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Socio-Demographic Situation in Kazakhstan: Problems of Reproduction

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Abstract

An increase in the birth rates and a decrease in mortality is currently one of the priority lines of the development of society. From a purely technocratic standpoint, development of the population should be based on accurate knowledge of the number of consumers and the movement of needs, without which it is impossible to solve many social problems in general. The paper addresses a question of the need to orient the economy towards the development of a person and the population as a whole. The purpose and objectives of the study were to identify the dynamics of the population size, natural increase, the main trends in the growth of birth rate, the analysis of the causes of death, including infant mortality, the study of the marriage and divorce rates, migration. In the main part of the paper, the indicators of the population size in the republic over the past 17 years and in recent years are considered, including: the main trends in population growth, factors affecting the growth and decrease in mortality, causes of infant mortality, migration balance, marriage and divorce rates, both in the republic as a whole and region-wise. In conclusion, proposals were made to create favourable conditions for the demographic growth of population of the republic. Today, the solution of problems in the field of demographic policy is becoming increasingly important. It is necessary to accurately determine the priority paths of demographic growth, taking into account the specifics of the development of the population of Kazakhstan. In the future, this would facilitate the solution of demographic

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problems in terms of improving the demographic situation, which will contribute to the prosperity of the whole state.

Keywords: population, birth rate, mortality, marriage rate, divorce rate, migration, population growth factors.

Introduction

Recently, there has been a reorientation of economic development towards a social dimension, which led to the emergence of the most aggravated problems of mankind at this stage of development. These questions relate to both qualitative and quantitative aspects of the planet population. The solution of these issues requires new approaches of planned economic development, which gives rise to the adoption of certain planning and forecasting measures in a practical aspect (Østby, 2019; Umer *et al.,* 2019; Lesthaeghe, 2020; Levene & Fenner, 2020; Mostepaniuk, 2020). As of April 1, 2018, the population of Kazakhstan was about 18212.8 thousand people. Notably, the predominance of urban population – 57.4%, which is 10459.2 thousand people, over rural – 42.6% corresponds to 7753.6 thousand people. Compared to the same period of 2017, there was an increase in the population by 1.3%, which is 237.700 people. Natural and climatic conditions, as well as a balanced economic and political situation, allow considering Kazakhstan as a country with favourable living conditions. Over the past decades, there was an increase in the growth rate of the population of Kazakhstan. In 2003, there was a decrease in the growth rate from 29% to 0.6%, compared to 6 years of the previous century.

Based on the data provided by the competent authorities, as of February 1, 2020, the population of the Republic of Kazakhstan reached 18.653 thousand people and by the end of the year it increased, in comparison with the population of 1993, by 1.9 million people. Notably, since 2003, the growth rate of the population of the republic began to increase from 0.2% in 2004 to 1.55% in 2019. The dynamics of the population size was positively influenced by the created favourable socio-economic situation in the last decade. The total number of Kazakhstanis due to the improvement in the socio-economic living conditions of the population, starting from 2003 to 2019, slowly increased annually and by the end of 2019 amounted to 18.6 million people, and as of February 1, 2020 it amounted to 18.653 thousand people *(Figure 1)*.
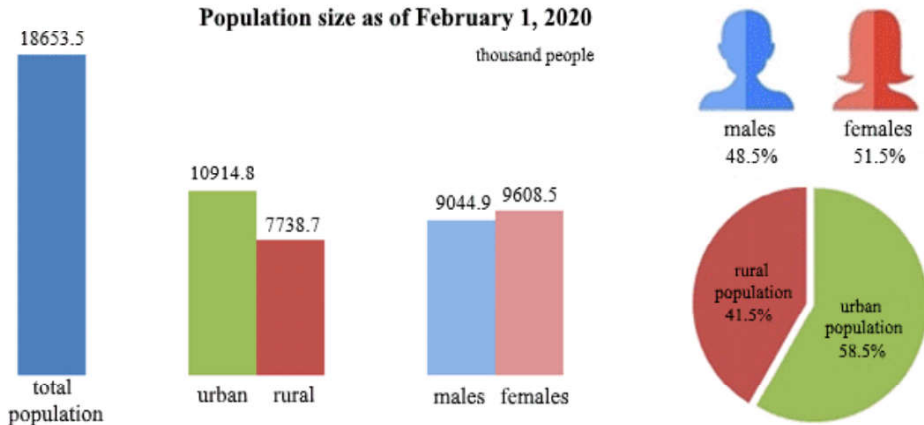
Source: Live data as of February 1, 2020 of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan (MNE RK) (Agency for Strategic planning…, 2021).

Figure 1. *Population structure as of February 1, 2020*

An increase in the growth of birth rates and a decrease in mortality is currently one of the priority directions of the development of society. As a solution to population problems, it would be effective to develop a programme of measures aimed at creating favourable conditions for reproduction of population, strengthening the family, increasing life expectancy, increasing the social activity of people, and improving their health (Novycki, 1990).

Methodology

From a purely technocratic standpoint, development of the population should be based on accurate knowledge of the number of consumers and the movement of needs, without which it is impossible to solve many social problems in general. The orientation of the development of the national economy towards meeting the needs of the population requires an answer to the questions: how many consumers (population) there will be by planning periods region-wise, in terms of gender and age structure, by ethnic composition; what are the needs (in quantitative and qualitative aspects) of the population and the level of their satisfaction at the present time? Such a formulation of the question can be expressed by the equation:

$$G = P \times N, \tag{1}$$

where: G – amount of goods and services necessary to meet the material and spiritual needs of the population; P – population size classified by ethnic and socio-demographic criteria by regional affiliation; N – the necessary needs of the population, taking into account the demographic and social factor and regional natural and economic conditions (Zhankubayev, 2011; Gromyko, 2013). The above equation requires an answer to the question about the development of the population, as a goal and as a means of developing the national economy, since labour resources are directly dependent on the quantitative and qualitative characteristics of the population. Quantitative and qualitative characteristics depend on the reproduction of population, life expectancy, physical and mental health, migration processes (Volkov, 1999).

During the period of Soviet rule, the largest increase in population was noted. Until 1993 the population growth amounted to 17 million people, which was conditioned by the high degree of confidence of the population in the future. A short time after the collapse of the USSR, since 1993, there has been a sharp population decline, which was caused primarily by the outflow of the population to Russia. The demographic collapse lasted until 2001, during this period the population decreased by more than 2,200 thousand people in comparison with 1993. The population dynamics of the Republic of Kazakhstan is shown in *Table 1*.

Table 1. *Population dynamics in Kazakhstan (million people)*

Years	Population at the beginning of the year	Including		Of the total number in %	
		Urban	Rural	Urban	Rural
1985	15.7	8.8	6.9	56	44
1990	16.4	9.3	7.1	57	43
1991	16.8	9.4	7.1	57	43
1992	17.0	9.7	7.2	58	42
1993	17.0	9.7	7.3	57	43
1994	16.9	9.7	7.4	56	44
1995	16.7	9.8	6.9	58.6	43.4
1996	16.1	8.9	7.2	55	45
1997	15.8	8.7	7.1	55	45
1998	15.2	8.5	6.7	56	44
1999	15.0	8.4	6.6	56	44
2000	14.9	8.5	6.3	57	43
2001	14.8	8.4	6.4	56	44
2002	14.9	8.5	6.4	57	43

2003	15.0	8.5	6.5	56	44
2004	15.1	8.6	6.5	57	43
2005	15.2	8.7	6.5	57	43
2006	15.2	8.9	6.3	59	41
2007	15.8	8.3	6.5	53	47
2008	16.0	8.5	7.3	53	47
2009	16.2	8.8	7.4	54	46
2010	16.4	8.9	7.5	54	46
2011	16.7	9.1	7.6	54	46
2012	16.7	9.1	7.6	54	46
2013	16.9	9.3	7.6	55	45
2014	17.4	9.6	7.8	55	45
2015	17.7	9.8	7.6	57	43
2016	17.9	10.0	7.6	58	42
2017	17.9	10.2	7.7	58	42
2018	18.2	10.5	7.8	59	41
2019	18.6	10.9	7.7	58	42
2020	18.7	10.9	7.8	58.5	41.5

Source: Compiled by the author based on the materials of statistical yearbooks of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan as of 2017-2020 (Agency for Strategic planning…, 2021).

Analytical data on the dynamics of the natural population changes in the Republic of Kazakhstan allow for the conclusion that until 1998 the birth rate has a tendency to decline, and in 2020 its value was 14.8 ‰, or 2.3 less than in 1995, but then it began to gradually increase and by 2005 it reached 18.4 ‰, and in 2011 it was 22.5 ‰, and in 2013 it was 23.3 ‰, in 2015 it decreased to 22.7 ‰, and in 2018 it decreased to 20.6 ‰ (Table 2). This reduction was conditioned by a number of social factors: the outflow of population outside the republic, as well as a decrease in the birth rate due to the instability of the economic environment (Hobela, 2020). The survey of the level of natural population changes will reveal the factors influencing it (*Table 2*).

Table 2. *Dynamics of vital statistics*

Year	Born	Deceased	Including children under 1 year old	Natural increase	Marriages	Divorces
1985	25.1	8.0	30.1	17.1	10.1	2.6
1990	21.7	7.7	26.4	14.0	9.8	2.6
1991	21.0	8.0	27.4	13.0	9.8	2.9
1992	19.9	8.1	26.2	11.8	8.7	3.0
1993	18.6	9.2	28.4	9.4	8.6	2.7
1994	18.7	9.8	27.2	9.7	7.5	2.6
1995	17.2	10.5	27.0	6.7	7.2	2.4
1996	15.9	10.4	25.4	5.5	6.4	2.5
1997	14.7	10.1	24.2	4.6	6.4	2.3
1998	14.8	10.2	21.6	4.6	6.4	2.4
1999	14.2	9.8	20.6	4.4	5.8	1.7
2000	14.9	10.1	27.9	4.8	6.1	1.89
2001	14.9	10.0	28.6	4.9	6.3	2.0
2002	15.3	10.1	25.8	5.2	6.7	2.1
2003	16.6	10.4	25.5	6.2	7.4	2.1
2004	18.2	10.1	25.8	8.1	7.6	2.1
2005	18.4	10.4	27.8	8.0	8.1	2.1
2006	19.7	10.3	13.9	9.4	9.0	2.3
2007	20.8	10.2	14.6	10.6	9.5	2.3
2008	22.8	9.7	20.8	13.0	8.6	2.3
2009	22.2	8.9	18.2	13.4	8.8	2.5
2010	22.5	8.9	16.5	13.6	9.0	2.6
2011	22.5	8.7	14.8	13.8	9.7	2.7
2012	22.7	8.5	13.5	14.2	9.8	2.9
2013	23.3	8.1	11.2	15.7	9.9	3.0
2014	23.1	7.7	9.8	15.5	9.2	3.1
2015	22.7	7.5	9.4	15.3	8.5	3.0
2016	22.5	7.4	8.6	15.4	8.0	2.9
2017	20.6	7.5	8.5	15.1	8.0	2.9

2018	20.6	7.5	8.0	14.5	7.9	3.0
2019	20.7	7.1	7.8	14.7	8.0	2.8

Source: Compiled by the author based on the materials of the statistical yearbooks of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan for 2018-2020 (Agency for Strategic planning…, 2021).

Results

After examining the data provided by the civil registration authorities, it was noted that in percentage terms, in March 2018, there was an increase in the birth rate by 0.3%, which corresponds to 92.6 thousand people compared to the same period in 2017. In 2018, the birth rate was only 20.6%, and in 2019, due to the development of the social sphere, it was 20.7%. The number of deaths over the same periods is decreasing, so in 2018 it amounted to 33.8 thousand people, decreased by 1.4% against 2017. Infant mortality is a catalyst for the development of medicine in the republic. And in 2018, its indicator showed the minimum value, which corresponds to 7.51 deaths per 1000 people, which shows a positive trend and a decrease from the same periods of 2017 by 2.4% (*Figure 2*).
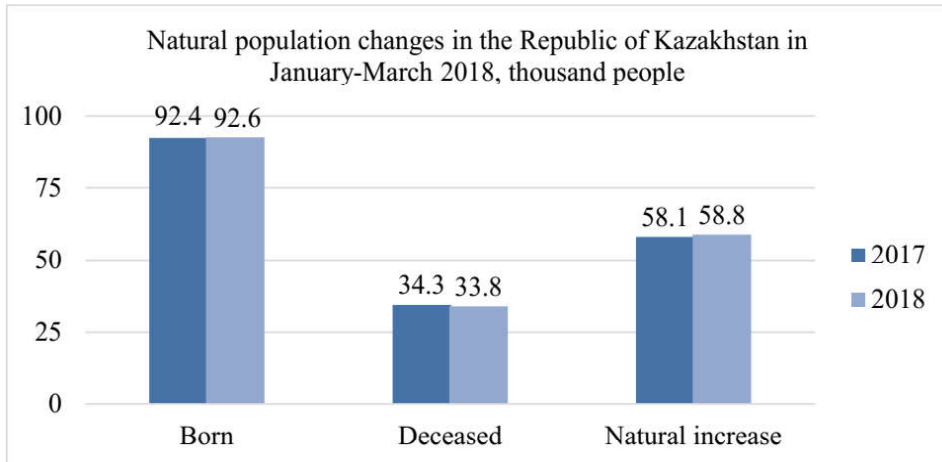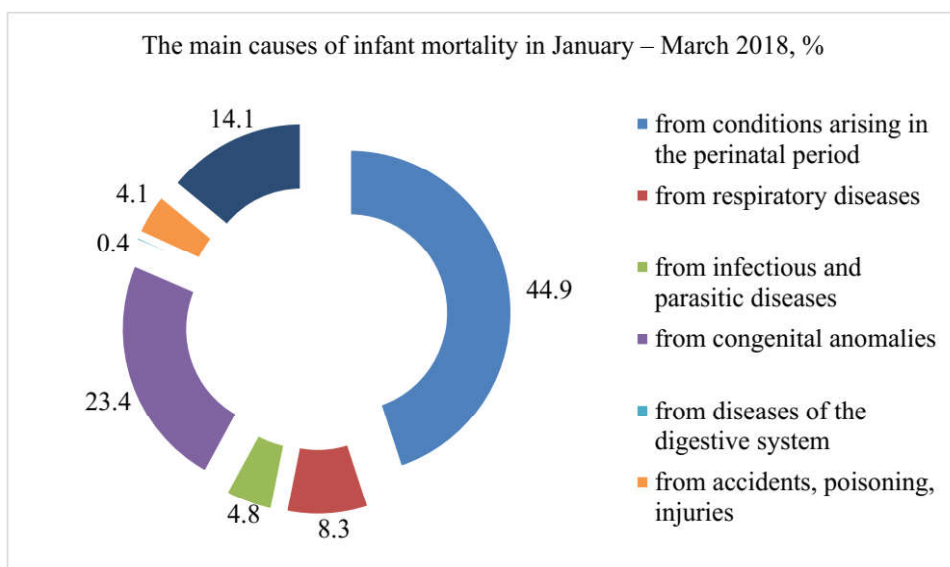

Source: Live data as of April 1, 2018 of the Committee on Statistics of the MNE RK (Agency for Strategic planning…, 2021).

Figure 2. *Natural population changes in the Republic of Kazakhstan as of April 1, 2018*

The general mortality rate at the beginning of the analysed period in 1995 was 10.5 per 1000 people of the population, then it began to decline and by 1999 it was – 9.8 ‰. Although, in the subsequent years 2000-2007 it exceeded 10 people on average per 1000 people of the population, then it decreases again and in 2008

it was 9.7 ‰, in 2009 – 2010 – 8.9 ‰, in 2011 – 8.7 ‰, in 2012 – 8.5 ‰, in 2013 – 8.1, in 2014 – 8.0 ‰, in 2015 – 7.85 ‰, in 2016 – 7.56 ‰, in 2017 – 7.51 ‰, in 2018 – 7.1 ‰. One of the indicators of the republic's population is the rate of natural increase, which amounted to 58.800 people in 2018, which is 1.3% higher than the same period of the previous year. Thus, the natural increase in 2018 amounted to 13.06 people per thousand of the population.

In 2018, the rate of infant mortality was 8.85 deaths per thousand newborns. The factors that affect the value of this indicator are primarily conditioned by a number of exogenous causes, the main ones in the postneonatal period. In the first quarter of 2018, for these reasons, 368 cases of infant mortality were recorded, which is 44.7% of the total value of the infant mortality rate. The next cause of infant mortality is congenital anomalies, from which 192 babies died in the first quarter of 2018, which corresponds to 23.4%. The third main cause of infant mortality are respiratory diseases, its share is 8.3% or 68 cases. In the period under consideration, 39 infants died from parasitic and infectious diseases, which corresponds to 4.8%, and in the last place in the ratings of the causes of infant mortality is death from accidents, its share is 4.1% or 34 cases (Figure 3) (Shelley, 2018; Mohamoud et al., 2019).

Source: Live data as of April 1, 2018 of the Committee on Statistics of the MNE RK (Agency for Strategic planning…, 2021).

Figure 3. *The main causes of infant mortality as of April 1, 2018*

At the same time, during the considered period, there was a sharp decrease in infant mortality from parasitic and infectious diseases compared to the same

period in 2013 by 44.8%. Investigating the problematic aspects of infant mortality in the Republic of Kazakhstan, a positive downward trend in the infant mortality rate was revealed. Even during the economic crisis of the late 1990s, the infant mortality rate was 21.6 ‰ and its decline was 3.6 ‰. Another feature of the infant mortality rate is the differentiation of this indicator depending on the territorial affiliation. Thus, the highest infant mortality rate in the first year of life is traced in Kyzylorda – 29.1 ‰, Jambyl – 30.4 ‰, and Mangystau Region was the leader in terms of infant mortality, which amounted to 40.9 ‰.

At the end of 2018, there was a decrease in the mortality rate of the population in the Republic of Kazakhstan by 4.5%, which is 7.5 deaths per thousand of the population. The target value for this indicator was calculated within 7.56. In 2017, the value of this indicator was 7.85 deaths per thousand people. The data in Table 3 demonstrate the main causes of mortality in the republic's population. The main causes of death are diseases of the circulatory system, for this reason, 31.6% died in 2018. The number of deaths from malignant tumours continues to decrease and at the end of 2018 was 15%. The positive dynamics of mortality is shown by the cause of respiratory diseases. Recently, cases of viral pneumonia have become more frequent, which leads to an increase in this indicator.

Table 3. *Mortality by main causes of death, thousand people*

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total number of deaths	145.6	144.2	142.6	135.9	132.3	130.8	131.2	129.0	130.5
of them:									
from malignant tumours	17.7	17.0	17.5	16.9	16.1	16.2	15.7	15.1	15.0
from diseases of the circulatory systems	65.9	51.3	43.1	35.3	35.9	34.1	31.8	31.5	31.6
from respiratory diseases	65.9	51.3	43.1	35.3	16.7	18.3	18.2	16.6	16.5
from accidents, poisoning, injuries	17.8	17.0	16.4	16.3	15.2	14.4	13.4	12.5	12.6

Source: Preliminary data for 2017 of the Committee on Statistics of the MNE RK (Astana); Live data as of April 1, 2018 of the Committee on Statistics of the MNE RK (Agency for Strategic planning…, 2021).

Having considered the main causes of death, the main share in the structure is occupied by diseases of the circulatory system and constitute 31.6%. In second place in causes of death – deaths from malignant tumours – 15%; in third place – deaths from diseases of the respiratory system – 12.6%. The mortality rate from accidents, poisoning, and injuries in 2018 was 9.6%. In terms of age and sex structure, the highest mortality rate falls on the male population – 55.5%. In terms of age, 23% of the dead are the working-age population. Notably, 3.6 times more

men of working age die than women. Also in 2018, a decrease in mortality was recorded in all regions of the Republic of Kazakhstan. The regions with the highest mortality rate are Atyrau, Mangistau, Jambyl regions. The reason for such high rates in these areas is the low development of the healthcare system. The regions in which the mortality rate exceeds the national average are East Kazakhstan (12.5‰), Karaganda (12.2 ‰), North Kazakhstan (11.7 ‰) and Almaty (11.5 ‰).

The next population indicator is the divorce rate. This ratio is calculated as the ratio of the total number of divorces to the product of the average value of the total population over a period of time. This indicator is calculated per mille (Glushkova & Symagyna, 2008).

$$K_d = \frac{Ktd}{\bar{S}*t}, \qquad (2)$$

where: K_d – divorce rate for the period; – average population size; t – period, years. In 2017, the total number of divorces in the country as a whole was 54.600, which is 3.100 more than for the same period in 2013. This indicator does not take into account population growth, and in connection with this circumstance, the study will consider the dynamics of the divorce rate (*Table 4*).

Table 4. *Indicators of the number of divorces and marriages*

Year	Thousand		Per 1000 people	
	marriage	divorce	marriage	divorce
2013	168.4	51.5	9.89	3.02
2014	159.3	52.7	9.22	3.05
2015	148.8	53.3	8.48	3.04
2016	141.7	52.0	7.96	2.92
2017	141.8	54.6	7.86	3.03
2018	137.8	54.8	9.9	3.3

Source: Compiled by the author based on the results of statistical yearbooks of the Committee on Statistics of the MNE RK (Levene & Fenner, 2020)

Based on the estimation of the divorce rate, a tendency of stability should be noted. So, at the end of 2018 it was 3.03 ‰. The results of the estimation of the number of migrants to the republic show that in the first quarter of 2017, the number of arrivals to the republic was 42.2% higher compared to the same period of the previous year. The number of migrants in the analysed period of 2017 amounted to 5.888 people. The number of people leaving the country increased by 0.7%, which is 7727 people, thus a negative migration balance of 1839 people was established. Over the past 10 years, 1.5 million couples have married in Kazakhstan. More than half a million divorced during the same period,

the Committee on Statistics of the MNE RK reported. The number of divorces is growing every year. If in 2007 there were 36 thousand divorces, then in 2017 – already 54 thousand. Most divorces are observed in the Karaganda Region, least of all – in the West Kazakhstan. According to the Committee, most often people between the ages of 30 and 34 who have been married for five to nine years file for divorce.

Young couples who have lived together for several years notice that the original projections of ideal images are erased. There are children with whom the couple is also going through their crises. All this subsequently affects their relationship, and it is during this period that people most often get divorced. There were twice as many divorces in urban areas than in rural areas. According to psychologists, citizens feel more inner freedom. More than half of the couples who divorced in the seven months of 2018 have had children together. Among 32 thousand divorced people, 19 thousand have had children. In January-July 2018, in Kazakhstan, the average age at marriage for men was 29 years, for women – 26 years. The youngest people who got married were 16 years old at the time of registration. The oldest were 90 for the groom and 87 for the bride.

Table 5. *Population shift in the Republic of Kazakhstan*

	January-April 2016	January-April 2017
Migration – total		
Arrived	137 837	376 043
Departed	141 358	377 882
Net migration	-3 521	-1 839
including:		
Internal migration		
Arrived	133 695	370 155
Departed	133 695	370 155
Net migration	-	-
External migration		
Arrived	4 142	5 888
Departed	7 663	7 727
Net migration	-3 521	-1 839
including:		
CIS countries*		
Arrived	3 045	4 022

Departed	6 753	6 718
Net migration	-3 708	-2 696
Other countries		
Arrived	1 097	1866
Departed	910	1009
Net migration	187	857

Source: Operational data of the Committee on Statistics of the MNE RK as of 2017 (Agency for Strategic planning…, 2021).

*Note: *CIS – Commonwealth of Independent States.*

As can be seen from the data presented *(Table 5)*, the main migration process is based on the CIS countries, the share of those who arrived in the republic from the CIS countries accounts for about 68.3%, then the outflow of the population to these countries is estimated at 86.9%. The share of interregional migration accounts for only 33.8% of the number of internal migrants. The regions with a positive balance of interregional migration of the population of the republic should be highlighted: (1) Astana city – 18.052 people; (2) Almaty city – 7.800 people; (3) Akmola Region – 1.361 people; (4) Almaty Region – 814 people; (5) Atyrau Region – 21 people.

For the first quarter of 2018, there was a decrease in entry migration processes in the republic by 23.3%, and, accordingly, an increase in exit migration processes by 21%, conditioned by migration of the population to the CIS countries. The share of arrivals from the CIS countries amounted to 76.8%, notably, the share of those who left for these countries still exceeds the number of arrivals and is 89.1%. The positive dynamics of interregional movement is noted only in four regions of the republic: the cities of Astana (15.359 people) and Almaty (5.925 people), in Akmola (1.191 people) and Almaty (920 people) regions.

Discussion

The high mortality rate can be explained by unfavourable conditions of the perinatal period of women in labour, problems arising during childbirth, and the high mortality rate of infants in the first week of life. The leading cause of death worldwide is diseases of the cardiovascular system (Østby, 2019). Having considered the causes of infant mortality, it becomes necessary to develop specialised programmes aimed at improving the health of mothers, improving the conditions of their stay in perinatal centres, reducing deaths from congenital anomalies, infectious and parasitic diseases (Mohamoud et al., 2019). The state

must strengthen control over the implementation of this task and allocate the necessary financial resources for their implementation.

Regarding the divorce rate, most often people who have been married for five to nine years file for divorce. Psychologists believe there are many reasons for this. By this age, a person experiences a reappraisal of values, during the same period people often experience a crisis that occurs every 10 years.

Considering the process of the development of population, two fundamentally different approaches should be noted. The first approach assumes a passive path of development, due to the ascertaining of emerging and ongoing processes. The second approach is conditioned by the active management of the ongoing demographic processes. Depending on the emerging socio-demographic situation, an alternative option for further development is selected, depending on one or another approach. When determining these approaches, the economic opportunities and needs of the country are also taken into account, which are part of the state's political development programme (Borysov, 2001; Ahn et al., 2019; Bouvier, 2019).

Due to the fact that the demographic situation of the state directly affects its economy and politics, an assessment of the demographic situation allows predicting trends in domestic policy. This, in turn, has an impact on social life and interethnic relations. It can be stated that having information about the required goods and services necessary to meet the needs of the population, the regional administration and the government of the republic will have a clear target setting about the required additional goods and services, as well as the capacities for their production required to meet the increasing (and changing) needs of the population (Shelley, 2018; Levene & Fenner, 2020). The development of society and the economy determines changes in the system of reproduction of labour-power (Glushkova & Symagyna, 2008). Improving demographic policy in Kazakhstan will have a positive effect on reducing poverty, creating dynamic economy and financing development.

Conclusion

The socio-economic policy pursued in the territory of the Republic of Kazakhstan allowed eliminating some of the causes of the demographic decline. Thus, confirming that the reserves of demographic growth are not only programmes to stimulate the birth rate, but primarily the well-being of the population, its confidence in the future. At this stage, there are some demographic problematic aspects due to the imperfection of the healthcare system. These problems are solved by the high birth rates in the country. Since 2000, this level has grown by almost 38.4%. Notably, the mortality rate has decreased by 34.6%. One of the problems at this stage is the high mortality rate of the male working-age population and the high level of infant mortality. The causes of infant mortality are conditions

arising in the perinatal period, from which 820 deceased infants under the age of 1 year were registered in the republic in January-March 2018 alone. Compared to the corresponding period in 2017, the number of deaths of children under 1 year of age increased by 2.4%.

Now it is becoming more and more important to solve problems in the field of demographic policy. It is necessary to determine the priority paths of demographic growth, taking into account the specifics of the development of the population of Kazakhstan. In the future, this would allow solving the demographic problems and improve the demographic situation, which will contribute to the prosperity of the whole state. This necessitates changes in the concept of social protection of the population in terms of stimulating women with children by increasing monetary targeted assistance, resettlement of people from densely populated southern regions to the northern regions – creating favourable conditions for them, providing early medical care to pregnant women to reduce infant mortality in the perinatal period, to increase the period of c maternity leave from one year to three years, etc.

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