

Low fertility in Scotland. Is there a scope for policy interventions?

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Introduction

Scotland's population is ageing—a success story of longer, healthier lives, but also a result of couples having fewer children. In 2024, Scotland recorded its lowest number of live births since records began in 1855, with fertility levels (TFR=1.25) well below the rest of the UK, and now comparable to the lowest in Europe.

Despite this, research on why fertility differs between the UK's constituent countries remains limited, though recent studies have begun to address the issue. Berrington et al. (2023) attribute much of the gap to lower childbearing rates among women in their thirties and forties, while Kulu et al. (2025) point to fewer second and third births in Scotland compared with England. Interestingly, however, these studies also observed that there are no differences in the intentions to become parents between Scotland and the rest of UK, and only minor differences in the desire for larger families. Still, these are quite trivial, and not sufficient to explain the lower fertility observed in Scotland over the last four decades. Thus, women in Scotland seem to postpone their reproductive plans; but, whatever the reason, they are then less able to realize them.

The Scottish Government has set out a Population Strategy to address low fertility through sustained and cohesive actions across a wide range of policy areas – such as childcare, housing and income support (Scottish Government, 2021). Although the strategy recognizes that it is not for governments to make intrusive value judgements on issues relating to having children, it also acknowledges their role in addressing the barriers that may prevent individuals and couples from having a family. The implicit assumption is that if conditions were more favourable, people in Scotland would have more children. Therefore, scientific research around the obstacles people face, and which may have shaped the fall in Scotland's fertility, is extremely valuable. Even more crucial – we argue – is rigorous and up-to-date evidence that contributes to evaluating “ex-ante” the potential impact on fertility of current policy measures, and of their future reforms.

Aim of the work

This project aims to investigate whether fertility in Scotland could respond positively to ‘family-friendly’ policies, conceived as measures to respond to (prospective) parents’ needs for time, money and services – from childbirth through to the childrearing years (Luci-Greulich & Thevenon, 2013). In principle, there are strong reasons to expect that supportive family policies would have an impact on fertility, given that they are intended to offset some of the direct and indirect costs of children (Thevenon & Gauthier, 2011). However, empirical evidence is still relatively limited, often restricted to specific contexts (i.e., Nordic countries), and mostly inconclusive regarding the actual magnitude of the impact, or its duration. Partly, this relates to the lack of suitable individual-level, longitudinal data for demographic inquiries on the relationship between public policies and childbearing (Neyer & Andersson, 2008). Another critique is that research designs are inherently flawed as most studies attempt to assess the impact of single policy measures, as if it were possible to separate it from that of the broader policy packages they belong to (Gauthier, 2008). Lastly, policies might act more subtly by shaping individuals’ perceptions of which behaviours are expected, or at least sustained; and for policies to be effective, there must be willingness to conform to these behaviours (Neyer & Andersson 2008).

In recent years, the study of how individuals perceive and respond to changes in family policies and broader structural constraints has gained considerable traction within fertility research. Building on the growing use of factorial survey and vignette experiments, recent studies have begun to examine how policy mixes and contextual factors shape perceived fertility intentions and family formation behaviour. For instance, new evidence from Italy (Guetto, Alderotti & Vignoli, 2025) employs Factorial Survey Experiments to show that comprehensive policy packages—combining childcare availability, parental leave, and financial benefits—are perceived as most effective in fostering fertility. Similar approaches have been applied in other contexts, such as Hong Kong and Singapore (e.g., Lui & Cheung, 2021; Wang et al., 2024), highlighting the role of work–family reconciliation policies and flexible working arrangements in influencing fertility preferences.

This study expands the evidence base on the impact of family policies by focusing on Scotland, a country with sustainably low fertility levels but rarely the focus of scientific investigation. The explicit commitment of the Scottish Government to a cohesive and multifaceted family-friendly policy package, makes it an even more meaningful case-study, as findings have the potential to inform and support future policy efforts.

By using experimental settings (i.e., “what would happen if...”) to prompt research participants to express likely fertility responses to hypothetical policy scenarios, the study seeks answers to the following questions:

Research Question 1) Do fertility intentions respond to policy changes? And if so, are there specific measures likely to have a stronger impact? Or are fertility intentions more receptive to the combined effect of composite policy packages?

Research Question 2) How might family policies impact differently on fertility intentions across population sub-groups (e.g., by gender, parity or socio-economic status)?

Data and methods

This study employs Factorial Survey Experiments (Auspurg & Hinz, 2014), a research method used to elicit respondents’ evaluations of hypothetical situations (‘vignettes’). By systematically varying the description of the vignette, researchers prompt respondents to provide their answers on a particular aspect of interest under different scenarios. It is thus possible to determine the influence of different hypothetical situations on respondents’ stated attitudes, decisions, or choices. In this study, the situations to be evaluated correspond to combinations of family policies, while respondents’ answers relate to the fertility intentions of a couple who has already one child. In other words, respondents are asked how likely the fictitious couple is to have their second child – should existing family policies be as described in the vignette.

The definition of the experimental research protocol was preceded by a thorough policy review and a consultation with both academics and policy stakeholders. This served two purposes: first, to identify the policy areas that are more likely to influence fertility, and the mechanisms through which they are thought to operate; second, to gather up-to-date information on the set of family policy measures currently in place within the Scottish context, and on those that might be envisaged for the future (i.e., policies that are currently debated within the Scottish/UK context and policies implemented with some success in other contexts). This process laid the ground for the definition of the baseline and alternative vignettes for the Factorial Survey Experiments.

Parental leave (and pay), childcare provision and cash transfers were identified as the most relevant policy dimensions. For each policy dimension, the Baseline scenario reflects the current provision across the UK, irrespective of individual characteristics. The Enhanced scenario corresponds to the current (or pledged) provision for some groups, often depending on being resident in Scotland, or on specific individual characteristics, or a combination of both (e.g. low-income families in Scotland). The Aspirational scenario represents what is perceived as the ideal support and largely coincides with what is being advocated for by third sector organizations.

The final questionnaire consists of two sections. The first and core section (Figure 1) consists of the ‘vignettes’, i.e., a description of the fictitious couple’s characteristics and a combination of family policy measures; each vignette included a question asking respondents to predict the fictitious couple’s fertility intentions in the following three years (under the depicted scenario). The second section includes questions about respondents’ socio-demographic characteristics.

Figure 1: Vignette. The text in blue represents the different levels of each dimension.

Fiona (30 yrs old) and Angus (33 yrs old) are a couple with a 2-year-old child, and they think that they may have another child. [They both have a permanent job/Angus has a permanent job, Fiona doesn’t work]. [They own their home/They rent their home]. Both Fiona and Angus’ parents live 1-hour away.

Considering the following context of family policies:

- **Parental leave:**
 - 12 months of maternity leave, plus 2 weeks of paternity leave. Maternity pay is 90% of earnings for first 6 weeks, and £750 a month for 8 months; the remaining time is unpaid.
 - 12 months of maternity leave, plus 2 weeks of paternity leave. Maternity pay is 90% of earnings for first 6 months, and £750 a month for the other 3 months; the remaining time is unpaid.
 - Up to 18 months parental leave. Mothers have a statutory right to 6 months, fathers to 1 month. The pay is at least the real living wage of £1700 per month. Then 6 months use-it-or-lose-it for each parent, paid at £1250 per month.
- **Childcare services:**
 - 30 hours per week of funded childcare, during term-time, for all children from the age of 3.
 - 30 hours per week of funded childcare, during term-time, for all children from the age of 1.
 - 50 hours per week of funded childcare, all year round, for all children aged 6 months and above.

- **Cash transfers:**
 - £25 a week per child, until the age of 16.
 - £25 a week per child until the age of 16, or £50 per week if child is from a low-income family.
 - £50 a week per child, until the age of 16.

How likely is it that Fiona and Angus will have another child together in the next 3 years?

a)

0	1	2	3	4	5	6	7	8	9	10
										Very likely
										Highly unlikely

The total number of different vignettes is given by all possible combinations of levels across the 5 dimensions: couple’s employment and housing, parental leave, childcare and cash transfer. This yields a total of $2^2 \times 3^3 = 108$ vignettes.

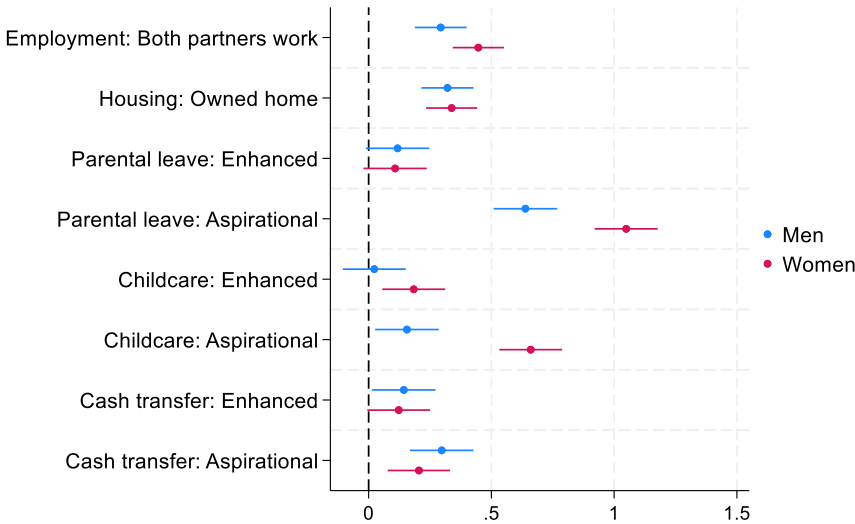
The collection of primary data was conducted by Cint, a specialised agency. The sample consisted of 1700 respondents of reproductive age (i.e., 20-44 years old) and in a romantic relationship, representative by gender and age-group. While representativeness by other characteristics (such as education and urban/rural residence) could not be granted, post-stratification weights are applied to adjust for small deviations from official statistics. Respondents were each asked to evaluate 6 vignettes, leading to a total of 10,200 observations.

Given the nature of the outcome (fertility intentions measured on a 0-10 scale), the analysis use use Ordinary Least Squares (OLS) regression models, including the vignette dimensions as explanatory variables. A ‘within-approach’ exploits the full research design by using all vignettes, thus maximizing sample sizes, and allowing for more complex modelling designs (e.g., inclusion of interaction terms). Random-effect OLS models are employed to account for the nested nature (multiple observations per respondent) of the data.

Results

A first specification of the model includes main effects only, to assess the effect of each policy dimension separately, thus providing answers to the first part of Research Question 1.

Figure 1 Coefficient estimates. Random effects OLS Regression. Main effects.



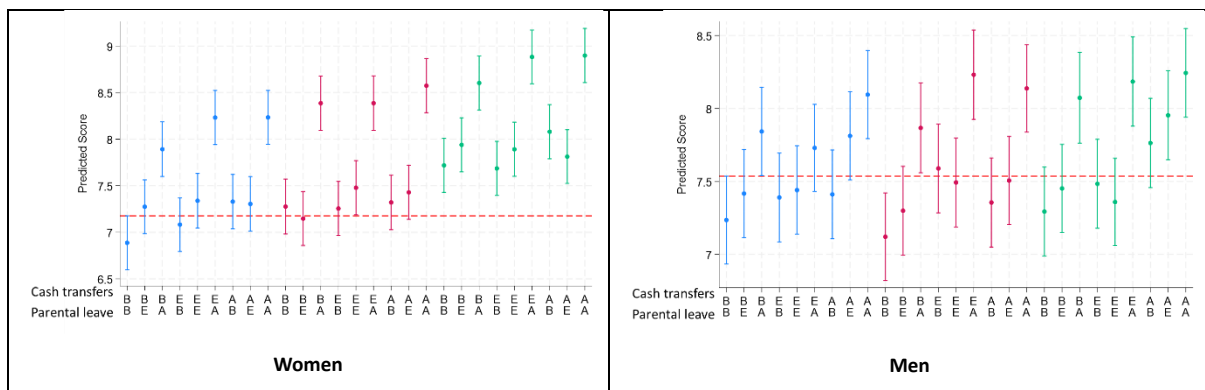
Source: Authors’ own elaboration of FSE data.

Results from the estimation of the random-effect OLS regression model indicate in the Scottish context both the characteristics of the fictitious couple and the different policy scenarios matters for realizing the intention to have a second child.

The fictitious couple is perceived as more likely to realize their fertility intentions if both partners work, and if they own their home. Moreover, the fertility behaviour of the fictitious couple also responds to changes in policy provision compared to the Baseline scenario. The first policy dimension relates to parental leave and pay. Compared to the UK statutory provision, the enhanced provision currently provided by some employers has only a marginally significant positive effect on fertility; by contrast, the aspirational changes advocated by third sector organizations appear as the most powerful lever to enable fertility plans. The provision of a parental leave lasting up to 18 months for parents, with a use-it-or-lose-it component of 6 months for each parents, paid at substantially higher rates than currently, is associated with a much greater effect (0.6 for men, and 1.1 for women), roughly double in size compared to the effects of the couple’s employment or housing. A similarly strong effect is also observed in relation to the Aspirational childcare scenario, particularly for women: 50 hours per week of funded childcare since the child is aged 6 months corresponds to a 0.6 increase in the couple’s likelihood to have their second child. Increases in child payments compared to the baseline UK value, both limited to low-income families or extended to all, also seem to have a positive, albeit more modest, effect on the realization of fertility intentions.

To evaluate the effect of composite family packages, a further specification of the model included a multi-way interaction term of all the policy measures being evaluated, although results suggest the effect of additive rather than multiplicative effects.

Figure 2: Coefficient estimates. Random effects OLS Regression. Interaction effects: childcare by cash transfers by parental leave.



Results show overall that female respondents anticipate stronger effects of policy changes compared to male respondents. Future refinement of the analyses will address Research Question 2 on how the effects of family policies might vary according to other respondents’ characteristics, such as socio-economic status, parity or the fertility intentions gap.

Concluding remarks

The study advances understanding of the relationship between family policies and fertility by adopting a novel methodological approach for an ex-ante evaluation of the effect of a composite package of family policies. While the use of experiments is not new in the social sciences, only very recently it has been applied to demographic research and to the study of fertility (e.g. Guetto et al. 2025; Lui & Cheung 2021; Wang & Dong, 2024).

Moreover, insights from the study help determine whether the interventions set out by the Scottish Government to eliminate barriers to family formation point in the right direction, or whether the focus should be placed elsewhere. Family policy is a cross-cutting issue spanning several domains, some of which fall within devolved and other within reserved policy areas of the Scottish and UK Governments. Findings would thus have the potential to inform policies at the wider national level, which is particularly timely since declining fertility is becoming a more pressing issue also South of the border.

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