The impact of state aid on fertility and children's quality : the case of Kazakhstan

By

TAGMANOVA, Ryskul

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Professor Lee, Ju-Ho, Supervisor

Professor Choi, Seulki

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ABSTRACT

The impact of state aid on fertility and children's quality: the case of Kazakhstan

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Tagmanova, Ryskul

In connection with the growing threats to demographic security, supporting families with children has become an important area of state social policy. The main problem of the demographic situation at the present stage is the low birth rate, which determines the reduction in the population and leads to the aging of the age composition of the population. Kazakhstan also faced the problem of low birth rates. The main measure of influence on the demographic situation in Kazakhstan is the state financial support for families with children, which should serve as an impetus for the birth rate increase. However, according to the Statistics Committee of the Republic of Kazakhstan, the trend in low birth rates has not changed. In the course of the correlation and regression analysis, it turned out that the effect of an increase in the number of preschool institutions is greater than an increase in financial assistance and a qualitative analysis proves the results. However, both quantitative and qualitative analysis do not deny the effectiveness of increasing state financial assistance. Nevertheless, the study proved that parents' confidence in the future of their children, in particular, access to quality education, has a greater impact on the decision to become "large" families.

Keywords: fertility, population, state aid, education, preschool institutions.

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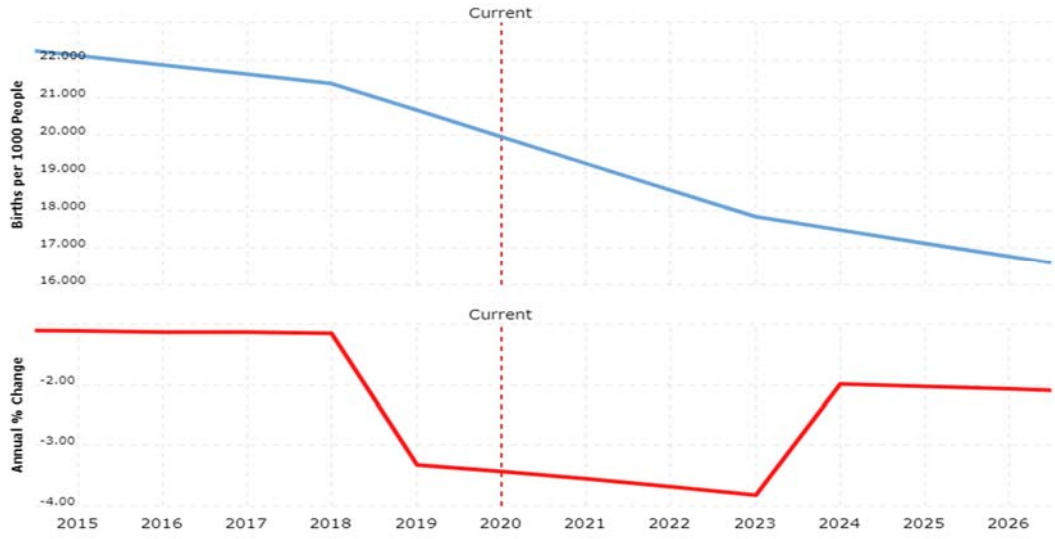
I. INTRODUCTION

Recently, in connection with growing threats to demographic security, support for families with children has become an important area of state social policy. The main problem of the demographic situation at the present stage is the low fertility, which determines the reduction in the population and leads to the aging of the age composition of the population (Chernoruk et al., 2013).

The conventional view of studying the problems of the demographic situation consists of determining the effect of stimulating fertility rates through a series of measures of financial support for families with children. In Kazakhstan, there are many different state social benefits and payments to support large and low-income families. However, the country has a long-term trend of declining fertilities. The current birth rate for Kazakhstan in 2020 is 19.959 births per 1000 people, a 3.43% decline from 2019 (UN, 2020).

Figure 1. Current birth rate for Kazakhstan



Data Source: United Nations - World Population Prospect, 2020

According to the Ministry of Labor and Social Protection of the Population, there are 340 thousand large and low-income families in Kazakhstan (Shamsutdinov, 2020). In Kazakhstan, with a population of more than 18 million people, the poverty rate is 4.7%. According to statistics from the United Nations Children's Fund (UNICEF), 90% of poor families are large. However, large families with four or more minor children are paid a special state aid. Its size is 4.16 MCI - 10 504 tenge in 2019. In Kazakhstan, 271 thousand families receive this aid, these are those who applied for it before January 1, 2018. From this date, the aid for large families was combined with targeted social assistance. That is, now only families with an income per person below 50% of the subsistence minimum have the right to it. Also, large families are entitled to benefits: (i) monthly allowance for the care of the fourth and subsequent child - 22,473 tenge (paid until the child reaches the age of one year); (ii) one-time allowance at the birth of the fourth and subsequent child - 159 075 tenge (paid once at the birth of the child).

Statement of the Problem

According to the Ministry of Labor and Social Protection of the Population, in Kazakhstan in 2018, almost 177 million dollars were allocated only for financial aid of large families (Zhulmukhametova, 2019). These are objectively large expenses that occupy one fifth of all that was allocated in 2018 for education. Since in the conditions of the Kazakhstani market, which largely consists of monopolies, prices will always be adjusted so that any financial assistance will be not enough. Therefore, large families remain vulnerable to social and economic risks, including educational opportunities for children in general and quality education.

The following research questions will guide the study:

(i) Does demographic policy really contribute Kazakhstan achieve a high birth rate?

(ii) What is the role of financial state aid in deciding to become "large" families?

(iii) What are the reasons for lower fertility in Kazakhstan?

(iv) What is the impact of traditional aspects on fertility in Kazakhstan?

(v) What is the relationship between access to education for children and fertility?

(vi) What practical developments contribute to raising the birth rate in Kazakhstan?

Significance of the Study

The study will help identify gaps in government assistance to stimulate fertility and reduce access to education for children. This will provide a direct understanding of some of the problems faced by small families, as well as large families, in order to determine appropriate family sizes, as well as guidelines to make families acceptable social and economic standards. In addition, this study will prove that a sound economic and social policy of the state should be aimed not only at financial assistance to families with children, but also at the effectiveness of society, in particular the development of the quality and accessibility of education for children.

Outline of the Remainder of the Study

The literature review for fertility and state aid are presented in Chapter II. Also, the children's education in large families is presented in the same Chapter. Data and a research methodology for answering research questions are presented in Chapter III and Chapter IV focuses on results and discussion. Finally, a conclusion and recommendations are made in the last part of this thesis.

II. LITERATURE REVIEW

With the spread in the world of contraception, the birth of a child began to be seen as the result of an informed decision of the individual. If earlier only demographers dealt with the birth rate problem, then in recent decades, representatives of other sciences - sociologists, physicians, psychologists, and, of course, economists, have become interested in this topic. Economist Harry Becker (1960) began to model the decision on the birth of a child in the same way as the decision-making on investment and consumption is modeled. He (Becker, 1960) considered children as durable goods and believed that when deciding on the birth of a child, parents make a choice between children and other goods, acting on a budgetary constraint and having a certain utility function determined by culture, religion, age, etc.

Uncertainty theories resemble Easterlin's theory (1976), according to which during periods of economic instability and rising unemployment, the craving for marriage and childbirth decreases. Oppenheimer (1988) developed the same idea in his work, which studied the effect of uncertainty in the ability to play economic roles on a family. Many researchers attribute economic instability - in the form of unemployment and an unstable situation in the labor market. In empirical studies, Mills and Blossfeld (2005) developed a scheme that includes 3 types of uncertainty: general (economic), temporary, and the nature of labor relations (labor relations). They explored economic uncertainty, which even when hiring individuals, young couples put aside their parental rights, which Rindfuss and Vandenhuvel (1990) call the “condition for accepting” a child in the family. According to Breen (1997), employment uncertainty reduced the ability of young people to make long-term commitments, such as becoming parents. Finally, workers whose employment relationships are less uncertain (for example, hired workers compared to self-employed or contracted workers) experienced difficulties due to greater vulnerability. However, the impact of economic uncertainty is severely limited by social institutions at the national level, such as government support for

youth, protecting youth from economic instability, and gender policies, which lead to very different women's perceptions of economic uncertainty in different countries (Mills et.al. 2005). Kreyenfeld (2010) concludes that unemployment and economic instability and lack of work have little effect than the level of education is the main driving force of the process. They concluded that poorly educated mothers, in spite of economic uncertainty, assume the role of a mother, while highly educated mothers, on the contrary, postpone the birth of a child.

In empirical literature, an attempt is made to calculate the opportunity cost of a child in terms of lost income. For example, Miller (2010) shows that postponing a woman's birth of a child by one year increases her work experience by 6% and income by 9%. Researchers also ask about the relationship between a woman's education and employment and her child's birth time and are unanimous in the fact that the higher the woman's human capital and her income, the later she puts off childbirth: such results were obtained for the USA (Miller, 2010), Great Britain (Kneale & Joshi, 2008), Sweden (Gustafsson, 2005), Italy (Rondinelli et al. 2010).

In the analysis of fertility, not only factors of a shift in the budgetary constraint of a family are studied, but also its utility function as such. Why for some children is a great happiness with zero price elasticity, while for others it is preferable to buy a new car instead of a child? What factors determine the "usefulness" of children for parents? Most researchers are inclined to the view that the preferences of individuals regarding the number of children and their age of birth are laid in childhood and adolescence (Hendershot, 1969; Murphy & Wang, 2001). Boyko (1985) indicates that the need for children is due to personality experience, contacts with infants in the parent family. The bulk of the work shows a strong correlation between the number of children in an individual's family and the number of his own children (Duncan et al. 1965; Anderton et al. 1987; Axinn et al. 1994). The literature also emphasizes that women born to young mothers themselves are more likely to give birth at a young age (Horwitz et al. 1991; Kahn & Anderson, 1992; Manlove, 1997). There is a negative relationship

between the educational level of the individual's parents and the age at which he has his own children (Michael & Tuma, 1985), as well as their number (Murphy & Wang, 2001; Rijken & Liefbroer, 2009). The income of the individual's parents also significantly increases the age of the child's appearance in his own family and reduces their (desired) number (Murphy & Wang, 2001; Rijken & Liefbroer, 2009). All these facts once again support the fact that in educated families with a high economic and social status, children are supplanted by the consumption of other goods, and this philosophy is passed on from generation to generation. In conclusion, we note a number of studies (Andersson et al. 2006a, b; Mills & Begall, 2010), demonstrating the preferences of families in favor of heterosexual children, i.e. the probability of having a third child is higher in families where there are two boys or two girls.

The second stream of research was aimed at analyzing the effectiveness of state-stimulating fertility policies. The results of these studies are mixed, but most agree that government measures shift the birth calendar, but do not affect the total fertility rate (Gauthier, 2007; Mills et al. 2011). Traditionally, people has given birth to ensure old age, and now the literature discusses the relationship of the pension system and fertility. For example, Galasso et al. (2009) shows that, indeed, high pensions reduce fertility. It is worth noting that in the scientific community there is a real discussion on the topic of assessing the effectiveness of financial measures to stimulate fertility. An article (Ermisch, 1999) demonstrates that high maternity benefits in the UK increase fertility among young women, and researchers (Hoem, 2005; Andersson et al. 2006a, b) come to similar conclusions when analyzing Swedish data. Some researchers argue that any material reward contributes to a decision on the birth of a child (Gurko & Orlova, 2013). There are also those who, on the contrary, draw conclusions about the inefficiency of the policy of maternity capital and other material measures to stimulate the birth rate (Bystrov, 2008). In a study (Slonimczyk & Yurko, 2014), the authors evaluate the effect of maternal capital policies on fertility using a dynamic structural model based on RLMS

of the Higher School of Economics data. The authors conclude that the introduced program increased the birth rate by an average of 0.15 children per woman, while the greatest effect of the program was to shift the birth calendar rather than increase the total birth rate.

Some researchers describe the lack of public assistance as a factor that makes it difficult to combine work and family, forcing a choice between career and motherhood, which leads to delayed births or abandonment of children (Castles & Ferrera, 1996; Mayer, 2004).

In particular with regard to the provision of childcare (if kindergartens), Kravdal (1996) and Rosen (2004), studying data from Norway and Finland, conclude that in regions with poorer conditions for providing childcare, the birth rate is higher. However, there are other studies proving, on the contrary, that the provision of childcare services by the state increases the birth rate (Del Boca, 2002; Rindfuss et al. 2010).

Conclusion

As we see, work on fertility is quite limited, and not only in quantity, but also in content. From a methodological point of view, existing studies are in statistical analysis. Such an approach ignores self-selection, in particular, the possible endogenous nature of women's choice of education and profession. The hypothesis that women prone to giving birth to a large number of children initially choose professions that allow them to combine work and parenthood is quite plausible. And, therefore, the estimates obtained through the models will be biased - as an example, a negative coefficient in a woman's employment does not necessarily indicate that having a job reduces the birth rate, but can only indicate that working women, in principle, do not want to have children, and in this case, the state's measures to reform the labor market for the possibility of combining child rearing and work will not take power. And in West fertility studies, such a complex and versatile problem as the relationship of a woman's employment and education with her reproductive behavior is practically not covered or is

highlighted at the level of correlation that does not take into account endogeneity. Russian and Kazakh studies also lack an analysis of the impact of the institutional environment on fertility: the availability of nurseries and kindergartens and the size of childcare benefits — the impact of these and other institutional factors on fertility has not been studied.

Therefore, in Chapter IV of the study, we present the results of the assessment of LSM models on the effect of the number of kindergartens and the amount of childcare benefits on fertility, as well as compare the results with the opinion of the respondents.

III. DATA AND RESEARCH METHODOLOGY

Quantitative Methodology

The method of the study was used to select a correlation and regression analysis to determine the degree of influence of a number of socio-economic factors on the indicator y - the number of births per 1000 people, for 2001-2019.

For the study, the following explanatory indicators were selected:

x_1 - the number of preschool institutions;

x_2 - the proportion of the total area equipped with water supply, %;

x_3 - average monthly nominal accrued wages of employees, thousand tenge;

x_4 - the amount of funds for state aid, billion tenge;

x_5 - the number of families who improved housing conditions for the year, thousand people;

x_6 - the number of persons first recognized as disabled, thousand people;

x_7 - the number of divorces per 1000 people.

In Kazakhstan, there is a shortage of places in preschool institutions, so the number of children in one group is higher than normal, thereby leading to a decrease in the quality of education. Therefore, it is expected that an increase in the number of preschool institutions will solve the problems of quality education and the availability of kindergartens, thereby increasing the birth rate.

For the study, statistical data provided by the Committee of Statistics of the Republic of Kazakhstan were taken. During the analysis, a matrix of Pearson paired coefficients was constructed.

Qualitative Methodology

Materials and methods. The empirical basis of the article is a qualitative study conducted in April 2020 with respondents from the cities of Almaty and Shymkent, whose focus was on the relationship between social benefits paid by the state and payments for children and fertility. The method of collecting primary sociological information was an in-depth interview.

Description of the data. Characteristics of the respondents. The sample was limited to 18-42 years old women and was formed using the "snowball" method. All interview participants are married and have children. The interview was attended by 48 women: 24 interviews with women who gave birth to a second child in the last two years, the age of women was from 18 to 42 years old, with 12 women aged 20-29 years and 12 women aged 30-40 years; 24 interviews with women who do not have a second child aged 18 to 42 years, with 12 women aged 20-29 years and 12 women aged 30-40 years. This provides representativeness of the study. Interviews were taken during personal communication via Skype. The study was based on an analysis of semi-structured interviews, which included questions aimed at identifying women's opinions on child benefits, child care benefits, encouraging women with child benefits, and the conditions for providing child benefits. Women's interviews are a fascinating read, they not only serve researchers as arguments and testimonies, but they also allow to look at various aspects of Kazakhstani society.

IV. RESULTS AND DISCUSSIONS

This section presents a correlation and regression analysis to determine the degree of influence of a number of socio-economic factors (the amount of financial assistance for families with children, the number of preschool institutions, etc.) on the birth rate in the Republic of Kazakhstan for two decades. Then I analyze the results of a qualitative analysis.

Empirical Findings

During the analysis, a matrix of Pearson pair coefficients was constructed (Table 2).

Table 1. A matrix of paired Pearson correlation coefficients, showing the degree of influence of explanatory factors on fertility

	y	x_1	x_2	x_3	x_4	x_5	x_6	x_7
y	1							
x_1	0,58	1						
x_2	0,748	0,101	1					
x_3	0,846	0,229	0,938	1				
x_4	0,883	0,297	0,923	0,992	1			
x_5	-0,482	-0,206	-0,598	-0,631	-0,584	1		
x_6	-0,77	-0,317	-0,725	-0,822	-0,822	0,292	1	
x_7	-0,494	-0,021	-0,69	-0,617	-0,614	0,557	0,138	1

In the study of the constructed matrix, it was found that the strongest relationship between the effective indicator is observed with several factors (Table 2).

Table 2. Pair correlation results of the birth rate change model in Kazakhstan

0,748	the proportion of the total area equipped with water supply
0,846	average monthly nominal accrued wages of employees
0,883	amount of funds for state aid
-0,77	number of persons first recognized as disabled

Such indicators as the average monthly nominal accrued wages of employees (0.846) and the amount of funds for state aid (0.883) are characterized by the highest values of the relationship. It is their connection with the effective indicator that is the strongest. The value of the coefficients is positive, that is, there is a directly proportional relationship between x_3, x_4 and y. This result is explained by the importance of financial stability, which ensures confidence in the future, for motivating the population to give birth.

The number of persons newly recognized as disabled (-0.77) seems to be the third most important indicator. Since its value is negative, the relationship between the factors x_6 and y is the opposite. Health undoubtedly has a decisive position on the possibility of having children. As a rule, the presence of disability either limits the ability to bear children or becomes a moral barrier to this, negatively affecting the birth rate.

An important factor is also high-quality utilities. The analysis of the studied model showed that an increase in the specific gravity of the total area equipped with a water supply system entails an increase in the birth rate in Kazakhstan.

We carry out the selection by elimination of factors that slightly affect the effective indicator and duplicate each other in order to build a regression model. Initially, we construct a regression model for all seven determining factors. The process of eliminating factors stops

at the moment when all regression coefficients are significant, i.e. the value of their t-statistics will be more than two modulo (Table 3).

Table 3. The results of a regression analysis conducted to build a regression model for the analysis and forecast of fertility in Kazakhstan

	Coefficient	*Standard error*	*t-statistics*	*P-value*
y	6,356	1,315	3,671	0,003
x_1	0,764	0,172	3,744	0,002
x_2	0,033	0,001	8,378	0,000

Using various approaches for selecting factors, we come to a model that will include 2 fundamental factors - the number of pre-school institutions and the amount of funds spent on providing social support to citizens. We draw up the equation of dependence according to the results of regression analysis, which takes the following form:

$$\hat{y} = 6.356 + 0.764x_4 + 0.033x_4$$

This equation shows that an increase in the number of preschool institutions (x_1) by 1 unit / thousand with a constant amount of funds spent on providing citizens with state aid (x_4) entails an increase in the birth rate by an average of 0.764 people / thousand. It can be observed that an increase in the amount of funds spent on providing state aid to citizens (x_4) by 1 billion tenge will be reflected in an increase in the birth rate by 0.011 people / thousand.

The analysis showed that the coefficient of determination $R^2 = 0.89$, that is, in this model, 89% of the variation in the birth rate is explained by the factors taken into account. The multiple correlation coefficient R = 0.943 shows the high tightness of the relationship between the

dependent variable y and the two explanatory factors presented above. The quality of the model is considered high, since the values of the presented characteristics are close to 1.

The approximation error is 3.25%. The model is accurate, and the calculated values from the actual deviate by an average of 3.25%.

We check the significance of the regression equation using the Fisher *F*-test. $F_{Fact} = 56.4$. $F_{table} = 3.74$ (with $\alpha = 0.05$; $k_1 = 2$; $k_2 = 14$). Since $F_{Fact} > F_{table}$, it is possible to recognize the equation as significant, and it also seems logical to use it for analysis and forecasting with a probability of 95%.

We check the model for the adequacy factor. Since the average value of a number of residues is approximately equal to zero, we assume that the model does not contain a constant systematic error and is adequate.

Considering that, due to the difference in units of measurement and different variability of factors, it is impossible to use the regression coefficient to assess the influence of factors on the dependent variable, we calculate the elasticity coefficients. To do this, we look for the average values of the variables: $\bar{y} = 11.6$; $\overline{x}_1 = 7.9$; $\overline{x}_4 = 156$. Then we proceed to the calculation of the elasticity coefficients for each of the factors: $E_{x1} = 0.764 * (7.9 / 11.6) = 0.5293$; $Ex_4 = 0.033 * (156 / 11.6) = 0.4437$.

Thus, an increase of 1% only the number of preschool institutions will increase the birth rate per 1000 people by an average of 0.4437%, and if we increase exclusively the amount of funds for social support by 1%, the birth rate per 1000 will increase by an average of 0.1479%. The strongest influence of the first factor was revealed compared with the fourth.

We find the predicted values of the factors x_1 (the number of preschool institutions) and x_4 (the amount of funds for state aid) to forecast the values of the effective indicator for 2020 and 2021. Due to the fact that the initial data are presented in time series, to obtain the predicted

values of the factors $x_{1,20}$, $x_{1,21}$ and $x_{4,20}$, $x_{4,21}$ for constructing trending models by factors, we use the Excel.

For factor x_1 (the number of preschool institutions), after smoothing out the abnormal points, a fourth-degree polynomial mod el was chosen, according to which a forecast for two years ahead was obtained: $x_{1,20}$ = 9.8 units / thousand .; $x_{1.21}$ = 10.1 units / thousand For the factor x_4 (the amount of funds for state aid), a fourth-degree polynomial model was selected, according to which a forecast for two years ahead was obtained: $x_{4.20}$ = 278.5 billion tenge; $x_{4.21}$ = 251.86 billion tenge.

We substitute all the predicted values of factors x_1 and x_4, in the above equation:

$$y_{20} = 6.356 + 0.764 * 9.8 + 0.033 * 278.5 = 25.882 \text{ people / thousand}$$

$$y_{21} = 6.356 + 0.764 * 10.1 + 0.033 * 251.86 = 22.384 \text{ people / thousand}$$

An increase in the birth rate per 1000 population is expected from an indicator of 21.73 people / thousand. in 2019 up to 25.9 people / thousand and 22.4 people / thousand in 2020 and 2021, respectively.

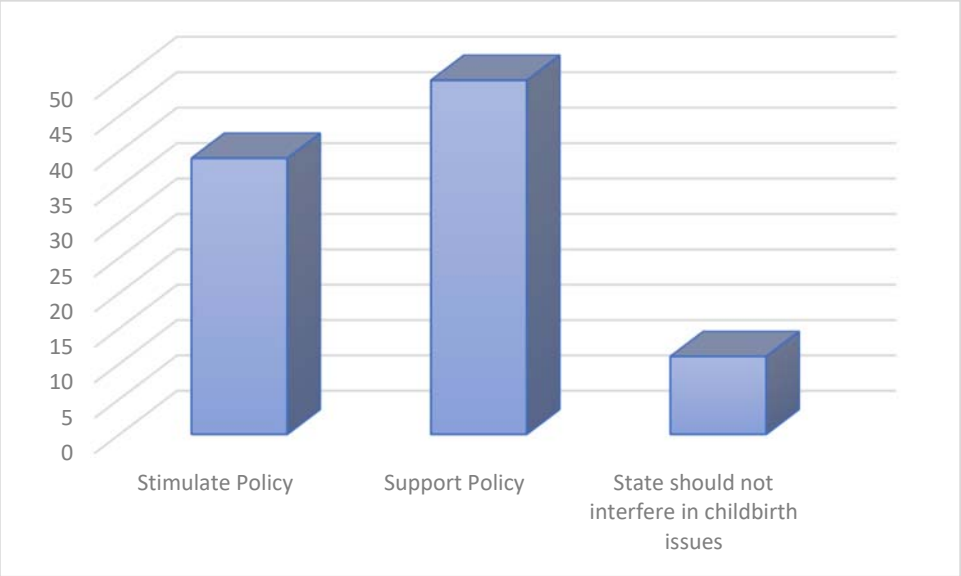
Thus, according to the results of the study, we conclude that it is the optimal situation in the field of childbearing that allows the country to function at the proper level. To achieve the optimum, measures are being taken of demographic policy aimed at resolving the current situation and motivating the population to reproduce offspring.

Having examined in more detail the specific features of the birth rate in the country by conducting an econometric analysis of the socio-economic factors that determine it, it was revealed that it is the number of pre-school institutions and the amount of funds for social support that have the greatest impact on fertility. These factors account for 89% of the variation of the effective trait. It is believed that the availability of education for a long time to make life

planning. By getting married, the two become more confident in the future of their children. Confidence in the future allows us to find stable social support, which makes it possible to survive all kinds of crises.

At the same time, the data of opinion polls show that the opinions of the population were divided both in assessing the measures introduced and in assessing the role of demographic policy. 39% of the respondents spoke in favor of the stimulate policy, 50% for support policy and 11% think that the state should not interfere in childbirth issues for the policy of support (Figure 2).

Figure 2. "How do you assess the role of demographic policy?"



Among the measures implemented, the three most important, according to the population, are the availability of kindergartens, housing subsidies and a lump-sum allowance for childbirth (Table 4). It should be noted that a large part (64%) of families spent a lump-sum benefit on childbirth to pay off loans. In second place is payment for education.

Table 4. Distribution of answers to the question: "Distribute according to the significance of the most important measures that could help you at the birth of the next child"

Population policy measures	The proportion of the population that determined 1st place%
Availability of preschool education for children	39
One-time allowance at birth	27
Housing subsidies	14
Childcare allowance for children under 1 year old	11
Monthly allowance for children up to 18 years	9

Analyzing the thematic in-depth interviews, we collected, we found that the respondents, in general, agree that there is support from the state and some financial security is "felt" at birth. However, most of them consider the amount of child benefits to be very small. So, to the question *"What do you think about childcare allowance?"*, women answered in approximately this way:

"The fact that they are is certainly correct and necessary, but their size is insufficient, especially in the current conditions", (D., 36 years old).

Respondents attribute this to the high cost of children's things, food, toys, medical services and education. As the results of an informal interview showed, the opinions of respondents differed on the issue of stimulating women with childbirth benefits. The following statements were made:

"I believe that benefits stimulate a woman to become a mother, especially of non-working women" (N., higher education, 38 years old).

"... the allowance does not encourage women to give birth to children, because it is impossible to cover all expenses for a child with such an amount. Instead, it would be better to offset the costs of educating children" (A., higher education, 24 years).

Since Kazakh families have traditional precepts for having children, most families in any case give birth to one or two children, despite the insufficiency of benefits to cover all expenses. Therefore, for low-income families, benefits are not a decisive incentive for the birth of the first and second child, but they are very important in the family budget. Nevertheless, benefits in this group of families are an incentive for the birth of a third and subsequent children. From the answers we can conclude that the financial situation of women to a certain extent affects fertility. However, most respondents believe that child allowance and childcare allowance cannot be the main factors in deciding to become a mother. The reason for this opinion is also the insignificant amount of the benefit and the term for its provision - payments are made within one year. To the question: *"Was the opportunity presented for receiving child benefits and childcare benefits for you personally an important factor in deciding to become a mother?"*, the following answers sounded:

"For me personally - no, and never appeared, although they inspire some confidence and security, but, alas, very tiny. For myself, I decided that I would have three children, and I would have a third child after two years after the birth of my second child, since only in this

case I can count on the maximum child allowance, which will at least somehow help cover the primary necessary needs with the birth of a child, not to mention the cost of preschool education" (D., 36 years old, higher education, married, university teacher).

or

"... the main factor - no, that is not to say, that is, if there were absolutely no benefits, I probably would have thought a little more, thought, decided" (R., 37 years old, a university degree, married, an employee of the research institute).

After giving birth, young mothers often quit work. Family income is falling. The childcare allowance could be a stimulating factor if their size was much larger and the payment term was more than one year. The results of the interview show that most families in their reproductive plans rely mainly on their strength.

During the focus groups with poor families, it turned out that the benefits that are given out to the child are often spent by families on basic necessities, for example, in order to purchase coal and food. They count on this benefit without it, it is extremely difficult for them to live. At the same time, some respondents try to save child benefits:

"Such an amount can be spent only on the purchase of strollers and things, having received money in only a few months. I did not touch this money and put the accumulated amount for the whole year on a deposit for the child" (J., 33 years old, higher education, married, office manager).

Thirdly, in their answers about factors affecting fertility, they call financial instability and inaccessibility of education, in particular, pre-school institutions. Here are some comments from respondents:

"Due to lack of money, we cannot decide to become a large family, because we are not sure that we can provide children with a quality education and a bright future." (B. and G., secondary education, Shymkent).

"We have two school children and my husband and I are working. If we decide to supplement our family with another child, then one of us has to temporarily stop working. Indeed, in our region, pre-school institutions do not have enough, and the queue has to wait a long time and prices for private preschool institutions are very high. And there is no one to leave the child" (M., higher education, Shymkent).

Respondents from the qualitative assessment group of this study consider kindergartens as important educational institutions. They noted that kindergartens give them the opportunity to work, and that their children are in kindergartens are fed and will be better prepared for school. They complained about the difficulties in enrolling the child in state kindergartens:

"They don't take to the state kindergarten, it is necessary through friends, corruption plays a role" (T., Astana).

Private kindergartens are very expensive. Some large families in southern Kazakhstan do not even think that it is a luxury to spend money on kindergarten: it is better to spend this money on food or clothing.

Thus, a qualitative assessment shows that cash benefits are important, but not enough to substantially address low-income families in Kazakhstan. Higher benefits can contribute to improving the material well-being of families with children and, most likely, contribute to their willingness to have children. Nevertheless, the presence of various factors affecting the well-being of families in Kazakhstan shows that cash benefits are not the only tool to influence reproductive ones that should promote fertility. In particular, measures must be taken to address family instability, which cash benefits alone cannot solve. These measures should be aimed at

reducing the costs of raising children by reducing the cost of certain areas, in particular, to increase access to free preschool education.

V. CONCLUSION

Against the background of a declining birth rate in Kazakhstan and the world, the main question that researchers and politicians must face is the extent to which the causes of the decline in the birth rate are to change the general values and principles of society, when people have less need for children, and what - the existence of barriers that prevent people from fully realizing their reproductive intentions. In the first case, when “children are not needed,” stimulating fertility seems impossible, at least in the short term, in the second, the state may well develop social policies aimed at increasing the birth rate. Therefore, the purpose of this thesis was to assess the impact of state aid on the birth rate in Kazakhstan.

Previous Western studies suggest that having financial assistance alone is not enough to stimulate fertility growth. To influence the reproductive behavior of the population and increase the birth rate, a whole package of demographic policy is needed. These conclusions are confirmed with the results of a qualitative analysis, emphasizing the importance of combining the payment of significant financial benefits with a number of measures aimed at eliminating material insecurity and ensuring universal access to education services, in particular access to preschool education and health care. The respondents also found out the importance of combining the balance between work and personal life.

In Kazakhstan, the cost of providing money to families with children is the highest of all sectors of Kazakhstan’s demographic policy. However, there is a lack of coverage for children with preschool education, thereby reducing the availability of quality education for children. Also, the results of correlation and regression analysis show the effectiveness of increasing the number of preschool institutions for the reproductive decision of families to become “large” families. And also the analysis does not deny the positive impact of increased cash payments for childcare.

Therefore, in order to increase the birth rate and well-being of children, state aid in Kazakhstan must be supplemented with effective and inclusive social services. There is a need to further expand access to preschool educational institutions to ensure in all regions of the country.

The main conclusion of this study, which requires attention from decision-makers at the state level, is that the amount of cash benefits for childcare is not the main incentive for family decision-making. Since it does not provide adequate support among poor families and does not satisfy the basic needs of families and their children. However, such families often need additional support from the state in addition to basic assistance for survival. For example, additional income for large families means that the benefits will be used for the specific needs of children, and not aimed at general household needs. This means that parents should be able to guarantee the satisfaction of children with quality education and living conditions.

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VII. APPENDIX

Appendix A

Table 5. The main socio-economic indicators of the Republic of Kazakhstan

	Population at the end of the period (year) thousand people	as a percentage of the previous year	Life expectancy at birth, years	men	women	Total fertility rate (per 1000 people)
1991	16451,7	100,6	67,60	62,60	72,40	21,53
1992	16426,5	99,8	67,40	62,40	72,30	20,54
1993	16334,9	99,4	65,40	60,10	70,80	19,26
1994	15956,7	97,7	64,90	59,70	70,30	18,93
1995	15675,8	98,2	63,50	58,00	69,40	17,46
1996	15480,6	98,8	63,60	58,00	69,70	16,25
1997	15188,2	98,1	64,00	58,40	69,90	15,15
1998	14955,1	98,5	64,50	59,00	70,40	14,75
1999	14901,6	99,6	65,63	60,60	70,90	14,57
2000	14865,6	99,8	65,45	60,20	71,20	14,92
2001	14851,1	99,9	65,76	60,50	71,30	14,91
2002	14866,8	100,1	65,95	60,70	71,60	15,29
2003	14951,2	100,6	65,74	60,50	71,50	16,63
2004	15074,8	100,8	66,06	60,60	72,00	18,19
2005	15219,3	101,0	65,86	60,30	71,80	18,42
2006	15396,9	101,2	66,15	60,60	72,00	19,71
2007	15571,5	101,1	66,34	60,70	72,30	20,79
2008	15982,4	102,6	67,11	61,90	72,40	22,60
2009	16203,3	101,4	68,39	63,55	73,25	22,14
2010	16440,5	101,5	68,45	63,55	73,41	22,53
2011	16673,9	101,4	68,69	63,85	73,57	22,51
2012	16910,2	101,4	69,52	64,74	74,29	22,70
2013	17160,9	101,5	70,62	65,91	75,23	22,73
2014	17415,7	101,5	71,44	66,90	75,82	23,10
2015	17669,9	101,5	71,97	67,49	76,26	22,71
2016	17918,2	101,4	72,41	67,99	76,61	22,52
2017	18157,3	101,3	72,95	68,72	76,92	21,64
2018	18395,6	101,3	73,15	68,84	77,19	21,77
2019	18631,8	101,3	…	…	…	21,73

Appendix B

Table 6. Organizations of Early Childhood Education

Years	Number of pre-school organizations	The number of children in preschool organizations, thousand people
2001	1 103	140,4
2002	1 095	147,5
2003	1 106	156,5
2004	1 120	168,8
2005	1 179	185,4
2006	1 327	207,8
2007	1 500	232,9
2008	1 692	257,1
2009	1 852	274,9
2010	4 781	390,8
2011	6 133	489,4
2012	7 221	584,3
2013	7 661	634,5
2014	8 467	727,5
2015	8834	758,8
2016	9410	807,2
2017	9828	862,3
2018	10314	880,9
2019	10 583	892,3

Appendix C

Table 7. Children in Early Childhood Education

	2005	2010	2011	2012	2013	2014	2015	2016[2)]	2017	2018
Children aged 3-6 (7) years, total	18,4	30	35,1	39,4	40,2	78,6	81,6	81,7	90,5	95,2
by area:										
urban	31,1	41,6	45,6	47	46,5	80,8	82,9	-	92,5	93,2
rural	4,4	18,9	25	31,7	33,6	75,6	79,9	-	88,0	98,0
Sex:										
boys	-	-	35,3	39,5	40,4	78,0	85,9	-	93,1	-
Girls	-	-	35,0	39,3	40,0	78,8	77,5	-	87,8	-
Children aged 1-6 (7) years, total	13,1	21,2	25,3	28,8	30	52,3	53,8	58,9	66,1	77,0
by area:										
urban	21,5	28,1	31,1	32,9	33,1	54	55,9	-	67,9	70,8
rural	3,3	14,4	19,4	24,5	26,6	50,1	25,6	-	64,0	86,3
Sex:										
boys	-	-	25,4	28,8	30,0	50,5	55,8	-	67,0	-
Girls	-	-	25,2	28,7	29,9	53,9	51,8	-	65,2	-

Appendix D

Survey Questions:

a) "How do you assess the role of demographic policy?"

"How do you assess the role of demographic policy?"	
Stimulate Policy	
Support Policy	
State should not interfere in childbirth issues	

b) "Distribute according to the significance of the most important measures that could help you at the birth of the next child"

Population policy measures	Check the box
Availability of preschool education for children	
One-time allowance at birth	
Housing subsidies	
Childcare allowance for children under 1 year old	
Monthly allowance for children up to 18 years	