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Fertility Decline in Bedouin Society in the Negev, Israel, in the Early 21st Century

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Abstract

At the end of the 20th century, the recorded total fertility of the Bedouin in Israel was over 10 children per woman, one of the highest levels ever recorded in human history. In the first decade of the present century, fertility declined by almost 50% and has since stabilized. This article examines how fertility decline is related to other social changes: the rise in living standards, in education and paid work, especially for women; the move to urban dwelling, beside the continuation of life in the unrecognized villages; the permeation of new aspirations and lifestyles, but also the reality of living on the margins of Israeli society and the ongoing confrontations with the institutions of the Jewish State. The analysis is based on a representative sample of 491 married women aged 18 to 52 from the towns and unrecognized villages in the Negev, drawn from a socio-economic survey of the Arab population in Israel conducted by the Galilee Society in 2007. Controlling for age, the main effects on fertility were of post-secondary education, a non-traditional lifestyle, and confrontations with the State (negative) and standards of living (positive). These effects have brought about a change in the age at marriage and at first birth, which are the proximate, but not the only, determinants of the number of children born.

Keywords

Fertility; Bedouin; Israel

Declarations

Conflicts of interest: The authors have no conflicts of interest to declare.

Availability of data and material: Secondary data analysis, see source in text for availability. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Code availability: please contact corresponding author.

Introduction

For many years, Bedouin (Arab-Palestinian) society in the Negev maintained one of the highest levels of recorded fertility in the world, which reached a peak of over 10 children per woman (Total Fertility) in 1998. This was more than double that of Muslim women in the North of Israel, and over three times that of the Jewish population and the national average (CBS, 1999, Table 3.9). However, in the first decade of the 21st century fertility decreased by almost 50%, to a level of 5.4 children in 2013 and stabilized at around that level, reaching 5.3 in 2019 before declining to 4.9 in 2020 and rising to 5.1 in 2021 (CBS, 2014, Table 3.9; CBS, 2020, Table 2.39; CBS, 2021, Table 2.39; CBS, 2022, Table 3.9).

This sharp decrease of 50% in fertility rates in Bedouin society in a single decade is an interesting social phenomenon. In European (national) societies, the process took a hundred years and more and in the Middle East and North Africa it took four decades (Courbage and Puschmann, 2015). Bedouin society has clearly begun a process of significant social change, as attested by a variety of previous reports. This includes an increase in the levels of education, income, and quality of life as well as changes in values, in family relations and in patterns of behavior (Abu-Bader and Gottlieb, 2008; Meir, 2019). Gender relations, too, are changing as educated women, working outside the home, pose a passive opposition to traditional, tribal, and patriarchal values (Abu-Rabia-Queder, 2006, 2007; Allasad Alhuzail, 2016; Tamari et. al., 2016). The purpose of this article is to establish the main factors associated with the decline in fertility rates in Bedouin society in the Negev, from the beginning of the 21st century to the present day. To anticipate, we suggest that contradictory forces are still at work: on the one hand, improved health services, female education, and the adoption of Western lifestyles, which operate to reduce fertility. On the other hand, growing material standards of living, which enable a realization of fertility aspirations, coupled with the political meaning of the family and high fertility as forms of resistance to the Israeli government's tendency to dispossess, deprive and discriminate against its Bedouin Arab citizens. The next two sections present a brief historical overview of Bedouin society in the Negev of Israel and the patterns of fertility and other changes that have taken place in Bedouin and other segments of Israeli society. Following this, the main findings and conclusions of the study are presented.

Fertility as a social process

Childbirth is an act of an individual (or a couple) but fertility, the rate at which women give birth is a "social fact" that must be explained with reference to the reality in which people live their lives. ". . . the birth rate is much less dependent on certain organic predispositions than on the morals and ideas which hold sway in a society. Although individual sterility may be due to a physiological state, mass sterility . . . is intentional, a sort of discipline, to which individuals deliberately submit" (Durkheim, [1882] 1992: 194). Fertility is a group action, a contribution to the growth rate of the group, as opposed to death and emigration, which lead to population decline,

and a reflection of its relationship with other groups. Consciously or unconsciously, fertility is part of the group's survival strategy (Goldscheider and Uhlenberg, 1969; Ritchey, 1975; Chabé-Ferret and Ghidi, 2013) and may even be a political act, part of the intergroup struggle, covert or overt, over security and the distribution of resources in society (Lopez and Sabagh, 1978; Fargues, 2000; Khawaja and Randall, 2006; Janus, 2013). Thus, the level of individual reproduction can only be understood in the context of the social reality in which the act takes place.

In general, fertility declines as women's education increases (Bongaarts, 2003; Arokiasamy et al., 2004; Lavy and Zablotsky, 2015; Shain, 2019). Education tends to delay family formation and increases the preference for child "quality" over "quantity" (Becker, 1960; Michael, 1975; Wang et al., 2021). However, the relationship with income is not so clear (Hansen et al., 2018). Some have reported a negative relationship (Córdoba and Ripoll, 2016) while others have found a positive relationship (Zhu, 2019). Simon (1969) showed that at given levels of age, education and occupational status, higher income households tend to have more children, suggesting that a higher income can make for a greater realization of fertility desires. Beyond that, fertility tends to be higher in rural and small settlements compared to large urban settlements (Duncan, 1950; Ben-Porath, 1973; Hill, 2013; Becker and Cinnirella, 2020).

The role of religion and religiosity is even less clear (McQuillan, 2004; Götmark and Andersson, 2020; Buber-Ennser & Berghammer, 2021). The prevailing opinion among most Muslim jurists is that the use of reversible contraception is permissible in Islam (Dardir and Ahmed, 1981; Atighetchi, 1994, Habib et al., 2020), though the actual practice of family planning in Islamic countries and communities is mixed (El Hamri, 2010; Shaikh et al., 2013). In Iran, under Islamic rule, total fertility dropped from 6.6 in 1980 to 2.0 in 2000 and for the past two decades has been consistently below replacement level¹. On the other hand, Muslims in south and southeast Asia have had higher fertility rates than neighboring Hindus and Buddhists (Morgan and Sonquist, 2002; Borooah, 2004), but these differences are related more to group and political identity and the level of group organization in the face of ethnic struggles than to the essence of Islam. In November 1988, the Supreme Mufti of Egypt issued a *fatwa* (religious ruling) in which he explicitly stated that family planning is consistent with the tenets of the Islamic faith (Tantawi, 1988)². Nonetheless, among the faithful, greater religiosity is often associated with higher fertility, though among Muslims in Israel the evidence is mixed (Friedlander and Feldmann, 1992; Schellekens and Eisenbach, 2010, 2011; Schellekens and Atrash, 2018; Burkmisher, 2019). Anson and Meir (1996, Anson & Ajayi, 2018), however, discussing the high Jewish fertility in Israel, argued that the driving force is nationalist, or group, commitment, with both religiosity and higher fertility as expressions of this sentiment.

¹ <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=IR>

² There are various web sites discussing Islamic views on contraception from both a Sunni and Shiite perspective, see, e.g. <https://www.dar-al-ifta.org/Foreign/ViewFatwa.aspx?ID=6101>, <https://www.al-islam.org/islamic-edicts-family-planning/birth-control>

The fertility we observe in any population is thus the outcome of a number of processes. On the one hand, the internal structure of the group and its relations with others, which will fashion the *conscience collective* (Durkheim, [1898] 1951), the accepted number of children to which couples aspire; on the other, specific levels of education, wealth and other constraints which will affect the realization of these aspirations.

Bedouin Society in the Negev

The Bedouin migrated to the Negev (the semi-arid southern half of Israel) and the Sinai Peninsula from Arabia, probably between the 13th and 18th centuries (Bailey, 1985; Tzfadia and Roded, 2011; Meir, 1997), though others have suggested an earlier date (Muhsam, 1966). After the First World War, until the end of the British mandate (1948), the Bedouin made a living from raising sheep and farming, using traditional methods, without irrigation, growing wheat, barley, corn, legumes, and vegetables. In rainy years, they would supply wheat and barley to all of Palestine and export the excess through the port in Gaza (Al-Aaref, 1933; Yiftachel, 2013).

In 1947 there were, according to various estimates, between 65,000 and 100,000 Bedouins in the Negev (Al-Aaref, 1933; Fallah, 1989; Madrell, 1990; Tzfadia and Roded, 2011; Rudnitsky, 2012). After the establishment of the State of Israel, in 1948, only about 11,000 Bedouin remained (Marx, 1967; Fallah, 1989; Madrell, 1990). In 1951, those who remained in the western Negev were relocated by the army to a restricted zone (the "Sayig") to the east of Be'er Sheva. The Sayig is arid, in the absence of water it is unsuitable for agriculture without irrigation and was thinly inhabited by other Bedouin tribes who subsisted mainly from grazing sheep. The displacement of the Bedouin population from the western Negev to the Sayig and the restriction of grazing by the military government (1948-1966) effectively destroyed the poor, traditional economy that was there, offering no alternative. During this period, "the Bedouin found themselves confined to a demarcated and closed area, isolated from the other parts of society, under conditions reminiscent of the native (American) reservations in the United States" (Swirski and Hasson, 2006: 11).

State policy for the settlement of the Negev, directed from above in line with national policy, included settling Jews in the Negev and reducing the Bedouin presence by concentrating them in as small a space as possible (Meir, 1999; Yiftachel, 2006). Specifically, the Bedouin were not offered alternatives such as agricultural villages, as were established for settling Jewish immigrants, though these would have matched their preferred lifestyle and their employment experience (Swirski and Hasson, 2006). The land question was, and still is, the major barrier to the development of the Negev and underlies the failure of government policy to settle the Bedouin. The Bedouin demand that the state recognize their traditional rights to ownership of their lands and reject any alternative arrangement or plan for their settlement. Israel does not recognize Bedouin ownership of their lands and claims that these are state lands, because they were never legally registered (Yahel, 2006; Meir, 2009; Yiftachel, 2013; Kedar et al., 2018).

The lack of a solution to the land question, and the settlement of the Bedouin in the Sayig, has led to the establishment of dozens of unrecognized villages where the Bedouin live in huts, metal shacks and tents, in very difficult conditions, without grid electricity, running water, telephone lines, roads or public institutions. In these localities, it is not possible to issue building permits legally, since the State does not recognize them, thus creating a situation whereby all the houses are, by definition, illegal, and liable to be demolished by court order (Swirski and Hasson, 2006).

The state process for planning the Bedouin settlements began before the end of the military administration. In 1965, a plan was approved for the establishment of three urban localities, Tel Sheva, Rahat and Kuseife. In 1975 four more were approved: Arara, Segev Shalom, Hura and Lakiya (Ben-David, 1993). In December 2003, the state further recognized 11 villages within the framework of a Regional Council (since split into two Regional Councils). However, there have been few significant changes in the development of these newly recognized villages: most homes have not received building permits and are not connected to electricity, water, or sewage infrastructures (Dagan-Buzaglo, 2014). In 2008, a government appointed public enquiry recommended recognition of villages and buildings as well as recognizing, or at least paying partial compensation, to Bedouin families with justified land claims (Goldberg, 2008). The Praver report (Praver and Sarfus, 2011) made practical proposals for the report's implementation. These were adopted by the government and further amplified by Benny Begin in his recommendations (2013). However, following opposition from both sides of the political spectrum, the plan was frozen and, in 2017, the government implemented a five-year investment plan of social infrastructures (Government decision 2397). At the same time, however, there have been renewed efforts to prevent illegal building and the number of home demolitions has more than doubled in the past decade, reaching 2,326 buildings in 2018 (Du-Kium, 2019).

The Bedouin towns, too, have suffered, and still suffer, from a lack of economic development; high unemployment; little physical and social infrastructure; a poor level of formal and informal education; a low level of municipal services; high crime rates and low personal security (Swirski and Hasson, 2006; Tamari et al., 2016). The Central Bureau of Statistics publishes an index of living standards in Israeli municipalities and the Bedouin towns of the Negev are all, consistently, in the lowest decile (full details at [cbs.gov.il](https://www.cbs.gov.il)³).

The result, despite the recognition of the Bedouin as ostensibly equal citizens, is the formation of a weak, poor, and isolated society. Nor did the processes of social change in the second half of the 20th century help Bedouin society break through the traditional social structure with its rigid tribal-patriarchal framework. In order to maintain a minimum level of subsistence under these difficult conditions of survival: poverty and exclusion; the lack of employment, educational, welfare, cultural and leisure frameworks, in addition to tense relations with the state, the Bedouin have strengthened the family and tribe as a basic anchor (Jakubowska, 1992, for a similar process in the north, see Cohen, 1956). At various levels, the extended, patrilineal family, the tribe (a network of

³ <https://www.cbs.gov.il/en/mediarelease/Pages/2022/Characterization-and-Classification-of-Geographical-Units-by-the-Socio-Economic-Level-of-the-Population-2019.aspx>

extended families) and the clan (a political network of tribes) serve as the locus of economic and political organization (Meir, 1997). They act as an economic framework through the pooling of resources in the family firm (Jakubowska, 2000) and an instrument of strict control over marriages and the fertility of women, thus strengthening norms of high fertility and birth rates (Abu-Srihan, 2017). Faced with the hostility of the State, the same mechanisms that had served in the face of a hostile physical environment were recreated. This provided, on the one hand, strength through organization but on the other, internal splits and hostile relations between the various units: blood feuds; polygamy; endogamy; patriarchal relations and the inferior status of women (Abu-Srihan, 2009, Aburabia, 2017).

In the last two decades, however, Bedouin society has undergone broad and far-reaching changes, with increases in educational attainment, income, standards of living, employment opportunities for both men and women, and increased access to government and municipal services, welfare, culture, leisure, and exposure to the outside world. Mortality, including infant mortality has declined dramatically, from over 20/1000 in the late 1980's to under 10/1000 in 2018-2020, though it remains 1.5 to twice as high as in the Palestinian-Arab population in the north of Israel and three times as high as in the ambient, Jewish, population in the south of Israel (Karakis et al., 2008; Ministry of Health, 2008; Rubin et al., 2017; CBS, Statistical Abstract of Israel, various years).

The reproductive revolution (MacInnes and Díaz, 2009) in Bedouin society is not just about a decline in mortality and in birth rates (discussed below). Bedouin women who have been educated and integrated into the labor market are making a quiet revolution, challenging traditional values, and encouraging the penetration of new norms such as career development, self-fulfillment, marriage postponement, family planning, and fewer births. This is a form of quiet, non-confrontational, feminism, with active but non-defiant opposition to traditional, tribal, and patriarchal values (Abu Rabia – Queder, 2006, 2007; AlAssad AlHuzail, 2016). Women have adopted and adapted traditional and religious codes, values, and norms to advance their status in Bedouin society, negotiating with patriarchy to keep alive the traditions in a new way (Abu-Rabia-Queder, 2007). For example, they organize workshops and lectures, conferences and seminars on tribalism and its destructive consequences for the individual and society and these are attended by clerics, leaders in the Islamic movement, psychologists, and social workers. It is precisely Islam, which has been fighting tribalism since its inception, which serves as an accepted way to attack, in a non-violent, tradition-based manner, oppression and the exclusion of Bedouin women. Women's organizations have adopted religious texts and verses from the Qur'an in their dealings with patriarchy and the traditional tribal structure, both at the personal and organizational levels. Thus, they point to the adverse psychological and social effects of polygamy, backed up by verses from the Qur'an and international law to help to improve the status of Bedouin women (Aburabia, 2017; Zoabi and Anson, 2017).

Nonetheless, it would be a mistake to see the change as purely a female issue, in which they struggle against male conservatism and chauvinism. Many men are partners in postponing and restricting childbirth. Although educated Bedouin men rarely defy traditional norms and values

publicly, many are trying to eradicate tribalism, blood feuds and the oppression of women, as well as working to ensure that girls receive higher education, to prevent violence against women and to limit childbirth.

These changes, and especially those in education and the employment of women, have intensified from generation to generation, with the younger generation expressing a greater tendency towards individuality, the acquisition of education, integration into the workplace and the adoption of a more Western dress code (AlAssad AlHuzail, 2016). They have also challenged the tribal framework. Marital bonds and the relations between marital partners have been strengthened; families invest more in child quality through education and there is a growing public discourse against endogamous and polygamous marriages and in support of women's rights (Aburabia, 2017). Much of this discourse is based on tracts from the Qur'an, *Hadith* (traditional rulings) and Muslim philosophers from the heyday of Muslim civilization in the Middle Ages, as well as modern Arab and Muslim scientists, philosophers, and writers (Abu-Srihan, 2017). However, the very conduct of the discourse in religious-traditional terms points to the opposing currents in Bedouin society. These currents work to maintain the status of men as the external representative of the family as well as a high birth rate, which strengthens the traditional structure of gender, family, and kinship (Abu Aleon et al., 2019; Braun-Lewensohn et al., 2019).

Incorporation into Israeli society has thus been double-edged. On the one hand, it brought with it access to education, to preventive primary and institutional health care and to a gradual decline in mortality (Meir, 1997). However, it also brought with it the *nakba* of 1948 and the loss of over 80 percent of the population; the forced resettlement in the arid, Sayig area to the east of Beersheba; military rule (till 1966) and the total disruption of Bedouin society and its economy. While there have been few direct confrontations between the Bedouin and the army and police, resistance has expressed itself in the legal filing of land claims (mostly unsuccessful); legal petitioning for basic services such as health and education (often successful) and the establishment of NGOs and the preparation of alternative development plans (largely ignored) (Aburabia, 2011). There has also been a growth in Islam as an egalitarian alternative to the current conditions of deprivation and discrimination (Jakoubowska, 2000). The Islamic Movement, represented in the Knesset (Parliament) by the Ra'AM list, has become the dominant political force among the Bedouin, through religious education; the provision of social welfare and informal educational activities, and the building of mosques and encouraging religious practices (Rubin, 2017; Yahel and Abu-Ajaj, 2021).

Nonetheless, the presence of a third, or more, of the population in unrecognized villages; the incremental recognition, by the state, of some of these villages, and the abandonment of the Praver/Begin plans, discussed above, are all indications of the limited ability of the state to impose its will on the population⁴. Clearly, an alternative solution to the current standoff between the

⁴ The Goldberg (2008) inquiry was a judicial commission which sought a middle ground between Bedouin land claims and those who denied those claims, on the grounds that the lands were never formally registered. The road maps to implementation, proposed by Praver and Begin, were adopted by the government but were withdrawn in

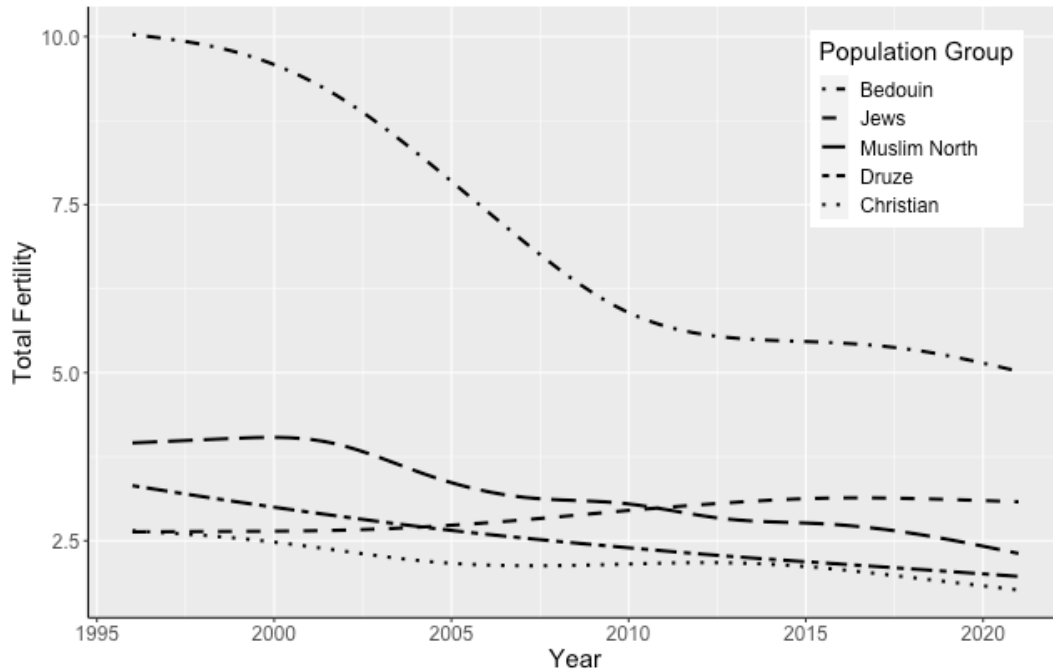
Bedouin and the State, other than by force, needs to be found. As the Goldberg Report (2009) noted, “We should not see the issue we are dealing with as the problem of the Bedouin in the Negev. We do not accept the ‘us’ and ‘them’ approach, which will delay the solution, rather than bring it any closer” (page 5, par 2, authors’ translation).

Bedouin Fertility

The observed decline in birth rates is thus part of a process of change in which Bedouin couples are postponing marriage and planning their families through effective contraception (Treister-Goltzman et al., 2021). Children are no longer perceived as their fathers' insurance certificate in old age and are no longer a source of labor for the family economy (Meir and Ben-David, 1992; Abu-Rabia et al., 2008). At the same time, we might suggest, family strength and size remain a significant element in Bedouin resistance, even if tempered by the practicalities of female education and employment. Traditional Bedouin society practiced natural fertility, with no attempt to prevent childbirth (Muhsam, 1951, 1966). In the mid-1950s, crude birth rates rose from around 35-40 per thousand to reach over 60 per thousand in the early 1970's, declined and then rose again to over 60 per thousand in the mid-1990's (Meir, 1997; for raw data, see Israel Abstract of Statistics, various years). These changes reflected the Bedouin's demographic response to changing health conditions; to their dispossession from their traditional lands and resettlement; to their gradual integration into the Israeli labor market and to other external political and economic events (Meir, 1984, 1986, 2009; Meir and Ben-David, 1991, 1992; Yiftachel, 2008).

the face of fierce opposition, both by those who argued they were giving Jewish land to the Bedouin and by those who claimed that they did not recognise the Bedouin's just rights as the indigenous population of the Negev.

Figure 1: Total Fertility, Israel, by Population Group, 1996-2020



Source, Israel Annual Abstract of Statistics, various years
<https://www.cbs.gov.il/en/subjects/Pages/Live-Births.aspx>

From 1996, data on Total Fertility (TF) are available for the Bedouin and other segments of the Israeli population and these are presented in Figure 1. In 1996, Bedouin TF was 10.1 children, 2.5 times that of the Muslims in the North of Israel and more than three times that of the Jews and the national average. In 2000, fertility began to decline steadily and rapidly to a level of 5.5 children per woman a decade later. Since then, the level of fertility has stabilized and in 2021 remained 2.8 children higher than that of the Muslims in the north, 5.1 compared to 2.3.

What, then, has happened in the last 20 years to lower the fertility rates in Bedouin society so dramatically and then stop? How do young women today differ from those of previous generations and to what extent can these changes explain the changes in the birth rate? In the light of the above discussion, it is hypothesized that the main motive is the relative improvement in the status of women resulting from changes in the level of education, the integration of Bedouin women into the labor market, exposure to globalization via the media and adoption of new lifestyles. However, these processes are also associated with an increase in the level of income and standard of living and these, in turn, may encourage an increase in the birth rate as the desired level of fertility remains relatively high (Zoabi & Anson, 2017).

Methodology

Data Source

Data are from the socio-economic survey of a randomly selected, nationwide sample of the Arab population in Israel, conducted by the Galilee Society in 2007 (Bashir et al., 2008)⁵, from whom we received the data file. The sample was a stratified sample (individuals within households within census enumeration districts) covering “all Arab Palestinian households within the green line” (ibid, p. 58). The research questionnaire included six sections: demographic, social and economic data; family; living conditions; entertainment; standard of living and personal security, and the overall response rate was 82%. Questionnaires were completed in the respondents’ household.

This study focused on 722 women from 15 Bedouin settlements in the south: seven recognized towns and eight villages, which are a representative sample of the entire Bedouin population in the Negev. Of these, 231 women had an unknown number of births and were either single, engaged (a custom still very prevalent in this population) or married women over the age of 52. The sample for the main analysis was restricted to 491 women aged 18 to 52, all married at the time of the survey (472) or in the past (divorced, widowed and separated).

The dependent and independent variables

The number of births ranges from 0 to 15 in a positive asymmetric distribution, with a median of 4 children. The analysis treats the number of births as a function of four main "factor-groups", closely related to the unique process of social change that Bedouin society has undergone in the second half of the 20th century and the beginning of the 21st century. These are:

1. Background: age, age at first marriage, age at first birth, current marital status;
2. Standard of living: education, work, type of settlement (recognized township/unrecognized village), household equipment;
3. Variables of modernization / traditionalism, on the personal level and in marital relations. Without getting into a complex discussion about the meaning of traditionalism and modernity, these variables point to the continuum between traditional Bedouin life and contemporary urban life.
4. Relations with the State

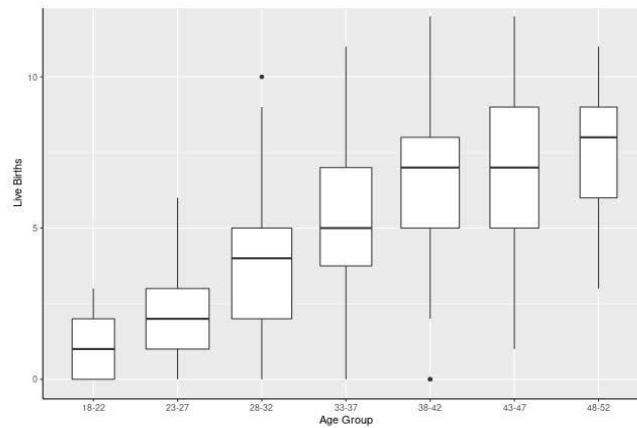
⁵ The Galilee Society is a professional organization established in 1981 with the aim of improving the health and environmental conditions of the Palestinian population in Israel and to further Palestinian-Arab Israelis’ ability to exercise their rights through scientific research and community action. The present survey was conducted by the Galilee Society’s Racaz centre for social research. Since 2004 the Galilee Society has been conducting national surveys of the Arabic speaking population in Israel and publishing reports, similar to the annual Statistical Abstract of Israel, covering the demography; education; economy; health; occupation; living conditions standard of living, personal security arts, culture and more. See <https://www.gal-soc.org/en/> (15/12/2022).

The independent variables and their relation to the birth rate

Background variables

Age: Undoubtedly, this is the main variable that determines the number of births, because both the number increases with age and because most of the other variables, such as education, work, traditionalism, etc. change with age. Age reflects the time women are exposed to childbirth, but also intergenerational, cohort, differences as women of different ages have grown up and given birth under different conditions. Therefore, even at this initial stage, correlations between the various variables and the birth rate are presented while monitoring the age of the woman. Women were grouped into 5-year age groups, 18-22 to 48-52. Despite the deviation from the accepted quintiles, it seems preferable to maintain the uniformity of the quintiles rather than create a first group two years wide. Each quintile, in fact, is centered on the quinquennial ages, 20, 25, etc.

Figure 2: Number of Births, by Age Group



Source: Galilee Society Survey, 2007 (see text). Analysis by authors

The distribution of the number of births in each age group is shown in Figure 2 and the effect of age on number of births is modelled by Poisson regression in Table 1. The number of births per woman steadily increases at the rate of one to two children every five years, up to 6.6 children for women around the age of 40, above which the increase is minor.

Table 1: Bivariate relation of independent variables with number of children born, controlling for age

Variable	e ^b	z	p(z)
Age			
Intercept	6.62	45.4	<0.0001
18-22	0.141	-12.4	<0.0001
23-27	0.329	-14.1	<0.0001
28-32	0.593	-7.79	<0.0001
33-37	0.771	-3.83	0.000127
38-42	1		
43-47	1.01	0.158	0.875
48-52	1.12	1.487	0.137
First marriage			
Age at first marriage	0.937	-8.68	<0.0001
Current marital status			
Status married	1.18	1.55	0.121
Other	1		
Education			
High school or less	1		
Post-secondary education	0.614	-4.51	<0.0001
Work			
Post-secondary education	0.645	-3.57	0.000363
In labor force	0.919	-0.904	0.366
Home appliances			
Appliance score	1.438	4.04	<0.0001
Residence			
Towns	1		
Villages	0.954	-1.04	0.298
Modern Urban Lifestyle			
Modernity score	0.804	-1.75	0.0806
No score	1.14	2.62	0.00870
Endogamy			
Cousin marriage	1		
Clan	0.920	-1.616	0.106
Other	0.916	-1.655	0.0979
State			
None or few conflicts	1		
Multiple conflicts	0.608	-4.93	<0.0001

Note: Variables are modelled by Poisson regression, age included as a control

Age at first marriage: Although an increase in the age of first marriage can be expected, as a sign of on-going change in Bedouin society, the findings showed the opposite, not because age at marriage is decreasing but because at younger age groups we are only capturing those already married. Thus, the average age is higher for women in their 40s than for younger women. However, in the youngest group, 18-22, only 25% of the women in the original sample were already married, compared to 80% in the 23-27 group and over 90% in the older groups. In practice, controlling for age, each one-year postponement of marriage reduces the total number of births by about 6.3% ($z = -8.68$, $p < 0.001$). (This and subsequent comparisons use a Poisson regression model which controls for age group, see Table 1). Women who married under the age of 20 (the median age) gave birth, on average, to one child more than those who married at the age of 20 or over ($t = -4.21$, $df = 485$, $p < 0.001$).

The age at first birth is closely related to the age of marriage ($r = 0.938$) and more than 80 percent of women give birth in the first year of marriage or the year after. However, 38 women (8%), mostly in the first two age groups, had not given birth and a further 14 women (4%) had an unknown age at first birth. This compared with only four (0.1%) women with unknown age at marriage. This analysis, therefore, will focus on the age at marriage.

Current marital status: Divorce is very rare in Bedouin society and, with the decline in mortality, widowhood is decreasing (although in the youngest group, 18-22, 4.3% of those ever married were divorced, a higher percentage than in any other age group). Overall, only 19 women (fewer than 4%) were unmarried (widowed, divorced or separated) so these three categories were combined to create a dichotomous variable, currently married or unmarried. In practice, controlling for age, there is no effect of current marital status on the number of births ($z = 1.55$, $p = 0.121$).

Standard of Living

Education: There are nine levels of education identified: none; can read and write; elementary school; middle school; high school; high school with matriculation; post-secondary; bachelor's degree; master's degree or higher. As age decreases, the median level of education increases. In particular, the percentage of women who did not complete elementary school dropped from 80% among 48-52-year-olds to 6.5% among 18-22-year-olds. Moreover, 15% of women between the ages of 23 to 32 had a post-secondary education. After controlling for age, the main effect is for women with tertiary (post-secondary or university) education, who have 60% the number of births that other women have ($z = 4.51$, $p < 0.001$). Therefore, education was treated as a dichotomous variable, comparing those who have a tertiary education with those who do not.

Work: The question referred to women being employed at the time of the survey, not necessarily at the time they gave birth, but the fact that a woman is working indicates a break with traditional conventions and the family's desire to raise its income level. Even so, the proportion of women in the labor market was very low and decreased with age: of the young women (aged 23-27), 23% were working, while of the women aged 43 to 52, only 3% (in fact, only 3 women). There was also a close correlation between work and education: three-quarters of women with tertiary

education worked while fewer than 6.5% of women without matriculation worked. After controlling for these two effects, age and tertiary education, working women did not have fewer children than women who did not work ($z = 0.904$, $p = 0.366$).

Home appliances: These were represented by a scale based on the number of household appliances in the home (20 items, the numbers in parentheses are the percentage of households with a positive answer). The items are: solar water heater (86); TV (85); refrigerator (83); cable / satellite (80); private car (69); washing machine (69); gas stove (44); stereo / radio (42); video (42); microwave (37); DVD (34); bookshelves (30); computer, (29); air conditioner (27); vacuum cleaner (20); freezer (20); telephone (land) line (17); heating (15); internet (15) and tumble dryer (14) (Cronbach $\alpha = 0.894$). The scale is constructed as the mean of the positive answers: 0 means a woman has none of the appliances and 1 she has all of them. The distribution of the scale is close to symmetric with an average of 0.438 and a standard deviation of 0.244. In general, the level of household equipment increases with age. Controlling for age, there is a positive relationship between the level of equipment and the number of children ($z = 4.04$, $p < 0.001$). Across the sample, the average number of children per woman in households with a high standard of living (above the overall mean) was one child higher than that of women from families with a low standard of living ($t = -3.81$, $df = 487$, $p = 0.0002$).

Type of settlement: Half to two-thirds of the Bedouin population today live in recognized towns and the rest in unrecognized villages, including those recognized at the beginning of this century (Dagan-Buzaglo, 2014). In the past decade there has been a growth in services, mainly through the new Regional Councils, which, together with the towns, also serve the still unrecognized villages. However, most of the population in the villages remains uncovered by a master plan which forms the basis for planning of the settlement and the legal construction of permanent buildings, and still live without grid electricity or regular running water. In the sample, 44% of the women were from the villages. The average age of women residing in the recognized towns was higher than that in the villages (average 35.5 compared with 31.6; $t = 4.98$, $df = 484$, $p < 0.001$). Controlling for age, there was no difference in the number of children between recognized towns and unrecognized villages ($z = 1.04$, $p = 0.298$).

Modernisation / Traditionalism

Traditional-Urban-Modern Lifestyle: represented by a continuous, aggregate scale that combines 10 variables reflecting the adoption of a contemporary urban lifestyle (percentages in parentheses): watching TV (83); going on day trips, eating in restaurants (49); reading newspapers, vacations in Israel (39 each); visiting parks (34); reading magazines, vacations abroad, sports activities (19 each) and reading books (17) (Cronbach $\alpha = 0.793$). The scale is constructed as the mean of the positive answers, and has a positive, asymmetric distribution, mean = 0.393 and standard deviation = 0.26. Only 307 women answered these questions and the vast majority of those who did not answer were in age groups 38 and above. Assuming that not answering may be related to the content of the scale, and in order not to lose the non-respondents, they were given an average score and another, dummy variable, was added with a score of 1 for those who did not answer the

questions and 0 for those who did. For the women who answered the questions, the level of traditionalism increased with age and births decreased, moderately, as they gave more positive (non-traditional) answers ($z = -1.75$, $p = 0.040$ one-tailed). Among those who did not answer the questions, after controlling for age, the number of births was higher than for those who did answer ($z = 2.53$, $p = 0.0056$ one-tailed).

Traditional household structure: Bedouin women traditionally marry their paternal parallel cousin, *ibn el-'aam* (Na'amnih et al., 2014; Richter-Devroe, 2016). In this sample, a third (33.5%) of the women were married to a first cousin (maternal or paternal); 36.8% were married to a person from the same tribe and the rest (29.6%) were married outside the tribe. In all age groups, between 20 and 30 percent of women were married outside the family and tribal circle, but while in the three older age groups most endogamous marriages were within the immediate family (first cousin marriage), in the lower age groups most endogamous marriages were within the tribe but not to a first cousin. After controlling for age, there is no relation between endogamy and the number of births ($LR\chi^2 = 3.62$, $df = 2$, $p = 0.164$).

Relations with the State

Lack of recognition by the Israeli authorities of the unrecognized villages and the absence of updated master plans in recognized towns have made it almost impossible to obtain building permits, therefore leading to illegal construction and subsequent demolition of buildings by the authorities. The questionnaire addressed four types of conflicts with the authorities: land expropriation; expropriation of houses; demolition of houses and destruction of trees and crops. The percentage of families who experienced these conflicts was lower than expected (18%), most of them in unrecognized villages. Conflicts were not age-related, and fertility was affected only for the 8 percent of women whose families experienced all four types of conflicts. For these, the number of births was significantly *lower*, averaging 2.7 versus 4.7 ($t = 6.53$, $df = 60.4$, $p < 0.001$).

The Multivariate Model

Given the correlation between the various explanatory variables, multivariate analysis was used to identify the main variables related to the number of reported births. In this context, age at marriage, which is closely related to the age at first birth, is likely to play a special role as an intervening variable. This is a proximate effect (Bongaarts, 1978, 1987), which is both related to other effects and may hide them in the model. Women with a post-secondary education give birth to their first child, on average, more than two years later than other women ($t = 4.84$, $df = 44.6$, $p < 0.001$) and the age at marriage is slightly lower among the more affluent women ($r = -0.118$, $p = 0.009$). Although the number of home appliances was measured at the time of the questionnaire, not at the time of birth, it is assumed that the relative gaps are generally maintained throughout life. Women from families who have severe conflicts with government authorities were married, on average, more than two and a half years later than other women ($t = 4.13$, $df = 41.5$, $p < 0.001$). By contrast,

there was no relation between modernity and age at marriage ($r = -0.019$, $p = 0.680$) nor any difference in age at marriage between women with and without a modernity score.

The model is a Poisson model in which the dependent variable is the number of births per woman. We present four models:

1. The baseline model, the number of births by age group;
2. The social effects model, the number of births by age group and social factors, including significant interactions between these factors and age group;
3. The age at marriage model, the number of births by age group, age at marriage (in single years) and the interaction between age group and age at marriage;
4. The combined model, including age at marriage and social factors, with interactions.

Table 2: Poisson Model, Number of Births by Age Group, Age at Marriage and Social factors

Exponential coefficients (e^β), (z-values in parentheses)

	Age Groups (1)	Social Factors (2)	Age at Marriage (3)	Combined (4)
Intercept	6.62	6.14	6.58	6.48
Age group				
18-22	0.144 (-12.2)	0.162 (-11.2)	0.0971 (-10.1)	0.110 (-9.37)
23-27	0.332 (-13.9)	0.391 (-11.2)	0.310 (-14.0)	0.350 (-11.6)
28-32	0.592 (-7.76)	0.661 (-5.86)	0.580 (-7.91)	0.620 (-6.57)
33-37	0.770 (-3.82)	0.860 (-2.13)	0.748 (-4.13)	0.820 (-2.71)
38-42 (baseline)	1	1	1	1
43-47	1.02 (0.241)	0.976 (-0.370)	1.02 (0.333)	1.005 (0.074)
48-52	1.12 (1.48)	1.06 (0.820)	1.13 (1.57)	1.10 (1.18)
Social factors				
Tertiary Education		0.610 (-4.40)		0.674 (-2.86)
Home Equipment		1.55 (3.98)		1.38 (2.93)
Modernity		0.625 (-3.18)		0.618 (-3.19)
Modernity Unknown		1.10 (1.92)		1.06 (1.17)
Conflicts with State		0.648 (-3.95)		0.754 (-2.50)
Age at Marriage			0.944 (-3.66)	0.948 (-3.13)
Interactions				
Age at Marriage * Age Group				
18-22			0.774 (-2.45)	0.788 (-2.22)
23-27			0.857 (-4.18)	0.860 (-4.04)

28-32			0.963 (-1.62)	0.977 (-1.01)
33-37			0.992 (-0.339)	0.998 (-0.086)
38-42 (baseline)			1	1
43-47			1.01 (0.420)	1.01 (0.571)
48-52			1.05 (2.00)	1.05 (2.03)
Age at Marriage * Tertiary Education				1.07 (2.16)
Deviance	534	456	413	377
df	477	472	470	464
Deviance gain		78	121	157
Df(gain)		5	7	13

Note: z-values greater than |1.96| are "significant" ($p < 0.05$) for a two-tailed, non-directional test; z-values greater than |1.65| are "significant" for a directional, one-tailed test.

Results

Table 2 presents the four models, including all variables identified above as being significantly related to the number of births. The model includes age at marriage, higher education, standard of living, modernity and multiple conflicts with official authorities. For Age Group we set 38-42 as the baseline, this being the age group by which most women have completed their childbearing. Continuous variables (Age at Marriage; Standard of Living and Modernity) were centered at the mean and a dummy variable was included to identify women whose Modernity score was imputed to the mean. Models (3) and (4) include the interactions between Age Group and the Age at Marriage and Model (4) includes the interaction between Tertiary Education and the Age at Marriage. All other interactions were insignificant ($p > 0.05$) and were excluded. The deviance (G^2) scores indicate that while Model 1 does not match the data ($p(G^2) < 0.05$), Models 2-4 all match the data ($p(G^2) > 0.5$) and each model is a significant improvement over the one before it in the hierarchy.

The coefficients in the table are the exponential (e^β) value of the regression coefficients. The constant (Intercept) values, therefore, are the expected number of births for women aged 38-42. In model 2 this will be for women without tertiary education; a mean level of home equipment; a mean modernity score and with few or no conflicts with the state. In model 3 the Intercept will refer to women with a mean age at marriage and in model four with conditions of models 2 and 3 combined. Across all models, the baseline number of children is similar, between six and six and a half children per woman.

The variable coefficients are the relative risks by which the baseline coefficients are multiplied for each unit increase in the variable. As age increases, so does the number of children born, from less than one child, on average, in age group 18-22 up to the baseline age. Above ages 38-42 the number of children born continues to increase, slightly, but not significantly. Model (2) is very similar to Model (1), but in Model (3) and Model (4) the values for the two younger age groups are reduced.

In Model (2), post-secondary education is associated with a reduction in the number of births; an increase in living standards is associated with an increase in the number of births; the coefficient for modernity is negative, but those with no modernity score have 10 percent more children than those with a mean modernity score, and a history of several conflicts with the authorities reduces the number of births. There are no interactions between social factors and age group.

In Model (3) there is a global effect of age at marriage, reducing births by close to six percent for every year's delay in marriage and there is also an interaction between the age at marriage and age group. In the two younger age groups, 18-22 and 23-27 this interaction is negative: the higher the age at marriage, the fewer the number of births. However, by age group 28-32, this interaction has effectively disappeared and there is no further effect of age at marriage on the number of births. Otherwise put, delaying the age at marriage dramatically reduced the number of births at younger ages, as we may expect, but much of this effect is short lived and in the two oldest age groups, the

interaction coefficients are greater than 1, thus partially offsetting the effects of age at marriage on the lifetime number of children born.

In Model (4), adding Age at Marriage to Model (2) slightly attenuates the effect of the social factors, and there is an interaction between Tertiary education and the Age at Marriage. Effectively, there is no overall effect of age at marriage on fertility for women with tertiary education ($0.948 * 1.07 = 1.01$). The interaction effects between age at marriage and age group remain, and these are the same as in Model (3): age at marriage reduces the number of births far more for younger women than for older women. The implication is that age at marriage creates a delay in having children but, as far as we can see from this cross-sectional sample, the effect on the number of children born declines with age and over the lifetime it reduces the number of births by about five percent for each year's delay. By contrast, the social effects, those of tertiary education, modernity and standards of living, are consistent across the age range and affect the total number of children born, not the timing of the births. The small group of women whose families have had multiple confrontations with the state have fewer children. From the information at hand, we cannot tell if this is a conscious decision or reflects force of circumstances. The small number of cases, however, does suggest that the question is not tapping into the true depths of the phenomenon.

Discussion

Bedouin society in the Negev, without a doubt, is undergoing a process of social, cultural and economic change that affects most age groups and the decline in birth rates both reflects and accelerates these changes. Having fewer children allows women to work outside the home, complete high-school and post-secondary education, go on vacation in Israel and abroad, watch Arab and foreign TV shows and movies and spend time on social media. The smartphone connects them to groups outside their limited traditional circle of the extended family, tribe and clan (Meir & Baskind, 2006; Samuel-Azran, 2012). Low fertility encourages the adoption of norms and behavioural patterns that emphasise women's empowerment, improve their status, and encourage a more egalitarian relationship with their spouses and other family members.

The decline in birth rates, therefore, is an integral part of the change process as a whole, a change that both affects, and is affected by, other social changes. These include education and the exposure to western culture; gender relations and family structure; the nature of employment; relations with official authorities; sources of livelihood and standards of living (MacInnes and Díaz, 2009). As the regression results show, not all of these are related to fertility in the same way. In particular, as education increases, marriage and childbearing are delayed and the total number of children declines. By contrast, as standards of living rise, marriage and childbearing are brought forward and the total number of children rises.

The classical model of demographic transition emphasizes economic development and social change as causal factors for declining fertility (Hirschman, 2001). As the population becomes urbanized, with more industrial and service based employment, and as infant mortality declines and effective contraception becomes more readily available, women are ready, willing, and able to have fewer children (Lesthaeghe and Wilson, 1986). The rise in living standards and in personal expectations; the increase in the number of years of education and children's dependence on their parents increase the cost of raising children. Children turn from being an economic asset into a financial commitment, leading to a significant delay in marriage and a preference for fewer children per family (Bongaarts, 2001; Emeka, 2006).

While this is true in shaping general trends in fertility, the specific level is still influenced by cultural-community factors, such as religion (James and Nair, 2005); language group (Zacharia et al 1994; Koc et al, 2008; Spolaore and Wacziarg, 2019); personal ties (Bongaarts and Watkins, 1996), group identity (Kraeger, 1997) and political conflicts (Anson and Meir, 1996). In this respect, the pattern seen among the Bedouin is similar to that of Muslims in the north of Israel a generation earlier (see Figure 1, above). This included a steep and rapid decline in fertility, for about 20 years, followed by stabilization for another 15 years and a further decline, to a level, already in 2011, lower than that of Jewish women (Winckler, 2002; Israel Annual Abstract of Statistics, various years). This pattern of decline, stabilization and again decline is familiar from other societies (Garenne, 2008; Cetorelli & Leone, 2012; Schoumaker, 2019), including Muslims in the north of Israel (Nahmias and Stecklov, 2007; Staetsky, 2019), and there is no need for the decline in fertility, once started, to be smooth, nor will it necessarily stabilize at some magic figure that guarantees a long-term balance in population size (Bongaarts, 2006; Westoff and Cross, 2006; Moultrie et al, 2008). Nonetheless, the length of this stabilization and its timing, after a rapid and dramatic decline, suggests that it reflects more than just an adjustment of proximate determinants (Dyson and Murphy, 1985; Schellekens and Eisenbach, 2002). Rather, it is a substantive stage in the fertility history of this population, one that needs to be explained with reference to the social, economic and political conditions in which this community lives.

While many of the processes observed are to be found, at varying levels of intensity, in other sections of Arab-Muslim society, Bedouin society maintains its own peculiarities. In particular, fertility remains far higher than in the Arab-Muslim population in the north of Israel or in the Bedouin societies of the Sinai desert or Jordan, to which much of the displaced population of 1948 fled (Sayed, 2019; Rasheed, 2021). In part, we may suggest that this reflects differences in the socio-economic history of the Arab populations in the north and south of Israel. Employment opportunities were greater in the north and center of the country, enabling an earlier integration into the urban, Jewish, labor market and the level of education was higher. Even at the end of the 20th century, the majority of teachers in Bedouin schools were from the north and center of the country and Bedouin high school students who wanted to obtain a matriculation certificate that would allow their admission to an Israeli university had to leave their family to attend high schools

in those communities. This, effectively, closed the door to higher education, or even high school matriculation, for women.

We suggest, nonetheless, that Bedouin high fertility reflects more than just social disadvantage. The relations between the Bedouin and the State have been, and remain, qualitatively different from those of Palestinian citizens in other parts of the country. Bedouin municipalities, though ostensibly on a par with all other municipalities in the country, are still subject to control by the Authority for Development and Settlement of the Bedouin in the Negev. The Bedouin remain a small, enclave community: poor, marginalized and still largely cut off from the work and educational opportunities which are the *sine qua non* for full integration into Israeli society. Government policies, starting at the time of the military government but continuing under the guise of the Authority, regarding settlement, the urbanization process, land expropriation, unrecognized villages and the demolition of houses have built up a wall of distrust and antagonism and have strengthened Bedouin tribalism. Tribalism and family solidarity have also served as a defense against poverty and basic material insecurity, a threat that is felt by all members of the community, not just those who have had personal confrontations with the state.

Our analysis of fertility at the individual level indicates who has more, and who has fewer, children. These results, however, are relative. The educated woman has fewer children than she might otherwise have; the wealthy woman has more. Implicitly, these results move up and down around a socially established absolute value. The observed total fertility in the population reflects both population composition (wealth, education etc. at various ages) and this absolute value, about which we can only speculate. With the data at hand, we cannot separate out the direct and indirect effects of segregation, discrimination, confrontation, and tribalism on the absolute level of fertility. This, however, is the reality within which the Bedouin live their lives, over seven decades after the founding of the state, and it is a very different reality from that facing the Arab population in the north of the country. It seems unlikely that Bedouin fertility will match that of the rest of the country until there is a mutually agreed resolution of the land and settlement issues and the Israeli Bedouin of the Negev can feel equal as citizens in their own country.

Conclusion

In the last two decades, there has been a significant improvement in the socio-economic level of Bedouin society in the Negev, together with an increase in the level of education and the integration of young Bedouin men and women in employment and institutions of higher education, in Israel and abroad. The development of education, welfare, health and local government systems, investment by government ministries in Bedouin local authorities, the relative improvement of the status of women and a vanguard of women who have acquired an academic education, have all brought about significant social change. Women have become qualified professionals working in education, in local authorities and for civic organizations (Marteau, 2014). The younger

generation, in particular, has been exposed to media from around the world, thus allowing for the penetration of new ideas.

In the background, however, there are two processes which are specific to Bedouin society in the Negev and whose effects are difficult to gauge. On the one hand, the rapid growth of the population, which today is over 300,000 (CBS, 2022, Table 2.15), more than 25 times larger than it was 70 years ago, on the same limited land area, with limited migration possibilities, effectively no possibilities for agriculture and very limited industrial development. On the other hand, there is the on-going confrontation with the State over land rights and housing arrangements, which continues to be felt, both in Bedouin consciousness and in practice. One-third, or more, of the population still live in unrecognized localities, without basic facilities, planning, budgets, or infrastructure. The sense of marginalization, discrimination and the denial of Bedouin history and culture is no less true in the recognized towns.

The effect of this conflict on the birth rate is not direct. In most families who reported expropriations of land and demolition of homes there is no significant difference in the birth rate. In the few families that reported several conflicts with the state authorities, the birth rate was actually lower than in the rest of the population. It is doubtful, then, that there is a deliberate strategy of high birth rates in response to a conflict with the State, but rather an indirect impact, through the general strengthening of ties within the family and the tribe and the subordination of women. Note, for example, the high rate of endogamous marriage and the continued practice of polygyny, phenomena that have almost disappeared in the Palestinian-Israeli population in the north of the country (Abu-Rabia et al., 2008; Sharkia et al., 2016). Clearly, more work is required evaluating the fertility of those families that have suffered house demolitions, crop destruction, forced relocation, etc.

All this needs to be kept in mind when evaluating the results of the present analysis. The increase in the level of women's education, especially the growing proportion of women with vocational, post-secondary education, leads to a decrease in the number of births, as does the growing adoption of elements of a Western lifestyle. On the other hand, the increase in the standard of living and access to labor-saving household products allows a higher birth rate to be maintained. These three processes have direct, but also indirect, effects: education postpones the age of marriage and the age at first birth, while at the same time new household appliances make it possible not to postpone, or at least to moderate the postponement. They are also interrelated: women with tertiary education have a higher material standard of living and a less traditional lifestyle. The analysis can demonstrate how these conditions are related to fertility, who are the women with more, or fewer, children. It cannot explain the specific levels of these relations (the size of the coefficients). Nor can it explain why families do, or do not, buy the household goods used here as a measure of the standard of living. Nonetheless, the outcome is clear. There has been a significant decline in fertility rates, which fell by almost 50% in little more than a decade, from over 10 children per woman in 1998 to 5.4 children in 2013. This is, without a doubt, a dramatic decline on any scale, relative to Europe, to the Middle East (Courbage and Puschmann, 2015) or to Muslims in the north

of Israel. This decade, however, has been followed by a period of stabilization. Only in 2020 did fertility drop below the level of five children per woman (and it rose again the following year). Whether this portends a new decline or not, and how far such a decline will go, has yet to be seen.

This process is still in progress, with age, period and cohort components intertwined. Infant mortality is declining, even though it remains relatively high, younger cohorts have a higher proportion of women with tertiary education, and they are adopting elements of an urban, Western, lifestyle. They are also marrying later and are having fewer children. Yet, in doing so, they are implementing tendencies that were already present, but latent, in previous cohorts: note that we found no interaction between age and tertiary education. Thus, the *effect* of education does not appear to have changed, only the proportion of younger women attaining higher education. In particular, there appears, as yet, to be no systemic effect of broadening education on uneducated women (Nahmias and Stecklov, 2007). The same is true for standards of living, which are also rising, enabling the realization of a higher level of fertility and the effects of these, too, are constant across the age groups, with no interaction.

We cannot foresee the future path of Bedouin fertility. The rapid decline in birth rates in the first decade of this century reflected change, but this appears to have been a change in social conditions more than in fertility intentions themselves. The consistent effect of living standards across age groups, and the decade of stabilization of fertility rates, reflect the presence of countervailing forces and mechanisms, which push back against change. As we suggested above, these are not necessarily conservative forces, but may be reflective of the political struggle between the Bedouin and Jewish society, represented by the State of Israel. Current political developments may, or may not, bring about a change in this confrontation. In June 2021, the United Arab List (Hebrew acronym Ra'AM) joined the new coalition government headed by Nafthali Bennet and Yair Lapid. Ra'AM, whose main electoral base is among the Bedouin, was promised a substantial change of policy in the Negev, including funding, investment in infrastructure, a curtailment of house demolitions and recognition of unrecognized villages. How, if at all, this will evolve in practice, given that this government has since fallen, has yet to be seen. Whether fertility will remain steady or decline, in the coming years, to approach the level of 2-3 children per woman found among other Israeli sub-populations very much depends on relations between Bedouin society and the rest of the country as well as on the evolving dynamics within Bedouin society itself.

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