10.3197/JPS.63799977346502

RESEARCH ARTICLE

Community pressure drives population pressure: evidence of social influence on Israeli fertility

Rachel A.M. Gould[1]

Abstract

Israel presents an anomalous fertility case: the non-Jewish sectors demonstrate dramatic fertility decline whereas the Jewish sectors maintain perplexingly high fertility rates. Traditional explanations of demographic trends focusing on economic development, educational level, women's empowerment or contraceptive availability fall short in explaining the current situation. A national online survey (n=602) conducted in April – May 2020 explored a wide range of drivers of fertility behaviour trends. Descriptive analysis supported by further multivariate linear regression analysis identified congruence with social influence as central factor contributing to high fertility rates and the homogeneity within Israel's disparate Jewish communities. Strong statistical correlation was found between answers to questions relating to desired family size, ideal family size, perceptions of average family size in one's community and actual fertility. Additionally, the number of siblings and the number of children currently in a family affect fertility, whereas other demographic factors, including education and income levels, were not statistically significant. Increased understanding of these social factors can contribute to more effective population policies in Israel and other high-fertility countries.

1 Department of Public Policy, Tel Aviv University. Email: rachelgould@mail.tau.ac.il

Keywords: Israel, social influence, population dynamics, fertility, ideal family size, desired family size

Introduction

The role of social influences to explain fertility behaviours and subsequent transitions has been discussed for nearly fifty years (Berrington, 2021; Coale, 1973; Greenhalgh, 1996; Casterline, 2001; Szreter, 1993). Both personal economic factors (e.g., career trajectory or economic stability) and social factors (e.g., support networks or community resources) may inform one's decision to have a child (Dasgupta and Dasgupta, 2017; Lois and Becker, 2014), suggesting that, in economically developed countries, social influences may prove more salient than economic factors.

Extended family, friends and the larger social community all provide incentives, pressures or motivations to have children. These social forces may be overt, like one's parents pressuring for grandchildren, or they may be covert, such as the admiration and praise for social cohort members successfully managing families with multiple children (Bernardi and Klärner, 2014). A more recent social force is concern over environmental impacts and the associated uncertainties about the future. The environmental consequences of having children or what kind of future they might have, in light of climate change and other emerging environmental challenges, have also appeared as topics for consideration prior to conception (Helm et al., 2021; Murtaugh and Schlax, 2009; Stern and Wolske, 2017; Wynes and Nicholas, 2017).

Developed countries which are member states of the Organization for Economic Cooperation and Development (OECD) have experienced almost uniformly low total fertility rates below replacement levels (D'Addio and D'Ercole, 2005; OECD, 2024). Israel [2] historically has been a demographic outlier, the only OECD country with both an expanding gross domestic product (GDP) and a consistently high total fertility rate (TFR), above replacement fertility levels, particularly in the Jewish sector of society (DellaPergola et al., 2014; Weinreb, 2023). In 2024 the Israeli TFR was 2.9 versus a TFR average across the OECD countries of 1.5

2 In discussing Israel and its population trends, this paper is not referencing population growth trends that include Palestinians living under the authority of the Palestinian Authority (PA) in the West Bank or in the Gaza Strip under the authority of Hamas.

(Reuters and TOI Staff, 2024). The negative correlation apparent between the economic development of OECD countries and their low fertility rates reinforces the perspective, Israel notwithstanding, that economic development is the key to reducing fertility rates. Concerns over increasing population sizes in developing countries continue to be addressed by policies anchored in economic terms and frameworks (Adam, 2021; Madsen et al., 2018), even as research shows that economic incentives appear to have limited influence on fertility rates (D'Addio and D'Ercole, 2005; Gauthier and Hatzius, 1997).

This article re-assesses the anomaly of Israeli population growth and considers why Israel's birth rate continues to be high despite a convergence of factors that would otherwise lead to declines in birth rates as seen in comparison to that of other developed countries. Based on the results of a national survey, the present study provides a broad selection of variables from which it may be possible to identify more specifically the drivers underlying social norms in Israel. This is the first peer-reviewed study we are aware of that considers the individual's social perception variables such as ideal, desired and perceptions of community family sizes together with a full set of demographic variables.

This paper first reviews influences that lead to changes in fertility rates and behaviours. Then Israel is presented as a case study. In the subsequent section the data collection for a national study and the analytical methods used to evaluate the data are outlined. Next comes a discussion of the survey results in light of the observed fertility behaviours in Israel. Finally, the article draws conclusions about the forces influencing Israeli fertility trends.

Changing fertility rates and behaviours

The literature analysing these socio-economic forces influencing fertility behaviours is robust and includes evaluation of economic incentives, access to education, empowerment of women and interpersonal factors that exist within a society (Berrington, 2021; McAllister et al., 2016; Montgomery and Casterline, 1996). Some of these forces are applied deliberately, with expected results, while other forces are applied more subtly or even unintentionally, influencing fertility behaviour imperceptibly, unbeknownst to most members of the society.

Economic incentives and drivers

Economic demographic theories and policy recommendations began with a focus on the negative relationship between fertility and income (individual or GDP) (Becker, 1960, 1991). Fertility rates decline as either countries or individuals improve their economic wellbeing (Madsen et al., 2018). The dominant perspective argues that, if parents place an emphasis on the rational assessment of the opportunity cost of additional children, parents are expected to have fewer children and invest more in the development of the children they do have (Easterlin, 1975; Ermisch, 1988; Willis, 1973).

The economic demographic thinking has evolved since the 1960s (Pampel and Peters, 1995; Robinson, 1997), recognising other economic influences on fertility decision-making. Gender parity in employment opportunities (McAllister et al., 2016), reduced social inequality (Macias, 2015), avoidance of traditional gender roles (D'Addio and D'Ercole, 2005) and state transfer payments (Cohen et al., 2013) have all been connected to changes in fertility behaviours. In high income countries, as women's participation in the labour force increases, fertility rates decline; in lower income countries fertility declines have been observed in connection with indirect economic development efforts (Adam, 2021).

Education as a tool to reduce fertility

Access to education for girls and women consistently results in a decline in fertility rates (Bongaarts, 2003; Emil Vollset et al., 2020; Madsen et al., 2018; Meisenberg, 2008; Sheikh and Loney, 2018). Education contributes to female empowerment and transforming women's status within the family, community and/or society. Women have been observed to delay their decision to have their first child to enrol in a higher education degree programme (Aassve et al., 2012), or even until they have completed their degree (D'Addio and D'Ercole, 2005; Martin, 2000). Education contributes to equality in professional opportunities which empowers girls and women to delay marriage or first births (Basu, 2002). Improved professional opportunities increase women's earning potential and overall empowerment. In contrast, levels of education for men and for those in higher socioeconomic bands do not necessarily translate to preferences for smaller families (Weeden et al., 2006).

Education is also a tool to dispel myths about contraception and empower women to use family planning, resulting in lower family size preferences and fertility levels (Bongaarts and Hodgson, 2022a). Women with education have been observed to be better prepared for and more likely to survive childbirth. Their children also have improved child survival rates (Kim, 2016), leading ultimately to fewer pregnancies to ensure some children survive to adulthood. Parents may also prioritise a smaller family to enable greater access to education, in order to enhance future socio-economic conditions for their children (Axinn and Barber, 2001; Knodel et al., 1990).

Contraception and family planning

Contraception use has historically led to declining fertility rates and smaller families. Both the Millennium Development Goals and the Sustainable Development Goals call for access to reproductive health-care services including contraception (Bongaarts and Hardee, 2017). Obstacles to the use of contraception include lack of knowledge, availability, cost, quality of the contraception and the care provided to receive them, health concerns, side effects, objections from other family members to the use of contraception and general social acceptability (Bongaarts and Hodgson, 2022b). Recent research has focused on the question of demand for versus use of contraception (Bongaarts, 2024). It is not sufficient that contraception is available – women have to want to use it and be empowered to use it for it to be a successful family planning approach. This further requires public support for the use of contraception to remove any stigma associated with family planning. Fundamentally, the use of contraception allows women to control their fertility. While this is empowering for women it can be threatening to men or more broadly to a society if that clashes with the norms of the community.

Social norms and preferences

Family size preference is a core determinant of high (Bongaarts, 2011; Bongaarts and Hodgson, 2022a; O'Sullivan, 2018) and low (Cleland et al., 2020) fertility rates. Preferences are influenced by informal (e.g., neighbours and friends) and formal social structures (e.g., religious communities) (Bernardi et al., 2007; Lois and Becker, 2014; McAllister et al., 2016; Okun, 2017; Potts, 1997). Members of a cohort acquire a more positive perception of raising a family to align with the behaviour of their cohort (Lois and Becker, 2014) and to remain within their established social network (Fent et al., 2013); children become a requirement for maintaining one's

social capital. In societies with stronger expectations for compliance with social mores, uniformity of fertility behaviours is further enhanced, even without explicit enforcement (Dasgupta and Dasgupta, 2017; Gelfand, 2018; Gelfand et al., 2011). It is therefore not surprising that a correlation between religious observance and family size has consistently been observed (Götmark and Andersson, 2023; Landau, 2003; Turner and Götmark, 2023).

In an attempt to identify how social norms influence fertility behaviours Bernardi and Klärner (2014) name four possible mechanisms: social learning, social pressure, contagion and social support. These mechanisms can be observed in individuals learning through observing others or mimicking the behaviors of others around them. The desire or necessity to conform to the expectations of others as well as the impact of resources available in one's social network are also factors that might influence fertility behaviours of the individual. Even if one or more social norm is identified, establishing a family remains a deeply personal decision, confounding the ability to isolate the influence of external motivations (Cleland et al., 2020) and social cohort influence (Merli et al., 2020).

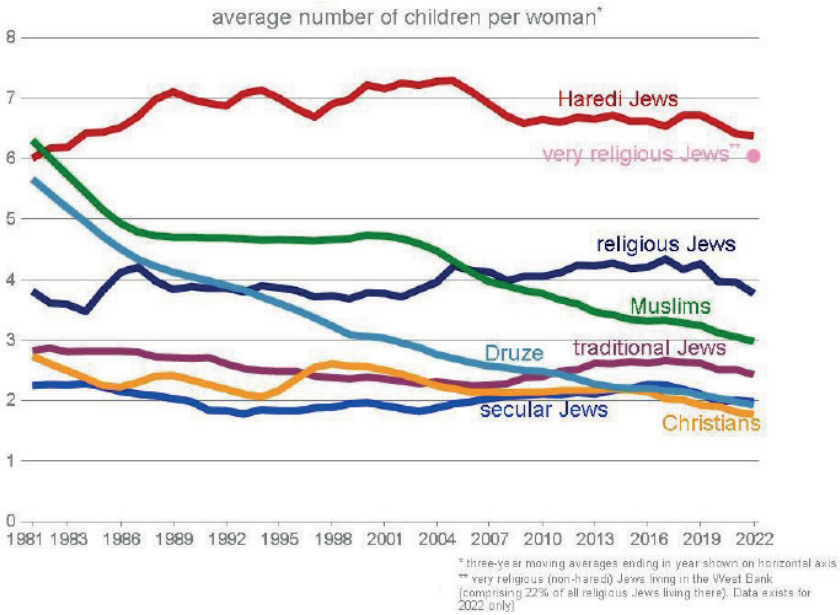
Israel as a case study

In just over 77 years, Israel has pursued and embraced economic and technological development to transform a country of post-war refugees into a bustling modern nation-state. Since joining the OECD in 2010, Israel's per capita GDP has been slightly above the OECD average (MacroTrends, n.d.b); its population size of just under 9.5 million people places it in the bottom quartile of OECD countries. In 2024, Israel had a TFR of 2.9, having been the only OECD country with an increasing fertility rate throughout the last decade (MacroTrends, n.d.a). Israel's demographic profile is commonly characterised based on religious affiliation and level of religiosity. The country is comprised of Jewish, Muslim, Christian and Druze populations (the latter three sometimes clustered as Arabic-speaking or 'non-Jewish'). Further, the Jewish population is often divided into secular, traditional, religious and ultra-Orthodox sectors with movement between the sectors.

High fertility rates (Figure 1) are prevalent throughout Israel's Jewish sectors, while birth rates in the non-Jewish communities (i.e., Muslim, Christian, Druze, atheist) have significantly declined throughout both the 1960s and 1970s, and again more recently in the 2010s (Staetsky, 2019). Given its small land area and

assuming a continued two per cent average annual population growth rate, Israel is projected to become one of the most densely populated countries on the planet by 2065, second only to Bangladesh (Ben-David, 2018).

Figure 1. Fertility rates in Israel



SOURCE: COURTESY OF THE SHORESH INSTITUTION FOR SOCIOECONOMIC RESEARCH.

Israel's founders perceived the country and the Jewish people under the constant threat of a 'continuity crisis', leading to the implementation of pro-natal policies (Kravel-Tovi, 2020: 6). Tensions between immigrant populations over differing birthrates informed population policies in the early years of statehood. Jewish communities with higher birth rates (i.e., Middle Eastern and North African immigrants) were encouraged to have smaller families under the banner of poverty alleviation, while communities with lower birth rates (i.e., European immigrants), who were seen as economically better-off, were encouraged to have larger families (Tal, 2016). The result was an asymmetrical, preferential and discriminatory fertility policy (Birenbaum-Carmeli and Carmeli, 2010; Hashash-Daniel, 2010).

Four main themes have been suggested to explain the ideological motivations to prefer large families. First, the magnitude of losses from the Holocaust cast a long shadow over the surviving generations and their children, sparking a desire to rebuild the Jewish people (Manski and Mayshar, 2003). Second, the potential reality of a Jewish minority in its first sovereign state compared to its Arab neighbours resulted in what some have considered a demographic war to increase the Jewish population in relation to the Arab population (Orenstein, 2004). Third, the ongoing wars and conflicts with Israel's Arab neighbours drove both a desire to ensure future generations of soldiers and as an 'insurance policy' for parents who must send their sons to battle and risk losing them (Kraft, 2018; Orenstein, 2004; Sperling, 2010; Yuval-Davis, 1996). Finally, the biblical commandment to 'be fruitful and multiply' was emphasised across the entire society, and especially within religious communities (Landau, 2003; Sperling, 2010; Tal, 2016).

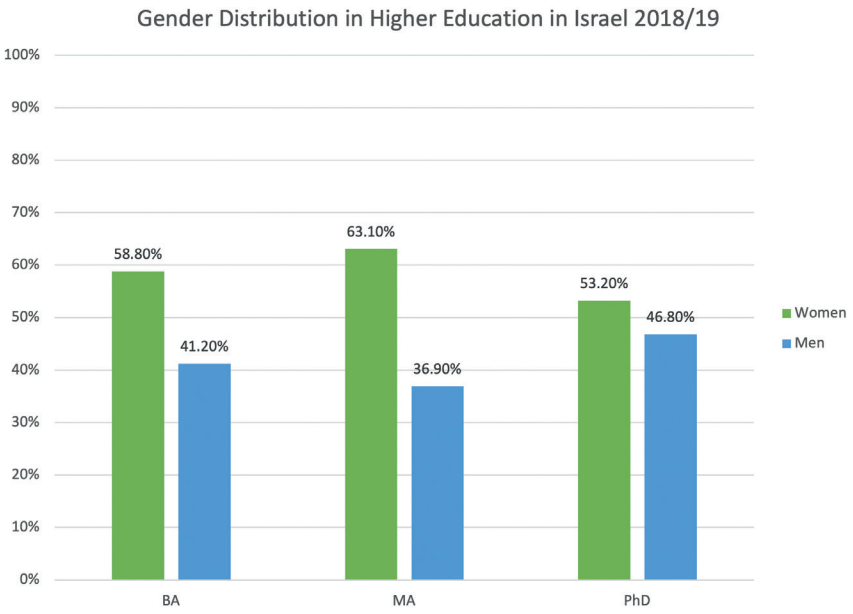
Israelis who choose not to have children face the risk of being deemed 'selfish' or 'barren', may find themselves excluded socially and may not be viewed as full adult members of society (Berkovitch, 1997; Birenbaum-Carmeli, 2016; Bystrov, 2016; Granek and Nakash, 2017). This may even be the case among couples with fewer than three children (Birenbaum-Carmeli, 2004; Granek et al., 2017; Kraft, 2018; Sperling and Simon, 2010). Choosing not to have children or regretting the ones you have are pervasive taboos in Israel across all religious sectors (Donath, 2015, 2017). Israeli culture is positively pro-natal and family oriented.

Policies in Israel that affect income levels show little to no influence on fertility behaviours (Cohen et al., 2013). The average family size remains consistent, regardless of income levels, in each of the Jewish sectors of Israeli society (Central Bureau of Statistics, 2021a). Anecdotally there are indications that those earning above middle-class income levels may in fact choose to have four or more children, presumably a function of their higher disposable income (Starkman, 2020); more research is warranted to fully understand this case. Amongst the poorest Israelis, where many of the largest families are found, the relationship between income level and family size is more complicated, given large numbers of ultra-Orthodox (i.e., the most religious sector) in this group. Establishing the poverty line based on income levels or the cost of basic goods may not accurately characterise the socio-economic conditions within the ultra-Orthodox Jewish communities, which often operate with strong sharing economies that do not necessitate high levels of income (Berman, 2000). A more nuanced understanding of internal socio-economic dynamics would

better represent the actual economic well-being of these communities (Zaken, 2018) and shed light on how economic policies influence family size decisions.

According to a 2021 OECD report, Israel has a well-educated population. Israel ranks above the OECD average for tertiary education for men and women up to age 34 (OECD, 2021a). A 2018 report to the Israeli parliament summarised the representation of female students in Israeli higher education (Lerer and Avgar, 2018). Israeli women represent a larger percentage of students in higher education than men at all degree levels and across all ethnic sectors of society (see Figure 2). Even in the Bedouin and ultra-Orthodox sectors, where high levels of poverty and fertility are prominent, women remain more likely to obtain higher education than men. In comparison globally, Israel is the only country with a TFR above 1.80 and an average of twelve or more years of schooling for girls and women (UN, World Population Prospects, 2024).

Figure 2. Gender Distribution in Higher Education in Israel for the Academic Year 2018-2019 Across Three Levels of Degrees Granted



SOURCE: CENTRAL BUREAU OF STATISTICS (ISRAEL) (HTTPS://WWW.CBS.GOV.IL/EN/PUBLICATIONS/PAGES/2019/STUDENTS-INSTITUTIONS-OF-HIGHER-EDUCATION-2007-2019.ASPX).

State support for families is front-loaded with pre-pregnancy, pre-natal and birth related benefits, resulting in a sense of government assistance for parents that encourages fertility. Israel's well-known and exceptionally generous provisioning of IVF treatment compared to all other developed nations contributes to a perception that the state is economically supportive of new parents (Birenbaum-Carmeli, 2004; Birenbaum-Carmeli, 2016; Sperling, 2010). Birth grants drop off precipitously after the second birth; payments for multiple births (e.g., twins) are considerably higher. Parents are eligible for maternity and paternity leave, day-care subsidies, income tax reductions, accommodations to care for sick dependents, along with monthly child welfare payments regardless of employment status, a national savings programme for each child and free education from age three.

This appears to be a magnanimous basket of social benefits for parents. In fact, compared to European nations, the social benefits provided to new parents in Israel are meagre. Depending on the mother's employment history prior to the birth of a child, Israeli mothers and fathers can share up to fifteen paid weeks of maternity/paternity leave. Only four other European countries in the OECD provide fewer weeks of paid parental leave (OECD, 2021b).[3] Additional unpaid leave time is available to Israeli women. Monthly cash transfers to families, while often in the news and on the government's agenda, also compare poorly to European countries (Matthews, 2016; OECD, 2019). Perhaps more important, the cost of living in Israel is higher than in most European countries[4] where the prodigious expense associated with raising a child is one reason why birth rates are low (Kalia, 2021). These economic, educational and 'social-safety-net' factors would suggest that Israel should already be near or below replacement level fertility, which is clearly not the case.

Social norms and community forces vary significantly between subgroups within Israeli society and influence differential fertility behaviours. As mentioned, Israel's Jewish population has clear societal divisions primarily predicated on religious

3 Parental leave is a combination of maternity or paternity leave immediately after the birth of a child together with parental or home care leave. In both cases these benefits may be paid or unpaid or some combination.

4 Only Switzerland, Sweden, and Norway are more expensive, based on data provided here https://www.numbeo.com/cost-of-living/rankings_by_country.jsp (last accessed 20 Aug. 2022).

observance that correlate with large differences in fertility, from 6.38 TFR among the ultra-Orthodox Jews to 1.98 TFR among secular Jews (Weinreb, 2023).

In 2023, the Jewish population in Israel was estimated at 11% ultra-Orthodox, 13% religious (understood as National Religious), 32% traditional and 44% secular (*Population Religiosity by Religion in Israel 2023*, 2025). The ultra-Orthodox Jewish sector contains numerous smaller sects that tend to be close-knit and cloistered and span a range from those who use technology to those who shun the internet and television and primarily speak Yiddish rather than Hebrew. The National Religious sector is a more modern and slightly more progressive, geographically integrated branch of Orthodox Judaism, with a strong sense of national identity as Israelis. A large percentage of the Jewish Israeli population identify as 'traditional', a broad and diverse swath of society that is neither observant/Orthodox nor secular. Many 'traditional' Jews are of Mizrahi origins from North Africa and the Middle East. Those who do not identify with any level of religious observance comprise the secular Jewish sector.

The National Religious and the ultra-Orthodox have been of particular interest in the literature on Israeli fertility behaviours; religious observance within a homogeneous community influences uniformity of fertility norms and ideals. In the National Religious sector engagement with community activities has been shown to relate to family size and the convergence of similar family sizes within those communities (Okun, 2017). Ultra-Orthodox communities have been compared to clubs with membership predicated on family size (Berman, 2000). Families that meet membership requirements (i.e., are sufficiently large) may access the benefits of the club including bulk purchasing schemes and charitable loans of goods or money. In a self-perpetuating loop, access to member-only economic resources is necessary to provide a desired (or, at least a minimum) quality of life for oneself and one's family within this sector. Alignment with community and societal norms around fertility behaviours play a significant role in the Jewish sector of Israeli society.

Methods

Choice of research method

This research is based on a national survey exploring individuals' general attitudes about fertility decisions and trends in Israel. It focuses solely on the population within Israel proper, not the West Bank or Gaza territories. Survey questions

focused on fertility decisions and behaviours; attitudes about having and raising children; concerns for the future; opinions of current and potential fertility policies; and perceptions of population growth, crowding and environmental impacts from population growth.

Of particular interest are several questions that probed attitudes about respondents' family size and the perceptions of others' family sizes, and of those who do not have children. Respondents were queried about their 'ideal' and 'desired' family sizes. 'Desired' references one's ideal of family size for him or herself. The use of the term 'desired family size' is less accurate when fertility is low (not the case in Israel) (Trent, 1980). It tends to be relatively uniform across social groups (Bacci, 2001), which, as we shall see, is not the case in Israel. 'Ideal' creates an opening for survey respondents to share their attitudes about family size without regard to their own personal plans. Questions pertaining to 'ideal family size' have value in measuring societal pro-natalism. This was confirmed by research in the 1960s and 1970s in America showing that the two child 'ideal' family emerged in parallel with media attention on overpopulation (Trent, 1980).

The survey was conducted by an internet research company, iPanel, which includes a panel of Arabic-speaking Israelis. Respondents were previously registered with this company and had expressed an interest in completing surveys for compensation, as is the industry practice. The sample reflected Israeli society demographically as closely as possible, based on previously collected demographic information held by the company. There was no obligation or coercion to complete the survey; compensation was provided by iPanel.

Internet survey tools such as iPanel, while not providing randomised and representative survey sampling, do offer a few noteworthy benefits. In seeking to reach a demographic in their years of fertility, online surveys are the most effective and efficient survey option, remunerated or not. Internet-based surveys may reduce recording errors, because individuals record their own responses (Groves et al., 2009). For sensitive subjects such as fertility, completing the survey in the privacy of one's home enhances anonymity for respondents (Hewson et al., 2015).

This method could introduce an element of bias, as only those with both access to the internet and the free time to answer surveys for remuneration become

the sample population. Specifically in Israel, there could be difficulty in reaching the ultra-Orthodox and nomadic Bedouin populations with this survey method and affluent Israelis may be underrepresented. Reaching these communities will require in person relationship building to allow for interviews or focus groups to collect similar data. The internet survey method for this study provides an effective, albeit imperfect, trade-off between sample size, subgroup representation and ease of participation, administration and subsequent analysis and interpretation (Hewson et al., 2015; Tourangeau et al., 2013).

Sample composition

The survey was available online from mid-April until mid-May 2020. The survey company provided a nationally representative sample of 602 respondents (n = 602), sufficient to ensure a 95% confidence level with a 5% margin of error, given the population in Israel at the time of 9 million people.[5] Under-sampling was expected for several hard-to-reach sectors of Israeli society, specifically the Haredi and Negev Bedouin communities, due to limited internet access (Groves et al., 2009). To mirror the demographic reality in Israel, 20% of respondents self-identified as non-Jewish and 80% identified as Jewish.

The first question of the survey prompted respondents to select a language, either Hebrew or Arabic. Respondents were then asked to self-identify as Jewish, Muslim, Christian, Druze, no religion or other, with a space to be specific. The second question clarified the level of religiosity with categories for Jews and non-Jews that were different based on commonly used terminology. From the next question, the survey began to address issues of family size, asking respondents the number of children they had. Those who answered none skipped a series of questions specific to their children (e.g., ages) and to parenting. At the end of the survey, additional demographic questions were asked about education, income levels, country of origin and current geographic location of residence, age, gender, marital status and voting preferences.

Given this research focus on fertility, the age distribution of the sample was intentionally skewed in favour of those under the age of fifty; the sample

5 This was calculated using the sample size calculation tool found here: https://www.qualtrics.com/blog/calculating-sample-size/ a sample size of 385 is sufficient for 95% confidence and a 5% margin of error.

population does not reflect the age distribution of the broader Israeli population. The distributions based on religion (i.e., Jewish, Muslim, all other) and voting pattern for the most recent election during the survey launch period (i.e., twenty-third Knesset) were consistent with the nationally reported figures. For the demographic factors of district of residence, religiosity, marital status, age at first marriage, country of birth, education level and household income, attention was given to ensure representative sampling.

The survey data required significant cleaning and standardising to combine the datasets from the Jewish and non-Jewish respondents. All responses were translated from Hebrew and Arabic to English for the analysis. Due to nuances in the divisions by religiosity, different options were given to these two groups which were then aligned. Age brackets were created for the analysis phase and original ages given were preserved in the dataset as well. Given the small number of responses indicating eight or more for questions related to family size, these were placed in a new category of 8+; the original answers were preserved.

Table 1 summarises key elements of the demographic composition of the survey sample. The gender split of 51.5% female, 48.5% male is consistent with the national gender distribution of 50.3% female and 49.7% male. Even as the age distribution of the sample skewed toward the younger age brackets, as intended, it remained within a few percentage points of the national distribution. For example, in 2020 in the Israeli population 17.3% were between the ages of 18-24 and in the survey 18.4% of respondents were in this age bracket (see Appendix 1). In 2020, the Central Bureau of Statistics reported 74.1% of Israeli society being Jewish, the survey sample was 76.4% (Central Bureau of Statistics, 2021b). Other demographic characteristics (e.g., education level, geographic location, country of birth) represent a cross-section of Israeli society to ensure that all sectors were included.

This article focuses on a subset of questions from the larger survey and their relationship to each other. These questions included:

- How many siblings do you have?
- How many children do you have?
- What is the ideal number of children you want to have?

Table 1. Demographic Distribution of Survey Sample

Sample n=602											
Panel	**Religion**	**Gender**		**Religiosity**		**Education**		**Income Level**		**# of kids in family**	
Jewish		Female	236	Secular	199	Elementary or middle school	8	Unemployed	18	None	143
n=460		Male	224	Traditional	158	High School	41	Far below the average	57	1 to 4	282
				Religious	56	Bagrut certificate[7]	119	A bit below the average	75	5 or more	35
				Very Religious	47	Other non-academic certification	66	Similar to the average	102		
						BA	151	A bit above the average	118		
						MA	71	Well above the average	46		
						PhD	4	Don't want to answer	44		

SOURCE: AUTHOR

7 A Bagrut certificate is certification of completing the matriculation exams upon graduating from high school. It is in addition to a standard high school completion diploma.

Table 1. Continued

Sample n=602												
Panel	**Religion**		**Gender**		**Religiosity**		**Education**		**Income Level**		**# of kids in family**	
Non-Jewish n=142	Muslim	115	Female	74	Secular	24	BA	55	Unemployed	5	None	65
	Other (Christian, Atheist, Druze)	27	Male	68	Traditional	14	Bagrut certificate	50	Far below the average	51	1 to 4	64
					Religious	85	Elementary or middle school	4	A bit below the average	31	5 or more	13
					Very Religious	19	High School	13	Similar to the average	29		
							MA	14	A bit above the average	18		
							Other non-academic certification	5	Well above the average	3		
							PhD	1	Don't want to answer	5		

SOURCE: AUTHOR

Table 2. Descriptive Statistics of Key Variables

Desired Family Size				
Min	Max	Mean	Median	Standard Dev
0	20	3.84	3	2.46

Ideal Family Size				
Min	Max	Mean	Median	Standard Dev
0	15	3.84	3	1.85

Average Family Size in Community				
Min	Max	Mean	Median	Standard Dev
1	25	3.89	3	2.36

SOURCE: AUTHOR

- How many children on average do other people in your community have?
- What is the ideal number of children in a family?
- Do you feel that the State encourages you to have more children?

Multivariate linear regression analyses were conducted on each of these questions to identify the presence, or absence, of influencing demographic characteristics. Independent variables included gender, number of siblings, number of children and average family size in the respondent's community, with dummy variables for age group, district of residence, marital status, income group and religion. Dependent variables were ideal number of children in a family and desired number of children.

Findings

The initial statistical analysis revealed a strong correlation between desired family size, ideal family size and average community family size for all demographic factors (Tables 2, 3). Responses to these three questions have nearly identical mean values of 3.84 or 3.89 children. The calculated standard deviation value for these three questions demonstrated noteworthy similarity prompting further inquiry into the nature of the interactions between these three variables. Frequency distributions of all three variables demonstrate a concentration around a family size of three to

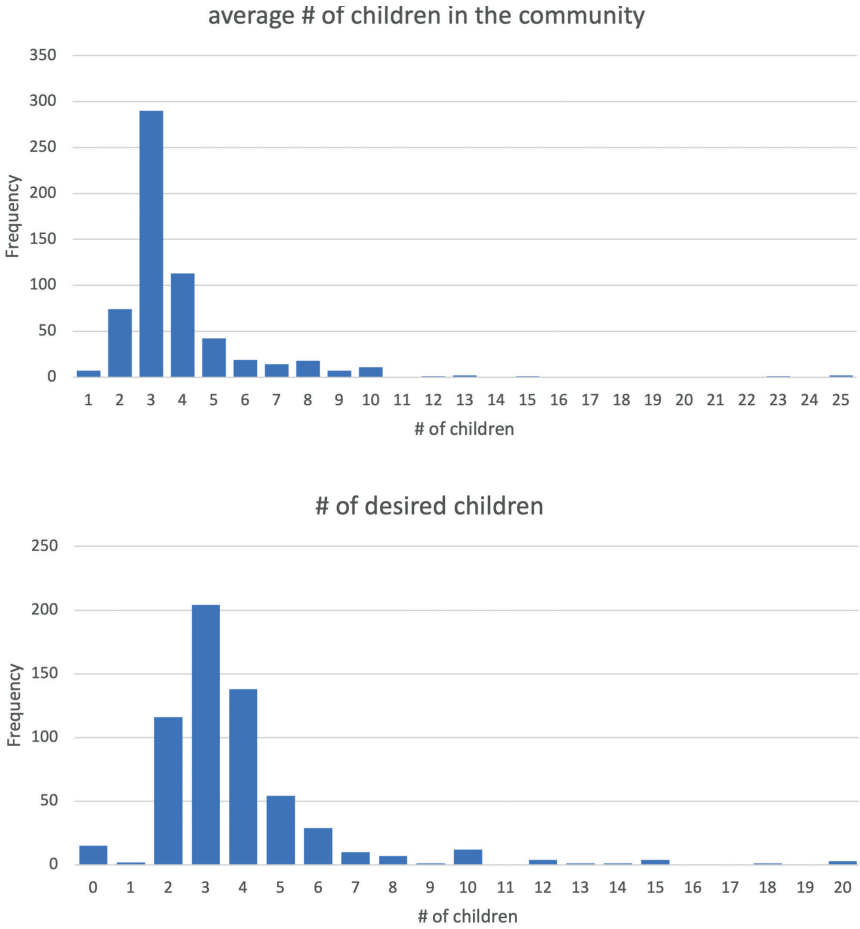
Table 3. Correlation Coefficients for Key Variables

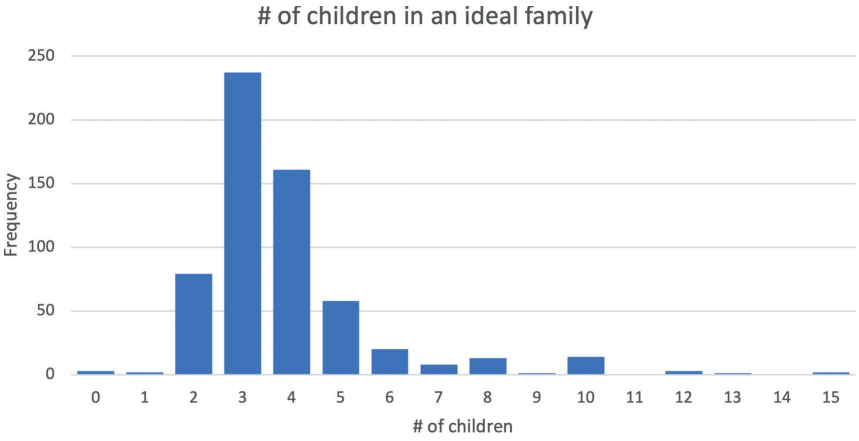
		Desired Family Size	Ideal Family Size	Average Family in one's Community	Religiosity	Current # of kid	Siblings
Family Size Realization	Desired Family Size	1					
	Ideal Family Size	**0.788**	1				
Community Norms	Average Family in one's Community	0.412	0.531	1			
	Religiosity	0.471	0.512	0.387	1		
Lived Experience	Current # of kids	0.327	0.367	0.106	0.197	1	
	Siblings	0.360	0.380	0.417	0.441	0.220	1

SOURCE: AUTHOR

four children (Figure 3). A closer examination of the difference between reported desired family size and ideal family size reveals that 59% of respondents reported the same number for both, while an additional 27% reported a difference of only one child. Accordingly, 86% of respondents reported a desired and ideal family size that differed by no more than one child (Figure 4).

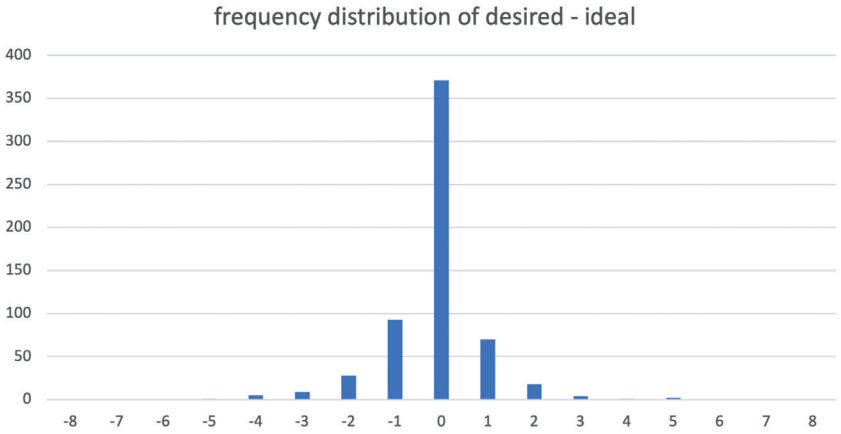
Figure 3 a, b, c. Distributions of Reported Desired Number of Children, Ideal Number of Children in a Family and Average Number of Children in Families in the Community (n=602)





SOURCE: AUTHOR

Figure 4. Frequency of Difference Between Desired and Ideal Family Size



SOURCE: AUTHOR, MITCHELL SMALL

Jewish respondents reported larger family size preferences compared to the non-Jewish respondents (Figure 5). Religiosity also influences family size preferences and impressions among the Jewish respondents. More religious respondents self-reported larger desired, ideal and perceived average community family sizes (Figure 6). Neither of these findings was unexpected, as they are consistent with official reports (Central Bureau of Statistics, 2021a). When asked about the average

family size in their community Muslim respondents reported larger average family sizes compared to the other religious groups. The one exception was for the 'very religious' respondents where Jewish respondents reported larger average family size in their communities compared to the non-Jewish 'very religious' respondents.

Figure 5. Average Number of Children by Religion

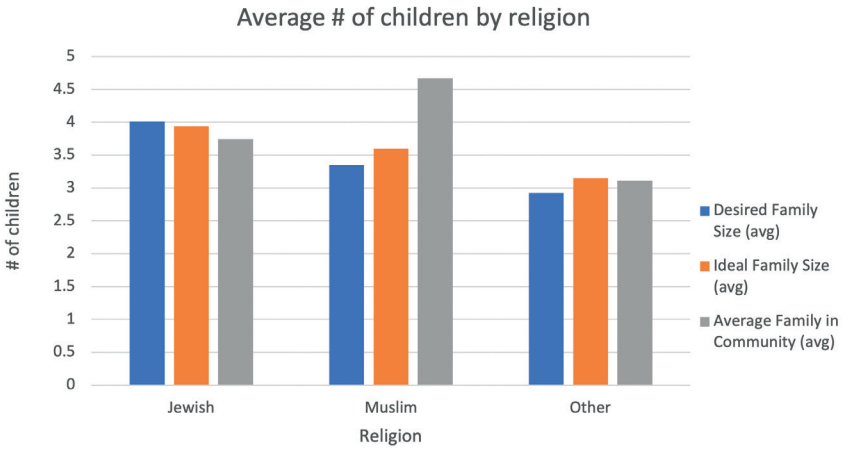
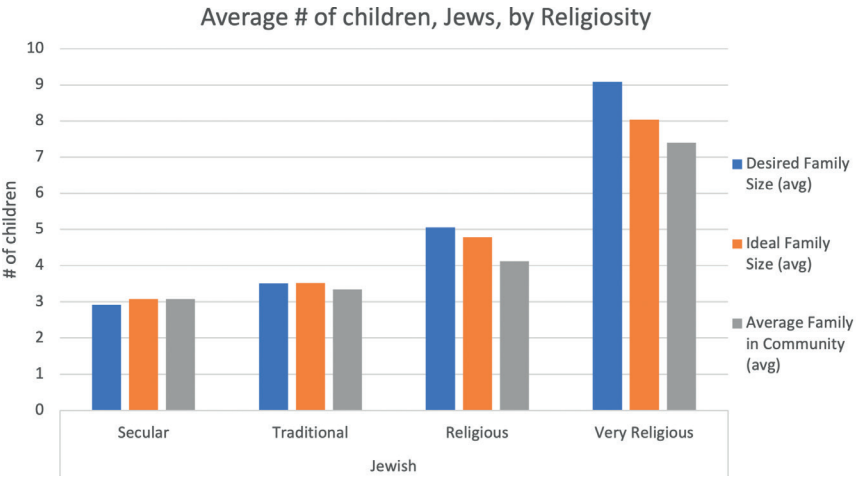


Figure 6. Average Number of Children, Jews, by Religiosity



SOURCE: AUTHOR

Results of a regression analysis revealed no statistically significant relationship between attitudes about desired, ideal or perceived average community family size and the other demographic factors of socio-economic status, gender, age and education. Influences that come from within the community or the larger society did demonstrate a statistically significant relationship. One influence was the size of respondents' origin family (i.e., number of siblings) where those reporting more siblings also reported larger desired and ideal family sizes. Each additional sibling reported resulted in a reported desire for 0.13–0.14 more children and 0.1–0.11 more children in an ideal family. Respondents from larger origin families also reported larger average family sizes in their communities.

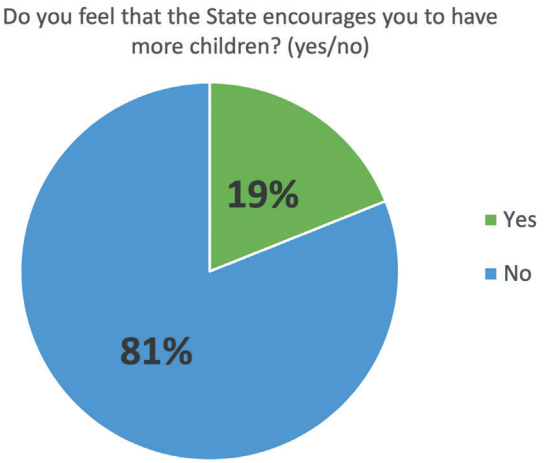
The other statistically significant explanatory variable indicating larger desired and ideal family size was the current number of children. The more children a respondent reported currently having, the larger their desired and ideal family sizes. Respondents desired between 0.23 and 0.25 more children per additional child already in their family. The same was true in relation to ideal family size, where we see an influence of 0.21 to 0.24 more children in an ideal family for each additional child a family already has. It is important to note that these respondents were on average older and so farther into the role of parenting and the establishment of families, compared to respondents indicating a preference for a smaller family. One possible explanation is that one's lived experience may influence family size preferences or aspirations. Cognitive dissonance may also play a role for the younger generation who may prefer a smaller family for economic or environmental reasons which clash with their origin family size, or their perceptions of what others are doing. Another possible explanation is that younger Jewish Israelis are shifting to a preference for smaller families. This is an important point for future investigation.

Concerning family sizes in the community, the larger the reported average family size in one's community, the larger the reported desired number of children. For each additional child reported as the community average, respondents indicated a desire for between 0.19–0.25 more children. The same trend exists when asked about ideal family size. For each additional child perceived in one's community, the ideal family size increased by 0.26–0.29 children.

Given the perception of broad, pro-natal government programmes as previously discussed, we expected that respondents would report strong state support for

and encouragement to have larger families. Instead, across all demographic factors, respondents answered that the state does not encourage one to have more children; 82 per cent of the entire sample answered this question in the negative (Figure 7). It is important to note that this question asked generically about the state encouraging the survey respondent to have more children. The survey did not enquire how respondents viewed specific pro-family or pro-natal policies provided by the state.

Figure 7. Perception of State Influence on Fertility



Discussion

Across all sectors of Israeli society, families of three or more children are desired, idealised and perceived as the norm, with survey results demonstrating a statistically significant consistency and correlation between these variables.

The relationship between the number of siblings, the number of children currently in one's family, desired, and idealised family size all correlate with larger families. These results are unsurprising; one's lived experience certainly influences one's desires and behaviours (Bongaarts, 2011; Manski and Mayshar, 2003; Okun, 2013; O'Sullivan, 2018). As the learning curve of parenting shortens with each additional child, parents may develop confidence in managing larger families which translates into a desire or preference for more children. When other families in

one's community are also managing larger families, it can provide a subtle boost of confidence to parents of smaller families that they too can cope with larger ones (Dasgupta and Dasgupta, 2017).

As expected, the level of religiosity is a significant factor in encouraging larger family size expectations (Rotkirch, 2020). Those reporting greater levels of religious observance in the Jewish sector also reported desiring and idealizing larger families, which aligns with the current demographic reality of larger family norms in more religious communities. Religious respondents also believed that the families in their communities were larger compared to the less religious respondents.

Finally, in evaluating the influence of socio-economic status and education levels on desired, ideal and community family size, no statistically significant influences were identified. In fact, among the Jewish respondents, women holding a bachelor's degree or higher (e.g., an academic degree) reported larger desired and idealised family sizes compared to respondents without a degree. This runs contrary to what other research has found (Lutz et al., 2019), suggesting that access to higher education has limited, if any, influence on Jewish women desiring smaller families in Israel. Given the strong societal emphasis on women being mothers and having careers in Israel (Okun, 2016), this finding is not surprising, even as it is exceptional among developed nations.

Taken together, these findings point to the strong influence of social norms and behaviours in Israeli society, specifically in the Jewish sector. What others around you are doing, one's current family size (i.e., current number of children), or one's family origin size (i.e., number of siblings) constitute especially strong influences on fertility (Dasgupta and Dasgupta, 2017). Perhaps the most striking example of the effect of social forces can be seen in the responses of Jewish Israelis who were born in the Former Soviet Union (FSU). Just one generation previously, this immigrant population averaged families of only one child (Nahmias, 2004; Okun and Kagya, 2012; Tolts, 2015). These survey results show that, within one generation, even the population who self-identified as Jewish (predominantly secular), Israeli, but born in the FSU desired 2.72 children on average and idealised 3.21 children on average. This is a highly noteworthy finding, confirming the observed trend that migrants tend to adopt the fertility preferences of their new countries (Majelantle and Navaneetham, 2013).

The immigrant experience is important, albeit poorly understood, in evaluating fertility behaviours and the influence of social networks on these behaviours (Merli et al., 2020; Nahmias, 2004; Okun and Kagya, 2012). Israel's population remains heavily influenced by the immigrant experience. The national narrative relies heavily on Israel as both a homeland and a haven for the world's Jews. As such, unlike migrants seeking a better life or opportunities in another country, immigrants to Israel typically view themselves as returning from a diaspora back to a historic homeland. This dynamic is important and relevant, concerning the social integration of immigrants into their new society. As the results from FSU Israelis shows, there is a strong influence on newer immigrants to comply with societal fertility patterns. This was not a focus of this research effort; however, as Merli (2020) outlined, it is an area in need of further research and Israel may provide an interesting case study.

A consistent preference for larger than average[6] families would not be surprising if the state were in fact implementing generous pro-natal policies. As discussed, however, the benefits provided to parents before, during and after childbirth are in fact quite modest when compared to other OECD countries. Survey respondents confirmed this perception by rejecting the proposition that the state encourages them to have more children. Social and communal norms rather than formal policies seem to be more salient factors.

Understanding why Israel ostensibly serves as a prime candidate for low fertility and yet in fact exhibits high fertility requires a deeper understanding of the interplay between individuals (Grow and van Bavel, 2016). This reinforces previously mentioned research focusing on findings of consistency between community engagement and family size preferences (Berman, 2000; Manski and Mayshar, 2003; Okun, 2017).

Successful family planning policies that take into consideration the characteristics of the society in which they are implemented have proven more successful, in contrast to those that disregard social influences (Fent et al., 2013). The demographic forces at play throughout Israeli society, therefore, present an important case study for evaluating the actual power of social influence as a

6 Average family size in relation to OECD data and definitions as outlined here – https://www.oecd.org/els/family/SF_1_1_Family_size_and_composition.pdf (accessed 20 Sept. 2022).

fertility driver. In addition, this knowledge could provide a strong foundation for the development and implementation of societally appropriate population policies as a means to manage future fertility rates and ensure balance with available natural resources, should this ever become a priority in Israeli society.

Conclusion

Israel's continued high birth rate places the country on a population growth trajectory unlike that of any other OECD country. Some scholars have questioned the ecological viability of maintaining such population expansion and point to the negative social and environmental consequences of such unbridled growth for Israel (ben Tzvi, 2021; Kramer et al., 2022; Shorek, 2021; Starkman, 2020; Tal, 2016). Other immediate and existential threats (e.g., Iran's nuclear development, global security threats to Jewish communities, war with terrorist organisations) divert attention from population growth challenges in Israel, which rarely make it onto the public agenda.

The cumulative effect of Israel's historic policy efforts (Manski and Mayshar, 2003; Tal, 2016) to encourage higher fertility rates has brought Israel to a future population projection of 20 million people by 2065 and minimal political will to introduce population management policies (Central Bureau of Statistics, 2017; Maor, 2018). But, ultimately, limitless population growth is unsustainable. Understanding the forces behind individuals' fertility decision-making is a vital first step to crafting policies capable of stabilising Israel's population.

Policymakers seeking a balance with the available natural resources of the country or seeking to meet international climate change obligations, those concerned about crowding and biodiversity loss, or the ability of the state to maintain social services (e.g., schools, hospitals, and roads) must reckon with the imperative of ending demographic growth and eventually achieving a sustainable population level. Population-driven requirements for agricultural land and new settlements may also limit options for international peace initiatives that may otherwise be viewed as feasible and advantageous for Israel and its neighbours. Understanding the personal motivations of citizens is a necessary element to ensure that the design of population policies incorporates considerations of societal equity and equality for those affected by the policies.

This study seeks to develop a foundational understanding of the forces influencing population growth in Israel. Focusing first on individual intentions and decision-making around fertility is consistent with recent calls for understanding reproductive attitudes and fertility intentions amongst the younger generations in developed countries before attempting to implement policy measures (Helm et al., 2021).

The results of this research suggest that the population management discourse in Israel should focus on social influences together with educational or economic incentives. Results are consistent with previous findings (e.g. Bernardi and Klärner, 2014) that fertility is an individual decision that is primarily influenced by interactions with other members of society. The strong influence of social norms and the behaviour of others may in effect compromise individuals' reproductive autonomy, negating the 'calculus of conscious choice' (Coale, 1973: 65) that has become the ideal throughout much of the world. It also may impede population stabilisation or decline and, thus, the creation of more sustainable societies.

It is clear at the macro level that Israelis have some of the largest families in the developed world. As a country, Israel is a united and compliant society when faced with external threats. Even as fertility rates differ between subpopulations, uniformity within subpopulations reinforces the tightknit nature of the broader society. Far too often, policymakers disregard the influential power of 'peer group effects', even as research has shown that social networks are a key mechanism for explaining fertility (Fent et al., 2013: 964). This reveals a critical piece of the population management policy puzzle: how to best encourage smaller families in Israel based on the understanding of individuals or couples' fertility desires together with their perspective on the broader fertility behaviours of the rest of Israeli society? Further research is needed to identify the mechanisms that are most forcefully at play across Israel's diverse society so that policymakers can formulate a more effective portfolio of policies and incentives.

Acknowledgements

The author would like to express gratitude to the two anonymous reviewers who provided excellent feedback on and critiques of this manuscript. Alon Tal, Phil Cafaro, Jane O'Sullivan, Daniel Orenstein, Daphna Carmeli and Nurit Carmi all provided invaluable help, support and encouragement. Bruce Mann (the author's father) provided patient and unending engagement in support of this research and is sadly missed. Funding to support this research was provided in part by the Bernard Sher Endowment Doctoral Fellowship Fund at Tel Aviv University and the Richard and Rhoda Goldman Fellowship Fund for Better Government.

References

Aassve, A., A. Goisis and M. Sironi. 2012. 'Happiness and childbearing across Europe'. *Social Indicators Research* **108** (1): 65–86. https://doi.org/10.1007/s11205-011-9866-x

Adam, D. 2021. 'How far will global population rise? Researchers can't agree'. *Nature* **597** (7877): 462–65. https://doi.org/10.1038/d41586-021-02522-6

Axinn, W.G. and J.S. Barber. 2001. 'Mass education and fertility transition'. American *Sociological Review* **66** (4): 481–505. https://doi.org/10.1177/000312240106600401

Bacci, M.L. 2001. 'Comment: Desired family size and the future course of fertility'. *Population and Development Review* **27**: 282–89.

Basu, A.M. 2002. 'Why does education lead to lower fertility? A critical review of some of the possibilities'. *World Development* **30** (10): 1779–90. https://doi.org/10.1016/S0305-750X(02)00072-4

Becker, G.S. 1960. 'An economic analysis of fertility'. In G.B. Roberts (ed.), *Demographic and Economic Change in Developed Countries*, pp. 209–240. New York: Columbia University Press.

Becker, G.S. 1991. *A Treatise on the Family*. Cambridge, MA: Harvard University Press. https://doi.org/10.4159/9780674020665

Ben Tzvi, R. 2021. 'Is it fair on my part to bring another life into this world?'. *Mako*, 13 May. https://www.mako.co.il/green-life/new_habits-goin_zero_waste/Article-70c70f8bcf06971026.htm

Ben-David, D. 2018. *Overpopulation and Demography in Israel*. Shoresh Institution for Socioeconomic Research.

Berkovitch, N. 1997. 'Motherhood as a national mission: The construction of womanhood in the legal discourse in Israel'. *Women's Studies International Forum* **20** (5–6): 605–19. https://doi.org/10.1016/S0277-5395(97)00055-1

Berman, E. 2000. 'Sect, subsidy, and sacrifice: an economist's view of ultra-orthodox Jews'. *The Quarterly Journal of Economics* **115** (3): 905–53. https://doi.org/10.1162/003355300554944

Bernardi, L., S. Keim and H. von der Lippe. 2007. 'Social influences on fertility: A comparative mixed methods study in Eastern and Western Germany'. *Journal of Mixed Methods Research* **1** (1): 23–47. https://doi.org/10.1177/2345678906292238

Bernardi, L. and A. Klärner. 2014. 'Social networks and fertility'. *Demographic Research* **30**: 641–70. https://doi.org/10.4054/DemRes.2014.30.22

Berrington, A. 2021. 'Fertility desires, intentions, and behaviour'. In N.F. Schneider and M. Kreyenfeld (eds), *Research Handbook on the Sociology of the Family*, pp. 248–62. Cheltenham, UK: Edward Elgar Publishing.

Birenbaum-Carmeli, D. 2004. '"Cheaper than a newcomer": on the social production of IVF policy in Israel'. *Sociology of Health & Illness* **26** (7): 897–924. https://doi.org/10.1111/j.0141-9889.2004.00422.x

Birenbaum-Carmeli, D. 2016. 'Thirty-five years of assisted reproductive technologies in Israel'. *Reproductive Biomedicine & Society Online* **2**: 16–23. https://doi.org/10.1016/j.rbms.2016.05.004

Birenbaum-Carmeli, D. and Y.S. Carmeli. 2010. *Kin, Gene, Community: Reproductive Technologies among Jewish Israelis*. New York: Berghahn Books. https://doi.org/10.3167/9781845456887

Bongaarts, J. 2003. 'Completing the fertility transition in the developing world: The role of educational differences and fertility preferences'. *Population Studies* **57** (3): 321–35. https://doi.org/10.1080/0032472032000137835

Bongaarts, J. 2011. 'Can family planning programs reduce high desired family size in sub-Saharan Africa?' *International Perspectives on Sexual and Reproductive Health* **37** (4): 209–16. https://doi.org/10.1363/3720911

Bongaarts, J. 2024. 'Fertility transitions in low-and middle-income countries: The role of preferences'. *Population and Development Review* **51** (1): 163–80. https://doi.org/10.1111/padr.12675

Bongaarts, J. and K. Hardee. 2017. 'The role of public-sector family planning programs in meeting the demand for contraception in Sub-Saharan Africa'. *International Perspectives on Sexual and Reproductive Health* **43** (2): 41–50. https://doi.org/10.1363/43e3917

Bongaarts, J. and D. Hodgson. 2022a. *Fertility Transition in the Developing World*. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-031-11840-1

Bongaarts, J. and D. Hodgson. 2022b. 'The impact of voluntary family planning programs on contraceptive use, fertility, and population'. In J. Bongaarts and D. Hodgson (eds), *Fertility Transition in the Developing World*, pp. 97–122. Cham, Switzerland: Springer International Publishing. https://doi.org/10.1007/978-3-031-11840-1_7

Bystrov, E. 2016. 'Religiosity, nationalism and fertility among Jews in Israel revisited'. *Acta Sociologica* **59** (2): 171–86. https://doi.org/10.1177/0001699316628615

Casterline, J. B. 2001. *Diffusion Processes and Fertility Transition: Selected Perspectives*. Washington, DC: National Academy Press.

Central Bureau of Statistics. 2017. 'Projections of Israel population until 2065' (in Hebrew). Jerusalem: Central Bureau of Statistics. www.cbs.gov.il (accessed 31 August 2022).

Central Bureau of Statistics. 2021a. 'Family day – families and households in Israel'. Central Bureau of Statistics. https://www.cbs.gov.il/en/mediarelease/pages/2021/family-day-families-and-households-in-israel.aspx (accessed 22 February 2022).

Central Bureau of Statistics. 2021b. 'Population – statistical abstract of Israel 2021 – No.72'. https://www.cbs.gov.il/en/publications/Pages/2021/Population-Statistical-Abstract-of-Israel-2021-No.72.aspx (accessed 30 May 2022).

Cleland, J., K. Machiyama and J.B. Casterline. 2020. 'Fertility preferences and subsequent childbearing in Africa and Asia: A synthesis of evidence from longitudinal studies in 28 populations'. *Population Studies* **74** (1): 1–21. https://doi.org/10.1080/00324728.2019.1672880

Coale, A.J. 1973. 'The demographic transition reconsidered'. Presented at the International Population Conference in Liege.

Cohen, A., R. Dehejia and D. Romanov. 2013. 'Financial incentives and fertility'. *Review of Economics and Statistics* **95** (1): 1–20. *https://doi.org/10.1162/REST_a_00342*

D'Addio, A.C. and M.M. D'Ercole. 2005. *Trends and Determinants of Fertility Rates: The Role of Policies* (27). OECD Publishing. https://doi.org/https://doi.org/10.1787/1815199X

Dasgupta, A. and P. Dasgupta. 2017. 'Socially embedded preferences, environmental externalities, and reproductive rights'. Population and *Development Review* **43** (3): 405–41. https://doi.org/10.1111/padr.12090

DellaPergola, S., J.F. May and A.C. Lynch. 2014. 'Israel's demography has a unique history'. https://www.prb.org/resources/israels-demography-has-a-unique-history/ (accessed 29 June 2022).

Donath, O. 2015. 'Regretting motherhood: a sociopolitical analysis'. *Signs: Journal of Women in Culture and Society* **40** (2): 343–67.

Donath, O. 2017. *Regretting Motherhood: A Study*. Berkeley, CA: North Atlantic Books.

Easterlin, R.A. 1975. 'An economic framework for fertility analysis'. *Studies in Family Planning* **6** (3): 54–63. https://doi.org/10.2307/1964934

Emil Vollset, S., E. Goren, C.-W. Yuan, J. Cao, A.E. Smith, T. Hsiao, C. Bisignano, G.S. Azhar, E. Castro, J. Chalek, A.J. Dolgert, T. Frank, K. Fukutaki, S.I. Hay, R. Lozano, A. H. Mokdad, V. Nandakumar, M. Pierce, M. Pletcher, … C.J.L. Murray. 2020. 'Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the Global Burden of Disease Study'. *The Lancet* **396** (10258): 1285–1306. https://doi.org/10.1016/S0140-6736(20)30677-2

Ermisch, J. 1988. 'Economic influences on birth rates'. *National Institute Economic Review* **126** (1): 71–92. https://doi.org/10.1177/002795018812600108

Fent, T., B.A. Diaz and A. Prskawetz. 2013. 'Family policies in the context of low fertility and social structure'. *Demographic Research* **29**: 963–98. https://doi.org/10.4054/DemRes.2013.29.37

Gauthier, A.H. and J. Hatzius. 1997. 'Family benefits and fertility: An econometric analysis'. *Population Studies* **51** (3): 295–306. https://doi.org/10.1080/0032472031000150066

Gelfand, M.J. 2018. *Rule Makers, Rule Breakers: How Culture Wires Our Minds, Shapes Our Nations, and Drives our Differences*. New York: Scribner.

Gelfand, M.J., J.L. Raver, L. Nishii, L.M. Leslie, J. Lun, B.C. Lim, L. Duan, A. Almaliach, S. Ang and J. Arnadottir. 2011. 'Differences between tight and loose cultures: A 33-nation study'. *Science* **332** (6033): 1100–04. https://doi.org/10.1126/science.1197754

Götmark, F. and M. Andersson. 2023. 'Achieving sustainable population: Fertility decline in many developing countries follows modern contraception, not economic growth'. *Sustainable Development* **31** (3): 1606–17. https://doi.org/10.1002/sd.2470

Granek, L. and O. Nakash. 2017. 'The impact of militarism, patriarchy, and culture on Israeli women's reproductive health and well-being'. *International Journal of Behavioral Medicine* **24** (6): 893–900. https://doi.org/10.1007/s12529-017-9650-7

Granek, L., O. Nakash and R. Carmi. 2017. 'Women and health in Israel'. *The Lancet* **389** (10088): 2575–78. https://doi.org/10.1016/S0140-6736(17)30563-9

Greenhalgh, S. 1996. 'The social construction of population science: An intellectual, institutional, and political history of twentieth-century demography'. *Comparative Studies in Society and History* **38** (1): 26–66. https://doi.org/10.1017/S0010417500020119

Groves, R.M., F.J. Fowler Jr, M.P. Couper, J.M. Lepkowski, E. Singer and R. Tourangeau. 2009. *Survey Methodology* (Vol. 561). New Jersey: John Wiley & Sons.

Grow, A. and J. van Bavel. 2016. 'Agent-based modelling in population studies: Concepts, methods, and applications'. In A. Grow and J. van Bavel (eds), Agent-Based Modelling in *Population Studies*, pp. 3–26. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-32283-4_1

Hashash-Daniel, Y. 2010. 'Medicine and the state. The medicalisation of reproduction in Israel'. In D. Birenbaum-Carmeli and Y.S. Carmeli (eds), *Kin, Gene, Community: Reproductive Technologies Among Jewish Israelis*, pp. 271–95. New York: Berghahn Books. https://doi.org/10.1515/9781845458362-013

Helm, S., J.A. Kemper and S.K. White. 2021. 'No future, no kids–no kids, no future?'. *Population and Environment* **43** (1): 1–22. https://doi.org/10.1007/s11111-021-00379-5

Hewson, C., C. Vogel and D. Lauren. 2015. *Internet Research Methods*. Second edition. London: Sage. https://doi.org/https://dx.doi.org/10.4135/9781473920804

Kalia, A. 2021. 'It is devastating': the millennials who would love to have kids – but can't afford a family. *The Guardian*, 13 October. https://www.theguardian.com/lifeandstyle/2021/oct/13/it-is-devastating-the-millennials-who-would-love-to-have-kids-but-cant-afford-a-family? (accessed 30 August 2022).

Kim, J. 2016. 'Female education and its impact on fertility'. *IZA World of Labor* **228**: 1–10. https://doi.org/10.15185/izawol.228

Knodel, J., N. Havanon and W. Sittitrai. 1990. 'Family size and the education of children in the context of rapid fertility decline'. *Population and Development Review* **16** (1): 31–62. https://doi.org/10.2307/1972528

Kraft, D. 2018. 'Israel booms with babies as developed world's birth rates plummet. Here's why'. *Christian Science Monitor*, 14 December. https://www.csmonitor.com/World/Middle-East/2018/1214/Israel-booms-with-babies-as-developed-world-s-birth-rates-plummet.-Here-s-why (accessed 30 August 2022).

Kramer, I., Y. Tsairi, M. Buchdahl Roth, A. Tal and Y. Mau. 2022. 'Effects of population growth on Israel's demand for desalinated water'. *NPJ Clean Water* **67** (5). https://doi.org/10.1038/s41545-022-00215-9

Kravel-Tovi, M. 2020. 'The specter of dwindling numbers: Population quantity and Jewish biopolitics in the United States'. *Comparative Studies in Society and History* **62** (1): 35–67. https://doi.org/10.1017/S0010417519000409

Landau, R. 2003. 'Religiosity, nationalism and human reproduction: the case of Israel'. *International Journal of Sociology and Social Policy* **23** (12): 64–80. https://doi.org/10.1108/01443330310790408

Lerer, M. and I. Avgar. 2018. *Representation of Women in the Israeli Academia*. Jerusalem: The Knesset Research and Information Center. https://m.knesset.gov.il/EN/activity/mmm/me040618.pdf (accessed 5 October 2021).

Lois, D. and O.A. Becker. 2014. 'Is fertility contagious? Using panel data to disentangle mechanisms of social network influences on fertility decisions'. *Advances in Life Course Research* **21**: 123–34. https://doi.org/http://dx.doi.org/10.1016/j.alcr.2013.10.001

Lutz, W., J.C. Cuaresma, E. Kebede, A. Prskawetz, W.C. Sanderson and E. Striessnig. 2019. 'Education rather than age structure brings demographic

dividend'. *Proceedings of the National Academy of Sciences of the United States of America* **116** (26): 12798–803. https://doi.org/10.1073/pnas.1820362116

Macias, T. 2015. 'Risks, trust, and sacrifice: social structural motivators for environmental change'. *Social Science Quarterly* **96** (5): 1264–76. https://doi.org/10.1111/ssqu.12201

Madsen, J.B., S. Moslehi and C. Wang. 2018. 'What has driven the great fertility decline in developing countries since 1960?'. *The Journal of Development Studies* **54** (4): 738–57. https://doi.org/10.1080/00220388.2017.1303675

Majelantle R.G. and K. Navaneetham. 2013. 'Migration and fertility: A review of theories and evidences'. *Journal of Global Economics* **1** (1). https://doi.org/10.4172/2375-4389.1000101

MacroTrends n.d.a. *Israel Fertility Rate 1950–2025*. https://www.macrotrends.net/global-metrics/countries/ISR/israel/fertility-rate (accessed 27 February 2025).

MacroTrends n.d.b. *OECD members GDP Per Capita 1960–2025*. https://www.macrotrends.net/global-metrics/countries/OED/oecd-members/gdp-per-capita (accessed 27 February 2025).

Manski, C.F. and J. Mayshar. 2003. 'Private incentives and social interactions: Fertility puzzles in Israel'. *Journal of the European Economic Association* **1** (1): 181–211. https://doi.org/10.1162/154247603322256800

Maor, D. 2018. 'With fertility rising, Israel is spared a demographic time bomb'. *Haaretz.Com*, 29 May. https://www.haaretz.com/israel-news/with-fertility-rising-israel-is-spared-a-demographic-time-bomb-1.6131135 (accessed 23 July 2019).

Martin, S.P. 2000. 'Diverging fertility among US women who delay childbearing past age 30'. *Demography* **37** (4): 523–33. https://doi.org/10.1353/dem.2000.0007

Matthews, D. 2016, May 23). 'Sweden pays parents for having kids – and it reaps huge benefits. Why doesn't the US?'. Vox, 23 May. https://www.vox.com/2016/5/23/11440638/child-benefit-child-allowance (accessed 18 January 2022).

McAllister, L.S., G.V. Pepper, S. Virgo and D.A. Coall. 2016. 'The evolved psychological mechanisms of fertility motivation: Hunting for causation in a sea of correlation'. *Philosophical Transactions of the Royal Society B: Biological Sciences* **371**. https://doi.org/10.1098/rstb.2015.0151

Meisenberg, G. 2008. 'How universal is the negative correlation between education and fertility?'. *Journal of Social Political and Economic Studies* **33** (2): 205.

Merli, M.G., S.R. Curran and C. Le Barbenchon. 2020. 'Demography and networks'. In R. Light and J. Moody (eds), *The Oxford Handbook of Social Networks*, pp. 480–95. London: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190251765.013.29

Montgomery, M.R. and J.B. Casterline. 1996. 'Social learning, social influence, and new models of fertility'. *Population and Development Review* **22**: 151–75. https://doi.org/10.2307/2808010

Murtaugh, P.A. and M.G. Schlax. 2009. 'Reproduction and the carbon legacies of individuals'. *Global Environmental Change* **19** (1): 14–20. https://doi.org/10.1016/j.gloenvcha.2008.10.007

Nahmias, P. 2004. 'Fertility behaviour of recent immigrants to Israel: A comparative analysis of immigrants from Ethiopia and the former Soviet Union'. *Demographic Research* **10**: 83–120. https://doi.org/10.4054/DemRes.2004.10.4

OECD 2019. *Family Cash Benefits*. Paris: Organization of Economic Cooperation and Development. https://www.oecd.org/els/soc/PF1_3_Family_Cash_Benefits.pdf (accessed 4 November 2021).

OECD 2021a. *Education at a Glance 2021*. Paris: OECD Publishing. https://doi.org/10.1787/b35a14e5-en (accessed 19 January 2022).

OECD 2021b. *Parental Leave Systems*. Paris: Organization of Economic Cooperation and Development. https://www.oecd.org/els/soc/PF2_1_Parental_leave_systems.pdf (accessed 4 November 2021).

OECD 2024. *Society at a Glance 2024*. Paris: Organization of Economic Cooperation and Development. https://doi.org/10.1787/918D8DB3-EN (accessed 27 February 2025).

Okun, B.S. 2013. 'Fertility and marriage behavior in Israel: Diversity, change, and stability'. Demographic Research 28 (17): 457–504. https://doi.org/10.4054/DemRes.2013.28.17

Okun, B.S. 2016. 'An investigation of the unexpectedly high fertility of secular, native-born Jews in Israel'. *Population Studies* **70** (2): 239–57. https://doi.org/https://doi.org/10.1080/00324728.2016.1195913

Okun, B.S. 2017. 'Religiosity and fertility: Jews in Israel'. *European Journal of Population* **33** (4): 475–507. https://doi.org/10.1007/s10680-016-9409-x

Okun, B.S. and S. Kagya. 2012. 'Fertility change among post-1989 immigrants to Israel from the Former Soviet Union'. *International Migration Review* **46** (4): 792–827. https://doi.org/10.1111/imre.12001

Orenstein, D. 2004. 'Population growth and environmental impact: Ideology and academic discourse in Israel'. *Population and Environment* **26** (1): 41–60. https://doi.org/10.1023/B:POEN.0000039952.74913.53

O'Sullivan, J. 2018. 'Synergy between population policy, climate adaptation and mitigation'. In M. Hossain, R. Hales and T. Sarker (eds), *Pathways to a Sustainable Economy: Bridging the Gap between Paris Climate Change Commitments and Net Zero Emissions*, pp. 103–125. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-67702-6_7

Pampel, F.C. and H.E. Peters. 1995. 'The Easterlin effect'. *Annual Review of Sociology* **21** (1): 163–94. https://doi.org/10.1146/annurev.so.21.080195.001115

Population Religiosity by Religion in Israel 2023. 2025. Statista. https://www.statista.com/statistics/1558645/israel-major-religions-by-level-religiosity/ (accessed 23 April 2025).

Potts, M. 1997. 'Sex and the birth rate: Human biology, demographic change, and access to fertility-regulation methods'. *Population and Development Review* **23** (1): 1–39. https://doi.org/10.2307/2137459

Reuters and TOI Staff. 2024. 'Israel's birth rate remains highest in OECD by far, at 2.9 children per woman'. *The Times of Israel*, 21 June. https://www.timesofisrael.com/israels-birth-rate-remains-highest-in-oecd-by-far-at-2-9-children-per-woman/ (accessed 13 January 2025).

Robinson, W.C. 1997. 'The economic theory of fertility over three decades'. *Population Studies* **51** (1): 63–74. https://doi.org/10.1080/0032472031000149736

Rotkirch, A. 2020. 'The wish for a child'. *Vienna Yearbook of Population Research* **18**: 49–62. https://doi.org/10.1553/populationyearbook2020.deb05

Sheikh, S.M. and T. Loney. 2018. 'Is educating girls the best investment for South Asia? Association between female education and fertility choices in South Asia: A systematic review of the literature'. *Frontiers in Public Health* **6** (172): 1–10. https://doi.org/https://doi.org/10.3389/fpubh.2018.00172

Shorek, N. 2021. 'In order to save the planet, there is no escaping reducing birth rates'. *Haaretz.Com*, 27 May. https://www.haaretz.co.il/family/parentsforclimateisrael/BLOG-1.9841154 (in Hebrew; accessed 30 May 2021).

Sperling, D. 2010. 'Commanding the "be fruitful and multiply" directive: Reproductive ethics, law, and policy in Israel'. *Cambridge Quarterly of Healthcare Ethics* **19** (3): 363–71. https://doi.org/10.1017/S0963180110000149

Sperling, D. and Y. Simon. 2010. 'Attitudes and policies regarding access to fertility care and assisted reproductive technologies in Israel'. *Reproductive Biomedicine Online* **21** (7): 854–61. https://doi.org/10.1016/j.rbmo.2010.08.013

Staetsky, L.D. 2019. 'Stalling fertility decline of Israeli Muslims and the demographic transition theory'. *Population Studies* **73** (3): 317–33. https://doi.org/10.1080/00324728.2019.1622765

Starkman, R. 2020. 'The Israeli bourgeois family currently has 4-3 children, who must stop this?'. *The Marker*, 16 October. https://www.themarker.com/markerweek/.premium-MAGAZINE-1.9237466 (in Hebrew; accessed 13 September 2021).

Stern, P.C. and K.S. Wolske. 2017. 'Limiting climate change: what's most worth doing?' *Environmental Research Letters* **12** (9): 91001. https://doi.org/10.1088/1748-9326/aa8467

Szreter, S. 1993. 'The idea of demographic transition and the study of fertility change: a critical intellectual history'. *Population and Development Review* **19** (4): 659–701. https://doi.org/10.2307/2938410

Tal, A. 2016. *The Land is Full: Addressing Overpopulation in Israel*. New Haven: Yale University Press. https://doi.org/10.12987/yale/9780300216882.001.0001

Tolts, M. 2015. 'Demographic transformations among ex-Soviet migrants in Israel'. In E. Lederhendler and U. Rebhun (eds), *Research in Jewish Demography and Identity*, pp. 146–68. Boston: Academic Studies Press. *https://doi.org/10.1515/9781618114402-008*

Tourangeau, R., F.G. Conrad and M.P. Couper. 2013. *The Science of Web Surveys*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199747047.001.0001

Trent, R.B. 1980. 'Evidence bearing on the construct validity of "ideal family size"'. *Population and Environment* **3** (3–4): 309–27. https://doi.org/10.1007/BF01255345

Turner, N. and F. Götmark. 2023. 'Human fertility and religions in sub-Saharan Africa: A comprehensive review of publications and data, 2010-2020'. *African Journal of Reproductive Health* **27** (1): 171. https://doi.org/10.29063/ajrh2023/v27i1.11

UN. 2024 World Population Prospects (2024) – processed by Our World in Data. 'Fertility rate, total – UN WPP' [dataset]. United Nations, 'World Population Prospects' [original data]. https://ourworldindata.org/grapher/womens-educational-attainment-vs-fertility?tab=table&time=2020 (accessed 24 April 2025).

Weeden, J., M.J. Abrams, M.C. Green and J. Sabini. 2006. 'Do high-status people really have fewer children?' *Human Nature* **17** (4): 377–92. https://doi.org/10.1007/s12110-006-1001-3

Weinreb, A. 2023. *'Israel's Demography 2023: Declining Fertility, Migration, and Mortality'*. Jerusalem: Taub Center for Social Policy Studies in Israel. https://www.taubcenter.org.il/en/research/demography-2023-overview/ (accessed 8 January 2025).

Willis, R.J. 1973. 'A new approach to the economic theory of fertility behavior'. *Journal of Political Economy* **81** (2, Part 2): S14–S64. https://doi.org/10.1086/260152

Wynes, S. and K.A. Nicholas. 2017. 'The climate mitigation gap: education and government recommendations miss the most effective individual actions'. *Environmental Research Letters* **12** (7): 74024. https://doi.org/10.1088/1748-9326/aa7541

Yuval-Davis, N. 1996. 'Women and the biological reproduction of "the nation"'. *Women's Studies International Forum* **19** (1/2): 17–24. https://doi.org/10.1016/0277-5395(95)00075-5

Zaken, D. 2018. 'Haredim aren't as poor as you think'. *Globes*, 17 December. https://en.globes.co.il/en/article-haredim-arent-as-poor-as-you-think-1001265187 (accessed 3 April 2019).