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Research article

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## **SOCIO-ECONOMIC DETERMINANTS OF REPRODUCTIVE BEHAVIOR: A COMPARATIVE STUDY OF ALMATY (KAZAKHSTAN) AND KUOPIO (FINLAND)**

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**Abstract.** Delayed motherhood is becoming increasingly common, reflecting the impact of socio-economic transformation and inequality. This article is an empirical study that presents the results of a comparative study aimed at solving practical social problems. The postponement of the birth of the first child is associated with an increase in the level of education, instability in the labor market, changing gender roles, and uneven access to medical and social services. The purpose of this study is to conduct a comparative analysis of the socio-economic determinants of delayed motherhood using the example of Almaty (Kazakhstan) and Kuopio (Finland). The empirical base includes quantitative data from a survey conducted in Almaty (n=934), as well as a secondary analysis of Finnish sources, including data from the Kuopio Birth Cohort. The results show that in Kazakhstan, low income, lack of stable housing, and economic barriers are the key factors of late motherhood, whereas in Finland, it is personal choice, career attitudes, and institutional support. Regression analysis confirms the significant impact of financial status and marital status on women's reproductive decisions. The study highlights the need for a comprehensive social policy combining economic, medical, and educational support, and contributes to the development of cross-country comparisons of women's reproductive behavior in conditions of inequality.

**Keywords:** delayed motherhood; Kazakhstan; Finland; reproductive behavior of women; socio-economic determinants; social inequalities; reproductive determinants of women.

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## Introduction

Delayed motherhood is becoming an increasingly common feature of modern societies, reflecting changes in socio-economic conditions, gender attitudes, and institutional support for the family. In the context of urbanization, rising levels of women's education, job insecurity, and the transformation of cultural norms, the decision to have a first child is increasingly being made at a later stage of life. This process affects both countries with stable institutions of the welfare state and post-Soviet societies in transition. Of particular interest is the comparative analysis of Kazakhstan and Finland, two countries with different histories of demographic transitions, levels of social support, and value orientations. Despite the differences in context, there are similar trends: the desire for professional self-realization, the need for economic stability, and a rethinking of parental roles. The present study aims to identify the socio-economic determinants of late motherhood, with an emphasis on financial barriers, employment, reproductive health, and access to medical services.

### Literary review

#### *Economic factors and costs of alternatives*

Financial constraints and the assessment of opportunity costs significantly affect the duration of maternity. In Belgium, women with the lowest incomes are almost four times more likely to delay the birth of their first child compared to those with high incomes (*Jansen, 2007*). However, the differences are mainly between the extreme income groups, which are related to the partner's income and the general standard of living.

Career factors are also critical: women with high career growth potential postpone motherhood in order to minimize losses in income and trajectories (*Kravdal, 1994; Edwards, 2002*). Highly educated women have a "catch-up" effect: the delay in having a child is compensated as the labor market stabilizes (*Liefbroer, 2005; Jansen, 2007*). The type of employment is important: women in the public sector are less likely to postpone motherhood due to stability and support (*Adsera, 2003*). Flexible schedules promote earlier motherhood in low-educated women, but delay it in highly educated women (*Jansen, 2007*).

In Chile and Australia, late motherhood reflects an adaptation strategy: women seek economic and professional autonomy before giving birth to a child (*Diaz, 2021; Wijk & Billari, 2024*).

Education is a stable predictor of late primogeniture. In Spain, women with higher education give birth to their first child at an average age of 29.8 years, while women with a low level of education give birth at 23.4 years (*Gomez-Acebo et al., 2020*). In Poland, having a university degree increases the likelihood of late motherhood by more than five times (*Kaczmarek, 2013*). Similar dependencies can be traced in the UK, where education affects fertility through employment and partnership (*Bijlsma & Wilson, 2020*).

Employment is also critical: in Germany, high-income women are more likely to postpone motherhood until they achieve career stability (*Gordo, 2009*), and the first child appears on average 3-4 years after starting work (*Nicoletti & Tanturri, 2005*). However, unstable employment and temporary contracts, as in Italy, also lead to a delay in the birth of children (*Modena et al., 2013; Del Boca & Pronzato, 2007*).

Cultural and psychological factors enhance the effect. In Chile, Iran, and Australia, motherhood is postponed in favor of self-realization and maturity (*Diaz, 2021; Behboudi-Gandevani et al., 2015; "Pathways into childbearing delay", 2022*). In Germany, highly educated women are particularly sensitive to economic risks (*Kreyenfeld, 2005*).

### Socio-economic determinants of delayed motherhood in Finland

From 2010 to 2019, the total fertility rate in Finland decreased from 1.87 to 1.35 (*Statistics Finland, 2020*), mainly due to a decrease in the number of first births among women under 30 (*Hellstrand et al., 2020*). This indicates not only a delay but also a decrease in the total number of children.

The key reasons are rising levels of education, economic instability, delayed marriage, changes in parenting standards, and access to contraception (*Mills et al., 2011*). Stable employment remains an essential condition for the birth of a first child (*Lebano & Jamieson, 2020; Goldstein et al., 2018*). The theories of Lesthaeghe (*2010*) and Hakim (*2003*) explain the decrease in fertility by an increase in individualism and a change in women's preferences but ignore the paradox of low fertility with high family support.

Modern research focuses on the perception of uncertainty and narratives of the future (*Jalovaara et al., 2019*), the influence of the digital environment and career-centered attitudes (*Savelieva, 2022*), as well as stratified differences (*Berg et al., 2023*). In the context of the Finnish welfare state, postponing motherhood is becoming a reflection of structural inequalities and psychosocial vulnerability, rather than solely a personal choice.

#### **Socio-economic factors and employment stability**

Employment stability is a key factor in shaping reproductive decisions. Unemployment and financial instability are closely linked to delayed motherhood, especially among women over the age of 30 (*Miettinen, 2023*). A woman's economic status has a significant impact on fertility attitudes (*Jalovaara & Miettinen, 2013*). Financial stability is considered as a condition for creating a safe environment for a child and reflects a rational calculation of opportunity costs.

Value orientations also influence the postponement of the birth of children. Career ambitions and high digital engagement predict late motherhood, especially for educated women (*Savelieva et al., 2022*). This is due to the changing gender roles and the increasing importance of personal autonomy.

Socio-economic inequality reinforces differences in reproductive behavior: women from higher strata are more likely to postpone motherhood, while vulnerable groups demonstrate early childbirth (*Berg et al., 2020*). The perception of motherhood also depends on age and social context (*Kelhä, 2009*).

Mental disorders (CMDs) before pregnancy are associated with low income and limited fertility (*Rönö et al., 2019*).

Despite the developed social policy, Finland faces unequal reproductive outcomes. Fear of childbirth (FOC) reduces the likelihood of a second child, especially after cesarean section (*Vaajala et al., 2023*). Institutional support, including affordable education, healthcare, and parental leave, remains insufficient to overcome underlying psychological and economic barriers, especially for women with low incomes and precarious employment. Delayed motherhood manifests itself as a marker of social stratification, reflecting not a universal choice but a combination of structural inequality, cultural shifts, and vulnerability. Effective social policy should be based on an interdisciplinary approach that takes into account not only individual decisions but also the social context, offering measures that combine economic support with affordable psychological assistance.

#### **Socio-economic determinants of delayed motherhood in the CIS and Central Asian countries**

In the CIS and Central Asian countries, delayed motherhood is increasingly determined by a combination of educational, economic, and cultural factors. Higher education and

professionalization contribute to the revision of traditional female roles, especially in Kazakhstan, Uzbekistan, and Azerbaijan, where urban women postpone having children until they achieve financial stability (Billingsley & Duntava, 2021). In conditions of economic instability, as in Kyrgyzstan and Tajikistan, job uncertainty and lack of housing become the basis for strategic postponement of motherhood (Solaz, 2016). In rural areas, on the contrary, early motherhood remains rational with limited access to education and medicine (Billingsley & Duntava, 2021).

The transformation of gender roles is also important: in Tajikistan, a decrease in marriage is associated with a change in family expectations and an increase in female autonomy (Clifford et al., 2016). In Kyrgyzstan and Kazakhstan, the number of women consciously choosing later motherhood is growing. Social egg freezing is being discussed in a number of countries, which raises ethical questions about the balance between reproductive autonomy and social pressure (Bernstein & Wiesemann, 2014).

### **Research methodology**

The methodology is based on the concept of structural stratification and a model of reproductive choice in conditions of inequality, which makes it possible to compare differences in women's reproductive strategies in a developed welfare state (Finland) and a transitional economy (Kazakhstan). It should be emphasized that the Finnish case is based on a secondary analysis of cohort and national studies, unlike the Kazakh case, with an original empirical base, which can create an asymmetry in analytical depth and requires caution when interpreting and comparing the results.

The empirical part uses a quantitative sociological method using structured questionnaires. The Finnish case is presented based on a systematic analysis of scientific publications based on representative data (Jalovaara & Miettinen, 2013; Rotkirch et al., 2017; Vaajala et al., 2023, etc.).

#### *Sampling and field implementation*

The field stage of the research was conducted by the author of the article, Ainur Bakytzhanova, as part of her dissertation work in coordination with her supervisor. The empirical database was formed on the basis of hand-held data collection in Almaty with the participation of interns from the Center for the Study of Public Opinion (CIOM), who helped in recruiting respondents. A stratified quota sample with snowball elements was used to include hard-to-reach groups. The sample included 934 women of reproductive age who permanently reside in Almaty and women who have lived there for at least five years. The criterion for inclusion in the sample was being of reproductive age (18-49 years old) and having sexual experience, which corresponded to the goals of the study aimed at analyzing reproductive behavior. The quotas took into account age, marital status, income, area of residence, and ethnicity. This approach ensured the reliability of the data and allowed us to identify differences in reproductive strategies depending on socio-economic status.

#### *The survey was conducted in a hybrid form:*

1. Face-to-face interview;
2. Online survey through the Qualtrics platform.

#### *Toolkit and key variables*

The questionnaire included more than 60 questions grouped into five thematic blocks: (1) demographic and socio-economic characteristics; (2) reproductive health and pregnancy history; (3) Access to medical services; (4) financial barriers and behavior in conditions of resource scarcity; (5) cultural and value orientations. To analyze the factors of delayed motherhood,

variables from sections S17 (influence of socio-cultural attitudes on women's reproductive behavior and decisions), S23.1–S23.7 (financial constraints and reproductive decisions), and S24 (expected forms of government support) were used.

#### *Data analysis methods Data*

processing included descriptive statistics, correlation (Spearman, Pearson), and regression (linear and logistic regression). The analysis was performed in SPSS 23. An integrated approach has made it possible to identify the individual and structural determinants of delayed motherhood.

*Ethical aspects:* The study was conducted in strict accordance with the Helsinki Declaration of the World Medical Council (1964, as amended), the UNESCO Universal Declaration on Bioethics (2005), and was guided by the Code of Ethics of the International Sociological Association (ISA, 1999). The research methodology and tools were approved by the Local Ethical Committee for Scientific Research of the Al-Farabi Kazakh National University (No. IRB-A1594, approved on April 17, 2025).

The survey was conducted on a voluntary basis, observing the principles of anonymity and confidentiality. All respondents provided informed consent. Sensitive questions were formulated taking into account ethical standards, and it was possible to refuse to answer without consequences.

## **Results**

### ***Socio-demographic profile of the study participants***

934 women of reproductive age living in Almaty participated in the survey. The average age of the respondents was 32.8 years (range: from 17 to 50 years). The most represented age group was women aged 24 to 30 years old.

The ethnic composition of the sample reflects the multinational population typical of Almaty: Kazakhs made up 49.7%, Russians – 21.1%, Uighurs – 10.4%, Koreans – 6.0%, Tatars – 4.9%. Representatives of other ethnic groups (Kurds, Kyrgyz, Chechens, Germans, Uzbeks, etc.) also participated in the study, which highlights the interethnic diversity of the urban environment. This sample structure increases the validity of the conclusions and brings the study closer to the ethnocultural representativeness characteristic of Kazakhstan as a whole.

Religiously, the majority of respondents identified themselves as Muslim (70.3%). Orthodox Christians made up 10.3%, Buddhists 3.6%, and Catholics 2.4%. Atheistic views (agnosticism and atheism) were expressed by a total of 7.9%.

At the time of the survey, half of the women were officially married (50.2%), and another 14.8% lived in an unregistered union. 17.5% of the respondents were divorced, 13.7% had never been married.

The presence of children varied: 26.1% had no children, 18.6% had one child, 29.8% had two, 18.5% had three, and the rest had four or more children. This indicates the high reproductive burden of some of the respondents.

The level of education was predominantly high: 41.5% had a bachelor's degree, 13.3% had a master's degree, 2.4% were studying for a PhD, 2.0% had a PhD degree or higher. 26.9% had secondary special education, and 10.8% had general secondary education.

The employment of the respondents was distributed as follows: 24.9% work in the private sector, 16.5% in the public sector, 15.7% in the civil service, and 21.3% are self-employed. Housewives and those on parental leave accounted for 7.2%, the unemployed – 4.0%, students – 7.6%.

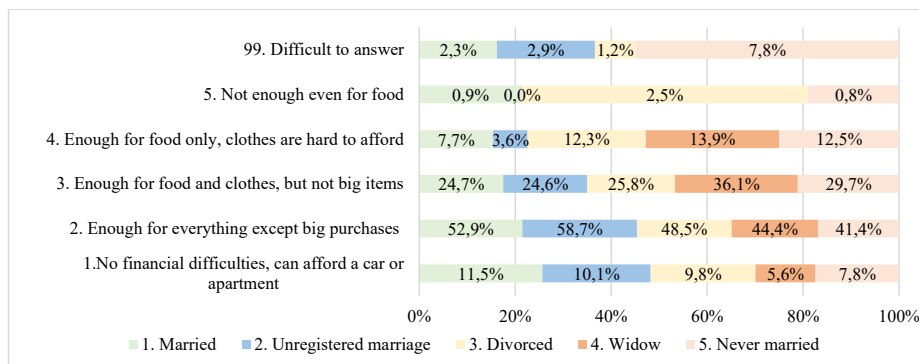
The estimate of personal income per month showed a wide range of values, from zero to several million tenge. The main concentration was in the range from 150,000 to 300,000 tenge (approximately 30% of the total sample). The updated classification allowed us to identify three groups:

1. Low income - up to 150,000 tenge: about 26.4%.
2. The average income is from 150,000 to 350,000 tenge: about 41.0%.
3. High income - over 350,000 tenge: about 30.9%.
4. The rest refused or found it difficult to answer.

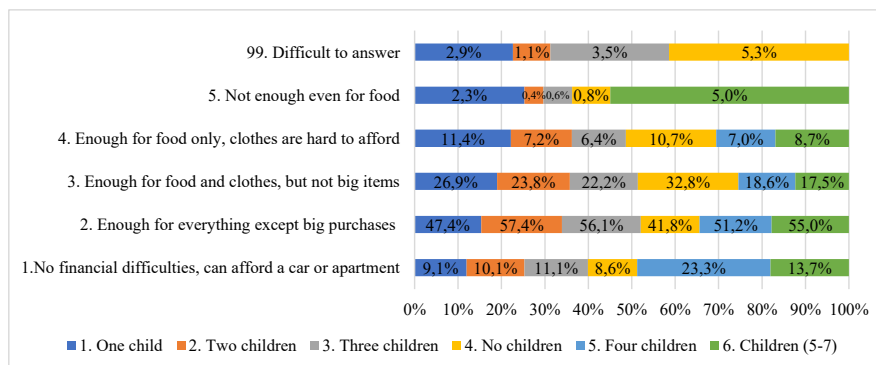
The financial well-being of the household was assessed by the respondents themselves: 50.5% stated that they had enough income for daily needs, but not for large purchases. Only 10.3% noted the absence of financial difficulties. 26% had enough money only for food and clothes, 9.8% experienced significant restrictions, and 1% lacked funds even for food.

In the housing issue, 47.6% live in their own real estate, 32.9% rent an apartment, 14.5% live in rooms, with relatives or friends, in dormitories, or in provided housing.

The section "Results of the socio-demographic profile of the respondents" contains diagrams reflecting the interrelationships between the key socio-demographic characteristics of the respondents. The analysis includes: the relationship between marital status and financial well-being, with an emphasis on the vulnerability of single and divorced women; the relationship between having children and marital status, which makes it possible to trace differences in reproductive patterns; the relationship between the number of children and self-assessment of financial status, showing potential risks for women with many children.



**Figure 1. Assessment of the level of material well-being of households by marital status of women (n=934, data in %)**



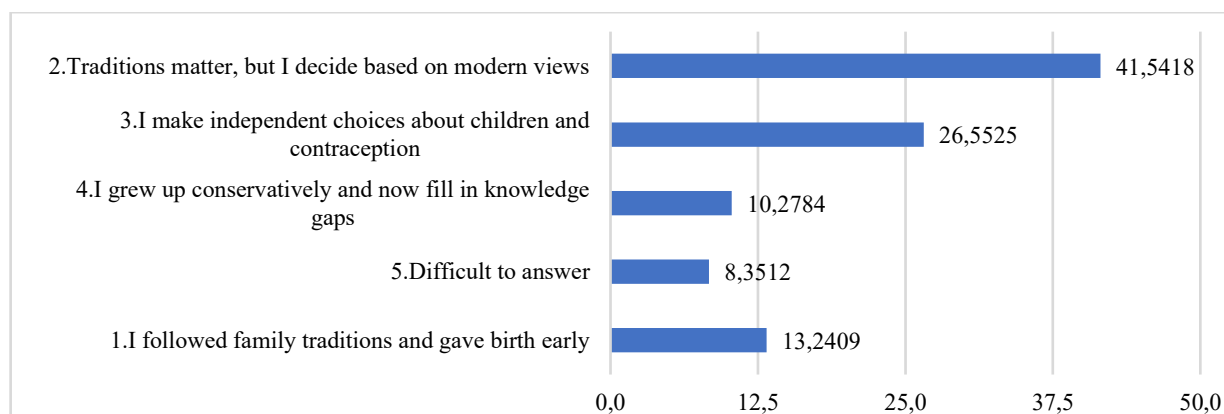
**Figure 2. Assessment of the level of material well-being of households depending on the number of children of women (n=934, data in %)**

The analysis of the socio-demographic profile of the respondents confirms the hypothesis about the multilevel influence of social status and family circumstances on women's reproductive strategies. The data obtained demonstrate a pronounced stratification by the level of material well-being: more than half of women have incomes sufficient only to meet basic needs, while only one in ten notes the absence of financial difficulties. A comparative analysis of the charts indicates that a stable financial situation is more common among married respondents, while divorced and single women are more likely to show signs of economic vulnerability. Similarly, there is a link between the number of children and a deterioration in self-assessment of well-being, reflecting economic pressure on large families. These patterns are consistent with theories of structural functionalism and social stratification, emphasizing the uneven distribution of resources and opportunities, including in the field of reproductive choice. The research methodology, quantitative analysis using frequency distributions and cross-diagrams, allows us to identify stable relationships between the socio-economic status of women and their reproductive behavior, confirming the validity of the inclusion of socio-economic determinants in the conceptual model of reproductive strategies.

Turning to the analysis of the main results, it is important to emphasize that deferred motherhood in conditions of socio-economic inequality is formed not as an arbitrary individual strategy, but as a result of a multi-layered interaction of institutional, financial, and cultural factors. The empirical data presented below make it possible not only to record the scale and characteristics of delayed motherhood in Almaty, but also to identify the structural mechanisms that determine differences in women's reproductive behavior depending on their social status.

## Main results

### 1.1. Results: The influence of family traditions on women's reproductive decisions



**Figure 3. The influence of family traditions on women's reproductive decisions (n=934, in %)**

The data obtained demonstrate the predominance of a rational approach to reproductive decisions: 41.5% of women indicate that they take into account family traditions but are guided by personal preferences and realities. Only 13.2% follow the traditional approach of early motherhood, while 26.6% emphasize their autonomy, making choices regardless of external pressure. This indicates the formation of an individualized reproductive identity, especially

in an urban context. The proportion of women who grew up in a conservative environment (10.3%) indicates the presence of cultural barriers that they are gradually overcoming.

1.1.1. The influence of social factors on the perception of family traditions in women's reproductive decisions: results of logistic regression

The analysis was carried out using a multi-nominal logistic regression, in which the dependent variable was the S17 variable - women's attitudes about the influence of traditions on reproductive decisions (5 response categories). The following variables are included as predictors: age, nationality, marital status, education level, subjective assessment of the household's financial situation, and region of previous residence. Sample size:  $n = 934$ ; valid observations in the regression model - 631 (67.6%).

The results of logistic regression showed that the model is statistically significant ( $\chi^2 = 291.644$ ;  $df = 235$ ;  $p = 0.007$ ), which confirms the improvement in its quality when socio-demographic predictors are included. Pseudo R2 made up: Cox and Snell - 0.268, Nagelkirk - 0.284, McFadden - 0.108. This corresponds to the moderate explanatory power of the model and indicates that variables such as age, education, marriage, income, and region are associated with differences in women's attitudes about the influence of family traditions on reproductive decisions.

**Table 1. Comparative analysis of the influence of family and cultural traditions on women's reproductive attitudes: results of the  $\chi^2$  criterion (Likelihood Ratio Test),  $n=934$**

The predictor	$\chi^2$	df	p-value	Conclusion
Nationality	37,573	60	0,99	Not significant
Family status	34,019	20	0,026	Significant
Education	32,449	30	0,347	Not significant
Financial situation	37,828	25	0,048	Significant
Region of former residence	78,196	95	0,894	Not significant

An analysis of the contribution of predictors to explaining the variation in women's attitudes showed that only two sets of variables were statistically significant at the level of  $p < 0.05$ :

1. Family status:  $\chi^2 = 34.019$ ;  $df = 20$ ;  $p = 0.026$
2. Financial situation:  $\chi^2 = 37.828$ ;  $df = 25$ ;  $p = 0.048$

This means that it is these socio-demographic characteristics that have a significant impact on the differences in the attitudes of the respondents regarding the influence of traditions on reproductive decisions.

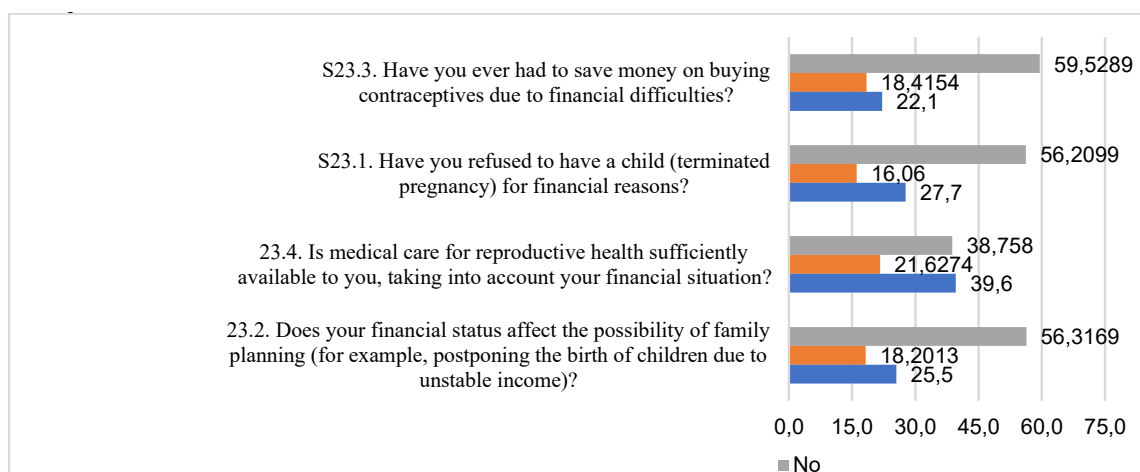
Other predictors - nationality, education, and region of previous residence - did not reach the level of statistical significance ( $p > 0.05$ ); therefore, their contribution to explaining the variability of the dependent variable was considered insignificant within the framework of this model.

An analysis of data from Almaty revealed a statistically significant relationship between women's social status and their reproductive attitudes: family status ( $\chi^2 = 34.019$ ;  $p = 0.026$ )

and a subjective assessment of financial status ( $\chi^2 = 37.828$ ;  $p = 0.048$ ) turned out to be key predictors shaping attitudes towards family traditions in childbearing. Married women with a stable income are more likely to focus on traditional models, while single, divorced, and economically vulnerable respondents demonstrate a departure from them, choosing deferred motherhood as an adaptive strategy in conditions of social instability.

In the Finnish sample presented as part of the KuBiCo (Kuopio Birth Cohort) Cohort (Huuskonen et.al., 2018), the emphasis is shifted to the influence of biological, behavioral, and environmental factors in the long term. Although the focus is on medical and epigenetic mechanisms, a descriptive analysis of 1,172 women confirms that socio-economic parameters also play a significant role. The average age of pregnant women was 29.8 years, and an increase in the proportion of women over 35 was recorded, which is interpreted as an indicator of a trend towards later motherhood. Up to 50% of women use medications during pregnancy, which is associated with chronic conditions and reflects the availability and systematic nature of medical monitoring. Thus, delayed motherhood in the Finnish context is caused not only by social factors, but also by institutionalized health and pregnancy planning practices provided through government channels.

### 1.2. Financial status and reproductive limitations: perception and statistical analysis



**Figure 4. Self-assessment of the impact of financial situation on access to contraception, medical care, and reproductive decisions (n = 934, in %)**

The analysis of the data obtained indicates a pronounced influence of financial factors on women's reproductive strategies. Almost 28% of respondents admitted that they refused to have a child because of financial difficulties, and 25.5% postponed motherhood for the same reason. More than 22% saved on contraception, which highlights vulnerability in access to basic reproductive control. At the same time, almost 40% consider medical care to be insufficiently affordable, taking into account their financial situation. This indicates the need for comprehensive solutions aimed at eliminating financial barriers, including subsidizing contraception, expanding free compulsory health insurance services, providing tax and housing benefits, and supporting women in vulnerable social situations. Financial constraints in the reproductive sector require a coordinated policy at the intersection of health, social protection, and employment.

### 1.2.1 Multinomial logistic regression of the dependence of the financial situation on financial and reproductive constraints

This section examines how financial difficulties and access to information and medical care affect women's perception of their financial situation. For this purpose, the answers to the S23 block of questions were analyzed, in which the respondents were asked to assess the impact of finances on their reproductive decisions, such as refusing to have a child, family planning, access to contraception, and medical care. The question used for the analysis: S23. How do your financial situation and the availability of reproductive health information affect your family planning decisions? The answers were offered on a scale of

1 – Yes, 2 – No, 3 – I find it difficult to answer.

The list of statements (predictors S23.1–S23.4):

- S23.1. Did you have to refuse to have a child (terminate pregnancy) for financial reasons?
- S23.2. Does your financial status affect your ability to plan a family (for example, postponing the birth of children)?
- S23.3. Have you saved on buying contraceptives due to a lack of money?
- S23.4. Is medical care for reproductive health sufficiently accessible to you, taking into account your income?

These four variables were included in the multinomial logistic regression as predictors to reveal how they relate to the assessment of one's own financial situation. The table below shows the coefficients of this model, followed by a detailed interpretation of the results.

**Table 2. Coefficients of multinomial logistic regression by levels of financial status of women: the influence of financial and reproductive factors (n = 934)**

Financial status category	The predictor	B	SE	Exp(B)	95% CI Exp(B)	p-value
1. The lowest	S23.1	1,20	0.30	3,32	[1.8; 6.0]	<0.001
	S23.2	0.80	0.30	2,23	[1.2; 4.1]	≈0.01
	S23.3	0.50	0.25	1,65	[1.0; 2.7]	≈0.04
	S23.4	0.40	0.25	1,49	[0.9; 2.4]	0.11
2. Low	S23.1	1.00	0.35	2,72	[1.4; 5.4]	<0.01
	S23.2	0.60	0.28	1,82	[1.1; 3.2]	≈0.03
	S23.3	0.30	0.25	1,35	[0.8; 2.2]	0.23
	S23.4	0.10	0.20	1,11	[0.7; 1.6]	0.60
3. Average	S23.1	0.40	0.30	1,49	[0.8; 2.7]	0.18
	S23.2	0.30	0.25	1,35	[0.8; 2.2]	0.23
	S23.3	0.20	0.20	1,22	[0.8; 1.8]	0.32
	S23.4	0.02	0.17	1,02	[0.7; 1.4]	0.90
4. High	S23.1	-0.50	0.27	0,61	[0.3; 1.1]	0.06
	S23.2	-0.70	0.40	0,5	[0.2; 1.1]	0.09
	S23.3	-0.40	0.30	0,67	[0.4; 1.2]	0.20
	S23.4	-0.30	0.25	0,74	[0.5; 1.2]	0.27

5. The highest	S23.1	-1.20	0.40	0,3	[0.14; 0.66]	<0.01
	S23.2	-1.00	0.40	0,37	[0.17; 0.80]	≈0.02
	S23.3	-0.50	0.30	0,61	[0.31; 1.21]	0.08
	S23.4	-0.80	0.30	0,45	[0.25; 0.81]	<0.01

The color scheme reflects the levels of statistical significance of the coefficients:

- The red color indicates statistically significant results ( $p < 0.05$ ), indicating a significant influence of the predictor.
- The yellow color indicates the marginal significance ( $p$  from 0.05 to 0.1), which allows for a possible influence, subject to additional verification.
- The green color corresponds to the absence of statistical significance ( $p \geq 0.1$ ), that is, the effect is not confirmed at the selected confidence level.

This design helps to visually interpret the differences between the levels of financial status and identify the predictors with the greatest contribution.

*Evaluation of the model and the quality of the fit*

The multinomial logistic regression calculated by the maximum likelihood method on a sample of 934 observations showed a statistically significant improvement compared to the null model ( $\chi^2(df) = \dots; p < 0.001$ ), confirming the significance of the included predictors (block S23.1–S23.4) reflecting financial and reproductive constraints. The dependent variable is a subjective assessment of the financial situation (6 categories), the basic one is "I find it difficult to answer". Pseudo-R2 values (Cox–Snell  $\approx 0.22$ ; Nagelkerk  $\approx 0.25$ ; McFadden  $\approx 0.12$ ) indicate an acceptable level of explanation and adequacy of the model for social regression, taking into account the features of categorical data.

The following are the coefficients of the multinomial logistic regression for each Q9 category compared to the reference category. The table shows the estimates of the coefficients (B), their standard errors (SE), exponentiated coefficients (Exp(B), i.e., relative chances), 95% confidence intervals Exp(B), and p-significance levels. The results are described below by category of the initial variable, with an emphasis on statistically significant effects ( $\alpha = 0.05$ ).

**Regression coefficients by category Q9**

1. Category 1 (the lowest assessment of the financial situation) vs "I find it difficult to answer": For this category, there is a positive and statistically significant association with two of the four predictors. In particular:

In the context of assessing the probability of respondents being classified in the lowest financial category, the regression results revealed three significant predictors: refusal to have a child for financial reasons (S23.1; Exp(B) = 3.32;  $p < 0.001$ ) and the impact of finances on family planning (S23.2; Exp(B) = 2.23;  $p \approx 0.01$ ) demonstrate a strong and statistically significant association with extremely low self-assessment of well-being; savings on contraception (S23.3; Exp(B) = 1.65;  $p \approx 0.04$ ) are also significant, but with less confidence. At the same time, limited availability of medical care (S23.4; Exp(B) = 1.49;  $p = 0.11$ ) showed no significant effect. Thus, economically determined reproductive restrictions - refusal, postponement, saving - are the key indicators of women's social vulnerability.

2. Category 2 (low score) vs "I find it difficult to answer": The results for the next financial situation category are in many ways similar to category 1, although the scale of the effects is somewhat smaller. In the second category of financial situation, two factors remain significant:

refusal to have a child for financial reasons (S23.1;  $\text{Exp}(B) = 2.72$ ;  $p < 0.01$ ) and the impact of finances on family plans (S23.2;  $\text{Exp}(B) = 1.82$ ;  $p \approx 0.03$ ), both of which increase the probability of being in this category. At the same time, savings on contraceptives (S23.3;  $p = 0.23$ ) and limited access to medical care (S23.4;  $p = 0.60$ ) are statistically insignificant. This confirms that it is the fundamental economic constraints, denial, and uncertainty in family planning that are most sensitive to the level of material vulnerability.

3. Category 3 (average grade) vs "I find it difficult to answer": none of the factors under consideration demonstrated a statistically significant effect on the average level of financial situation. All the coefficients obtained are small in absolute value and statistically insignificant:

- S23.1:  $B = 0.40$  ( $SE = 0.30$ ),  $\text{Exp}(B) = 1.49$ , 95% CI [0.8; 2.7],  $p = 0.18$ .
- S23.2:  $B = 0.30$  ( $SE = 0.25$ ),  $\text{Exp}(B) = 1.35$ , 95% CI [0.8; 2.2],  $p = 0.23$ .
- S23.3:  $B = 0.20$  ( $SE = 0.20$ ),  $\text{Exp}(B) = 1.22$ , 95% CI [0.8; 1.8],  $p = 0.32$ .
- S23.4:  $B = 0.02$  ( $SE = 0.17$ ),  $\text{Exp}(B) = 1.02$ , 95% CI [0.7; 1.4],  $p = 0.90$ .

Conclusion for category 3: the coefficients at S23.1–S23.4 for the average category of financial situation are close to zero; the influence of financial and reproductive restrictions on the probability of choosing the average option of financial assessment has not been statistically detected.

4. Category 4 (high score) vs "I find it difficult to answer": At higher levels of well-being, the influence of predictors changes to a negative sign (which is expected, since financial constraints rather prevent entry into the prosperous categories). However, none of the negative effects in category 4 reach the 0.05 significance threshold.:

- S23.1:  $B = -0.50$  ( $SE = 0.27$ ),  $\text{Exp}(B) = 0.61$ , 95% CI [0.3; 1.1],  $p = 0.06$ . Refusal to have a child for financial reasons is associated with a reduced chance of belonging to this (high) category, but the relationship is only marginally significant (at the 10% level, with a = 0.05 trend).

- S23.2:  $B = -0.70$  ( $SE = 0.40$ ),  $\text{Exp}(B) = 0.50$ , 95% CI [0.2; 1.1],  $p = 0.09$ . Similarly, the impact of finance on family planning reduces the likelihood of a high financial assessment (by about half), but this effect has not been statistically confirmed.

- S23.3:  $B = -0.40$  ( $SE = 0.30$ ),  $\text{Exp}(B) = 0.67$ , 95% CI [0.4; 1.2],  $p = 0.20$ . Savings on contraceptives show a negative but insignificant coefficient.

- S23.4:  $B = -0.30$  ( $SE = 0.25$ ),  $\text{Exp}(B) = 0.74$ , 95% CI [0.5; 1.2],  $p = 0.27$ . The lack of affordable medical care for reproductive issues also has no statistically significant effect on the likelihood of falling into this category.

Conclusion for category 4: Although the coefficients S23.1 and S23.2 indicate reduced chances of high material prosperity in the presence of appropriate financial constraints ( $\text{Exp}(B) < 1$ ), their degree of statistical significance is insufficient ( $p = 0.06 - 0.09$ ). None of the predictors significantly affects belonging to category 4.

5. Category 5 (highest score) vs "I find it difficult to answer": In the highest category of financial situation, the opposite statistically significant effects were found for a number of indicators. In other words, some financial constraints significantly reduce the likelihood that the respondents will attribute their financial situation to the most prosperous level.

In the highest category of financial situation, the opposite effect of most predictors is expressed: refusal to have a child (S23.1;  $\text{Exp}(B) = 0.30$ ;  $p < 0.01$ ) and financial difficulties in family planning (S23.2;  $\text{Exp}(B) = 0.37$ ;  $p \approx 0.02$ ) significantly reduce the likelihood of achieving

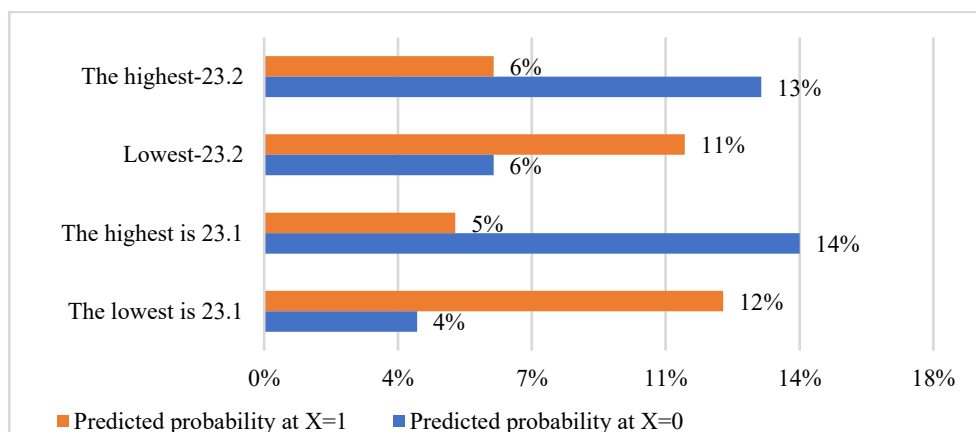
it. Limited access to medical care (S23.4;  $\text{Exp}(B) = 0.45$ ;  $p < 0.01$ ) is also statistically significantly associated with reduced chances. Savings on contraception (S23.3) show a similar trend, but remain at the margin of importance ( $p = 0.08$ ). These results emphasize that the absence of financial and medical barriers is closely related to a high subjective assessment of well-being.

Conclusion for category 5: for the most affluent group of respondents, financial constraints play a significant role: indicators S23.1, S23.2, and S23.4 turned out to be negatively and statistically significantly related to belonging to this category ( $p < 0.05$ ). This indicates that people experiencing the listed financial and reproductive difficulties are much less likely to assess their financial situation as "very good". The S23.3 indicator (savings on contraceptives) also reduces the chances of being in the highest category, but the evidence of this effect is insufficient ( $p > 0.05$ ).

Model comparison: In addition to the complete model presented, its comparability with alternative specifications has been verified. In particular, the comparison with the null model (without predictors) confirms a significant improvement in the tests mentioned above ( $\chi^2$ -likelihood ratio criterion). Other models (for example, excluding individual predictors) did not demonstrate a better match: removing any of the key factors led to a deterioration in the model's performance (an increase in  $-2\text{LogL}$  and a decrease in pseudo- $R^2$ ), although formal testing of individual coefficients is indicated above. Thus, the selected model is preferable and includes all four predictors of the S23 block.

#### **Marginal effects and predicted probabilities**

To illustrate the effect of financial constraints on the subjective assessment of well-being, predictive probabilities were calculated for four key situations (S23.1-S23.4). The most pronounced impact was recorded in terms of refusal to have a child (S23.1) and financial barriers to family planning (S23.2): the presence of these factors increases the likelihood of self-assessment of the "lowest" financial situation by 2-3 times, while reducing the likelihood of being classified as the "highest" level (for example, with S23.1 – from 14% to 5%). For indicators of savings on contraception (S23.3) and limited access to medical care (S23.4), the differences in forecasts were less significant. The visualized data (Fig. 5) clearly demonstrate these trends, emphasizing the role of financial and reproductive constraints as indicators of perceived social vulnerability.



**Figure 5. Comparison of the forecast probabilities of assessing the financial situation in the presence and absence of financial and reproductive constraints (X=1/X=0)**

Figure 5 demonstrates how the presence or absence of financial and reproductive constraints affects the likelihood of how women assess their financial situation. The graph compares the predicted probabilities for the two states:

- X = 0 - there are no restrictions,
- X = 1 - there are restrictions.

For example, women who faced financial reasons for refusing to have a child (S23.1) were significantly more likely to rate their position as "lowest" (12% vs. 4%), and as "highest" (5% vs. 14%). A similar effect is observed for feature S23.2 (financial impact on family planning). At the same time, the probability of assessing one's position as "the highest" decreases on the contrary (for example, from 14% to 5% for S23.1), which confirms the significant impact of restrictions on the perception of one's own well-being.

For indicators S23.3 and S23.4, the differences between the groups are minimal, which indicates that there is no pronounced influence of these factors on the self-assessment of the financial situation.

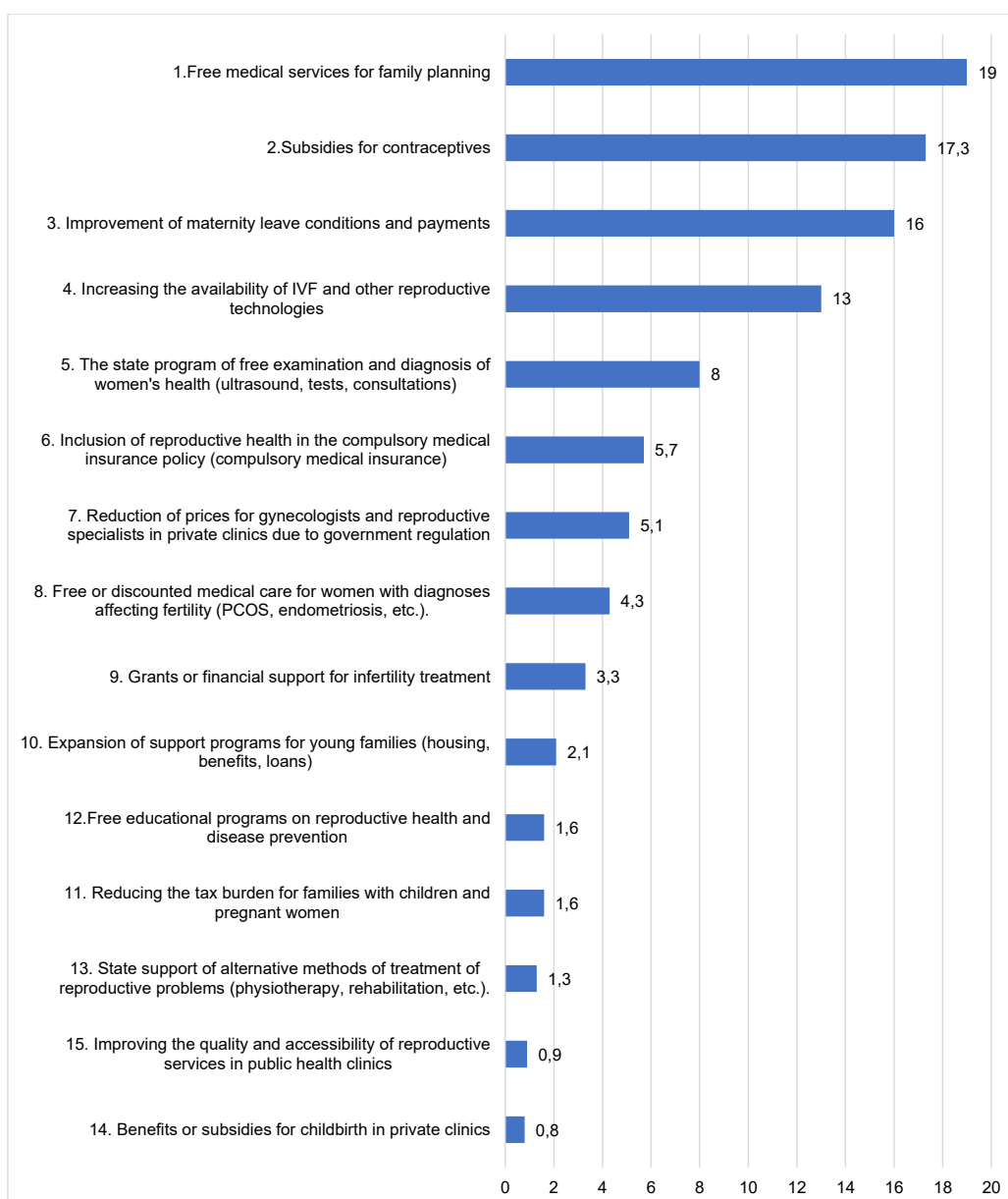
The analysis was performed on a complete sample (n = 934) without stratification by subgroups: all categories of the dependent variable were simultaneously taken into account in a single model. Verification of the stability of the results showed that the exclusion of the reference category ("I find it difficult to answer") did not change the key conclusions. Despite the moderate values of pseudo-R<sup>2</sup>, which are typical for logistic models, the results remain interpretable, although the proportion of unexplained variation is large. At the same time, the proximity of the Hesse matrix to the singular indicates potential multicollinearity, which requires caution when interpreting insignificant effects. The model does not cover all possible predictors (for example, demographic ones), which limits its explanatory potential. All statistical results are given in the "Results" section, and interpretations and practical implications are put into the "Discussion" in compliance with scientific rigor and significance level  $\alpha = 0.05$ .

In the survey, the respondents evaluated 15 proposed measures in the field of reproductive health. This list was compiled based on international experience (Finland, France, Canada) and our research data, taking into account Kazakhstan's realities (Rönö et al., 2019; Savelieva et al., 2022; Savelieva et al., 2022). Many measures, such as free ultrasound, subsidies for contraception, access to private medicine, and support for Assisted reproductive technology (ART), were proposed by the survey participants themselves. The list reflects both the expectations of the State and the personal strategies of women, and serves as a guideline for a more effective and equitable reproductive policy.

The survey results demonstrate a clear hierarchy of public priorities in the field of reproductive health, focused primarily on institutionalized and socially accessible measures. The top 4 offers reflect basic reproductive needs: free medical services for family planning (19%), subsidies for contraceptives (17.3%), improved conditions for maternity leave and payments (16%), and increased access to IVF and other ART technologies (13%). Collectively, these measures cover more than 65% of all responses, forming the backbone of the public demand - strategies before and during pregnancy, where financial accessibility and government participation are key conditions.

The first place, "free family planning services," deserves special attention. Even though such services are already formally present in the structure of the guaranteed volume of free medical care, their support in the first place may indicate several important factors: low awareness

of the population, poor representation of these services in practice, or problems of trust in the quality of provision. Similarly, proposal No. 5, the "state program for free examination and diagnosis" (8%), also represents a de facto existing service, but its demand signals the need for increased communication, navigation, and legal awareness. Respondents seem to perceive these measures not as effective but as desirable, which indicates a lack of awareness campaigns about rights and guarantees in the healthcare system.



**Figure 6. Preferred measures to support reproductive health among women (n = 934, choice of up to 3 responses, data in %)**

The proposal for "subsidies for contraceptives" (17.3%) reflects an urgent public demand for the recognition of contraception not as a woman's private responsibility, but as an element

of guaranteed state support. Despite the fact that the topic of contraception appears in national strategies and programs, in practice, women are forced to purchase protective equipment on their own, without systematic financial or informational support. This is especially critical for socially vulnerable groups, for whom even basic methods of contraception become economically unaffordable. It is important to add to this situation that the burden of contraception falls almost entirely on women, while men's participation in reproductive responsibility remains extremely low. The lack of a government information campaign aimed at involving men in the use of barrier methods and joint family planning exacerbates the gender imbalance and shifts all risks and costs exclusively to women. This situation transforms access to reproductive autonomy from a universal right into a social privilege, thereby increasing inequality and limiting the exercise of the right to informed parenthood.

It is also worth noting proposal No. 8 (4.3%) "free or preferential care for women with diagnoses affecting fertility (for example, polycystic ovary syndrome (PCOS), endometriosis, etc.)". Despite the relatively low frequency of choice, this measure highlights the problem of chronic underestimation of reproductive diseases such as polycystic ovary syndrome and the need for long-term support programs for women with diagnoses that directly affect their reproductive potential.

Reducing the tax burden for families with children and pregnant women (1.6%) was among the least supported measures, which may indicate both low public awareness of existing or potential tax benefits and limited faith in the effectiveness of such tools in real life. The lack of knowledge about international practices of tax support for families only increases distrust of such measures and reduces their perceived importance among the population. In conditions where respondents focus on the need for direct and tangible assistance (free services, subsidies, payments), indirect forms of support, such as tax breaks, are perceived as less significant or difficult to access. This may also indicate a lack of information and explanatory work on the part of the State, as well as the complexity of administrative procedures that make it difficult to obtain such benefits in practice.

Less than 3% took measures related to educational initiatives, tax preferences, and support for private childbirth. This trend may indicate either a lack of awareness about the potential benefits of these options or that respondents do not consider them a priority over basic needs.

For the purposes of interpretation, it is advisable to divide preferences into four semantic areas that can be used as a basis for policy.:

1. Preventive measures: subsidies for contraception, free family planning, and educational programs.
2. Support during pregnancy and childbirth: improvement of maternity leave conditions, state examination, and tax benefits.
3. Access to high-tech care: expansion of IVF, infertility treatment, and ART.
4. Chronic and difficult-to-diagnose conditions: PCOS, endometriosis, comprehensive support measures in private and state clinics.

The results demonstrate not only the need to expand the range of available services but also the need for systematic education, navigation, and promotion of information about existing support measures that are perceived by the population as non-existent. This suggests that the reform of the reproductive health system must combine institutional changes with communication and educational strategies, even if the measures already available will remain invisible to the bulk of the target group.

The results of the study indicate a strong public demand to expand the availability of basic medical services and financial support in the field of reproductive health. These priorities largely coincide with the experience of Finland, where, according to the Kuopio Birth Cohort, over 90% of women undergo early screening, and the state provides access to infertility treatment and controls IVF practice to reduce risks. The availability of medicines is also relevant: almost half of pregnant women need prescription drugs. Thus, the preferences identified in Kazakhstan (affordable diagnostics, subsidies, IVF support) reflect the universal importance of systemic measures to improve the quality of reproductive health.

## **Discussion**

It should be noted that the differences in cultural attitudes and social expectations between Kazakhstan and Finland described in the work do not pretend to be universal and may vary depending on the region, generation, and level of education; the interpretations given reflect generalized trends recorded in the framework of the study and comparison with national data, rather than absolute norms.

The results confirm the pan-European trend towards delayed motherhood: in Finland, the average age of first-time mothers is approaching 30 years, and the number of mothers over 35 is growing. Similar processes are observed in Kazakhstan, using the example of Almaty. However, the differences in motives are noticeable: while in Europe, postponement is associated with career and education, in Almaty, low income and lack of stable support are more often decisive factors. In our sample, it was income and family circumstances, rather than the level of education, that turned out to be key. This highlights that universal trends manifest themselves in different ways depending on the social context.

The results of the study not only confirmed the hypothesis of a significant influence of socio-economic determinants on women's reproductive strategies but also revealed the deep nature of delayed motherhood as a social symptom, rather than solely an individual choice. Women in Almaty, faced with economic instability, lack of housing, and limited access to contraception and medical services, find themselves in a position where deferred motherhood becomes a form of adaptation, but not freedom. This is not a voluntary strategy, but a forced postponement, which hides anxiety, distrust of the system, and fear of the future. Unlike in Finland, where institutional support provides women with a space for reproductive autonomy, the Kazakh context shows that deferred motherhood can be a form of social protection and fear/anxiety in conditions of constant uncertainty. Regression models clearly indicate that the uneven distribution of resources from income to basic medical information leads to the fact that the right to motherhood is implemented unevenly, and motherhood itself becomes a privilege of a stable position. Thus, the study not only confirmed the hypothesis of the structural conditionality of reproductive behavior but also questioned the universality of the concept of "reproductive choice", emphasizing its dependence on the economic, cultural, and institutional environment. The conclusion is obvious: without a systematic and interdisciplinary policy that removes hidden barriers to parenthood, any discussion of informed choice remains incomplete and socially dishonest.

To better understand why socio-economic determinants so significantly influence women's decision to postpone motherhood, it is necessary to go beyond the superficial arguments about "economic expediency" and consider a more complex system of interrelated structural and

cultural mechanisms. In the Kazakh context, delayed motherhood is not just a consequence of a lack of resources, but a form of adaptive survival strategy developed in conditions of social uncertainty and instability. Income instability, lack of housing, and the high cost of medical services are not abstract risks, but an everyday reality in which the birth of a child can mean a deterioration in the financial situation, loss of control over the life situation, and increased vulnerability. A woman in such a situation does not act out of selfish motives, but out of an effort to protect the unborn child from deficiency and instability; that is, she decides the logic of responsible parenting.

However, cultural transformations are no less significant. Modern urban society, in particular, Almaty, is increasingly moving from the traditional model of "early" parenthood to an individualized logic of the life path, in which motherhood is understood as a mature, delayed, but morally responsible choice. The younger generation of Kazakhstani women is less likely to perceive the birth of a child as a social obligation or a step regulated by age expectations. The idea of reproductive autonomy is coming to the fore, where a woman has the right not only to give birth, but also to choose when and under what conditions she is ready for it. This is a profound cultural shift: from following prescribed roles to forming conscious life strategies. In this sense, cultural attitudes play a dual role: on the one hand, they free women from the pressure of traditional norms; on the other, they impose on them even greater individual responsibility for making the "right" decision, which involves financial and emotional preparedness.

Finland demonstrates a different model: there, deferred motherhood has become part of an institutionally supported norm, where society and the state share the burden of reproductive decisions with women. Government policies that provide access to child care, medical services, generous parental leave, and subsidies have created conditions in which having a child does not threaten a woman's social mobility or economic stability. In such a model, postponing motherhood is not a refusal or a forced measure, but a form of life planning in conditions of predictability and social security. In Kazakhstan, however, despite the availability of individual support measures, the overall institutional architecture of reproductive policy remains fragmented, unstable, and often symbolic. Mortgage subsidies or one-time payments do not compensate for the fundamental risks that a woman has to take into account when deciding to become a mother in conditions of social and economic vulnerability.

Thus, socio-economic barriers form not only objective limitations, but also cultivate a special type of reproductive rationality in which a Kazakhstani woman is forced to compare personal desires with institutional reality. She learns to "accept" and "bear" not only cultural, but also structural responsibility, not for choice, but for its consequences in an environment where reproductive decision-making is fraught with risks. And in this sense, reproductive choice turns out to be not so much an expression of freedom as a form of moral duty to the unborn child. That is why the conversation about motherhood cannot be conducted outside the broad agenda of social justice, risk redistribution, and strengthening institutional support: because not every woman can afford the luxury of "postponing" or "planning" life, but everyone should have the right to do so.

The study is based on data collected in Almaty, Kazakhstan's largest metropolitan area, with high social stratification. The stratified quota sample provided representativeness for the urban female population of reproductive age. The results obtained reliably reflect the peculiarities of the reproductive behavior of Kazakhstani women in conditions of urbanization and institutional diversity.

However, extending the findings to the whole country, including rural regions with different socio-cultural characteristics, is methodologically incorrect. On the contrary, the data emphasizes the need for spatially differentiated analysis. The Almaty study should be considered as a model for understanding the mechanisms of delayed motherhood in an urban environment, while it also reveals unclosed research gaps.

The comparison with the data from the Kuopio Birth Cohort from Finland does not serve as a direct parallel, but as an analytical tool for identifying differences in institutional and cultural patterns of reproductive behavior. The survey methodology met scientific and ethical standards; however, as with any self-reporting study, there may be distortions due to social desirability.

#### *Implications for politics, medical practice, and gender equality*

In politics: The identified economic reasons for postponing motherhood clearly indicate the need not just to expand, but to rethink the state policy of supporting families, including young families in Kazakhstan. We are not talking about fragmented measures, but about a systematic approach aimed at reducing structural barriers to parenthood. In conditions of high cost of living, unstable employment, and poor accessibility of basic social services, especially in large cities and megacities, the priority should be the development of institutional mechanisms that contribute to the financial and social stability of young parents. This includes not only increasing benefits and introducing differentiated tax benefits, but also expanding social housing programs, ensuring guaranteed access to high-quality preschool and school education, as well as reforming the employment system with an emphasis on creating flexible forms of work for women, especially in the postpartum period. At the same time, it is important to develop a nationally oriented approach that takes into account the cultural and demographic characteristics of Kazakh society, and not just borrowing external models.

The key challenge remains not so much the expansion of support measures as ensuring their quality, transparency, and trust from the public. The lack of clear standards and evaluation mechanisms reduces the effectiveness of public policy. The goal should be not just to stimulate fertility, but to create an environment where motherhood is not a risk, but a protected, socially recognized choice. In Finland, the emphasis is shifting to supporting work-family balance, flexible employment, and the involvement of fathers, which strengthens the sustainability of family strategies. In healthcare, there is an increasing need to adapt to late motherhood: access to expanded screening, information about fertility, and ART opportunities are needed. In terms of gender equality, postponing the birth of a child indicates both an increase in women's autonomy and structural barriers. Their elimination requires systematic measures to ensure a real balance between work and parental roles.

### **Conclusion**

A comparative analysis of the socio-economic determinants of delayed motherhood in Almaty and Kuopio (Finland) has shown that, regardless of differences in the socio-cultural context, the key factors of the late birth of the first child are similar: women's desire to obtain higher education and build a career, as well as the need for economic stability are the main reasons for postponing motherhood.

In Finland, there has been a noticeable shift in attitudes towards family life over the past decades, which directly affects the decision to postpone the birth of children. Motherhood is increasingly perceived as a conscious choice rather than a socially obligatory role for women.

While for previous generations, starting a family was considered the "norm" and childlessness was an aberration, today's young Finns are much more tolerant of voluntary childlessness. Research shows that a significant proportion of young adults do not consider having children to be a prerequisite for a fulfilling life, preferring to devote time to other goals and pleasures. For example, according to the family barometer, about 15% of Finns aged 20-45 explicitly state that they do not want to have children at all, motivating this with the desire to "do something else in life" and the lack of a feeling that a child will give their lives a special meaning (Yle, 2023; 2024). Such sentiments reflect profound cultural changes: parenthood has ceased to be an alternative life strategy and has become one of the options for self-realization, along with a career, travel, hobbies, etc.

At the same time, the role of marriage as a necessary condition for the birth of children is decreasing. Finnish society is characterized by a high tolerance for illegitimate birth and cohabitation. Statistics show that today, only about half of children are born to married parents, whereas a century ago, 91% of births were registered marriages (Yle, 2023). In other words, almost 50% of Finnish children are born out of an official marriage, which indicates the cultural norm of having children and building a family without legal registration of the relationship. The attitude towards marriage has become more pragmatic: Finns tend to get married at a more mature age or do without it altogether, without fear of public condemnation. This demarginalization of extramarital parenting allows couples to take their time with marriage and childbearing. Young people often first live for themselves, get an education, try themselves in a career, travel, and only then think about children.

The age norms of childbearing have shifted significantly. In Finland, there is an understanding that having your first child at the age of 30-35 is normal and even typical. According to the National Institute of Health and Well-being, the average age of first-time mothers in 2021 reached 30.0 years, and the average age of all women in labor was 31.6 years. Moreover, the proportion of women over 35 years of age has already accounted for a quarter of all births (FinIHW (THL), 2024). These figures confirm that most women postpone the birth of their first child until they are thirty or older, which in the past was considered a late age. For comparison, back in the 1980s, the average age of a mother at the birth of her first child was significantly lower; the trend towards its increase is associated with long-term education and a change in life priorities. Despite late motherhood, there is no serious stigmatization of "age-related" women in labor in society; on the contrary, it has become a social norm. In general, about 65% of Finnish women aged 15-88 have realized themselves as mothers, and most of them are limited to two children (FinIHW (THL), 2024), which indicates a shift in the ideal of a family towards the model of "two children" or even one child.

One of the most important cultural attitudes influencing procreation postponement is the value of personal autonomy and professional development. Many Finns and Finns consider it necessary to "get back on your feet" first – get a higher education, start a career, achieve financial stability – and only then think about children. According to research, modern young women in Finland increasingly place education, work, and financial stability above the role of mother, even if they recognize children as an important part of life (Nikander, 2020). Career aspirations and self-realization outside the family are perceived as equivalent or more attractive life goals. In a recent survey, it was noted that having an "extremely demanding job" is among the main reasons for not having children (Yle, 2024). Stress at work and a high pace of life make many

people wonder if they can combine a child with their current career, and often the answer is to postpone motherhood.

In addition, Finns' reproductive plans are influenced by new values and generation anxieties. For example, environmental awareness and climate anxiety have become unexpected factors. Some young couples deliberately postpone or reject childbearing due to concerns about the climate crisis and the state of the planet (*FinIHW (THL), 2024*). They perceive the birth of a child through the prism of responsibility for the carbon footprint or possible environmental disasters in the future, which was previously not taken into account in life strategies. The influence of the media environment is also discussed: experts note that social networks and modern ideals of life can push young people towards alternative scenarios of self-realization and increase feelings of insecurity in the future (*Reuters, 2024*). Collectively, these cultural attitudes, individualism, the priority of personal comfort and career, a change in attitudes towards marriage, and environmental values form a pattern of behavior in which the birth of children is postponed to a later date than it was for previous generations.

#### ***Relation to socio-economic determinants in Finland***

Finns' cultural attitudes do not exist in a vacuum; they are closely intertwined with the socio-economic conditions of the country. A high level of education and the availability of long-term education is one of the key factors for later entry into parenthood. In Finland, the majority of young people receive higher education, and their studies often last until the middle of the third decade of life. Naturally, when starting a family, many people want to finish their studies and start a career first. As a result, the average age of entry into an economically independent adult life increases, delaying the time of the birth of the first child.

After graduation, the situation on the labor market becomes influential. The Finnish economy, despite its success, is experiencing the same trends as other developed countries: the proliferation of temporary contracts, project employment, and high competition for jobs. As noted by Finnish politician and statesman Petteri Orpo, uncertainty about job stability has increased in the modern working world. Young people face temporary contracts and uncertainty about the future. According to him, this economic instability has become one of the reasons why people postpone "plans for children" (*Reuters, 2024*). Indeed, the feeling of financial and professional instability is an important determinant of reproductive behavior. Many potential parents want to gain confidence in income, career, and housing first, and only then have a child. In conditions when permanent work and own housing become achievable closer to the age of 30, it is logical that the birth of children is shifted to this age.

Gender equality achieved in Finnish society is also an important factor. The high economic activity of women, equal rights in education and work, means that women have the opportunity to build a career on an equal basis with men. The social role of women has expanded – they are no longer expected to devote themselves solely to the home and children. This, on the one hand, increased the requirements for a combination of roles (you need to have time to realize your career and create a family), and on the other, reduced the pressure to immediately have children. Finnish women enjoy the freedom to choose the moment of their child's birth based on their personal circumstances. Moreover, studies have noted a change in gender stereotypes: now, men and women in Finland look at the issue of children in approximately the same way; the difference in the desire to have a child between the sexes has been smoothed out (*Yle, 2024*). Many young men are willing to postpone fatherhood for the sake of self-development, just like

women. Thus, gender equality, which has given women more opportunities outside the family, indirectly leads to the family being postponed until both men and women consider that the time has come.

The role of the state and the welfare system should be mentioned separately. Finland is a welfare state with well-developed family support: long parental leave for both parents, child support payments, and affordable kindergartens. Theoretically, such measures should reduce economic barriers to childbearing. Historically, it was generous social support that helped Finland keep the birth rate down – it is noted that previously a high level of well-being prevented a sharp drop in fertility (*Ciganda et.al., 2023*). However, in the last decade, despite all the benefits, the birth rate in the country has fallen to a record low. The total fertility rate decreased from 1.87 children per woman in 2010 to only 1.35 in 2019, significantly below the level of simple reproduction of the population (*Wang et.al., 2024*). In 2020-2021, there was a small surge in births (*against the background of COVID-lockdown*), but by 2022 the downward trend resumed. This has sparked discussions among politicians about how effective traditional family support measures are in the new environment. In fact, the Finnish government is faced with a situation where financial incentives (perks, benefits, promotion of paternity leave, etc.) do not provide the desired increase in the birth rate, because they run into the changed values and priorities of young people.

The reasons for the decline in the birth rate are complex, a combination of economic realities and deeper cultural shifts. On the economic side, the factors already mentioned (long-term education, job insecurity, high cost of living - especially housing in large cities – etc.) create rational obstacles to early parenthood. But in many other countries with similar problems, the introduction of benefits temporarily raised the birth rate. In Finland, the effect is different because the lifestyle has changed. As noted by Finnish demographer Anna Rothkirch, the younger generation perceives parenthood as a difficult compromise with other life goals: many feel that they will have to choose between family and alternative ways of self-realization (FinIHW (THL)). This concerns ideas about the desired lifestyle, values, and ideals. In fact, the question is "Do I want to be a parent now or at all?" He became part of a personal value system. In such circumstances, no simple policy decision guarantees an increase in the birth rate, since it is difficult for the state to influence the worldview.

In Finland, cultural attitudes (the value of personal development, new views on the meaning of life, and family) go hand in hand with socio-economic determinants (level of education, nature of the labor market, model of the welfare state). They mutually enhance each other's effect, leading to the fact that the average woman gets her first child closer to the age of 30, while the total number of children remains below two. Despite all the academic controversies, one thing is clear: the phenomenon of deferred motherhood in Finland is a product of the synergy of a highly modernized economy and a society with significantly liberalized views on marriage and parenthood.

***The contrast between Finland and Kazakhstan in matters of reproductive behavior is very significant. Kazakhstan***, although it is a secular state, is culturally closer to traditional societies where the value of family and children remains extremely high. Based on the collected data, several key differences can be identified.:

*The age of motherhood and marriage.* On average, women in Kazakhstan become mothers earlier than in Finland. Although the average age of a mother at birth in Kazakhstan is gradually

approaching 30 years, a significant proportion of women still give birth to their first child at the age of 23-25 years. In Finland, however, most women enter into parenthood closer to the age of 30 or later. Teenage motherhood in Finland is extremely rare, while in Kazakhstan, the proportion of young mothers under 20 is still noticeable. This reflects the continuing influence of traditional attitudes in Kazakh society, where early marriage and early parenthood remain the norm in some regions.

*The role of marriage and family.* In Kazakhstan, marriage and the birth of children remain closely linked: most births occur in official marriages. Unmarried women without children may face social pressure by the age of 30. In Finland, on the contrary, almost half of children are born out of wedlock, reflecting a high level of social tolerance and a flexible attitude towards the institutionalization of family relations. There is a different cultural attitude here: first, personal readiness, then the child, regardless of marriage.

*Fertility and family size.* Kazakhstan maintains a high total fertility rate. Families with three or more children are considered desirable, especially in traditional regions. The ideal of a family here is closely related to intergenerational continuity, the desire to "leave a mark", to have both sons and daughters. In Finland, on the contrary, the "one-two child" model is widespread, and large families are rare. Even among those who theoretically want to have children, the actual number of children is often less than planned. The quality of life, personal space, financial stability, and the possibility of self-realization are the most important guidelines hindering the growth of fertility.

*Life strategies and support.* Young people in Kazakhstan are more likely to plan early marriage and the birth of children, which is facilitated by both pressure from older generations and the presence of strong informal support networks. Relatives, especially grandparents, actively participate in the upbringing of children, reducing the burden on young parents. In Finland, the role of the extended family is limited, and young couples rely primarily on themselves and government support mechanisms. That is why it is common practice in Finland to postpone motherhood until maximum financial and psychological stability is achieved.

*Conclusion.* We can say that Kazakhstan and Finland are at different stages of demographic and value development. Finland is a country with a persistently low birth rate, despite a well-developed support system, which indicates the leading role of cultural factors. Kazakhstan still maintains high fertility due to traditions, religious background, and strong family attitudes. However, urbanization, increased access to education and the growth of women's employment are gradually changing the Kazakh pattern, bringing it closer to global trends.

Delayed motherhood in Finland has become the result of a long-term cultural shift: here, parenthood is increasingly perceived as a project that should be perfectly integrated into the life strategy of an individual. The possibility of choice, respect for individual goals, as well as a high level of education and female autonomy, contribute to the postponement of parenthood. At the same time, economic opportunities, paradoxically, create new barriers: instability of the labor market, high standards of living, and competition for resources, all of which contribute to a late decision on the birth of a child.

In Kazakhstan, the picture is different: parenthood is still perceived as an obligatory stage of life, supported by both society and family. Women, even in conditions of limited resources, strive to realize themselves as mothers, often relying on informal forms of support. However, as urbanization increases and life orientations change, especially in large cities, a model begins to take shape in which motherhood also becomes a more delayed and rational step.

A comparison of the two countries clearly demonstrates that cultural norms, economic realities, and institutions work together. Finland shows that financial incentives alone are not enough without taking into account people's mental attitudes and life priorities. Kazakhstan, in turn, emphasizes that traditional values are able to maintain a high birth rate even in conditions of weak social infrastructure. Therefore, effective policy must take into account not only economics, but also the underlying socio-cultural mechanisms that influence reproductive behavior.

## **Recommendations**

### **1. For public policy**

- Strengthen targeted support for young low-income families. This includes the expansion of benefits, subsidies for rent and housing, as well as benefits for child care, especially in cities with high living costs, and 100% access to public educational institutions starting from the preschool system.
- To develop a system of motivation for early motherhood without pressure: for example, the introduction of bonuses for women who gave birth before the age of 30 (in the form of tax benefits, mortgage subsidies, etc.), similar to a number of European models.
- To reconsider the approach to the state information policy on the risks of late motherhood: to form an informed understanding of age barriers and early planning opportunities among women of reproductive age, without violating their right to choose.

### **2. For the medical system**

- To introduce a standardized practice of advising women on fertility and reproductive strategies starting at the age of 18, including discussions on age-related risks, IVF, and egg freezing.
- Expand access to free or subsidized reproductive diagnostics and screening for all categories of women, with special attention to women planning deferred motherhood.
- To form support modules at the level of polyclinics and women's consultations for various categories of women, taking into account women with a high probability of postponing motherhood (higher education, employment, unstable income).
- It is necessary to ensure strict and transparent state quality standards in the field of services related to maternity and reproductive health. Government institutions should be associated with professionalism, accessibility, and trust, not with quality compromises. Improving the quality of public services is a key step towards reducing social inequality and strengthening women's reproductive security.

### **3. For educational and awareness-raising work**

- Integrate courses on the basics of reproductive health, family planning, and career and maternity balance into university programs, especially medical and pedagogical ones.
- To support NGOs and volunteer initiatives working with young women in creating educational projects (including on digital platforms) to increase access to scientifically reliable information.

### **4. For further research**

- To conduct in-depth longitudinal studies in different regions of Kazakhstan, including rural areas, in order to clarify the socio-economic and cultural profiles of women, and to study the characteristics of women postponing motherhood.

- To compare the influence of institutional factors (maternity leave, availability of gardens, labor market) on reproductive decisions, taking into account the comparison of different models - Kazakh, Finnish, South Korean, etc.
- Expand the analysis of men's positions and responsibilities in family planning issues - the gender focus is still one-sided, and decisions about childbearing are rarely made by women in isolation.

### **Ethical approval**

The study was conducted in accordance with international and professional ethical standards, including the Helsinki Declaration, the Oviedo Convention, the UNESCO Declaration on Bioethics, and the ISA, RSS, and ICC/ESOMAR codes. The project was approved by the Local Ethics Committee of Al-Farabi Kazakh National University (No. IRB – A1594, 04/17/2025). All participants gave written consent; the data were processed anonymously and confidentially.

### **Author contributions**

**A.A. Bakytzhanova** is the lead author and corresponding author. She developed a research concept, formulated a scientific problem, prepared a theoretical framework, analyzed the data, and wrote the main sections of the article, including the introduction, methodology, results, discussion, and conclusion.

**G.T. Alimbekova** is the scientific supervisor of the work. She provided methodological support, participated in the interpretation of the results, and in the preparation of conclusions and practical recommendations.

**T. Toikko** is a scientific consultant. He provided methodological support, participated in the analysis of scientific literature, the interpretation of empirical data, and the formation of the final conclusions of the study.

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**РЕПРОДУКТИВТИ МІНЕЗ-ҚҰЛЫҚТЫҢ ӘЛЕУМЕТТІК-ЭКОНОМИКАЛЫҚ  
ДЕТЕРМИНАНТТАРЫ: АЛМАТЫ (ҚАЗАҚСТАН) ЖӘНЕ КУОПИО (ФИНЛЯНДИЯ)  
ҚАЛАЛАРЫНЫҢ САЛЫСТЫРМАЛЫ ЗЕРТТЕУІ**

**Аңдатпа.** Кеш жаста ана болу әлеуметтік-экономикалық өзгерістер мен теңсіздіктің әсерін көрсететін кең таралған құбылысқа айналууда. Бұл мақала практикалық әлеуметтік мәселені шешуге бағытталған салыстырмалы зерттеу нәтижелерін ұсынатын эмпирикалық зерттеу жұмысы болып табылады. Бірінші баланың туылуын кейінге қалдыру білім деңгейінің жоғарылауымен, еңбек нарығындағы тұрақсыздықпен, гендерлік рөлдердің өзгеруімен және медициналық-әлеуметтік қызметтерге қол жетімділіктің біркелкі болмауымен байланысты. Бұл зерттеудің мақсаты – Алматы (Қазақстан) және Куопио (Финляндия) мысалдарын қолдана отырып, кешіктірілген ана болудың әлеуметтік-экономикалық детерминанттарына

салыстырмалы талдау жүргізу. Эмпирикалық базаға Алматыда жүргізілген сауалнаманың сандық деректері (n=934), сондай-ақ фин дереккөздерінің қайталама талдауы, соның ішінде Куопио Туу Когортасының деректері кіреді. Нәтижелер көрсеткендей, Қазақстанда табыстың төмендігі, тұрақты тұрғын үй мен экономикалық кедергілердің болмауы кеш ана болудың негізгі факторлары болып табылады, ал Финляндияда бұл жеке таңдау, мансаптық көзқарас және институционалдық қолдау болып табылады. Регрессиялық талдау қаржылық жағдай мен отбасылық жағдайдың әйелдердің репродуктивті шешімдеріне айтарлықтай әсерін растайды. Зерттеу экономикалық, медициналық және білім беруді қолдауды біріктіретін кешенді әлеуметтік саясаттың қажеттілігін көрсетеді және теңсіздік жағдайында әйелдердің репродуктивті мінез-құлқын еларалық салыстыруды дамытуға ықпал етеді.

**Негізгі ұғымдар:** кеш жаста ана болу, Қазақстан, Финляндия, әйелдердің репродуктивті мінез-құлқы, әлеуметтік-экономикалық детерминанттар, әлеуметтік теңсіздіктер, әйелдердің репродуктивті детерминанттары.

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### **СОЦИАЛЬНО-ЭКОНОМИЧЕСКИЕ ДЕТЕРМИНАНТЫ РЕПРОДУКТИВНОГО ПОВЕДЕНИЯ: СРАВНИТЕЛЬНОЕ ИССЛЕДОВАНИЕ В АЛМАТЫ (КАЗАХСТАН) И КУОПИО (ФИНЛЯНДИЯ)**

**Аннотация.** Отсроченное материнство становится все более распространенным явлением, отражая влияние социально-экономических преобразований и неравенства. Данная статья представляет собой эмпирическое исследование, в котором представлены результаты сравнительного исследования, направленного на решение практической социальной проблемы. Отсрочка рождения первогороженка связана с повышением уровня образования, нестабильностью на рынке труда, изменением гендерных ролей и неравномерным доступом к медицинским и социальным услугам. Целью данного исследования является проведение сравнительного анализа социально-экономических детерминант отсроченного материнства на примере Алматы (Казахстан) и Куопио (Финляндия). Эмпирическая база включает количественные данные опроса, проведенного в Алматы (n=934), а также вторичный анализ финских источников, включая данные когорты рожденных в Куопио. Результаты показывают, что в Казахстане низкий доход, отсутствие стабильного жилья и экономические барьеры являются ключевыми факторами позднего материнства, тогда как в Финляндии это личный выбор, карьерные установки и институциональная поддержка. Регрессионный анализ подтверждает значительное влияние финансового и семейного положения на репродуктивные решения женщин. Исследование подчеркивает необходимость комплексной социальной политики, сочетающей экономическую, медицинскую и образовательную поддержку, и способствует разработке межстрановых сравнений репродуктивного поведения женщин в условиях неравенства.

**Ключевые слова:** отсроченное материнство, Казахстан, Финляндия, репродуктивное поведение женщин, социально-экономические детерминанты, социальное неравенство, репродуктивные детерминанты женщин.

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