

# “Young Adults’ Fertility Intentions and Self-reported Rationales in Low-Fertility Finland”

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## Short abstract

Total fertility rates in Nordic Countries have sharply declined since 2010, making understanding this trend crucial. While many studies rely on register data, our study focused on young Finns' self-reported fertility intentions. We analyzed survey responses from 3,838 individuals aged 20–29 in 2021–2022, who were asked to evaluate how 38 rationales influenced their intention to postpone childbearing by 5 years, 6–10 years, or beyond, remain childless, or express uncertainty. An exploratory factor analysis identified four key rationale factors: personal and relationship concerns, desire for personal freedom, concerns over global issues (e.g., environment) and career-related rationales. A latent profile analysis revealed four groups of individuals with distinct constellations of rationales. The groups differed in their fertility intentions: those facing temporary challenges —such as freedom desire related to personal/relationship issues or career-concerns— tended to delay childbearing, whereas those prioritizing personal freedom in combination with global concerns (e.g., environmental concerns or overpopulation) were more inclined to forgo it entirely.

**Keywords:** Postponement intentions; Childlessness intentions; Intention rationales; Latent profile analysis; Young adults; Freedom desire.

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## **Introduction and aim of the study**

It was in the early 2000s that Kohler and colleagues defined countries with a total fertility rate (TFR) of 1.3 or less as “lowest-low fertility” countries. At the time, the TFR was lowest in Southern, Central, and Eastern Europe, whereas it was closer to the replacement level of 2.1 in Western and Northern European countries. Since 2010, the fertility rates in the Nordic countries have sharply declined, with Finland experiencing a 33.1% drop, reaching 1.25 in 2024 (Statistics Finland 2025). Fertility projections suggest that the 1980s cohort is likely to experience a decline in the completed fertility (Hellstrand et al. 2021). Finland is the country going through the steepest decrease in fertility, not only among non-partnered individuals but also within couples (Hellstrand et al. 2022).

The factors underlying the decline in fertility in Nordic countries are still under scientific scrutiny. Firstly, it is still unclear whether these changes in fertility are due to involuntary childlessness, following a too long first birth postponement, or an increasing desire to remain child-free. Secondly, the study of subjective factors underlying such preferences is still scarce. Therefore, to fully understand these fertility changes, it is important to explore the individuals’ subjectivity, e.g., fertility intentions, which are often studied as significant precursors to behaviors (Ajzen 1991; Miller and Pasta 1995a, 1995b). Researchers often examine respondents' expectations regarding the number of children they plan to have or whether they intend to have a child within a specific timeframe, typically a short-term horizon like three years. However, it is important to also consider varying timeframes of postponement

and to account for individuals who either do not wish to have children or are uncertain about the timing. Further, it is important to examine the rationales individuals provide for their fertility intentions.

In Finland, studies on fertility intentions trying to understand the shifts in fertility have increased in the last decades. These studies reported an increase in the desire for freedom, often connected to the intention of postponing childbearing or remaining childless, which competes with commitments to partnership and family responsibilities (Miettinen and Paajanen 2005; Savelieva et al. 2021, 2023). Employment-related reasons, which are often investigated with fertility outcomes, are found to be associated with intentions to postpone but not forego childbearing (Miettinen and Paajanen 2005). Similarly, there has been a decline in the preferred number of children, compared to the past, driven more by an increase in child-free preferences than by structural conditions (Golovina et al. 2024).

While existing demographic literature focuses on fertility intentions, it has limitations. Many studies examine rationales in isolation, neglecting how the simultaneous co-existence of rationales influences specific groups of individuals to either delay or forgo fertility. Additionally, there is a lack of research on the rationales of recent cohorts at normative childbearing ages, leaving the motivations of today's young adults underexplored (e.g., climate change, cfr. Rotkirch 2020). Furthermore, studies often fail to specify the timeframe for intended postponement or differentiate between postponement intentions, uncertainty, and intentions to remain childless. We contribute to the literature by exploring whether distinct groups of individuals present unique rationales underlying their fertility intentions and how they relate to child-timing intentions across various postponement timeframes, including intentions for childlessness and uncertainty.

## **Data and methods**

We utilized follow-up data from individuals who participated in the RCT evaluating the KiVa anti-bullying program in Finland from 2007 to 2009, when they were in grades 1 to 9, aged 7 to 16 years. Of the 25,738 participants, 24,079 with address information were invited to a survey in 2021-2022. 4. A total of 4,740 young adults took part in this follow-up survey, which included questions for the present study. Respondents were first asked about the timeframe in which they intended to have a child (2, 5, 6–10, over 10 years), with the option to indicate uncertainty or an intention not to have children at all. Furthermore, respondents rated 39 rationales related to their fertility intentions. From the original sample, we subtracted those individuals planning to have a child within two years, as they were not asked about their intention rationales because they were not postponing their fertility plans. We also removed 83 individuals having a missing value on the fertility variable and 58 having more than 50% missing values on the rationales. Most respondents were women (63.8%), childless (90.5%), aged 20–29 (mean 25.6), with a modal birth year of 1995, and had a partner (62%). Those who declared that they did not know or identified themselves with another gender than the ones given in the survey were not considered, as this would have resulted in an impossibility to estimate our final model (77 individuals). Our final sample consists of 3,838 individuals.

Given the many rationales, we first used an exploratory factor analysis (EFA) with a principal factor method and an oblique rotation (geomin) to identify latent factors, i.e., latent dimensions summarizing the original set of variables. The analyses were conducted through Mplus, Version 8.9 (Muthén and Muthén 2017). The EFA was conducted on a randomly selected half of the sample (N=1,927). Missing values were imputed using a full-information maximum likelihood (FIML). A scree plot and parallel analysis suggested that both four and five factors were

possible solutions (Figure A 1). We decided on a four-factor solution, which ensured a better interpretability of the factors.

We, then, performed a confirmatory factor analysis (CFA) on the other half of the sample to verify the goodness-of-fit of the factor structures. Before performing the CFA, we analyzed the factor loadings to verify the presence of cross-loading items, that is, items having a significant loading on two or more items. In the CFA, we kept only those items having a factor loading equal or above 0.5, which identifies practical significance (Hair et al. 2019) and having a difference of 0.3 or more between the two maximum loadings (thus, we deleted 14 items to fulfil the first condition, whereas we kept two items to comply with the second condition).

After some minor adjustments on the residual covariances, based on modification indices, the CFA confirmed the goodness-of-fit of the model (RMSEA=0.06, CFI=0.913, TLI=0.899). From the CFA, we then computed the mean scores, that is, we took the mean of the answers to each respondent's questions referring to each factor. Compared to the factor scores, the mean scores have the advantage of maintaining the scores in the original scale.

After computing the mean scores, we performed a latent profile analysis (LPA) aimed at identifying latent profiles, or groups, of individuals in our sample according to the combination of rationales they endorsed. The analyses were carried out through *mplus.lca* function from the R-package *misty* (Yanagida 2025) to run Mplus statistical package. In this analysis, missing values were also imputed using FIML and the estimation was based on a maximum likelihood with robust standard errors. We selected the number of classes based on statistical criteria: convergence and replicability of the log-likelihood (with robust standard errors); value of the Bayesian Information Criterion (BIC); the size of the classes (at least 5%); classification quality (entropy 0.7 or beyond)

(Turunen et al. 2024). One important qualitative criterion was the interpretability of the profiles, as well as the preference for parsimoniousness (Turunen et al. 2024).

From the LPA, we predicted the profile each individual would be most likely to belong to. The predicted profiles were introduced as the main independent variable of a multinomial logistic regression whose dependent variable was represented by fertility intentions. From this model, we computed the predicted probabilities of intentions. Here, analyses were performed using Stata 19 *mlogit* and *margins* commands (StataCorp 2025). Control variables were gender, age, relationship and parenthood statuses.

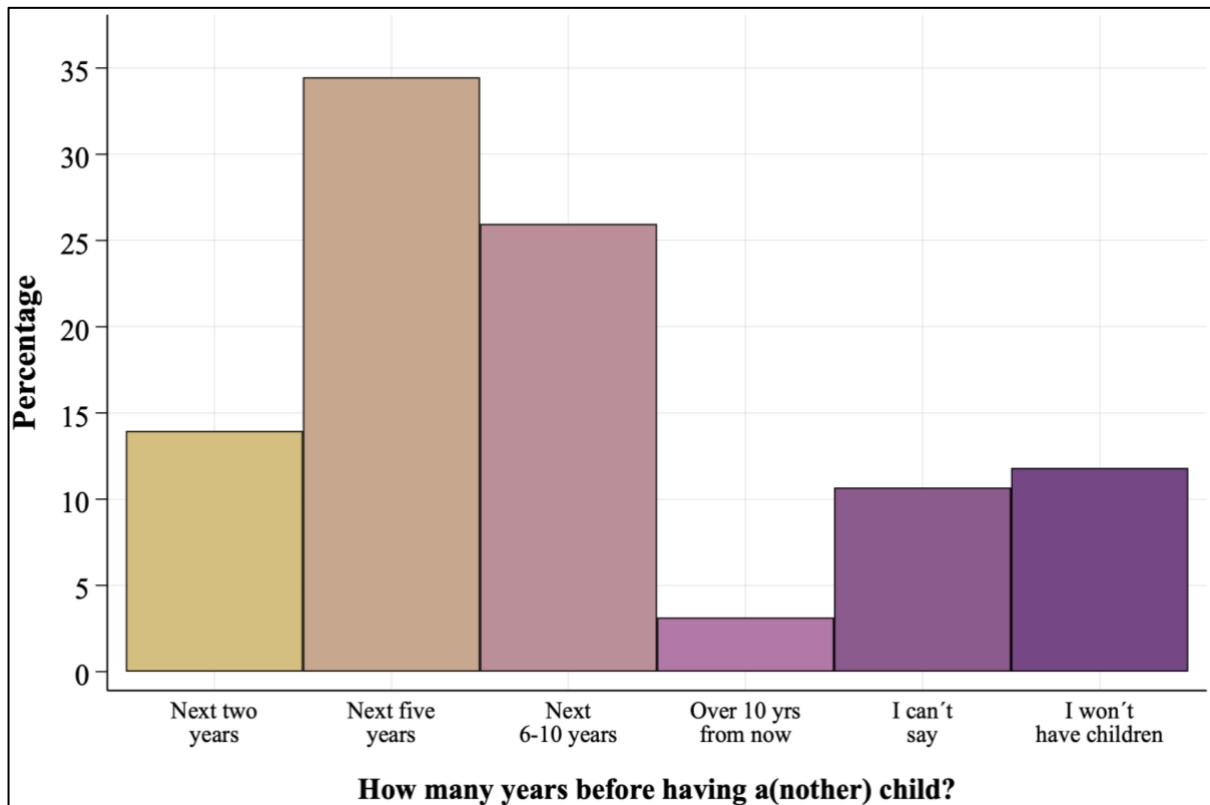
## **Results**

### *Descriptive results*

We start by analyzing the fertility intentions in our sample. From Figure 1, we see that most respondents, 74.4%, intend to have a child by either two, five or 6–10 years. The share of those who intend to have a child over ten years from the time of the interview is instead the lowest, around 3%. This is consistent with the age of the sample, whose median age is 26.

The share of those who do not want to have a child is 10.7% and the one of those who “could not say” was 11.8%. This last option could indeed be open to many interpretations: it can be selected by either people who were uncertain about having a child or about the timeframe by which they wanted to have a child. The cross-tabulation with a question about the lifelong likelihood of having a(nother) biological child suggests that the former interpretation was the most likely. Around 80% of those who answered “I can’t say” declared the following about the likelihood of having a(nother) child in their life: “Absolutely certain that not”, “Pretty certain that not”, “I guess that not”, “I don’t know”.

**Figure 1: Fertility intentions regarding the timeframe before having a(nother) child**



Source: own computations from Kiva RCT data

From descriptive analyses in different sub-samples, each intention is characterized by a similar share of men and women, except for the intentions to have a child within 5 years or to remain childlessness, which are slightly more frequent among women than men (~40 vs.~30). Further, those intending to have a child within 6–10 years or 10+ years were almost exclusively childless and presented the youngest mean ages (23- and 25-years vs ~26). Regarding the relationship status, those intending not to have (other) children or who “cannot say” present a share of individuals in a relationship that is half of the category, confirming that child-free intentions are also present within couples.

### *Results from EFA and LPA*

The EFA signals the presence of four rationale factors (meaning that they are computed from the rationales). Table 1 shows the items that load on each latent factor. The first identified factor is “Global issues”, which considers overpopulation, environmental concerns and homeless childhood. The second factor includes “Personal and Relationship Problems”, e.g., concerns about the suitability of the partner, the personal ability to conceive and fertility preferences. The third factor regards “Career concerns”, e.g., the ability to conciliate family and career. Finally, the fourth factor regards “Desire for freedom”, that is individuals’ unwillingness to tie themselves to children and desire to pursue their own lifestyle.

**Table 1: Rationales affecting each latent factor (factor loadings into parenthesis)**

<b>Global concerns</b>	<b>Personal and relationship problems</b>	<b>Career concerns</b>	<b>Desire for freedom</b>
1. There are already too many people in the world. (0.869) 2. I am concerned about the state of the world (e.g. climate change). (0.825) 3. I think having a biological child is selfish. (0.549) 4. There are already so many homeless children in the world that adoption is a more sensible solution. (0.626)	1. My own mental health problems or the medication can affect pregnancy or parenting. (0.553) 2. I don't have a suitable partner. (0.523) 3. I already have the number of children I want. (0.609) 4. My partner would not be suitable to be a parent. (0.806) 5. My own or my family's financial situation prevents. (0.577) 6. I can't/we can't have (more) own children. (0.713) 7. My partner does not want (yet / no more) children. (0.640) 8. The partner's work situation is uncertain. (0.583) 9. I am afraid I will not get enough support and help from my family or friends. (0.515) 10. My relationship has problems. (0.792)	1. I want to advance in my profession or career. (0.677) 2. I would not now want a break from my work due to family leave. (0.674) 3. Reconciling work and taking care for a small child would be difficult. (0.670)	1. I want to be free to do other things that interest me. (0.637) 2. I don't (anymore) want to tie myself to small children. (0.759) 3. The idea of caring for a child is distressing. (0.617) 4. My life is good without (more) children. (0.643) 5. I have no particular reason to have a child. (0.586) 6. I would have to give up my current lifestyle. (0.670)

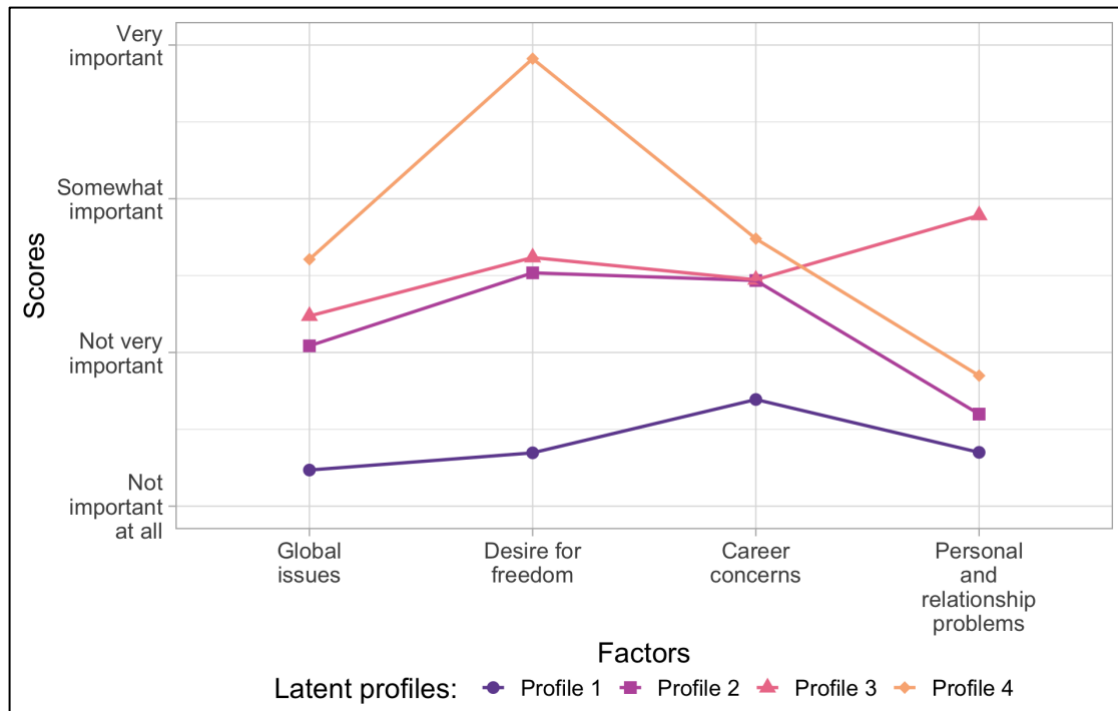


Next, we conducted a LPA to identify latent subgroups within our sample based on their factor mean scores, which represent the average values of the scores of the rationales associated with each factor. The LPA model that resulted the most suitable is the one where within-class variance and covariances are both profile-varying (i.e., unequal variances and covariances across profiles) (Yanagida 2025). Figure 2 shows the profiles obtained through the LPA. The first profile includes those having low scores across all rationale factors, thus indicating the absence of specific concerns to postpone or not having children, among the ones proposed in the Kiva RCT questionnaire (10.2% of the sample). The second profile shows moderate concerns for global issues and personal and relationship problems and relevant concerns about career and desire for freedom (42.8%). The third profile entails individuals having high personal and relationship problems, alongside relevant desire for freedom and career concerns (39.7%). Finally, the fourth profile regards those with a very high desire for freedom and high career-related and global concerns (7.3%).

The first profile is characterized by relatively low values for the rationales and for this reason is renamed as “*Low concerns*”. The second profile is characterized by more pragmatic concerns, that is a desire for freedom combined with concerns towards the ability to develop the own career. This profile is therefore named as “*Career and freedom focused*”. The third profile adds to the concerns of the second profile worries towards personal and relationship problems. For this reason, we call it “*Career, Freedom, and Relationship/Personal focused*”. The fourth profile is characterized by very high desire for freedom – much higher than in the other profiles – and, to a lesser extent, career. It is also characterized by worries about global and societal issues and, for this reason, named as a “*Idealistic Freedom Seekers*”. As shown by Figure A 2–Figure A 5, the individuals in these profiles appear evenly distributed in terms of age (mean age between 25 and 26) and

relationship status (half are in a relationship and half not). However, the “Idealistic Freedom Seekers” tend to present a larger share of women and childless, compared to the other groups.

**Figure 2: Rationale factor latent profiles from the latent profile analysis**

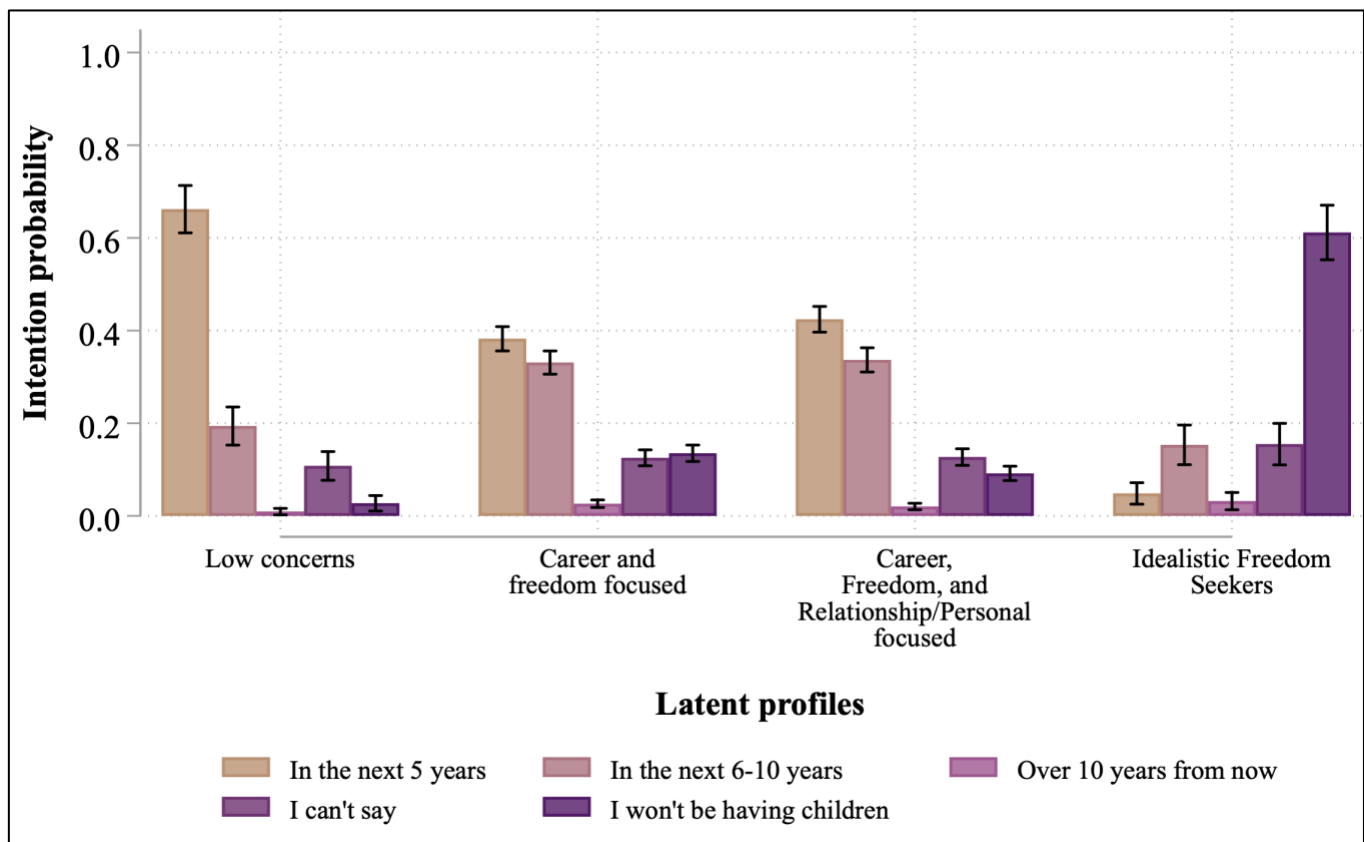


**Source: own computations from Kiva RCT data**

### *Multinomial logistic regression*

The LPA also computed each individual’s most likely membership, which was introduced as the main covariate, along with controls, as the independent variable of a multinomial logistic regression having childbearing intentions as the dependent variable. We then calculated the predicted probabilities of falling into specific intention categories from these estimates (Figure 3). From this model, we can see that those having low concerns are the ones with the highest probability of intending to have a child in the next five years ( $p = 66\%$ ). Yet, a minority in this group intends to have a child within six to ten years ( $p = 19\%$ ). Intentions of remaining childless are, instead, very low ( $p = 2.7\%$ ).

**Figure 3: Predicted probabilities of fertility intentions**



**Source: own computations from Kiva RCT data**

Note: Predicted probabilities from a multinomial logit whose dependent variable is fertility intentions and main independent variable the most likely predicted class, alongside and controls (age, sex, relationship and parenthood status).

The fourth profile, that is the one considering the desire for freedom as very important, is complementary to the one just seen. In this case, the probability of intending to remain childless is the highest ( $p = 61\%$ ). Minor shares in this group are predicted to be uncertain about the childbearing timeframe or intend to have a child in 6–10 years (around 15% probability). Those who are expected to intend to have a child within five years or more than 10 years are the ones with the lowest probability (less than 5%).

Regarding the second and the third profiles, they present moderate freedom and career concerns, but different levels of personal and relationship issues. Among these groups, there is a similar intention probability of having a child within five years, whose difference is not significantly distinct

from zero ( $p = \sim 40\%$ ). What we notice is that, regardless of the level of personal and relationship problems, these groups tend to have a probability of intending to have a child within six to ten years that is by far higher than the other groups ( $p = 33\text{--}34\%$ ).

As part of further analyses, we examined the interaction between profiles and factors, such as relationship status (Figure A 6), age groups (Figure A 7), sex (Figure A 8) and parenthood status (Figure A 9). The results indicate that, for individuals in the "Low Concerns" or "Idealistic Freedom Seekers" profiles, there is no significant difference in their relationship with childbearing intentions, when different sub-groups of the sample are analyzed. The only notable exception is among individuals under the age of 25. For this group, if they fall within the "Low Concerns" profile, the predicted intentions to have a child within the next 5 years are comparable to their intentions to have a child within 6–10 years (for this group, the former are generally higher than the latter).

Regarding the groups "Career and freedom focused" or "Career, Freedom, and Relationship/Personal focused", we see that, for those who are more than 25 or in a relationship, the highest predicted intention to have a child is 5 years (around 0.4–0.5), followed by the intentions to have a child within 6–10 years (around 0.2). The reverse holds when we consider those younger than 25 and those who are not in a relationship, as the predicted intentions to have a child within 6–10 years (around 0.4) is higher than the one to have a child within 5 years (around 0.2). A similar trend is observed for sex, with men being more likely to delay in the long-term and women not. However, the differentials by sex are smaller than the ones witnessed earlier for age and relationship status. Regarding the parenthood status, it is difficult to identify a pattern characterizing those with children, as the confidence intervals are very large. Patterns for the childless, however, coincide with the ones identified in the main analysis (Figure 3).

## Preliminary conclusions

Amid Finland's fertility decline, we explored the childbearing intentions of young Finns, primarily those born between 1995 and 2000, who are currently facing or will soon confront their fertility choices. One of the novelties is that we did not provide a pre-established temporal window when asking about the intention towards childbearing timing. Rather, we examined multiple timeframes to identify short- and long-term postponement and allow reporting of the reluctance to have children. Further, we explored new rationales underlying young adults' intentions, which regard global concerns like environmental issues or overpopulation. The factor analysis performed on rationales identified a factor for global issues, personal and relationship problems, desire for freedom and concerns over the work career. Finally, we did not limit ourselves to identify the existence of relationships between factors and fertility intentions. Instead, we examined whether specific *combinations* of these factors among groups of individuals could lead to different intentions and how widespread these groups are.

In our sample, which consists almost exclusively of childless individuals (above 90%), positive intentions to have a child are still common among young Finnish adults. Still, around 30% of individuals in the sample do not intend to have a child or are uncertain about the childbearing timeframe/having a child, which in turn may lead to continuous delays and involuntary childlessness.

The latent profile analysis revealed distinct mechanisms underlying intentions for postponement versus those for childlessness. Postponement appears to be linked to practical concerns, such as a desire for freedom, potentially driven by challenges in balancing a career and childcare. Consequently, socioeconomic factors seem to underlie medium-term postponement rather than intentions to remain childless. Interestingly, these patterns persist regardless of the

severity of personal or relationship problems. One possible explanation is that such issues are perceived as solvable in the short or medium term. Alternatively, career-related concerns and the desire for freedom may play a more dominant role in shaping the type of intention.

In contrast, the intention to remain childless is high among groups that are concerned about their freedom and career but are also more ideologically driven, having concerns about global problems, such as environmental issues or overpopulation. This suggests that the desire for freedom may be linked to lifestyle choices. It is important to highlight, however, that this group is still limited in size (around 7%) and, therefore, claiming a “retreat from childbearing” appears incorrect.

In sum, our study enhances understanding of young adults' childbearing intentions, emphasizing personal freedom as a temporary or permanent need of Finnish youth. In the next steps, we will rely significantly on linking the Kiva data with the most recent available register data, which is expected to occur in the coming months and will provide numerous opportunities for analysis. Specifically, we will access further details of the respondents' socioeconomic status, e.g., education, activity status, and occupational class, which will be possible. This way, we will shed further light on the selection mechanisms among respondents in the sample. Further, we can understand whether the trends witnessed so far may differ for those with different types of socioeconomic status.

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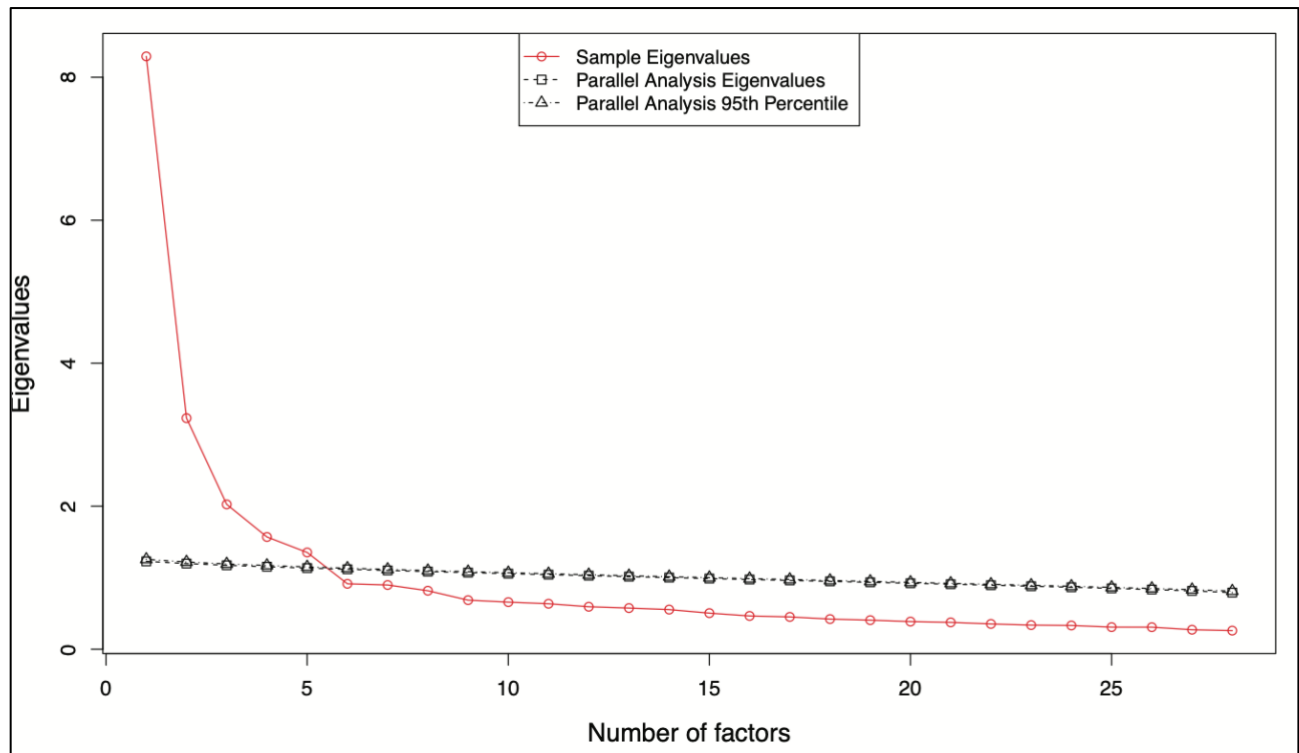
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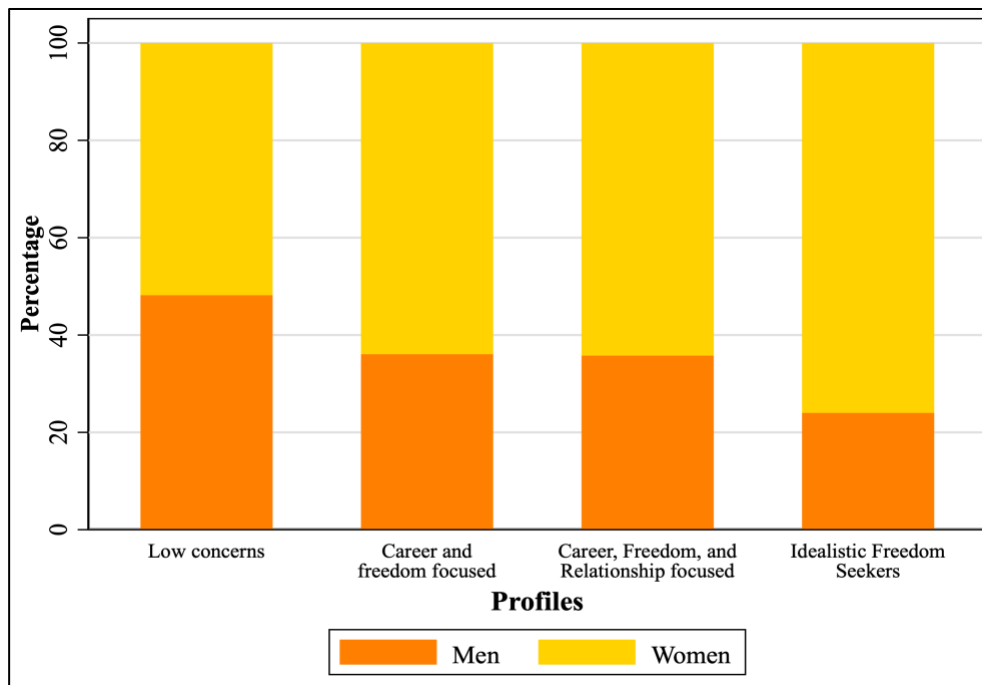
**Figure A 1: Scree plot for the parallel analysis, to determine the number of factors.**



**Source: Own computations from Kiva RCT data**

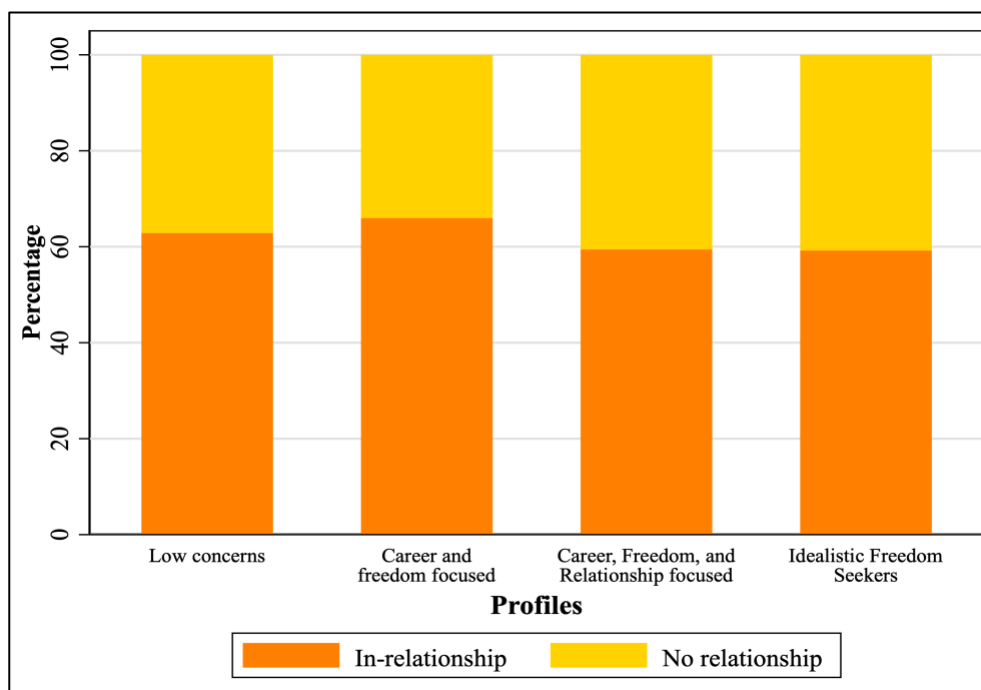
*Note:* The suggested number of factors is above the parallel analysis line. Here, the graph indicates the suitability of 4-5 factors (as the eigenvalue of the fifth is basically overlapping the parallel analysis line).

**Figure A 2: Profiles by sex**



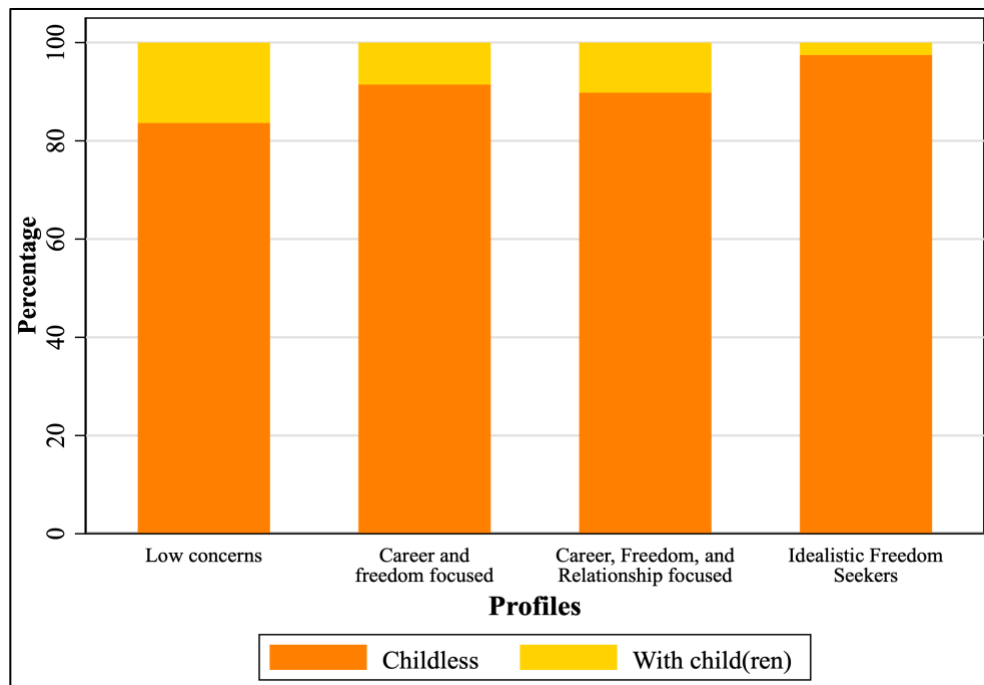
Source: Own computations from Kiva RCT data

**Figure A 3: Profiles by relationship status**



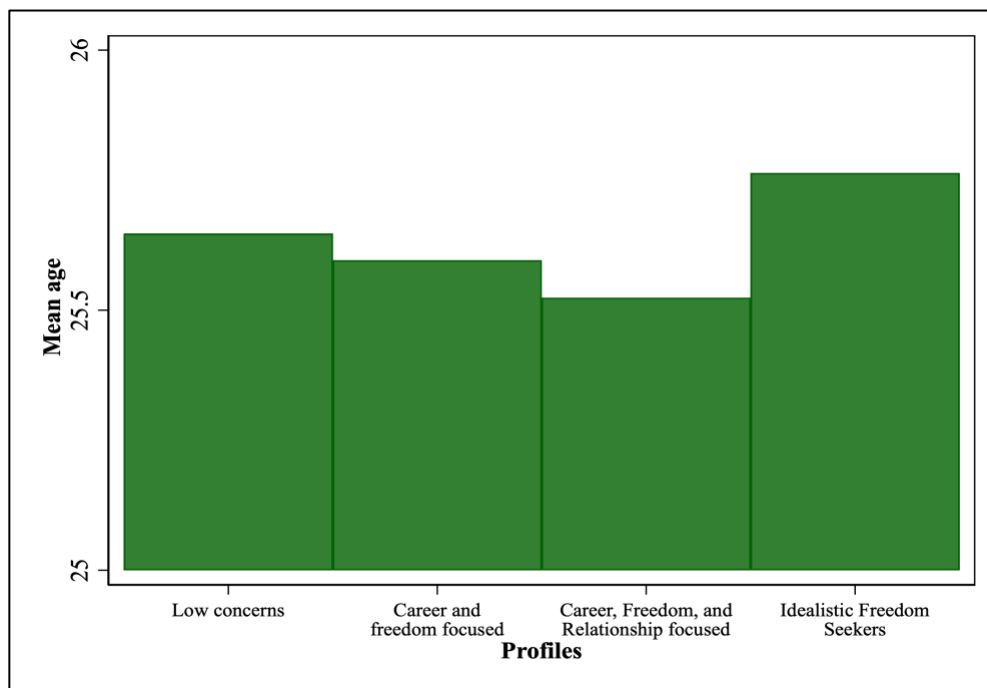
Source: Own computations from Kiva RCT data

**Figure A 4: Profiles by parenthood status**



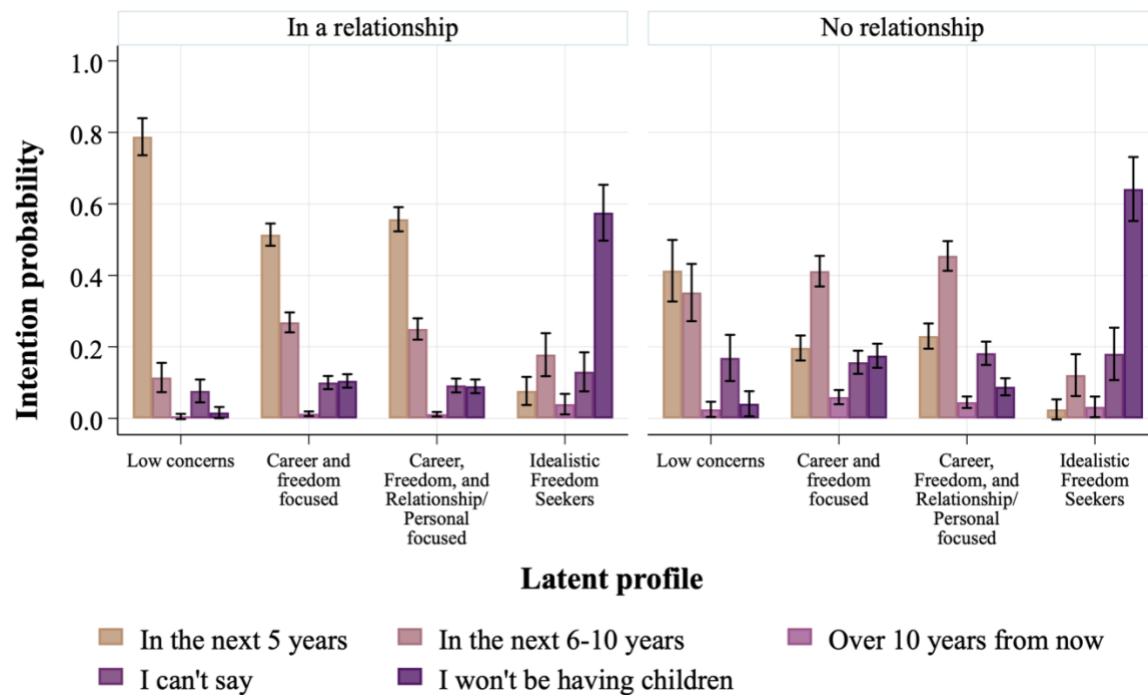
Source: Own computations from Kiva RCT data

**Figure A 5: Mean age by profile**



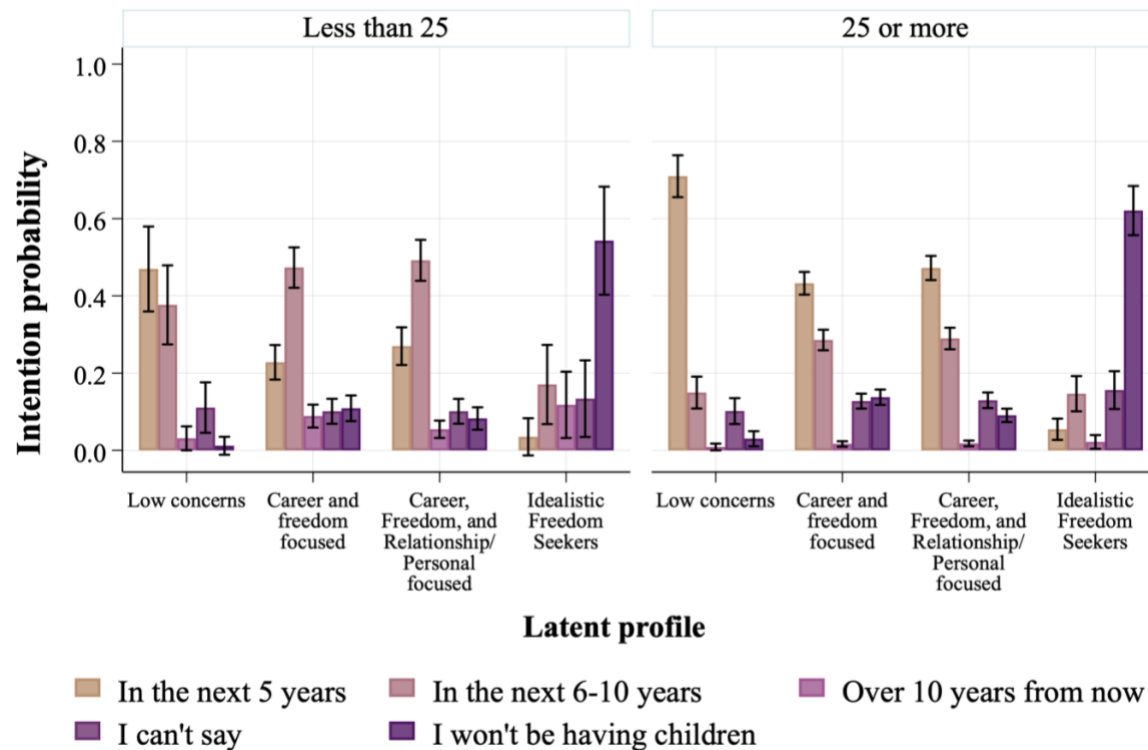
Source: Own computations from Kiva RCT data

Figure A 6: Predicted probabilities of fertility intentions, by relationship status



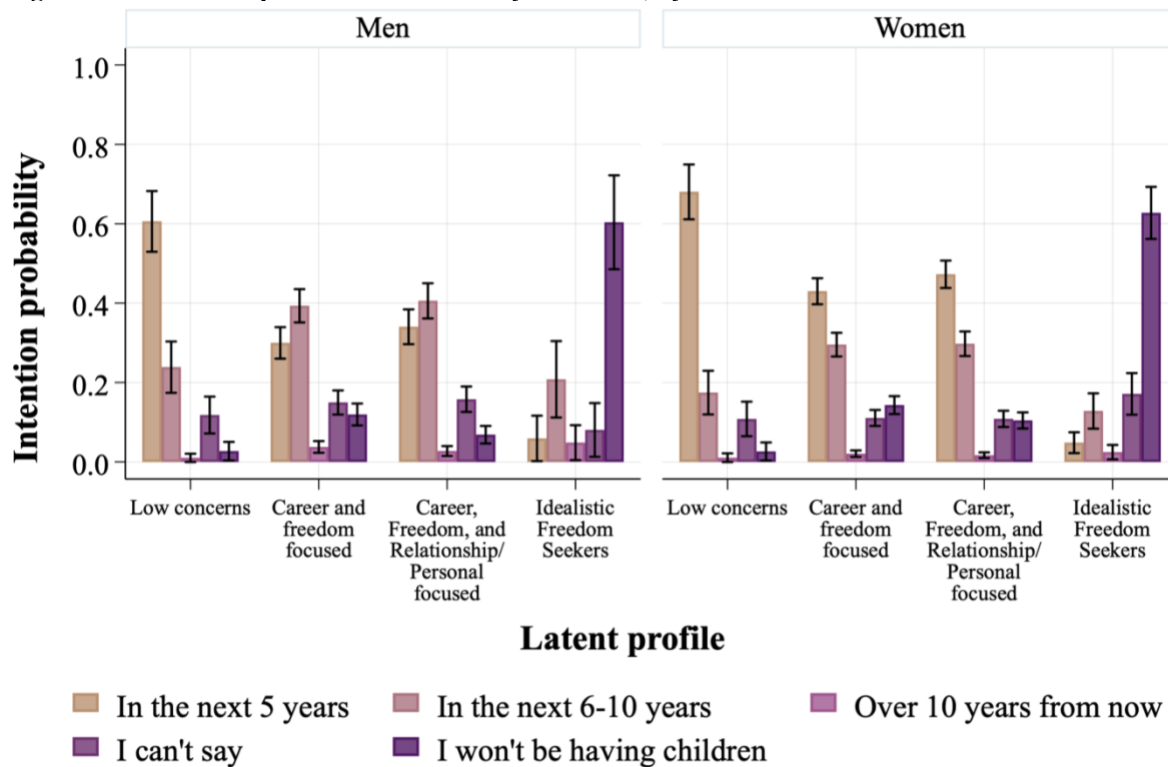
Source: Own computations from Kiva RCT data

Figure A 7: Predicted probabilities of fertility intentions, by age group



Source: Own computations from Kiva RCT data

**Figure A 8: Predicted probabilities of fertility intentions, by sex**



Source: Own computations from Kiva RCT data

**Figure A 9: Predicted probabilities of fertility intentions, by parenthood status**

