

The use of triangulation of qualitative and quantitative methods as applied on health and mortality research in demography

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Short Abstract:

Our paper will contribute to the discussion about the use and successful application of a methodological triangulation as an innovative new methodological approach in demography. The triangulation combines qualitative and quantitative methods and complements those results to a comprehensive picture of the phenomenon under study. The approach has been used in some health studies, but has only scarcely been applied in demographic research. To illustrate how we used this approach in health and mortality research we describe the underlying phenomenon -sex differences in smoking- that we have studied with the triangulation and then concentrate on the description of the actual implementation. Furthermore, we discuss relevant issues and describe why we consider this methodological approach as highly beneficial not only for health and mortality research but also for studying other demographic phenomena.

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Extended Abstract:

This paper will contribute to the discussion about the use and successful application of a triangulation as an innovative new methodological approach in demography. Although in health research triangulation of qualitative and quantitative methods has been used in a few studies, the approach has only scarcely been applied in demographic research. However, the triangulation allows the access to new data sources by qualitative methods and combines it with demographic data in an efficient perspective. We will illustrate how we used this approach in demographic research. First we describe the underlying phenomenon that we have researched with this methodology. The second part concentrates on the description of the actual implementation. At last, we discuss relevant issues and describe why we consider this methodological approach as highly beneficial for studying health and mortality as well as other demographic phenomena in fertility or migration research.

We applied a methodological triangulation of qualitative and quantitative methods for analysing determinants of sex differentials in smoking prevalence. The smoking difference between females and males is a crucial risk factor for gender differences in mortality beside other behavioural risk factors. We used an across-method triangulation (Begley 1996) to combine on the one hand experiences and knowledge of medical professionals about the smoking behaviour of their patients with representative data of individual smoking behaviour on the other hand. The triangulation of quantitative and qualitative methods is highly useful both for the research process and for the epistemological development of a research question. Both methods have different angles, the results complement each other and yield a comprehensive picture of the determinants of sex differentials in smoking prevalence (Flick 2006). The qualitative perspective is based on the methodology of the Grounded Theory strategy including theoretical sampling (Lamnek 1995) and constructing theories and concepts according to the coding paradigm (Corbin and Strauss 1990). Sampling was based on theoretical considerations (theoretical sampling) throughout the entire project (Lamnek 1995).

Using expert interviews 20 general practitioners, five gender medicine researchers, two cardiologists and four geriatric nurses, who make a total of 31 participants, were interviewed in Austria in 2008 and 2009. The majority of them showed work experience of 20 years and more. The use of expert interviews is an appropriate qualitative method for the reconstruction of complex experiences and is used when the research interest has a focus on decision maxims, experiential knowledge, rules for action routines and knowledge relying on systematic

problems, which can be mentioned explicitly or implicitly (Meuser and Nagel 1997). It has to be mentioned that the current analysis is embedded in a study on gender differences in mortality. Therefore the expert interviews were designed rather broadly and were carried out in the context of behavioural factors and issues related to the health of men and women. It turned out that in various interviews different gender roles as well as smoking were mentioned by the interviewed experts in the framework of the gender gap in life expectancy.

While the qualitative analysis focused on behavioural sex differences and on the question which factors determine the sex differences in smoking behaviour, the quantitative analysis concentrates on the question how these factors influence the smoking behaviour of women and men. We used data of the western German first wave panel from the German Life Expectancy Survey (LES) of the German Federal Institute of Population Research (Gärtner 2001). The survey includes a representative population sample of 8,474 individuals born between 1914 and 1952 who were interviewed between 1984 and 1986. Although the qualitative analysis focuses on experiences and quotations of Austrian medical professionals the results can be compared to and extended by German quantitative data as the trends in smoking prevalence, smoking attributable mortality and overall mortality have nearly the same pattern in Austria and Germany (Lopez, Mathers et al. 2006; Luy, Wegner et al. 2010).

The LES was first carried out in 1984/86 and hence includes characteristics of individuals from 30 years ago. It has to be mentioned that the results of the qualitative analysis are based on physicians' long-term experience of mostly older patients with health problems or former patients who have already died. Based on the life course approach (Kuh and Ben-Shlomo 2004) both the morbidity or survival status of patients are influenced by the accumulation of health risks like smoking during the whole life span. The model of smoking epidemic (Ramström 1997) suggests a time lag of about 30 years between regular smoking and resulting morbidity and mortality status. Consequently, the use of the LES considers the time lag between risk behaviour and caused health status in an appropriate perspective.

Following this description of the data collection and analysis the next part of this paper deals with the description of the applied triangulation of qualitative and quantitative methods. Overall, the triangulation process followed a circular shape. The results that emerged either during the qualitative or the quantitative analysis guided the overall research process and were complemented with results of the other method. A literature review and first findings of a short preliminary quantitative analysis were incorporated in the construction of the interview

guideline. As common practice in Grounded Theory, we started without any hypotheses at the beginning of the interview phase. Since we worked with specific research questions which guided the sampling and the data collection, it was possible to reveal categories and hypotheses during the circular analysis process. The coding process of the first interviews resulted in first categories and concepts. According to these first results the research questions may be refined and actually were refined in the current study. The method of theoretical sampling offered the possibility to broaden the sample and to ask persons who can contribute to answer the research questions from another point of view. Following this strategy, the sample of the interview participants and the guideline of the interviews were adapted several times. After finding the core category, the theoretical model based on the data was developed and results were formulated. These results were discussed and related to previous findings in the literature. The search for appropriate data is crucial for a triangulation since it is necessary to find quantitative data that include the relevant information and items. To our knowledge, the German LES was the only available dataset appropriate to this purpose. In general, the first hypotheses may be supported or rejected and either way the analysis then turns again to the qualitative approach where the rejected or supported hypotheses guide the next steps of the overall research process.

The triangulation itself is a complex and time-consuming process. But there are several advantages that make the method exciting for demographic research. First, the method allows applying data sources which are not available or only partly ascertainable in the quantitative approach. Second, the method is not restricted to health or mortality research. The approach can also apply in fertility, nuptiality or migration research. For example, the study of birth intentions and their underlying factors can be extended by analysis of social networks or the perspectives of employers related to their strategies for avoiding double burden of their female employees. Furthermore, the qualitative method enables the collection of highly sensible data like anonymised experiences of abortion counselling. The third advantage is the circulation process within the triangulation. The support or refusal of hypotheses and the continuous specification of the phenomenon under study lead to an in-depth analysis with multitude of topics related to the initial research question. In fact, each triangulation usually ends with a new set of research questions related to the phenomenon.

Therefore, we recommend a triangulation of qualitative and quantitative methods in demography and in health and mortality research, particular.

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