

Opponent's review on the PhD thesis of Shynar Tuleshova
"Regional Mortality Differentiation in Kazakhstan (1999-2008)"

The PhD dissertation of Shynar Tuleshova "*Regional Mortality Differentiation in Kazakhstan (1999-2008)*" has 275 numerated pages. The text itself (without title pages, contents, different lists and appendices) has 231 pages and it is organized into fourteen numerated chapters including Introduction and Conclusion. Besides the main body of text, the dissertation incorporates also the lists of abbreviations, tables, figures, maps and appendices.

The work has a firm logical structure. It starts with an Introduction. There the topic is specified, its significance assessed, basic objectives formulated and structure of the thesis sketched. The chapter two presents a brief overview of literature. In this part, the author should adopt problem approach when ordering the literature rather than using a regional principle. She should also not forget the main purpose of this chapter – mapping the attained level of cognition of studied theme. The analogous notes can be addressed to the author in the case of the chapter three dealing with applied theoretical concepts. With respect to the purpose of the text, the theoretical part seems to be very brief containing only very basic characteristics of developments as they are generalized by theories of demographic revolution, epidemiologic transition and spatial diffusion. On the other side, it has to be pointed out that Shynar Tuleshova has quite successfully tried to show concrete manifestations of these concepts using national and regional data.

Chapter four contains listed research questions and hypotheses. The positive moment of hypotheses presentation is that they are supported by references to and discussion of relevant literature. It partially compensates the unconvincing impression left by earlier mentioned overview of literature. Relatively well is elaborated also the part five dealing with data availability and quality. Author's conclusions and presented facts are again well supported by rich references of professional literature. The shortcoming can be seen in the part dealing with socioeconomic indicators. There are several not univocally defined characteristics which definitions used are not properly specified (e.g. unemployment rate, GDP and GRP). Methodology applied in the dissertation is overviewed in the chapter six. Wide set of instruments used by the author in her analytical works is relatively correctly presented and mostly also correctly specified. Weaker is only justification of some methods and their use, especially those belonging to multivariate statistics (e.g. in the case of factor analysis). In the case of subchapter on cartographic method it is unjustified to create a lower structure and moreover to call it "spatial mapping". After all, spatiality is a main attribute of a map and thus also of cartographic methods and therefore this fact does not need to be stressed in any title or text.

Entrance to Kazakhstani reality is secured by the content of the chapter seven. The author deals with applied territorial division, social and economic developments of the regions, ecological problems, and educational structure of population and sociocultural parameters (mainly ethnic structure) of regional populations. Finally, also the overall development of regions is traced in this chapter.

Basic description of mortality developments on national and regional levels are presented in the chapter eight. In the tables evaluating overall regional differentiation through basic characteristics of variability is a systematic mistake when standard deviation values are calculated from probabilities based on the whole equal to one and the marginal values of an empirical distribution as well as the range are calculated from probabilities multiplied by some unknown constant, probably by thousand. More detailed insight into mortality by age categories and selected groups

of causes of death when intensity of the studied process is analyzed region by region is a subject of the chapter nine. The contents of the chapters eight and nine are so closed that it gives rise to the question why this practically single theme is divided into two separate chapters. Another open question is why in her attempt to explain observed trends of mortality developments the author remains on a half way. For instance she sees the main reason of mortality decrease of poverty level in the regions but does not discuss what part of it is going on the account of real social and economic improvements and what part of the observed change is a result of changes in official statistics.

The chapter ten is focused on contributions of the defined age categories to the life expectancy at birth between the periods 1999-2000 and 2007-2008. After a short introduction overviewing these contributions on the level of the country, the author is moving her attention to the regions. The entire chapter has a descriptive character, the same as the chapter eleven where the contributions are traced according to the observed causes of death.

The following two chapters, twelve and thirteen ones are devoted to application of more advanced statistical methods. The earlier one deals with changes of the diversity of age at death and its regional differentiation in relation to the changes of regional diversification of life expectancy at birth between the periods 1999-2000 and 2007-2008. The later chapter examines using regression analysis the links among the life expectancy at birth on regional level to the values of independent variables mostly of a socioeconomic nature. This part is more focused on delimitation of relevant variables rather than on testing the relevance of applied models. Therefore it is uneasy to say how much the existing interlinks between used variables and the marginal (remote) values influence the results.

In the chapter fourteen the author overviews the main results of her work and discusses the obstacles met. She sees the main issue of the presented analysis in relatively weak information base, namely in insufficient and less reliable official statistics.

In the dissertation text there can be found also some formal errors and deficiencies, e.g. misprints, missing symbols in some mathematical formulas, not always correctly written capital/small letters in names, changed writing of decimal numbers (with comma) in some parts of the text, etc. Their frequency is, however, not significantly high and therefore I will not pay attention to them case by case. More important I have found that the main formal requirements were fulfilled. Work is, with minor reservations mentioned above, properly and logically structured, objects in the text and their descriptions are mostly correctly elaborated, literature used is properly quoted and references have required format.

Taking into account all my findings made when reviewing the text of the submitted dissertation I can state that Shynar Tuleshova came to terms with the assigned tasks of her doctoral research. Her doctoral thesis, regardless all the critical notes above, fulfills all major criteria of a successful final thesis of doctoral studies in the field of Demography submitted at the Faculty of Science, Charles University in Prague. Therefore I recommend to the Commission for state doctoral examinations in Demography to accept the PhD dissertation of Shynar Tuleshova "*Regional Mortality Differentiation in Kazakhstan (1999-2008)*" for defense.



Prague, 10th October 2011

RNDr. Tomáš Kučera, CSc., opponent