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Income, Contract Uncertainty, and Fertility: Experimental Evidence from Czechia

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Introduction and Research Question

Many developed countries, including Czechia, have experienced a decline in fertility, in part linked to increasing economic uncertainty (Vignoli et al., 2020), the unavailability of housing (Florida et al., 2021) and childcare (Bergsvik et al., 2021), and the rising income prerequisites of parenthood (D. van Wijk & Billari, 2024). While most studies focus on employment uncertainty, recent research emphasises increasing income prerequisites of parenthood. Compared to previous studies, we consider a variety of economic conditions simultaneously to see how these affect people's judgements of parental readiness. We use data from a factorial survey experiment conducted in Czechia in 2024. Based on the experimental design, we investigate to what extent low income, employment instability, unavailability of childcare, and different housing tenures function as barriers to fertility.

Context and Main Hypothesis

The link between fertility and income has been strengthening over the past two decades (D. van Wijk & Billari, 2024), but the mechanisms underlying this link remain unexplored. We expect that income will have the greatest impact on people's perceptions of parental readiness. We investigate whether higher incomes "compensate" for the losses generated by temporary contracts through an interaction between vignette incomes and other components, as research suggests that the effect of uncertainty comes from lower incomes associated with it (D. C. van Wijk et al., 2021). We also examine the impact of housing, as Czechs have a strong preference for homeownership (Lux et al., 2021). Renting could be perceived as a barrier to fertility. Conversely, we expect that if the main concerns are cost, then renting and mortgaging will be indistinguishable. Finally, economic uncertainty and income are associated differently by gender (Fahlén & Oláh, 2018), leading us to test the interaction between vignette gender and other components.

Data and Method

The vignette experiment was conducted in 2024 in Czechia among men and women aged 18-49 drawn from an online internet panel. Respondents were presented with fictional scenarios depicting heterosexual co-residential couples with varying partnership arrangements, housing situations, employment stability, access to public nurseries, and their wages. Each vignette has a primary partner, whose gender, job and wage are described, while the other is assumed to be average. This design enabled us to

investigate the effect of each component, net of others, on respondents' perceptions of parental readiness and likelihood. Respondents were then asked to rate how ready the couple are to become parents and how likely they are to become parents in the next 3 years on scales ranging from completely unprepared/very unlikely (0) to completely prepared/very likely (10).

A total of 2,990 respondents rated 6 randomly drawn vignettes, yielding a panel dataset of 17,940 observations. The estimates of interest were obtained from linear mixed-effect models with respondent random intercepts to control for heterogeneity and are comparable to the Average Marginal Component Effect (AMCE), known in conjoint experiments (Hainmueller et al., 2014). We also tested for the presence of interactions between vignette income and other components, as well as between vignette gender and other components using nested model comparisons. Models were estimated in R.

Figure 1: Vignettes

<p><i>[Name_1]</i> and <i>[name_2]</i> have lived together for some time in a medium-sized Czech Town. <i>[name_1]</i> and <i>[name]</i> are <i>[relationship status]</i>. They don't have children and live in a newer housing estate in a 70m² flat, which <i>[housing tenure]</i>. It <i>[has/hasn't]</i> been hard in recent years to find a whole day spot for children in local municipal nurseries. <i>[name1]</i> and <i>[name]</i> finished their education a couple of years ago and have been employed since then. Both are 30 years old. <i>[name_1]</i> has a <i>[employment stability]</i> and earns <i>[wage]</i> before tax. Their partner has an average wage.</p>
<p style="text-align: center;">Dimensions</p> <ol style="list-style-type: none"> 1. Sex of name_1: man/woman (chosen sex determines choice of names) 2. Relationship status: are married/aren't married, and currently aren't planning to get married 3. Housing tenure: inherited flat from grandmother/mortgage a flat/rent a flat 4. Availability of municipal nursery: was/wasn't 5. Employment stability: fixed-term contract for 1 more year/permanent contract 6. Pre-tax wage: 19,500 CZK/39,000 CZK /58,500 CZK Rounded values of 0.5/1.0/1.5 times the median monthly pre-tax wage 2024q2 (Czech Statistical Office, 2024).
<p style="text-align: center;">How ready are <i>[name1]</i> and <i>[name]</i> to become parents? 0 [Completely unprepared] – 10 [Completely prepared]? Don't know</p> <p style="text-align: center;">How likely is it, in your opinion, that <i>[name1]</i> and <i>[name]</i> will become parents in the next 3 years? 0 [Very unlikely] – 10 [very likely]? Don't know</p>

Preliminary Results and Conclusions

Low wages (0.5 median) are seen as the greatest obstacle to childbearing. Nevertheless, housing costs, unavailability of childcare, and temporary employment are also seen as

non-negligible barriers (Figure 2). Renting and mortgaging aren't meaningfully different, suggesting that housing cost, rather than an ownership norm, affects fertility (Figure 2).

Vignette gender and income level interact with the effects of other components (Table 1). Women's low incomes are seen as less of a barrier than men's (Figure 3). Examining the interaction with income, aside from the effect of gender that overlaps with the previous model, we observe that the negative impact of temporary employment intensifies among high-income vignettes, contrary to our expectations (Figure 3).

Figure 2: Effect of vignette components on perceived parental readiness and likelihood of having a child in the next 3 years

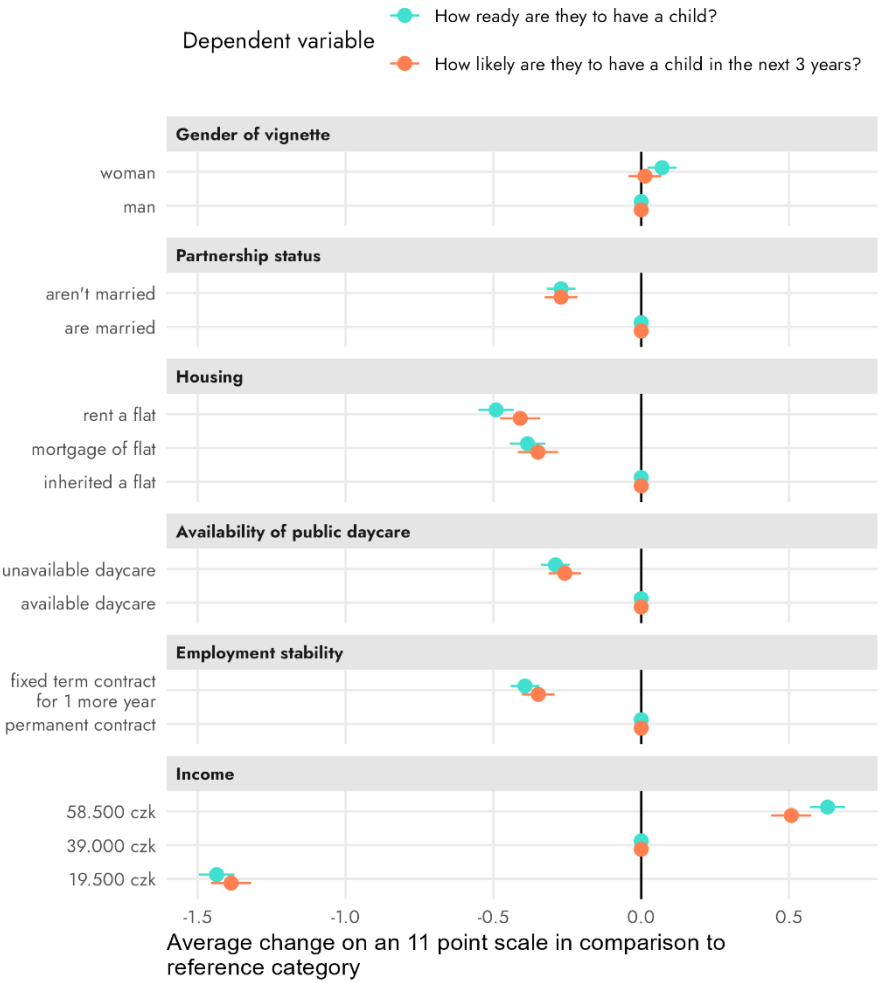
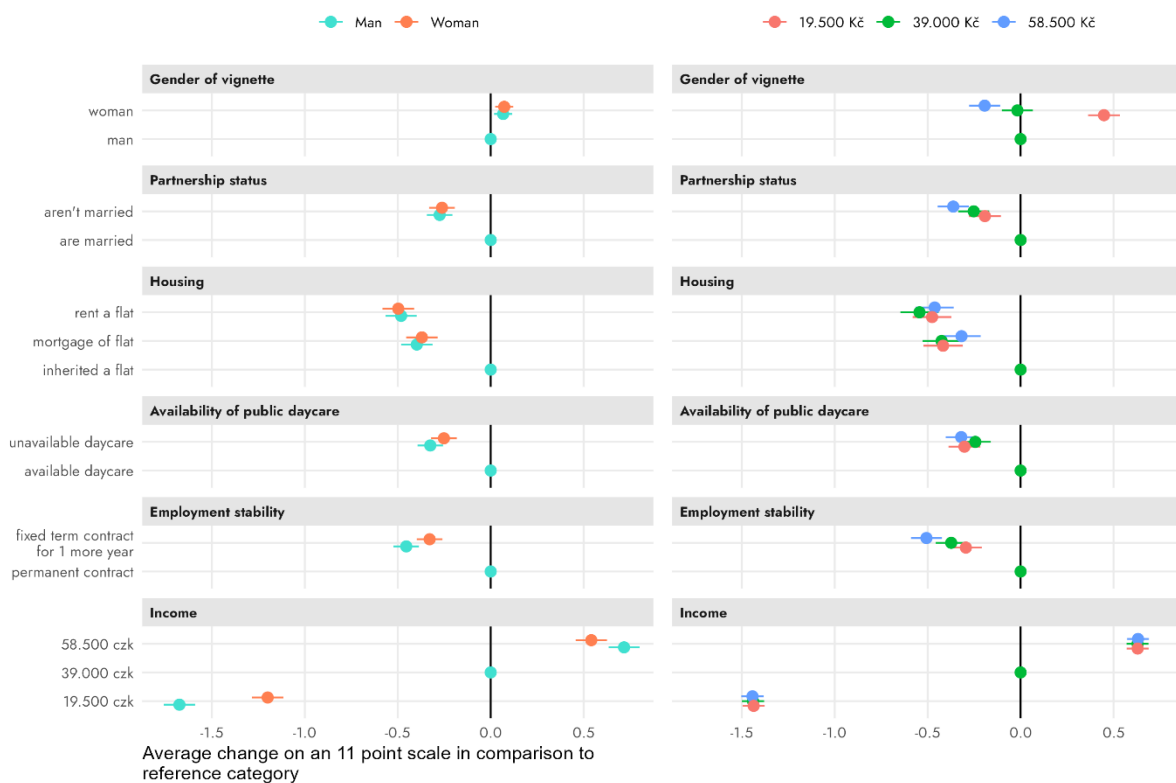


Table 1: Hypothesis tests of interaction effects using F-test and degrees of freedom based on Kenward-Roger approximation (q: How ready are they to have a child?)

Model	Tested interaction	F	ndf	ddf	p
Interaction vig. gender	Vig. Gender x components	18.48	7	14377.98	0.001
Interaction vig. income	Vig. Income x components	11.04	17	14190.03	0.001

Figure 3: Effects of vignette components in models with interactions (left with vignette gender, right with vignette income) (q: How ready are they to have a child?)



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