BENCHMARKING CRITERIA AND COMPARATIVE PARAMETERS USED FOR ASSESSMENT OF HEALTH CARE IN VARIOUS REGIONS IN POLAND AND IN OTHER EUROPEAN COUNTRIES

Benchmarkingowe kryteria i parametry analiz porównawczych służące ocenie ochrony zdrowia w poszczególnych regionach w Polsce i w krajach europejskich

Martyna Kruszyńska

STRESZCZENIE

KaŜdego roku publikowane są opracowania, mające na celu porównanie różnych aspektów funkcjonowania ochrony zdrowia. Nieustanne poszukiwania uniwersalnych, prostych wskaźników odzwierciedlających sytuację w systemie ochrony zdrowia, prowadzą do opracowywania nowych metodologii badań, a także systematycznego doskonalenia tych już istniejących. Benchmarking jest metodą polegającą na porównywaniu stosowanych w danej organizacji rozwiązań z rozwiązaniami wykorzystywanymi w najlepszych firmach. Zastosowanie tej metody pozwala na doskonalenie się organizacji poprzez uczenie się od najlepszych. Z benchmarkingu z powodzeniem korzystać mogą nie tylko prywatne przedsiębiorstwa, lecz także instytucje sektora publicznego odpowiedzialne za kreowanie polityki ochrony zdrowia w regionie. By móc tworzyć zestawienia za pomocą metody benchmarkingu pozwalające oceniać ochronę zdrowia, należy zadbać o to, by opracowywane wskaźniki zapewniały porównywalność danych. Istotny jest także zakres prowadzonych porównań. Niniejszy artykuł ma na celu ocenę możliwości wykorzystania metody benchmarkingu w zarządzaniu publicznym. Podejmuje także próbę zbadania możliwości wykorzystania wskaźnika Local Human Development Index (LHDI) jako benchmarkingowego parametru oceny ochrony zdrowia.

Słowa kluczowe: benchmarking, ochrona zdrowia, wskaźnik LHDI

Keywords: benchmarking, health care, Local Human Development Index

There are many definitions of benchmarking in the literature. According to Z. Martyniak, benchmarking is “a search for standard procedures by learning from others and using their experience.” Another definition by this author states that benchmarking is “learning from the best by making a comparison with them” [Martyniak, 1996]. Benchmarking is a versatile tool that has been used in business practice since the 20th century for comparisons of products, services, methods, and also processes [Zimniewicz, 2003]. An efficiently performed benchmarking process may not only bring benefits to organizations operating in the private sector, but it can be successfully used in the public sector responsible for developing health care policy in regions.

The benchmarking method used at the regional level provides comparable statistical data for the assessment of the relative results obtained by a given region. It can therefore be concluded that regional benchmarking is a tool which can support local authorities in developing health care policy in the regions [Europejskie Regionalne Stowarzyszenie Społeczeństwa Informacyjnego 2007]. The purpose of this paper is to assess the possibility of using the benchmarking method in public management. Moreover,
the author investigates the possibility of using the Local Human Development Index (LHDI) as a benchmarking indicator for health care.

The benchmarking process can be divided into six stages; these are [Europejskie Regionalne Stowarzyszenie Społeczeństwa Informacyjnego, 2007]:

– **Identification of a benchmarking subject** – at this stage it is necessary to indicate the focus of analysis and the factors that determine the success of an organization and constitute a barrier to its development. Moreover, it is also important to create a competent research team, responsible for carrying out this process.

– **Internal analysis** – an organization should characterize the benchmarking subject in detail in order to facilitate finding the right partner.

– **Partner selection** – selecting the best partner as a model to emulate.

– **Analysis of the partner** – aimed at obtaining as much information about the benchmarking partner as possible. One of the best methods of finding out information about the partner is direct contact. Questionnaires, surveys, interviews, and generally available sources, such as the Internet or trade journals are also used.

– **Evaluation of the results** – at this stage it is necessary to review the available information, in order to assess whether it is comparable and reliable.

– **Implementation of changes and improvement** – this is the last stage of the benchmarking process, which involves the implementation of the selected solutions.

The possibility of using benchmarking as a tool for productivity improvement in the public sector, should encourage local authorities to embrace this method. In the United States, Seattle is regarded as a benchmarking innovator in the public sector. The Department of Public Health in Seattle decided to use this method for the implementation of an anti-AIDS program, selecting San Francisco as its benchmarking partner. At that time, San Francisco was conducting a successful program addressed to this group of patients. Moreover, San Francisco had a similar number of inhabitants and population of people suffering from AIDS.

Representatives of the Public Health Department thoroughly analyzed the program implemented by San Francisco. They also personally met with its authors. In-depth knowledge of the San Francisco program helped Seattle to avoid past mistakes made by its benchmarking partner. Nowadays, thanks to the use of this method, the Seattle program has been providing appropriate care for AIDS patients at a reasonable cost (public spending). Seattle’s example shows that this method can be implemented in order to achieve tangible benefits, both social and financial.

Despite many advantages of using the benchmarking method, there are also obstacles that result in the relatively low popularity of this method in the public sector. These disadvantages are [Bogan, English, 2006]:

– **Financial constraints** – budget deficits which occur in public institutions make them reluctant to designate the resources needed to implement a benchmarking process. However, this is unfounded, because, as business practice shows, a successful benchmarking process will pay for itself many times over.

– **Fear of failure** – employees of public institutions are reluctant to run the risk of benchmarking failure. The fear of accusations of wasting public money discourages them from making attempts to implement this method.

– **Absence of objective standards** – managers of public organizations often report problems with identifying models for comparison and the absence of objective criteria for evaluating their actions.

Thanks to benchmarking, one can successfully take advantage of one’s partner’s good practices, if the implementation of a process is preceded by analysis of those practices and their adaptation to the local conditions. A prerequisite for achieving benchmarking benefits in health care policy-making is the use of high quality indicators and data.

In 1990, the United Nations Development Programme published the first Human Development Report, which proposed a novel methodology based on the Human Development
Index (HDI). The HDI had been developed by Pakistani economist Mahbub ul-Haq and Indian economist Amartya Sen, who claimed that the traditionally used economic growth measures (primarily, gross domestic product) were insufficient indicators of countries’ social development. The authors of the Human Development Report argued that social development was a multi-faceted issue consisting of both economic and non-economic factors.

In order to create a simple, practical, and transparent indicator, ul-Haq and Sen selected only a few variables affecting social development. The HDI is a synthetic measure of the development level achieved in three basic areas: long and healthy life, knowledge, and a decent standard of living [UNDP, 2010]. Initially, in order to calculate the level of social development achieved in these dimensions, the authors decided to use three indicators: life expectancy at birth (LE), the adult literacy index (ALI), and the natural logarithm of gross domestic product (GDP) per capita [Anand, Sen, 2004].

The indicators used for the HDI were met with a barrage of criticism. It was pointed out that the indicator pertaining to access to knowledge was faulty as adult literacy was imprecisely defined and did not take into account its different types [Lind, 1992]. Life expectancy at birth was not as severely criticized as the literacy indicator. While it was generally found to be a good measure of life expectancy, some authors postulated that it only had an indirect relationship with healthy life [Engineer, Roy, Fink, 2010].

Over the years, the methodology of HDI calculation has evolved. Since 2010, four basic measures have been used to calculate the HDI:

- life expectancy at birth (LE),
- the expected years of schooling index (EYSI),
- the mean years of schooling index (MYSI),
- gross national income (GNI) per capita.

Human Development Index is calculated as a geometric mean of the three social development dimensions as given by the formula:

\[
HDI = \sqrt[3]{\frac{LE}{EYSI} \cdot \frac{ALI}{MYSI} \cdot \frac{GNI}{GDP}}
\]

Chart 1. Components of the Human Development Index


The adoption of uniform methodology by the UNDP enables international comparisons of social development between individual countries. These comparisons are published in annual reports. The number of countries included in the ranking has been steadily increasing – the 2010 report contained HDI results for 169 countries, while the 2012 report – for 187 countries. Based on their HDI values, countries were classified into groups characterized by very high, high, medium, and low level of social development.

Research on social development conducted over the past years has led to the conclusion that there is a lack of correlation between economic growth and improvement in health or education [UNDP, 2010]. Therefore, it is not true that in today’s world it is only rich countries that are able to afford high outlays on health care and public education. Nowadays, as a result of technological development and changes in social structure, underdeveloped countries can also achieve satisfactory health care and public education. Thus, “human development is different from economic growth” [UNDP, 2010].

However, comparisons of HDI values at the global level raise some doubts about drawing practical conclusions from this index. While international rankings do have significant scholarly value, they do not translate into practical actions in terms of countries’ policies. Therefore, critics have urged the creation of an indicator that would take into account differences in social development at the regional level. Such an indicator could become an important tool for the local authorities during the development of strategic documents, including regional health care strategies.

One of the major problems in current economic analysis is the spatial differentiation of regional development. These discrepancies encourage scholars to search for their determinants. The Local Human Development Index (LHDI) is a study of Polish social development at the local and regional level based on HDI methodology. Work on LHDI is conducted by the Polish UNDP Project Office in partnership with the Ministry of Infrastructure and Development and in cooperation with experts from the Warsaw School of Economics. The LHDI is measured in the same three dimensions as the HDI, that is, health, education, and welfare.

However, the individual components of the three social development dimensions at the local level are calculated using indicators different from those applied in HDI methodology (see Table 1).

The LHDI index is calculated according to the following formula:

\[
LHDI_i = \frac{2}{HI_i} \times EI_i \times WI_i, \text{ where } i = 1, 2, \ldots n;
\]

LHDI\(_i\) – value of the social development index for county or province \(i\)
HI\(_i\) – Health Index in i-county
EI\(_i\) – Education Index in i-county
WI\(_i\) – Welfare Index in i-county [UNDP, 2012]
The LHDI, which is still under development, provides a ranking of counties and provinces, showing their strengths and weaknesses. The LHDI is a tool for comparing social development between regions (counties and provinces). This was not possible in the case of the HDI, which is calculated for the whole country. Thanks to the LHDI, one can seek solutions to the problems affecting a given region in other regions with a higher position in the ranking. The adoption of proven and effective solutions used in regions with the highest LHDI levels and their adaptation to the needs of other regions has been made possible by the benchmarking method.

The assessment of health care in individual regions in Poland with the use of LHDI methodology is quite a difficult task. The Health Index, one of the LHDI dimensions, consists of two components – life expectancy at birth and aggregated mortality rate due to cancer and cardiovascular diseases (Table 1).

The LHDI, which is still under development, provides a ranking of counties and provinces, showing their strengths and weaknesses. The LHDI is a tool for comparing social development between regions (counties and provinces). This was not possible in the case of the HDI, which is calculated for the whole country. Thanks to the LHDI, one can seek solutions to the problems affecting a given region in other regions with a higher position in the ranking. The adoption of proven and effective solutions used in regions with the highest LHDI levels and their adaptation to the needs of other regions has been made possible by the benchmarking method.

The assessment of health care in individual regions in Poland with the use of LHDI methodology is quite a difficult task. The Health Index, one of the LHDI dimensions, consists of two components – life expectancy at birth and aggregated mortality rate due to cancer and cardiovascular diseases (Table 1).

Life expectancy at birth is defined as “the number of years that a newborn will live if the pattern of mortality according to age remains unchanged throughout life” [UNDP, 2012]. The aggregated mortality rate due to cancer and cardiovascular diseases is expressed as the number of deaths attributable to those causes per 100,000 inhabitants. Cardiovascular diseases and cancer are the main causes of death among Polish people, thus mortality linked to them undoubtedly has an impact on public health. The aggregated mortality rate due to cancer and cardiovascular diseases is an indicator that is easily available (data are aggregated by the Central Statistical Office) and reliable (causes of death are recorded by physicians).

The geometric mean of two dimensional indicators (life expectancy at birth and the aggregated mortality rate due to cancer and cardiovascular diseases) produces a numerical value of the Health Index, which can be used
to rank regions. However, it is difficult to make an assessment of the health care system based on these data. Instead, analysis of regional LHDI differences allows one to draw conclusions concerning health in the context of its impact on social development. This notion of health is compatible with the World Health Organization's concept, according to which health includes physical, mental, and social well-being.

Although it may be difficult to evaluate the health care system based on LHDI methodology, there are some benefits for regions which encourage further work in this venue. The use of the LHDI in the development of regional health care strategies may lead to policies based on objective information about social phenomena (evidence-based policies), which are provided by this index. The concept of evidence-based policy derives from medical sciences, where reliable data concerning the effectiveness, efficiency, and safety of clinical procedures are emphasized in an approach termed evidence-based medicine. Therefore, highly rigorous research (for example, one based on the LHDI) can be a useful tool contributing to regional policies.

The LHDI can be used not only to formulate strategic objectives for regional health care policies, but also as a tool for ex-post analysis [UNDP, 2012]. Drawing on existing data, one can investigate the results of past actions, such as health programs or educational projects launched at the regional level. Not only can the effectiveness of such actions be evaluated, but also guidelines for the future may be formulated. The implementation of the LHDI would also make it possible to monitor and evaluate activities undertaken by local authorities. The LHDI has much in its favor. This tool can be successfully used for social development research at the regional level. On the other hand, the LHDI has some weaknesses, which should not be forgotten. Due to limited data accessibility, only short-term analyses have been formulated so far, concerning the years 2007 to 2010 (life expectancy at birth by province has been available in Poland since 2007).

In order to analyze local social development, the HDI must be calculated at the lowest level of administrative division, which is the municipality. The authors of the LHDI methodology acknowledge that the lack of statutory obligation to gather certain data, as well as the long time of their collection makes it difficult to make a comparison of municipalities [UNDP, 2012].

Another problem is the multiplicity of institutions that collect the requisite data. The data used in LHDI calculations come from the Central Statistical Office, the Ministry of Infrastructure and Development, the Ministry of Finance, the Ministry of Labor and Social Policy, the Ministry of Health, the National Health Fund, the Ministry of Education, the Central Examination Commission, and the National Electoral Commission [UNDP, 2012]. The available data are often unstructured, which significantly impedes and prolongs the time of statistical analysis. Moreover, there is a problem with data discrepancy between different institutions, and also the high cost of their collection at the local level.

One of the latest studies on the assessment of the health care system in Poland, which should also be mentioned is the National Index of Health Care Efficiency, which compares provinces. The authors responsible for preparing this index drew on international experiences of health care efficiency measurement (including the World Health Organization and the European Health Consumer Index (EHCI), which compared health care systems among European countries).

The report presenting the National Index of Health Care Efficiency, published by PricewaterhouseCoopers in cooperation with the website “Dane i Analizy” is based on 44 specific indicators, weighted by relevance. The indicators selected by the report’s authors are divided into three axes, reflecting the priorities of the health care system. According to the authors, the objectives of a good health care system are:

- Improvement of the inhabitants’ health status – understood as better health status of the province’s residents, and in a broader perspective, that of the Polish population at large;
- Effective financial management;
- Consumer quality of health care [Koziérkiewicz, 2014].
Each of these axes consists of a number of activity dimensions that affect the health care system (Chart 2). The axes differ in terms of their significance: according to the authors, the axis “improvement of the inhabitants’ health status” represents the most important goal of the healthcare system, so it was given a 50% weight. The other two axes, that is, “effective financial management” and “consumer quality of health care” were given a weight of 25% each (Chart 3). The obtained results yielded a ranking of provinces for each of these three axes. Thus, leading provinces were identified in the categories of improvement of the inhabitants’ health status, financial management, and consumer quality of health care [Kozierkiewicz, 2014].

The first edition of this report was published in January this year. As work progresses, the authors of the National Index of Health Care Efficiency assume that they may be able to incorporate new indicators. As in the case of research based on LHDI methodology, also here the main obstacle mentioned by the authors is the limited availability of reliable, comparable data necessary for this type of research.

Chart 2. Weights assigned to the axes of the National Index of Health Care Efficiency

![Chart 2](image)

Source: Based on Kozierkiewicz A. et al., Krajowy indeks sprawności ochrony zdrowia 2014, PwC, Dane i analizy, Warsaw 2014

Chart 3. Axes and dimensions of evaluation in the National Index of Health Care Efficiency

![Chart 3](image)

Source: Kozierkiewicz A. et al., Krajowy indeks sprawności ochrony zdrowia 2014, PwC, Dane i analizy, Warsaw 2014, p. 17
The Human Development Report, the Local Human Development Index, and the National Index of Health Care Efficiency are only some studies that have ventured to assess healthcare. There exist many initiatives of this kind, implemented at various territorial levels (international, European Union member states, regions, etc.) and conducted by different institutions (the European Union, the World Health Organization, governmental agencies, non-profit organizations, etc.). Two other indicators may be useful in the process of international benchmarking. In 1998, the initiative European Core Health Indicators (ECHI) was launched to monitor health care systems in the member states of the European Union. Currently, the ECHI consist of 88 indicators in five categories: demographic and socio-economic situation, health status, health determinants, health interventions – health services, and health interventions – health promotion.\(^\text{11}\)

Another health care monitoring initiative undertaken at the European level is the Euro Health Consumer Index (EHCI). The EHCI is an initiative of Health Consumer Powerhouse, which has published rankings evaluating national health care systems from the consumer perspective since 2004. The indicators used to create the EHCI 2013 are divided into six subcategories: patient rights and information, accessibility (waiting time for treatment), outcomes, the range and reach of services provided, prevention, and pharmaceuticals.\(^\text{12}\)

Constant work on developing comparable, simple and reliable indicators for health care assessment leads to permanent improvement of existing methodologies as well as to the creation of new methods.

To conclude, the Local Human Development Index is a tool that may be successfully used for regional health care strategy planning. It is important to remember that the Health Index (as part of the LHDI) provides information about health in the context of its impact on social development. A skilful use of LHDI can provide assistance to the local authorities, which are responsible for strategic decisions regarding regional development. And benchmarking, derived from business practice, is a helpful method of seeking solutions to the problems faced by those authorities.

The use of LHDI methodology for studying social development is a relatively new method, which requires gradual refinement and development. Limited data availability and quality is an important problem which should be addressed in the nearest future. In order to streamline data processing, it seems essential that one institution should be designated as responsible for systematic data collection using a consistent methodology.

The use of the benchmarking method has both advantages and disadvantages. It is a concept which does not guarantee an immediate success. According to K. Zimniewicz, problems with selecting a suitable process partner represent one of the major benchmarking barriers. The lack of objective indicators, which should be taken into consideration while looking for a model to emulate, often leads to partner selection on a trial and error basis [Zimniewicz 2003]. A fundamental issue in regional benchmarking is the reference unit, which is the basis for identifying a region for comparison. According to the “Guide to Regional Good Practice: Indicators and Benchmarking” the best method is to make comparisons between “functional regions”, which are defined by a common criterion (such as a similar population) [Europejskie Regionalne Stowarzyszenie Społeczeństwa Informacyjnego, 2007].

Another barrier mentioned by Zimniewicz is insufficient information. The success of the benchmarking process largely depends on the data obtained from the benchmarking partner. Thus, effective, open and direct communication with the partner enhances the benchmarking process. The choice of benchmarking indicators is also essential for appropriate measurement of the investigated phenomena. In addition, indicators should provide comparability of measurement in the long term as well as between regions.

---

\(^{11}\) http://ec.europa.eu/health/indicators/echi/index_en.htm, accessed on 06.04.2013

Benchmarking is not a simple process of copying solutions practiced by other organizations as it requires their adaptation to specific local conditions [Rogut, Piasecki, Klepka, Czyź, 2007]. Benchmarking is a relatively easy-to-learn tool that brings many benefits if applied at the regional level. Along with the benchmarking method, health care policy-makers should also make use of the more holistic process of benchmarking, which involves an open exchange of ideas, discussion, and interpretation of data by the process partners.

LITERATURE