The concept of geo-demographic situation and geo-demographic typology of the subjects of the Russian Federation

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Abstract. The article presents the results of research on typologisation of Russian regions according the geo-demographic situation. The typologisation of regions is performed on the basis of statistics for 2011-2012. The regions are described through demographic, economic, social, settlement, ecological, and ethno-demographic categories, the most common of which according to the authors point of view are the typological features of the geo-demographic situation. The subjects of the Russian Federation provided the research material to apply 15 typological traits and identify three types of geo-demographic situation, 9 subtypes of the first level, sub-types of the second level and a model subtype of the third level. The study shows that various types and subtypes of regions require different approaches in demographic, economic, social, equity, ethnic, environmental, and population distribution regional policies towards relevant entities of the Russian Federation.

Contents:

1. Introduction

The 1960s-1980s witnessed active progress of comprehensive studies of demographic processes in their close relations to all other processes in geographical space. The All-Russian census of 1959, 1970 and 1979 provided an extensive empirical basis for establishing theoretical regularities that explained the connection between demographic processes, internal factors and external environment. D. Valentey uses the notion of 'demographic situation' (Valentey, 1970) while N. Agafonov speaks about 'demographic environment' (Agafonov, 1970; Agafonov, Golubev, 1973). The fact that these terms are synonymous is demonstrated by the definition offered by A. Kvasha, who writes in the Demographic Encyclopedic Dictionary (1985) that the demographic situation, or the demographic environment is a 'state of demographic processes, composition and distribution at a given time, often in a given year. Normally it relates to the country as a whole or its certain regions' (Kvasha, 1985: 409).

The close relationship between demographic processes in a region and other socio-economic (mainly economic) factors is reflected in the concept of 'regional economic and demographic environment' (Agafonov, 1982). Later it justifies a broader concept of geo-demographic situation, which takes into account the economic, as well as demographic, socio-economic, ethno-demographic and environmental aspects and the patterns of population distribution existing at the moment of research. On the basis of this, the concept of geo-demographic situation (GDS) is formed (Fedorov, 1984, 1986, 1991). Geo-demography appeared as a branch of geography and the term 'geo-demography' was listed in the encyclopedia (Kovalev, 1985; Treshnikov, 1988).

In the 1990s, geo-demographic research in Russia did not receive any further significant theoretical foundation, and the previously accumulated empirical research and theoretical generalisations were largely lost, although some interesting developments continued to be carried out (i.e. Preminina, 1994; Kvasha,1995; Minazeva, 1998; Popov,1998). This is partly due to the general crisis of the theory of national economic geography in a period of transition from a command to a market economy system. Another important factor is the general decline of interest in demographic processes and their spatial differentiation against the background of multiple economic, social and political problems in the country and its regions.

However, by the beginning of the first decade of the 21st century growing depopulation and ageing of population, high incidence and low life expectancy, as well as the badly managed migration flows and a large contingent of illegal migrants, uncontrolled growth of mega-cities and degradation of the village had become such important negative factors for the development of the economy and social life in the country that ignoring them became impossible. At the governmental level 'The concept of the demographic development of the Russian Federation for the period up to 2015' has been adopted (Kontseptsiya demograficheskogo…, 2001). A number of decisions have been taken to stimulate the birth rate (a 'maternity capital' is given with the birth of a second child and other children) and to attract Russian compatriots living abroad (Kontseptsiya demograficheskogo…, 2001). The ageing of population and increasing demographic pressure on its able-bodied part raise the issue of increasing the retirement age.

The challenges posed by demographic processes and specific demographic compositions become more complicated due to their large territorial differentiation, which aggravates the possibility of uniform regulation of labor resources and the implementation of social policy in the regions. More over in developing policies and programs of regional development of Russian regions and municipalities a geo-demographic factor is considered extremely weak. This often makes it impossible to implement them.

In the 2000s, geo-demographic publications began to appear again in geographic and economic research (Rybakovsky, 2006; Kunitsa, 2009; Starkova, 2010; Kuznetsova, 2009, 2010; Eremin, 2011; Gabdrakhmanov, Rubtsov, 2012). Research was conducted in geographic dissertations analysing the regional level of the complex relationship between demographic processes and social and economic factors. Such studies were based on the methodological principles of GDS (although increasingly using similar concepts of 'demographic situation', 'geo-demographic situation') (i.e. Lipukhin, 2001; Zorina, 2002; Ustavshchikov, 2003; Filina, 2007; Chekme-

neva, 2009; Kuznetsova, 2009). Similar doctorate research is conducted in various Russian regions and by economists as well. (Tourischeva, 2004; Gladyshev, 2005; Smirnova, 2005; Petryakova, 2003). Geodemography as a scientific discipline is taught in a number of universities at geographic and economic faculties; study and reference materials are published (Fedorov, 1983; Praktikum po geodemografii Urala, 2010; Programma distsipliny «Geodemografiya», 2011). One can hope that geo-demographic research will be expanded and deepened, and it will serve as a basis for the necessary changes in regard to the role of geo-demography in integrated regional studies. And it will improve the GDS and will ensure its full integration in complex regional development in Russia.

2. Geo-demographic categories

In this paper, as in my previous ones, geo-demographic situation (GDS) will be understood as a set of relations between demographic and all other components of a region. The category 'GDS' is close to the notion of 'demographic development', but 'GDS' focuses not so much on the demographic processes and structures themselves, but mostly on the relationship between them and the socio-economic factors in the region. GDS connects its economic, social, population distribution and other functional subsystems (ethno-system, socio-environmental) with the demographic one and includes demographic processes and structures, as well as economic, social, population distribution, ethnic, ecological and demographic relations. The most common categories of GDS are: demographic - natural and migratory movement, age and sex structure of the population, economic-demographic - labor forces, socio-demographic - demographic and migratory behavior, spatial distribution of population - population density and urbanisation, the ethno-demographic - the ethnic composition of the population and its demographic differences, ecological-demographic - the degree of favourable environment for living. They are determined by multiple factors: demographic, economic, social, ethnic, environmental, features of settlement, etc., which define the regional differentiation of GDS.

We assume that 'sustainable development', as a dynamic and balanced development of the region, is characterised by geo-demographic indicators rather than economic and social ones. Let us study an example of these economic and socio-demographic ties in GDS.

Labor forces as an economic-demographic category of the GDS are linked through the need for labor and the labor supply to the economic subsystem of the region (the level, structure, and the pace of economic development), and through the reproduction of the population (the extended, simple, narrowed) to a demographic sub-system, which is characterised by a specific age-gender structure of the population, reproduction trends and migration flows. A synthetic indicator reflecting these relationships is the balance of labor resources. High rates of economic growth (which are most often seen as a sign of successful development of a region) against the background of disproportionate balance of labor resources ultimately lead to the emergence of diverse and often insurmountable contradictions in the development of the region or even the country as a whole.

Similarly, socio-demographic categories like demographic and migratory behavior describe, on the one hand, the relationship between the social subsystem of the region with a certain level and quality of life of the population and, on the other hand, the rate of natural reproduction, migration mobility and impact of migration. In this case we can speak of a certain socio-demographic balance. The current socio-demographic situation in most Russian regions is marked by a certain demographic behaviour aimed at one-child family (often even with only one parent, usually the mother), low migration mobility (with a rather high productivity of migration), by a positive balance of migration with most post-Soviet countries and a negative one with developed western countries. Such condition is neither socially nor demographically viewed as optimal and reflects the state of both social and demographic crises in the country as a whole and its regions in particular.

As for the assessment of demographic processes and structures, neither narrowed or expanded natural reproduction of the population, nor influx of people in the low reproduction level of population and labor force, the influx of people in the

expanded reproduction, significant age and sex disparities can be regarded as normal state of regional systems. It is necessary to develop improvement measures for demographic processes and structures at all territorial levels. Furthermore, achieving this improvement has become one of the most important indicators of regional development in line with economic, social and environmental ones.

Relationships and their balances similar to the economic and socio-demographic ones can be seen in population distribution, environmental-demographic and other types of geo-demographic relations. An interesting, in particular the study of relationships of demographic processes and structures of the educational process A particular interest can be given to such an important aspect of geo-demography, as the study of dependence of demographic processes and structures on the educational process, done in recent years (Karpenko, 2011).

To ensure truly proportional and dynamic (sustainable) development of the regions of the country it is necessary to provide a scientifically grounded coordination of regional development. The selection of priority areas for regional development in the strategic planning process should be based on balanced growth of the basic components of territorial socio-economic systems: demographic, economic, social, and environmental at all hierarchical levels (macro, mezo and micro-regional). Such an approach significantly increases the role of geo-demography with GDS as its main concept which provides a connection between all the components of the region and allows to control their balanced development.

3. Geo-demographic typology

A special place in geo-demographic research is given to GDS typology which makes it possible to highlight a special group of regions on the basis of typological features, which are the basic demographic, economic, social, population distribution, ethnic, ecological and demographic categories. Each of the geo-demographic types requires a different approach to the improvement of GDS which must be incorporated into forecasting and managing regional development in order to achieve its optimal dynamics and proportionality.

The indicators which reflect the most general GDS categories are to be used as identifying characteristics in complex geo-demographic typology. We used the following indicators which are given in the headings of Tables 1 and 2:

(a) demographic indicators:
1. crude birth rate, number of births per 1,000 population;
2. crude death rate, number of deaths per 1,000 population;
3. migration increase (decrease) per 1,000 population;
4. share of people below working age as a percentage of total population;
5. share of able-bodied population as a percentage of total population;
6. share of people above the working age as a percentage of total population;
7. share of male population as a percentage of total population;

(b) economic-demographic indicators:
8. total number of unemployed as a percentage of total able-bodied, economically-active population;
9. degree of economic involvement of the population as a percentage of total able-bodied, economically-active population;

(c) socio-demographic indicators:
10. average per capita income as a percentage of average living cost;
11. share of people with higher education degrees as a percentage of the total number of economically active population;

(d) spatial distribution of population indicators:
12. population density, people per sq. km;
13. share of urban population as a percentage of total population;

(e) ethno-demographic indicator:
14. share of Russians as a percentage of the total population;

(f) ecological-demographic indicator:
15. rural population density, people per sq. km.

Quantitative data for regions have been obtained from official statistical handbooks, which are based on the current account of the population as of 2012 (points 1-7, 12, 13, 15), sample surveys of the population 2012 (points 8-10), census 2010 data points 11, 14).

The regions have been grouped using cluster analysis allowed to combine in the types and subtypes of regions with fifteen indicators of GDS mentioned above.

4. Geo-demographic types and sub-types of the subjects of the Russian Federation

The results the typological distribution of the subjects of the Russian Federation are given in Fig. 1 and 2, Tables 1 and 2.
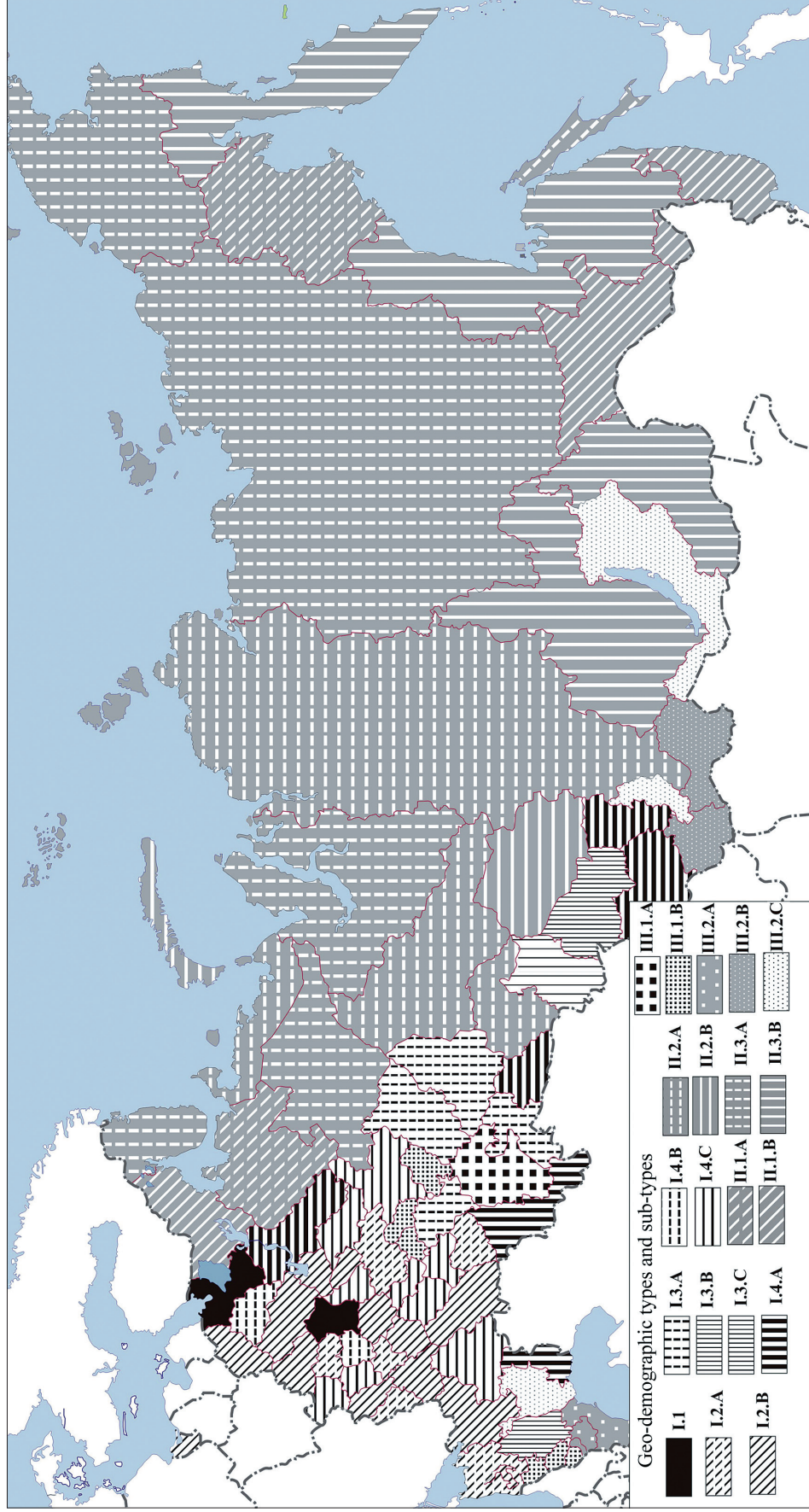
Fig. 1. Geo-demographic types and sub-types of the subjects of the Russian Federation
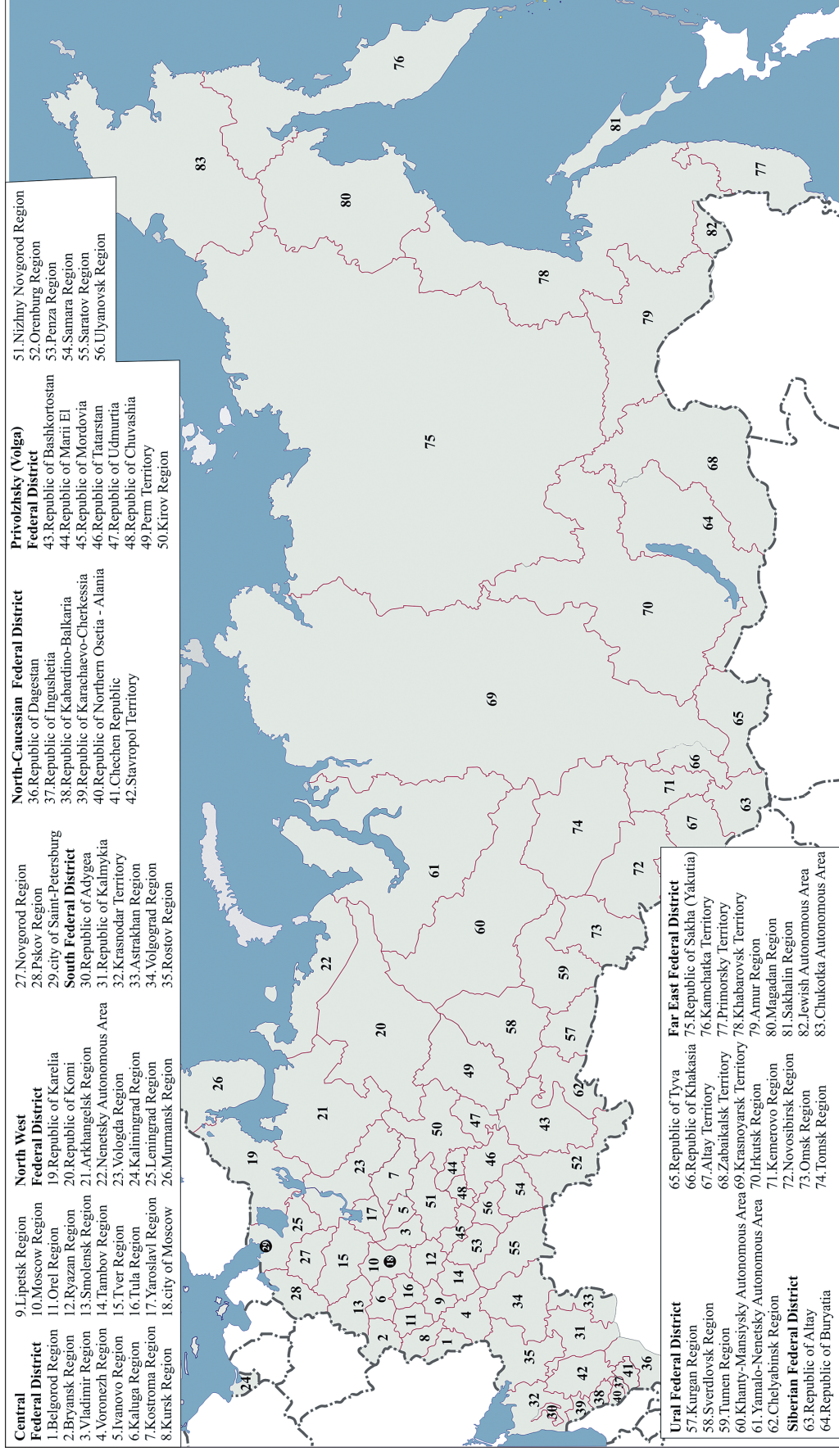*Source:* Osnovnye pokazateli…2013; Regiony Rossii…, 2013; Rossiyskiy statisticheskiy…, 2012

Fig. 2. The subjects of the Russian Federation

Source: Russia in figures. 2013

Central Federal District
1.Belgorod Region
2.Bryansk Region
3.Vladimir Region
4.Voronezh Region
5.Ivanovo Region
6.Kaluga Region
7.Kostroma Region
8.Kursk Region
9.Lipetsk Region
10.Moscow Region
11.Orel Region
12.Ryazan Region
13.Smolensk Region
14.Tambov Region
15.Tver Region
16.Tula Region
17.Yaroslavl Region
18.city of Moscow

North West Federal District
19.Republic of Karelia
20.Republic of Komi
21.Arkhangelsk Region
22.Nenetsky Autonomous Area
23.Vologda Region
24.Kaliningrad Region
25.Leningrad Region
26.Murmansk Region
27.Novgorod Region
28.Pskov Region
29.city of Saint-Petersburg

South Federal District
30.Republic of Adygea
31.Republic of Kalmykia
32.Krasnodar Territory
33.Astrakhan Region
34.Volgograd Region
35.Rostov Region

North-Caucasian Federal District
36.Republic of Dagestan
37.Republic of Ingushetia
38.Republic of Kabardino-Balkaria
39.Republic of Karachaevo-Cherkessia
40.Republic of Northern Osetia - Alania
41.Chechen Republic
42.Stavropol Territory

Privolzhsky (Volga) Federal District
43.Republic of Bashkortostan
44.Republic of Marii El
45.Republic of Mordovia
46.Republic of Tatarstan
47.Republic of Udmurtia
48.Republic of Chuvashia
49.Perm Territory
50.Kirov Region
51.Nizhny Novgorod Region
52.Orenburg Region
53.Penza Region
54.Samara Region
55.Saratov Region
56.Ulyanovsk Region

Ural Federal District
57.Kurgan Region
58.Sverdlovsk Region
59.Tumen Region
60.Khanty-Mansiysky Autonomous Area
61.Yamalo-Nenetsky Autonomous Area
62.Chelyabinsk Region

Siberian Federal District
63.Republic of Altay
64.Republic of Buryatia
65.Republic of Tyva
66.Republic of Khakasia
67.Altay Territory
68.Zabaikalsk Territory
69.Krasnoyarsk Territory
70.Irkutsk Region
71.Kemerovo Region
72.Novosibirsk Region
73.Omsk Region
74.Tomsk Region

Far East Federal District
75.Republic of Sakha (Yakutia)
76.Kamchatka Territory
77.Primorsky Territory
78.Khabarovsk Territory
79.Amur Region
80.Magadan Region
81.Sakhalin Region
82.Jewish Autonomous Area
83.Chukotka Autonomous Area

Table 1. Characteristics of geo-demographic types and sub-types of the first level, 2012

Types, sub-types	Indicators														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I	10-15	12-20	-10-15	13-18	58-62	21-28	45-47	2-9	64-72	155-323	20-44	8-401	47-92	40-97	2-29
I.1	12	12-13	11-15	13-14	62	24-26	45-46	2	72	241-323	39-44	78-401	91-92	92-93	7-29
I.2	10-13	13-20	0,2-9	14-18	58-62	23-27	45-47	3-8	64-71	167-239	20-35	11-71	47-82	64-96	4-33
I.3	12-15	12-14	-4-8	16-18	60-62	21-23	46-47	4-8	65-70	155-267	23-30	14-42	58-84	40-93	3-14
I.4	10-14	13-18	-10-0	13-18	58-61	22-28	45-46	4-9	64-70	161-204	20-29	8-60	56-86	74-97	2-13
II	12-18	5-14	-14-5	16-22	61-70	8-24	46-51	3-18	62-82	127-353	12-35	0.1-12	54-92	16-97	0.01-3
II.1	12-13	13-14	-14--0,6	16-19	60-65	18-24	46-48	3-8	64-78	152-241	19-31	0.3-12	67-96	84-97	0.01-3
II.2	14-18	6-13	1-5	17-21	62-68	11-20	47-49	5-8	64-74	179-268	12-31	0.2-9	70-92	68-91	0.06-3
II.3	12-18	5-14	-12--0.2	16-22	61-70	8-21	46-51	3-18	62-82	127-353	24-35	0.1-5.4	54-93	16-91	0.02-1
III	10-26	4-14	-14-9	14-34	57-62	8-24	46-49	6-48	57-71	109-240	22-35	2-122	29-65	1-82	1-51
III.1	10-16	9-14	-10--2	14-21	59-62	17-24	46-47	6-9	57-71	141-240	22-35	28-88	43-65	21-62	11-51
III.2	15-26	4-13	-14-9	19-34	57-62	8-20	45-49	8-48	62-67	109-227	23-33	2-122	29-68	1-82	1-44

Source: Osnovnye pokazateli..., 2013; Regiony Rossii..., 2013; Rossiyskiy statisticheskiy..., 2012

Table 2. Characteristics of geo-demographic sub-types of the second level, 2012

Types	Indicators														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I.1	12	12-13	11-15	13-14	62	24-26	45-46	1.6	72	241-323	39-44	78-401	91-92	92-93	7-29
I.2.A	12-13	13-16	0.5-9	14-17	59-61	24-26	45-46	3-6	64-70	200-239	22-35	34-71	54-80	86-96	9-32
I.2.B	10-13	13-20	0.2-9	14-18	58-62	23-27	45-47	3-8	64-71	153-185	20-33	12-63	47-82	64-96	4-30
I.3.A	14-15	12-14	0.7-8	16-18	60-61	22-23	46	4-6	69-70	221-267	24-30	16-56	75-84	40-90	3-14
I.3.B	12-14	12-14	1-8	16-17	61-62	22-23	46	5-6	65-69	155-197	29-30	15-42	58-78	81-93	3-11
I.3.C	15	13-14	-4-2	17-18	61-62	21-22	46-47	5-8	67-69	193-224	23-27	14-21	60-72	68-86	4-7
I.4.A	10-12	15-18	-2--0.4	13	59-59	27-28	45	4-5	66-67	204-205	23-25	12-60	70-79	95	3-13
I.4.B	11-13	14-16	-4--1	14-16	59-61	24-26	45-46	4-7	64-69	161-194	20-29	11-49	66-78	74-97	3-11
I.4.C	14	15-16	-10--1	17-18	58-60	22-25	45-46	6-9	64-70	161-220	21-23	8-29	56-86	92-97	2-6
II.1.A	12-13	13-14	-14--3	17	60-65	18-22	47-48	3-8	69-78	204-241	23-31	0.3-6	77-96	84-97	0.01-1
II.1.B	12-14	14-15	-9--0.6	16-19	60-62	20-24	46-48	5-8	64-70	152-182	19-29	2-12	67-79	82-94	0.8-3
II.2.A	14-18	8-13	1-6	17-23	62-68	11-20	47-49	6-7	68-74	210 - 367	12-30	0.2-9	62-92	66-91	0.06-3
II.2.B	14	12	4	17	63	20	47	8	64	179	31	3	71	92	1
II.3.A	12-18	11-12	-12--2	17-24	63-70	11-19	47-51	3-8	68-82	220-353	24-34	0.1-5	65-84	38-89	0.02-0.5
II.3.B	13-16	12-14	-7--0.2	16-21	61-65	18-21	46-50	6-11	64-73	181-195	22-35	0.7-3	67-82	86-92	0.2-0.6
III.1.A	14	13	-2	18	61	21	47	6	67	240	22	28	61	36	11
III.1B	10-14	9-14	-10--3	14-21	59-62	17-24	46-47	6-9	57-71	141-185	23-34	30-88	43-65	21-62	10-51
III.2.A	19-26	4-6	- 8-+9	27-34	57-60	8-11	45-49	12-48	65-67	157-227	29-32	59-122	35-45	1-4	34-44
III.2. B	22-26	11	-12--2	26-31	59	10-15	47-48	12-18	62-67	127-152	29-30	2	29-54	16-57	1-2
III.2.C	15-17	10-13	-14--1	19-22	60-62	17-20	46-48	8-13	63-67	109-171	23-33	3-9	45-68	30-82	1-3

Source: : Rossiyskiy statisticheskiy…, 2012; Osnovnye pokazateli…, 2013; Regiony Rossii…, 2013

Type I includes well-developed regions of the European part of the country and the south of Western Siberia with a sufficiently high density of population, including rural areas. They are characterised by a low birth rate and high mortality rate, a low number of children and a high proportion of the elderly. The process of aging is not extensive, but it continues to grow. Subtype III.1 stands out in terms of economic and socio-demographic characteristics as well as population distribution. It includes highly urbanised metropolitan areas, with a high proportion of persons with higher education degrees, higher per capita incomes in comparison with the average living cost. The regions of the subtypes of the first level I.1 and I.2, as well as the subtypes of the second level I.3.A and I.3.B have a positive balance of migration, while subtypes I.3.C and I.4 have a negative one. In many regions of these four types the share of male population is reduced to 45-46% due to the high proportion of elderly people (among whom, as it is well known, the proportion of men compared to women is lower due to their higher age-specific mortality).

Subtyping is often determined by significant differences in the level of income. Subjects of subtype I.2.A are characterised by a high level of income compared with the regions of subtype I.2.B. In subtype I.3 the regions of the subtype of the second level I.3.A have higher real per capita income (correlated with the minimum cost of living), the indicators of I.3.B are lower while the ones for I.3.V are intermediate. ? Subtype I.4.A is characterised by increased income, subtype I.4.B by reduced, whereas the regions of subtype I.4.V are different from the previous subtypes in their slightly higher birth rate, a high proportion of children and a lower proportion of the elderly.

Type II combines the less developed regions of the country with a low population density, particularly in rural areas. The regions of subtype II.1 are characterised by negative birthrate and out-migration. Subtypes II.2 and II.3 due to the increased proportion of young people of fertile age are marked with positive birth rate, type II.2 is defined by migration inflow, while subtypes II.1 and II.3 – by outflow.

Subtypes II.1A, II.2A and II.3A differ from subtypes II.1.B, II.2.B and II.3.B respectively in a higher per capita income level.

Type III includes national republics with a predominance or a high proportion of ethnic population. All of them have positive birth rate, with a low level in the Volga region and some of the Eastern republics (Buryatia, Khakassia), and with a much higher level in the North Caucasus, as well as the republics of Altai and Tuva.

Subtype III.2 has the highest overall unemployment rate for all subtypes of the first level. Accordingly, there is a decrease in the proportion of economically active population.

The regions of subtypes III.1.A are characterised by a high level of income of the population compared to subtype III.1.B. Subtype III.2.A differs from subtypes III.2.B III.2.C in higher per capita incomes, while III.2.C in comparison to III.2.A and III.2.B has reduced natural growth (due to low birth rates and high mortality), a lower proportion of children and a relatively high share of the elderly.

Table 3 shows the estimated number of people who live in 2012 in each of the types and subtypes of regions.

Table 3. Population in the geo-demographic types and sub-types

Types, subtypes	Population		Types, subtypes	Population	
	thousand	percentage		Thousand	percentage
I	105,142	73.4	II.1.B	3,580	2.5
I.1	25,653	17.9	II.2.	6,892	4.8
I.2	34,662	24.2	II.2.A	5,831	4.1
I.2.Ŕ	15,524	10.8	II.2.B	1,061	0.7
I.2. B	19,138	13.4	II.3	8,398	5.9
I.3	24,736	17.2	II.3.A	3,215	2.3
I.3A	14,240	9.9	II.3.B	5,183	3.6
I.3.B	5,487	3.8	III	17,376	12.1
I.3.C	5,009	3.5	III.1	10,379	7.2
I.4.	20,092	14.1	III.1.A	4,063	2.8
I.4.A	2,166	1.5	III.1.B	6,316	4.4
I.4,B	10,688	7.5	III.2.	6,997	4.9
I.4.C	7,238	5.1	III.2.Ŕ	4,688	3.3
II	20,683	14.5	III.2.B	519	0.4
II.1	5,393	3.8	III.2.C	1,790	1.2
II.1.Ŕ	1,813	1.3	Total	143,202	100.0

Source: Rossiyskij statisticheskiy…, 2013

5.   Differentiation of the regions of the geo-demographic Sub-type III.2

A closer analysis of most subtypes of the second level can reveal subtypes of the third level. Thus, regarding sub-type III.2, in addition to the three subtypes of the second level, we have identified three subtypes of the third level (III.2.A.a, III.2.A.b, III.2.A.c) in subtype III. 2A, and two subtypes of the second level (III.2.C.a, III.2.C.b) in subtype III.2.C (Table. 3). Regarded as subtype III.2.A.a the Republic of Ingushetia stands but from all the other subjects of this type in migration growth since, due to its relatively recent status as an independent subject of the Russian Federation, it continues population exchange with the neighboring republics - Chechnya and North Ossetia - Alania. The Republic of Dagestan (III.2.A.b) has the highest per capita income of the population, projected onto the minimum cost of living. Kalmykia (III.2.C.b) with the lowest per capita income level in Russia is the region with the lowest birth rate and the highest out-migration.

6. Summary and conclusions

Russian regions highly differ in geo-demographic indicators: demographic, economic, social, population distribution, eco- and ethno-demographic. This makes it difficult to implement a unified national demographic, economic and social policy, as one and the same strategy towards regions of different types may have different outcomes which are not always positive.

Insufficient consideration of geo-demographic characteristics of the RF subjects often leads to errors in strategic plans for their development. Demographic imbalances are growing, age-gender structure of the population is getting more deformed, unemployment is increasing, or, on the contrary, there is a shortage of manpower. Migratory flows are not always rational.

Analysis of the GDS in the regions and their geo-demographic typology have to become an essential component of the development of both a regional policy of the Russian Federation and of regional strategies and programmes for socio-economic development. Geo-demographic typological study

Table 4. The sub-types of the second and third levels of the geo-demographic Sub-type III.2

Sub-types; regions	Indicators*														
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
III.2	15-26	4-13	-14-+9	19-34	57-62	8-20	45-49	8-48	62-67	109-227	23-33	2-122	29-68	0.8-82	1-44
III.2.A	19-26	4-6	- 8-+9	27-34	57-60	8-11	45-49	12-48	65-67	157-227	29-32	59-122	35-45	1-4	34-44
III.2.A.a Republic of Ingushetia	23	4	9	31	60	9	45	48	67	157	32	122	40	0.8	40
III.2.A.b Republic of Dagestan	19	6	-8	27	62	11	48	12	66	227	29	59	45	4	43
III.2.A.c Chechnya	26	5	-3	34	57	8	49	31	65	164	30	85	35	2	34
III.2.B Republics: Altay, Tuva	22-26	11	-12--2	26-31	59	10-15	47-48	12-18	62-67	127-152	29-30	2	29-54	16-57	1-2
III.2.C.	15-17	10-13	-14--1	19-22	60-62	17-20	46-48	8-13	63-67	109-171	23-33	3-9	45-68	30-82	1-3
III.2.C.a Republics: Buriatia, Khakassia	16-17	12-13	-5--1	19-22	60-61	17-20	46-48	8	63-66	164-171	23-25	3-9	59-68	66-82	1-3
III.2C.b Republic of Kalmykia	14.8	10	-14	21	62	17	48	13	67	109	33	4	45	30	2

Explanation: *See the interpretation for the indicator numbers on pp. 7-8

Source: Rossiyskiy statisticheskiy…, 2012; Osnovnye pokazateli…, 2013; Regiony Rossii…, 2013

of the regions could be recommended as a step towards the adoption of necessary measures at the federal level. Similar measures of population control, social policy, industrial and agricultural policy, improvement of settlement systems can be carried out for regions of the same type (subtype), taking into account particular features of a region's population.

Quite significant differentiation in terms of the GDS in seemingly similar regions of type I, including the ones adjacent to each other, suggests that a more favorable situation is often linked not only to objective advantages of the region, but also to effective social and economic policies. Therefore, regions of the same type (subtype) should effectively share of the experience and learn from the 'best practice' of the subjects of the Russian Federation with better geo-demographic indicators.

The major problem of the regions of type II is the weak development of the territory at the background of out-migration in sub-types II.1 and II.3 due to less favorable natural and social conditions and the patterns of population distribution. Subtype II.2 still has a positive balance of migration thanks to the development of mineral deposits mining which provides high per capita income. However, when the resources are depleted, the situation might change to worse, incomes can decline, and net migration might turn from positive to negative. As in the other regions of the two subtypes, the key task is to diversify the economy and to develop manufacturing industries and the service sector.

The main problem in most regions of the type III (especially subtype III.1) are related to continuing natural growth of population under the conditions of a low level of socio-economic development and its slow pace. This medium and weakly urbanised regions along the southern borders of Russia and the Volga region. These are medium and weakly urbanised regions located along the southern borders of Russia and the Volga region. Except Dagestan, all of them have a higher level of overall unemployment and lower per capita income. All these regions except for the Republic of Ingushetia experience migration outflow due to the lack of jobs. Support of investment activity, especially in small businesses, and development of social infrastructure are essential for solving geo-demographic problems.

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