

When is Fertility Too Low or Too High? Population Policy Preferences of Demographers around the World

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Abstract

When has the fertility rate in a country become so low or so high that a government needs to intervene? This paper sheds light on this population policy question based on a world-wide survey among demographers. We examine how professional views on the interaction between population and society, and the fertility level in the country of residence affects their policy preferences with respect to fertility levels. Three results stand out: first, concerns about the carrying capacity of the earth explain why concerned demographers are more willing to intervene than those who are less concerned. Because of this, the median respondent becomes concerned once fertility drops below 1.4 children in low fertility settings or above 3.0 in high fertility settings. Second, the context of decision making matters: on the one hand, experts living in high fertility countries are more set on intervention than those living in low fertility countries, but on the other hand their threshold fertility level is also higher. Third, the political orientation of demographers matters: demographers on the right of the political spectrum are more set on intervention than demographers on the left.

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1. Introduction

Population and fertility developments divide governments worldwide. In the least developed parts of the world most governments express a willingness to decrease the fertility rate (De Silva & Tenreyro, 2017; UN, 2017). The mirror image of this policy stance is to be found in the developed world where below replacement fertility levels cause concern for governments as populations might decline and age. Some governments would like to see fertility rates increase whereas others abstain from intervention. This divide in the sense of urgency has not always been around in policy circles. During the sixties and seventies in the twentieth century only a minority of governments in the developing world was set on achieving lower fertility rates and in the developed world, population decline was not widespread. The latest UN report on population policies around the world makes clear that currently almost 90 percent of least developed countries aims at lowering fertility and the majority of developed countries is set on increasing the fertility rate. Assessing whether the level of fertility is too high or too low seems to vary across time and space. Judging from debates in national (Kohler, Billari, & Ortega, 2002; Teitelbaum & Winter, 1985) or international forums such as the ICPD and follow-up population conferences (May, 2017; Van Dalen & Scharf, 2014), this stance seems to be based on a mix of the preferences of governments, and the sense of urgency shared by politicians and citizens about the negative consequences of population growth or decline for their own country. Popular media attention to demographic issues (cf. Stark and Kohler (2002)) suggests that it is more or less received wisdom of demography that governments should strive for the replacement rate of 2.1 children per woman. Any deviation from this ‘universal’ constant is cause for alarm. Lutz (2014) makes a strong case that replacement fertility is not a good guide for today’s population policy and that discussing population policy cannot be done in purely demographic terms. According to Lutz, there can be “sound economic reasons why long-term fertility levels somewhat below replacement would be preferable to replacement level.” Whether the status quo in demography is as dire as he suggests can be challenged by looking at what the concerns are of demographers and when - according to their judgements - governments should start to intervene in matters of fertility.

In this paper we examine the policy preferences of demographers with respect to the fertility rate in a country and see whether they defy the stereotype image of a demographer seeking replacement fertility or whether they share a more nuanced view on fertility being either too low or too high that justifies government intervention. We do so by using a unique worldwide dataset on the views of demographers from 93 different countries (see Van Dalen

and Henkens (2012)). Opinions of population experts are important because these experts inform policy makers and can be expected to be more informed and have a long-term perspective on population developments. By trying to understand the policy preferences of experts around the globe one cannot only profit from this knowledge diversity and see what unites experts, but it indirectly might help to understand the diversity in fertility-related population policies and why in some places population policy is welcomed whereas in other places it is viewed with skepticism or hostility.

Two research questions are at the focus of attention in this paper: (1) Should governments intervene in matters of low fertility or high fertility, and if so, at what fertility levels is intervention deemed appropriate? (2) To what extent are these policy preferences of demographers influenced by the demographic context of a country and their assessments of the consequences of population growth or decline and their political orientation? Disentangling these drivers of population policy preferences helps to understand to why expert opinions may differ and why, e.g., debates about population policies can generate tensions based on participants coming from different regions of the world or their, or for reasons related to individual concerns and political orientation.

Four novel insights are presented. First of all, there is a wide interval of non-interference in matters of fertility when one looks at the median respondent: fertility levels between 1.4 and 3.0 may raise concern but do not convince demographers that government intervention is necessary. Second, the concerns about the carrying capacity of the earth as well as the concerns about population decline (only in low fertility settings) have an impact on the threshold level of fertility at which intervention is deemed necessary. Third, the political orientation of experts is important in deciding on the principle issue whether government should intervene in matters of fertility at all. Experts who place themselves on the right end of the political spectrum are more set on intervention in matters of fertility than left-wing experts. And finally, a fourth finding concerns the importance of context of decision making: experts living in high fertility countries are more set on intervention than those living in low fertility countries, but on the other hand of those who favor policy intervention their threshold fertility level is also higher.

The setup of this paper is as follows. We will first set out the dilemmas of population control in different fertility settings, and subsequently present the dataset and the models and

methods used to explore the question in more depth, to be followed by a section reporting on our results, concluded by a discussion.

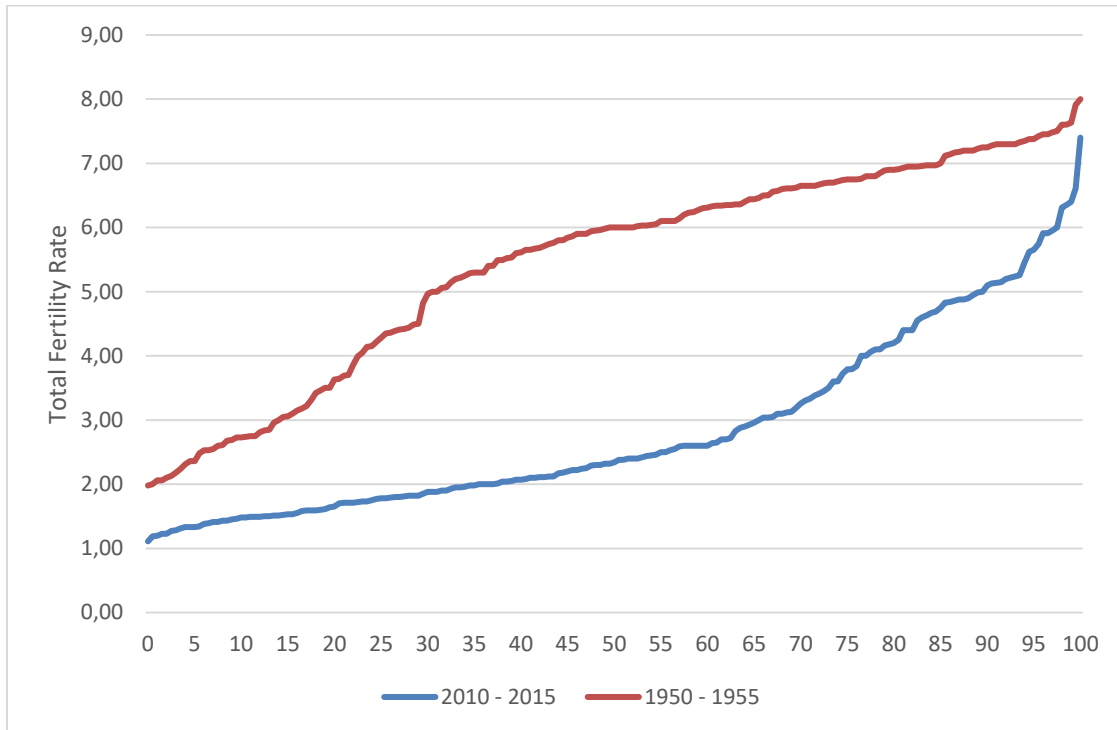
2. Perspectives on population policy

Pleas for population control are becoming louder in both developed and developing countries. In Europe fertility is thought to be so low that experts in countries such as Germany and Italy fear that the level has surpassed a threshold level with the prospect of the one-child family becoming the norm and countries ending up in a low-fertility trap (Goldstein, Lutz, & Testa, 2003; Lutz, Skirbekk, & Testa, 2006; McDonald, 2007). This fall in fertility generates tensions in developed countries. In the absence of migration, countries face the prospect of population decline and this fate is according to some associated with a fall in national identity (Teitelbaum & Winter, 1998), or a fall in long-run growth prospects (Bloom, Canning, Fink, & Finlay, 2010). It may then not come as a surprise that pleas for pronatalist policies are becoming louder and louder. Fear for population decline and its consequences is widespread, especially among Eastern European countries (Coleman & Rowthorn, 2011). This growing awareness over time of population issues and a concomitant change in population policy policies of national governments (UN, 2017) is understandable if one consults the fertility development as presented by Figure 1. This figure shows, for the 1950s and the most recent past, how the TFR distribution has evolved across all the countries in the world. In the 1950s the median country had a TFR of 6.0 children, whereas in the period 2010-2015 the TFR for the median country dropped to 2.1. In the 1950s virtually none of the countries had worries of clear population decline, whereas for the period 2010-2015 approximately 40 percent of the countries have a TFR below 2.1 children¹ and governments of these countries might be concerned about the prospect of population decline. And approximately a third of the countries have a TFR higher than three children per woman and experts living in those countries might still share the classic Malthusian concerns of high fertility. However, these classic concerns of the negative external effects of population size are of interest to all countries as the effects of climate change become more and more visible. Developing countries may be particularly concerned with these effects as they may be vulnerable to

¹ Of course, the actual threshold level of most countries in the 1950s would diverge from the 2.1 level due to higher mortality among the reproductive period of women (see Espenshade, Guzman, and Westoff (2003))

countering the effects of global climate change, but lack the resources to take adequate measures.

Figure 1: TFR distribution for all countries in the world, 1950-55 and 2010-2015



Source: UN (2017) <https://population.un.org/wpp/DataQuery/>

A fundamental question that has to be considered by governments is whether it should intervene in matters of fertility? These questions are not new and linked to earlier debates, in particular to those in the seventies and eighties about the tension between population growth and the carrying capacity of the earth between ecologist Paul Ehrlich (1981) and economist Julian Simon (1981). This debate still offers in a nutshell how divergent views can be on diagnosis of the level of fertility and its policy implications. Ehrlich embraced the pessimistic Malthusian outlook and predicted that population growth would lead to massive famines, poverty, deaths and perhaps a thermonuclear war. Simon took the optimistic view and perceived no imminent resource scarcities as a consequence of population growth based on his firm belief in human ingenuity. Human creativity would turn possible scarcities into unbounded possibilities. Freedom to choose, a value also covering the choice of offspring, is something he cherished highly and government intervention in private fertility decisions would have to be absent in population matters. This policy stance clearly diverged from Ehrlich who stated “We must have population control at home, hopefully through a system of

incentives and penalties, but by compulsion if voluntary methods fail” (Ehrlich, 1968). Both sides of the debate let their judgements be affected by their values; the values of Simon were those of free market competition – the belief of the invisible hand that never errs - whereas Ehrlich did not believe in the power of market, but solely in the power of government that corrects market failure and hence defends the public interest explicitly. Of course, the current day circumstances differ substantially from the seventies. Now the western countries are more concerned about low fertility levels and population decline, whereas countries the least developed world are still trying to escape from the Malthusian trap of high fertility and low economic development.

In subsequent sections we will first elicit the population policy preferences of demographers and secondly, we will deepen our understanding of the drivers of population experts’ willingness to intervene in matters of fertility. We will use the following hypotheses as our guide. First, we will register the stated policy preferences of demographers and see whether their preferences are closely distributed around to the replacement rate for both high and low fertility regimes. The reason for focusing on this issue is to see whether experts conform to the norm of the replacement rate when it comes to making policy judgements. In other words, as soon as fertility rates diverge from the replacement rate the majority of the respondents find this sufficient reason to let government intervene. As a second step, we want to understand why they choose certain thresholds in fertility and we will focus on three separate hypotheses.

First, policy preferences may be affected by the context of the demographic situation in the country of residence of respondent. We know from the work in psychology by Kahneman and Tversky (Kahneman & Tversky, 1984; Tversky & Simonson, 1993) that the context of individual decision making can have a distinctive impact. In issues of population policies this is more or less an unexplored possibility and the current paper offers the possibility to see whether this is indeed the case. We assume that the demographic context of a country will act as a reference point in deciding the threshold level when is the appropriate level to start government involvement. When fertility levels are high in the country of residence, experts might be inclined to report higher intervention levels than those who live in countries with much lower fertility levels. The basic reason for this divergence among demographers is some form of attachment to the status quo: even when an expert wants to intervene he or she will diverge not too much from the status quo. We assume that the fertility context works both ways: demographers living in a high fertility level country will adapt their

preferences and prefer higher intervention levels than those living in countries with a lower fertility rate. And the reverse also applies: those demographers living in low fertility countries will prefer a lower intervention level than those living in a country with a higher fertility rate.

Second, we assume that the threshold choice is based on an individual assessment of the societal consequences of population growth or decline. The perceived pros and cons of population growth or decline are expected to be a major driver of preferences for government interference. Two possible consequences of population growth or decline are deemed particularly important and used in this paper: the assessment of the economic consequences of population decline for a country and the assessment of adverse consequences of population growth on the carrying capacity of the earth.

Finally, policy preferences may be affected by the ethical values or the political orientation of demographers. Most of the fertility or population policy analyses abstract from the issue that such elements may be involved, whereas in principle and practice choices in population involve values and ethics (Atkinson, 2014; Dasgupta & Dasgupta, 2017; Van Dalen, 2008). In particular, issues of government intervention revolve around how much value respondents attach to the issue of freedom of choice and whether they think that unfettered individual choices will be superior in matters of fertility than collective decisions. We expect that demographers who have a more liberal (in the English sense of the term) worldview will cherish freedom of choice and be more averse to government intervention than those who see collective decision making primarily as the best candidate for solving so-called market failures.

3. Methods and data

To shed light on the factors affecting population policy preferences, we use a survey of members of the IUSSP (International Union for the Scientific Study of Population) in the year 2009, designed to tap into the knowledge and expert opinion of 750 demographers around the world (see Van Dalen and Henkens (2012)). The sample, based on the IUSSP directory, has the advantage that it (1) has a worldwide coverage of demographers; and (2) has members who are a mixed crowd of both academics and practitioners who are involved in setting up family planning programs, organizing censuses, or who keep account of the state of the national population. The survey was internet-based, and the link was sent out via email through the secretariat of IUSSP to all its members in April 2009. To stimulate response, the survey was set up in the two languages that are used within the IUSSP, English and French;

85 percent of respondents used the English version. The response rate (taking into account only the fully filled out questionnaires) is 35 percent, well above response rates for similar expert surveys (cf. Klein and Stern (2005)). The sample distribution is in line with the IUSSP membership composition: 75 percent is affiliated with a university or research institute, and the remainder is dominated by demographers working at a government agency (11 percent) or NGO (9 percent), with 5 percent working in the private sector.

Table 1 provides an overview of the independent and dependent variables and their definitions as used in this paper. The dependent variables are measured by two questions. First, respondents were asked “When fertility is below the replacement level, at what level of the fertility rate (TFR) do you think that a government should take measures in order to stimulate fertility?” (answer categories: at a TFR of 1.8; 1.6; 1.4; 1.2; 1.0; 0.8 or lower; or never intervene). Second, respondents were asked “When fertility is above the replacement level, at what level of the fertility rate (TFR) do you think that a government should take measures in order to reduce fertility?” (answer categories at a TFR of 2.5; .3.0; 3.5; 4.0; 4.5; 5.0 or higher; or never intervene). The dependent variables are presented at the top of Table 1 and show the means and standard deviations of intervention dummy variable and the threshold level of fertility intervention.

The key explanatory variables constitute the political orientation (5-point Likert scale), and the opinions on whether respondents are concerned about the prospect of overpopulation and the prospect that population decline might decrease economic growth.² To assess the impact of the fertility context of decision making, we use a country-level variable: the net reproduction rate (NRR). This variable is based on a source outside the survey, viz. the UN estimates for the time period 2005-2010 (UN, 2017). This variable is deemed the most

² The key variables describing the views with respect to population and development refer to the consequences of world population outstripping the carrying capacity and the economic consequences of population. Close to 50 percent of the demographers disagrees with the statement “The current size of the world population exceeds the carrying capacity of the earth.” But a substantial share of the demographers (33 percent) agrees with the statement and the remainder has an agnostic position. With respect to population decline, only 17 percent expects negative effects of population decline, 60 percent disagrees and 23 percent take a neutral position. The other key variable that we are interested in refers to the political orientation of population experts: 45 percent is oriented towards the political left, 38 percent takes the middle position and 17 percent favors the political right. The other variables are used as control variables.

appropriate variable to capture the context of decision making in a parsimonious manner as the NRR not only incorporates information on fertility but also mortality (of women).³

To control for other factors that might impinge on the policy preferences we controlled for age, gender, the question whether respondents possess expert knowledge with respect to fertility, reproductive health and family planning, the institution at which respondents work - being either academic (university or a research institute) or applied (government agency, NGO, or private sector organization) -, and finally whether demographers speak the French or the English language.⁴

HERE TABLE 1

The analysis is carried out in two steps. First, we analyze by means of multilevel logit analysis the decision to let government intervene in fertility decisions or not. And in a second step, we examine by means of multilevel ordered logit analysis for those who favored intervention at what threshold level they would intervene. Multilevel analysis was used because experts are nested within 93 countries. The average number of experts per country was 8.2. Preference for the ordered logit analysis of six ordered options instead of the simpler regression analysis is based on the fact that the both intervention questions have open ended options (a threshold TFR of 0.8 or lower; and a TFR of 5.0 or higher) which are difficult to assign a precise numerical value, as well as different intervals (low fertility regime jumps with 0.2 and high fertility with 0.5).⁵

³ The estimation results do not change much, by including both the total fertility rate and the mortality rate in the country of residence, but in multilevel analysis one should be cautious in including too many country level variables.

⁴ Respondents could fill in a French or an English version of the survey (see Van Dalen and Henkens, 2012, for details).

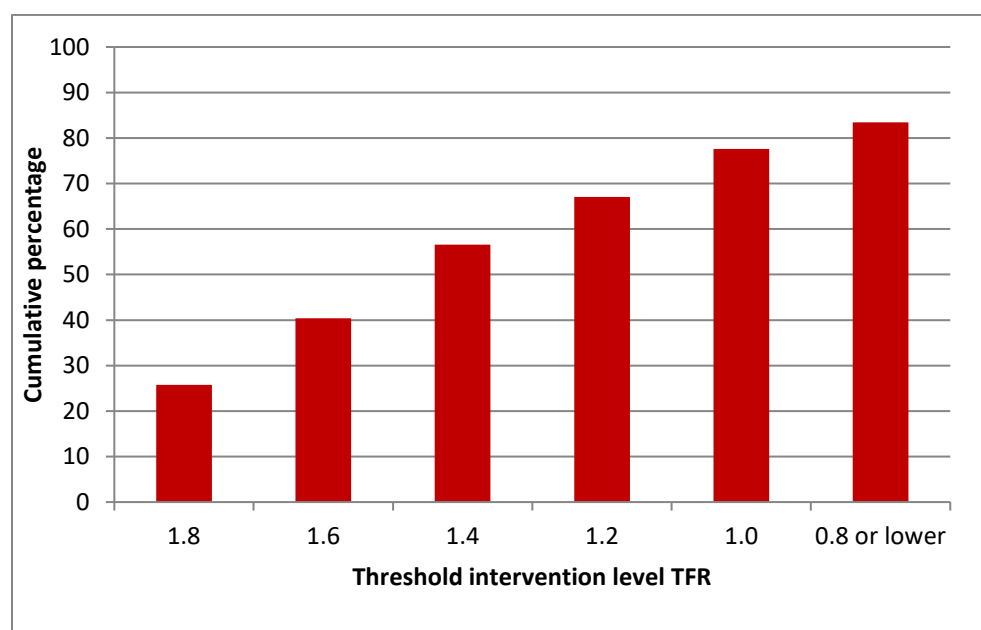
⁵ Furthermore, Heckman's two-step selection method (Heckman, 1979) was used to test for selection problems, with assessed quality of long-run forecasts on fertility, mortality and migration, as well as self-reported knowledge about mortality, migration as the additional variables (also present in the survey, see Van Dalen and Henkens, 2012) in the selection equation. Clear signs of selection were not observed, hence we resorted to the use of the presented two step approach.

4. Results

4.1 Stated population policy preferences

Figures 2a and 2b captures the prevailing views of experts on *when* to let government interfere to stimulate fertility if the fertility is deemed too low, and when to interfere when fertility become too high.

Figure 2a: Cumulative percentages of demographers in favor of government intervention by fertility level, low fertility regime

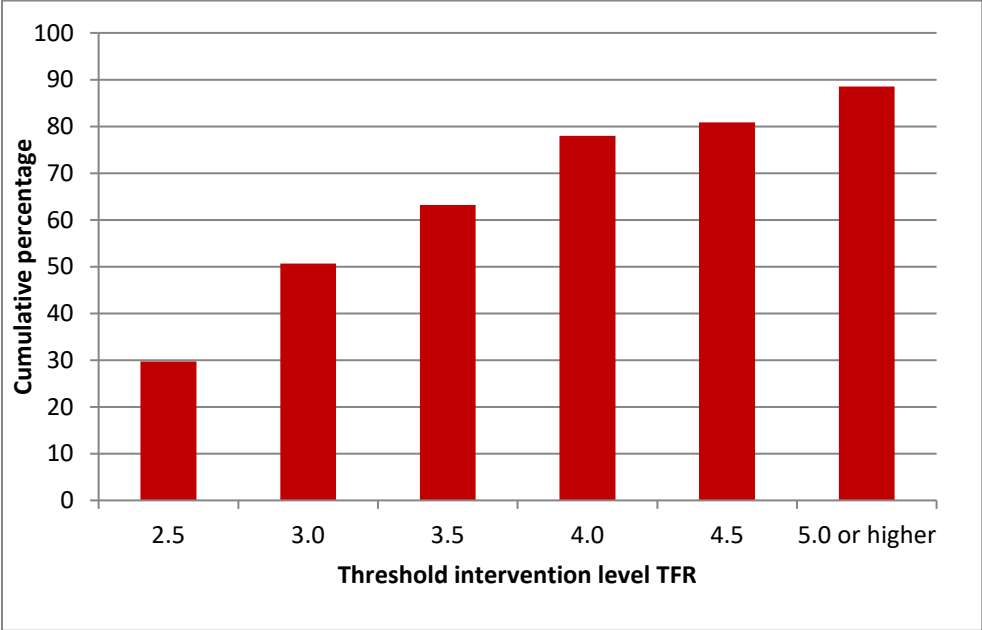


Note: Question posed: “When fertility is below the replacement level, at what level of the fertility rate (TFR) do you think that a government should take measures in order to stimulate fertility?” The cumulative percentages should be interpreted as follows: at TFR 1.8 (just below-replacement level 2.1) 25 percent of respondents think government should intervene to increase the TFR, 40 percent support intervention at TFR 1.6, etc. and 83 percent support intervention at TFR 0.8 or lower. Hence 17 percent is in favor of non-intervention whatever the TFR level below replacement is.

An obvious norm for judging fertility developments in countries where low mortality is the rule is the fertility replacement rate of 2.1, even though this norm is highly debated. Lutz (2014) makes the claim that replacement level fertility is not a meaningful policy goal as “it has little to do with actually maintaining the size of a population in contemporary societies, which have irregular age structures and experience migration and mortality changes.” (p.528) The focus of Lutz is very much directed at western countries where low fertility is the rule and as he claims replacement rate figures can be significantly different from 2.1. In a way Figure 2a confirms this insight as the median respondent uses a threshold fertility level of 1.4.

This figure comes close to what demographic research (Lee & Mason, 2014; Striessnig & Lutz, 2013) shows to be ‘optimal’ fertility rates based on models that explicitly take into account the economic effects of population growth and age structure.⁶

Figure 2b: Cumulative percentage of government intervention by total fertility level, high fertility regime



(a) Question posed: “When fertility is above the replacement level, at what level of the fertility rate (TFR) do you think that a government should take measures in order to reduce fertility?” The cumulative percentages should be interpreted as follows: at TFR 2.5 30 percent of the respondents thinks government should intervene to lower the TFR, at TFR 3.0 51 percent supports intervention, etc. and at TFR 5.0 or higher 89 percent supports interference, hence 11 percent is in favor of non-interference whatever the TFR level.

The impression of a diverse group of professionals can also be deduced from Figure 2b where the median respondent picks the threshold fertility level of 3.0. Most demographers know that the replacement rate of 2.1 is an adequate indicator for developed countries because the sex ratio at birth is more or less uniform across countries, and most women survive till the end of their childbearing years. However, for developing countries the value of 2.1 will probably not be the correct replacement fertility rate as mortality, and sometimes even the sex ratio at birth, may differ substantially from what is standard in developed countries. Espenshade et al. (2003) show for the period 1995-2000 that the replacement fertility levels in least developed

⁶ It should be noted that this opinion of demographers cannot be influenced or informed by the papers cited because this expert survey predates those papers by far.

countries is around 2.7 and in countries with very low survival rates, like Sierra Leone, this replacement level can approach 3.5. However, the fact that quite a number of demographers have higher threshold levels suggests that other factors are at play in explaining their population policy preferences.

A final observation on these two figures is that a minority of demographers abstains from government intervention in both fertility regimes: 16 percent of the demographers prefers to never intervene in the case of the high fertility regime and 11 percent in the case of the low fertility regime. Or taking the alternative interpretation, the large majority of demographers do not trust that spontaneous action will solve societal problems in a significant manner and the demographers interviewed display a high degree of consensus with respect to the issue that government should in principle intervene. Of course, the type of government intervention may differ with respect to the level of coercion, which is an issue not further explored in this paper.

4.2 Understanding population policy preferences

The multivariate analyses of the choices – whether and when to intervene – are presented in Table 2.

HERE TABLE 2

Intervention or not?

The first, and novel result is the finding that demographers living in countries with high NRR are far more likely to support government interference in high fertility regimes than demographers living in a country with a low NRR.

Second, we have estimated the impact of judgements about the consequences of population growth and decline. Contrary to the low fertility regime, judgements clearly come into play in deciding on the principal issue of intervention: the more one agrees that the world population level exceeds the carrying capacity of the earth the more one is willing to let government interfere in case of high fertility.

And third, the political orientation matters when it comes to the choice whether one should intervene or not (columns 1 and 3) with the fertility rate in a country. In the case of a low fertility regime, political orientation is the only factor that really matters. Contrary to the expectation that experts with a liberal orientation are in favor of non-interference of

government and pro freedom of choice, this does not seem to apply to demographic issues: demographers on the political right are more in favor of interference than demographers on the left of the political spectrum. This effect also applies for demographers having to decide on this issue in a high fertility regime, however, the impact of political orientation in a high fertility regime is smaller than in the low fertility regime.

At which fertility level should government intervene?

When we turn to the threshold level of intervention and hence to those who decided to intervene in matters of fertility (columns 2 and 4) we again see some similar and dissimilar effects.

First, the policy preferences of demographers in the two regimes are affected in an asymmetric manner and this is to some extent affected by the demographic context of the country in which the respondent resides. It matters quite a lot in the high fertility regime whereas it does not matter in a low fertility regime. To restrict our attention to the high fertility regime: the higher the net reproduction rate, the higher the threshold level of fertility at which intervention is seen by demographers as necessary step. This is an important finding, because it underscores that one's judgement is influenced by circumstances in which one lives.⁷ Why they make this judgements may be for a myriad of reasons. Demographers living in high fertility countries expect that their threshold is a feasible one and going for lower threshold might be overambitious in the short run. They are probably well aware that interference in high fertility regime will mean a decrease in fertility and this decrease might be evaluated differently. With respect to the freedom to choose one's level of offspring such a policy may be seen as an infringement of individual rights. In a low fertility environment intervention would mean encouragement of fertility. To shift the level of intervention upwards one allows or facilitates more freedom of choice.

The second effect concerns the impact of the perceived consequences of growth or decline and this effect also shows some differences across the two regimes. Demographers who worry about overpopulation and the carrying capacity of the earth choose to intervene at a lower fertility rate than those who do not worry. In other words, these concerned demographers may see the upside of low fertility developments as it alleviates the pressure on issues of global overpopulation. And clearly those who worry about the issue of

⁷ To check whether the outcomes are different when we control for the country of birth, the effects do not differ, perhaps because most demographers stay working in the country of birth.

overpopulation when they cast their eye on high fertility regimes certainly prefer government intervention at a lower fertility rate. What makes a difference between the two fertility regimes is that the worries about overpopulation in a low fertility regime are more or less neutralized if the demographer also has worries about population decline harming economic growth. And, of course, the worries about the economic consequences of population decline do not matter at all when the demographer assesses the situation in a high fertility regime.

To see the effects of concerns about global population growth and the demographic context more clearly we offer a simulation of the predicted probabilities of each choice outcome in Table 3 for the case of high fertility regimes.

HERE TABLE 3

The Malthusian concerns of demographers that the global population growth exceeds the carrying capacity of the earth has a major impact on the threshold level when it concerns higher fertility regimes. For instance, if we compare demographers with low concern about these Malthusian issues to those who are very concerned one can clearly see how this impacts the population policy preferences: 64 percent of the ‘concerned’ demographers have a threshold level of 3.0 children per woman or lower, whereas this preference for the threshold level of 3.0 children is only shared by 35 percent of the ‘unconcerned’ demographers. The distribution is less skewed but still pronounced for the context of decision making: the NRR level where the demographer lives. For those living in a below replacement country (NRR = 0.8) 55 percent have the threshold level of 3.0 children or lower. In an above replacement country (NRR = 1.5) only 43 percent support a threshold of 3.0 children or lower.

A third observation to be made is that the political orientation does not matter in a distinctive manner when it comes to the threshold at which government intervention is supported, both in a high and a low fertility regime. Apparently, demographers see this as an issue where science or knowledge of the situation at hand matters. And perhaps that is why demographers who have high level of knowledge about family planning or reproductive health also have a slightly higher fertility thresholds for intervention in a low fertility regime than demographers who do not consider themselves fertility experts. In other words, family planning experts have (slightly) more worries about the TFR dropping to too low levels (Lutz et al., 2006). The institution at which one works, does not seem to matter much: whether one works in an academic surrounding or an applied environment like a government agency or an NGO is irrelevant. Only in the case of a high fertility regime (column 4) one can see a weak

sign that demographers working in a policy setting are in favor of a lower threshold than those in academic setting.⁸

5. Conclusion and discussion

To intervene in matters of fertility or family planning has been, and still is in some countries a controversial issue, whether one refers to low fertility regions like Europe (cf. Teitelbaum and Winter (1998)) or high fertility regions as illustrated by May (2017) for the case of Sub Saharan Africa. Nonetheless, given the importance of the societal consequences of population decline or excessive growth thinking about population policy will need to be tackled.

Understanding how judgements and decisions at the national or the supranational level are made is therefore important for understanding dilemmas in population policy. And in this vein, the current paper may offer food for thought as it draws on the international background of population experts who ponder the dilemmas of population growth and decline and who are asked to think about government intervention in case of fertility decisions. By showing their reflections and their population policy preferences one gains insights that are not so easily obtained from other sources. Four important elements stand out.

First of all, the demographers display in their policy preferences a wide interval of non-interference by the government in matters of fertility. The median ‘demographer’ in the survey would consider fertility levels between 1.4 and 3.0 as an interval where they would not support government intervention. It suggests that professionals do not immediately cry wolf when total fertility rates immediately drop below the bar of 2.1.

The most important driver for this policy stance among demographers – and this is the second contribution – is their assessment (or their concerns) of the pros and cons of population growth or decline. Especially in high fertility regimes the concern about the carrying capacity of the earth matters considerably in intervening in private choice in fertility: concerned demographers are supporting action at lower thresholds than experts who do not have this sense of concern. In low fertility countries the situation is different: the concerns about global overpopulation are kept in check by the economic consequences of population

⁸ A final observation concerns the fact that the French respondents are more set on intervening at higher levels of TFR than English respondents. This should not be exclusively attributed to those living in France, but also to those French-speaking demographers living in Canada, which is a country that also favors immigration as a channel to increase the national population size.

decline. In other words, population decline is a mixed blessing: it alleviates perhaps the concerns of overpopulation, but it increases the problems tied to decline and ageing.

A third contribution is the awareness that the demographic context matters considerably in deciding on policy intervention, but only in high fertility regimes. However, this effect has to be split into an expected and unexpected effect. The expected effect is that demographers are in favor of government intervention in high fertility countries the higher the net reproduction rate (NRR) in their place of residence. However, a novel finding is that demographers who reside in countries with a high NRR also have higher threshold levels before they would let government intervene compared to demographers living in countries with a low NRR.

The fourth and final contribution is that the political orientation of demographers is important in deciding on the principle issue whether government should intervene in matters of fertility at all. We have shown that demographers display a large interval of non-interference, but on the principle question whether government should act the large majority says that government at some level should intervene. However, the novel and unexpected finding is that demographers who place themselves on the right end of the political spectrum are more set on intervention in matters of fertility than left-wing experts. And this applies to a larger extent in low fertility surroundings than in high fertility settings. This finding contrasts strongly with what one would expect based on the fact that people on the right end of the political spectrum cherish freedom of choice, whereas one would expect that the other end of the spectrum would have no qualms in supporting collective action.

Discussion

These findings bring to the fore dilemmas that are in store for governments around the world⁹ as countries in the long-run will probably be facing population decline (Goldstein et al., 2003; Reher, 2007) and at the same time the issue of global climate change will increasingly demand the attention of governments and citizens. Most governments will then face the population dilemmas which were indirectly the ones the demographers in our survey have been struggling with in their choice of threshold levels of intervention in below replacement fertility countries. In those countries one will see the national interests of falling fertility rates that governments increasingly want to stimulate (UN, 2017) whereas the concerns of global

⁹ This applies despite the stalling of fertility transitions in some developing countries (Bongaarts, 2006; Bongaarts & Casterline, 2013).

population increase necessitate global efforts at decreasing the population. And to neglect the potential impact of population policy on tackling global problems, such as global climate change is a tragedy. As Bongaarts and O'Neill (2018) argue : “Rapid population growth is one of the key drivers of emissions and one of the determinants of vulnerability to impacts.” (p. 652). To a large extent they are right, as the interests of least-developed countries facing stalling fertility transitions and the global community are aligned and policy intervention could be beneficial. However, the more difficult dilemma is the one faced by the growing number of below replacement countries, that will see a conflict between their national interest and the global interest. Governments then have to seek alliances in solving a global public good dilemma, or alternatively preventing a global tragedy of the commons. As Sandler (2004) shows, these type of dilemmas are extremely difficult to solve in practice where governments are tempted to cater to the needs of their constituents and hence prefer to put the interests of their nation first.

This brings us to the second element that might prove challenging. Citizens will probably display the stance that we earlier discovered among the Dutch population (Van Dalen & Henkens, 2011): the large majority of the population wants the global population to decrease, but their own group– the national population - should remain stable. In other words, population decline suffers from the “Not-in-my-backyard”-attitude that is common in quite a number of public good issues. Furthermore, as can be seen also in the current paper, judgements made in demography are, as can also be seen in other disciplines (Van Dalen, 2019), not a neutral affair. Demographers on the political right are more persuaded than demographers on the left to intervene in matters of fertility. A right-wing orientation apparently does not signify, as one would expect, a clear preference for freedom. It is hard to determine what drives these results. Being right-wing oriented could signify conservative tendencies (perhaps also affected by prevailing religions in a country), but it could also mean that leftward oriented demographers have become more oriented towards individual freedom of choice as can be seen in the ‘Programme of action’ adopted at the ICPD in Cairo (1994) where gender equality and reproductive rights of women and girls were seen as being central to issues of population and development. It should, however be noted that this political orientation effect only applies by asking the principle question of government interference. Once demographers are asked to reflect on actual threshold levels of intervention, the political orientation effect is absent and this suggests that demographers perceive this decision as one outside the realms of politics.

Finally, the findings offer a peek at how demographers judge the demographic problems of societies – developed and developing - and how these views translate into practice, into policy advice. So far demographers (Goldstein et al., 2003; Hagewen & Morgan, 2005; Lutz et al., 2006) have made an effort to register or elicit the *private* fertility preferences of citizens, the current study tries to distill the *public* fertility preferences of societies as perceived by demographers. By analyzing policy preferences of demographers as a group, we profit from the diversity of nationalities and experiences. And this type of research contributes to key questions in ‘political demography’ as perceived by Weiner (1971). He stated already in the seventies that “it is not enough to know the facts and figures of population – that is fertility, mortality and migration rates; it is also necessary to consider the knowledge and attitudes that people and their governments have toward population issues”. Teitelbaum (2015) reemphasized recently that this field is seriously under-attended by demographers. The current paper underscores the importance of this strand in demography as it shows that the population policy preferences are in the end informed by economic or social judgements of consequences of population growth and decline as well as the national context.

Table 1: Description of variables and descriptive statistics

Variables	Description	Mean	Standard deviation
<i>Dependent variables</i>			
Intervention in low fertility regimes	When fertility is below the replacement level at what TFR level do you think a government should take measures in order to stimulate fertility? Never (=0) or one of 6 TFR levels (=1)	0.84	0.37
Intervention in high fertility regimes	When fertility is above the replacement level at what TFR level do you think a government should take measures in order to reduce fertility? Never (=0) or one of 6 TFR levels (=1)	0.89	0.32
TFR levels of intervention in low fertility regimes	For those that prefer intervention the threshold level is measured by the options (1.8; 1.6; 1.4; 1.2; 1.0; 0.8 or lower = 0.8)	1.44	0.32
TFR levels of intervention in high fertility regimes	For those that prefer intervention the threshold level is measured by the options (2.5; .3.0; 3.5; 4.0; 4.5; 5.0 or higher = 5.0)	3.29	0.78
<i>Explanatory variables</i>			
Political orientation	How would you place your views on a scale from left (=1) to right (=5)?	2.53	0.98
View carrying capacity	Agreement to statement "The current size of the world population exceeds the carrying capacity of the earth" (1 = fully disagree to 5 = fully agree)	2.80	1.30
View population decline	Agreement to statement "Population decline will decrease the rate of economic growth" (1 = fully disagree to 5 = fully agree)	2.40	1.04
<i>Country level variable</i>			
Net reproduction rate	Net reproduction rate in country of residence as reported for 2005-2010 by UN 2017	1.11	0.41
<i>Control variables</i>			
Gender	Male (=0) Female (=1)	0.36	0.48
Age	Years	48.21	14.08
French	Language used in questionnaire (English = 0; French = 1)	0.14	0.35
Work environment	Academic (university or research institute = 0) Policy oriented (government agency, NGO or private sector =1)	0.27	0.45
Expert level - knowledge fertility, family planning	Self-rated knowledge on fertility, reproductive health, family planning (1= low; 2 = medium; 3 = high)	2.38	0.67

N = 758

Table 2: Explanation of preference to intervene in fertility level and for those who prefer to intervene the TFR level threshold among demographers, worldwide

	Policies in low fertility regimes				Policies in high fertility regimes			
	Intervention (no = 0, yes = 1)		TFR level of intervention		Intervention (no = 0, yes = 1)		TFR level of intervention	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Coef	s.e.	Coef	s.e.	Coef	s.e.	Coef	s.e.
Political orientation	0.51***	0.13	0.05	0.08	0.30**	0.15	0.06	0.08
Carrying capacity of the world	0.05	0.09	-0.16***	0.06	0.68***	0.13	-0.27***	0.06
Neg. consequences of population decline	-0.01	0.11	0.14**	0.07	-0.05	0.13	0.0	0.07
<i>Country level variable</i>								
Net reproduction rate	0.45	0.37	-0.15	0.21	0.94**	0.44	0.70***	0.27
<i>Control variables</i>								
Gender (male = 0)	-0.06	0.23	-0.30*	0.16	-0.45	0.27	0.29*	0.16
Age (in years)	-0.02*	0.01	-0.00	0.01	-0.00	0.01	-0.02***	0.01
French (English =0)	0.21	0.37	0.61***	0.23	-0.23	0.37	0.34	0.27
Work environment (academic =0)	-0.03	0.25	-0.23	0.16	-0.13	0.31	-0.29*	0.17
Knowledge fertility	-0.05	0.16	0.29***	0.11	0.11	0.19	0.20*	0.12
Constant	0.96	0.90	-	-	-0.40	1.06	-	-
Random effects parameter:								
Country	0.39	0.23	0.06	0.08	0.38	0.27	0.53	0.19
N =	758		637		752		668	
Loglikelihood	-305.8		-1054.8		-224.3		-1014.4	

* p < 0.1; ** p < 0.05; and *** p < 0.01.

Notes: models in columns 1 and 3 are estimated by means of multilevel logit analysis; models in columns 2 and 4 are estimated by means of multilevel ordered logit analysis; estimated cut-off points are not shown in the table.

Table 3: Predicted probabilities of threshold fertility intervention levels in high fertility regimes

	Distribution of threshold levels TFR						Total
	2.5	3.0	3.5	4.0	4.5	5 or higher	
Sample average ^a	0.23	0.26	0.18	0.21	0.04	0.08	1.00
Concerns about carrying capacity earth							
Low	0.15	0.22	0.18	0.27	0.05	0.12	1.00
High	0.34	0.29	0.15	0.15	0.02	0.04	1.00
Net reproduction rate							
0.8	0.27	0.28	0.17	0.19	0.03	0.06	1.00
1.5	0.18	0.24	0.18	0.25	0.05	0.10	1.00

(a) These are the sample probabilities underlying the model in column (4) of Table 2.

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