The "Fertility Gap" and Female Domestic Burden

BACKGROUND AND MOTIVATION:

Across nearly all high-income settings, the total fertility rate has dropped below the replacement level of 2.1, and in many below the sustainable level of 1.8. Mean ideal family size, however, has become increasingly more stable around 2 in the same settings over the last 50 years (Sobotka & Beaujouan, 2014). This suggests that there are impediments to women achieving the childbearing goals, resulting in a "fertility gap" between ideal and actual family size. One explanation for this could be female domestic burden, when women are expected to perform both paid and unpaid labour responsibilities without additional support, making continued childbearing untenable. This idea supported both from sociological (Gender Revolution Theory) and evolutionary (Cooperative Breeding Hypothesis) theoretical frameworks, which we combine for a more holistic approach to this study.

From a previous systematic review of the literature by the authors (Raybould & Sear, under review) on division of household labour and fertility in high-income settings, the following shortcomings were identified:

1) Analysis of the "fertility gap" is methodologically weak in this literature. Most explore this through studying 'realisation of intentions' for children, following individuals over a short period of time to see whether they fulfil their intentions. However, this was often poorly executed (e.g. seeing whether couples achieved their ideal family size over 5 years without accounting for censoring), illustrating a poor understanding of the difference between intentions, desires and expectations and how to conceptualise them. Furthermore, measuring the "gap" in this way does not include those who at one point may have had an ideal family size of 2, but since revised their intentions downwards after the birth of the first child, a time when domestic burden is known to increase.
2) The USA was an understudied region for this literature. The USA does not have a big "fertility gap" relative to some European countries, but it still exists.

This paper seeks to address these shortcomings.

DATA AND METHODS:

To do so, we use the National Longitudinal Survey of Youth (NLSY), which follows a cohort aged 18-24 in 1979, with waves every 2 years to investigate:

1) The probability of realising intentions for a second child

We use multinomial logistic regressions to see whether our independent variables are associated with the probability of fulfilling an intention for a second child 1) within the time specified as ideal by the respondent, 2) later than the time frame specified as ideal by the respondent or 3) never. The decision to focus on fulfilling intentions for a second child is influenced by previous findings that the "fertility gap" is largely a product of low progression from first birth (Kohler et al., 2002).

2) Whether ideals for 2 children become sacrificed after the birth of the first child, as this is a time when domestic burden typically increases and becomes more gendered. We use a piecewise linear growth curve model to see how ideal family size changes over time for women with at least one child, beginning from 3 years before the birth of the first child to five years after. In order to capture the changes to ideal family size that might occur around the time of first birth in response to changing lifestyle, piecewise components were added at year before birth, year of birth and at 1,2,3 and 4 years after birth. The model does not extend beyond these years, as over time the depreciation of ideal family size is likely to be driven by different factors such as reaching the end of the reproductive life span.

For both models our independent variables are satisfaction with the division of labour, measured by frequency of arguments about household chores and children and gender role attitudes. Control variables include age, partnership status, age of first child at the time of intention, highest educational attainment and employment status.

FINDINGS:

Model 1: realising intentions for a second child

Among our sample of women who stated an expectation for a second child (585), the majority expected to have that child within the next 2 years (86.67%). 41.54% fulfilled this expectation (group 1), 20.17% had their second child but later than expected (group 2), and 38.29% never fulfilled their intention (group 3). In the multinomial regression (table 1), using group one as the baseline category, we found that membership to group 2 to only be predicted by age. Membership to group 3, however, was predicted by lack of spouse, increasing age, lower educational attainment and younger age of first child at time of intention. Our predictive variables were not significant for either group.

TABLE 1: Multinomial Regression model: Relative risk ratios of fulfilling an intention for a second child within the expected time span, outside the expected time span or never

	Category 1: fulfilled intention within time span expected	**Category 2: fulfilled intention but later than expected[1]**	**Category 3: never fulfilled intention[2]**
Frequency of arguments about housework and children	Reference category	1.258137	1.066341
Gender Role attitude scale		0.9504904	0.9768462
Relationship status (ref: no current spouse or partner) Spouse Partner		 0.1608615 0.2573579	 0.1640397* 0.5121526
Age		0.8626845**	1.174648***
Educational attainment scale		0.9559616	0.9020005*
Year first child was born		0.9937502	0.9476058*
Employment Status (ref: Working) Not working Keeping the home Other		 0.00000134 2.311433 1.195729	 3.269147 3.512464 0.09651414
Constant		1.11	2.22*

[1] Relative risk ratios for the comparison of those who fulfilled their intention for a second child, but later than expected, with those who fulfilled their intention for a second child within the expected time span

[2] Relative risk ratios for the comparison of those who never fulfilled their intention for a second child, with those who fulfilled their intention for a second child within the expected time span

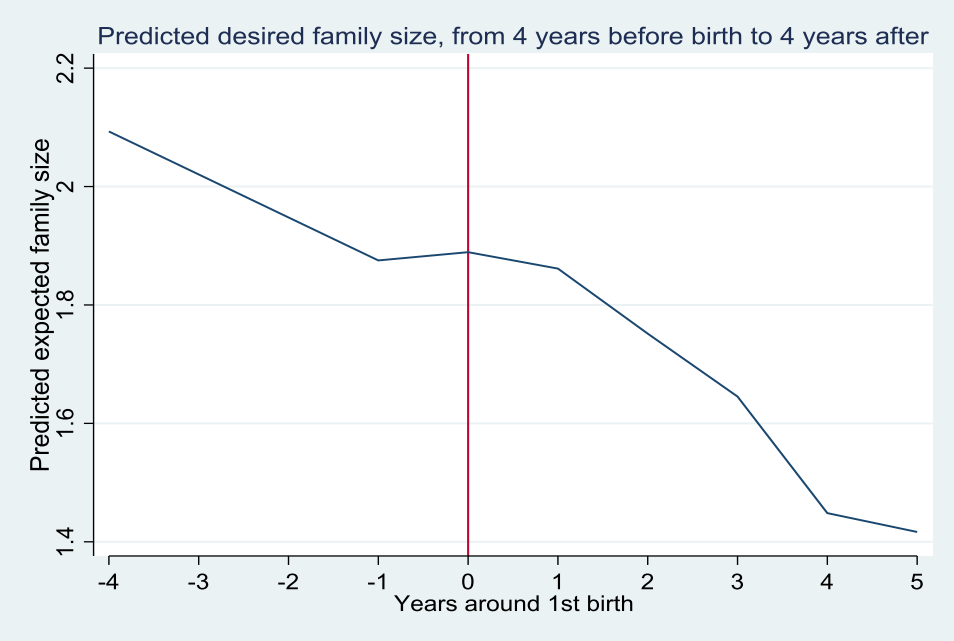
Number of observations: 585

*** p<0.005 ** p<0.01 *p<0.05

Model 2: decreasing desire for a second child

Graph 1 shows 'ideal family size' as predicted by the piecewise linear growth curve model. As we hypothesised, there is a decline in ideal family size, beginning at 2.1 four years prior to first birth, and ending at 1.4 four years after the first birth. Continuing analysis will test whether the decrease in desired family size is predicted by frequency of arguments, gender role attitudes, and the control variables.

GRAPH 1: Predicted desired family size from piecewise linear growth model among women with 1 child, from 4 years before birth to 5 years after.



Preliminary Conclusions and Further Steps:

So far we have found little evidence for a relationship between our variables and fulfilment of intentions for a second child. As hypothesised, however, we found a decrease in desired family size both in the years before and after the birth of the first child. A lack of support for our hypothesis in model 1 is possibly because of inadequate measures of female burden in the NLSY. Housework and childcare hours were only collected for one year of survey, so proxies such as arguing over housework had to be used instead.

Further steps in this analysis will therefore include the imputation of time-use data from the American Time Use Survey using the method developed by Borra et al. (2013) via Propensity Score Matching. The method produces a synthetic data set combining the characteristics of the NLSY panel with the time use data. If the imputation proves to be robust, we will then be able to add a more accurate measure of female domestic burden as an explanatory variable into both models, which is currently lacking from the NLSY survey.

References

Borra, C., Sevilla, A., Gershuny, J. (2013) Calibrating Time-Use Estimates for the British Household Panel Survey *Social Indicators Research* 114, 1211-1224

Kohler, H.P., Billari, F.C., Ortega, J.A. (2002) The Emergence of Lowest-Low Fertility in Europe During the 1990s *Population and Development Review* 28(4), 641-680

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