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Item 2 of the provisional agenda

#### **Methodology**

### **Factual determination methodology aspects of demographic processes in forecasts**

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#### *Summary*

*Predictive calculation is less or not used demographic factor determination process, so the short and medium-term forecasts are characterized with significant errors, not to mention the long-term forecasts. Accordingly, the impact of demographic factors on the process of force rate indicators of demographic processes makes it possible to more accurately take into account the long-term development of a hypothesis and prognostic estimates.*

*Demographic processes (fertility and mortality) of the factors in assessing the need to distinguish between the demographic processes of modernization of the historic and decisive on the other hand - it's non factors that indirectly influence the changes in the short and medium term.*

*Demographic processes operating on one of the main factors of non factor in living standards and values orientations shown that the influence of the force of the run rate, both macro and micro levels is difficult. His assessment of indirect statistical data, can be used as indicators of the living standards of the accumulated socio-economic parameters, in addition to data non demostatic factors influence the force allows the assessment of sociological research methods.*

*Keywords: demographic projections, non demographic factors, level of life, valuable orientations, demographic conduct, reproductive conduct.*

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## I. Introduction

1. Demographic predicting, on the one hand takes into account the demographic situation in the long-term functioning of the global demographic factors such as demographic, epidemiological and migration transition, which are directly related to the reproduction of historical modernization and other medium and short-term prospects of the regional and the local socio-economic and cultural non factors. It should be in the region and within the country's demographic trends and the factors influencing the processes of different features.
2. Demographic forecasts influencing factors can be considered in determination of hierarchy, as global macro and micro level factors. In addition, certain levels of compliance, as well as demographic processes can be direct and indirect factors affecting the first or the second of the only demographic factors - along with demographic, social non-economic, cultural and other factors meant.
3. It's true. Demographic factors influence the processes of non determination which is quite difficult and laborious, but the demographic and sociological development of the art is capable of solving the problem.
4. In this article, the demographic situation in the "pure demographic factors" considered in the non factors determinative research methodological issues. It might be suggested by some locally methodology uses his country's population when calculating the forecast, but it is a common methodology used less for every country, which is reflected in the individual countries' demographic projections accuracy.
5. The paper presents the United Nations, the World Bank and the US Census Bureau estimated the demographic projections of the methodology used and compared to Georgia performed demographic forecast methods, where the demographic situation in the "pure demographic" factors hypothetical set aside some sociological studies of demographic processes affecting non factors assessment options.

## II. Research methodology

### *a) Statistic methods used in demographic projections of Georgia [1]*

6. The forecast for 2006 was about 60 software applications, including the most famous and MortPak, DemProj- found. UN projections are based on two processes: 1) the well-known and relevant information elsewhere and 2) hypotheses of fertility, mortality and international migration. Recent revision includes 8 options: low, medium, high, constant fertility and constant mortality, zero-net migration. The more accepted and known option and the average low, high and constant fertility. Only three organizations in the world: the United Nations, the World Bank and the US Census Bureau gives countries the demographic forecasts. UN forecasts for 2050 until losing the 2008 revision of the 2010 revision of the forecast for the period until 2100 (World Population Prospects: The 2010 Revision, <http://esa.un.org/unpd/wpp/index.htm>).
7. The World Bank forecast is mainly based on the demographic projections of demographic trends in the medium variant.
8. The US Census Bureau projections based on the Cohort-component method and access to fertility, mortality and international migration.
9. In Georgia, the international standards, the demographic projections for the first time in 2001 and performed in the period 2005-2020 included. Second checked (2002). Also

included years 2005-2020, And the third (2003). Demographic forecasts for 2005-2050 have been completed and it has been MortPak computer program. The fourth review was performed in 2007 and also included the period 2005-2050 and was performed in the same computer program. The last review was completed in 2010 and has been implemented by a computer program based on DemProj.

10. Taking into account demographic predicting the one hand, the demographic situation in the long term the kind of global

11. Demographic factors such as demographic, epidemiological, migration and human reproduction migration historical type of modernization of the children's demand to have a declining trend. On the other hand, medium-and short-term prospects of the regional and local levels of the demographic trends in the different processes.

12. We tried to some extent taken into consideration in predicting certain sociological studies revealed the demographic processes in the socio-economic, cultural, religious and other non factors impact force.

13. Georgia built by demographic forecasts were allowed overall birth and age ratios, life expectancy at birth, and international migration of certain hypotheses. The projections were developed for the four options: The average birth rate, low, high and constant level. Were used in accordance with the age-specific fertility ratio and total fertility ratio.

14. The 2010 revision of the forecast for whatever option was ever allowed life expectancy at birth, and international migration rates. In contrast, in our case, a variety of options provided for in the forecast as the overall birth and age koefficient, life expectancy at birth as well as international migration and variable settings.

15. We have allowed hipotezata respectively, for the period 2015-2050. Be based on the forecast of a low birth rate, increasing mortality (population 1000) and the subsequent low natural growth parameters.

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21. We have allowed hipotezata respectively, from 2015 to 2050. Be based on the forecast of a low birth rate, increasing mortality (population 1000) and the subsequent low natural growth parameters.

22. Above the country's economic development and the gradual change to the migration needs time. The main stages of the scheme was to determine the general migration and timely borders Georgia.
23. It has already passed the stage of the mid-1990s for the period 1997-1998 and the II stage. Stage II are still going on, in 2020 is expected to stage III. Up until 2025 is expected to minimize the negative balance of international migration and migration in the years 2025-2030 saldoti positive change. The period from the international migration surplus will gradually begin to rise.
24. It should be noted that the foregoing assessment of the data for the years 1989-2001 migration negative balance of 1025 thousand, while in the years 2001-2010 - 250 thousand. Thus, on the whole, in the 1989-2010 migration negative balance equal to 1 million 275 thousand, which is significantly different from the official statistics.
25. Evaluation of various options for the 2010 revision of the forecast net migration has been identified as follows:
26. Average variant: 2010-2025 – -155 thousand, 2025-2050. – 195 thousand that is entire 2010-2050 – 40 thousand.
27. Low variant: 2010-2025– -160 thousand, 2025-2050– 135 thousand 2010-2050 – -25 thousand
28. High variant: 2010-2025 – -135 thousand 2025-2050– 240 thousand, 2010-2050 – 105 thousand.
29. Permanent birth rate options: the option for the average characteristic values.
30. International net migration to sample basis for assessment and prediction, then the difference between some of the demographic data would be quite large. For example by 2050 the population of the evaluation version of the average forecast of about 400 thousand fewer would have been, over the level of demographic aging, while the number of births less.
31. The overwhelming number of the population and the age-composition of the forecast took into account all the options of Abkhazia and the Tskhinvali regions, the projections made in 1989, on the territory of Georgia.
32. The United Nations, the World Bank and the US Census Bureau, the population of the same age-composition of the population projections made in the last 5-year age group except for the interval, however, including the methodological approaches to the difference between the age groups of 75 years celebrated. In particular, the United Nations and the US Census Bureau predicts the population of the age group for the last 100 and calculates the older population, the World Bank 75 and older, and we - the 80 and older population. It was considered the comparability of the World Bank standard.
33. Fertility, mortality and international migration, the World Bank does not provide forecasts of live births, deaths and international migration, balance absolute numbers. They are used to calculate the appropriate amount of the product of (respectively) fertility, mortality and international migration balance general coefficients.
34. US Census Bureau of live births, deaths and international migration balance has the absolute number of each year.
35. In our case above demographic indicators (fertility, mortality and international migration rates) 6-year intervals has been adopted as the single 6-year average.

36. Accordingly, the natural population growth is calculated in the number of live births and deaths difference. The amount of change was adopted as the natural growth of the population and international migration balance sum.

37. UN and World Bank forecasts the proportion of net reproduction ratios. US Census Bureau gives only the gross rate of reproduction. C. Tsuladze projections are shown as gross human reproduction, and net ratios.

***b) the non-demographic factors on the process of determination***

38. If the demographic situation in the demographic factors determinatsiisa for the extraction and processing of statistical information is available, it is difficult to non determinatsiisas factors. Demographic factors on the process of non-performance-quality statistical data can be used for GDP per capita, but it is quite general and specific socio-economic factors as a determinant effect on the statistics do not reflect. For this purpose we consider the sociological study of factors affecting the method of non determination and their assessment parameters taken into account in the forecast.

39. Although the demographic factors of influence on the process of non determination quite difficult and laborious. It should also be noted that no factors unlike demographic factors on the one hand may appear to be factors affecting the demographic processes, on the other hand the processes of demographic trends result. Therefore, the process of forecasting their difference from each other is necessary. The point is that the playback is determined by the type of change in the birth rate and mortality trends change, while the reproduction of the type of demographic processes within the non factors often shape a regional, medium and short-term demographic processes differentiated level.

40. The point is that the processes of demographic changes in the demographic behavior and therefore they determine the outcome of this behavior. It is presented as a system of relations and actions, which are aimed at achieving some result in births, marriage, health and life expectancy from the proceedings. Demographic behavior depends on the demographic situation in the maintenance, as well as a change in the direction of increasing or decreasing.

41. According to the micro level determination process demographic research is primarily concerned with the identification and analysis of demographic behavior.

42. In fact, the population, the size of the family and the individual's level of fertility is mainly formed of reproductive behavior is determined. Also on self-conductive behavior significantly affect mortality.

43. Therefore, the birth rate among factors of reproductive behavior occupies a special place. It as a determining factor in birth rates, in turn, significantly influenced by various non factors, which in turn represents the araarapirdapir subpaktorebad. Accordingly, the fertility levels of reproductive behavior in turn is due to the non sub-factors, including: education, employment type, ethnicity, religion, marital status, Value Orientation and others.

44. Sub-factors listed as "invisible", indirectly affect fertility levels and may expose them to their way of life and the needs of the system of values orientations of the study.

45. Birth rates non factors of the study can be used: as a way of life and values orientations indicators (which reproductive conduct in a sociological study may have adopted), as well as fertility and reproductive behavior of indicators, in addition to their differentiation should be made of the performance, which subpaktorebad mention: education level, housing type of place, nationality, they can be examined, as the Census

materials, as well as the calculation and research basis. Religious beliefs and the degree of impact on the birth rate, may show only the social-demographic study.

46. The birth rate is on the analysis of the factors influencing the macro can be used as indicators, such as the minimum wage less income share, the average cash income sulobrivi, the average monthly nominal salary, the total housing price per employment and unemployment levels and so forth.

47. Demographic behavior should distinguish between determinant family values and orientations of living conditions. It should be noted that a significant impact on the living conditions of the Value Orientation promise as supporting or hindering the realization of the orientations of demographic factors. [10, 11, 12].

48. Reproductive studies show the majority of the revenue feedback level and the number of children, which in our opinion, the result of methodological error. The point is that there is little or no research on children's use of quantitative demand to have differentiation between respondents. Children's demand to have the child's theory that the number of different needs of people and families, and the lives of children affected by the level of demand. Therefore, you'll have a different picture of the study's stature. In particular, children's quantitative having demand (ultimately the birth of) the quality of life impact studies should be performed in children with the same (a) the number of the needs of the size of the groups, which will allow us to more or less accurately understand the quality of life impact of children in the quantitative requirements and their realization.

49. Birth rate determining reproductive behavior analysis should focus on the life and material satisfaction and quality, eamdenada the reproductive behavior is generally determined not by the size of the factors, but also on their family and personal satisfaction level. The thing is that the family and the individual needs of the system of value orientations of hierarchical levels present in the standard of living, material security, and other children in need. Consequently, reproductive behavior determines it, if the values which place basvshvta having quantitative requirements [10, 11].

50. Therefore, the family and the individual value orientations were essential to children's points of orientation. Can be a family of 3 or more number of children in need, but its sales of factors contribute to the living standards of the material and the spiritual with the requirements, including the number of children in motkhovnilebatsaa. Value orientations, children in a quantitative orientation can determine the sequence of a sociological survey, obtained values ranging orientations. This method is based on the demographic policy of the extraordinary event of the Patriarch, His Holiness and Beatitude Ilia II initiative (call) in the third and subsequent children born to him by order of the baptizing. This initiative (call) the family values and orientations of the individual, the level of life of the country and the condition of the material, the value of the child moved to the foreground. As a result, 2007-2014 AD the total number of children born in Georgia every third and subsequent children's share of the order of 7.5% to 18.3% by the year 2014, is quite high in the modern stage in Europe.

51. This initiative has contributed to the family and the person with the desired number of children in certain deferred sales. Thus was born the points on which there was a need, but may not have been born. Patriarch Initiative (call) the increased value of the quality of the child's family and inducing the better mayor for deferred having children. As a result, from 2007 to 2014, the overall birth rate is estimated coefficient from 2.33 to 1.76 (officially 1.45 to - 2.19) is increased, while the ratio of net reproduction rate is estimated to 0,89 1,11 up to (officially 0.67 to - 1.04) is increased.

52. This unexpected demographic "fracture" predicts looming depopulation, expanded reproduction of the state of the art. It is difficult to determine how long it will last "demographic brake", but given the reproductive behavior of the inactivity of this situation

should continue at least until 2020. This has been confirmed by us in 2014 in the following cities (large, large, medium and small) recorded the expected number of children in the study demostosiologiuri fairly high rate - 2.5 children. Given that it is almost the desired number of children (2.6 children) are equal, the above hypothesis is not groundless. The demonstrators were taken into consideration when developing the forecasts.

53. Predicting mortality, compared with less attention paid to the demographic population self-conductive behavior, both endogenous and exogenous non factors. He, like the reproductive behavior is also determined by the level of living and reproductive behavior of the Value Orientation However, unlike the more determinant in the form of components. If only children in reproductive behavior is mostly related motifs self-conductive behavior as health and life expectancy is higher than it needs, motivation and satisfaction of its products is much to be done.

54. Self-conductive behavior of the component, as an essential determinant of the level of life and affects a significant sub-factor. In particular, the mode of the day, meals, medical care and the level of quality, working conditions, sports load, etc.

55. As well as the needs of children, the preservation of human health and life expectancy of the requirement also demands a certain place in the system. Naturally, other needs in comparison with the needs of the hierarchy above and realized self-conductive behavior comes first, which is seen as a motive for self-conductive behavior. According to the health and long-term survival of a wide range of diversity determine their motivation and their interactions. Therefore only revealing sociological testing, based on the results of which may determine the health and life expectancy of the options sub-factorial influence, which can take into account mortality and life expectancy at birth forecasts.

56. Like demographic behavior, personality as well as satisfy the requirements of the migration behavior. The migration behavior of demographic factors in comparison with non factors provide. They, in turn, a better environment and a better quality of life in terms of living is determined by demand. Migration patterns and demand depends on the individual's family and the opportunity.

57. Migration can be a motivation, but migrate to other place like it on other grounds would not take place or be postponed. Migration of the factors as well as various kinds and any one or more of them sub-factorial determinants of migration, allowing the motivation to change.

58. Can not be migrated to the demand and motivation, but it conflicts, persecution and war, disregarding the force of law. An example of the lost territories of refugees, not to mention other countries in the conflicts caused by migration [13].

59. Predicting migration, social studies, if possible peacetime migration behavior motivations taking into account, which can not be said of the migrant force. Motivations for Migration, the forecast should be considered the region's political and economic development prospects sosialur, which to some extent determines hinderlandis migration, duration and shape. Migration motivations from the need to single out: education, employment opportunities, better climatic conditions, the level of urbanization and the other, which can be used as indicators of the forecasting process.

### **III. Conclusion**

60. UN, World Bank and US Census Bureau projections of the demographic situation in the core is made according to official data, taking into account non demostatic determinants. In contrast ISU Institute of Demography and Sociology, official statistics assessed annually. The point is that official statistics based on the

law, did not take into account the demographic circumstances, which are not accounted for in the (eg., Home birth, death registration, etc.). This was confirmed by international organizations. Based on the above specified demographic indicators in the evaluation of cases, which, based on factors including the impact of the non fulfillment of demographic projections. Georgia is currently a variety of international organizations and by us [1] estimates demographic forecasts are summarized in Table 1, which shows that the estimation of demographic indicators on the basis of the forecast for 2014 is much closer to the actual performance, compared to other international organizations.

**Factual demographic situation of 2014 and various evaluations of projections in 2010-2015 (average condition) [1]**

	Population both sexes (thousand) 2010-2015	Born (thousand)	Dead (thousand)	Natural growth (thousand)	International migration (thousand)
<b>projections</b>					
UN	4225,0	49,0	50,0	-1,0	-25,0
World Bank	4078,0	50,0	53,0	-3,0	-25,0
USA population registration bureau	4525,0	49,0	46,0	3,0	-18,0
G. Tsuladze	3905,0	53,0	55,0	-2,0	-17,0
<b>factual</b>					
Geostat 2014	3729,5*	60,6	49,1	11,5	-6,5
G. Tsuladze (evaluation) 2014	3756,1	61,6	54,1	7,5	-12,1

\* As of January 1<sup>st</sup> 2015

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