

Opponent's review of master's diploma thesis

Thesis title: Reproduction of the population of Kazakhstan in the data of the Population Division of the UN DESA and analysis of the results of its projections for 1994-2019

Author: Guldana Uteulina

Scope: 79 numbered pages of text, of which 73 pages of the text of the original work, including a list of used literature and data sources, and 6 pages of appendices, including their list.

Relevance of the topic: The study of population reproduction in Central Asian countries and the assessment of the accuracy of demographic forecasts for these countries are relevant. This is due to both the specificity of demographic trends in these countries (not only against the background of European dynamics but also demographic processes in other parts of Asia) and some problems with the reliability of detailed demographic data necessary for the development of quality population forecasts. Among the post-Soviet countries of Central Asia, Kazakhstan is distinguished by the greater completeness of demographic information (availability of continuous series of demographic dynamics and systematic population censuses). At the same time, there are specific challenges in analyzing demographic trends and forecasting population development in this country due to insufficient harmonization of statistical methodology and definitions for different periods, incomparability of demographic indicators, etc. Therefore, this study, which aimed at analyzing the trends of population reproduction in Kazakhstan using the data of the Population Division of the UN DESA in comparison with the data of Kazakhstan's official statistics, can lead to both improved analytical capabilities and contribute to better future projections.

Evaluation

Definition of the objectives of the work:

The definition of the goals of the thesis in the introduction is clear and, taking into account the knowledge and skills of the graduate, realistic enough. The thesis declares that its main goal is to analyze Kazakhstan's demographic dynamics, as presented in the UN DESA's World Population Prospects data, focusing on the accuracy and reliability of its forecasts from 1994 to 2019 revisions. As subsidiary objectives of the thesis, the author set out a comparison of these forecasts with historical data and official demographic statistics and an analysis of corresponding differences in population estimates.

Structure of the thesis:

The dissertation under review is characterized by a logical and compact structure. The text is divided into seven sections, including an introduction and a conclusion. The two sections constitute the introductory part of the thesis, the next four are its core, and the conclusion summarises the main conclusions.

In the introduction to the diploma thesis, the chosen subject is considered within the framework of the principal focuses of demographic analysis and forecasting and the Kazakh national context.

The objectives that have already been mentioned are defined, and the relevance of the research is revealed. The second section is devoted to a review of the relevant literature. This review is quite comprehensive, covering and comparing the works of leading authors who have addressed this scientific issue. It reveals the concepts and approaches that form the foundational basis for evaluating the quality of demographic forecasts.

The third section of the thesis presents the data sources and discusses the availability and quality of data for Kazakhstan. It's an important part of the study because the quality and recency of the input data influence projections' accuracy.

The fourth section presents the results of the generalization and analysis of various aspects of the UN Population Division's methodology. This includes a comprehensive overview of the overall approach and key steps involved in generating population estimates, preparing population projections, and the methods used for these projections.

In section 5, the author examines various error measures used to assess the quality of forecasts, highlighting their application peculiarities, advantages, and disadvantages.

The analysis of the differences between the forecast estimates and the actual data for each of the demographic processes (fertility, mortality, migration) and the population size is combined in sections 5 and 6 with the search for the reasons for the estimated differences and clarification of the specifics of the country's demographic development in this period. It should also be noted that in analyzing the accuracy of the UN's values compared to Kazakhstan's national statistics, the author applied the procedure of data and indicators' recalculation to ensure comparability and accuracy (section 6, p.61).

The thesis conclusions summarize the study's main findings. They also highlight the importance of incorporating high-quality and timely data into the forecasting process and taking into account the local demographic context.

Topic development:

The development of the chosen topic has, as follows from the content and structure of the dissertation itself, all the main features of the master's research work. It is based on the systematic study of available literature. It can also be said that the thesis reflects the current level of knowledge on this topic.

The main advantages of this paper include maximizing the use of information opportunities provided by Kazakhstan's official national statistics. The author also managed to ensure a comprehensive consideration of the problem of the accuracy of forecasts for Kazakhstan and a more in-depth analysis of the country's demographic development. She tried to identify and explain specific local factors that influenced the differences between the forecast demographic indicators and the actual ones at different periods. I also would like to draw attention to the procedure of recalculation of data and indicators that the author applied to the estimation and analysis of differences between projected and actual data to ensure comparability and accuracy of the comparison of the UN's values and Kazakhstan's national statistics.

However, I also have a few critical comments. I would like to draw attention to some formulation errors, controversial value judgments and interpretations, which, however, are often found even in more experienced authors. For example, the thesis defines the demographic situation in Kazakhstan as pre-crisis and even crisis without convincing justification (p. 11), especially taking into account the country's high birth rate and relatively low population ageing. The author also sometimes overestimates the influence of political decisions on the dynamics of demographic processes and uses rather political clichés instead of scientific justifications to explain specific trends.

In some cases, the author emphasizes the influence of certain factors on demographic changes (such as the state of the healthcare system as a factor in life expectancy – p.43) without giving due attention to other significant factors (such as features of living standards of specific historical periods

etc.) or describes them not accurately enough (for example, writes about malnutrition instead of the bad structure of nutrition – p. 44).

In some places, when explaining demographic changes, the author mentions factors that influence the absolute number of demographic events or at least the crude rate but are not factors of the dynamics of the indicators she is considering, such as TFR (pp. 39-40).

It is also worth noting that in the presentation of the study's conclusions (p. 69-70), its results do not fully correlate with the original research objectives and tasks.

The formal aspect of the dissertation:

The form of the thesis fully corresponds to its content. The postgraduate student followed the formal rules of writing a master's diploma thesis. The text and graphic appendices are clear and understandable. The thesis's references in the text and bibliographical entries are designed in accordance with the relevant standards.

Personal contribution of the student:

The presented thesis is an original, full-fledged study devoted to analyzing Kazakhstan's demographic development using the data of the Population Division of the UN DESA and the results of its projections for 1994-2019.

This work's main contribution is to provide further insights into the reproduction of the country's population. These insights were obtained through the projection's quality assessment, more precisely by interpreting significant departures of the projected values from UN estimates and official statistics.

The author also showed that while advanced statistical models and methods are crucial in demographic forecasting, their effectiveness is highly dependent on the timeliness and relevance of the data inputs.

This work and the information collected within it have the potential to serve as a foundation for further research on Kazakhstan's demographic development. More importantly, it can aid Kazakhstani demographers prepare their own population forecasts for the country.

Overall assessment:

The diploma thesis of Guldana Uteulina "*Reproduction of the population of Kazakhstan in the data of the Population Division of the UN DESA and analysis of the results of its projections for 1994-2019*" meets the requirements for a master's thesis in demography at the Faculty of Science of Charles University in Prague, and therefore, I propose to accept it for defence.

Technical note:

This review is based on the diploma thesis available in the Errata section of the Student Information System (SIS), as the originally downloaded file lacks some graphical objects.

Prague, January 22, 2025



Prof. Iryna Kurylo, DSc.

reviewer