age of majority as 18 years old, both for men and women but, like the other countries, also allows a judge, under articles 8.1 and 8.2, to permit persons as young as 15 years old to be married if the guardian approves or if it is “absolutely necessary”.²³ However, marriage cannot be forced upon anyone without their consent under threat of fine or imprisonment (article 9). In Kurdistan, the minimum age for marriage can be lowered to 16 years old with the guardian’s consent and judicial permission, despite the Domestic Violence Act (Kurdistan Region) No. 8 of 2011 classifying child marriage as a crime (article 2, paragraph 3).

In Jordan, where article 10 (b) of the Personal Status Law No. 36 (2010) stipulates that the legal age for marriage is 18 years old, a judge may still allow the marriage of minors who are 15 years old or older if there is a “general interest” as defined by the *sharia* court, but not younger. Allowances are outlined in article 35 (3) of the Personal Status Law that states that, if at the time of marriage the female is pregnant, has given birth or the two parties had already met the eligibility conditions, the court will not hear a case to declare the marriage void because the spouses are not of legal age. This is despite article 31 (7) of the same law, which explains that a marriage will be voided in case both or one of the spouses was not eligible to marry at the

The primary factors for child marriage are the persistence of patriarchal attitudes that sustain and perpetuate gender inequality and discriminatory gender norms

time of the contract, as outlined in article 10. In Jordan, the Law on Protection from Domestic Violence of 2017 does not address child marriage.

In Tunisia, the Personal Status Code was revised in 2007 and set the legal age for marriage for each spouse at 18 years old; however, in exceptional cases, marriage can occur under that age of majority after obtaining special permission from the court (articles 5 and 6). Forced marriages are prohibited under article 21 of the Personal Status Code, though there is no prescribed penalty. Law

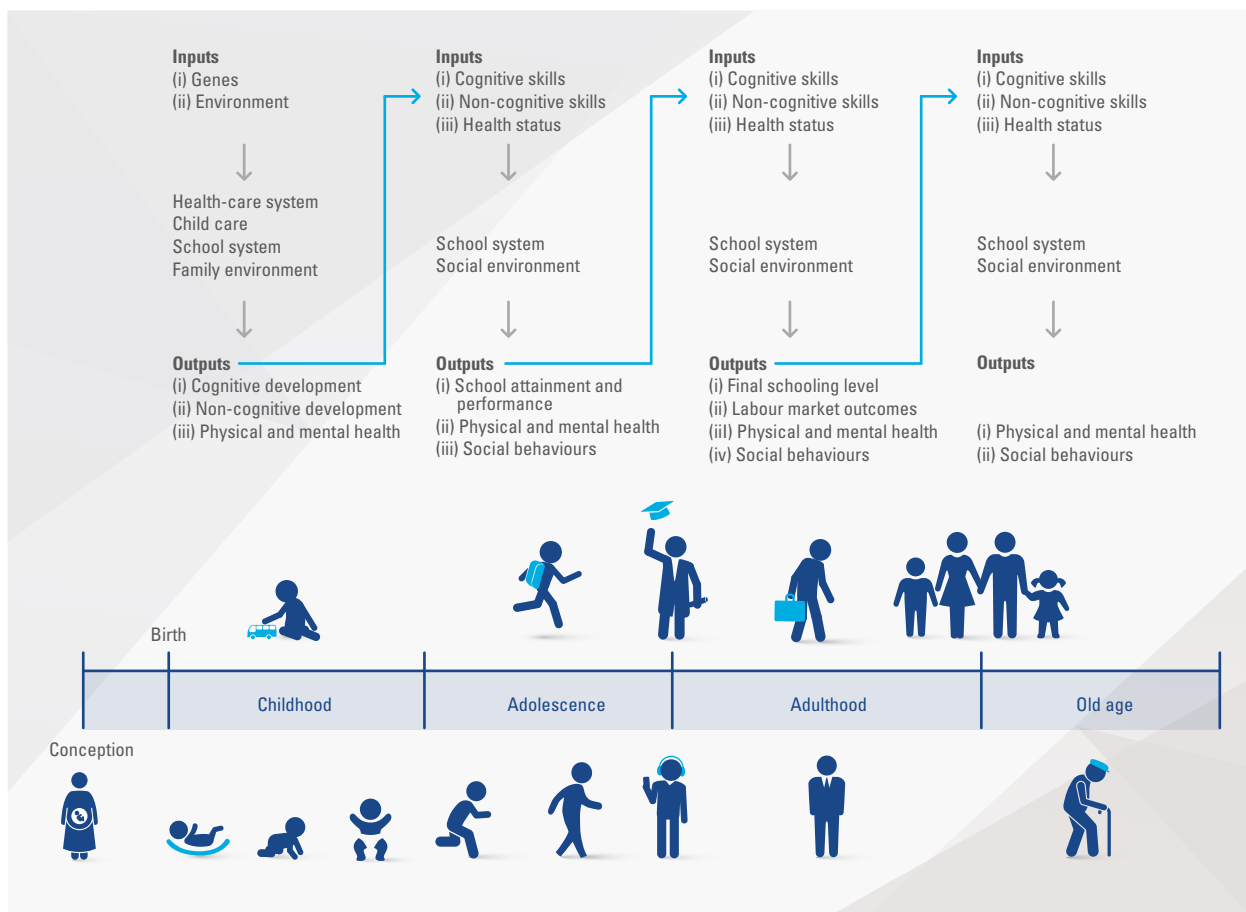
No. 58 of 2017 on the elimination of violence against women has outlawed the marriage of girls aged 13–18.²⁴

5.

Analytical framework: The effects of child marriage over the life cycle

This study utilizes the skill formation model, developed by Cunha and Heckman, to explore how child marriage impacts human development throughout a woman's life.²⁵

Figure 4. Skill formation over different stages of life



Source: ESCWA (2020), based on Urzúa (2016).

Skill formation is a multi-stage process; each stage corresponds to a period in a person's life cycle, from conception to death. Skills are multiple and encompass cognition, personality and health. Skills are also capacities to act; they shape expectations, constraints and information.²⁶ The acquisition of more skills increases a person's potential over their lifetime.

At each stage of life, inputs are combined with investments to produce a set of outputs. The output is the level of skill achieved during that stage. An essential feature of the skill formation model is that the skills produced at one stage become the inputs for subsequent stages of life. This is referred to as "self-productivity". Consequently, skills acquired in one period will determine the type of skills acquired in future periods. Skill formation begins in the womb and continues throughout the life cycle. Girls and boys who are married as children are denied many necessary investments that should be carried out in childhood to advance their human potential and health in all subsequent stages of life.

Child marriage is associated with early childbearing and high fertility, which pose health risks for girls and their children. Early pregnancy and childbirth negatively affect girls'

Girls and boys who are married as children are denied many necessary investments that should be carried out in childhood to advance their human potential and health in all subsequent stages of life

Early pregnancy and childbirth negatively affect girls' physical and mental health and social well-being, educational attainment and income-earning potential

physical and mental health and social well-being, educational attainment and income-earning potential. Married girls are less likely to be informed about contraceptive methods and sexually transmitted diseases and are at greater risk of maternal mortality.²⁷ Moreover, child marriage and early pregnancy compromise intergenerational mobility by curtailing schooling opportunities for young girls and their children.²⁸

Girls who marry early also have limited opportunities for education and employment and are at increased risk of domestic violence, resulting in limited agency and decision-making power within the household. According to Kabeer,²⁹ a girl's or woman's capacity for choice can be conceptualized as depending on the following three dimensions: agency (the ability to define one's goals and act on them); resources (material, human or social); and achievements (these affect choice because they are foundations on which future agency is built). Child marriage hurts all three dimensions. The study looks at six different domains of impacts of this practice and showcases its negative impacts on a broad range of development outcomes for women, their children and society at large.³⁰

6.

Costing of child marriage over the life cycle

This study estimates the statistical association of child marriage on several outcomes over the life cycle of women and girls, as outlined in sections 1, 2 and 6. These outcomes include fertility, health, decision-making, domestic violence, educational attainment, and labour market outcomes, and the findings of these are presented in this section.

Estimates of potential impacts are obtained through a regression analysis³¹ that

followed the most pertinent theory and controlled for the most relevant variables (namely, independent variables that may affect the outcomes of interest) in each case by using a fixed-effects estimation and accounted for these fixed effects using a stratified sample.³² This section reflects on the most relevant findings and average marginal effects (AMEs)³³ from the regression analysis and discusses their inherent implications.³⁴

A. Fertility and modern contraceptive use

► 1. Impact of child marriage on fertility levels and average number of live births

Girls who marry early are often forced to transition directly from childhood to adulthood. Married girls have limited knowledge of sexual and reproductive health concerns. Available research suggests that while child marriage often results in women and girls having a greater number of children, it is also associated with many adverse reproductive outcomes such as unhealthy birth spacing, unwanted pregnancies, abortion, stillbirth,

miscarriage, underweight, and stunting.³⁵ Married girls lack the bargaining power to negotiate intimate relations with their husbands and have limited knowledge of and access to contraceptives, resulting in early pregnancies.³⁶ Because the reproductive span of married girls is longer, they are likely to have more children over their lifetime.³⁷ A study in sub-Saharan Africa notes that women who married before they were 18 years old

were eight times more likely to have more than three children compared to women who married at age 18 or later.³⁸ Similar results were found in India, where women married before the age of 18 had high fertility (more than three children), repeat childbirth in less than 24 months and pregnancy termination.³⁹ In the Arab region, child marriage often results in early childbirth, as females face pressure to prove their fertility upon marriage.⁴⁰

Using data from DHS and MICS, we estimated the effects of child marriage on the average number of live births and the use of modern contraception in Egypt, Iraq, Jordan, and Tunisia. The findings have been reported in tables 1, 2 and 3. Despite national legal frameworks and legislation in place addressing child marriage, many girls are still married before they are 18 years old. Table 1 reveals that a significant fraction of women aged 18–49 married before the minimum age for marriage in Iraq, Egypt and Jordan,

where the prevalence varies from 33.80 per cent in Iraq to 20.45 per cent in Egypt and 13.42 per cent in Jordan. Tunisia reports the lowest prevalence rate at 3.06 per cent; the prevalence of child marriage there has been low since the mid-1970s.

Child marriage is primarily related to poverty traps that almost guarantee the intergenerational transmission of poverty. While fertility rates across the Arab region have been declining since the 1980s, some countries experienced a rise in fertility beginning in the 2000s. However, several studies have identified this reversal in fertility trends across the region as rare.⁴¹ The main reason for this change has been identified as a return to the practice of early marriage and a stabilization of the levels of contraception during the first decade of the 21st century,⁴² which may be due to access to and utilization of contraceptives, as well as changing personal behaviours.

Table 1. Prevalence of child marriage by age cohort (Percentage)

Age groups	Egypt	Iraq	Jordan	Tunisia
15–19 years	9.31	19.88	6.93	0.25
20–24 years	15.62	42.26	9.97	1.30
25–29 years	16.34	43.90	11.59	1.90
30–34 years	20.42	32.18	12.64	2.22
35–49 years	26.90	30.49	17.40	4.66
All women aged 18–49	20.45	33.80	13.42	3.06

Sources: Egypt (DHS, 2014); Iraq (MICS, 2018); Jordan (DHS, 2017–2018); Tunisia (MICS, 2018).

Note: Age groups refer to those in the survey years.

Table 2. Age-specific and total fertility rates

Age-specific fertility rates	Egypt	Iraq	Jordan	Tunisia
15–19 years	56	70	27	4
20–24 years	213	170	109	49
25–29 years	200	194	156	86
30–34 years	134	147	137	67
35–39 years	69	99	88	34
40–44 years	17	43	27	10
45–49 years	4	5	2	0
Total fertility rate (15–49)	3.5	3.6	2.7	1.2

Sources: Egypt (DHS, 2014); Iraq (MICS, 2018); Jordan (DHS, 2017–2018); Tunisia (MICS, 2018).

Note: ASFRs are per 1,000 women; TFR is expressed per woman.

Age-specific fertility rates (ASFRs) and total fertility rate (TFR) are reported in table 2. While ASFRs are useful in understanding the age pattern of fertility, TFR is a helpful measure for examining the overall fertility level.⁴³ The highest TFR is observed in Iraq (3.6 births per woman),⁴⁴ followed by Egypt (3.5 births per woman),⁴⁵ and the lowest TFR is observed in Tunisia.⁴⁶ Looking at the ASFR differentials across the age groups, in all the countries included in this report, fertility is concentrated among women aged 20–34, and the highest rate is observed in the 25–29 years age group, except in Egypt (where fertility peaks in the

20–24 years age bracket, with 213 births per thousand).

Ample evidence points out that women who marry early tend to have children earlier and more children over time than those who marry after 18 years of age. Table 3 shows the difference in the number of live births by marriage status. In all four countries under consideration, for all age cohorts, we observe a large and statistically significant difference in ASFRs, where women who married before the age of 18, on average, tend to have more children over their lifetime than women who marry later (table 3).

Table 3. Average number of live births of women aged 15–49 by marriage age

Egypt	15–19 years	20–24 years	25–29 years	30–34 years	35–49 years
Sample as a whole	0.522	1.286	2.058	2.840	3.682
Married at 18 or later	0.205	1.001	1.775	2.488	3.282
Married before 18	0.669	1.998	3.018	3.796	4.709
Difference	0.460***	0.973***	1.191***	1.234***	1.427***
Iraq	15–19 years	20–24 years	25–29 years	30–34 years	35–49 years
Sample as a whole	0.975	2.177	3.302	4.316	5.833
Married at 18 or later	0.133	1.295	2.653	3.865	5.311
Married before 18	1.065	2.705	4.013	5.216	6.994
Difference	0.932***	1.410***	1.360***	1.351***	1.683***
Jordan	15–19 years	20–24 years	25–29 years	30–34 years	35–49 years
Sample as a whole	0.559	1.162	1.995	2.951	4.218
Married at 18 or later	0.101	0.805	1.741	2.73	3.944
Married before 18	0.698	2.096	3.264	4.154	5.333
Difference	0.597***	1.291***	1.523***	1.424***	1.389***
Tunisia	15–19 years	20–24 years	25–29 years	30–34 years	35–49 years
Sample as a whole	0.444	0.975	1.473	1.919	2.703
Married at 18 or later	0.200	0.906	1.419	1.901	2.638
Married before 18	0.750	1.600	2.607	2.462	3.797
Difference	0.550***	0.694***	1.188***	0.560***	1.159***

Sources: Egypt (DHS, 2014); Iraq (MICS, 2018); Jordan (DHS, 2017–2018); Tunisia (MICS, 2018).

Note: Estimates are weighted using survey weights. Robust standard errors are clustered at the subnational region level.

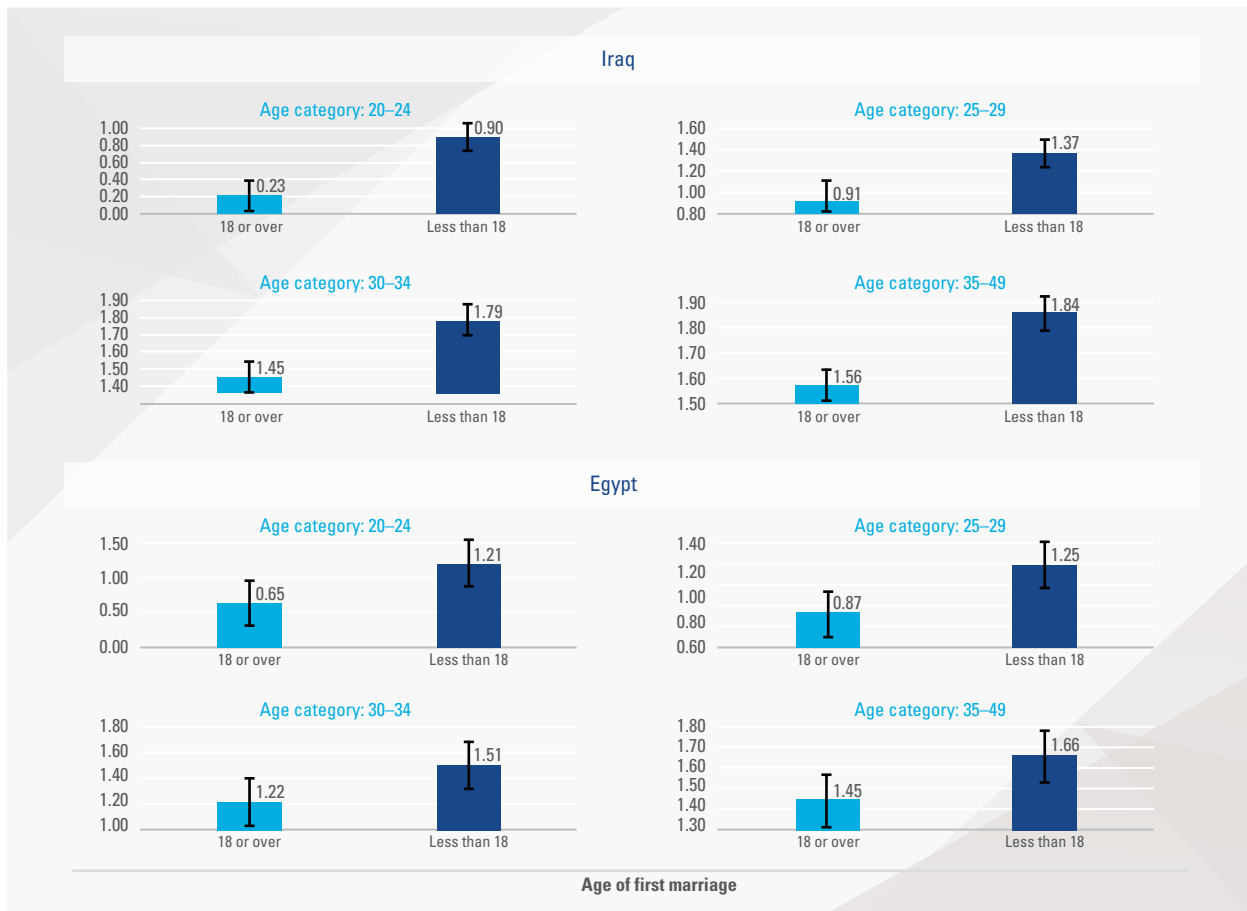
*** p<0.01, ** p<0.05, * p<0.1.

Additionally, we estimated Poisson regression to analyse the impact of child marriage on the average number of live births by age cohort for all four countries. The AMEs are reported for Iraq and Egypt in figure 5. The bars represent the AMEs of being married as a child, relative to marrying after age 18. The AMEs are a way of presenting results as differences in probabilities. The green bar represents women married at or after 18, and the pink bar represents women married as children.

All regressions controlled for basic socioeconomic indicators such as age,

education, religion, employment status, gender of the head of household, household wealth index, and household location (urban/rural). These margins show that, after controlling for observed characteristics, the average number of live births is more prominent for women who married before the age of 18 relative to their counterparts in all age cohorts. These differences are large and statistically significant. In other words, child marriage is statistically associated with a more significant average number of live births over women’s lifetimes in Iraq and Egypt. Similar results were observed for Jordan and Tunisia (not shown here).

Figure 5. AMEs – average number of live births over the lifetime by cohort (Married women aged 20–49)



Sources: Based on Iraq (MICS, 2018) and Egypt (DHS, 2014).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

▶ 2. Use of contraception by ever-married women

Contraceptive use is not common among women married before 18 years of age, as they may not know or have access to these methods. Often, childbirth is expected right after marriage, so girls who marry as children frequently lack access to modern contraception until they have their first child. Moreover, they often do not have a say in how many children to have. In this section, we estimate the use of contraception by women who married before the age of 18 relative to their older married counterparts in Egypt, Iraq, Jordan, and Tunisia.

Traditionally, the use of contraception and family planning services in Iraq has been low. During the Iran–Iraq war in the 1980s, the Government imposed a pronatalist approach to accelerate population growth by implementing significant restrictions on access to contraception.⁴⁷ In the decades that followed, the economic embargo also set limits on access to contraception and family planning services. Only in the post-2003 period has the Government actively supported family planning services.⁴⁸ In Egypt, the levels of use of modern contraceptive methods seem to have stabilized in the first decade of the twenty-first century.⁴⁹ In 1980, 23 per cent of currently

married Egyptian women aged 15–49 used modern contraception; the figure rose to 54 per cent by 2000 and reached 57 per cent in 2014.

Contraceptive use among women in Jordan has been increasing since the 1990s; however, the use is low among young women. Multiple factors beyond contraceptive use are at play, as cultural factors appear to advocate for larger family sizes.⁵⁰ Notably, the use of modern contraceptive methods has decreased in Jordan over the

past six years – from 42 per cent in 2012 to 37 per cent in 2017–2018. In Tunisia, evidence points to several persisting challenges concerning contraception. While the prevalence of child marriage is low in Tunisia, the utilization of any type of contraception is

lowest among the youngest age cohort of 15–19 years and the 20–24 years cohort.

Table 4 shows that, across all the countries under review, the utilization of any type of contraception is most significant in the older age cohort of 35–49 years and lowest by the youngest age cohort of 15–19 years (especially in Tunisia and Iraq). This may indicate that contraception increases as women attain their desired level of fertility.

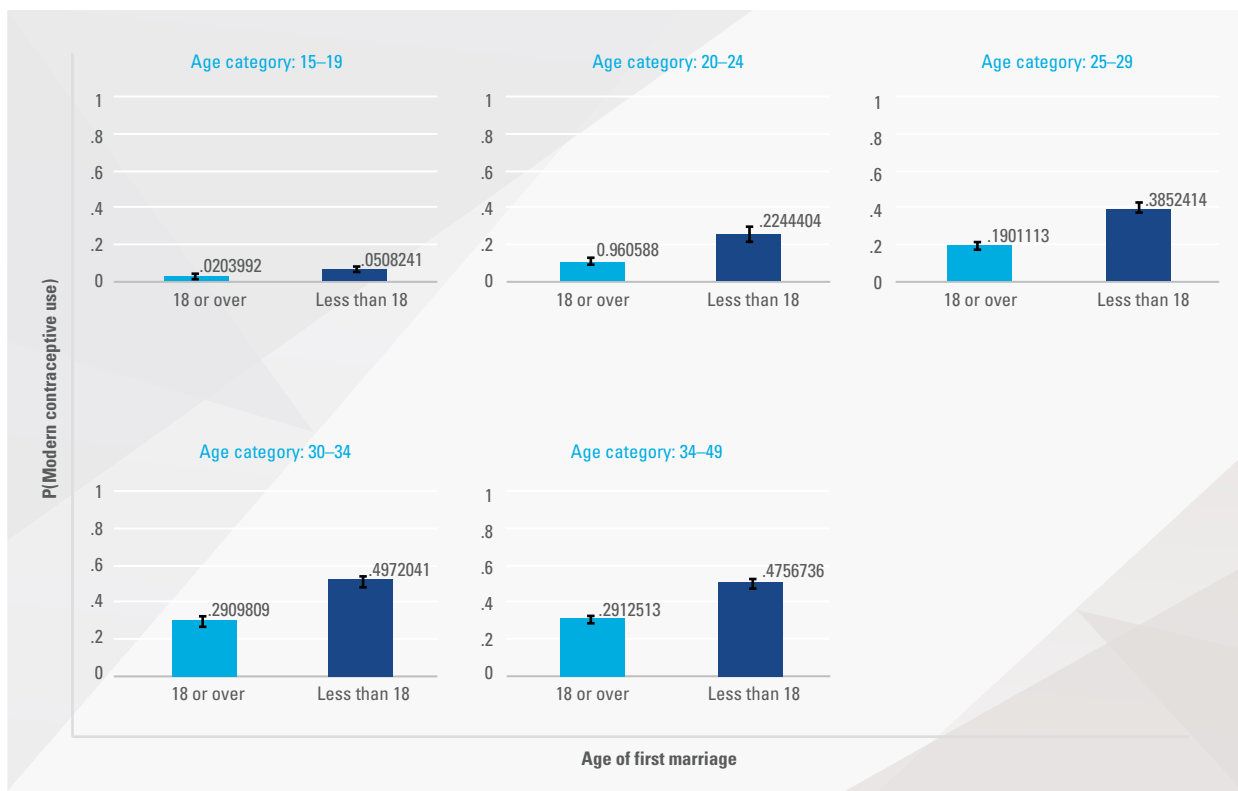
The utilization of any type of contraception is most significant by the older age cohort of 35–49 years

Table 4. Use of modern contraception by ever-married women

Age groups	Egypt	Iraq	Jordan	Tunisia
15–19 years	18.2	2.5	7.7	0.1
20–24 years	38.7	11.9	21.1	5.3
25–29 years	50.6	24.0	31.9	21.3
30–34 years	59.4	32.9	35.7	42.4
35–49 years	56.8	33.0	38.2	53.7

Sources: Egypt (DHS, 2014); Iraq (MICS, 2018); Jordan (DHS, 2017–2018); Tunisia (MICS, 2018).

Figure 6. AMEs – use of modern contraceptive methods in Iraq by cohort (Married women aged 15–49)



Source: Based on Iraq (MICS, 2018).

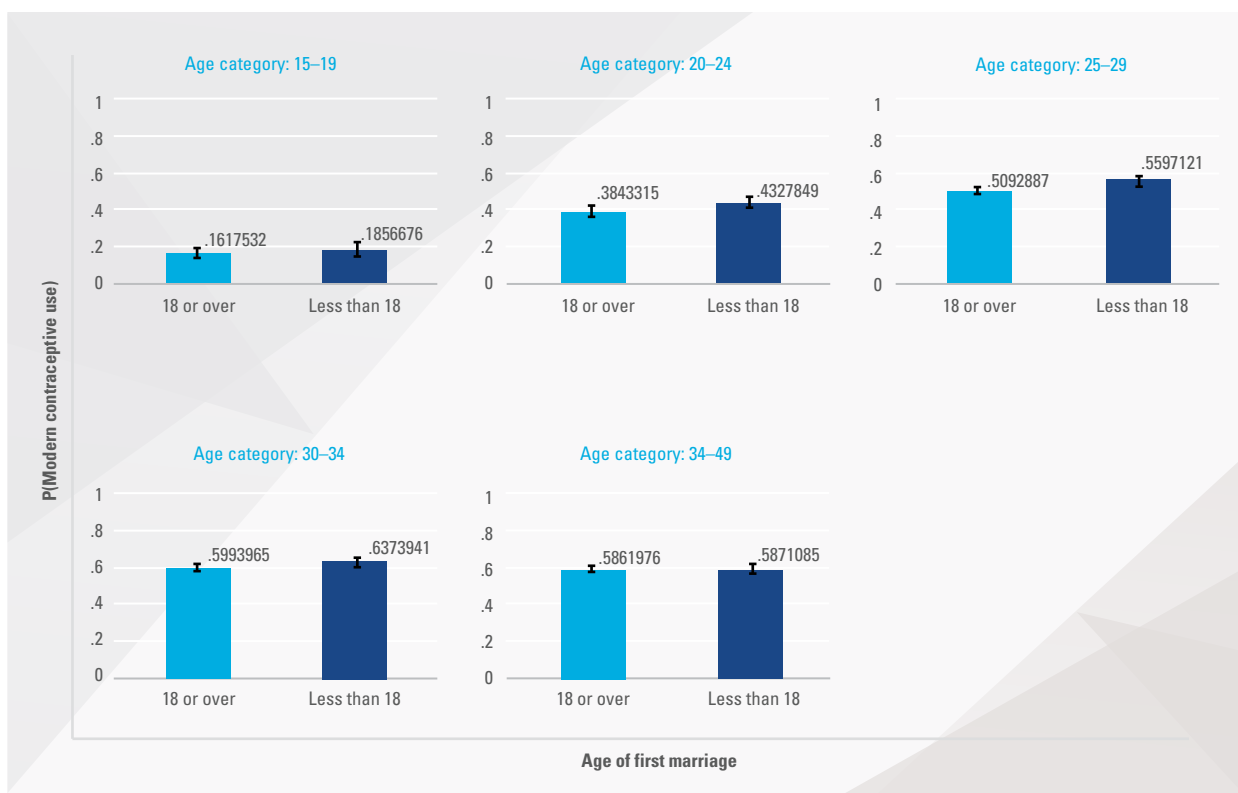
Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

We also estimated logistic regression (where the dependent variable is binary and takes the value of 1 if the woman is currently using a modern contraceptive method) to gauge the impact of child marriage on the use of modern contraception in Iraq, Egypt, Jordan, and Tunisia.⁵¹

Figure 6 reports the AMEs of logistic regression for Iraq, where the bars represent the contraceptive use by women who married before the age of 18 relative to women who married after the age of 18 by age cohort. Overall, we found that child marriage positively correlates to contraceptive use. In other words, child marriage’s impact on fertility in the long term may be seen as

positively associated. It could be explained by the fact that women (who married as children) have already achieved their desired fertility level, so their usage of modern contraception increases. Nonetheless, this requires further analysis. We also found similar results for Jordan and Tunisia (not shown here), whereas for Egypt, the impact was low for all age cohorts (figure 7). The greater use of modern contraception by older cohorts who married at an earlier age can be explained by the fact that they have reached their desired fertility sooner (which would be earlier if they had married earlier), and so now they utilize contraception more than the women who married later and wanted to bear more children.

Figure 7. AMEs – use of modern contraceptive methods in Egypt by cohort (Married women aged 15–49)



Source: Based on Egypt's (DHS, 2014).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

B. Health

Women who enter marriage as children are denied an appropriate childhood and adolescence, with negative repercussions over their life cycle and with potential intergenerational effects. They also often lack sexual and reproductive health knowledge, including proper child-rearing skills. While child marriage usually affects the most marginalized groups, most women who marry before they are 18 years old lack access to family planning and health-care services.

Child marriage not only affects women's sexual and reproductive health, but their mental well-being is also likely to be jeopardized. Often, those in child marriages do not have access to adequate health and contraceptive services owing to geographic location or constriction in movement. Additionally, girls who marry early often lack the status and knowledge to negotiate for safer intimate relations and/or contraception, increasing the risk

of exposure to human immunodeficiency virus (HIV) or other sexually transmitted infections and the probability of pregnancy at an early age.

Women who married before they are 18 years old are found to be given less medical care during pregnancies compared to those who marry later.⁵² Also, it is reported that, globally, complications during pregnancy and birth are the second leading cause of death among adolescent girls aged 15–17.⁵³ Moreover, the prevalence of mental health concerns is greater among women who married before the age of 18 compared to their adult counterparts. They experience higher levels of depression, anxiety and isolation and tend to self-harm and attempt suicide.⁵⁴ The mental and physical health status indicates

that these women are likely to live unhealthy lives, reducing their productive energies and affecting their life choices.

They are also reported to experience higher malnutrition rates, maternal mortality and morbidity and are more likely to be victims of intimate partner violence.⁵⁵ These unfavourable health conditions lead to higher out-of-pocket health expenditures for women, with lasting effects on their productivity. Additionally, intergenerational effects are observed in the children of adolescent mothers, who may have poor nutritional status (due to intra-household poverty or with the lower status of females within the household where they receive less food compared to their male counterparts) and experience higher rates of infant mortality.⁵⁶

▶ 1. Under-five mortality

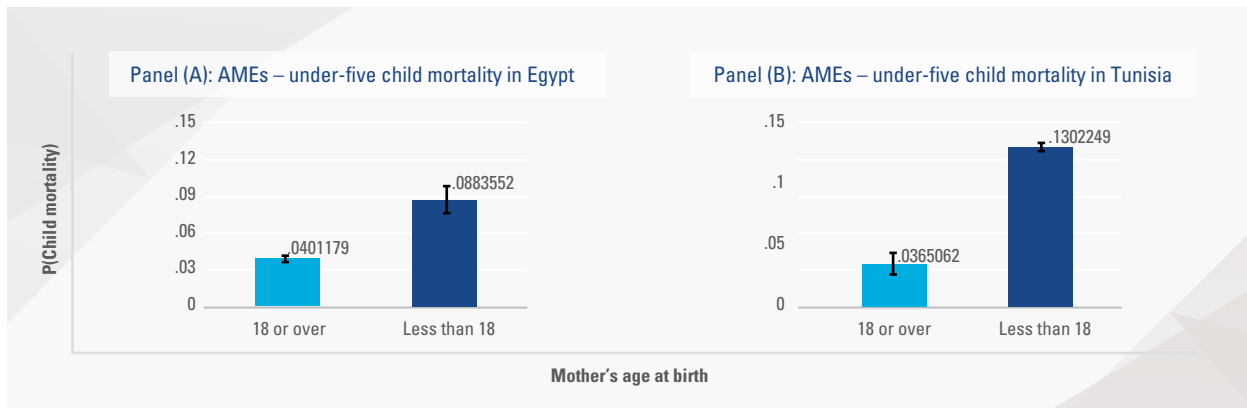
Children born to adolescent mothers often experience adverse child health outcomes. Infant and child mortality, as well as malnutrition, are likely prevalent among children of women who married before the age of 18. This may be because of overlapping vulnerabilities of young mothers, such as maternal malnutrition, low bargaining power with their husbands, poverty, and/or ignorance of nutritional practices given their low educational attainment. Besides, adolescent mothers have restricted mobility and access to health care. They have limited decision-making power regarding pregnancy and childbirth decisions.

We carried out estimates of the effects of child marriage on child mortality for the under-five in Egypt, Iraq, Jordan, and Tunisia, as well as estimates of the impact of child marriage on stunting for under-five children in Egypt and Iraq (in line with data availability). A logistic regression was estimated using baseline and extended models to evaluate the effect of the

mother's age on the probability of a child's death before age five. The under-five child mortality is measured through a dichotomous variable that takes the value of 1 if the child dies before age five and 0 otherwise. The baseline model has a bivariate regression of the mother's age on the probability of a child's death before age five, while an extended model adds on other control variables such as the child's gender, if the birth of the child was single or a twin, the child's birth order, if the preceding birth interval was less than two years, household size, access to improved water sources and sanitation facilities, and household wealth index.

Panel A of figure 8 shows the AMEs of marital age on under-five mortality in Egypt. When comparing these AMEs, we observe that child marriage is associated with a higher prevalence of under-five child mortality (effects are almost twice as significant for women who married before age 18) compared to children of mothers who married at or after age 18.

Figure 8. Under-five child mortality



Sources: Based on Egypt (DHS, 2014) and Tunisia (MICS, 2018).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

Under-five child mortality has been declining in Iraq in recent decades; even the escalation of violence since 2003 has not been found to have affected the secular decline in under-five child mortality rates.⁵⁷ Stunting also has been declining over the decades; however, in areas exposed to conflict, prevalence of under-five child mortality and under-five stunting remains high. In regions experiencing intense exposure to conflict, these deprivations may be associated with higher rates of child marriage.⁵⁸ We carried out regression estimates using the Iraq MICS 2018. However, the AMEs appear to be negligible for both groups (aged under 18 and aged 18 or above), indicating that the mother's age at marriage has no effect on the likelihood of under-five child mortality in Iraq (not shown here).

Similarly, for Jordan, where child mortality has been declining steadily since the 1990s, we found negligible AMEs, which indicates that

the prevalence of child mortality for women who married before age 18 is trivial.⁵⁹ These results are consistent with the strides made by the Jordanian Government in improving child health and nutrition.⁶⁰

In Tunisia, child mortality has likewise been declining steadily since the 1970s. Also, the prevalence of child marriage in Tunisia is low, although those women and girls who married before they were 18 years old appear to come from the most marginalized backgrounds. Hence, the results reveal a strong correlation between the age of the mother and under-five child mortality, with the predicted probability of dying before age five being four times higher for children of women who married before the age of 18 relative to their counterparts (figure 8, panel B). This reaffirms the impact of child marriage on children's health and the intergenerational transmission of disadvantage.

▶ 2. Stunting

A child's stunting (linear growth retardation) manifests chronic malnutrition and is associated with concurrent, possibly later,

delayed mental and motor development.⁶¹ The adverse effects of stunting could affect adulthood by limiting cognitive ability.

Several studies have identified underweight, inadequate childcare, feeding practice, and birth order as probable correlates of stunting. A higher prevalence of stunting among children of women who marry before the age of 18 shows the intergenerational transition of disadvantage from one generation to the next.

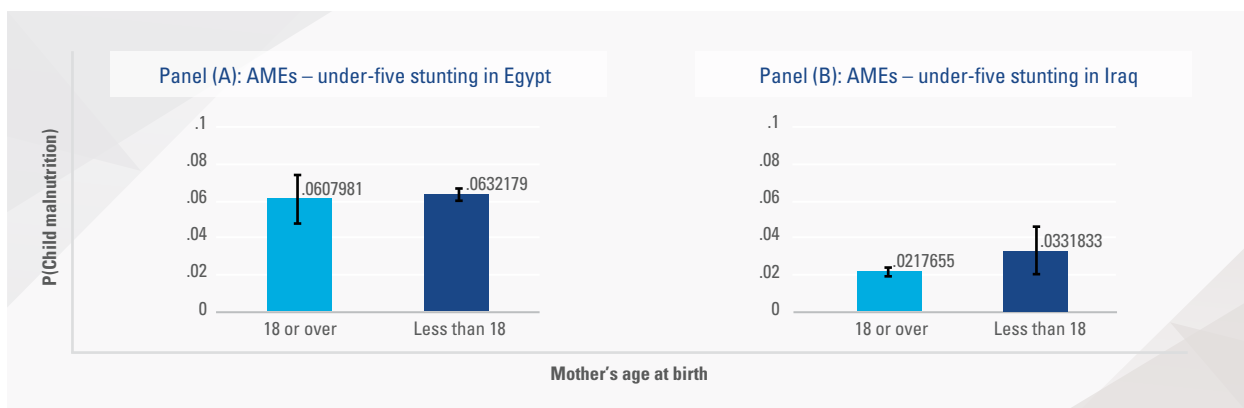
Stunted children appear to be born to the most deprived mothers, as specific social contexts increase the likelihood of child marriage

(education, height and working status); and the household characteristics (household size, access to improved water sources and sanitation facilities and household wealth index). Figure 9 presents the AMEs for under-five stunting for children of women who married before the age of 18 relative to children of women who married at or after the age of 18 in Egypt (panel A).

Following Onagoruwa and Wodon,⁶² we estimated the effects of marital age on the prevalence of under-five stunting for children born to young mothers. A child is considered stunted if he or she has a height more than two standard deviations below the median reference height for that age, as indicated by the World Health Organization (WHO). Logistic regression was employed to examine the impact of adolescent mothers on under-five child malnutrition. The dependent variable is binary – it takes the value of 1 if the child is stunted and 0 otherwise; and the extended model includes the following control variables: the individual child’s characteristics (child’s age, child’s gender, if the child was born a single or as a twin, child’s birth order, if the preceding birth interval was less than two years, if the child received vaccinations); the mother’s characteristics

While stunting appears to be a serious health problem in Egypt, with one in five Egyptian children under the age of five stunted,⁶³ child marriage is not highly correlated with the likelihood of stunting. These AMEs appear to show negligible differences between the probability of under-five stunting for the children of women who married before they were 18 years old relative to their older counterparts. Still, stunted children appear to be born to the most deprived mothers, as specific social contexts increase the likelihood of child marriage, among them rural and impoverished areas with low access to health care and the girl’s education level.⁶⁴ These deprivations, rather than the age at which the mothers married, appear to be the driving force behind observed differences in the prevalence of under-five stunting in Egypt.

Figure 9. AMEs – under-five stunting



Sources: Based on Egypt (DHS, 2014) and Tunisia (MICS, 2018).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

However, the impact of adolescent mothers on under-five child malnutrition is positively correlated and statistically significant in Iraq. If the child is born to a mother married before the age of 18, the probability of the child being stunted before they reach five years of age is 1.5 times higher than for mothers marrying at or after age 18 (figure 9, panel B reports the AMEs of the adolescent mothers on under-five stunting). Hence,

in mothers under the age of 18, there is a greater probability of child stunting, yet the mother's age does not impact child mortality before they reach five years of age. The estimated results are comparable to the findings from the available literature, where either adolescent mothers have no statistically significant impact, or it is positively correlated, resulting in a higher prevalence of child mortality and child malnutrition.⁶⁵

C. Impact of child marriage on decision-making

Child marriage seriously impairs the decision-making processes of women and girls, as they cannot voice their choices and lack the ability to alter their circumstances.⁶⁶ The lack of decision-making power has long-term intergenerational effects. Evidence indicates that, within households where women have higher bargaining power, their intra-household expenditure is diverted towards education and health compared to families where men make the decisions.⁶⁷ Limited voice and agency can have an intergenerational impact on their children, especially girls.

Child marriage imposes overlapping vulnerabilities on women and girls that result in lower participation in decisions regarding their life and that of their children. According to Wodon and others,⁶⁸ child marriage impacts decision-making directly and indirectly. The direct impact is the married girl's inability to freely voice her concerns and preferences and decide her well-being.⁶⁹ The indirect implications affect their voice via education: lower education translates into limited knowledge and life choices.

Often, married girls discontinue their education or have low education levels

to begin with. These poorly educated girls will have less bargaining power and less ability to make short- and long-term decisions. By reducing educational attainment, child marriage has implications for agency and decision-making over the life cycle.⁷⁰ A growing literature on intra-household bargaining finds that increases in the female share of income, regardless of any other changes, can give women more power within the household.⁷¹ Child marriage leads to an allocation of resources that better reflects husbands' preferences, including household expenditures, education, housing, and investments in children.

The limited earning potential of married girls also translates into low intra-household decision-making power. Even if some of them are working, they may not have control over their earnings. In addition, since they mostly stay at home, they lack the social support of friends or a community that could help improve their earning potential.⁷² Furthermore, married girls often have little say in sexual activity, including decisions about when and how many children to have and contraceptive use.⁷³

Household decision-making index and marital decision-making index

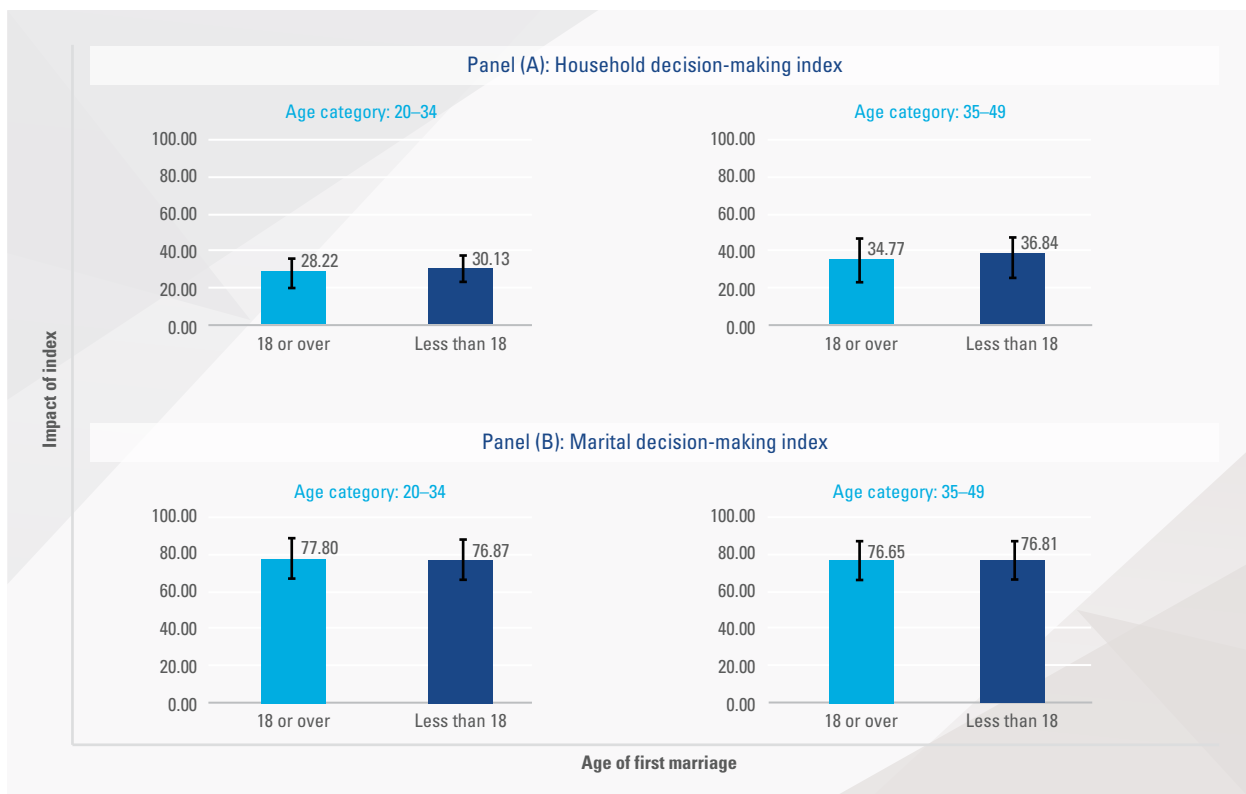
The impact of child marriage on women’s decision-making power has been examined using data from the DHS for Egypt (2014) and Jordan (2017–2018). Since decision-making and agency may be wide-ranging, we constructed a “household decision-making index” and a “marital decision-making index” to measure empowerment, agency and the inclusion of women in household marital decision-making. These indices measure women’s participation in the following four decisions: (i) health care, (ii) household purchases, (iii) visits to friends and relatives, and (iv) use of husband’s earnings.

The household decision-making index indicates if a woman decides on her own (1),

jointly with someone else (2), or if another household member(s) decides (3) on her behalf (scores 1, 2 and 3). Similarly, the marital decision-making index indicates if a woman participates in a given decision when she is alone (1), jointly with the spouse (2), or only the spouse (3) makes the decision (scores 1, 2 and 3). We estimated these indices using principal component analysis. The indices range from 0–100, with 0 indicating no autonomy in decision-making and 100 meaning full autonomy in decision-making.

We estimated the impact of child marriage on household decision-making using the ordinary least squares (OLS) regression on the overall index for married women aged 20–49. Similarly, we examined the impact of child marriage on marital decision-making.

Figure 10. Decision-making indices in Egypt (Married women aged 20–49)



Source: Based on Egypt (DHS, 2014).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

In Egypt, women face inequalities in the community and the household. Within families, men are typically the head of household and make decisions for the whole household.⁷⁴ Generally, Egyptian women assume traditional roles within the family, and their labour force participation is low.⁷⁵ While these conventional views on the role of women apply to all married women regardless of their wealth or education, these norms and practices can be especially detrimental for married girls. Figure 10, panel A, shows the estimated AMEs for women aged 20–34 and women aged 35–49 by the age at marriage. Our findings suggest negligible differences in women’s decision-making involvement by age at marriage. In other words, both married girls and their older counterparts have low household decision-making power. Additionally, the low predicted values of these margins hint at limited household decision-making power for most married women in Egypt, regardless of the age at marriage.

Regarding marital decision-making, our estimates indicate modest differences in women’s decision-making involvement, and slight differences by the age at marriage, to the detriment of women who married before the age of 18. Panel B of figure 10 shows the estimated AMEs for women aged 20–34 and women aged 35–49 by the age at marriage. These AMEs suggest that women who married before 18 and their older counterparts have

modestly high marital decision-making power. Yet, for marital decision-making, women married before they are 18 years old have a lower predicted margin for both age cohorts; however, the differences are small.

While marrying later provides more opportunity for education, employment and participation in the choice of a husband, these factors are also predicted to enhance women’s power within the marriage and household. In Egypt, age at marriage does not appear to be a proxy for women’s post-marital agency.

In Jordan, the lack of economic opportunities, regardless of education level, appears to significantly impact women’s roles and decision-making power in their marriages and households. Similarly, the educational status of women does not often translate into more autonomy or labour force participation. Female labour force participation in Jordan is estimated to be 15 per cent, while the regional average is 20 per cent.⁷⁶ Sociocultural norms appear to

dictate women’s roles in economic and household spheres. As with the example of Egypt, we found negligible differences in women’s decision-making involvement by the age at marriage in Jordan (results not shown here). In other words, most married women in Jordan have limited household

and marital decision-making power, regardless of their marriage age.

In Egypt, both married girls and their older counterparts have low household decision-making power

In Jordan, the lack of economic opportunities, regardless of education level, appears to significantly impact women’s roles and decision-making power in their marriages and households

D. Spousal violence, including sexual and physical violence

Child marriage is strongly associated with domestic violence – both physical and sexual.⁷⁷ Women who marry before the age of 18 are in a weaker position than their husbands and may be subjected to violence by their partners and in-laws.⁷⁸ Married girls are 1.8 times more likely to be subjected to physical and sexual violence than their adult counterparts.⁷⁹ Married girls often lack social and human capital, meaning that they primarily stay economically dependent on their husbands. As such, they do not have the resources to stand up against domestic violence, even later in life.⁸⁰

The ratio between ever-married females and males in Egypt and Jordan exceeds twofold and reaches more than threefold in Tunisia,⁸¹ meaning that an age gap exists between spouses. These age disparities result in unequal power dynamics within the home, making women more susceptible to domestic violence. We carried out regression estimates for the effects of child marriage on sexual and physical violence in marriage and a composite index on spousal violence for Egypt and Jordan. These analyses are based on the domestic violence module of DHS.

As per the 2014 DHS for Egypt, about 30 per cent of ever-married women aged 15–49 reported having been subjected to at least one episode of physical, sexual and/or emotional violence inflicted by their current or most recent spouse; yet, sexual violence was only reported by a small fraction of women.⁸² Even though all married women from all age groups are at risk of spousal violence, married young girls are at a much higher risk of exposure to violence and its consequences, a risk that does not appear to mitigate through adulthood.

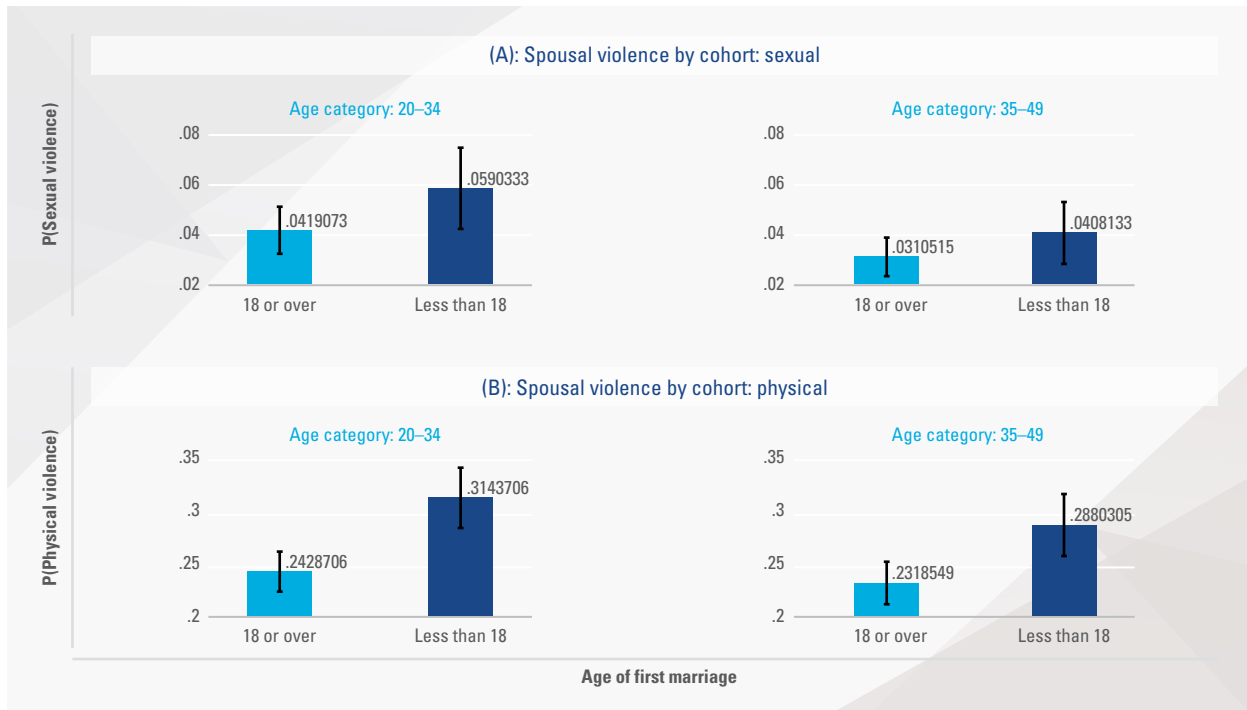
Following Savadogo and Wodon,⁸³ we constructed an index of spousal violence using

the principal component analysis for Egypt and Jordan. The index indicates if women experience any kind of physical violence (less or more severe) or sexual violence and ranges from 0–100. The results from Egypt and Jordan (not shown here) showed a negligible impact of child marriage on spousal violence. These are comparable to the global report on child marriage by Wodon and others,⁸⁴ as they also found no significant impact on spousal violence.

In addition to the spousal violence index, we conducted a separate analysis for each type of violence. We created binary variables indicating if the respondent ever experienced any kind of physical violence and a separate variable if they ever experienced sexual violence and used logistic regression. In this analysis, the primary explanatory variable is the categorical variable capturing if the woman was married before she was 18 years old. The extended model includes additional control variables such as individual-level characteristics, including age of the respondent, educational attainment, religion, employment status, exposure to media (radio, newspaper and television) and household characteristics (gender of the head of household, rural/urban location and household wealth index). The total sample is disaggregated by age in two sub-samples, namely, 20–34 years and 35–49 years. Smaller cohorts are avoided because of the smaller sample size.

Figure 11 reports the AMEs – the impact of child marriage on spousal sexual violence and physical violence. These AMEs suggest that child marriage only slightly increases the prospect of spousal sexual and physical violence. Furthermore, such differences are more prominent for the younger cohort, where married girls will fare worse than their counterparts who married after age 18. We found similar results in the case of Jordan (not shown here).

Figure 11. Spousal violence in Egypt (Married women aged 20–49)



Source: Based on Egypt (DHS, 2014).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

E. Education

The interaction of cultural and social norms, poverty and gender discrimination severely affects whether or not parents choose to invest in girls' education. Parents who prefer marrying girls are often less inclined towards education. Low investments, in turn, become a cause and consequence of child marriage, affecting all life-cycle outcomes and perpetuating poverty traps. Evidence from the existing literature indicates that eliminating child marriage can help increase girls' literacy and educational attainment.⁸⁵

Limited availability of viable education opportunities may result in child marriage. In villages or remote areas, especially in

developing countries, there may be fewer opportunities to continue schooling beyond primary education. School distance, the availability of safe transportation and a lack of adequate washroom facilities are some of the significant contributors to girls dropping out of secondary school.⁸⁶ In the absence of a feasible option for schooling, parents may prefer that girls stay at home, so they marry them earlier. Field and Ambrus⁸⁷ and Nguyen and Wodon⁸⁸ find that child marriage reduces the probability of the completion of secondary school by 4–6 per cent. In addition, girls may be forced to quit schooling because they are married or pregnant.⁸⁹

While child marriage directly impacts education, it also has many indirect effects on other aspects of life. Quitting education deprives these girls of human capital and the social skills and networks they could have built through school.⁹⁰ In conservative and traditional societies, girls often have the only chance to leave the house and interact with anyone for educational purposes. Schools give them space and the opportunity to develop social skills and networks that can help them build a support system.⁹¹ Consequently, the lack of a social support system and a human capital shortage result in the extremely limited voice and agency of married girls within the household and the community. Furthermore, a lack of education can indirectly impact the earnings and productivity of married girls in the labour force.⁹² When girls do not complete their education, they often resort to informal work that offers much lower wages and difficult working hours or increased exploitation compared to formal employment, resulting in a lifelong dent in earnings due to child marriage.⁹³

The lack of a social support system and a human capital shortage result in the extremely limited voice and agency of married girls within the household and the community

Finally, child marriage not only disrupts the accumulation of human capital of girls who get married early but also has an intergenerational impact on their children's health and educational outcomes.⁹⁴ More educated mothers have a higher probability of utilizing their household expenditures towards investments in their children's health and human capital.⁹⁵ Children of less educated mothers are often less nourished and lack immunizations against diseases.⁹⁶

Child marriage is widespread among vulnerable populations in Egypt.⁹⁷ With one in four women in Egypt marrying before the age of 18, child marriage disproportionately affects poor and uneducated women and girls. In Iraq, child marriage is consistent across all regions; however, it is more common in rural areas and among low-income families. Low educational attainment for girls is the cause

and consequence of child marriage, especially at the secondary school level. While the enrolment of girls in primary education has been consistently close to that of boys, for secondary school, girls have a higher dropout rate than boys.⁹⁸ From the 1970s to the mid-1980s, Iraq made significant improvements in the education system, with markedly high enrolment and literacy levels and near gender parity.⁹⁹ The multiple conflicts the country has experienced over the decades, compounded by the aftermath of the invasion led by the United States in 2003, have intensely affected educational attainment and completion, particularly for women and girls.¹⁰⁰ The intensification of violence since 2014

has devastated the education system, which was already in decline. Iraq has faced severe supply barriers to education. The destruction of infrastructure throughout the country has made access to schools more challenging. In conflict-afflicted areas,

schools are often destroyed or used for emergency purposes, and in some areas, the intensification of violence has restricted the availability of teachers.¹⁰¹ The state of insecurity and escalating violence has forced families and communities towards the idea of protecting girls through child marriage.¹⁰²

While child marriage is moderately low in Jordan, important differences in prevalence have emerged among different communities.¹⁰³ Syrian refugee communities in Jordan exhibit a more considerable prevalence of child marriage than their host counterparts.¹⁰⁴ These divergent trends are driven by more traditional views of marriage in these communities and limited economic prospects for girls, making child marriage more probable.¹⁰⁵ At the same time, lower educational attainment among girls in these groups appears to be highly correlated with the prevalence of child marriage.

Since the 1970s, Tunisian women have become increasingly educated. Moreover,

in younger age cohorts, a larger share of women is obtaining higher education than their male counterparts.¹⁰⁶ As schooling acts as a protective factor against child marriage and with the greater progress in educational attainment for women and girls in Tunisia, this concurs with a decline in the prevalence of child marriage. Yet, while child marriage has declined to very low levels, women and girls who married as children will fare worse than their counterparts who married at an older age.

We estimated the impact of child marriage on educational attainment using logistic regression to isolate the effect of marrying

as a child while controlling for other factors that might influence this relationship. These estimates were carried out for women aged 20–49, as these cohorts are expected to have completed primary and secondary education.

The regressions of education present the challenge of reverse causality, where child marriage interrupts educational attainment, while simultaneously, low educational attainment may lead to a higher probability of child marriage. For simplicity, we estimated the regressions using logistic regression, so we cannot address the reverse causality issue and only present estimates of how educational attainment and child marriage correlate.

Table 5. Educational outcomes for women aged 20–49 by marriage age (Percentage)

Egypt	Literacy rate	Primary school completion	Secondary school completion
Married before 18 years of age	56.4	73.3	2.7
Married after 18 years of age	83.6	91.3	29.5
Difference of means (married as a child versus not)	27.2***	17.9***	26.7***
Iraq	Literacy rate	Primary school completion	Secondary school completion
Married before 18 years of age	59.6	64.6	17.3
Married after 18 years of age	60.9	76.7	39.5
Difference of means (married as a child versus not)	1.32***	12.12***	22.23***
Jordan	Literacy rate	Primary school completion	Secondary school completion
Married before 18 years of age	93.3	80.5	6.2
Married after 18 years of age	96.4	92.0	42.1
Difference of means (married as a child versus not)	3.09***	11.54***	35.95***
Tunisia	Literacy rate	Primary school completion	Secondary school completion
Married before 18 years of age	56.9	84.8	46.2
Married after 18 years of age	64.2	93.2	66.6
Difference of means (married as a child versus not)	7.22***	8.43***	20.37***

Sources: Based on Egypt (DHS, 2014); Iraq (MICS, 2014); Jordan (DHS, 2017–2018); Tunisia (MICS, 2018).

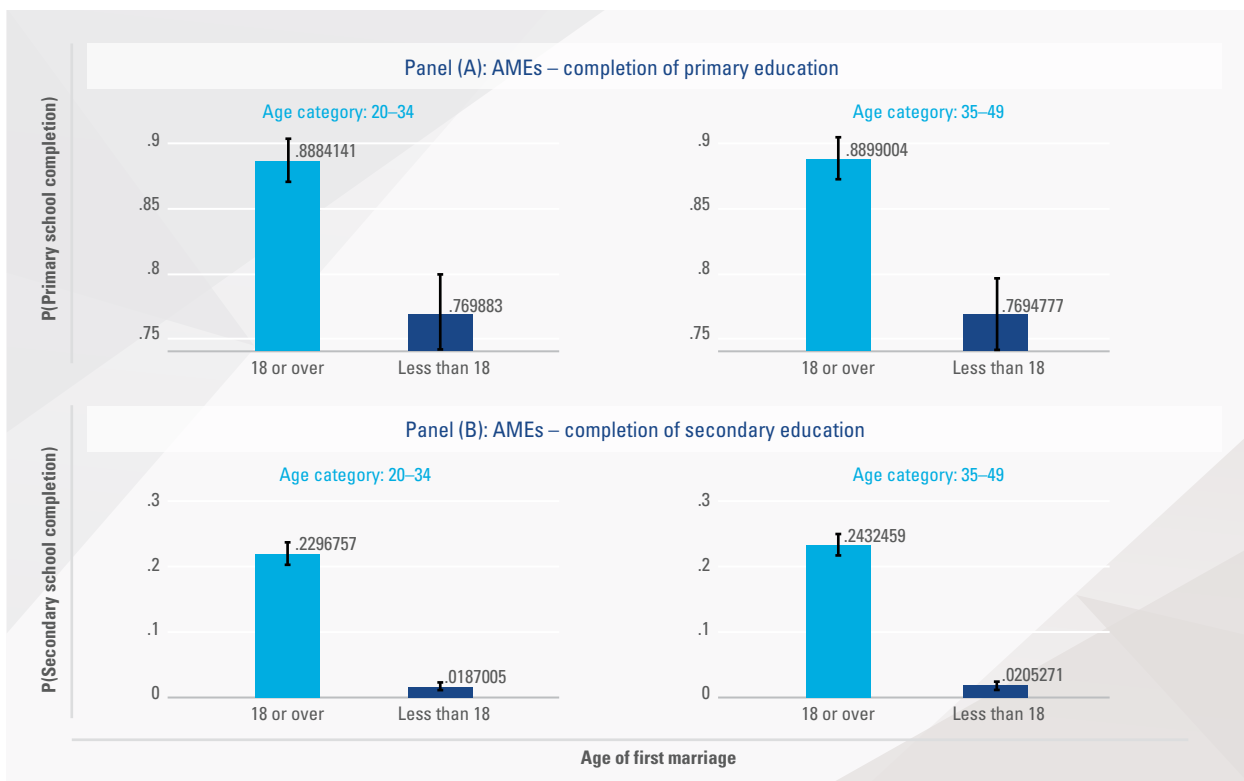
Note: *** signify 1 per cent significance.

Table 5 shows differences in educational attainment for women aged 20–49 in all four countries under consideration. To understand the role of child marriage in primary and secondary school completion, we selected this cohort of women who are expected to have completed primary and secondary education by age 20. There are striking differences in literacy rates and primary and secondary school completion, and these differences are large and statistically significant.

Figure 12 shows the AMEs for completing primary and secondary education in Egypt. These AMEs allow for comparing the likelihood of primary school completion by the age at marriage for different cohorts of Egyptian women. Child marriage is found to have a statistically significant negative impact

on primary and secondary school completion in Egypt. Women aged 20–34 married at or before age 18 in Egypt are 11.8 percentage points less likely to have completed primary school than those married at 18 or older. Women aged 35–49 married at or before age 18 in Egypt are 12 percentage points less likely to have completed primary school than those married at age 18 or older. Such effects are even more prominent for secondary educational attainment (figure 12, panel B). Girls married at or before age 18 in both age cohorts (aged 20–34 and 35–49) are about 22 percentage points less likely to complete secondary school than those married at 18 years or older. Moreover, these estimates suggest a low probability of completion of secondary education for all women aged 20–49 in Egypt.

Figure 12. Impact of age at marriage on completion of primary and secondary education in Egypt



Source: Based on Egypt (DHS, 2014).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

In Iraq, child marriage is also found to have a statistically significant negative impact on primary and secondary school completion.

Figure 13 presents the AMEs for primary school and secondary school completion by the age at marriage for women aged 20–49.

Panel B confirms that child marriage largely negatively correlates with women’s secondary school attainment in Iraq. Women aged 20–34 who married before age 18 are about 24 percentage points less likely to complete secondary school than those who married at 18 years old or older. And women aged 35–49 who married early are about 19 percentage points less likely to complete secondary school

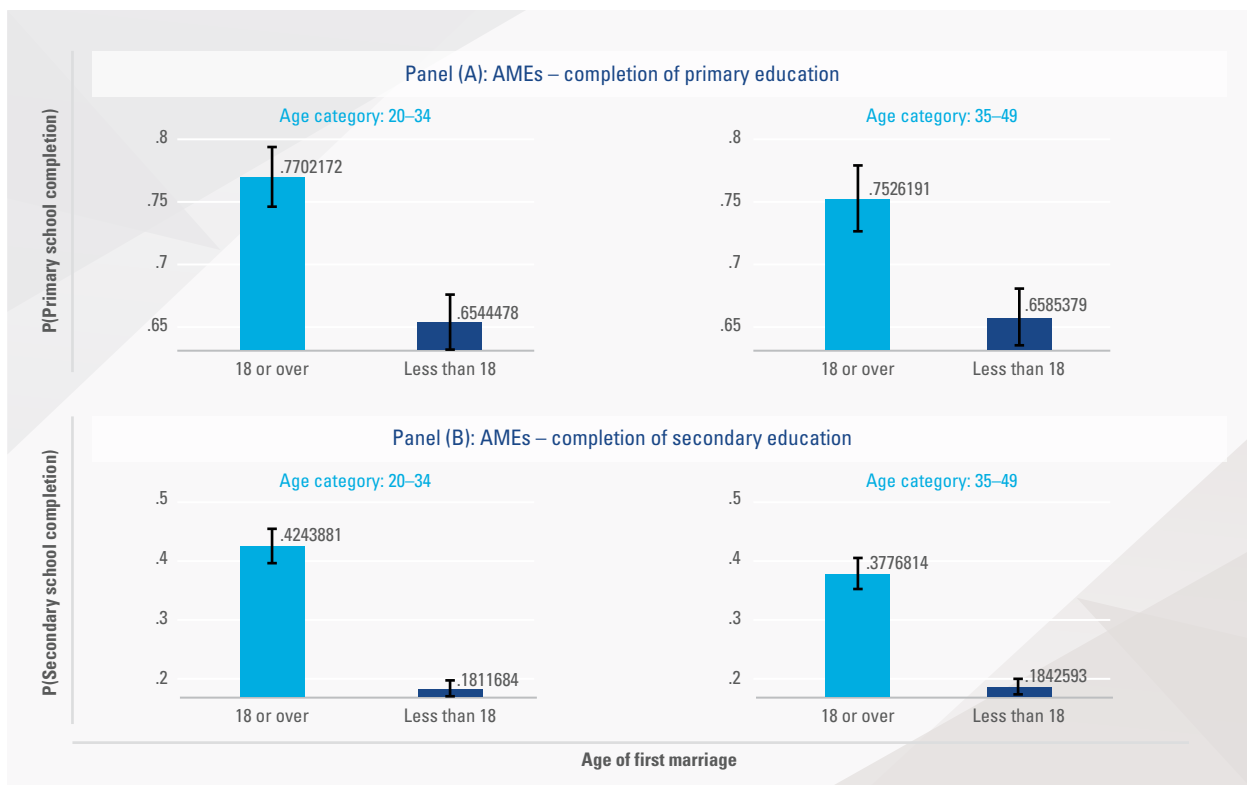
Child marriage has a statistically significant negative impact on women’s primary and secondary school completion

than their counterparts who married at 18 years old or older.

Similarly, our regression analyses for Jordan and Tunisia revealed that child marriage has a statistically significant negative impact on women’s primary and secondary school completion. However, primary education completion rates are higher overall in Tunisia than the other three States analysed in this report.

Moreover, while child marriage appears to decrease the likelihood of primary and secondary school completion in Tunisia, the effects are significantly lower for Tunisian women (not shown here) than their counterparts in Egypt, Iraq and Jordan.

Figure 13. Impact of age at marriage on completion of primary and secondary education in Iraq



Source: Based on Iraq (MICS, 2014).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

F. Impact of child marriage on labour market outcomes for women

Child marriage may impact women's labour force participation through multiple channels, including lower educational attainment, low bargaining power within and outside the household and a disproportionate burden of unpaid work due to increased lifetime fertility.¹⁰⁷ Early marriage limits access to education for married girls, especially secondary schooling, which not only reduces their probability of joining the labour force but, even when they do join the labour force, they are frequently employed in informal, temporary, part-time, home-based work or low-paying jobs with dismal working conditions and no social protection.¹⁰⁸ Lower rates of labour force participation and low returns to work have long-term and adverse impacts not only for the married girl and her family but also for the country's economic growth at an aggregate level.¹⁰⁹ Over time, it may translate to lower investments in children's health and education, leading to a vicious cycle.

Also, child marriage may result in poor health outcomes, as early and frequent pregnancies can lead to severe complications, and recovery time may be extended, after which long-term physical, social, psychological, and economic consequences may cause withdrawal from the labour force.¹¹⁰ Moreover, sociocultural norms further reduce the opportunity cost for married girls.¹¹¹

In many Arab States, women's labour market participation is limited; research identifies marriage as the critical barrier to women's labour force participation in the region, as they perform the bulk of care work and household work and face difficulties reconciling domestic responsibilities with paid market work.¹¹² While women are increasingly educated, the role of women is still quite rigidly defined by social and

cultural norms,¹¹³ further preventing the region from fully utilizing its human capital potential.

Similar to education, labour force participation exhibits an endogenous relation to marriage: marriage determines labour force participation, and, at the same time, labour force participation affects the likelihood of marriage. This report does not address the endogeneity problem but estimates the correlation between child marriage and labour force participation and child marriage and real wages.

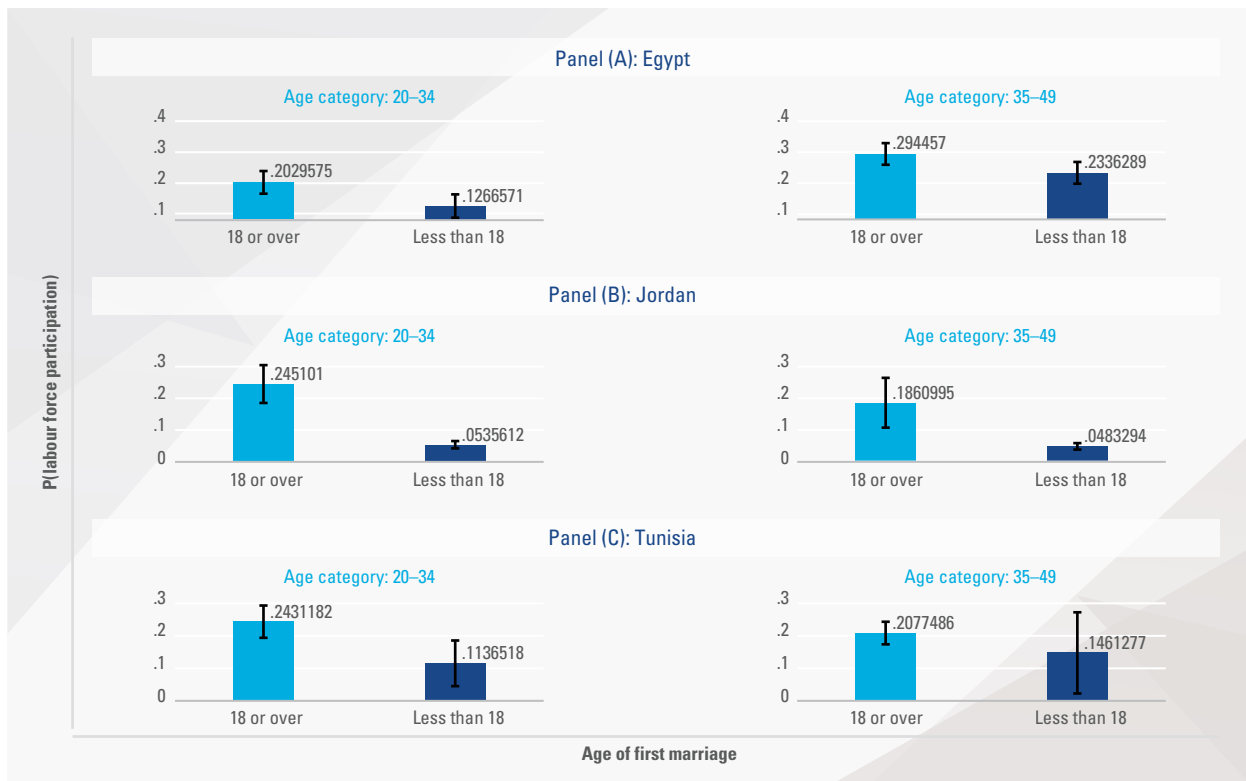
Labour force participation and real wages

While Egypt has made remarkable progress in increasing the educational attainment of women and girls, these academic achievements have not been matched with greater labour force participation. The overall labour force participation of women in Egypt is low. As of 2012, just 18 per cent of working-age women (those aged 15–64) were employed, declining from 22 per cent in 2006.¹¹⁴ Assaad and others describe the rising educational attainment but stagnant participation as a paradox stemming from the interaction of demand and supply barriers to women's labour force participation in Egypt.¹¹⁵ The key obstacles faced by women include a disproportionate burden of childcare and household responsibilities, poor working conditions and opportunities in the private sector, poor enforcement of laws barring discrimination and sexual harassment, and a high wage gap compared with men in the private sector.¹¹⁶ Married girls tend to be less educated, so their labour market prospects are limited. Assaad, Krafft and Selwaness estimate that marriage in Egypt reduces the probability of formal private-sector waged employment by 40 per cent.¹¹⁷

According to modelled estimates produced by the International Labour Organization, the labour force participation rate for women in Jordan was 13 per cent in 2021. This is relatively low compared to the global average and other countries in the region. Kasoolu and others identify two factors affecting women’s labour force participation in Jordan.¹¹⁸ They note that the extremely low labour force participation among women with high school or less education is associated with traditional social norms and poor public transportation. In addition, they attribute the higher unemployment rates of well-educated women to a small and undiversified private sector that cannot accommodate women’s needs for work-family balance (demand-side barriers for married women’s employment). Moreover, labour force participation of Jordanian women mostly declines after marriage, especially for less-educated women.¹¹⁹

Compared to the other Arab States, Tunisia’s rates of female labour force participation and educational attainment are impressive. However, women’s overall economic involvement has remained stagnant despite significant gains in women’s education in recent decades. As in Jordan, demand-side barriers to women’s economic participation are critical in the country given that more educated women have much higher levels of unemployment. Also, following the revolution in 2011, the private and public sectors contracted, and the resultant sharp decline in opportunities, especially in the public sector, directly impacted educated women who mostly aspire to work in the public sector.¹²⁰ For their low-educated counterparts, labour force participation is usually low. While child marriage appears to be relatively low in Tunisia, marriage has the most significant impact on the participation rates of less-educated women.¹²¹

Figure 14. AMEs of labour force participation by cohort



Sources: Based on (ELMPS, 2018), (JLMPS, 2016) and (TLMPS, 2014).

Note: The 95 per cent confidence interval is visually shown here as the black vertical line.

To show the impact of child marriage on women’s labour force participation, we estimated a logistic regression for Egypt, Jordan and Tunisia. Additionally, we estimated the Heckman two-step regression to examine the effect of child marriage on hourly real wages.

Figure 14 shows the AMEs on women’s labour force participation by the age at marriage. These margins show consistently low labour force participation for all married women, with larger differences for the younger age cohort, namely, for women married as children, in both the 20–34 and 35–49 age cohorts.

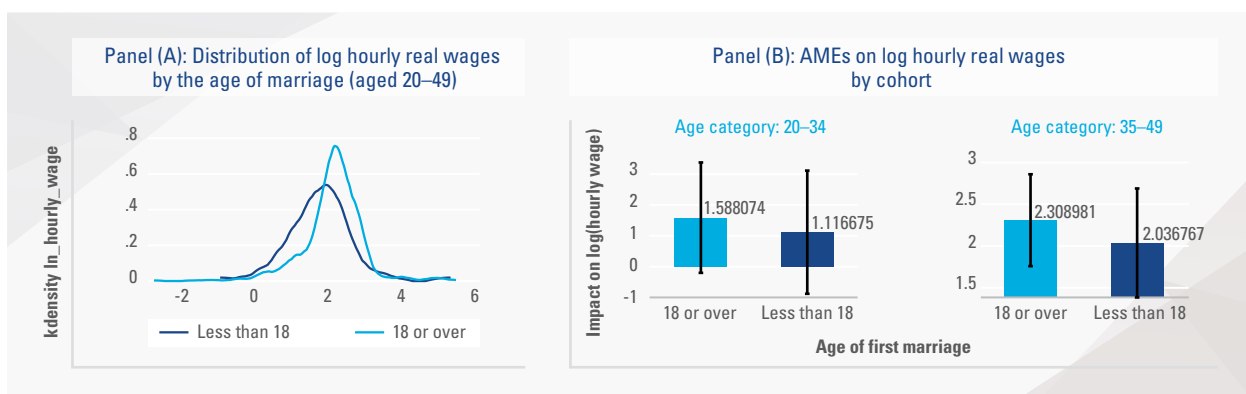
For many, marriage is the main reason to drop out of the labour force

The low levels of labour force participation across all three countries confirm the effects of sticky social and patriarchal norms that shape the role of women and their economic participation in the labour market. But there is also significant evidence suggesting that social norms alone do not explain the entire problem. For many, marriage is the main reason to drop out of the labour force, as married women are primarily responsible for the bulk of household chores and other unpaid care responsibilities. (They spend nearly 40 hours per week on domestic work in Egypt and Tunisia and about 30 hours per week in Jordan.) Additionally, married women in these countries face significant demand- and supply-side barriers to participation in the labour market.

As mentioned previously, the effect of child marriage on hourly real wages is estimated using the Heckman two-step regression. Panel B of figure 15 shows the AMEs on log hourly real wages by the age of marriage, which suggests that married girls will have lower predicted real wages in both the 20–34 and the 35–49 age cohorts. Moreover, for working married girls, the distribution of real wages by age at marriage shows that girls married before the age of 18 will not only face lower average wages but also large and statistically significant differences over the whole distribution of wages. (Panel A of figure

15 shows a visual comparison of the kernel density distributions of the two groups.)¹²² It can be observed that the distribution of wages for women married at or over 18 has a heavier upper tail than those married as children. In other words, the mean and median wages are lower for married girls, and their wages are also compressed in the distribution’s lower tail. One of the most crucial features of the difference between the two distributions is precisely the additional mass in married girls’ wage distribution below the mean of the distribution of their counterparts. These striking results confirm that married girls fare worse in the labour market and engage in low-paying occupations.

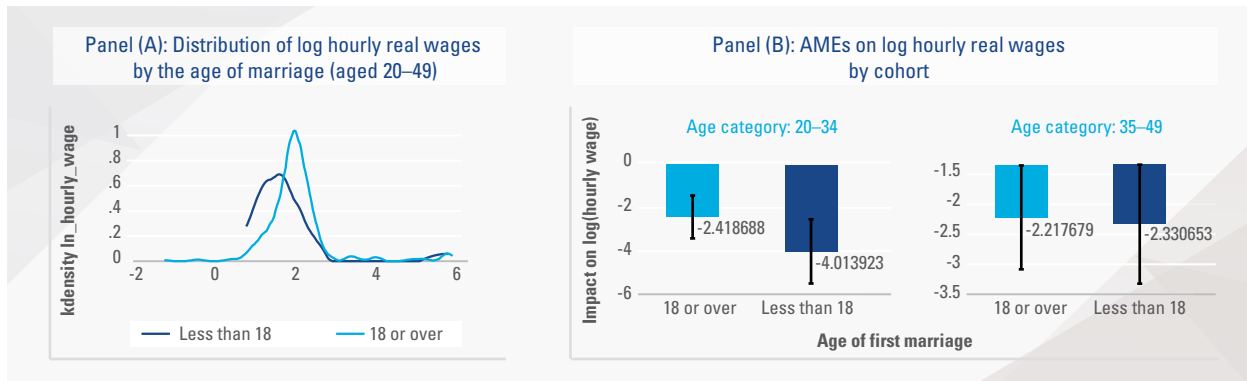
Figure 15. Effect of child marriage on hourly real wages in Egypt



Source: Based on (ELMPS, 2018).

Note: Kernel density is a non-parametric method for estimating smooth probability density distributions of empirical data. The results are presented in log wages; negative values are equivalent to values between 0–1 in levels. The 95 per cent confidence interval is visually shown as the black vertical line.

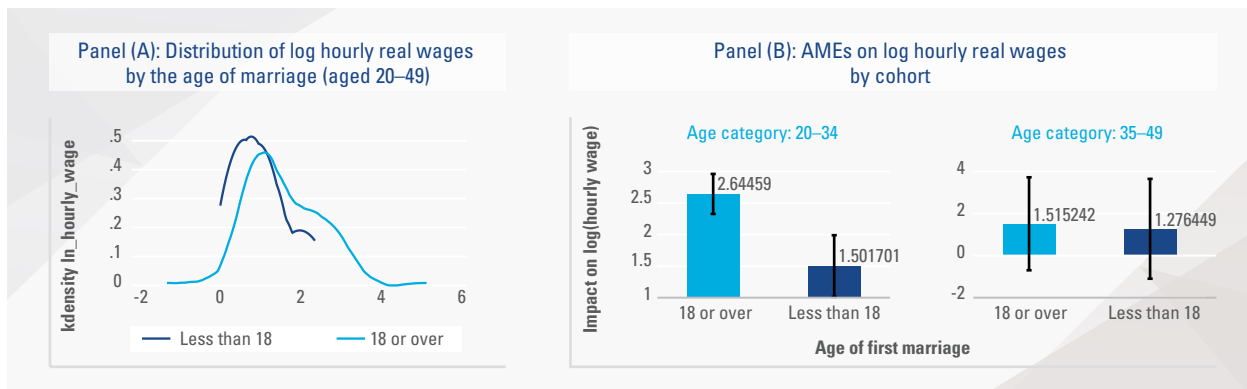
Figure 16. Effect of child marriage on hourly real wages in Jordan



Source: Based on (JLMPS, 2016).

Note: Kernel density is a non-parametric method for estimating smooth probability density distributions of empirical data. The results are presented in log wages; negative values are equivalent to values between 0–1 in levels. The 95 per cent confidence interval is visually shown as the black vertical line.

Figure 17. Effect of child marriage on hourly real wages in Tunisia



Source: Based on (TLMPs, 2014).

Note: Kernel density is a non-parametric method for estimating smooth probability density distributions of empirical data. The results are presented in log wages; negative values are equivalent to values between 0–1 in levels. The 95 per cent confidence interval is visually shown as the black vertical line.

Similarly, for Jordanian women, we found large and statistically significant differences over the whole distribution of wages between those married before the age of 18 and after. It can be seen that the distribution of wages for those married at or over 18 has a heavier upper tail than for those married as children, which implies that women married as children work vastly in low-paying occupations, with wages essentially compressed around the mean of the distribution. Also, the low dispersion of these distributions points to sizeable occupational segregation by gender, as women are confined to these poorly paid occupations (figure 16).

In Tunisia, the distribution of real wages by the age of marriage also shows consistent results. The kernel density distributions for married women aged 20–49 have a heavier right-hand side tail, and the distribution appears to be compressed around the mean. The women on the right-hand side of the wage distribution are those more educated (figure 17, panel A). Panel B depicts AMEs, which suggest that married girls will have higher predicted real wages in the younger age cohort of 20–34 and lower predicted real wages in the 35–49 age cohort.

7.

Conclusion

Child marriage shapes lifetime outcomes, with detrimental effects at all stages of life. Assessing the cost of child marriage should start by understanding the human development repercussions that child marriage has over the life cycle of women. Child marriage unambiguously affects women in all aspects of life with costs that carry from one stage of life to the next. These costs are borne directly by women and girls who marry before the age of 18 (and indirectly by their children); however, these costs also extend to their families, communities and society.

The social costs of child marriage are the aggregate individual costs arising from child marriage.

Using the skill formation model and based on micro-level survey data for Egypt, Iraq, Jordan, and Tunisia, the present report provides new evidence on the lasting effects of child marriage on human development in the Arab region. The analyses and findings are organized around six key stages of the life cycle of females because married girls are forced to transition directly from childhood to

adulthood and are more likely to experience deprivation at all stages of life.

The research finds consistently high costs of child marriage on fertility (the average number of live births and use of modern contraception), education, labour force participation and earnings, the health of the children born to these young mothers, and the ability of girls to lead healthy and productive lives in Egypt, Iraq, Jordan, and Tunisia, with varying degrees of impact and severity. Our estimates suggest that women and girls who marry early have low decision-making power and

agency over their lives. Moreover, child marriage appears to impact the prevalence of domestic violence directly.

The results suggest significant cumulative effects of child marriage on women that prevail throughout their lives and produce adverse intergenerational effects via health and human capital investments in their children. While women and girls in these countries appear to face enormous disadvantages, furthered by discriminatory gendered norms, child marriage systematically perpetuates and

Assessing the cost of child marriage should start by understanding the human development repercussions that child marriage has over the life cycle of women

exacerbates these inequalities, particularly for girls who experience a disadvantaged upbringing. This report highlights the individual costs of child marriage and sets the stage for aggregating these average individual impacts at the societal level by estimating the economic costs associated with some of these impacts.

Moving forward, there is a significant value in conducting a macro-focused costing exercise, as it will assist Governments, researchers and policymakers in better understanding the far-reaching economic impacts of child marriage. Such an exercise can also aid Governments in determining the financial resources required to address this issue comprehensively. Therefore, the second

Moving forward, there is a significant value in conducting a macro-focused costing exercise, as it will assist Governments, researchers and policymakers in better understanding the far-reaching economic impacts of child marriage

phase of this research will measure the economic costs of child marriage in terms of the loss of income or gross domestic product for several Arab States. Together, these two studies, focused on the micro and macro levels, aim to demonstrate the adverse impacts of child marriage in the Arab region on women, their families, their communities and the State. These will also contribute to knowledge generation and the broader discussion

and strategizing on eliminating child marriage in the Arab region to impact policy and service provision. As such, these call for a more holistic and integrated approach to addressing the persistence of child marriage, aiming to eliminate its practice.

Annex 1.

International human rights instruments and frameworks related to child marriage

International instrument	Obligation(s)
Universal Declaration of Human Rights	<p>Article 16</p> <ol style="list-style-type: none"> 1. Men and women of full age, without any limitation due to race, nationality or religion, have the right to marry and to found a family. They are entitled to equal rights as to marriage, during marriage and at its dissolution. 2. Marriage shall be entered into only with the free and full consent of the intending spouses.
International Covenant on Civil and Political Rights	<p>Article 23</p> <ol style="list-style-type: none"> 3. The right of men and women of marriageable age to marry and to found a family shall be recognized. 4. No marriage shall be entered into without the free and full consent of the intending spouses.
International Covenant on Economic, Social and Cultural Rights	<p>Article 10</p> <p>[...] marriage must be entered into with the free consent of the intending spouses.</p>
Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages	<p>Article 1</p> <ol style="list-style-type: none"> 1. No marriage shall be legally entered into without the full and free consent of both parties, such consent to be expressed by them in person after due publicity and in the presence of the authority competent to solemnize the marriage and of witnesses, as prescribed by law. 2. Notwithstanding anything in paragraph 1 above, it shall not be necessary for one of the parties to be present when the competent authority is satisfied that the circumstances are exceptional and that the party has, before a competent authority and in such manner as may be prescribed by law, expressed and not withdrawn consent. <p>Article 2</p> <p>States Parties to the present Convention shall take legislative action to specify a minimum age for marriage. No marriage shall be legally entered into by any person under this age, except where a competent authority has granted a dispensation as to age, for serious reasons, in the interest of the intending spouses.</p>
Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)	<p>Article 16</p> <ol style="list-style-type: none"> 1. States Parties shall take all appropriate measures to eliminate discrimination against women in all matters relating to marriage and family relations and in particular shall ensure, on a basis of equality of men and women: <ol style="list-style-type: none"> (a) The same right to enter into marriage. (b) The same right freely to choose a spouse and to enter into marriage only with their free and full consent. 2. The betrothal and the marriage of a child shall have no legal effect, and all necessary action, including legislation, shall be taken to specify a minimum age for marriage and to make the registration of marriages in an official registry compulsory.

General recommendations to CEDAW

- ▶ General recommendation No. 21 (1994) on equality in marriage and family relations: Reaffirms article 16 of CEDAW.
- ▶ General recommendation No. 24 (1999) on women and health: Reaffirms articles 12 and 16 of CEDAW.
- ▶ General recommendation No. 30 (2013) on women in conflict prevention, conflict and post-conflict situations: Reaffirms articles 1–3, 5 (a), 15, and 16 of CEDAW.
- ▶ Joint general recommendation No. 31 of CEDAW and general comment No. 18 of the Committee on the Rights of the Child (2019) on harmful practices: Reaffirms child and/or forced marriage as a harmful practice; reaffirms article 16 of CEDAW; calls for a minimum legal age of marriage for girls and boys, with or without parental consent, established at 18 years; calls for the legal requirement of marriage registration; and calls for the empowerment of women and girls.
- ▶ General recommendation No. 35 (2017) on gender-based violence against women, updating general recommendation No. 19 (1992): Calls for the repeal, including in customary, religious and indigenous laws, of all legal provisions that are discriminatory against women, including child marriage.

International Convention on the Rights of the Child (CRC)

Article 1

For the purposes of the present Convention, a child means every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier.

Article 24

3. States Parties shall take all effective and appropriate measures with a view to abolishing traditional practices prejudicial to the health of children.

Article 28

States Parties recognize the right of the child to education, and with a view to achieving this right progressively and on the basis of equal opportunity.

Article 34

States Parties undertake to protect the child from all forms of sexual exploitation and sexual abuse.

**General
comments to CRC**

Joint general comment No. 18 of the Committee on the Rights of the Child on harmful practices and general recommendation No. 31 of the Committee on the Elimination of Discrimination against Women: Reaffirms child and/or forced marriage as a harmful practice; reaffirms article 16 of CEDAW; calls for a minimum legal age of marriage for girls and boys, with or without parental consent, established at 18 years; calls for the legal requirement of marriage registration; and calls for the empowerment of women and girls.

**Convention on
the Rights of
Persons with
Disabilities**

Article 3

The principles of the present Convention shall be:

- ▶ Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons.
- ▶ Non-discrimination.
- ▶ Full and effective participation and inclusion in society.
- ▶ Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity.
- ▶ Equality of opportunity.
- ▶ Accessibility.
- ▶ Equality between men and women.
- ▶ Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities.

Article 6

Women with disabilities:

1. States Parties recognize that women and girls with disabilities are subject to multiple discrimination, and in this regard shall take measures to ensure the full and equal enjoyment by them of all human rights and fundamental freedoms.
2. States Parties shall take all appropriate measures to ensure the full development, advancement and empowerment of women, for the purpose of guaranteeing them the exercise and enjoyment of the human rights and fundamental freedoms set out in the present Convention.

Article 1

Each of the States Parties to this Convention shall take all practicable and necessary legislative and other measures to bring about progressively and as soon as possible the complete abolition or abandonment of the following institutions and practices, where they still exist and whether or not they are covered by the definition of slavery contained in article 1 of the Slavery Convention signed at Geneva on 25 September 1926:

- (c) Any institution or practice whereby:
 - (i) A woman, without the right to refuse, is promised or given in marriage on payment of a consideration in money or in kind to her parents, guardian, family or any other person or group.
 - (ii) The husband of a woman, his family, or his clan, has the right to transfer her to another person for value received or otherwise.
 - (iii) A woman on the death of her husband is liable to be inherited by another person.

Article 2

With a view to bringing to an end the institutions and practices mentioned in article 1 (c) of this Convention, the States Parties undertake to prescribe, where appropriate, suitable minimum ages of marriage, to encourage the use of facilities whereby the consent of both parties to a marriage may be freely expressed in the presence of a competent civil or religious authority, and to encourage the registration of marriages.

Beijing Declaration and Platform for Action

Platform L. The girl child

- ▶ Considers child marriage as a harmful practice.
- ▶ Acknowledges that early marriage and early motherhood can severely curtail educational and employment opportunities and are likely to have a long-term adverse impact on their and their children's quality of life.
- ▶ Calls upon governments: To enact and strictly enforce laws to ensure that marriage is only entered into with the free and full consent of the intending spouses; in addition, to enact and strictly enforce laws concerning the minimum legal age of consent and the minimum age for marriage and raise the minimum age for marriage where necessary (art. 274 (e)).
- ▶ Calls upon governments and international and national organizations: To generate social support for the enforcement of laws on the minimum legal age for marriage, in particular by providing educational opportunities for girls (art. 275 (b)).
- ▶ Calls upon governments and international and national organizations: To place special focus on programmes to educate women and men, especially parents, on the importance of girls' physical and mental well-being, including with regard to early marriage (art. 277 (d)).

2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs)

SDG 5.3

Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation.

Annex 2.

Regional human
rights instruments
concerning child
marriage

Regional instrument	Obligation(s)
<p>Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol)</p>	<p>Article 6</p> <p>(a) no marriage shall take place without the free and full consent of both parties;</p> <p>(b) the minimum age of marriage for women shall be 18 years;</p>
<p>African Charter on the Rights and the Welfare of the Child (ACRWC)</p>	<p>Article 2</p> <p>A child means every human being below the age of 18 years.</p> <p>Article 21</p> <p>Governments should do what they can to stop harmful social and cultural practices, such as child marriage, that affect the welfare and dignity of children.</p>
<p>Arab Charter on Human Rights</p>	<p>Article 33</p> <p>[...] no marriage shall be entered without the full consent of the intending spouses. The law in force shall regulate the rights and responsibilities of spouses as to marriage, during marriage and at its dissolution.</p>

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Endnotes

- 1 The 2030 Agenda consists of 17 interlinked Sustainable Development Goals (SDGs), including SDG 5 on Gender Equality.
- 2 UNICEF, 2021.
- 3 Borjas, 2004.
- 4 IFRC, 2021.
- 5 UNFPA, 2020.
- 6 Wodon and others, 2017.
- 7 Cunha and Heckman, 2007.
- 8 DHS and MICS are nationally representative household surveys that collect data through standardized, face-to-face interviews with women aged 15–49 in low- and middle-income countries. LMPS are longitudinal and nationally representative surveys, tracking both households and individuals over time, and are conducted by the Economic Research Forum.
- 9 Rashad, Osman and Roudi-Fahimi, 2005.
- 10 Calculations based on UNICEF child marriage statistics.
- 11 These rates are calculated using the most up-to-date household level data for these countries, namely, Egypt's DHS 2014, Iraq's MICS 2018, Jordan's DHS 2017–2018, and Tunisia's MICS 2018.
- 12 Cetorelli, 2014.
- 13 ESCWA, 2020.
- 14 Rashad, Osman and Roudi-Fahimi, 2005.
- 15 Wodon and others, 2017.
- 16 Psaki and others, 2021.
- 17 UNICEF and ICRW, 2017, p. 13.
- 18 UNICEF and ICRW, 2017; ESCWA, 2020.
- 19 El Arab and Sagbakken, 2019; Bartels, Michaels and Bunting, 2021; Elnakib and others, 2021.
- 20 For an overview of the most relevant legislation, both international and regional, see annexes 1 and 2.
- 21 Tunisia holds no reservations to CEDAW and has also ratified the Optional Protocol.
- 22 CEDAW/C/EGY/8–10.
- 23 Personal Status Law of 1959.
- 24 CRC/C/TUN/RQ/4–6.
- 25 Cunha and Heckman, 2007.
- 26 Heckman and Cunha, 2007.
- 27 UNFPA, 2013.
- 28 Alderman, and others, 2001; Behrman, and others, 2017; Black and Devereux, 2010; Graham, Birdsall and Pettinato, 2000; Corak, 2006; Solon, 1999; Chadwick and Solon, 2002.
- 29 Kabeer, 1999; Kabeer, 2008.
- 30 These impacts (direct and indirect) are measured as statistical associations between child marriage and various outcomes for women, such as early childbirth, child's health and so on. The economic costs associated with these impacts are not computed.
- 31 Different types of regression techniques were used depending on the type of outcome being analysed (across different domains).
- 32 Our strata variable considers the region and rurality. Using stratification, we ensured to include women from every region and rurality status; we also ensured similar variance, as each region has a similar level of variance. Moreover, the regressions are carried out using clustered standard error at the governorate level.
- 33 Since AMEs provide an intuitive and unified way of describing relationships estimated with regression, such estimation allowed the study to explain how the well-being and potentials of girls married before age 18 compare with women married after age 18.
- 34 Detailed regression results and descriptive statistics are not included.
- 35 Nasrullah and others, 2014a; Raj and others, 2009; Yaya, Odusina and Bishwajit, 2019.
- 36 Walker, 2013.
- 37 Raj and others, 2009.
- 38 Yaya, Odusina and Bishwajit, 2019.

- 39 Raj and others, 2009.
- 40 Inhorn, 1994; Inhorn, 1996; El-Zanaty and Way, 2009.
- 41 Cetorelli, 2014; De Bel-Air, 2017.
- 42 De Bel-Air, 2017.
- 43 TFR is calculated by summing the ASFRs for women aged 15–49.
- 44 Fertility in Iraq has remained stubbornly high. Cetorelli (2014) provides a detailed account of these trends. Her estimates indicate that, while total fertility remained stable from 1997 to 2010, an examination of the age patterns of fertility revealed an abrupt shift in the timing of births, with adolescent fertility rising by over 30 per cent soon after the onset of the war in 2003. Thus, in Iraq, conflict appears to be a driving force behind the prevalence of early and child marriage (Cetorelli, 2014; ESCWA, 2020).
- 45 De Bel-Air (2017) attributes the persistently high TFR in Egypt since the 1980s to an increase in early marriages that have driven up the fertility rates for very young age groups.
- 46 Fertility has plummeted in Tunisia over the last half century (Frini and Muller, 2021). In the 1960s, the TFR was 8 children per woman, dropping to 1.2 children per woman in 2018.
- 47 Cetorelli, 2014.
- 48 United Nations, 2013.
- 49 De Bel-Air, 2017.
- 50 Bongaarts and Casterline, 2018.
- 51 We follow the definition of modern contraception given in the Egypt 2014 DHS report. Modern methods include female sterilization, male sterilization, birth control pills, intra-uterine device, injectables, implants, male condom, and diaphragm/foam/jelly.
- 52 Parsons and others, 2015.
- 53 WHO, 2014.
- 54 Gage, 2013.
- 55 Campbell, 2002; Carbone-López, Kruttschnitt and Macmillan, 2006; Le Strat, Dubertret and Le Foll, 2011; Nour, 2009.
- 56 Nour, 2009; Nasrullah and others, 2014b; Paul, 2020.
- 57 ESCWA, 2020.
- 58 Acharya and others, 2020.
- 59 Our regression results showed that the age at marriage is weakly correlated with child mortality in Jordan.
- 60 Alduraidi, Sleaf and Sidebotham, 2021.
- 61 Mendez and Adair, 1999.
- 62 Onagoruwa and Wodon, 2017.
- 63 Hashad, 2020.
- 64 Raj and Boehmer, 2013.
- 65 ESCWA, 2019; Acharya and others, 2020.
- 66 The ability to voice and make decisions regarding one's own life and act upon them is called "decision-making power".
- 67 Quisumbing, 2003.
- 68 Wodon and others, 2017.
- 69 Irani and Latifnejad Roudsari, 2019.
- 70 Wodon, Nguyen and Tsimpo, 2016.
- 71 Ashraf, 2009.
- 72 Duflo, 2012.
- 73 Raj, 2010.
- 74 Samari and Pebley, 2018.
- 75 El-Zanaty and Way, 2009.
- 76 Ait Ali Slimane and others, 2020.
- 77 Irani and Latifnejad Roudsari, 2019; Raj and others, 2010a; Santhya and others, 2010.
- 78 Santhya and others, 2010.
- 79 Raj and others, 2010a.
- 80 Law Commission of India, 2008.
- 81 Rashad, 2015.
- 82 El Gazzar and others, 2020.

- 83 Savadogo and Wodon, 2017.
- 84 Wodon and others, 2017.
- 85 Wodon and others, 2017; Nguyen and Wodon, 2014; Parsons and others, 2015.
- 86 Santhya and others, 2010.
- 87 Field and Ambrus, 2008.
- 88 Nguyen and Wodon, 2014; Nguyen and Wodon, 2017.
- 89 Field and Ambrus, 2008; Nguyen and Wodon, 2014; Nguyen and Wodon, 2017; Wodon, Nguyen and Tsimpo, 2016.
- 90 Parsons and others, 2015.
- 91 UNICEF, 2014.
- 92 Khanna, Verma and Weiss, 2013.
- 93 Parsons and others, 2015.
- 94 Abu-Ghaida and Klasen, 2004; Semba and others, 2008.
- 95 Boyle and others, 2006.
- 96 Pfeiffer, Gloyd and Ramirez Li, 2001; Smith and Haddad, 2015.
- 97 Malé and Wodon, 2016.
- 98 ESCWA, 2019.
- 99 Iraqi Alliance for Education, 2018.
- 100 ESCWA, 2019.
- 101 Ibid.
- 102 ESCWA, 2020; Ibrahim, 2020.
- 103 Hutchinson, 2018a.
- 104 Sieverding and others, 2020.
- 105 Hutchinson, 2018b.
- 106 Assaad, Ghazouani and Krafft, 2017a.
- 107 Klasen and Pieters, 2015.
- 108 UN Millennium Project, 2005.
- 109 Chaaban and Cunningham, 2011; Smith and Haddad, 2015.
- 110 Koblinsky and others, 2012; Prata and others, 2010.
- 111 Parsons and others, 2015.
- 112 Assaad and El-Hamidi, 2001, 2009; Assaad, Ghazouani and Krafft, 2017a, 2017b; Assaad, Hendy and Yassine, 2014; Assaad and Krafft, 2015; Assaad and Zouari, 2003; Hendy, 2015; Hoodfar, 1997.
- 113 It is widely documented that social norms may constrain women's labour force participation worldwide (Alesina, Giuliano and Nunn, 2013; Bertrand, Kamenica and Pan, 2015; Chamblou, Muzi and Ahmed, 2016; Delprato and others, 2015; World Bank, 2012).
- 114 Assaad, Krafft and Selwaness, 2017; Assaad and Krafft, 2015.
- 115 Assaad and others, 2020.
- 116 Constant, and others, 2020.
- 117 Assaad, Krafft and Sewalness, 2017.
- 118 Kasoolu and others, 2019.
- 119 Ibid.; Assaad and Krafft, 2020.
- 120 Assaad and others, 2020.
- 121 Sayre and Hendy, 2013.
- 122 The Kolmogorov Smirnov (KS) test was carried out to estimate differences in wage distributions. The KS test statistic tests if these distributions are far away from each other. This suggests that we can reject the null hypothesis which states that the distribution of wages for married women is identical (meaning that the p-value is zero).



Child marriage violates human rights and is a significant impediment to achieving the 2030 Agenda for Sustainable Development. Although progress has been made in reducing child marriage worldwide, it remains prevalent (including in the Arab region), fuelled by sociocultural norms, poverty, lack of education, and external factors such as conflict or natural disasters. Research confirms that child marriage has severe and far-reaching consequences for women and girls, affecting all aspects of their lives, families and society. This new study estimates the costs of child marriage at different stages of women's lives, using a life-cycle skill formation model in four Arab countries, namely, Egypt, Iraq, Jordan, and Tunisia. The study provides new insights into the multifaceted costs of child marriage and highlights the urgent need for action to eliminate this harmful practice.

