The Use of Statistics in Human Rights, Humanitarian, and Developmental Projects World-Wide Population Assessment of Ukraine 2015 Project

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Abstract

The Institute for Demography and Social Studies (IDSS) of the National Academy of Sciences of Ukraine approached United Nations Fund for Population Activities (UNFPA) for assistance in assessing the population of Ukraine. After independence they had only one census in 2001 and were unable to conduct one around 2011 and there was no hope to have one in near future. The registration of vital events in Ukraine was reliable but it could be by place of occurrence. Ukraine demographic estimates are interesting; the population is declining due to the declining number of births, which are less than the number of deaths. The State Statistics Service of Ukraine provides estimates of migration for each calendar year. After Crimea annexation and Donbas war, internally displaced persons (IDPs) had to be accounted in order to estimate population. Administrative records could be used to cross-check and balance the population assessment model.

Keywords: population, migration, unified registration, administrative records, IDPs.

1. Introduction

The Institute for Demography and Social Studies (IDSS) of the National Academy of Sciences of Ukraine approached United Nations Fund for Population Activities (UNFPA), Ukraine and 'Population Assessment of Ukraine 2015 Project' was initiated in mid-2015. UNFPA approached Statistics Without Borders (SWB) and a team consisting of Michiko Wolcott (Project Coordinator), Ramesh Srivastava (Technical Lead), and Artem Kopelev (Team member) were selected. UNFPA Program Officer Oleg Voronenko was the focal point although UNFPA regional and headquarters representative were also involved in communication. IDSS focal point was Dr. Gladun Oleksandr. SWB communication with UNFPA and IDSS started early July 2015 and final comments on Prof. Ortega's report was provided mid-February 2016.

Prof. Jose Antonio Ortega (University of Salamanca, Spain) joined the Ukraine population assessment exercise as an international expert to support the IDSS, visited Kyiv from 28 September – 2 October, 2015 and submitted Inception report in last week of October, which was revised in December 2015.

The goal was to assess the population of Ukraine. After independence in 1991, only one population census was carried out in Ukraine in December 5, 2001. The population movement resulting from the conflict situation starting in 2014 had added another dynamics. The exercise was to evaluate available population estimates as well as alternative sources of information including survey data, administrative data and international sources. The ultimate goal was the production of estimates for the de facto population by region, sex and age.

2. POPULATION

SWB suggested the simple population model as

$$\mathbf{P_n = P_0 + B - D + I - E + IDP_s}$$

Where P_n is the current population estimate, P_0 is the base year population; B and D are number of births and deaths during this period, providing natural increase. I is the number of immigrants and E is the number of emigrants thus providing net increase due to migration. IDPs are internally displaced persons.

In general, registration of vital events in Ukraine was reliable. However, births and deaths could be registered: 1) by place of occurrence, 2) by place of residence (for live births – by place of residence of the mother or the father; for deaths – by place of residence of the decedent; 3) by burial place. This may lead to a distortion of estimates of population by sex and age. (1)

Migration statistics are not perfect in many countries. Passport records are in many cases not required upon departure but the same is asked for at point of entry.

According to the All-Ukrainian Population Census 2001 data, the total actual population of Ukraine accounted for 48 million 457 thousand persons. (Source: State Statistics Committee of Ukraine)

The urban population according to the 2001 Census results amounted 32 million 574 thousand persons, or 67.2%, the rural population – 15 million 883 thousand or 32.8%.

According to the 2001 Census results the number of men accounted for 22,441,000 or 46.3%, and that of women - 26,016,000 or 53.7% (the actual population).

Since the last Population Census, the number of towns had increased by 20 and on the Census day, there were 454 cities and towns. 9 cities numbered more than half million inhabitants. The population of the capital of Ukraine accounted more than 2.6 million inhabitants.

Based on one of the IDSS report of 2009, some forecasted numbers are following.

Table 1. Population forecast for Ukraine*(calculated in summer 2009)*

Population by age on January 1 of corresponding year, thousands persons					(Medium variant)		
Both sexes	2009	2010	2011	2012	2013	2014	2015
All ages	45,963	45,713	45,482	45,280	45,087	44,909	44,726

Year	2008	2009	2010	2011	2012	2013	2014	2015
Born alive (thousands persons)								
Medium variant	510.6	502.6	512.1	516.7	515.9	510.1	499.1	488.8
Deaths (thousands persons)								
Medium variant								
Both sexes	754.5	768.1	759.1	741.1	734.4	721.9	715.0	713.5
Males	386.5	392.3	387.2	374.9	369.6	360.9	355.8	354.1
Females	368.0	375.8	371.9	366.2	364.8	360.9	359.2	359.5
Net migration (thousands persons)								
Medium variant	14.9	14.9	16.7	21.5	26.1	33.8	32.5	35.8
High variant		14.9	19.4	31.9	43.1	54.6	56.1	53.7
Low variant		14.9	13.1	2.4	-7.0	-21.8	-32.7	-42.1

Ukraine demographic estimates are interesting, the population is declining, and the number of births is declining and less than the number of deaths in all years in the table above.

The State Statistics Service of Ukraine provides estimates of migration for each calendar year. Until 2014, Ukraine had no refugees and/or internally displaced persons. Data on migration are available for years XX to 2013. They include: the data on total net-migration, net-migration by sex, age, year of birth, internal (inter-oblast and within-oblast) and external migration. (1)

Sometime you can look at other countries census statistics. For example, in 2000 US Census there were 275,155 people born in Ukraine. Dr. Gladun mentioned of 800,000 Ukrainians who fled to Russia and Belarus?

According to the UN Refugee Agency by 9 July 2015, 922,651 Ukrainians had sought asylum, residence permits or other forms of legal stay in neighboring countries (Russian Federation, Belarus, Poland, Slovakia, Hungary, Romania and Moldova). (1)

IDPs had fled from two areas of Ukraine: around 20,000 have fled Crimea (State Emergency Service, 2014), while 1,295,600 have fled eastern Ukraine (United Nations Office for Coordination of Humanitarian Affairs (OCHA), 29 May 2015). IDPs have been displaced to every region in the country, although Crimean IDPs have mainly fled to western areas while those from eastern Ukraine were mainly displaced within the east of the country (OCHA, 23 January 2015). The latest rise in the figure is due to new displacement as well as registration of previously displaced persons. The figure 1,332,600 includes an estimated 17,000 IDPs displaced within Crimea (The Office of the United Nations High Commissioner for Refugees (UNHCR), October 2014).

3. UNIFIED REGISTRATION SYSTEM IN PLACE for IDPs

The initial registration process put in place at the start of the crisis lacked a unified system and was run by emergency responders. In October 2014 the Cabinet of Ministers adopted Resolution 509 which established a unified registration system, operated by the Ministry of Social Planning (MoSP), and delegated registration and benefit payments to district and city social service departments.

Through the resolution, IDPs are entitled to government assistance, pensions, and free housing for a period of up to six months with the possibility of extension.This system has been successful in identifying the scale and scope of the needs of IDPs in the country, but importantly gives them legal recognition through which they can access state support. Despite this, many challenges remain. SWB advised IDSS to explore the database on IDPs.

4. ADMINISTRATIVE DATA

Use of other administrative records, for example- tax and revenue records, pension records, election registers, education records etc. We could use these records to estimate number of pensioners, voters, student population and number of individuals/households paying taxes. This information could be used to cross-check and balance the population assessment model. However in any registration system there is possibility of omissions and double entries.

It appears we have to use the secondary data to build our population assessment. In this short period of six months, it is difficult assess the reliability and validity at national level, so we could inventory all secondary data available for all or many of the Oblasts, select one Oblast to start and build the model and test it prior to rolling out elsewhere and/or supplementing with small samples. We believe this is a much more realistic approach.

SWB question: Is IDSS open to this approach- selecting one Oblast and explore all secondary data available through administrative records to start, extend to additional Oblasts if feasible, then supplement with a small representative sample of households, collect primary data and assess population and other demographic variables and build model?

IDSS response: We think we first need to develop a plan for our project. This plan should describe deliverables, methods and implementation schedule. In addition, this plan has to be approved by IDSS, SWB and the expert from UNFPA. We are currently working on developing such a plan. The project has two main tasks:

1) Estimations of population by sex and age on January 1, 2014 (that is before the annexation of the Crimea and the war in the Donbas). This task is complex as the last Census was held in 2001.
2) Estimations of population by sex and age on January 1, 2015 and January 1, 2016 that take into account the impact of the war in the Donbas.

Testing a model with an application to one selected oblast seems to be reasonable; however, we assume that some regions require some specific models. There is also a need for building a model for Ukraine at the national level.

SWB agreed with IDSS on need to develop a plan with the outlined two main tasks. Some countries estimate mid-year population (for example on July 1, 2014) but it is fine to estimate on January 1, 2014 and January 1, 2015 and average of two will provide mid-year.

Based on numbers in Table 1, for example 2013 population of 'All ages' both sexes was 45,087 thousands, there were 510.1 thousands 'Born alive' and 721.9 thousands Deaths. The net migration was 33.8 thousands. We have used Medium variant numbers. If we insert these numbers in the population model,

$P_{2014} = P_{2013} + B_{2013} + D_{2013} + \text{Net migration}_{2013}$

$P_{2014} = 45{,}087 + 510.1 - 721.9 + 33.8 = 44{,}909$ thousands

We think let us use data from IDSS reports, to estimate the population on January 1, 2014 (that is before annexation of the Crimea and Donbas war). We can do it by sex and major age-groups. After Crimea annexation and Donbas war, we have to include IDPs in the equation, to estimate population on January 1, 2015 and onwards.

SWB question: Aside from pension, tax, and election commission databases, what other reliable sources of data could we utilize? What are the main requirements of the socioeconomic factors and outcomes we hope to have in the reports?

IDSS response: We can utilize any data from the State Statistics Service of Ukraine including data on children in preschool institutions and schools. We hope to get in the report: 1) refined data on population by sex, age, and regions for the years 2002 to 2015, 2) the method and algorithm that we can use for estimating inter-censal populations.

SWB view was that if we want to achieve our tasks by end of December 2015, it will be ambitious to assess the population for the years 2002 to 2015. State Statistics Service of Ukraine could provide data from 2002 onwards. Let us focus on main tasks i.e. estimations of population by sex and age on January 1 of 2014, 2015 and 2016. If Ukraine had two recent census figures, we could calculate growth rate for estimating inter-censal populations.

5. OTHER QUESTIONS

SWB question: What software packages would IDSS prefer to use for building the model? What type of model are they thinking about using (regressions, hierarchical methods?)
IDSS would prefer to use Excel. Model choice problem is the one of the challenges.
It was suggested that R-studio will be utilized for the exercise. As an open source platform it seems to be an ideal lightweight tool to implement. Training the Ukrainian assessment team in R will prove very useful in their future population assessment work as well as for applications in a number of other projects and industries. The advice was to combine powerful output from R to complement simplified charts and aggregated summary statistics in excel.

We are aware that many countries have statistical software availability problem and are using Excel. Although some statistical software could be acquired free.

IDSS main questions were as follows: 1) How to refine actual population figures by sex, age, and regions? 2) How to make population projections? We are interested in the experiences of other countries that have addressed similar problems.

SWB response: One method will be to estimate the base population on January 1, 2014 for regions by sex and age-group. If we know the distribution of IDPs by regions, we could plug in. UNHCR reported 1.33 million IDPs as per their October 2014, which is about 3 percent of the total population.

Ukraine should also benefit from the World Bank and World Health Organization (WHO)'s Civil Registration and Vital Statistics (CRVS): scaling up investment plan 2015-2024. The goal of the CRVS plan is to register births, deaths and other vital events, including reporting cause of death, and access to legal proof of registration for all individuals by 2030. This global plan has three key components concerning the following: 1) national CRVS strengthening that removes the barriers to birth registration, improving reporting of deaths and determining cause of death, strengthening CRVS institutions and ICT systems, strengthening national ID mechanisms, and improving the response to deaths and vital statistics; 2) international support for CRVS that will focus on strengthening international standards for CRVS, and preparing and sharing guidance based on country experience; and 3) sharing knowledge and building the evidence base that analyzes barriers and programs of implementation research, together with rigorous impact evaluation, that will share lessons on what works in different situations. (10)

6. Conclusions

The main findings of the UNFPA project was that population statistics had not deteriorated seriously since the Census, their main limitation being that by definition they are based on a *dejure* concept which was not the most appropriate for planning purposes. It is the *de facto* population that is relevant. In this respect, the situation of Ukrainian population statistics would improve by following international recommendations on two areas: (3)

Reporting by UKRSTAT (State Statistics Service of Ukraine) of vital statistics by place of residence as well as by place of occurrence, as stated in the United Nations Principles and Recommendations for a Vital Statistics system (United Nations Department of Economic and Social Affairs (UNDESA), 2014).

Reforming the registry system in line with World Bank's Civil Registration and Vital Statistics (CRVS) plan and guidelines.

Regarding the demographic consequences of the conflict, administrative data from vital registration and the school system provided an idea of what had happened independent of the new registry of Internally Displaced People (IDP).

It was suggested that R-studio will be utilized for the exercise. As an open source platform it seems to be an ideal lightweight tool to implement.

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