Journal of Population and Social Studies, Volume 27 Number 1, January 2019: 87-105
DOI: 10.25133/JPSSv27n1.006

Marriage and Fertility under Military Occupation: A Study of the West Bank of Palestine

Yara Jarallah[1*] and Dennis Hogan[2]

Abstract

We investigate effects of the Israeli Occupation of the West Bank on rate of marriage and fertility in Palestine using three alternate theories: (1) higher fertility is a political response to existential threat associated with expansion of settler communities (minority status hypothesis), (2) larger numbers of checkpoints in a place isolate it from neighboring places, and narrows accessible marriage market possibly increasing age at marriage (marriage market hypothesis) and (3) for families under stress, responses to both checkpoints and larger settlement populations will be to 'double down' on family - an earlier age at marriage and higher fertility within marriage despite fracturing of the marriage market (family security hypothesis). We use data from Palestinian Censuses of 1997 and 2007 and divide the 11 West Bank governorates into 31 distinct geographic areas, distinguishing urban, rural, and refugee camps. We test the hypotheses for women age 10 to 49 years in 2007, controlling for place of residence characteristics in 1997, community marriage and fertility rates in 1997, and change in community level of development from 1997 to 2007. Military checkpoints and settler population penetration in each governorate measure the intensity of the Israeli Occupation. We find evidence consistent with family security hypothesis.

Keywords

Marriage; fertility; conflict; minority hypothesis; West Bank

Background

Conflict has been a major component of life throughout history, and remains such in many parts of the developing world, disturbing all aspects of a given society. This includes rates of mortality, migration, fertility, and nuptiality (Randall, 2005). Although studies have been conducted on the effect of internal and international conflicts on infant mortality and fertility in the developing world (Agadjanian & Prata, 2002; Lindstrom & Berhanu, 1999), few have focused on the long-term effect of such conflicts on the amount of children families have. Some have found no association whatsoever between conflict and fertility (Locoh, 1994), while others have found a conflict-induced decline in fertility, mostly due to perceived notions of additional costs and economic burdens of maintaining children (Eloundou-Enyegue et al., 2000). War seems to increase infant mortality when a population is subject to forced removal, but typically, it does not result in a long-term increase in infant and child mortality that might engender increased fertility (Kiros & Hogan, 2000). In 1994, Eberstadt studied Eastern

[1] School of Population and Global Health, The University of Melbourne; Department of Sociology and Population Studies and Training Centre, Brown University

[2] Department of Sociology and Population Studies and Training Center, Brown University, Box 1916, Providence, RI 02912, USA

* Yara Jarallah, corresponding author. Email: yara.jarallah@unimelb.edu.au

Germany after Communism and found that prospective union and marital difficulties were exacerbated following unification with the result being decreases in marriages, as well as decreases in both fertility within marriage and overall fertility. This was irrespective of receiving higher levels of education and improvements in the standard of living in a post-communist era. The author concluded that uncertainty in an economic future negatively affected marriage and childbearing.

Conversely, Heuveline and Poch (1998, 2006, and 2007) studied social conditions in Cambodia, which has had a remarkable recovery in its rates of marriage and fertility following the fall of the Khmer Rouge, despite the collapse of its social structure and the death of millions of Cambodians. Remarkably, they find that marriages, which were formed during the worst of the Khmer Rouge excesses, were as likely to remain intact after the crisis. This suggests a degree of resilience of marriage, family, and fertility in a population even after social upheaval and genocide.

The purpose of this study is to investigate the long-term impact of wartime conflict and military occupation on marriage and fertility using the case of the occupied Palestinian territories as its focus. For so many decades Palestinians have been affected by periodic wartime violence and expulsion and, since 1967, there has been a military occupation of the West Bank by Israel, with its numerous internal checkpoints (Figure 1) as well as a growing number of Israeli settlements (Figure 2) in land claimed by Palestinians for an autonomous state. The 'demographic puzzle' of the Palestinian territories, as mentioned in a previous study (Randall, 2001), is why improvements in education, urbanization, and initial improvements in life expectancy do not have a direct association with dramatic declines in fertility which remained very high at about 7 children per woman from the 1960s until the early 1990s when it started to decline to about 5 children per woman in the early 2000s (Khawaja, 2000, Khawaja et al., 2009). However, despite dramatic improvements in education, intensification of urbanization, and reductions in infant and adult mortality after 2000, there have been no significant declines in fertility. From the early 2000s to the present the total fertility rate (TFR) has remained steady at about 4.4 children per woman (PCBS, 2018). Indeed, when compared to nearby countries in the Middle East, the Palestinian territories have levels of development exceeded only by Lebanon and prewar Syria, yet have fertility levels that are higher than any Arab nation except Yemen, and Iraq (PRB, 2018). One explanation offered is that early marriage and high fertility of Palestinians reflect a demographic response to the political tensions by offering demographic security in numbers to a perennial state of conflict and political insecurity (Khawaja, 2003).

One of the frequently referenced theories in explaining fertility differentials during both times of peace and conflict is the Goldscheider and Uhlenberg minority group status hypothesis (1969). It states that members of the minority group within a larger nation state will have higher or lower fertility than their counterparts depending on the normative system to which their group belongs—that is, when the normative system encourages large families, fertility is usually higher and conversely, if it is socially acceptable to have smaller families then fertility is lower. Indeed, Khawaja and Randall (2006) in examining this theory in relation to the Palestinian population have extended it to argue that the Palestinian population (2006: 22) 'is not a minority within a nation state, but a minority who perceive themselves to be occupied and oppressed by a nation state'.

Other studies have provided evidence in support of the political fertility thesis in the Palestinian context in comparison to Palestinians living in Lebanon and Jordan (Courbage, 2005; Khawaja, 2003). The ideas posed in these studies are suggestive but not compelling. This is because the different socioeconomic, ethnic, and political structures of these countries mean that the Palestinian comparison does not only capture political factors but a myriad of other

social, economic and ethnic differences. At the individual level, there is strong evidence that urban residence, increased standard of living, better medical care, and increased women's education, are associated with delayed marriage and lower marital fertility among Palestinians (Khawaja et al., 2009).

One particular study of fertility amongst Palestinians in Israel found that neither structural factors nor ideational factors, including the minority status hypothesis, fully explain why the TFR declined from nearly 9 children per woman in the 1960s to 4.5 children per woman in the early 1980s, nor did it explain why it has remained at nearly 4.5 children per household ever since (Nahmias & Stecklov, 2007). The authors suggest that the minority status hypothesis might have more merit at the level of the local community, a strategy that is adopted in this paper.

An alternative hypothesis is that road closures, expansion of settlements, and growth of military zones, all associated with a profusion of checkpoints limiting travel between areas of the West Bank and between the West Bank and Gaza, have dramatically shrunk marriage markets (Map 1; compare contiguous geographic areas in the 1967 and 2000 panels). Lichter, LeClere and McLaughlin (1991) argue that marriage markets are applicable to local communities and are not national in scope. This is extremely relevant in the Palestinian context where the profusion of checkpoints separate adjacent communities that previously formed marriage markets, and can segment parts of local communities. As the map demonstrates, the contiguous residential areas of Palestinians in the West Bank are small and segmented. Palestinian marriage markets were previously unencumbered within the West Bank; but since the second Intifada[i], marriage markets have shrunk and narrowed because of the greater isolation of areas that experience more checkpoints.

Furthermore, since 1967 there has been a continuing marriage market cleavage between Palestinians living in East Jerusalem and the West Bank, who before 1967 regularly married. West Bank Palestinians typically have very restricted access (if any) to East Jerusalem and thus rarely meet potential spouses past barricades. When couples do manage to meet and marry, they incur major costs. In most cases, the new spouse (from the West Bank) cannot get residence in East Jerusalem. Complicating the issue, if it becomes known that an individual living in East Jerusalem has married a Palestinian living in the West Bank, that person will lose the right to reside in East Jerusalem even if he or she was born in this city and has always lived there (Hamayel et al., 2017).

Another alternative theory is that the Palestinians respond to threats of violence, the loss of men who are killed or are in prison, land seizures, and potential catastrophic economic loss through the family, which after all, is the traditional unit of social organization and security for Palestinians. This is consistent with the ideas of Harker (2012) who argues that even though Palestinian families have been criticized as patriarchal institutions, they are also the means by which resistance to political violence occurs. Khawaja (2000) examined the fertility trends in the West Bank and Gaza between 1968-1992 and noted that the long-term trend since 1985 towards lower fertility in the West Bank evened out during the first Intifada.[ii] Because of the early age at which young men and women marry in the West Bank, higher fertility takes place

[i] The second Palestinian uprising (Intifada) broke in the year 2000 fueled by widespread discontent with the failure of the Oslo Accords (that were signed by the Palestine Liberation Organization and Israel in 1993) to address accelerating Israeli confiscation of Palestinian lands and by the shortcomings of the Palestinian National Authority.

[ii] The first Palestinian popular uprising (Intifada) broke out in 1987 against the Israeli military occupation.

in the first years of marriage which offsets fertility among women who are a bit older which continues to decline. Since the intensification of the military occupation in 2000, the total fertility rates have remained unchanged.

Hypotheses

One of the problems with the application of any of these hypotheses to Palestinians is that there is no other group in Palestine from which to compare them to. Also, there has never been another group in the world that has faced similar social, economic, and political restrictions, and thus, no other group internationally to compare them to either. Because of this complicating factor, this paper has taken a different approach. It examines the changes over time in the marriage and fertility patterns (birthrates) of West Bank women, and it studies women living in local communities that vary in the level of disruptions associated with the occupation. This allows the effects of the occupation to be assessed while holding the cultural and social context constant.

This study may be the first empirical attempt to capture the long-term effects on marriage and fertility patterns that come about when a group of people has experienced military occupation by a foreign power. The objective of the study is to look at variations of marriage and fertility patterns within the Palestinian population residing in different parts of the West Bank that is experiencing the impact of the Israeli occupation in varying degrees. To do this, data was combined from several sources. The data captured the socio-demographic characteristics of individuals, families, and communities, and measures of the Israeli Occupation on given areas to assess the net impact of the occupation on family formation.

The study used two measures associated with the occupation; these are the Israeli checkpoints and closures affecting each community and the ratio of the size of the settler population to the local Palestinian population. Three antithetical hypotheses that may account for the association between high fertility and the occupation are tested: (1) that higher marital fertility is a political response to the existential threat associated with the expansion of settler communities, but is unaffected by the number of checkpoints (the minority status hypothesis), (2) that larger numbers of checkpoints in an area isolate it from neighboring regions, and narrows the accessible marriage market, thereby increasing the age at which individuals usually marry, but has no impact on marital fertility (the marriage market hypothesis), and (3) in the pronatalist Palestinian society, in which children are perceived as assets and a source of long-term economic and social security in families (Khawaja & Randall, 2006), the community response to the occupation is to 'double down' on family by encouraging individuals to marry at an early age despite the fracturing of the marriage market and higher fertility within marriage-the high rate of fertility merely the result of so many young marriages (the family security hypothesis).

The Setting

The Occupied Palestinian Territories (OPT), is the name officially used by the United Nations to designate these lands that have a unique history dominated by conflicts, war, and outside colonial and political domination (Khawaja, 2000). From centuries of colonization by the Ottoman Empire, to the British mandate and up to the current protracted Israeli Occupation, the Palestinians have undergone extraordinary demographic, economic and political

conditions that have no doubt been prominent in shaping their lives, behaviors, and the overall social fabric of their society including marriage and fertility dynamics (Assaf & Khawaja, 2009).

The Occupied Palestinian Territories is divided into two separate areas, which are the West Bank and the Gaza Strip and are home to around 4.78 million Palestinians. The West Bank, including East Jerusalem, on which this paper is based, consists of about 2.88 million people (PCBS, 2018) and is divided into 11 separate governorates (see Map 2). The Palestinian population has a very young age structure with about 47% of the population younger than 17 years of age, a reflection of the high total fertility rate of around 4.4 children per woman (PCBS, 2018) compared to Jordan (3.2), Lebanon (1.7), and Israel (3.1) (PRB, 2018). In addition to the high fertility, it is also common to marry early. In 2017, the median age at first marriage was 19 years for women aged 14 years and older (PCBS, 2018).

Despite the difficult political situation and protracted Israeli Occupation, Palestinians fare generally well on standards of health, literacy and education, in part due to international aid for refugees and persons living in camps as well as for the general population. In fact, Palestinian literacy rates are considered one of the highest in the Middle East region (Tabutin & Schoumaker, 2005), with a combined primary, secondary and tertiary gross enrollment ratio of 82.4% (Giacaman et al., 2009). Palestinian women aged 15 and older in particular are among the most highly educated in the Middle East with a literacy rate of 88.9% compared to Lebanon with 86.3%, followed by Jordan (84.7%), Syria (75.4%) and Egypt (43.5%) (Abdul Rahim et al., 2009). In the field of health, all usual indicators point to remarkable progress irrespective of the data source. For example, infant mortality has declined from 100 per thousand births in the early 1970s to around 25 per thousand in 1995 (Khawaja, 2000).

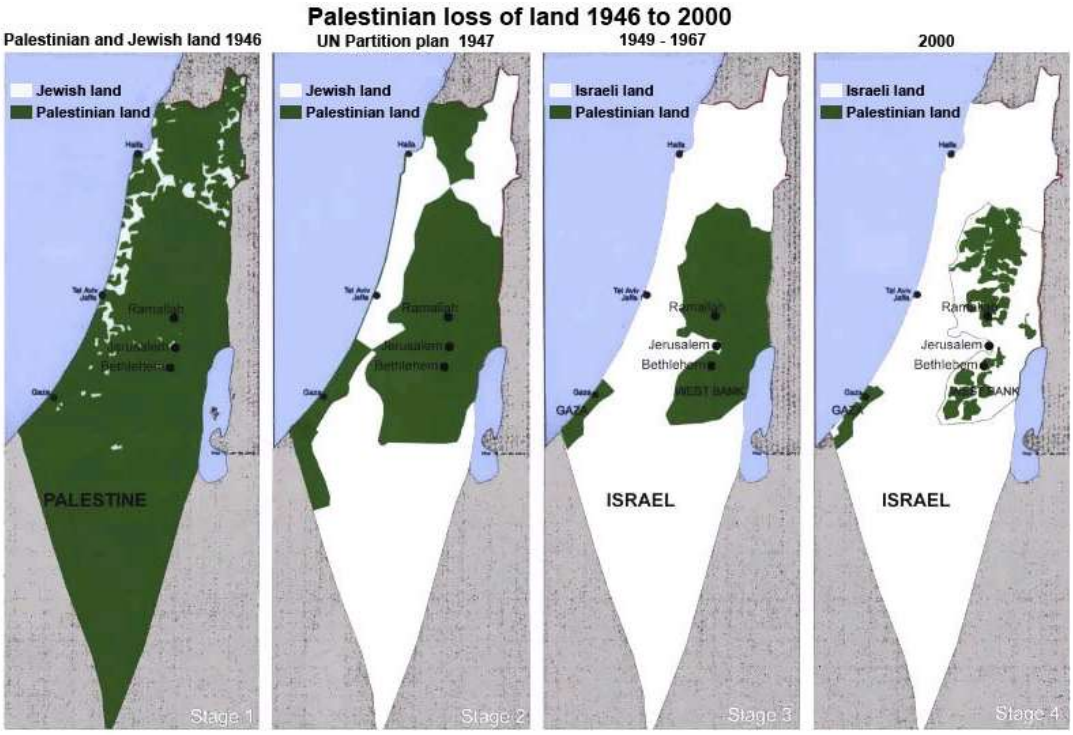
The West Bank, including East Jerusalem, was captured from Jordan in the 1967 War, making Israel an occupying power. As an occupying power, Palestinians see Israel as bound by the 4th Geneva Convention that prohibits the transfer of the population of any occupying power into the territories that are being occupied. This notwithstanding, Israeli settlements have occurred in areas of the occupied West Bank (the boundaries of which were determined in 1967), and East Jerusalem which was annexed as part of Israel. From the viewpoint of the Palestinians, the seizure of East Jerusalem and these Israeli settlements have deprived the Palestinians of a contiguous territory for a nation state (refer to Map 1). This is the context in which Palestinians regard themselves as under an existential threat.

As of 2000, the lives of the Palestinians under the occupation has become much harder with the intensification of the checkpoints and construction of the massive Separation Wall. The Wall, based on the Israeli declared route in 2006, will annex around 10% of the total land area of the West Bank and incorporate many of the Israeli settlements (Giacaman et al., 2009). The Israeli settler population has grown with an average yearly population growth rate of 4% between 1977 and 2011 compared to only 2.6% for the Palestinians (Courbage, 2011). By 2008, there were a total of 460,000 Israeli settlers living in 149 settlements in the West Bank (Batniji et al., 2009). It is estimated that around 32% of Palestinian privately owned and registered land in the West Bank has been used to build these Israeli settlements and the boundary areas around them (Batniji et al., 2009).

By 2008 the Israeli military erected over 600 checkpoints and barriers within the West Bank (Giacaman et al., 2009), further restricting Palestinian internal movement in a geographic area that is slightly smaller than Delaware (5,655 km^2). This physical barrier (the Wall) along with the Israeli military closures of roads connecting the governorates and checkpoints within the parts of the Palestinian territories outside of the Wall dramatically segments Palestinian governorates in the West Bank from one another, restricting Palestinian access to health care

and education, and separating families from their places of work and land (Giacaman et al., 2009). Based on the long-term and pervasive impact of the occupation, and the increased restrictions on mobility that began in 2000 and the expanding settler populations, Palestinians in the West Bank regard themselves under existential threat. This makes it a classic case for the study of the effects of conflict and wartime occupation on demographic behaviors, including marriage and fertility. This study uses information from the 1997 Census of Occupied Palestinian Territories to represent the population prior to the intensification of the settlements, the beginning of the construction of the Separation Wall, and the pervasive geographic segmentation of areas of the West Bank. The demographic consequences of this intensified occupation after 2000 is captured in the 2007 Census.

Map 1: Palestinian Land from 1946 up to 2000



Source :The Palestine Solidarity Committee at :http//:www.stl-psc.org/?p=19

Map 2: Governorates in the Occupied Palestinian Territories

Source: Giacaman et al, 2009 Lancet Series

Changes in Marriage and Fertility in the Governorates

There have been small declines in the percentages of women aged 10 to 49 who are ever-married in the West Bank (65% in 1997 to 60% in 2007). In reviewing data in all of the governorates for 2007, marriage was more likely among women in East Jerusalem (both in areas under Palestinian control and those under Israeli control), Bethlehem, and Hebron (tabulations not shown). There were also some declines in the annualized marital fertility rate per 1000 ever-married women from 226 in 1997 to 210 in 2007 in the West Bank. The smallest declines were found in Ramallah, Jericho, Bethlehem, and Nablus. In both years, the highest marital fertility was in Hebron. The relative stability in the percentage of women who were ever-married and in the general marital fertility rate is unexpected given the further improvements in levels of education, increased urbanization, and the economic situation of the West Bank during the past ten years. In order to assess the impact of settler penetration and geographic isolation caused by its numerous checkpoints on governorate-level variations in marriage and fertility trends in 2007, it is important that the initial 1997 marriage and fertility patterns of the governorates are controlled for. The statistical models of this study, in essence, look for changes in marriage and fertility of the governorates from 1997 to 2007, controlling for their baseline values in 1997.

Data and Methods

Palestinian Censuses of 1997 and 2007

Two main sources of data for this study are the Palestinian Censuses of 1997 and 2007 conducted by the Palestinian Central Bureau of Statistics (PCBS). The 1997 census collected data for 407,265 households and 1,873,476 individuals in the West Bank. The 2007 Census collected information from 414,575 households and 2,279,095 individuals. Public use micro-sample census data were available on a 20% sample of the enumerated households and individuals in each of the census years. This 20% is a systematic random sample of all the enumerated households of the census. In this paper, the micro-sample census data on households and persons in the households' rosters were used. Specifically, the 1997 census was used to control for community level variations in marriage practices and fertility rates for ever-married women (see Table 1)[iii]. The micro-census data includes information on locality (urban, rural, or refugee camps) and governorates that reflect distinctive geographic variations in the social, cultural, and economic characteristics of the Palestinian population.

Table 1: Independent Variable Measures by source, year and level of measurement

Variable	Source	Year	Level
Demographic Measures			
Age	Census	2007	Person
Education	Census	2007	Person
Locality	Census	2007	Person
Socio-economic Measure			
Change in Wealth Index	Census	1997 & 2007	Community
Political Measures			
Ratio of Settler to Palestinian Population	B'tselem	2007	Community
Checkpoint	OCHA	2007	Community
Other Measures			
Singulate Mean Age at marriage	Census	1997	Community
Marital Fertility Rate	Census	1997	Community
Marriage Duration under Five years	Census	2007	Person

Local Measures of the Intensity of the occupation

Since measures of the intensity of the occupation are not data that are collected in the censuses, this paper also relies on published reports from both B'Tselem (2011) and UN-OCHA (2013). B'Tselem, the Israeli Information Center for Human Rights in the Occupied Palestinian Territories, is an Israeli human rights organization established by the Israeli public and policy makers on human rights violations in the Occupied Palestinian Territories[iv]. UN-OCHA, the United Nations Office for the Coordination of Humanitarian Affairs in the Occupied Palestinian Territories (OPT) was established in 2002 to support international efforts to respond to the deteriorating humanitarian situation in the OPT[v]. The B'Tselem data on the Israeli settler population comes from the Israeli Central Bureau of Statistics (CBS) in late 2007. The data on checkpoints and closures comes from OCHA's closure maps in late 2007. The data

[iii] This is explained further in the 'Local Measures of Marriage and Fertility' section on page 12.

[iv] More information on B'Tselem can be found at www.btselem.org/about_betselem

[v] More information on UN-OCHA-OPT can be found at www.ochaopt.org/content.aspx?id=1010055

that is used in this study is available for each of the governorates to reflect the situation in 2007. The dramatic expansion of settlements after 1997 continued so the 2007 data is a cumulative measurement of this activity. While some checkpoints were erected in 1997 and seem to be permanent, others are temporary. The geographic focus of the checkpoints has been largely unchanged in the 1997 to 2007 period (see Figure 1).

Figure 1: Israeli checkpoints and closures by governorate and year, 2003-2011

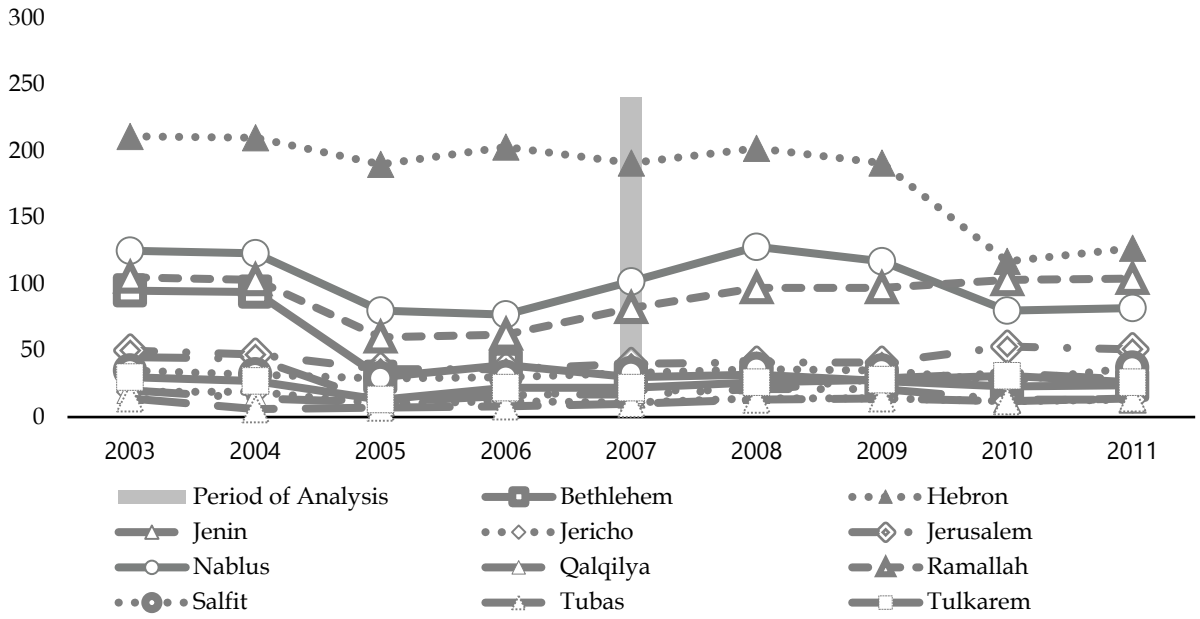
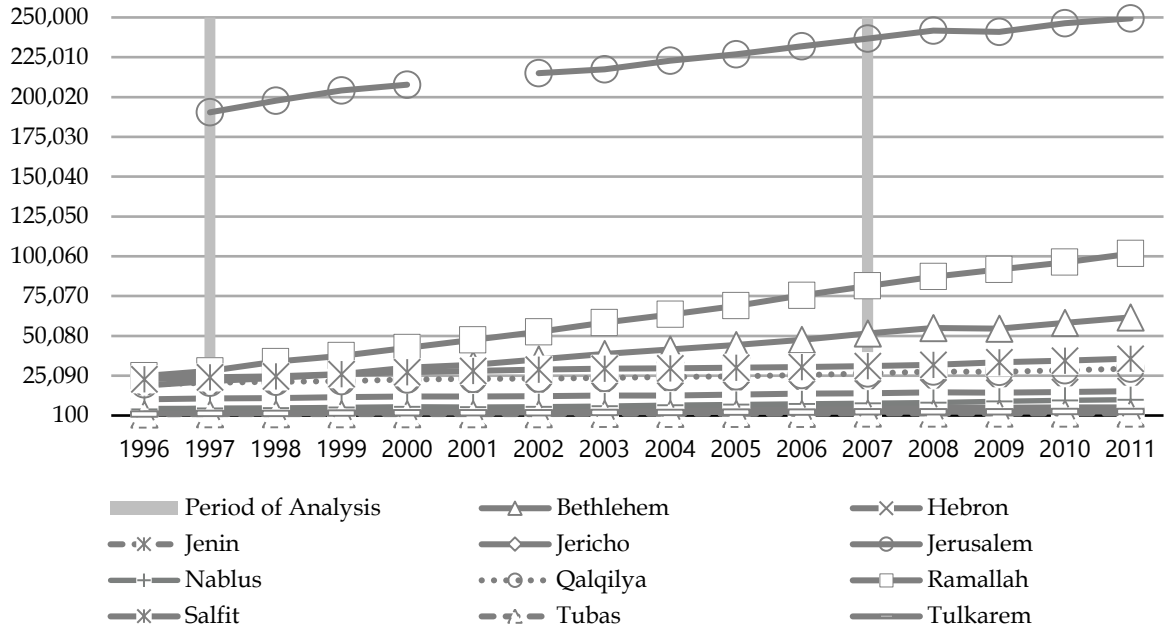


Figure 2: Israeli settler population in the West Bank by governorate and year 1996-2011 (including East Jerusalem)



In this study each West Bank woman who was a participant in the micro-sample census was assigned two measures, which were political indicators of their experiences of the occupation, based on their places of residence. These measures were: (a) the ratio of the Israeli Settler population to the Palestinian population using the B'Tselem data and (b) the number of checkpoints in each governorate using the OCHA data. The Political Indicators were governorate characteristics. The ratio of the settler population to the Palestinian population was done as a means of gauging the penetration of settlement activity within a governorate.

Palestinians regard the settlements as an existential threat since this ever-expanding intrusion involves the seizure of land and homes and the forced evacuation of persons from (a) land that will be used for settlements, (b) roads to the settlements that are restricted to settlers (typically Palestinian roads that are seized), and a 300-meter security border that is being erected around the settlements and the roads. And if the minority status hypothesis is right this existential threat indicator will increase marital fertility. The second Political Indicator is the number of Israeli checkpoints in each governorate. These checkpoints restrict, and sometimes prevent, travel and trade within and between governorates in the West Bank. Both of these Political Indicators are logged to normalize the distributions.

Thus, it can be stated that in the minority status hypothesis there is the assumption that a higher level of marital fertility will take place in areas that have a greater impact of settlements, but checkpoints in this area will have negligible bearing on birthrate. The marriage disruption hypothesis states that the number of checkpoints (but not the settlements themselves) increases the age in which individuals get married by shrinking the effective size of marriage markets, although this has no significant impact on marital fertility. In contrast, earlier ages at marriage in places most impacted by the checkpoints and settlements, is evidence for the family security hypothesis. The family security hypothesis also anticipates that lifetime fertility of women will be higher because of their greater period of marital exposure, but it does not imply that greater settler penetration will result in higher marital fertility.

Local Measures of Marriage and Fertility

Combining information on places of residence in the governorates and localities, it is possible to identify 31 distinct areas, or communities, in which Palestinian individuals and families reside. Two governorates in the West Bank, Qalqilya and Salfit, do not have refugee camps. Thus, there are 31 instead of 33 residential communities. These communities have very distinct demographic histories and socioeconomic features (as based on the aggregate of the population census data in those, as well as variations in their historic levels of fertility and mortality). In order to account for these underlying community variations in customary marriage practices, the marriage models include controls for past patterns of marriage (the 1997 singulate mean age at marriage for women in each community). Similarly, the models of marital fertility include a control for the 1997 fertility rate for ever-married women in each of the 31 communities. More than half of the women in the sample were married or were at one time married, with a singulate mean age at marriage of 15.7 in 1997[vi]. The five-year annualized marital fertility rate was 226 births to ever-married women in 1997 (Table 2).

[vi] We calculate the singulate mean age at marriage and marital fertility for women in each of the 31 communities using the 1997 census data separately and then using the community identity indicators assign each woman in our 2007 micro-sample census file these two community measures.

Table 2: Sample characteristics of women 10-49 years, West Bank 2007 (n=146,045)

Variable	% or Mean
Women Ever Married in 2007 (%)	60.03
Births, Mean (SD)%	3.58 (1.73)
Births per Women (%)	
0	8.94
1	7.97
2	10.18
3	11.37
4	12.57
5 or more births	48.97
Demographic Measures	
Age (%)	
10-19	29.48
20-24	13.10
25-29	11.18
30-34	9.97
35-39	8.49
40-44	7.23
45-49	5.41
Education (%)	
Below Secondary	71.13
Secondary and Above	28.87
Locality (%)	
Urban	68.38
Rural	26.18
Refugee Camp	5.44
Socio-economic Measure	
Wealth Index, Mean (SD)	142.94 (58.35)
Political Measures	
Ratio of Settler to Palestinian Population, Mean (SD)	0.20 (0.23)
Checkpoint, Mean (SD)	81.11 (65.95)
Singulate Mean Age At Marriage in 1997 (years)	15.68
Marital Fertility Rate 1992-97 (births)	225.50

Measures of Other Variables

This study has constructed a wealth index for each of the 31 communities that is a weighted factor based on 11 variables comprising the availability of household amenities [private car, refrigerator, solar boiler, central heating, cooking stove, washing machine, home library, TV, video, phone line, and computer][vii]. The components of this wealth index, while widely used in population censuses and surveys worldwide, are reflective of consumption rather than wealth (ownership of land, property, or businesses). Improvements in the wealth index are used as an indicator of socioeconomic development; and in this case that occurred from 1997[viii] to 2007, and was measured as the log of the ratio of the wealth index in 2007 relative to 1997.

[vii] Specifically, we used the availability of household amenities in each of the 31 communities to construct a separate wealth index for each.

[viii] Again, we calculate the wealth index in each of the 31 communities using the 1997 census data separately and then using the community identity indicators assign each woman in our 2007 micro-sample census file this index.

Since there are likely to be other changes in the development level of the governorates, the models used in this study include information for the distribution of persons in urban, rural, and refugee camp communities.

Using micro-census data the timing of marriage of individual women was measured using an indicator "ever-married" (meaning "ever have been married at one time" vs. not married or never having been married) and was categorized according to age. Crude as this measure might be, the micro-samples for public use only provided information on marriage age and current age aggregated into five-year intervals that prevented the possibility of conducting a survival analysis of single year ages at marriage during the past five years. The second outcome variable is a count of the number of children under the age of five living with each ever-married woman aged 10 to 49. Since infant and child survival is quite high and it is extremely rare for children to live apart from their mothers at these ages, this is a strong proxy for actual marital fertility during the previous five years. Because marriage and fertility are highly age-graded, all models include a control for women's ages (10-19, 20-24, 25-29 (reference group), 30-34, 35-39, 40-44, and 45-49 years).

To assess the net impact of the political indicators on marriage and fertility, it is essential to control for other individual variables known to affect marriage and fertility. One of these variables is education (Saxena et al., 2004; Cetorelli, 2014). Secondary school education is critical in affecting the age in which Palestinians marry and thus, indirectly, it affects their fertility (Khawaja & Randall, 2006). Hence, education is dichotomized into "below secondary education" (reference) versus "secondary education and above". The fertility models also include an indicator of marriage duration in the past five years and indicates the number of years a person has been married. It is top coded at five if a person has been married for five years or more. This controls for women's differential exposure to the risk of birth during the past five years since virtually all births in the occupied Palestinian territories occur within marriage (Rashad et al., 2005).

Table 2 provides some descriptive statistics for variables that will later be used in the multivariate analysis. There were 146,045 women in the sample, and 60% were ever-married in 2007 with a mean number of 3.58 births, and 54% were 29 years and younger. This is a relatively educated sample in which about 29% had a secondary education or higher. The sample is predominantly urban where 68% lived in urban areas while around 26% lived in rural areas and 5% lived in refugee camps. At that time there was an average of about 0.20 Israeli settlers for each Palestinian and an average of about 81 checkpoints in each of the governorates.

Statistical Models

One consideration was that the data used should elucidate both the personal and communal impacts of the occupation should they exist. The study first estimated a random effects logistic regression model to predict whether women were ever-married and then estimated a random effects poisson regression for predicting ever-married women's number of births during the preceding five-year period. More technical details about the analytical approach used in this study can be seen in the Appendix.

Results

Marriage

As shown in Table 3, Model I, the likelihood of a given woman in 2007 being married in that year was 0.988 and the number of births she has had in the past five years was 0.998. Model II, is closely linked to the prior marriage patterns and fertility levels of the communities they lived in. The coefficients of the other variables related to the geographic variations among women in marriage and fertility in 2007, taking into account the characteristics of the 1997 marriage and fertility patterns of those communities in 1997.

The control variables related to the likelihood of ever being married. Women under age 25 were found less likely to have ever been married and women 35 and over were more likely to have been married. This is to be anticipated in a population in which nearly all women eventually marry. Women with secondary education or higher were found to be much less likely to get married at an early age. Other research shows that although education delays marriage amongst most Palestinian women, virtually all, even those with a college education, will eventually marry (Abu-Rmeileh & Hogan, 2011). Women who were living in communities that had greater economic improvements between 1997 and 2007 were more likely to get married. In most populations worldwide, the age for marriage is earlier in rural populations than in urban settings; but this is not the case for the Palestinian population in which rural residents and persons living in refugee camps are less likely to be married at each age. Ethnographic studies of the rural population indicate that young people in rural areas and refugee camps have a more difficult time becoming financially independent than in the past, and their families have greater difficulties affording appropriate weddings (Johnson, Abu Nahleh & Moors, 2009).

The more women and their families are intruded upon, and in a sense, under siege by the Israeli occupation, the greater the likelihood those women will be married. A one percent increase in the number of checkpoints results in a 9% increase in the odds ratio that women are married (Table 3, Model I). A one percent increase in the indicator of settler penetration results in a 7% increase in the odds ratio that women will marry. These results are consistent with the family security hypothesis and do not support the marriage market hypothesis.

Marital Fertility

As expected, the greatest numbers of births in the past five years are of married women aged 25 to 29 years, with the number of births lower among younger and older women (Table 3, Model II). This is consistent with the age pattern of adoption of contraceptive methods that Hammoudeh and Hogan (2013) have reported. Women who have completed at least a secondary or higher education have significantly lower fertility with an incident rate ratio of 0.70. Women living in rural areas, and especially women in the overcrowded refugee camps where there are less economic opportunities have lower fertility rates than urban women. Women who lived in communities that had greater economic improvement between 1997 and 2007 were shown to have been more likely to have higher fertility.

Women living in places where the occupation has had a greater impact were found to not have higher marital fertility. Neither did the number of checkpoints nor the greater ratio of settlers to the Palestinian population influence marital fertility. These fertility results do not support the minority group status hypothesis but are consistent with the family security hypothesis since increased lifetime fertility is associated with getting married at an earlier age.

Table 3: Random effects logit and poisson analysis predicting ever marriage (Model I) and number of children born to ever married women (Model II) in the past five years, West Bank, 2007

	Model I		Model II	
Variable	**Exp (B)**	**(SE)**	**Exp (B)**	**(SE)**
Age (Person)				
10-19	0.01***	(0.00)	0.30***	(0.01)
20-24	0.20***	(0.00)	0.51***	(0.00)
25-29 (Ref)	1.00		1.00	
30-34	1.08**	(0.03)	0.73***	(0.00)
35-39	1.27***	(0.04)	0.89***	(0.00)
40-44	1.35***	(0.05)	0.99	(0.00)
45-49	1.28***	(0.05)	1.08***	(0.01)
Education (Person)				
Below Secondary (Ref)	1.00		1.00	
Secondary and Above	0.55***	(0.01)	0.70***	(0.00)
Locality (Person)				
Urban (Ref)	1.00		1.00	
Rural	0.84***	(0.02)	1.01†	(0.01)
Refugee Camp	0.82***	(0.03)	0.98†	(0.01)
Socio-economic Indicator (Community)				
Ln Change in Wealth Index	1.22***	(0.04)	1.02*	(0.01)
Political Indicator (Community)				
Ln Ratio of Settler to Palestinian Population	1.07***	(0.02)	1.00	(0.01)
Ln Checkpoint	1.09**	(0.03)	1.01	(0.01)
Singulate Mean Age At Marriage in 1997 (Community)	0.98	(0.01)		
Marital Fertility Rate in 1997 (Community)			1.00***	(0.01)
Marriage Duration under Five Years (Person)			0.29***	(0.00)
-Log-Likelihood	52,527.8		173,602.31	
N	146,045		78,671	
Rho[a]	0.002***		0.002***	

*† p<.10; * p<.05; ** p<.01; *** p<.001*

[a] variance of ever marriage and marital fertility explained by clustering of observations within governorates; Model I: Odds Ratios predicting Marriage; Model II: Incidence Rate Ratios predicting Marital Fertility, both models account for clustering of women within governorates.

Conclusion and Limitations

Previous studies of the Palestinian population have attempted to explain the persistent high fertility in modern but conflict-ridden contexts and have found some evidence to justify their disparate claims. However, one very cogent reason why conflicts and occupied homelands have bearing on fertility can be found in the axiom that reproduction is one of the remaining liberties to express identity amongst marginalized and disempowered people (Courbage, 2005; Khawaja & Randall, 2006). Some researchers may argue that having large families or lack of is merely conforming to societal norms, whereas others have emphasized the

important political resource that children present in times of conflict (Khawaja, 2000) since, according to Obermeyer (1992: 53), in the most extreme case of war, numbers represent power.

This study found that fertility is not necessarily higher in communities more affected by the occupation, calling into question the minority group status hypothesis. There is also no support for the marriage market hypothesis. It is quite clear that early age at marriage is more common among Palestinians in communities more affected by the occupation, and thus the family security thesis seems the most tenable argument.

Barber (2013) uses life course data to show that Palestinians who were young during the first Intifada do not all have negative reactions as a result of this experience. Instead, his empirical evidence suggests that it is individual exposure and experience of violence in the immediate past that is critical in shaping negative attitudes. Hence assuming that high birth rates are a group reaction toward occupation ignores individual reactions. It also ignores cultural differences in understanding and responding to adversity, and in the specific case of political conflict, it does not account for the critical role of ideologies and moral systems that underlie the political conflict and shape a young people's interpretation of it, and their exposure, participation, and processing of experiences (Barber, 2013). Indeed, Spellings, Barber, and Olsen (2012) demonstrate that youth political activism is most strongly influenced by parental political activism and their expectations that their children should be politically active. Political resistance is not a general phenomenon (as the minority status hypothesis implies), and is not influenced by social or economic situations. Instead, resistance to the occupation is deeply rooted in individual experience, local cultures and norms, and the attitudes of family members.

Looking at the population of the West Bank in its entirety, further evidence is found in favor of the family security hypothesis. As Khawaja and colleagues have argued, in times of generalized political violence, when both personal and group securities are in question the Palestinians invoke the term I'zwa. To Palestinians this represents the numerical strength in relatives ready to come to one's defense that is used to justify the high demand for children in times of conflict. It is in those situations that motivation for family formation through marriage —often at an early age-increases (Khawaja, 2000; Khawaja et al., 2009).

This study found that the marriages are more likely during times that are perceived as dangerous or when feeling violated by settlements encroaching on traditional Palestinian land, and the segmentation if not fragmentation of Palestinian society by checkpoints. It is in those times that the institution of family is relied on. In lieu of a Palestinian Authority that is efficacious, Palestinians turn to the bulwark of family for individual and group security.

This study has its limitations. First, the analysis is restrictive in a sense since it relies on two crude measures of the occupation in the year 2007. Also, since it is a highly contentious issue, the exact number of checkpoints might differ based on the source, limiting the authors' options to only one data source where this was available. However, even given these caveats, it is commonly recognized by Palestinians that certain areas of the West Bank are more subject to settler expansion and fragmentation than others. It is believed that the measures used here are consistent with local differences. Second, even though this paper uses two censuses spanning a ten-year period in between, it is based on a cross-sectional survey design and hence causation cannot be implied and the study results remain associational. Third, even though attempts were made to control for the level of development, of marriage rates, and marital fertility using our 1997 census data, the background covariates of the study including education and locality were measured at the time of the censuses, rather than at the time of marriage or birth, limiting the ability to assess changes over time for these covariates.

Despite these limitations, this study represents a serious attempt at empirically testing the impact of military conquest and occupation on the marriage and fertility patterns of an indigenous group. It is found that in areas most affected by the occupation individuals have a higher likelihood of being ever-married, but not necessarily the highest likelihood of having more children when married. This study cautions against categorical acceptance of the minority status hypothesis to explain relatively high levels of fertility in a minority group. Depending on the degree of individualism and centrality of the family, higher lifetime fertility may have more to do with early family formation rather than increases in fertility rates per se.

Acknowledgments

The authors would like to thank Margot Jackson for her advice on model specification and estimation. Thanks also to participants of the Middle East Studies Luncheon Seminar Series 2015 at Brown University for useful comments and to the participants of the Impacts of Conflict and Natural Disasters I session at the Population Association of American's 2011 Annual Meeting for useful suggestions on an earlier draft of this paper.

References

Abdul Rahim, H., Wick, L., Halileh, S., Hassan-Bitar, S., Chekir, H., Watt, G., & Khawaja, M. (2009). Health in the Occupied Palestinian Territory 2: Health status and health services in the Occupied Palestinian Territory. *Lancet*, March, 28-38.

Abu-Rmeileh, N., & Hogan, D. (2012). The transition to adulthood among Palestinian youth in the Occupied Palestinian Territory. Unpublished working paper.

Agadjanian, V., & Prata, N. (2002). War, peace, and fertility in Angola. *Demography,* 39 (2), 215-231.

Assaf, S., & Khawaja, M. (2009). Consanguinity trends and correlates in the Palestinian Territories. *Journal of Biosocial Science*, 41, 107-124.

Barber, B. K. (2013). Annual research review: The experience of youth with political conflict – challenging notions of resilience and encouraging research refinement. *Journal of Child Psychology and Psychiatry,* 54(4), 461-473.

Batniji, R., Rabaia, Y., Nguyen-Gillham, V., Giacaman, R., Sarraj, E., Leena Punamaki, R., … & Boyce, W. (2009). Health in the Occupied Palestinian Territory 4: Health as human security in the Occupied Palestinian Territory. *Lancet*, March, 48-58.

B'Tselem. (2011). *Statistics on settlements and settler population.* Retrieved from http://www.btselem.org/settlements/statistics. Accessed 30 March 2014.

Cetorelli, V. (2014). The effect on fertility of the 2003-2011 war in Iraq. *Population and Development Review*, 40(4), 581-604.

Courbage, Y. (2005). Demography in Palestine on the eve of the 21st century. Paper presented at the Center for Research on Population and Health Seminar Series, American University of Beirut, Lebanon. Feb 24. Unpublished manuscript.

Courbage, Y. (2012). Demographic trends and challenges in case of statehood in Palestine, 2012-2048. Paper presented at Ibrahim Abu-Lughodr Institute of International Studies Working Paper Series, Birzeit University, West Bank. Unpublished manuscript

Eberstadt, N. (1994). Demographic shocks after communism: Eastern Germany, 1989-93. *Population and Development Review,* 20, 137-152.

Eloundou-Enyegue, P.M., Strokes, S.C., & Cornwell, G.T.. (2000). Are there crises-led fertility declines? Evidence from Central Cameroon. *Population Research and Policy Review,* 19, 47-72.

Giacaman, R., Khatib, R., Shabaneh, L., Ramlawi, A., Sabri, B., Sabatinelli, G., … & Laurance, T. (2009). Health in the Occupied Palestinian Territory 1: Health status and health services in the Occupied Palestinian Territory. *Lancet*, March, 15-27.

Goldschneider, C., & Uhlenberg P. (1969). Minority group status and fertility. *American Journal of Sociology*, 44, 361-372.

Hamayel, L., Hammoudeh, D., & Welchman, L. (2017). Reproductive health and rights in East Jerusalem: The effects of militarization and biopolitics on the experiences of pregnancy and birth of Palestinians living in the Kufr 'Aqab neighbourhood. *Reproductive Health Matters,* 25(sup1), 87-95.

Hammoudeh, W., & Hogan, D. (2013). Decomposing the Palestinian 'demographic puzzle': An exploration of the proximate determinants of fertility in the West Bank and Gaza. [MA thesis]. Rhode Island: Brown University, Sociology Department.

Harker, C. (2012). Precariousness, precarity, and family: Notes from Palestine. *Environment & Planning*, 44, 849-865.

Heuveline, P. (1998). Between one and three million: Towards the demographic reconstruction of a decade of Cambodian history (1970-79). *Population Studies*, 52, 49-65.

Heuveline, P., & Poch, B. (2006). Do marriages forget their past? Marital stability in post-Khmer rouge Cambodia. *Demography,* 43, 99-125.

Heuveline, P., & Poch, B. (2007). The phoenix population: Demographic crisis and rebound in Cambodia. *Demography,* 44, 405-426.

Johnson, P., Abu Nahle, L., & Moors, A. (2009). Weddings and War: Marriage arrangements and celebrations in two Palestinian intifadas. *Journal of Middle East Women's Studies,* 5(3), 11-35.

Johnson, P. (2006). Living together in a nation in fragments: Dynamics of kin, place, and nation. In Taraki, L (Ed.), *Living Palestine: family survival, resistance, and mobility under occupation* (pp. 185-230). Syracuse University Press.

Khawaja, M. (2000). The recent rise in Palestinian fertility: Permanent or transient? *Population Studies,* 54(3), 331-346.

Khawaja, M. (2003). The fertility of Palestinian women in Gaza, the West Bank, Jordan and Lebanon. *Population,* 53(3), 273-302.

Khawaja, M., & Randall, S. (2006). Intifada, Palestinian fertility and women's education. *Genus,* LXII (1), 21-51.

Khawaja, M., Assaf, S., & Jarallah, Y. (2009). The transition to lower fertility in the West Bank and Gaza Strip: Evidence from recent surveys. *Journal of Population Research,* 26(2), 153-174.

Kiros, G-E., & Hogan, D. (2000). The impact of famine, war, and environmental degradation on infant and early child mortality in Africa: The case of Tigray, Ethiopia. *Genus*, LVI (3-4) (2000), 145-178.

Lichter, D., LeClere, F., & McLaughlin, D. (1991). Local markets and the marital behavior of black and white women. *American Journal of Sociology,* 96(4), 843-867.

Lindstrom, D., & Berhanu, B. (1999). The impact of war, famine, and economic decline on marital fertility in Ethiopia. *Demography*, 36(2), 247-261.

Locoh, T. (1994). Will the decline in fertility in Sub Saharan Africa last? A time of uncertainty'. In T. Locoh and V.H.Liefe. Liege (Ed.), *Onset of fertility transition in Sub-Saharan Africa* (pp. 105-33). France: International Union for the Scientific Study of Population.

Nahmias, P., & Stecklov, G. (2007). The dynamics of fertility amongst Palestinians in Israel from 1980 to 2000. *European Journal of Population,* 23, 71-99.

Obermeyer, C.M. (1992). Islam, women and politics: The demography of Arab countries. *Population and Development Review*, 18(1), 33-66.

Palestinian Central Bureau of Statistics 2018. Population, Housing and Establishments Census, 2017: Preliminary Results. Ramallah, Palestine.

Population Reference Bureau 2018. 2018 World Population Data Sheet.

Randall, S. (2001). Fertility, in J. Pederson, S. Randall, M. Khawaja (Ed.), *Growing Fast: The Palestinian Population in the West Bank and Gaza Strip* (pp. 95-120). Oslo, Fafo.

Randall, S. (2005). The demographic consequences of conflict, exile and repatriation: A case study of Malian Tuareg. *European Journal of Population*, 21, 291-320.

Rashad, H., Osman, M., & Roudi-Fahimi, F. (2005). Marriage in the Arab world Washington, DC: Population Reference Bureau.

Saxena, P., Kulczycki, A., & Jurdi, R. (2004). Nuptiality transition and marriage squeeze in Lebanon: Consequences of sixteen years of civil war. *Journal of Comparative Family Studies*, 35(2), 241-258.

Spellings, C. R., Barber, B. K., & Olsen, J. A. (2012). Political activism of Palestinian youth: Exploring individual, parental, and ecological factors. *Journal of Marriage and Family*, 74, 1084-1100.
Tabutin, D., & Schoumaker, B. (2005). The demography of the Arab world and the Middle East from the 1950s to the 2000s. *Population,* 60, 505-615.
United Nations Office for the Coordination of Humanitarian Affairs. (2013). *Closure Maps*. Retrieved on March 30, 2014 from http://www.ochaopt.org/mapstopic.aspx?id=106&page=1.

Appendix

Given the nature of the context and our data, there might be some elements of clustering that we need to address in our methods. We have individuals clustered within governorates. The political situation renders each of the 11 governorates distinct from one another, with movement between governorates hampered with the increasing number of Israeli checkpoints on the few remaining roads linking the governorates. This makes individuals within each governorate more similar than individuals across governorates, which renders a possibility of clustering and correlated errors. In order to address this we estimated a random effects model, which creates a random intercept for each governorate and would thus account for the potential clustering in our data.
We first estimated a random effects logistic regression model to predict whether women have ever been married as follows:

$$\text{Logit}\,(Y_{ij}) = \eta_{00} + \eta_{01}\boldsymbol{G}_j + \beta_1\boldsymbol{X}_{ij} + a_{0j} \qquad (1)$$

Where Y_{ij} is the outcome variable of ever having been married for woman ($i=1\ldots n_j$) in governorate ($j=1\ldots J$), η_{00} is an intercept that is governorate specific and varies across governorates. The vector of governorate level covariates $\boldsymbol{G}_j$ includes the political indicators, socioeconomic development (as measured by the wealth index), and the 1997 marriage practices of the 31 communities (to capture any unmeasured traditional behaviors prior to the expansion of settlements and checkpoints). The vector of individual level covariates $\boldsymbol{X}_{ij}$ includes controls for individual characteristics of women (age, education, and locality, distinguishing urban, rural and refugee camps). a_{0j} is a random residual error at the governorate level and assumed to have a mean of zero and a variance of σ^2_u.

We then estimated a random effects Poisson regression for predicting ever-married women's number of births during the preceding five-year period as follows:

$$\text{Log}\,(Y_{ij}) = \eta_{00} + \eta_{01}\boldsymbol{G}_j + \beta_1\boldsymbol{X}_{ij} + a_{0j} \qquad (2)$$

Where Y_{ij} is the outcome variable of the number of births during the preceding five years to ever-married women ($i=1\ldots n_j$) in governorate ($j=1\ldots J$), η_{00} is an intercept that is governorate specific and varies across governorates. The vector of governorate level covariates $\boldsymbol{G}_j$ includes the political indicators, socioeconomic development (as measured by the wealth index), and the 1997 fertility rates of the 31 communities to capture any unmeasured traditional behaviors prior to the expansion of settlements and checkpoints. The vector of individual level covariates $\boldsymbol{X}_{ij}$ includes controls for characteristics of individual women (marriage duration, age, education, and locality, distinguishing urban, rural and refugee camps). a_{0j} is a random residual error at the governorate level and is assumed to have a mean of zero and a variance of σ^2_u.

The rho-intra class coefficient, measures the degree of correlation/clustering of observations – in this case women within governorates – and in our models it indicates a low but statistically significant degree of clustering ($p<0.001$) for both the marriage and fertility models. The random effects statistical modeling strategy we adopted was thus essential to estimating accurate standard errors and correctly interpreting the impact of the political indicators on marriage and fertility.