Opponent Report on Dissertation Thesis „Four Decades of Cause-Specific Mortality in the Czech Republic, West Germany and France" written by Markéta Pechholdová

This Dissertation thesis consists of 183 text pages which are divided into 8 main - further structured – chapters. Huge number of figures (94) are an organic part of dissertation thesis as a result of calculation. Introduction is the beginning and describes the outline – theory of epidemiologic transitions with all development of this topic. As every theory also this one needs empirical data and that is connected with the International Classification of Diseases (ICD). However, the problem is connected with periodical revisions of ICD which is also mentioned in introduction.

The 1st part is the past, present and future of ICD and starts since the beginning: the modern history of medical classification and trials of international comparison. It is very clear from the text, the classification were very close to development of medicine (which should be in mind for present too). ICD, its classification is very complex work and it is explained by author in exact detail. Following the development of medicine, newer and newer revisions are more detailed and time series analysis will be more complicated. This is clear on tenth revision (1993) and without mapping support it is more and more complicated (see p. 30).

Compilation of mortality statistics is contents of 2nd chapter. This part is – from the point of international comparison – complicated. There are ICD (international) standards on one side, but (national) practices on another one. The cases of Germany, the Czech Republic and France are subject of the matter and from the explanation of national cause-of-death statistics seems to difficult for comparison.

The 3rd chapter is given up to transition between ICD8 and ICD9 revisions, e.g. recent history or present times. Causes of national death statistics were used and reconstruction of the time series could be applied. The method is based on creating of smallest clusters of death by the same causes. Elementary association combine information from the theoretical content (e.g. by definition) with the reported numbers as a empirical content. The problem is of course in splitting one ICD8 into multiple ICD9 items (p. 62). Some problems of instability in this situation could be comment. The next part of this chapter is oriented on selected items of the correspondence table between ICD9 and ICD8 and *vice versa*. Without any hesitation: hard work has been on that done, but reconstructed elementary associations are result – graphs on p. 70 for Germany, (probably) on p.85 for the Czech Republic, but situation in France is mentioned only at the beginning of chapter (without results?).

Transition to ICD10 is contents of 4th chapter – with changes to alphanumeric system of codes. Automated coding systems are mentioned and bridge (double) coding diminishing problem of data discontinuities. To be oriented to main causes, the sort list of main causes of death is created – with explanation of problems among countries (p. 104) and description on many single ICD items.

International comparability of the reconstructed time series (5th chapter) gives possibility to compare situation for these three countries – in spite of problems mentioned before and correctly stated at the beginning of this chapter. This was done by age-standardized death rates by ICD10 chapter, country and sex (p. 127). Chapter by chapter, comparison by countries and sex is illustrated in graphs – very illustrative part of this dissertation thesis.

Life table analysis (6th chapter) gives possibility to standardize results – in mutual comparison – via concept of multiple-decrement life tables (p.145). The mortality situation for these three countries was (and still is) on different level and this is very close to different chapters and codes of ICD. Prior to this decomposition by age groups is applied, using the method of Andreev. After calculation of multiple decrement life tables exploratory analysis and hierarchical cluster analysis were performed. Typology of five basic clusters were defined at the end of this part and age specific probabilities by cause of death were calculated.

There is summary of findings, broader context and perspectives at the end of this dissertation thesis. They are not many things which could be discussed. Problems with time series analysis were mentioned, international comparability too. Maybe, broader context of topics could follow this line. Demographic changes are result of more general (societal) processes, which are connected with economical situation of countries and investments into medical system. Increasing health condition, life expectancy are generally accepted, but payments for this progress are problems.. Should be interesting to analyze, linkage between mortality parameters (independent variables) and investments into medical systems (dependent variables). But I realize it would be another story.

Without any doubt this dissertation is very detailed well precise treatment of this topic and I propose this dissertation for acceptance.

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