

Opponent's review of Mgr. Fariza Tolesh's dissertation "Population prospects of Kazakhstan till 2030"

Doctoral dissertation by Mgr. Fariza Tolesh "**Population prospects of Kazakhstan till 2030**" consists of 207 numbered pages of the text and appendices in total. Having the standard structure, it is divided into ten basic chapters including introduction and conclusion. The work includes also the lists of figures, list of tables and maps, as well as the references to used literature.

The thesis has a standard structure concurrently reflecting its theme – a population forecast production and presentation. After a well done **introduction** the author provides a relatively brief but representative historical **overview of literature** on population forecasting and its key questions. She mentions practically all titles representing the source on which the presented concept of population forecasting is based.

Fariza Tolesh' tough affiliation to our so called Albertov concept of population forecasting is clearly presented also in the second chapter devoted to **conceptual and theoretical framework** of the dissertation. After brief but apposite discussion of the core terminology related to population forecasts the student provides an overview of major relevant theories and tries to discuss briefly their relevance for Kazakhstan and its population development.

The chapter three presents a skillful discussion of official **statistical data availability and quality** based not only on author's personal experience or speculations so frequent in similar texts of other Kazakh students but also on experience and meanings of other authors dealing with population issues in the country and region of Central Asia.

The extensive chapter four covers general **methodological questions** of population forecasting organized in their logical order. First of all the author discusses different approaches related to population forecasting. They are inventively divided on the approaches to population development, to forecasted population and to the process of forecasting itself. In the second subchapter of the chapter four she describes a classical cohort component projection model. In the third one F. Tolesh discusses the approaches to forecasting the cohort component projection model parameters rather than particular methods and techniques directly leading to the parameters' forecasts.

The core part of the dissertation starts by the chapter five presenting the student's own research process and its results. This, the most extensive chapter of the entire work is devoted to **identification of population system** for the purpose of forecasting population development of Kazakhstan as a whole. Two delimitations are done *ad hoc* (the population of Kazakhstan as a whole and divided on rural and urban population), however, the third one is based on relatively detailed description and analysis of fertility and mortality and their regional differentiation. The question is why the same procedure is not also applied to the process of migration.

Own **forecasting oriented analysis** of the past population development is the theme of the chapter six. Its text provides a basic overview of fertility, mortality and migration developments on the level of individual regions and their aggregates designed for the purpose of forecasting. Due to problem of data availability, the analysis covers only the period 1999–2010. The indicators used preconceive author's original but logical and legitimate approach to assumptions making. She gives explicit priority to the aggregate indicators (TFR, life

expectancy at birth and net migration) and not to the elementary ones when estimating future values of the parameters.

The **projection model parameters** are then **estimated** through distribution of the aggregate characteristics values as it is documented in the chapter seven. The thematic scope (three alternative delimitations of the population system of Kazakhstan as well as many subpopulations defined in their framework and representing the partial objects of forecasting) would deserve more extensive and detailed as well as better structured and worked-out chapters six and seven.

The same critics could be addressed to the chapter eight devoted to **presentation of the forecasts results**. The content and structure of the obtained results presentations do not sufficiently correspond to the original intention of Fariza Tolesh' doctoral research as they were specified in the introduction. She originally intended to find out how much different results can be obtained when applying different delimitations of population system and to determine which of delimitation is the most suitable for current population forecasting practice on the national level.

The similar signs of ill-conceived output are clearly visible from the content, organization and different formats of the dissertation **appendix** and its parts. Moreover, there is missing a list of tables and graphs presented in the appendix.

As such the entire thesis of Fariza Tolesh gives an impression of unbalanced text in terms of its content and its quality. On one side, there is quite well elaborated introductory part of the dissertation represented by the first five chapters including the introduction, and relatively brief and sloppy second part which should document the author's own research and its results on the other. The negative impression is supported by very many partial deficiencies, namely factual and well as formal errors. Their full overview is provided in the commented electronic version of the thesis. For illustration I will mention here only some of them.

As one of the principal errors can be considered the empirical and forecasted profiles of the probability of dying for different subpopulations as they are presented in Figure 68 (p. 112), Figure 69 (p. 113) and namely Figure 1A (p. 140). Some their shapes, especially in three last graphs, document that the author has no idea about general mortality patterns. Could she explain how the forecasted values can be more fluctuating than the empirical ones and some of them to reach completely unrealistic levels? Moreover, the above mentioned graphs and many others due to choice of colors are practically unreadable.

There is almost no explanation in the submitted text why namely such values of the projection model parameters are expected. I also miss a more detailed description how the parameters of fertility, mortality and migration were estimated. Please how they were tied to the general level assumptions, of course, if any such assumptions on future developments of population system significant surroundings were formulated in the process of forecasting? Description how migration was incorporated in the applied projection model is missing in the text as well.

The text of dissertation is also full of formal deficiencies. The most illustrative in this respect are the bibliographical records in the References. They contain dozens of misprints, many different formats of records, some of them only fragmental (see for instance Anderson and Silver, 1987; Bijak, 2006; Bongaarts, 2001; de Beer, 2000; Kazakhstan Agency on Statistics, 2010 and 2011; Merkov, 1965), and not properly ordered (e.g. Keilman's references). The list

of literature includes several titles which are not quoted in the text (Gentile, 2005; Rogers et al., 1978; Burcin et al., 2012; Tolesh, 2009). Very careless is also quotation of sources in the text. The quotations are frequently missing (see pages 14, 15, 20, 23, 26, 34, 51, 56 and many others) or they are not complete, the authors' names order is changed in several cases (Swanson and Tayman, 1995; Hoorn and Keilman, 1997), and in the case of direct quotations not always are mentioned pages (see pages 19, 22, 23, 52, etc.).

Another problem is the description of tables and graphs as well as their parts, e.g. axes of graphs (see for instance Figures A2 or A3). Different obligatory parts of their titles (factual, spatial or time specifications) are often missing (Figures 49, 50, 52, 58, 63, 71, etc.; Tables 7–11). Also many graphs and tables are not properly designed and their size is mostly adapted to the room available in the text. As results, some of them are practically unreadable due to their size. In the case of graphs their readability is frequently reduced by bad selection of colors. Moreover, the titles of particular graphs and tables are not always identical with those presented in the corresponding lists (Figures 48, 77, 78, 79; Table 16).

Regardless author's very good English the text is sometimes not fully understandable (e.g. the text below the formula (2) on the page 39).

Due to ascertained large-scale shortcomings and very many imperfections of the submitted text I cannot recommend the submitted doctoral dissertation of Mgr. Fariza Tolesh "**Population prospects of Kazakhstan till 2030**" for defense without its completing and careful correction of all deficiencies.

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