Modern demographic processes in urban areas of the Republic of Kazakhstan

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Abstract. The result of the growth in cities’ population is the migratory and natural movement of the population. Special attention is given in this article to the research of natural movement of the population of cities of Kazakhstan; this indicator of natural movement of the population is defined by the demographic processes in the future. Therefore, the given information about the natural and mechanical movement of the population can be considered as the original generalizing indicators of the processes that happen in population movement.

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processes of natural reproduction defined the dynamics of population size.

In 2010 compared with 1999, the natural increase increased by 8.7% – it is basically owing to the growth of the general factor of birth rate, which has increased in the analysed period by 7.9% (by 9.4% in cities and by 5.5% in the countryside). At the same time the general mortality rate coefficient decreases faster in the cities than in the countryside. These distinctions have caused a higher natural increase in the urban population. And if in 1999 the natural increase indicator in villages was 3.5 times more than in the cities, then in 2009 the situation became the opposite. It is explained not only by the high indicator of the natural movement, but also by a growing migratory stream from villages into cities of the population of childbearing age.

The objects of research are indicators of natural and mechanical movement of urban areas in Kazakhstan for 1999–2009. The subjects of research are analyses and dynamics of processes of natural and mechanical movement of population in urban areas in the republic. The evaluation of the main indicators of natural movement of population in urban areas is important for the socio-demographic development and finding solutions for the demographic policy of the country. It is explained that the comparative analysis of indicators of natural movement differs in a city and a rural area and is trends in depopulation processes for 1999–2009 are observed.

In the methodological and information bases of scientific work the methodology of the geographical science of national and foreign authors has been used. In this work general scientific methods have been used, also modern methods of research, systematic and comparative-geographical analyses, methods of GIS technologies.

2. Processes of natural movement of population of urban areas of the Kazakhstan

According to the development process of urbanisation in Kazakhstan the level of the birth rate in an urban population has decreased in comparison with the rural one, and further there is also a decrease in birth rate in rural area. In some cases it can lead to the fact that the birth rate level in cities becomes higher, the causes of which are socio-economic and demographic factors, in particular the fact that there is a more balanced sex ratio in the cities.

In 1999–2010 the changes in the dynamics of the size of city and rural populations were observed; they enable us to allocate some stages of development of the given process. In this period a similar thing occurs not for the first time: in the 1990s the size of the urban population was reduced more intensively than the size of the rural one; in 1999–2005 the size of the urban population increased, and the rural one decreased; in 2006–2009 the quantity of townspeople and countrymen increased. It was due to the administrative-territorial changes, and the transformation of some city settlements into rural areas.

The change in the aggregate size of the population of the Republic of Kazakhstan, is first of all influenced by the natural increase, which is formed under the influence of changes in the birth rate and death rate of the population. Between the census period of 1999–2009 the natural increase in the republic grew from 4.7‰ to 13.5‰ and it increased three fold, i.e. from 70.1 thousand people in 1999 up to 214.7 thousand people in 2009.

The main source of the population increase between the census periods of 1999 – 2009 is the high level of the birth rate (the birth rate coefficient in 1999 is 14.5‰ and in 2009 it is 22.2‰). A rather low death rate (in 1999 – 9.87‰, and in 2009 – 8.87‰) is observed. During this period the natural increase coefficient of an urban population increased from 2.2‰ in 1999 to 13.2‰ in 2009.

The analysis of statistical data showed that in 1999–2009 575 thousand people were born in the republic. The general factor of the birth rate in 1999 is 14.6‰, and in 2009 it is 22.2‰.

Nowadays in Kazakhstan there are over 4019 women of childbearing age which is about 30% of the general population of the republic. As it is known, the birth rate is characterized by rather a high degree of flexibility in relation to the sociopolitical and economic changes. The development of re-formation processes, the complication of social and economic living conditions, the change in behavioural stereotypes, the appearance and wide availability of various means of contraception have all played a certain role in the process of the decrease in the birth rate in the 1990s. In some families (especially in new families) there was a reorientation to a desirable quantity of children; spouses began to postpone the birth of the next child more often until a more certain future. The refusal to give birth to more of children has led to a change in the diagram of births that promoted the increase of first-borns among newborns in the 1990s. Thus, essential distinctions were observed between the situation in city and rural districts. In cities the
orientations to the birth of the first child was more and more, and in rural areas the traditions of having many children were still supported – the proportion of third children and more, though it was reduced, nevertheless remained considerable. Thus, the birth rate indicators by the end of the 1990s were supported, basically, thanks to the birth rate in the rural areas of a considerable number of the 3rd or later child in the birth order.

It is impossible to define the contribution to change of a demographic situation of each of the listed factors, at least, on the basis of the available information. We will try to reveal the general tendencies. The evolution of age structure in 1999–2009 continues favorably to affect the general factors of natural movement of the population. In 2009 from the age of 20 to 39 the number of the most active reproductive part of the population increased (by 10.3%). Growth in the number of births became the consequence of it.

The indicator of birth rate in 2009 in the cities of Southern Kazakhstan was 28.7‰, that is 8.7‰ more than in 1999. The population of the ‘growing’ group in 1999–2010 increased by more than 1.5 million people, thus 62.3% of growth was provided in 2005–2010. The obvious demographic donor of Kazakhstan is the southern areas – in 1999–2010 they defined the dynamics of the population growth of the country. Especially in the south the highest concentration of the population – 36.5% in 2010 is observed.

By 2009 the population of Kazakhstan compared with 1989 was almost restored, but its ethnic structure had cardinally changed. The majority defining the demographic situation now is the Asian ethnoses presented by the people of the Turkic group. The number of Kazakhs, Uzbeks, and Uyghurs (1989–2009 increased 1.5 – fold over 20 years and constitutes 67.4% of the population of the country (in 1989 – 42.9%). The European ethnic group (Russian, Ukrainians, Tatars, Germans) for the same period decreased 1.9-fold; its relative density decreased from 51.0% in 1989 to 28.2% in 2009.

At the present stage the birth rate growth in Kazakhstan is caused also by several factors. First, reproductive age has reached the generation, who were born in the 1980s. Secondly, some improvement in social and economic living conditions has led to the realization of the effect of so-called ‘postponed births’. Thirdly, the orientation of new families to a reduction in the intervals between births, especially the first and second child is observed accurately enough.

![Fig. 1. The natural growth rate of population in urban areas of Kazakhstan for 1999–2009](image)

*Source: Authors’ work based on the statistical data of the Agency of the Republic of Kazakhstan*
But as a whole the rates of urban population increase nowadays are much above the rates of the rural population, and the urban population defines the general dynamics of the population of Kazakhstan – in 1999–2010 the population growth of the Republic of Kazakhstan was thanks to the townspeople.

The birth rate peak in Kazakhstan was in 1987 – at that time the greatest quantity of children was born in the republic. But the process of gradual reduction in number has already begun from 1988 until and including 2001. From 2002 at birth rate growth in Kazakhstan is much deeper. There are serious processes in Kazakhstan testifies that the migratory situation is much deeper. There are serious tendencies connected with such negative factors, as loss of highly-skilled personnel, growth in illegal migration, increase in intensity because of non-uniform moving of immigrants in the territory of the country. Not the scales but its structure and territorial distribution play an important role in migratory processes. And within the limits of labour migration the tributary with intense migratory potential will increase. Migration from rural regions into cities remains the prevailing form of territorial placing in internal migration that testifies an active development of the urbanisation process. Migratory processes essentially change the ethnic and gender age-related population composition. First of all, migrations render a great influence on demographic processes. They lead to changes to the gender age-related and social structure of the population in the areas, where migrants move from and where they come to. In the areas with an outflow that exceeds the rates of population reproduction, its population is reduced and birth rate decreases because mainly the young population participates in migrations.

The detailed analysis of migration indicators as a whole in the republic, and in the regions including the cities of Kazakhstan will allow priority directions of a migratory policy to be revealed, especially in modern conditions when the migratory mobility of the population has unusually amplified.

Between the census period (1999–2009) the number of migrants in the republic was up to 3 million people or 18.9% of the whole population. Mainly, it was internal migration, which made up 78.5% of all migrants (2.4 million). In the structure there were 18% (0.5 million people) from the CIS countries and 3.5% (0.1 million people) from other countries.

According to the results of the last census city dwellers (65%) prevail among migrants. Migration from a village to a city remains the prevailing form of territorial placing that testifies the lasting urbanisation process. Among the internal migrants the movement from a village to a city prevails which is 70%; among the migrants from the CIS countries it is equal in a city and a village; and among migrants from other countries movement to the countryside prevails and it is 66.7%.

If we examine only the internal migration the population becomes more mobile within regions, that is more subject to residence change. First of all, it is connected with low incomes and absence of work in a village. In the countryside the migrants’ moving into regions prevails; it is 71% as a change of residence from a village to a city is a more cost-based process. And in cities, there are equal migrants, both

3. Migratory processes of urban areas in Kazakhstan

The study of issues connected with migratory processes in Kazakhstan testifies that the migratory situation in the country is much deeper. There are serious
intraregional and from other regions of Kazakhstan as well.

An interesting fact is the feature examination of the age structure of the population migrating within the republic.

Following the results of the census of 2009 there were considerable changes in the age structure of migrants. The age of the most mobile part of migrants is becoming younger: if in 1989–1998 the most mobile age group was 25–29 years old (12.4%) then in 1999–2009 this age group was 20–24 years old (15%). The greatest change indicator of specific density in the structure of migrants is at the level of 3.2% in the age group of 20–24 years old. The proportion of age groups of 15–19 years old, and 45–54 years old has also increased in the structure of migrants by 1.7–1.5% points.

The comparison of the given censuses of 1999 and 2009 testifies high rates of increase in migratory processes in Kazakhstan. According to the census data, those who came following the census results of 2009 made up 18.9% of the whole population or 3.0 million; it is 4 times more in comparison with the census of 1999. The number of those who arrived at that time was 752.2 thousand, which is 5% of the whole population in the republic.

If the internal migration amount on the census of 1999 made up 59%, then in 2009 it was already 78.5%. Accordingly, the proportion of external migration reduced from 41% to 21.5%. So, Almaty, Astana and Almaty oblast are the regions of the greatest migratory streams not only following the census results of 2009, but also in the previous census decade. The migratory dimension in Almaty city in the general migration process decreased from 24% to 15% in the period of 1989–1999.

4. Demographic processes in urban areas in the modern period

In the last 20 years the general number of the population of Southern-Kazakhstan (especially South Kazakhstan, Kyzylorda, Almaty oblast and Almaty) and in the last 10 years the number of inhabitants in the West Kazakhstan region (in the cities of Mangystau, Atyrau and Aktobe oblast) grew annually and faster. In the years of formation as the capital of the country the size of the population of Astana has increased from 300 thousand to 700 thousand i.e. 2.3-fold. At the same time the number of inhabitants in other cities of 4 oblasts of the North Kazakhstan region has decreased annually, and continues reducing until today. The general size of the population in East and Central Kazakhstan has also considerably decreased.

It is important to notice that unstable dynamics of the birth rate indicators in the last one and a half decades was in parallel with the process of increasing death rate indicators.

The death rate is socially determined and depends on a set of factors which is divided into big groups: endogenous (generated by internal development of a human body) and exogenous (connected with environment action). The comparison of the dynamics of the population’s death rate of countries with a similar development history gives a reason to say that apart from the negative effects of a transition period’s economic crisis the high death rate in Kazakhstan is explained as a higher degree of ageing of the population as the consequences of intensive emigration of able-bodied aged people to outside the country in the heaviest period for the country. The aged parents of those who emigrated who stayed in the republic were recruited to the ranks of dead people, which death rate indicators testify according to nationality. In 2009 the population mortality rate coefficient for separate nationalities is the following: Kazakhs – 6.4‰, Russian – 13.8‰, Ukrainians – 23.8‰, Uzbeks – 5.40‰, Germans – 10.0‰, Tatars – 14.4‰, Uyghurs – 5.75‰, and other ethnicities – 22‰.

Between the census period (1999–2009) the general mortality rate coefficient of the urban population was 10.3‰. According to the Agency of the Republic of Kazakhstan for statistics, the urban population mortality rate coefficient in 2009 was 9.45‰ or 82,516 people. For the death rate, as was mentioned told above, there is a set of factors – both socio-economic, and biological. Among the most important are the age indicators. In this aspect the greatest indicators of the death rate are among the people at the age of 65 and older. The death rate of townspeople in all age groups is essentially above the death rate of rural area inhabitants.

In 2005 the growth in death rate indicators was 11.8‰, then a decrease in the mortality rate coefficient decrease observed, and in 2010 it was 8.7‰. Including the urban population the mortality rate coefficient was 9.6‰, and in the countryside it was 8.1‰. It is necessary to note that indicators of death rate of the urban population of Kazakhstan were always above those in the rural area population the reason is for which the younger age structure of the rural area population. But here it is also important to allocate some features: in the 1980s the indicator...
difference in the death rate of a city and rural area’s population was small. In the 1990s the situation changed – mortality rate coefficients both in cities, and in rural areas increased. And, in the rural areas they increased slightly: from 1990 to 1993 the indicator increased from 7.3‰ to 8.8‰, and during the period from 1993 till 1995 the indicator fluctuated within 8.1‰-8.9‰. And the mortality rate coefficient among townspeople increased considerably: in 1990 it was 7.9 ‰; in 2006, – 11.5 ‰ (it grew by 3.6 points); in 2009 – 9.45 ‰. Accordingly, throughout the 1990s and at the beginnings of the 2000s the difference between the indicators of city and rural area population death rate also increased. If in 1990 the difference was 0.6 points, in 2006 it was 2.8 points and in 2009 – 1.8 points.

The number of deaths in big cities is very high. Thus in Astana the number of deaths in 2009 in comparison with 1999 increased by 344 persons, that is 3‰. In 2009 in comparison with 1999 the mortality rate coefficient of men in cities was 12.9 ‰, and the mortality rate coefficient of women in cities was 8‰. These indicators in comparison with 1999 decreased, but there is the same tendency concerning boys.

On the one hand the high indicators of death rate among townspeople at the present stage are caused by the features of the urban population’s age structure (the ageing demographic model); on the other hand it is the presence of additional risks in city settlements (criminogenic conditions, numerous road and transport incidents, industrial traumatism, psycho-emotional overloads, regular stresses, distribution of dangerous diseases, possible access to drugs etc.). The high indicators of death rate, especially in the population of able-bodied age, have led to the decrease in indicators of forthcoming life average expectancy during the period from 1999 to 2009. Especially the life expectancy of the urban population was reduced. If in 1989 the average life expectancy of townspeople was 68.4, then in 1999 it fell to the age of 65.0, and in 2000 to 64.8. From the beginning of 2000 the indicators started to increase gradually: in 2001 it was the

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**Fig. 2.** Natural movement of the urban population of the Republic of Kazakhstan for 1999

*Source: Authors’ work based on the statistical data of the Agency of the Republic of Kazakhstan*
age of 65.1; in 2006 – 65.3, and in 2009 – 68.2. There
is also a difference between the life expectancy of men
and women in cities: in 1999 –59.3 and 70.8 years old
accordingly; in 2006 – 59.0 and 71.9 years old; and in
2009 – 63.0 and 73.1 years old. It is necessary to note
that the life expectancy of townspeople is 2–3 years
below the life expectancy of men in villages. In 1999
the life expectancy of peasants was 66.4 years old and
in 2009 – 68.4 years old. The life expectancy of rural
men is higher. In 1999 the life expectancy of men was
62.4 and of women 71.0 years old and in 2009 it was
64.2 and 72.9 years old.

The authors have prepared the map of natural
movement of urban population for the period of
population censuses 1999 and 2009 with the help of
GIS-technologies, which approve the received con-
clusions. Urban areas of Kazakhstan can be referred
to the regions with the indicators of natural move-
ment population. This indicator is rather high only in
the urban areas of South regions, and the regions with
a rather low level of the birth rate are in the urban
areas of North and Eastern Kazakhstan (Fig. 2 and 3).

5. Conclusions

The analysis of the given census of 1999 and 2009
testifies the high growth of migratory process in
Kazakhstan. According to the census data, the num-
ber of those who came according to the result of the
census of 2009 is 4 times higher in comparison with
the census of 1989. The amount of internal migration
concerning the census of 1999, when it was 59% grew
in 2009 up to 78.5%. Accordingly, the proportion of
external migration reduced from 41% to 21.5%.

The largest ethnic groups among migrants are
Kazakhs and Russians (77% and 14%). 80% of mi-
grating Kazakhs are internal migrants. In compari-
son with the census data of 1999 the proportion of
migrants of Kazakh nationality increased by 12.6%.
The second ethnic group among the migrants, that is
Russians, reduced to 7.2%. Mainly, immigrants arrive
from the frontier CIS countries, China and Mongolia.
The greatest migratory streams of immigrants were
observed in Almaty (18%), South Kazakhstan (17%)
and Mangistau (15%) oblasts. These are favourable enough regions as regards environmental conditions, with prospective possibilities for development of agricultural and cattle-breeding productions, more suitable to a way of life of ethnic Kazahs from Mongolia and China. The considerable changes in migratory processes which are indicated by the results of the National population census of 2009 testify the necessity of greater attention than ten years ago. First of all, it is necessary to analyse the reasons for migration and to develop a special strategy, a series of measures both on a countrywide scale, and for each oblast as well, especially, in the regions that differ with a high level of migratory mobility of the population.

Thus, the basic indicators of natural movement of Kazakhstan’s urban population are characterized in this article. Also, on the basis of the statistical data the indicators of birth rate, death rate and the natural increase of urban population of Kazakhstan are analysed for the period of 1999–2009.

The comparative analysis of indicators of natural movement differs in a city and a rural area. So, the factor of birth rate of an urban population is higher (22.6%) than in a rural area (21.7%), but there is also a high mortality rate coefficient of an urban population. The expected life expectancy of an urban population is lower than in the villages by 2–3 years. The age indicators of death rate are among the people at the age of 65 years and older. The death rate of townspeople in all age groups is essentially higher than the death rate of the inhabitants of rural areas. The difference in the forthcoming life expectancy of men and women of cities is 9 years (as the life expectancy of women is 73.1 and of men – 63.0).

In conclusion we can note that the positive tendencies of a natural increase in urban population were outlined in modern Kazakhstan. And in 2010 the natural increase coefficient of an urban population was 13.4‰.

These conclusions are reflected in the maps prepared with the help of GIS-technologies. The regional features and the basic tendencies of demographic processes of Kazakhstan cities in the modern period are presented on them.

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