Economic and Social Commission for Western Asia

The cost of child marriage over the life cycle: Evidence from Egypt, Jordan, Iraq and Tunisia

Methodology

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UNITED NATIONS
الاسكوا
ESCWA

Shared Prosperity **Dignified Life**

Empirical Specification

➢ We examine the impact of Child Marriage on various life outcomes in the Arab region

➢ $Y_{ij} = \alpha_i + \beta_i.CM_{ij} + \gamma_i.X_{ij} + \varepsilon_i$

where

Y_i is the vector of outcomes for individual i living in country j

CM is 1 if the individual is married before 18 years

X is a matrix of control variables

What do we mean by impacts?

➢ Our results and estimates of individual "costs" are only associations, and do not necessarily imply causation

➢ Estimates of impacts in this study are typically obtained through regression analysis (using cross-sectional data) aiming to isolate the potential impact of child marriage on various outcomes, controlling for other factors affecting those outcomes.

➢ Findings show the effects of child marriage by age cohorts in a cross sectional data and thus, are not following the same individuals over their life cycle.

➢ Hence, there is always a risk of bias in the measures of likely impacts.

Outcome Variables

Sections	Outcome Variables	Indicators
Fertility	Number of Live Births	Number of Live Births
	Use of Modern Contraception	Equal 1 if the woman is using modern contraceptive methods, 0 otherwise.
Health	Under-5 Mortality	Equals 1 if the child dies before or at the age of 5, 0 otherwise
	Under-5 Stunted Growth	Equals 1 if the child is stunted before or at the age of 5 and 0 otherwise.
Decision Making	Domestic Violence Perceptions Index	First, The Principal Component Analysis was run on target variables to condense the multivariate data into summary indices. Then, the produced indexes were normalized on a scale of 0 to 100 where 100 represents complete decision-making autonomy while 0 depicts no influence on decisions.
	Household Decision Making	
	Marital Decision Making	
	Composite Decision-Making Index	

Outcome Variables

Sections	Outcome Variables	Indicators
Domestic Violence	Intimate Partner Violence (Physical)	Equals 1 if the respondent ever experienced any kind of physical violence by husband/partner, 0 otherwise
	Intimate Partner Violence (Sexual)	Equals 1 if the respondent ever experienced any kind of sexual violence by husband/partner, 0 otherwise
Educational Attainment	Primary Education Attainment	Equals 1 if the woman has completed her primary education, 0 otherwise
	Secondary Education Attainment	Equals 1 if the woman has completed her secondary education, 0 otherwise
Labor Market Outcomes	Employment	Equals 1 if the woman is employed, 0 otherwise
	Log (Wages)	Log of Monthly Wages Earned

Choice of Countries

Within the Arab Region, the choice of countries is primarily data driven and is hinged upon the following two conditions:

➢ Availability of recent micro-data for all sections of the life-cycle analysis.

➢ Identification of age of first marriage
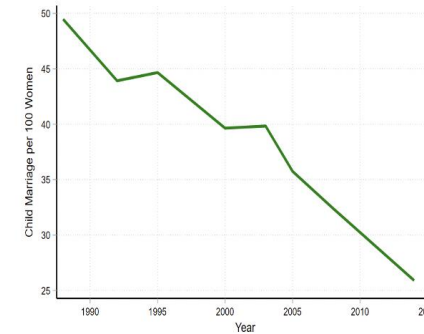
Countries and Data Set

	MICS	DHS	Labor Market Panel Survey
Egypt		2014	2018
Iraq	2018		
Jordan		2016-17	2016
Tunisia	2018		2014

Incidence of Child Marriage

Child Marriage Incidence is falling overtime, yet there are regions with higher incidence.
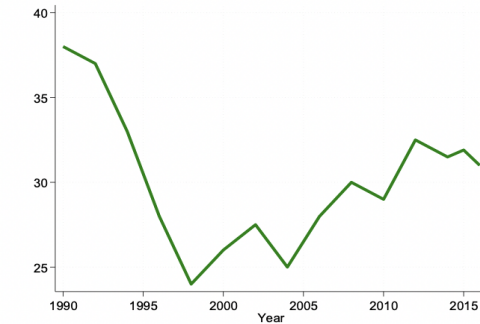
Countries	Child Marriage Incidence (%)
Egypt	20.49
Iraq	33.80
Jordan	13.42
Tunisia	3.06

Figure 4: Child marriage trend in Egypt 1990-2015
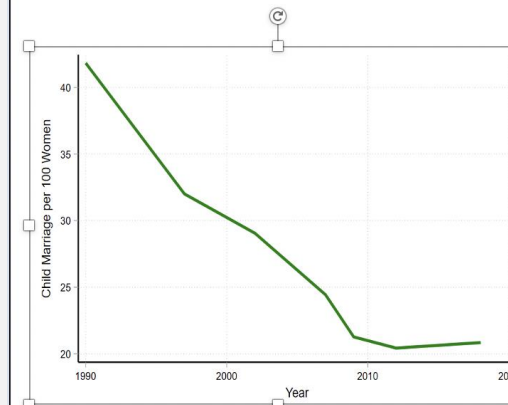(Percentage of child marriage by year of marriage)

Source: Authors' calculations based on DHS 2014.

Figure 6: Child marriage trend in Iraq 1990-2018
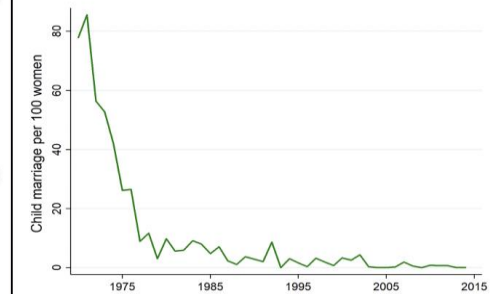(Percentage of child marriage by year of marriage)

Source: Authors' calculations based on MICS 2018.

Figure 8: Child marriage trend in Jordan 1990-2018
(Percentage of child marriage by year of marriage)

Source: Authors' calculations based on DHS 2017-2018.

Figure 10: Child marriage trend in Tunisia (1975-2015)
(Percentage of child marriage by year of marriage)

Source: Authors' calculations based on DHS 2018

Data Sets

Sections	Outcome Variables	Data Sets
Fertility	Number of Live Births	Egypt – DHS 2014
	Use of Modern Contraception (Binary)	Iraq – MICS 2018
Health	Under-5 Mortality	Jordan – DHS 2017-18
		Tunisia – MICS 2018
	Under-5 Stunted Growth	Egypt – DHS 2014
		Iraq – MICS 2018
Decision Making	Domestic Violence Perceptions Index	Egypt – DHS 2014
	Household Decision Making	Jordan – DHS 2017-18
	Marital Decision Making	
	Composite Decision-Making Index	
Domestic Violence	Intimate Partner Violence (Physical)	Egypt – DHS 2014
	Intimate Partner Violence (Sexual)	Jordan – DHS 2017-18
Educational Attainment	Primary Education Attainment	Egypt – DHS 2014
	Secondary Education Attainment	Iraq – MICS 2018
		Jordan – DHS 2017-18
		Tunisia – MICS 2018
Labor Market Outcomes	Employment	Egypt Labor Market Panel Survey 2018
	Log (Wages)	Jordan Labor Market Panel Survey 2016
		Tunisia Labor Market Panel Survey 2014

Empirical Specification

Sections	Outcome Variables	Econometric Specification
Fertility	Number of Live Births	Poisson Regression
	Use of Modern Contraception (Binary)	Logit Regression
Health	Under-5 Mortality	Logit Regression
	Under-5 Stunted Growth	Logit Regression
Decision Making	Domestic Violence Perceptions Index	Ordinary Least Squares Regression
	Household Decision Making	
	Marital Decision Making	
	Composite Decision-Making Index	
Domestic Violence	Intimate Partner Violence (Physical)	Logit Regression
	Intimate Partner Violence (Sexual)	Logit Regression
Educational Attainment	Primary Education Attainment	Logit Regression
	Secondary Education Attainment	Logit Regression
Labor Market Outcomes	Employment	Logit Regression
	Log (Wages)	Heckman Two Step Regression

Child Marriage and Number of Live Births

➤ Number of live births of women in each age cohort is a count dependent variable and hence, following Onagoruwa and Wodon (2017a) we use Poisson Regression for this analysis.

➤ Regressions control for basic socio-economic indicators like age, education, religion, employment status, gender of household head, household wealth index and household region (urban/rural).

Child Marriage and Use of Modern Contraception

➤ Use of modern contraception is taken as a binary variable and hence, a logit regression method is utilized for this analysis (Kamal and Ulas 2020; Santhya, 2011; Kamal, 2012; Godha et al., 2013; Nasrullah et al., 2013; Raj et. al., 2009)

➤ Regressions control for basic socio-economic indicators like age, education, religion, employment status, gender of household head, household wealth index and household region (urban/rural).

Child Marriage & Health

➢ Inter-generational health is proxied by indicators that hold true if the child born to adolescent mother is stunted or dies before reaching the age of 5.

➢ To examine the marginal average impact of having an adolescent mother on child's under-5 stunting and mortality we use logit regression (Onagoruwa and Wodon ,2017c ; 2017d)

➢ Regression controls for like child's gender, if the birth of child was single or twin, the child's birth order, if the preceding birth interval was less than 2 years, household size, access to improved water source and sanitation facilities and household wealth index.

Child Marriage & Decision Making

➢ Following Onagoruwa and Wodon (2017e), decision making is measured from three dimensions

  ➢ Perceptions of Domestic Violence
  ➢ Intra-Household Expenditure Decisions
  ➢ Marital Decisions

➢ We in addition create an index for each of the three decision making dimensions and then all three are aggregated in a composite index using principal component analysis.

Child Marriage & Domestic Violence Index

➢ Women respond to instances when/if a husband is justified in beating their wife:

  ➢ if the wife goes out without telling her husband,

  ➢ if she neglects her children,

  ➢ if she argues with her husband, or

  ➢ if she refuses to have sex with him.

Child Marriage & Intra-Household Index

➢ Women currently married are asked about who makes decisions about:

    ➢ use of healthcare

    ➢ large household purchases

    ➢ visiting relatives

    ➢ use of husband's earnings

Child Marriage & Marital Index

➤ Marital Decision Making Index includes:

  ➤ if women can refuse to have sex with their husband
  ➤ if they can request their husband to use a condom when having sex
  ➤ if they easily get permission to use healthcare facilities

Child Marriage & Decision Making

➤ All indices are created using Principal Component Analysis and are standardized between 0-100, where 0 is least agency and 100 indicates most agency.

➤ Separate analysis is conducted for each dimension of the decision making along with the composite index.

➤ Ordinary Least Squares regression method is utilized while controlling for education attainment, age cohort, religion, household wealth index and region.

Child Marriage and Domestic Violence

➢ Following Savadogo and Wodon (2017), we conduct separate analysis for physical and sexual violence.

➢ Logit regression is used to estimate the marginal impact of child marriage on the probability of incidence of Intimate Partner Violence (Physical or Sexual).

Child Marriage and Educational Attainment

➢ Endogeneity issues between child marriage and education due to bi-directional causality and omitted variables (Wodon ,2017f).

   ➢ Literature use instruments like regional level child marriage rates, year of menarche.

➢ However, we estimate the marginal effect of child marriage on completion of primary and secondary education, logit regression is employed.

➢ The sample is restricted to 20-34 year women and controls for marital status, religion, region and the PSU level leave out means for electricity, access to piped water, toilet, unemployment and mean of bottom two quintiles.

Child Marriage and Labor Market Outcomes

➢ Following Savadogo and Wodon (2017b), we employ logit regression to estimate the marginal impact of child marriage on the probability of employment.

➢ To examine the effect on women's earning, we use the two-stage heckman model that examine the impact of child marriage on log of wages.

➢ Both regression control for age of individual at the time the survey was conducted, education, access to the internet, region, the number of employed individuals in the household, wealth index and ownership of mobile phone, bicycle and land.

Thank You