



Well-being from the perspective of Germany's official statistics

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Abstract: This paper will show which data on the well-being of people, social groups or society as a whole are provided either directly or indirectly by official statistics in Germany. The first section will generally address the data available from official statistics and their further development, especially in close connection with serious economic crises. The second section will show which comprehensive monitoring systems to inform policy decision-making at national and international level in order to improve well-being in the broadest sense are particularly important for Germany's official statistics. The third section will briefly examine more recent developments to establish and expand the federal statistics programme especially in conjunction with well-being. This will be followed by a brief outlook on the general importance of high-quality and neutral statistical indicators.

Keywords: economic crises, open data, georeferenced data, big data

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Introduction

Official statistics have traditionally offered a broad range of statistical data on various topics and areas of life and hence implicitly on the well-being of individuals, groups of people and on society as a whole even if for quite some time there was no dedicated or even comprehensive concept for this. These statistics primarily contain information about material well-being (especially income, housing, ownership of durable goods), employment (e.g. current occupation, professional income, working hours), level of education (school education, vocational training, professional development), health (life expectancy, disease, causes of death, subjective physical and mental impairments), social inclusion and leisure activities (club membership, voluntary work), political commitment (voter turnout, party membership). However, Germany's official statistics also provide a wealth of data on the broader framework of well-being, i.e. on general economic developments (labour market situation, economic capacity utilisation rate, international ties and cooperation), the natural environment (climate, water and air quality, open space for leisure activities, such as parks), public services to take care of young children, the ill or the elderly, the general legal framework of the regulatory system regarding the equipping, role, tasks and services of the public administration at legislative, executive and judicial level. The data available range from global figures (particularly from national or environmental-economic accounts) to regional information, primarily for administrative territorial units. The 16 federal states at the next federal level in Germany deserve special mention here. Sub-national data for cities not attached to an administrative district [*kreisfreie Städte*] and rural districts [*Landkreise*] are becoming increasingly important. Finally, it should be noted that following an amendment to the Federal Statistics Law the use of georeferenced information is now generally permitted. The two most recent censuses, i.e. the agricultural census and the population census from 2010 and 2011, respectively, were published openly on the Internet as maps with grids of 1km x 1km. The focus areas of well-being in statistics – implicitly and, more recently, explicitly – are largely shaped by history and are supplemented, and where necessary, modified with newer developments when it becomes foreseeable that they will be statistically relevant. These changes are systematically integrated at longer intervals into the existing official statistics programme and expanded to become sub-systems of a larger entity. Global economic crises, in particular, irrespective of how they were triggered, appear to generate considerable momentum for reviewing and re-orienting the statistical data available. This will be outlined on the basis of a brief historical overview.

Following the Great Depression in 1929, the focus was on material living conditions, especially income and employment, which still continue to be important in terms of their relevance for well-being. While analyses were primarily carried out at macro level for a long time, a fact that was reflected by the establishment, expansion and modification of national accounts, in more recent times, statistical data has been required at micro level, not just in terms of their specific content but also with a view to regional relevance. Since the end of the 1970s – especially during the first and second oil

crises¹ – the general public, at least in Germany, has shifted its attention more towards changes in the natural environment. Forest dieback as well as the depletion of natural resources, air and water pollution and the implications for future generations have increasingly moved centre-stage, also in official statistics. Complete systems for environmental statistics have been set up and developed, and existing sub-systems, especially economic statistics, have been adapted to address the latest developments (e.g. in the fields of investment, waste and pollution, recycling).

Shortly after the turn of the millennium, the new market collapsed. However, what originally began as a financial crisis brought in its aftermath economic and political consequences and a relevance for statistics that could not be underestimated. It was then found that, at least in Germany, official statistics had no data for the area of modern information and communication technologies whatsoever even though these developments had increasingly taken hold in all areas of society, politics, business and academia.

Finally, the more serious financial and economic crisis of 2008/2009 must also be mentioned. The aftershocks of this crisis are still being felt in some areas today, not just in Germany, but especially in the European Union.

As a consequence of the increasing digitisation of all areas, there are also demands for 'open', such as Open Source, Open Access or Open Data, which also means Open Government and eGovernment for the public sector. With a view to Open Data, the Federal Statistical Office is currently the leader at federal level in the public administration: It provides a wide and in-depth service free of charge with billions of statistical data to a heterogeneous user group with very different data requirements so that it can be generally and relatively easily used and processed. With its statistical data services, the Federal Statistical Office offers a vital foundation for evidence-based political planning and decisions that frequently influence the well-being of individuals, selected groups of the population or society as a whole.

Well-being: Areas and importance

Even if well-being or a good life belong to the fundamental issues of humanity, issues that Greek philosophers, especially Plato, mused over extensively², it is still not clear what goes into making it or which factors determine it.

In modern times, politics and academia have come up with several approaches that focus either directly or indirectly on well-being. Adam Smith and Abraham Maslow are two examples that deserve special mention. While Adam Smith in his 18th century 'The Wealth of Nations'³ identified a strong economic component for wealth, Maslow's⁴ ideas are largely characterised by a hierarchical order of elementary human needs that range from basic needs, such as food and shelter, to self-fulfilment and social recognition. These are perfect examples of the broad spectrum covered by well-being and its basic elements. There is also a host of fundamental legal acts in which politics, under different terms, commits itself to promoting the well-being of the population or society as a whole, i.e. the common good. Some examples include the American Declaration of Independence from 1776 with its "pursuit of happiness" in its preamble, Germany's Basic Law with its "establishment of equivalent living conditions" in Article 72, or Article 14 of the European Union's Lisbon Treaty with its promotion of "social and territorial cohesion". But when it comes to explaining what goes into making well-being, there are probably no generally valid criteria. Such criteria may in fact not be possible at all because they are largely specific to each individual and intrinsic, marked by exogenous framework conditions and because they may change over the course of time for various reasons.

For the purposes of official statistics, the following section will present different approaches in politics, academia and society from the recent past that are also relevant for Germany. The calls for

¹ See Heilemann, U. and Schnorr-Bäcker, S., Could the start of the German recession 2008-2009 have been foreseen? Evidence from real-time data. RPF Working Paper No. 2016-003, Research Program on Forecasting, Center of Economic Research, The George Washington University, Washington DC, <https://cer.columbian.gwu.edu/sites/cer.columbian.gwu.edu/files/downloads/2016-003.pdf>, p. 4 et seqq., last retrieved on 7 March 2017

² See Streeck, N., Besser leben mit Platon. In: Neue Zürcher Zeitung of 20 May 2012

³ See Smith, A., The Wealth of Nations, Wordsworth Edition, Hertfordshire 2012, p. 1 et seqq.

⁴ See Maslow, A.H. Persönlichkeit und Motivation [English edition: Motivation and Personality] 11th edition, Hamburg, 1981

"sustainable development" by the United Nation's Brundtland Commission are to serve as a starting point and framework. This generation-spanning and holistic approach demands that present needs be satisfied in such a manner that future generations will be able to satisfy their own needs or choose their own lifestyle.⁵

In practice, this has led to equal consideration of social, economic and ecological goals. For some time now, the public sector has also become increasingly involved (see Fig. 1).

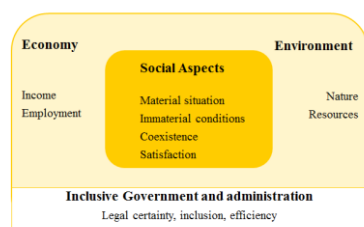


Fig. 1: Areas of well-being

Source: Schnorr-Bäcker, S., Möglichkeiten und Grenzen der Messung von Wohlstand und Lebensqualität in der amtlichen Statistik, German Federal Government (editor), Diskussionsbeiträge des wissenschaftlichen Beirats Regierungsstrategie zur Lebensqualität in Deutschland, Berlin, 2016, p. 76

As mentioned earlier, the various sub-areas will now be restricted here to their most important influence factors – in a more equal and systematic manner – and comprehensively examined in an overall view while taking their mutual interaction into account. These analyses will not be limited to a national level. In a globalised world, there is growing demand for sub-national and cross-border analyses. After all, practice shows that sub-national living conditions are much more heterogeneous than they appear to be at macro level. Under different names, approaches like these become more important at both national and international level, especially in light of the fact that gross domestic product measures economic output only rather than specific living conditions in all their diversity and their appreciation by the population of a country.

Statistical monitoring systems on well-being from Germany's official statistics

The following section is to outline in more detail and compare for Germany outstanding, comprehensive and generation-spanning approaches that are of enormous political importance to the German government combined with statistical monitoring. All in all, three different approaches are to be presented with their main features as well as their most important similarities and differences (see Fig. 2).

- Sustainable development in Germany and its new version
- 'Europe 2020', the European strategy for growth and employment
- The government strategy entitled 'Living well in Germany - what is important to us?'

Germany was among those countries that were very quick to introduce (in 2002) a comprehensive sustainability strategy combined with statistical indicators and targets for the individual fields of action. The statistical indicators are regularly updated every two years by the Federal Statistical Office.⁶ Every quarter, the strategy is evaluated by policy-makers and by the general public, for instance, in the form of a public hearing as a basis for the further continuation of the strategy.

⁵ See https://www.nachhaltigkeit.info/artikel/brundtland_report_563.htm, retrieved 7 March 2017

⁶ Federal Statistical Office, Sustainable Development in Germany, Indicator Report, Wiesbaden 2014

Year	Concept	Components	Basic principles	Regional analysis
2002	Sustainable development in Germany	4 areas: Intergenerational equity, quality of life, social cohesion, international responsibility 38 indicators	Negotiated at political level	National level only
2017	Sustainable development in Germany, new version of 2016	17 goals of the UN SDGs 62 indicators	Negotiated at political level	National level only
2010	Europe 2020	3 priorities: Smart, sustainable, inclusive growth 5 headline targets 9 indicators	Negotiated at political level	National level only
2016	Government's 'Living well' strategy	3 dimensions: Our life, our environment, our country 12 areas 42 indicators	Direct discussion between politicians and civic society in the form of citizens' dialogues	National and sub-national, in as far as relevant for a good life, especially: regional life expectancy GPs per district Distance to the next GP Commute time People's confidence in local police work Time to education, health-care and cultural facilities

Fig. 2: Comprehensive indicator systems to support policy-making in Germany for well-being

Source: Table produced internally

The original national sustainability indicators were adopted as far as possible in order to ensure the compatibility and comparability of developments in Germany over the course of time.⁷ The indicator system was largely negotiated at political and especially at federal ministry level. Monitoring is carried out, mainly for Germany as a whole. However, due to Germany's federal structure and the responsibilities related to this, deviating approaches are frequently applied at regional and municipal level. That being said, Germany provides the SDG indicators, which are also required at UN level, for a global comparison. The national sustainability strategy is regularly reviewed at longer intervals, also in the form of a public hearing procedure, to assess if its goals have been reached and to modify it when necessary.

Another example of a statistical monitoring system to provide comprehensive information for policy decision-making and relevant for Europe is 'Europe 2020', the European Strategy for Growth and Employment. This Strategy was adopted by the heads of state and government of the European Union (EU) in June 2010. 'Europe 2020' picks up on the EU's so-called Lisbon Strategy from 2000 to 2009, albeit in modified form. 'Europa 2020' with its three priorities, i.e. smart, sustainable and inclusive growth, is regularly evaluated in five different areas (employment, research and development, climate protection and sustainable energy, education as well as combating poverty and social exclusion) with specific targets based on nine statistical indicators. In a complex annual review process that foresees interaction between both economic and fiscal policy, the measures adopted the previous year, both at

⁷ See https://www.bundesregierung.de/Webs/Breg/DE/Themen/Nachhaltigkeitsstrategie/_node.html retrieved 7 March 2017

Member State and at EU level, are reviewed with a view to their progress towards targets, and proposals are presented for the current period.⁸

When it comes to monitoring systems to inform policy decision-making, the first two strategies are primarily targets that were negotiated at political level whereas a different, so-to-speak bottom-up, strategy was chosen for the government's 'Living well in Germany - what is important to us?' strategy. This strategy is based on so-called citizen dialogues where selected groups of society from all over Germany (e.g. vocational students, people with a migrant background, disabled people, members of business associations), for instance, were able to talk directly to members of the Federal Government to discuss their ideas of a good life, both for them personally and in Germany in general. Based on these citizen dialogues and with scientific support, an indicator system to support policy decision-making was drawn up and its contents were coordinated with the respective federal ministries in charge. The final report is generally available on the Internet free of charge in German or English.⁹ Interactive applications, especially at regional level, enable user-oriented analyses so that the direct political relevance can also be seen.

The example of general practitioner (GP) services in Germany, especially in rural areas, is used to show the user-oriented analyses that are possible at sub-national level using data and tools currently available from federal statistics. Figure 3a shows the number of people to be served by one GP in 2010 and 2015, respectively, in small territorial units, i.e. administrative districts [kreisfreie Städte] and rural districts [Landkreise]. For the selected rural district of 'Altmarkkreis Salzwedel', at least, the number of people rose from 1,693 (2010) to 1,956 (2015) i.e. by 15 percentage points. A closer look at this area using the federal statistics grid-based Census Atlas (Fig.3b) shows a much more differentiated settlement structure with darker shades for more densely populated grids on a one-square-kilometre basis.

Number of inhabitants served by one GP per district in 2010 and 2015

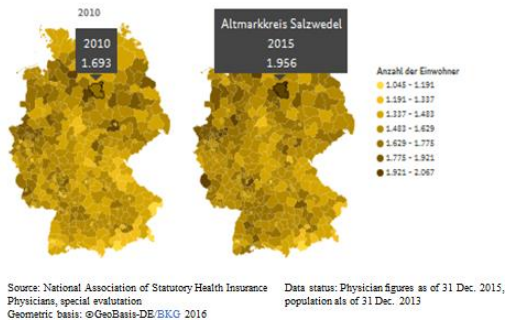


Figure 3a: Development of population to be served by one GP
Source: <https://www.gut-leben-in-deutschland.de/static/LB/bericht/gesundheit>

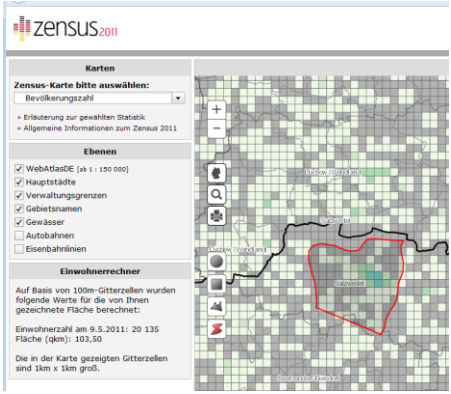


Figure 3b: Identification of residential population on a sub-national and user-oriented basis
<https://atlas.zensus2011.de>

In order to determine the supply areas (geometric or freely definable), a 'population calculation' tool was developed which in Figure 3b shows the area marked in red with a population of 20,135 for an area covering 103.50 square kilometres. In this way, it is not only possible to determine the supply areas but also to calculate accessibility, e.g. of the nearest GP or supermarket, while also taking topographical characteristics (a broad river, a railway line) into account, i.e. aspects that are decisive for well-being and when considering geographic interconnections.

⁸ A comprehensive overview is provided by Schnorr-Bäcker, S., Promoting economic prosperity and social progress in the European Union and the OECD with the aid of statistical monitoring systems to inform policy decision-making – comparing Europe 2020 and the OECD’s Better Life Initiative, a presentation and contribution to the 'Gutes Leben oder gute Gesellschaft' symposium by Leopoldina, the German National Academy of Sciences together with the Volkswagen Foundation on 17 and 18 June 2016 in Schloss Herrenhausen, Hanover

⁹ See <https://www.bundesregierung.de/Content/DE/Infodienst/2016/10/2016-10-26-gut-leben-regierungsbericht/2016-10-26-gut-leben-regierungsbericht.html>, retrieved 7 March 2017

Recent developments to close the data gap in official statistics

The discussion about statistical monitoring systems on well-being to comprehensively inform policy decision-making has shown that the statistical data available from official statistics is not sufficient to map all of the aspects that are important for well-being. What's more, it is obvious that the real phenomena are becoming more complex and that there are numerous areas of interconnection which can, at best, only be roughly mapped and with difficulty using conventional means in official statistics. Daytime population or commuter flows are just two examples of important basic information for well-being which is likely to be impossible to map with methods traditionally used in official statistics to record residential population. New data sources, such as mobile phone or remote sensing data (such as satellite images) or other sensors offer tremendous opportunities (see Fig.4a and 4b) in order to expand the programme of official statistics and adapt it to the latest developments, not just with a view to objective, but increasingly also subjective issues, such as assessments of satisfaction in its various dimensions.¹⁰



Figure 4a: Population density during the day identified on the basis of mobile phone data
Source: Statistical Office of the Republic of Slovenia; Big Data activities at SURS, Statistical Office of the Republic of Slovenia; DIME/ITDG meeting, February 2016
<http://www.stat.si/dokument/8686/SURS-Big-Data-Boro-Nikic.pdf>

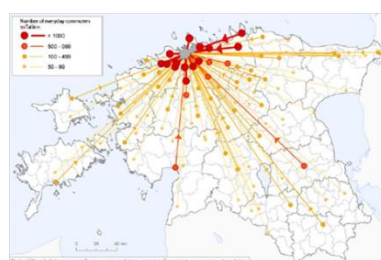


Figure 4b: Commuter flows identified on the basis of mobile phone data

Source:
<http://unstats.un.org/unsd/trade/events/2014/beijing/Margus%20Tiru%20-%20Mobile%20Positioning%20Data%20Paper.pdf>, here p. 14

This is not merely about the current situation but also about changes over the course of time. Official statistics must always adapt their programme and data sources in line with developments that appear to be permanent. The digital transformation of all areas of life brings with it enormous opportunities worldwide for official statistics as well as extraordinary challenges.

Outlook

The task of official statistics is to make available openly and free of charge to a large and heterogeneous user group reliable and up-to-date statistical information on all areas of life and to make disparities transparent. Comprehensive statistical monitoring systems to inform policy decision-making, especially with regard to well-being, are becoming increasingly important. In an age of high-density information that is quickly and widely disseminated, the truth of which is often difficult to assess and which has a short half-life, reliable and up-to-date statistics on both objective circumstances and their subjective appreciation are fundamental for evidence-based, rational and sustainable policies to improve living conditions in all their many facets. These statistics are also an important basis for a broad social discourse to be conducted not only on what is essential for the quality of life beyond generations and national borders, but also on how this quality of life can be shaped in a pluralistic society and according to democratic principles.

¹⁰ An overview is provided in the article by Schnorr-Bäcker, S., Politik begleitendes statistisches Monitoring und neue Datenquellen, in AStA Wirtschafts- und Sozialstatistisches Archiv, DOI 10.1007/s11943-016-0192-2, August 2016; English translation entitled 'Statistical monitoring systems to inform policy decision-making, and new data sources' available at: <http://content.iospress.com/articles/statistical-journal-of-the-iaos/sji160324>, last retrieved on 6 March 2017