

RESEARCH METHODS ALLOWED TO USE IN THE HEALTH ECONOMICS

Jan Neugebauer

Abstract

This paper examines the role of qualitative research methods in health economics, contrasting them with the more commonly employed quantitative approaches. While cost-benefit analysis, cost-effectiveness analysis, and economic modeling have been instrumental in evaluating health interventions, they often fall short of capturing the complexities of human behavior and experiences. Qualitative methods, such as ethnography, narrative analysis, phenomenology, and grounded theory, offer complementary insights by exploring health and healthcare's social, cultural, and psychological dimensions. Qualitative research can enhance the understanding of factors influencing health outcomes and resource utilization by delving into patients' perspectives, healthcare providers' experiences, and the broader healthcare context. This paper argues for integrating qualitative and quantitative methods to develop a more comprehensive and nuanced understanding of health economics.

A mix of content analysis and expert opinion was used for this study. All the data were extracted from the databases. All presented data shows when the methods can be used and when not.

Key words: health economics, research, methods, analysis, data collecting

JEL Code: C18, I15, I23

1 Introduction

Both qualitative and quantitative scientific approaches are applicable in health economics. Qualitative methods are also widely used in contrast to mixed methods to generate new quantitative data and questions about values and preferences. A typical example would be discrete choice experimentation or needs analysis to understand preferences (Coast & Jackson, 2017). Qualitative methods are becoming more common in health economics, with particular growth in research conducted in low- and middle-income countries and around priority-setting issues. However, these methods are not exclusive to the application of health economics; they also influence institutional and behavioral economics (Folland et al., 2023).

Some specialists in economics and health economics do not consider the qualitative approach to be a suitable method for examining economic aspects. They tend to perceive economics as a quantitative environment with resulting econometric approaches. Williams (1997) already stated before the year 2000 that even economics should systematically monitor a body of knowledge with possible different concepts and ways of thinking. With this view, conceptually focused questions are formed on the topic of resources, rationality, scarcity, incentives, values, and others. Since this is health economics, it is natural that a purely economic approach is combined with approaches specific to sociology or health sciences. In both cases, the approaches are used within the framework of the relevant theory, and in neither are the ways of thinking tied to specific methods; in both sociology and health sciences, for example, both quantitative and qualitative methods are widely used to study interesting phenomena (Coast & Jackson, 2017).

Qualitative methods are associated with many traditions, including anthropology, psychology, sociology, education, and health. Different forms are evident, often associated with different traditions. It is not possible to provide a complete taxonomy here, but some of the approaches that economists are most likely to encounter include ethnography, narrative research, phenomenology, and grounded theory (Coast & Jackson, 2017). **Ethnography** is often used to investigate new cultures and is linked to both anthropology and sociology; research involves immersion in the field of study (Folland et al., 2023). Ethnography draws heavily on observational methods as well as interviews. **Narrative research** is used to focus on individuals and their stories and is linked to the humanities and storytelling (Creswell, 2013). Narrative research focuses on the life stories of individuals and allows them to be told; interviews are the primary method of data collection, although narrative approaches can also be used in documentary analysis (Folland et al., 2023). **Phenomenology** is connected with psychology and philosophy. It focuses on understanding the essence or lived experience of a particular situation. It is often used in health research and nursing to understand how individuals themselves experience particular conditions and to find the essence and 'hidden meanings' of this lived experience (Creswell, 2013). **Grounded theory** has developed within sociology and focuses on generating new theories, particularly around processes and interactions (Creswell, 2013). Phenomena are explored in depth to generate new theoretical insights, and grounded theory provides a specific methodological approach to sampling, data collection, and data analysis to develop a fully “grounded” theory of a topic.

In health economics, research relies not only on qualitative theories but also on anchoring in relevant economic concepts. For research where the primary goal of qualitative inquiry is to inform quantitative research, the relevant economic theory is usually easily identifiable. For example, qualitative studies aimed at identifying attributes for capability-based outcome measures for economic evaluation were explicitly based on Sen's theory of capabilities (Sen, 1993). Similarly, the development of multiple attributes for discrete choice experimentation is based on utility maximization concepts (Coast & Jackson, 2017) and works generating Q sets in diabetes was based on economic concepts of rationality. Qualitative research aimed at interpreting existing quantitative data is also likely to be linked to existing aspects of economic theory, as evidenced by research attempting to explain the generation of health ratings (Creswell, 2013).

In addition to being anchored in economic theory, a robust methodological design is essential for the rigor of qualitative research in health economics (Coast & Jackson 2017). It includes principles such as triangulation (different approaches leading to similar findings), reflexivity (awareness of the researcher's role), rich and detailed description, prolonged involvement in the research environment, and multiple coding of data sets (Creswell, 2013). A characteristic feature of qualitative research is the dynamic development of the research design during the investigation. Decisions about further sampling and data collection are made based on the analysis of earlier data (Luken et al., 2022). Research design may involve solving specific problems, such as the combination of methods and translation decisions in the case of international research or research in countries with different linguistic backgrounds of the research team.

2 Materials & Methods

The study was inspired by theoretical concepts that are repeated in world literature. Since health economics is a new concept in the Czech Republic, the study focuses on creating an overview of applicable research methods. The thesis objective is to map and verify available research methods that can be applied to the environment of health economics and, at the same time, obtain relevant results.

2.1 Research design

The research design follows standard rules with the PICOT principle and research questions. The entire proposal is carried out qualitatively using document analysis, content analysis, and expert opinions.

2.2 Research question

A research question was established for the elaboration of the study. The inspiration and basic principles were found in the foreign projects. Our question was: "What are the economic barriers to access to health care relevant to the Czech Republic?" The research question focuses on the listed factors related to the accepted definitions and anchoring according to the direction of Health Economics.

2.3 Data collection & analysis

The search was performed in the Web of Science database using the following selection criteria: keyword selection (health economics, barriers, needs, accessibility, differential care), preferred period was 2024-2020, publication must be in the Social Science Citation Index (SSCI) category, the journal must be in Q1 – Q3 and we focused only on professional articles (conference contributions, reviews, etc. were excluded). After the initial selection, keywords, article titles and abstracts were analyzed. This section assessed the relevance of the topic and the quality of the accepted study. Furthermore, data synthesis, reporting and searching for contributions to stimulating discussions and conclusions were carried out. In the initial phase, a total of 197 studies found according to the above criteria were analyzed. After selection, 9 relevant studies related to the target clinical question were included.

This was followed by a control qualitative investigation with experts from the ranks of sociologists, health professionals, and economists. The aim of this part was to confirm or refute the theoretical statements that we arrived at during the analysis of the documents. Finally, a list of possible methods that can be used in the environment of health economics was created.

3 Results & discussion

All the results were settled into the groups and shown in Table 1. These groups were created based on the usability of each research method and for better understanding and description.

Many different scientific methods can be used in health economics. The appropriate method for a given study depends on the research questions, available data, and available resources.

Tab. 1: Research methods in Health Economics

Author	Type	Technique	Objective	Results	Usability	Experts' opinion
Meybohm et al. (2020)	Quantitative	Cost analysis	To analyse the economic benefit of widespread implementation of a multimodal PBM programme	The results are beneficial, clearly presented, and the objectives fulfilled. Method is useable and effective for this objective.	Yes	Cost analysis is a useful tool for displaying relevant real-time data in the context of money. It is one of the most used methods in Health economics.
Vanness et al. (2021)	Quantitative	Cost-effectiveness analysis	To estimate a U.S. cost-effectiveness threshold based on health opportunity costs	The results are beneficial, clearly presented, and the objective fulfilled. Method is useable and effective for this objective.	Yes	It is a useful tool for displaying relevant effectiveness of the research problem. It is one of the most used methods in Health economics.
Knapp & Wong (2020)	Quantitative	Modeling	To reveal the selected economic methods used in healthcare	The results are beneficial and clearly presented. The objective is fulfilled and methods is useable for reaching the objective.	Yes	Modeling is an excellent tool for better understanding past and future situations. Economics and researchers can predict some issues.
Meybohm et al. (2020)	Quantitative	Meta-analysis	To analyse the economic benefit of widespread implementation of a PBM programme	The results are beneficial, clearly presented, and the objectives fulfilled. Useful results are mentioned.	Yes	Meta-analysis is useful for health economics to view the theories which we can use in next research.
Folland et al. (2023)	Quantitative	Econometric Methods	To provide a clear, step-by-step understanding of health economics, and making economic principles.	The results are beneficial, clearly presented, and the objectives fulfilled. For this type of the objective is effective to	Yes, but not always	These methods tend to stay in relevant numbers and use typical statistical methods. The clearly defined objective can be strongly viewed in health economics.

				use these methods.		However, not all the tests are relevant, and not all the situations need to be tested by econometrics methods in healthcare.
Mukumbang et al. (2020)	Qualitative	Interviews	To explore if the interviews are useable for proving theories in economy field.	The results are beneficial, clearly presented, and the objectives fulfilled. The technique of interviews are presented as non-common but very attractive and effective for understanding.	Yes	The interviewing approach reinforces and maintains theoretical awareness throughout the theory-driven evaluation process, and it brings to light the trustworthiness that the realist interviewing technique affords.
Luken et al., (2022)	Qualitative	Focus groups	To map the anticipated advantages and disadvantages of a national rollout of blood group genotyping of donors.	The results are beneficial, clearly presented, and the objectives fulfilled. This method were effective in reaching the objectives.	Yes	Focus group discussions are more common for health sciences but not very common for the economic field. It provides the opinions of the selected workers. This method is very effective in a multidisciplinary approach.
Ploder & Hamann (2020)	Qualitative	Ethnographic research	To reveal the method of the Ethnographic reserach	It is an assemblage of seeing and looking, hearing and listening, handling objects, describing, interviewing, recording, reading, documenting, and working with data.	Yes	Ethnographic research interlinks bodies, minds, artifacts, technologies, and built environments. It is specifically focused on, and it is a very useful tool for healthcare research.
Subbe et al. (2023)	Qualitative	Content analysis	To explore the impact of safer care on health economic	The results are beneficial, clearly presented, and	Yes	Content analysis is a very useful method for health

			considerations for clinicians, providers and policymakers	the objectives fulfilled. Method is very effective for reaching the objectives.		economics to clearly view the actual situation or retrospective data analysis.
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Source: Own research

From the results obtained, it is evident that we can use both qualitative and quantitative approaches in health economics research. Typical quantitative methods include cost analysis, effectiveness analysis, modeling, meta-analyses, and econometric methods. Qualitative methods include interviews, focus groups, ethnographic research, and content analysis.

Quantitative approach the common for economic research. There are a few types of the typical methods. **Cost analysis:** This method compares the costs of different health interventions. These can be direct costs (e.g., medication, hospitalization) or indirect costs (e.g., lost productivity). Cost analysis is useful for comparing the effectiveness of two or more interventions that serve the same purpose (Meybohm et al., 2020). **Cost-effectiveness analysis:** This method balances the costs and outcomes of different health interventions. Outcomes are typically measured in quality-of-life units such as quality-adjusted life years (QALYs). Cost-effectiveness analysis is useful for comparing interventions that serve different purposes and for informing which intervention is most effective for achieving a given outcome (Vanness et al., 2021). Although the techniques look practically the same, the opposite is true. Key differences are evident in the content focus of the researched plan. Cost analysis focuses only on costs, while cost-effectiveness analysis considers both costs and outcomes. By comparing the cost-effectiveness ratios of different interventions, decision-makers can determine the most effective option, which is essential for the allocation of limited health care resources (Cookson et al., 2020). There are many other methods, as we mentioned above. They all have their place in the research, but the researchers must know what they want to find. We can also use Cost-minimization analysis (CMA), Cost-consequences analysis (CCA), Cost-utility analysis (CUA), Cost-benefit analysis (CBA), Well-being economic evaluation, and others (Knapp & Wong, 2020). **Models** are used to simulate complex systems and to predict the impact of various interventions. There are many types of models used in health economics, including economic models, epidemiological models, and population dynamics models. Modeling is useful for exploring "what if" scenarios and for informing policy decisions (Knapp & Wong, 2020). Typical model situations are often discussed in foreign literature concerning health economics. With these model situations in

contrast to the economic focus, we can achieve adequate preparations for war conflicts or other pandemic waves, as with COVID-19 (Folland et al., 2023; McPake et al., 2020). **Meta-analysis** is a statistical method that combines the results of multiple studies to reach a stronger conclusion. Meta-analyses are used to synthesize evidence about the effectiveness and efficiency of health interventions (Meybohm et al., 2020). Meta-analysis is strongly recommended for achieving theories, finding the relevant data about any issues, or making relevant conclusions in relationship with some health conditions. It can be mixed with modeling technique or others. **Econometric Methods** is the next relevant approach and can be used to analyze behavioral data in healthcare. They can be used to estimate the demand for health care, the supply of health care, and the impact of health care on health and the economy (Folland et al., 2023).

A qualitative approach is not very common in economic research, and it takes place in health economics. There are a few types of methods used for specific research. **Interviews** are used to gather information about people's experiences and perspectives on healthcare. They can be conducted with patients, healthcare providers, policymakers, and other stakeholders (Mukumbang et al., 2020). Interviews are more common for health sciences but not very common for economy field. It offers a special harmonization between both concepts for better understanding and highlighting the effectiveness of the research design. **Focus groups** discussions are used to gather information about people's opinions and attitudes about healthcare. They can be useful for understanding complex topics and for identifying common themes (Luken et al., 2022). **Ethnographic research** involves observing people in their natural environment and gathering information about their culture and customs. It can be useful in understanding how people perceive and use the health system (Ploder & Hamann, 2020). **Content analysis** is used to analyze text such as newspaper articles, political documents, and medical records. It can be useful for understanding how healthcare is talked about and perceived (Subbe et al., 2023).

The third part is not recommended methods for Health economics design. **Statistical analyses** are used to analyze data and draw conclusions about relationships between variables. They can be useful for identifying trends and patterns in data and for testing hypotheses. For example, a statistical analysis of data on heart attack patients could show whether there is a statistically significant difference in mortality between patients who underwent angioplasty and those who did not. However, statistical analyses are only as good as the data on which they are based. If the data is of poor quality or incomplete, the statistical analysis results may

be misleading (Mutubuki et al., 2021). **The observation** can be useful for studying people's behavior in their natural environment without the bias that can arise from collecting data through questionnaires or interviews. For example, observing patients in a clinic waiting room could provide long-term information about how patients wait, who they interact with, and how they respond to various stimuli (Subbe et al., 2023).

4 Conclusion

Based on the presented data, it can be concluded that various quantitative research methods are employed in health economics, each with specific strengths and applications. Cost analysis, cost-effectiveness analysis, modeling, and meta-analysis are widely used techniques to evaluate the economic implications of healthcare interventions. Experts in the field have deemed these methods valuable tools for understanding healthcare programs' costs, benefits, and overall impact.

The choice of method depends on the research question, available data, and resources. While all reviewed studies found their respective methods beneficial in achieving their objectives, each technique's specific advantages and limitations should be carefully considered when designing future research.

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Contact

Mgr. Jan Neugebauer, Ph.D., MBA
CEVRO College
Jungmannova 17, 110 00 Nové Město
Jan.Neugebauer@vsci.cz