The Recent Fall of Women's Fertility Intentions in Canada

Introduction

Since the late 2000s, fertility has been decreasing in Canada: from the onset of the 2008 financial crisis till 2022, the total fertility rate fell from 1.70 to 1.33 (Statistics Canada 2023). Canada was not alone to experience such a fall. A similar decrease occurred in the Nordic countries which were known until recently for their comparatively high fertility among developed countries (Hellstrand et al. 2021). It happened in France too, but with a small lag: there, the TFR decreased from 2.03 in 2010 to 1.68 in 2023.

In this paper, we investigate the change in fertility intentions of Canadian women – measured as lifetime child-number intentions – over three decades using cross-sectional data from seven surveys conducted between 1990 and 2022. First, we estimate the intentions using proportions and means and compare them across surveys. Second, we investigate the role of parity, age, and education with a special focus on the change in their relationship with intentions over the period covered by the surveys. Conceptually, we try to approach fertility intentions from a life course perspective despite using cross-sectional data. Practically, rather than using the intended number of children as the dependent variable of a linear regression, we model the probability of intending to have a given number of children as a non-linear function of age conditional on parity. This can be seen as studying fertility intentions mimicking the way fertility itself is studied, replacing the behaviour with the intentions and the rates with probabilities.

Methods

Data and Variables

We use data from the six cycles of Statistics Canada's General Social Survey (GSS) that focused on the family: 1990, 1995, 2001, 2006, 2001, and 2017. The GSS collects information from persons aged 15 and over in the ten provinces of Canada, excluding full-time residents of institutions (Statistics Canada 2019: 5). Each of these six surveys contains at least two questions on fertility intentions as well as information on socio-demographic characteristics generally associated with their variation. All samples are cross-sectional and probabilistic. For each survey, we use the sub-sample of women of childbearing age at the time of the survey. For 2022, we use the data from cycle 4 of the Canadian Social Survey (CSS), whose sampling design is like that of the GSS.

Although our focus is on the relation between fertility intentions with age and parity, we also investigate the effect of some factors commonly associated with fertility intentions: the region in which the woman lives, her conjugal status, her labour force status, her religious beliefs, the language she speaks at home, her place of birth, the type of area in which she lives, and her educational level, as measured at the time of survey. Given that unlike the six GSS, the 2022 CSS did not collect most of these variables, we do not use the 2022 data when assessing the effect of the factors commonly associated with fertility intentions.

Model

We model the probability of a given answer – the lifetime child-number intentions – using polytomous logistic regression. The dependent variable of the equation is the natural logarithm of the ratio of the probability of a given answer to the probability of the answer chosen as the reference category which, in all our equations, is intending to have two children. When studying the intention to have at least three children among mothers of two, the model becomes an ordinary logistic regression. We model the variation of the probability over age as a quadratic function. When focusing on the differences across educational levels in the shape of the variation of intentions over age, we estimate the coefficients quadratic function within educational level.

Results

The complete paper includes two tables and nine figures. Most of the results from logistic regression, which focus on the variation of intentions over age for childless women, mothers of one and mothers of two, are presented as figures. In this abstract, we include only four figures, we report only a fraction of the descriptives results and we refer to the results from the analyses only as we discuss them. Furthermore, we limit to education the discussion of the factors other than age and parity commonly associated with intentions.

Descriptive Findings

Figure 1 displays the lifetime child-number intentions – the sum of the number of existing children and the number of further intended children – of Canadian women as measured in each of the seven surveys we use. The proportion of women intending to never have children increases in 2017 and then again in 2022, reaching almost .25. The proportion of women intending to have one child increases as well over the period. In all surveys, the modal class is intending to have two children, but the proportion of women intending to have two children falls

below .40 for the first time in 2022. The proportion of women intending to have three children decreases over the period, more markedly in 2017 and then in 2022.

Figure 2 allows comparing fertility behaviour and intentions over the period under study. It displays the total fertility rate, the mean lifetime fertility intentions from each of the seven surveys we use, and the difference between the TFR and mean intentions. To allow a better comparison with the TFR, mean intentions are computed as the mean of the average lifetime fertility intentions within 5-year age categories. Intentions are always larger than fertility, but the difference between the two varies over time. Intentions remained slightly above 2.0 from 1990 till 2011 despite fluctuations in the TFR: the difference between intentions and fertility was large in 1995 and 2001, as fertility was comparatively low while intentions did not vary by much. However, except for a blip around the COVID-19 pandemic recovery period (Provencher and Galbraith 2024), fertility has been steadily decreasing since 2011, and intentions have decreased in the same fashion.

Figure 7 displays the proportion of the reproductive years spent at intending to have a given number of children by parity and survey. The proportions are computed using the integrals of the predicted probability functions estimated for childless women, mothers of one and mothers of two. Among childless women, the proportion of the reproductive years spent intending to remain childless does not vary in a consistent way between 1995 and 2017. It is higher in 2022. Here again, 1990 seems to be a special case. The proportion of time spent intending to have two children is lower at the end of the period among childless women. It does not vary much among mothers of one. Among childless women, the proportion of time spent intending to have at least three children is never large and decreases across surveys. Among mothers of one, it increases slightly from 1990 to 2001, then decreases. It does not vary consistently among mothers of two.

The Effect of Education

Using education as an 'ordinary' independent variable in the logistic regression models leads to conclude that overall, among Canadian women, fertility intentions increase with education: the probability of intending to have at least three children among childless women and among mothers of one is the highest for university-educated women, while the probability of intending to have at least three children among mothers of two is the highest for the two categories of women with a postsecondary diploma. This conclusion might seem disputable, especially given that, as shown in Figure 8 (not reported in the abstract), university educated women do not have larger intentions than other women except among mothers of one child in 2001.

These results and their interpretation rely on the assumption that the variation of the intentions across educational levels can be summarised in a set of three coefficients. Given that education is known to delay the start of family formation, this might be a strong assumption. We investigated the matter further and estimated the model allowing the coefficients of the quadratic relation between age and intentions to vary across educational levels.

The most informative results are reported in Figure 9. In a nutshell, highly educated women do not have higher fertility intentions than less educated ones, but rather they intend to have children later in life than less educated women. Thus, the differences between educational levels when using education as 'an ordinary' independent variable are misleading. The problem stems from the fact that less educated women are more numerous and contribute the most to the average schedule. In addition, linear coefficients can only move a curve vertically – capturing differences in intensity –, not laterally, as is required to correctly capture differences in schedule.

6. Discussion and Conclusion

In the population as a whole, mean intentions are always higher than fertility, but both vary in the same way since 2001. Since then, there is no obvious lag between them which could suggest that intentions follow or herald fertility. Except for the very young, if intentions were to be translated into behaviour, they would be so short after having been measured, or at least envisioned to be turned into behaviour, while the external conditions prevailing at the time of the measurement still prevail – no matter how external conditions are defined or evaluated. All of this suggests that whatever drives fertility down nowadays also drives fertility intentions down, regardless of whether fertility adjusts to intentions or vice versa. Furthermore, the data from the most recent survey, especially as reported in Figures 1 and 2, suggest than the norm or ideal of the two-children family might be waning.

Looking at child-number intentions among all women, the pattern is straightforward: from the beginning to the end of the period more women intend to remain childless or to have a single child, and less intend to have two or at least three children. The pattern is the same among childless women. Looking at intentions for higher order parities provides more insights. Among mothers of one child, intentions to remain so or to have the second child do not vary over the period; however, after 2011, these women become less prone to intend to have at least three. Mothers of two, probably an increasingly selected group, are the only women whose intentions increase over the period: after 2001, they become more prone to have at least three children.

Looking at the composition of the population by parity over the three decades covered by the surveys put these results in context: from the beginning to the end of the period, the proportions of childless women and of mothers of one child increase, while those of mothers of two or of at least three children decrease.

Our interest on the age schedule of fertility intentions involves looking at fertility intentions not only by parity – life events – but also at their variation over age and over age within parities. Our first glimpse at the variation of child-number intentions over age and across surveys showed that in 2017 and 2022, while mean lifetime fertility intentions follow the same preceding pattern of increasing with age before decreasing, they are at a markedly lower level than before: unlike in previous surveys, they never reach 2.

Between 2011 and 2022, the probability of intending to remain childless among women at the beginning of their reproductive years increased from about .20 to about .50. In 2022, it still decreases until the mid-20s as it did in previous years, but it never goes below .40. The intention to have one or two children moves gradually later in life. That of intending to have at least three children declines; this is especially clear when looking at the proportion of the reproductive years spent intending to have at least three children.

Among mothers of one, from 1990 till 2006, the intention to have the second child became gradually concentrated at a later age – maybe because the age at the birth of the first child was increasing – but in 2017 and 2022, the peak of the curve moved back to the left – perhaps because nowadays, only women who had their first child early enough ever intend to have two. Accordingly, the proportion of their reproductive years mothers of one spend intending to have at least three children increased until 2011 and decreased afterwards.

Among mothers of two, the curve of the probability of the intention to have at least three children does not vary consistently across the surveys, though it seems to be lower in 2022. The increase across surveys in the proportion of these women who intend to have at least three children may hide a somewhat more complex process related with age and parity. It might be that mothers of two are becoming a select group of women who started to have children earlier than most women now do.

As we write above, the differences in the age schedule of intentions between educational levels and in its change across surveys within educational levels shows that the relation between age and the probability of intending to have a given number of children must be modelled within educational levels. Highly educated women do not intend to have more or fewer children than other women, but they tend to intend having them later in life or, to phrase it otherwise, they have a late fertility intentions schedule. The proportion of highly educated women is increasing over time, while the biological ability to conceive and achieve pregnancy decreases with age. This suggests that soon, achieving intentions may become more challenging for a growing number of women.

Between 1990 and 2022, the lifetime fertility intentions of Canadian women decreased. Nowadays, Canadian women are not intending to have many children if any, and this seems to be the result of a process that developed over 30 years and is most visible since the early 2010's, rather than a mere temporary adjustment to the current economic conditions. The decrease is most noticeable among young women, about half of which now begin their reproductive years intending to remain childless. As the proportion of childless women has increased over the period we studied, it is hard to see fertility intentions increasing in the foreseeable future among Canadian women. Given that the decrease occurred in a period where Canadian social policy was becoming more family-friendly – with higher financial support for low- and lower–middle-income families and better parental leaves and benefits – it is difficult to clearly posit what kind of policy could foster fertility intentions. As we write above, modern family policy is grounded in the will of helping individuals and couples to have the children they want. If fertility intentions keep decreasing in the way they decreased in Canada since 2011, demographers and other social scientists may need to seriously ponder about the implications of this decrease for family policy.

References Cited in the Abstract

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Figure 1 Lifetime child-number intentions of women, Canada, selected years, 1990–2022. Weighted estimation.
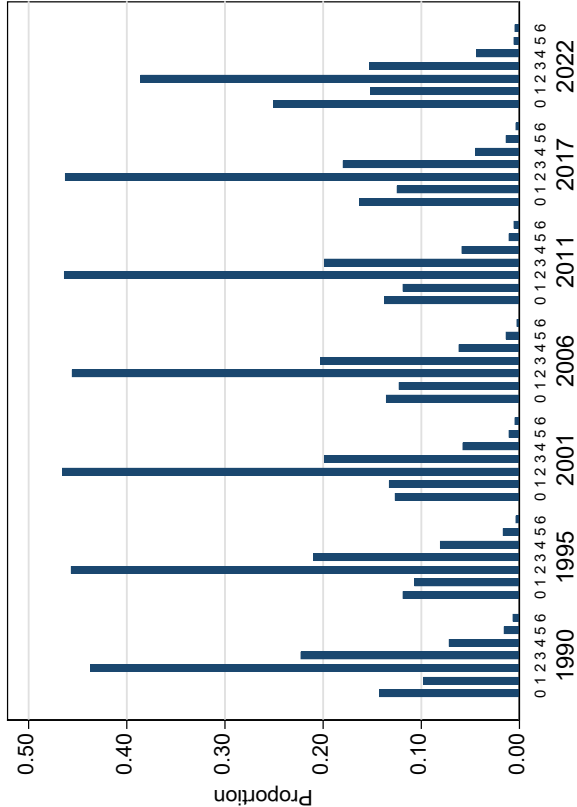

Figure 2 Total fertility rate, Canada, 1986–2022. Mean lifetime fertility intentions, selected years, 1990–2022. Difference between the TFR and mean lifetime fertility intentions.
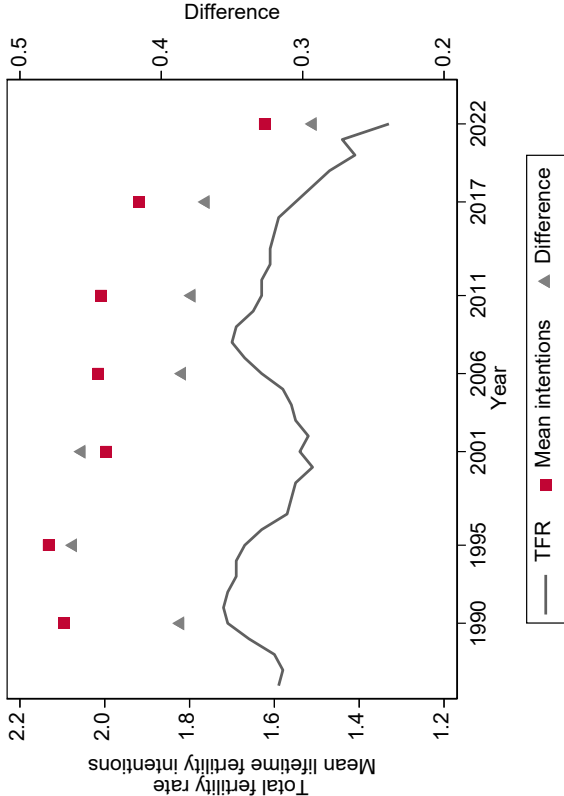

Figure 7 Proportion of the reproductive years spent intending to have a given number of children by parity and survey. Women aged 15 to 49.
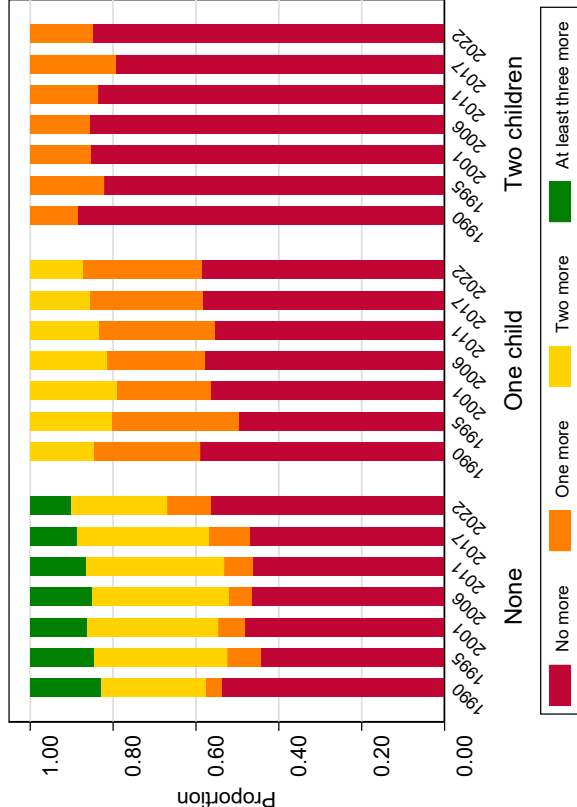

Figure 9. Predicted probability of child-number intentions according to age by parity for selected levels of education. Childless women who have secondary or university education. Women aged 15 to 49. Multinomial logistic regression. Weighted estimation.