Contextual and individual effects behind fertility change in the West Bank and Gaza Strip

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Even though the fertility transition in the West Bank and Gaza Strip is well under way, it is clear that the classical theory of the demographic transition alone cannot explain the ongoing high demand for children in the modern yet conflicting context of the Palestinian territories. Individual-level variables have always been the main focus of studies on Palestinian fertility. However, the role of contextual variables is of central importance to best capture the mechanisms of fertility change in the region. To better understand the recent fertility behaviour of Palestinian women, we use the most recent retrospective data available from the Demographic and Health survey conducted by the Palestinian Central Bureau of Statistics in 2004 by modeling a multilevel discrete-time logistic regression on the complete birth histories of ever-married women aged 15-49 at the time of the survey. Regional characteristics representing the proportion of Jewish settlers, the status of women, and infant mortality are the three main contextual dimensions considered in this study. We argue that the status of women, especially through higher education, is the main factor behind the decline of Palestinian fertility, especially among older women. The decline in infant mortality only has a slightly negative impact on fertility. Finally, the presence of Jewish settlers contributes to decrease Palestinian fertility as regions with a higher proportion of settlers had a significantly lower fertility.

1 Introduction

Despite low infant mortality rates, high level of urbanization, female education, and contraceptive prevalence for regional standards, Palestinian women have one of the highest fertility in the Arab world. In 2004, the average number of children per woman in the Occupied Palestinian Territories (oPt) of the West Bank and Gaza Strip was, respectively, 4.5 and 6.0.

In recent decades, a steady decline in fertility can however be observed in the region. As it is shown in Figure 1, fertility of the Palestinian women living in the West Bank and Gaza Strip is decreasing at a similar pace, although it is still much higher in the Gaza area. This decline was mostly achieved through changes in marriage dynamics as there is a growing number of women who remain single, while among couples little change to desired fertility levels has been observed (Khawaja et al., 2009).

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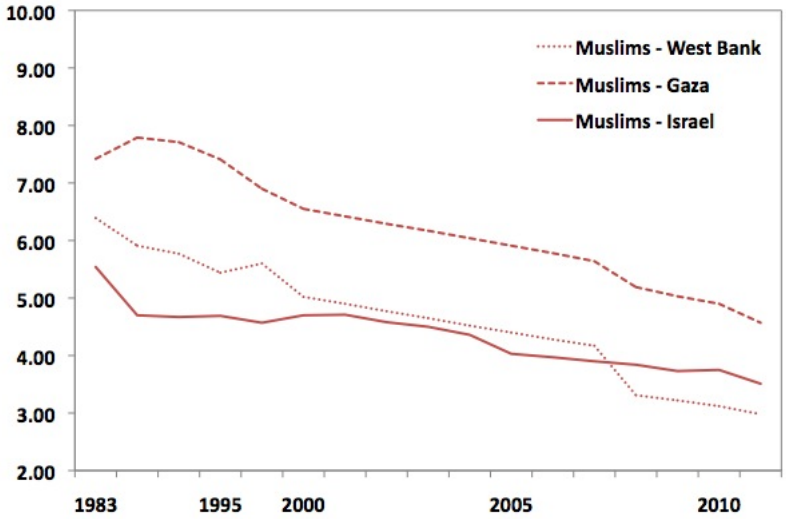
Figure 1: Fertility rates in Israel and the Occupied Palestinian Territories



Sources: ICBS *Statistical Abstracts of Israel* and PCBS

The literature on the "exceptionally" high Palestinian fertility is abundant. Although there is a fair number of articles that describe the fertility behaviour of the Palestinian population of the West Bank and Gaza Strip ((Khawaja, 2000); (Khawaja et al., 2009)), there is no clear explanation for the high fertility of Palestinian women. Moreover, while much is known about the impact of individual-level factors on women's fertility, less is known about how community characteristics affect a woman's propensity to bare more or less children. Indeed no study has examined contextual influences on fertility in a region with such a specific setting.

Nahmias and Stecklov (2007) found that Palestinian fertility in Israel is heavily influenced by education at both the individual and contextual levels. However they did not find support for the minority group status hypothesis as fertility in mixed Arab-Jewish localities did not differ significantly from more homogeneous localities. Finally, based on structural and ideational explanations, they expected fertility of the different Palestinian sub-groups in Israel to converge after controlling for socioeconomic variables but it was not the case as other factors are responsible for the elevated fertility of some groups such as the acceptance of polygamy and marriage instability. This study contributed to the understanding of Palestinian fertility behaviour but many questions remain unanswered. This analysis follows previous work by Nahmias and Stecklov (2007) and aims to add to the stream of literature about the fertility dynamics in this region by providing consistent and comparable results from a multilevel analysis of the factors associated with fertility.

2 Background and hypotheses

When the classical factors associated with the demographic transition theory fail to account for fertility dynamics, other hypotheses that emphasize cultural factors as the primary determinants of fertility and fertility change (Lesthaeghe, 1983) emerge. As individuals are socialized as members of specific communities in which they learn norms of appropriate behaviour and face the collective constraints and

opportunities in specific geographical settings shaped by social institutions, the contextual background should be considered especially in a region with a very unstable climate.

Indeed, many arguments have been brought up to provide a better explanation to high fertility levels in the oPt. The political fertility thesis (Courbage, 1995) according to which the persistence of high fertility is a result of ideological motives conveyed by political leaders during a conflict is often cited. The Israeli-Palestinian conflict would have caused a change in the ideals associated with fertility and a "war of cradles" promoted by political leaders. A concrete and direct evidence for this thesis is however lacking (Khawaja et al., 2009). Indeed the observed fertility decline could reveal a divergence between individual and societal values, as Palestinian couples have to choose between the future of their children and the national cause (Courbage, 2006). For that matter, the focus of this research is put on three contextual dimensions.

The *presence of Jewish settlers* is an indicator used to evaluate one of the best known and most commonly used theories in the field of fertility differentials: the minority group status hypothesis[2]. The effect of being affiliated with a religious or ethnic group will be different depending on whether this group represents a major or minor subgroup. Fertility of the minority group will be higher or lower than their counterparts based on factors such as acculturation and socioeconomic variables. Minority groups tend to have higher fertility rates than the majority group to ensure their survival in the community. They put more emphasis on aspects of family life that lead to procreation or reduced use of contraception (Morgan et al., 2002). In this context, being surrounded by a higher number of Jewish settlers should increase Palestinian fertility as they are in direct competition.

Many studies highlighted the role of *women's status* on fertility behaviour. The extent to which women are independent from men control affects their age at marriage, desires for children, cost of children, and the use of contraception (Mason, 1987). Women's status is measured through indicators such as the proportion of single women aged 15-34, the proportion of women who participate in the workforce, and the proportion of women with post-elementary education. As these characteristics are often associated with a delayed age a marriage and fostering a positive attitude towards family planning, among others, women with a greater status are expected to have a lesser amount of children than other women.

The *Infant mortality rate* is linked to the motivation of childbearing (Hirschman and Guest, 1990). In regions like the oPt where few people benefit from institutional-based pensions, adult children can be perceived as providers of old age assistance to their parents. When child mortality is high, parents ca be prone to "insure" their retirement with extra births. As infant mortality declines, parents may see larger families as a financial obstacle to a better quality of life.

[2]Randall and Khawaja (2006) applied this theory to the Palestinians but extended it as describing them not by being a "minority within a nation state, but a minority who perceive themselves to be occupied and oppressed by a nation state".

3 Data and methods

To account for the changes in fertility over time, the Palestinian Demographic and Health Survey of 2004 is used. The survey is based on a multi-stage stratified sample design, with stratified random samples drawn using the 1997 population census and includes conventional maternal and child health data. Complete birth histories for women aged 15-49 at the time of the survey are included. Data from 5,799 households and 4,972 ever-married women were collected. Some contextual variables linked to these datasets come from indicators provided by the Palestinian Central Bureau of Statistics (PCBS). Because Palestinian fertility is observed almost exclusively within marriage (Randall and Khawaja, 2006) the emphasis is put on ever-married women of reproductive age. Under the assumption that fertility varies by age, women are separated by age groups to avoid issues with heteroscedasticity associated with higher variance at older ages. The analysis is performed separately for younger women (aged 15-29) and older women (aged 30-49).

The dependent variable is the yearly probability of having a child. The main independent variables used at the contextual level are the proportion of Jewish settlers, the proportion of women with post-elementary education, the proportion of women who participate in the workforce, the proportion of single women aged 15-34, and the infant mortality rate. At the individual level, we used participation in the workforce and the years of schooling. Controls are applied for the age of the woman, the age difference with the husband, and the age at first marriage.

We use a multilevel discrete-time logistic model to identify the most important factors behind fertility behaviours. Because lifestyle and fertility behaviour cannot be dissociated from their social context, the simultaneous examination of how individual and group-level variables interplay and impact fertility outcomes is important. Multilevel hierarchical linear models are the most appropriate models to use when both sets of variables come into play because they allow the study of individual effects that may vary by groups. They can also determine whether these between-group variations affect all the members of the groups, or only specific sub-groups and estimate how much of this between-group variability is explained by the contextual factors included in the model. They produce richer and more consistent results than when the focus is limited to individual-level variables.

The analytical strategy consists of applying three models. The first model is “empty” (without covariates) fitted to test random variability in the intercept and to estimate the intra-class correlation coefficient. The second model includes only individual -level predictors of fertility. In the last model, all individual and contextual variables are included to allow for the sequential measurement of the relative contributions of each set of variables to the contextual-level variance.

4 Preliminary results

We expected a higher Palestinian fertility when surrounded by a higher number of Jewish settlers. However this hypothesis failed to explain the fertility levels as Palestinian fertility in regions with a higher proportion of Jewish settlers was significantly lower. Such a result would be consistent with Goldscheider and Uhlenberg (1966) argument according to which a minority group that does not have an orga-

nized system that reflects their values might have a residual lower fertility resulting from the insecurities associated with the minority group status.

The women's status is however a good predictor of Palestinian fertility, especially education. The negative effect of higher education on fertility was stronger among older women. Nahmias and Stecklov (2007) argued that there is a critical value of mass education needed to change the attitudes and values towards childbearing. For that matter, the effect of mass education might be saturated among younger women. The effect of the participation in the workforce was never significant.

The decline in infant mortality does not have a strong negative impact on fertility as it remained high. The permanent state of belligerence and the frequent uprisings must be part of the reason for a high demand for children as the risk of losing older children or husbands increases as mortality rises in periods of conflict or war.

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