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The German Urban Audit

Data – indicators – information



Annecy Antalya Antwerp Avellino Avilés Bacău Barnet Barnsley Barre Bergen Bergen op Zoom Darwen Blackpool Bl Braïla Brandenburg a Bromley Brugge Bruxe Vallée de Montmoren Saclay CA du Val d'O Seine CA Val de Fra IJssel Cardiff Carlisle Plaine de France CC Chelm Chelmsford Ch Constanța Córdoba C Darlington Darmstadt Hermanas Dresden D Edinburgh Edirne Ein Fareham Faro Ferrara Breisgau Fréjus Friedr Genève Genova Gent Görlitz Gorzów Wielk Grudziądz Guadalajar Hannover Haringey H Hénin - Carvin Herne Ipswich Irakleio Irun Is Kaiserslautern Kalama (Allgäu) Kensington a Köln Konin Konstanz Las Palmas Latina La Lelystad Lemesos Le línea de la Concepci Ludwigshafen am Rhe Malatya Malmö Manc Massa Mataró Matera Moers Mollet del Valle Napoli Narva Neubran Norrköping North East Nürnberg Nyíregyház Oradea Örebro Orléa Padova Palencia Pal Pécs Pernik Perugia P Plovdiv Plymouth Plze de Alarcón Praha Pra Recklinghausen Redt upon Thames Rīga R Ruda Śląska Ruse F Salford Salzburg Salz Augustin Sanlúcar de de Tirajana Santand Setúbal Sevilla 's-Gr Slavonski Brod Sliven Split St Albans St. G Stoke-on-trent Stralsu Talavera de la Reina Telde Telford and Wre Torremolinos Torrevie Tunbridge Wells Turku Västerås Veliko Tarno de Gaia Viladecans V Waltham Forest Wand Winterthur Wirral Witten Wrocław Woking Wolfsburg Wörrnhampton Worcester Worthing Wrexham Wrocław Wy Wycombe Yambol York Zaanstad Zabrze Zagreb Zamora Zamość Zaragoza Zgierz Zielona Góra Žilina Zlín Zonguldak Žory Zürich Zwickau Zwolle

Angoulême Ankara Augsburg Aveiro Bârlad Barletta Benidorm Bergamo ham Blackburn with rest Bradford Braga Hove Bristol Brno ancilienne CA de la CA du Plateau de CA Sénart - Val de se Capelle aan den CC de l'Ouest de la Charleville-Mézières ester Colmar Como stochowa Dacorum echt Dortmund Dore Eastbourne Ede Evry Exeter Falkirk im Main Freiburg im lynia Gelsenkirchen Gniezno Gondomar eifswald Groningen and Fulham Hanau elsingborg Hengelo nowroclaw Ioannina önköping Jyväskylä ecskemét Kempen avn Koblenz Kocaali eth Landshut Larisa m-Voorburg Leipzig le Limerick Lincoln Lublin Ludwigsburg ajadahonda Málaga Marseille Martignes es Miskolc Modena amur Nancy Nantes port Nijmegen Nitra aton and Bedworth n Oostende Opole abianice Paderborn a Pavia Pazardzhik Neven Plock Ploiești im Poznań Pozuelo a Ravenna Reading eykjavík Richmond e Madrid, Las Rubí Salamanca Salerno stia Sandwell Sankt enerife Santa Lucía Sénart en Essonne tard-Geleen Slatina Speyer Spijkenisse rt Stockton-on-Tees térvár Szombathely agona Tartu Tczew o Torrejón de Ardoz o Tübingen Tulcea antaa Varese Varna a de Xira Vila Nova Wałbrzych Walsall gan Wilhelmshaven uppertal Würzburg



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The word cloud created using www.wordle.net shows the names of the 125 German Urban Audit cities. The font size varies depending on the average occupancy rate of accommodation (Urban Audit indicator CR2101I, categorised by very high / high / mediocre / low / very low results in comparison). The back cover lists all the Urban Audit cities for the 2014/2015 funding period.

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Foreword

Over 70 % of Europe's population lives in urban areas. Yet Europe's cities are facing a daunting array of challenges, including demographic trends, poverty and social exclusion, as well as those posed by environmental problems and climate change. On the other hand, Europe's cities attract people, investments and services, and generate employment, innovation and economic growth. Cities are thus both the source of and the solution to economic, environmental and social challenges. It is the cities that will make the decisive contribution to achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth.

Given this reality, more and more voices are calling for an "EU Urban Agenda" in which the European Union takes on a greater role in including and promoting cities. Following a broad consultation with the public and interest groups last year, the European Commission is currently in the process of defining the contents of an EU Urban Agenda in detail. Already, it is clear that cities and their challenges will play an ever greater role in the EU's cohesion policy. For instance, some 370 million euros has already been specifically allocated for actions in urban areas in the current 2014-2020 funding period.

Further milestones set for next year will underscore the significance of cities both in Europe and globally. In the first half of 2016, the Netherlands will make the EU Urban Agenda a main focus of its EU Council Presidency and enact a "Pact of Amsterdam". This will be followed by the UN-HABITAT III summit in Quito, Ecuador in October, where the participating nations will define the main aims of the future global urban agenda in light of the recently enacted United Nations 2030 Agenda for Sustainable Development.

The Urban Audit database is the sole body of comparative urban statistics within the European Statistical System, and comprises data for over 900 cities in EU member states as well as the EFTA and candidate nations Norway, Switzerland and Turkey. The indicators compiled in the course of the Urban Audit and published by Eurostat form an important foundation for registering and tracking the quality of life in Europe's cities. Both the availability and the quality of the data have been continually improved in recent years, even though no European legal basis exists to regulate the dissemination of data and impose uniform standards, as is the case for all other European statistics.



In order to adequately reflect the growing significance of the cities in the political discussion and the improved availability of official statistics regarding cities, Eurostat will issue its first separate publication of data on European cities in 2016. Indicators based on the Urban Audit will feature prominently here.

For many years, the KOSIS Association Urban Audit has been a close and reliable partner of Eurostat, and is the only association of cities that is recognised as a national statistical authority in the European Statistical System. This cooperation may be justly described as a success model, particularly as the data availability for German cities is particularly high compared to Europe as a whole. Eurostat therefore explicitly welcomes the fact that in its recent assumption of the oversight role, the City of Mannheim has coordinated the German Urban Audit just as actively and successfully as did Klaus Trutzel, who promoted the German Urban Audit for many years with great passion.

Therefore, I would like to extend my particular thanks to Dr. Petra Wagner, Ms Alexandra Muth and Ms Grazia Gross for their exemplary execution of the German Urban Audit and the associated workshops and publications, as well as the dedicated employees of the Urban Audit cities, without whom the collection and compilation of the data would not have been possible.

I am looking forward to a continuation of this successful cooperation and wish everyone involved stimulating and successful discussions for the Urban Audit Workshop 2015 in Mannheim!



Gunter Schäfer

DG EUROSTAT

Head of Unit E4 - Regional statistics and geographical information

Luxembourg, 3 November 2015

Introduction

The Urban Audit, a database of comparative urban data, is intended to benefit municipal self-determination, European cohesion policy and comparative urban research alike: this is the mission as set out in the brochure *The German Urban Audit*, published in 2013¹. With this objective in mind, the City of Mannheim as the new Managing Office of KOSIS Association Urban Audit embarked on the sixth project phase funded by the European Union in April 2014. Making the urban comparison data usable was defined as the main objective of this phase. The realisation of this objective is reflected in the articles contained in this brochure.

The 2013 publication brought together detailed information on the project background, the organisation in Germany, the cities participating in the Urban Audit, the data compiled and provided for the Urban Audit including the multitude of sources, and the various territorial units. This brochure focuses more concretely on the potential of this database. The aim here is to place this into context and to present practical application examples. Each chapter and each article within the chapters can be read for itself. A brief introduction at the beginning of each chapter facilitates orientation. The chapter summaries and the articles themselves offer links and references for further reading.

The consensus of the German community of municipal statisticians is that there is no need to reinvent the wheel every time. The two articles in Chapter I show that this is true internationally as well. The application examples from Switzerland for a national, and from the Swedish city of Jönköping for a European city comparison, also lay the groundwork for Chapter II.

This chapter looks at the possibilities for using the Urban Audit data to measure quality of life and goal attainment from multiple perspectives. It is intended first and foremost as an inspiration and motivation for readers' own analyses. The authors of these articles were able to directly utilise improvements in the data offering and the instruments used to provide data: in addition to basis data, the Urban Audit information portal now also contains indicators calculated from that data.

¹ KOSIS Association Urban Audit (2013) (ed.): *The German Urban Audit – Comparison of cities in the European Statistical System* (www.staedtestatistik.de/fileadmin/urban-audit/UA_Broschuere_2013_final_EN.pdf).

Chapter III examines the EU perception surveys on quality of life in European cities, which were conceived of as a complement to the Urban Audit structural data. Chapter II also describes briefly the potential that lies in survey data – while Chapter III confirms this.

The articles in Chapter IV examine the Urban Audit sub-city district (SCD) level. In addition to background information on collecting, preparing and visualising data, this chapter focuses on possible applications for assessing and classifying SCD data. The goal of enabling intra-municipal comparisons to complement inter-municipal comparisons set in 2013 has come considerably closer to becoming reality. The Urban Audit Structural Data Atlas permits initial analyses of intra-municipal disparities as well as comparisons of structurally similar districts of different cities.

The final chapter introduces the information portal, which was launched in 2015. Once again, it highlights the high level of integration of the various tools for preparing data – including the DUVA map tool, which since 2014 has enabled the generation of printable thematic maps.

The importance of European cities for Europe's development and the comparative Urban Audit database on the European level are articulated cogently in the foreword of Gunter Schäfer, head of EUROSTAT Unit E4 Regional Statistics and Geographical Information.

Also in Mannheim, European urban comparisons are key. For centuries, Mannheim has been a city of immigration. In view of today's migrations, cities need more Europe, not less – as our Mayor, Dr. Peter Kurz, stated the case in his role as representative of the German delegation in the Council of European Municipalities and Regions. The vision of the European cities is attractive globally, inviting people to share in the European city and its values. Freedom, justice and solidarity are the values for which our European cities stand. We of the Urban Audit Association must ask ourselves how we, with our comparative urban database and our urban research analyses, can contribute to enhancing the controllability and municipal autonomy of our cities.

As the Managing Office of the KOSIS Association Urban Audit, the City of Mannheim plans to carry on and further cement the project in 2016/2017, assuming that funding is approved. An application for funding for the next round of data collection was prepared in close cooperation with the Federal Statistical Office and submitted to Eurostat. Whereas in the last two years the focus of the Urban

Audit was on the SCD level with respect the available territorial units, the coming period is to focus on the Functional Urban Areas (FUAs, formerly Larger Urban Zones – LUZ). Concurrently with the ongoing refinement of the instruments for using and providing the data, a publication containing analyses on multiple aspects of the Urban Audit is planned for the end of 2017 – perhaps even containing an article by you!

We hope you will enjoy reading this Urban Audit brochure!



Dr. Petra Wagner
City of Mannheim
Department Head
Urban Development and Statistics



Dr. Ellen Schneider
City of Mannheim
Director, Municipal Statistics
Office

Mannheim, 23 November 2015

I Urban Audit in practice – international examples

The two articles in this chapter present examples for how the data from the Urban Audit structural database can be utilised.

The article by Anna-Katharina Lautenschütz, who manages the Urban Audit project in **Switzerland**², describes how the data are used. The Swiss Federal Statistical Office (BFS) provides a variety of quality products in close cooperation with the participating cities, who are also the clients.

In the second article, Andreas Zeidlitz and his team from the **City of Jönköping**³ (Sweden) describe in an easily understandable and informative manner how a city can use the data for a “custom” city comparison.

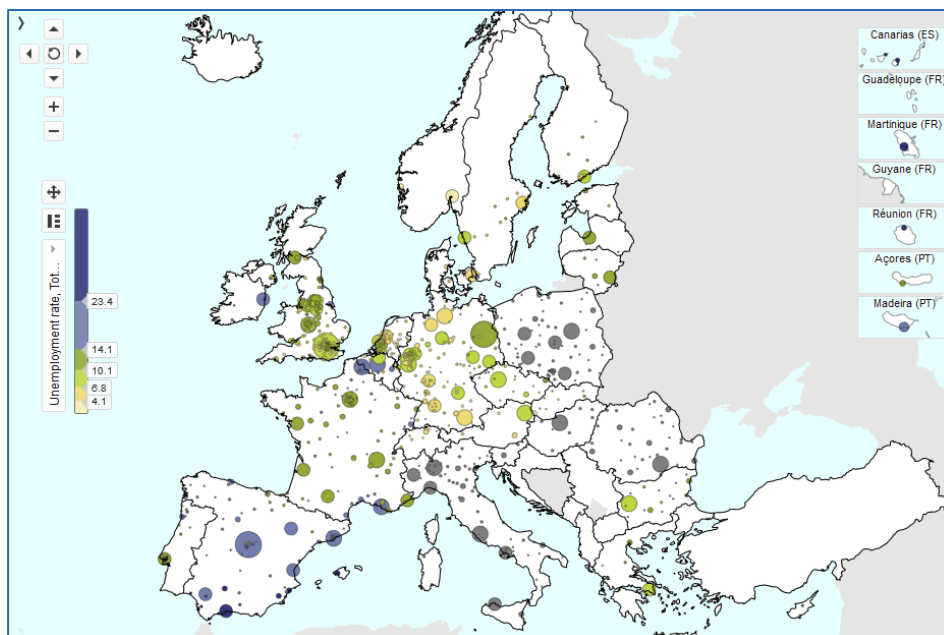
The data offerings of **Eurostat**⁴ must also be mentioned here. Whereas the products of KOSIS Association Urban Audit mostly focus on German cities, Eurostat as the database project sponsor makes possible the full range of international comparisons. Particularly the application **City Statistics Illustrated**⁵ demonstrates how Urban Audit data can (also) be used.

Chapter overview

Switzerland

Jönköping

Eurostat



City Statistics Illustrated

² www.bfs.admin.ch/bfs/portal/en/index/international/03/04.html

³ www.jonkoping.se

⁴ ec.europa.eu/eurostat

⁵ ec.europa.eu/eurostat/cache/RSI/#?vis=city.statistics&lang; cf. also Bartsch, Gorja (2014): *Urban Audit-Kommunikation auf EU-Ebene*. Talk presented at the Urban Audit Members meeting in Mannheim on 20/11/2014 (www.staedtestatistik.de/fileadmin/urban-audit/Eurostat_Bartsch__Mannheim_20141120.pdf).

1 Urban Audit Switzerland

by Anna-Katharina Lautenschütz

Initial situation

As a member of the European Statistical System ESS, Switzerland participates in the Urban Audit project. This enables the participating Swiss cities to assess themselves in relation to each other and other European cities on the basis of comparable, reliable information. These insights can then be used for instance to prepare future development strategies on a municipal level. A further key aspect of participation in the Urban Audit is that it heightens the visibility of Swiss cities in Europe.

Switzerland has been conducting the Urban Audit under the auspices of the Federal Statistical Office (BFS) since 2009 jointly with the Federal Office for Spatial Development (ARE) and with its ten most populous cities Zurich, Geneva, Basel, Berne, Lausanne, Winterthur, Lucerne, St. Gallen, Lugano and Biel-Bienne.⁶

Structure

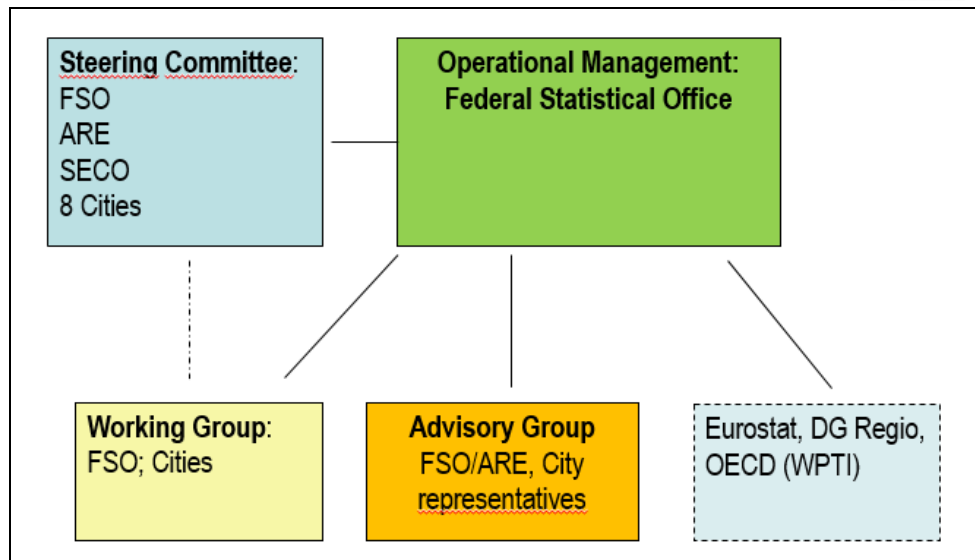
Structure of the Urban Audit Switzerland

The situation of the Urban Audit in Switzerland differs from other EU nations, as the project is substantially co-financed by the partner cities. Consequently, the cities are integrated substantially into the processes as stakeholders. The Federal Statistical Office assumes the operational management for the project. It is responsible for the execution of production and data collection, administration of data and analysis parameters as well as further development and dissemination.

The city partners are involved not only in the data collection but also in the development, dissemination and financing of the project. They thus participate as partners in two groups, a steering committee and a working group, so that they are actively involved in structuring the entire project. An advisory group acts as a link between the statisticians and the end users – primarily urban planners, municipal authorities and political decision-makers – and supports the utilisation of the Urban Audit.

The Federal Office for Spatial Development is responsible for the federal government's spatial planning and agglomeration policy, as well as their implementation. This office participates in the ongoing development of the project with the quality of life approach.

⁶ Visit Urban Audit Switzerland on the internet:
www.bfs.admin.ch/bfs/portal/en/index/international/03/04.html.



Organisation of the Urban Audit in Switzerland

Valorisation of the Urban Audit Switzerland

Until 2012, the Urban Audit Switzerland was mainly a collection of data on multiple topics, e.g. demographic, social and economic aspects. Urban planners could not immediately recognise how the database can be utilised. The decision was thus taken to improve the usability of the Urban Audit Switzerland project. The aim was twofold: to increase the visibility of the Urban Audit Switzerland and to develop an overarching research focus for the project. One important tool to enhance the project's visibility is the "Atlas of cities". It was launched in 2013 and allows the cartographic comparison of 20 indicators. The advisory group helped developing an overarching research focus. In a participatory process, the group's first step was to identify the users of the Urban Audit. The advisory group members see political bodies, e.g. the municipalities and regional associations, as users of the Urban Audit, who could employ the data for in-depth analyses on the development of their cities and the implementation of their objectives. They would be more easily able to illustrate their policy objectives for their citizens in the future by using indicators. Generating user profiles for the Urban Audit in conjunction with the advisory group has been an important step, as the city partners as stakeholders are to benefit from the project and its offers.

Improving valorisation

Which focus is most relevant for the users?

Following an in-depth analysis of the urban development objectives of the city partners, the quality of life approach was defined jointly with the advisory group as the sole common analytical framework for valorisation. Although every individual strives to achieve a good quality of life, the strategies employed to achieve this goal vary greatly. Quality of life is also influenced by

the infrastructure and services that are available in a city. Along with conventional economic factors such as tax revenues, quality of life is a key component for the attractiveness of a city. It thus plays a central role for urban development policy, as it is that which attracts people and enterprises and thus generates capital necessary for development.

On an international level, the significance of quality of life has increased considerably, especially for the regions, and the cities. The Working Party on Territorial Indicators (WPTI) of the OECD, for example, has declared “quality of life” to be a major focus of its work for the coming years.

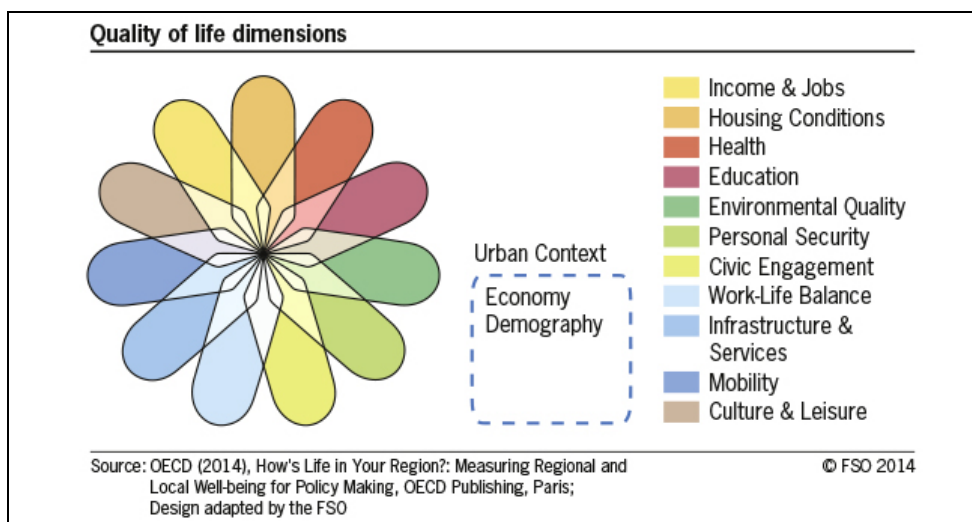
What is quality of life and how can the Urban Audit implement this concept

Concept of quality of life

The concept of quality of life is based on the OECD report “How’s Life” and was applied on the urban level for the first time for the Urban Audit Switzerland in conjunction with the OECD report “How’s Life in the Region”. This concept attempts to measure the well-being of the population in its varied and mutually interactive dimensions. Well-being is influenced both by material living conditions and by the subjective perception of quality of life. The dimensions of material living conditions include *income and jobs*, as well as the *housing situation*. The intangible dimensions of quality of life comprise *health, education, environmental quality, personal security, civic engagement* and *work-life balance*.

In order to take the specific characteristics of Swiss cities into account and better reflect location attractiveness, the dimensions of quality of life were expanded to include *infrastructure and services, mobility, as well as culture and leisure*. Additionally, the aspects of economic context and demographic context portray the economic and demographic structure of the cities.

Dimensions of quality of life according to OECD “How’s Life in Your Region?” (www.oecdregionalwellbeing.org)



Products of the Urban Audit Switzerland

The products of the Urban Audit Switzerland are intended both for international and intra-Swiss comparison. International comparison includes e.g. the indicator set that is annually updated with the most important indicators of the Urban Audit and accessible on the Urban Audit Switzerland website.

The products presented here represent the most important results with respect to visibility and valorisation of the Urban Audit Switzerland.

Pocket statistics

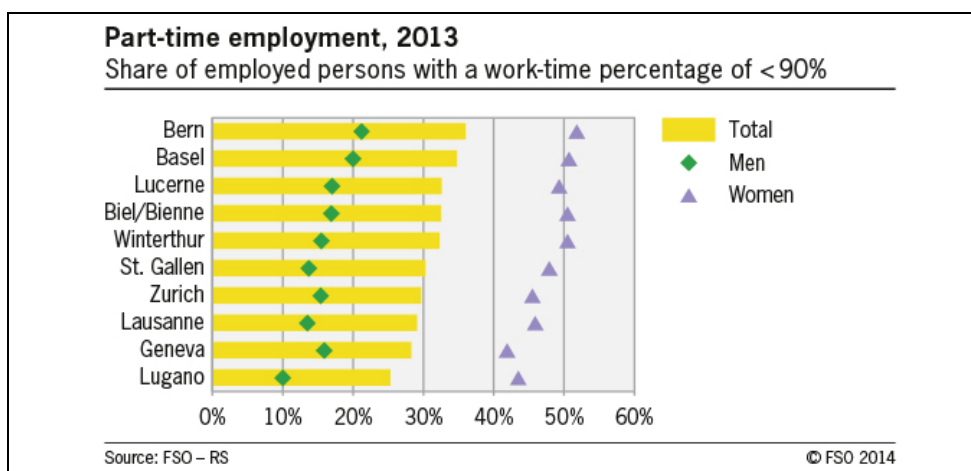
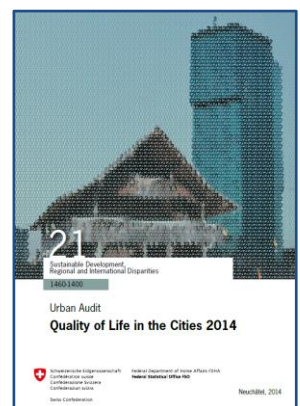
An initial series of indicators of quality of life in cities using Urban Audit data was published in 2014 in the form of [pocket statistics](#)⁷. The eleven dimensions were represented using 24 indicators, which can be expanded at a later point so as to enable a more complete picture of quality of life. Two of these indicators are presented here as examples.

► Part-time employment

The indicator “part-time employment” is a part of the income and jobs dimension. This dimension allows people to cover their basic needs and provide opportunities to fulfil personal wishes.

Part-time employment can have both positive and negative consequences. Additional time can be used for a better work-life balance and personal fulfilment and leisure. These are positive consequences. Negative consequences are a reduced income, fewer opportunities for promotion, limited possibilities for continuing education and training, as well as lower contributions to retirement savings. Part-time employment is also important for gender equality.

Pocket statistics



Indicator “part-time employment”

⁷ Available at www.bfs.admin.ch/bfs/portal/en/index/news/publikationen.html?publicationID=5827.

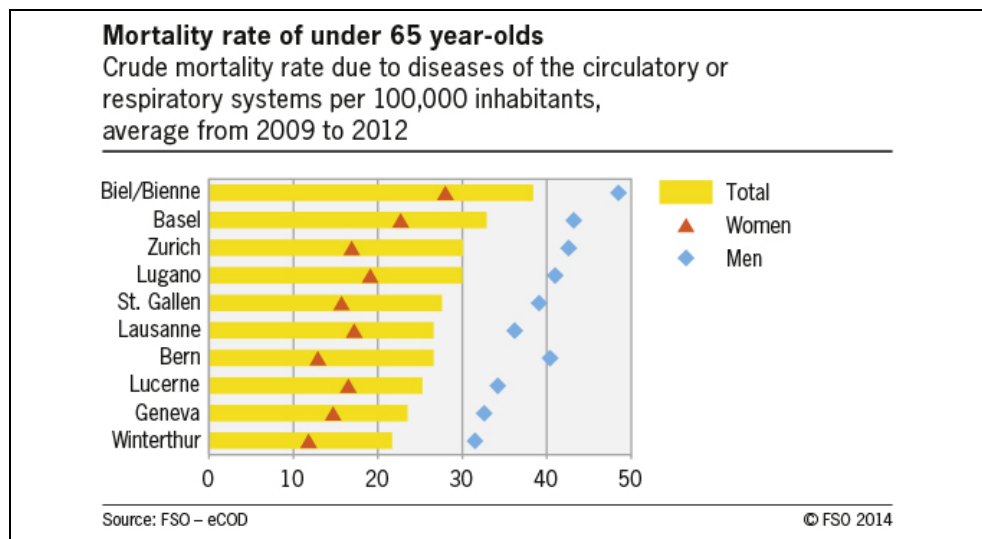
➤ *Mortality rate of under 65 year-olds*

The indicator “mortality rate of under 65 year-olds” is part of the health dimension. Good health is one of the most valuable aspects of a person’s life. It enables active participation in social life and in the labour market. Health is influenced by multiple factors, including work-life balance and environmental quality.

Deaths under the age of 65 can have a variety of causes, such as genetic factors, accidents, individual health behaviour or local environmental quality.

The discrepancy between men and women can be explained by mens' greater consumption of tobacco and alcohol as well as a higher occurrence of obesity in men.

Indicator “mortality rate of under 65 year-olds”



Atlas of cities

As mentioned above, the publication “Atlas of cities”⁸ enables cartographic comparisons between Swiss cities, their sub-city districts and agglomeration communities for 20 indicators. One indicator from this atlas is presented below as an example.

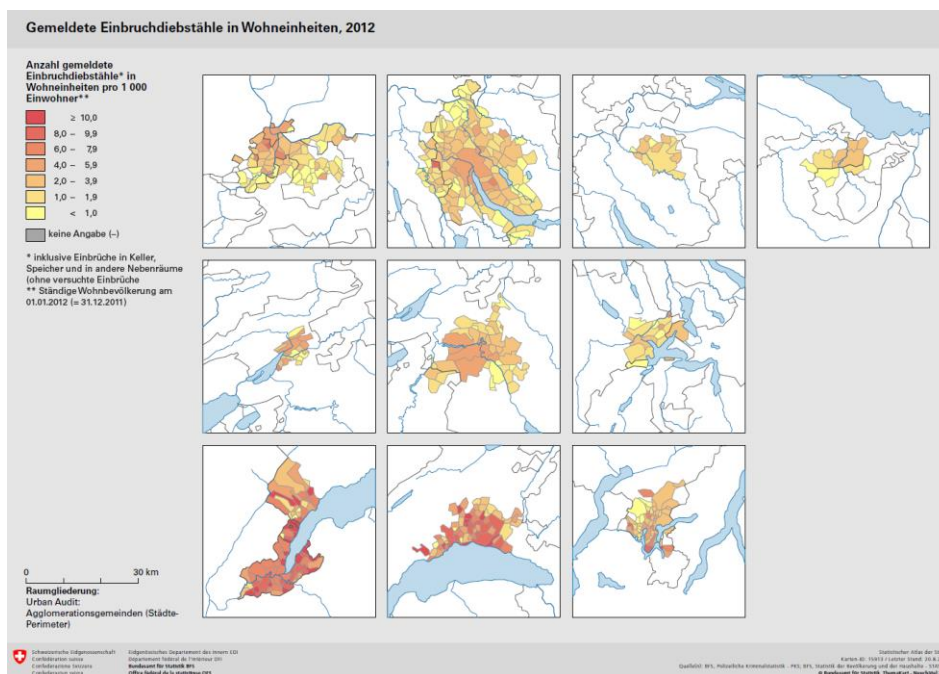
Atlas of cities

► Home burglaries

Security is an important precondition for well-being and the maintenance of good health. Personal security is primarily influenced by crime, the risk of traffic accidents and natural hazards. Crime may lead to a loss of possessions, physical suffering, stress and anxiety.

Burglaries do not only result in damage of property for victims but also often mean that people no longer feel secure in their own homes. Burglaries therefore have a direct impact on the quality of life.

In the suburban communities and agglomerations of the Urban Audit, 3.4 burglaries*** per 1,000 inhabitants occur on average every year (see graphic). In the core cities this value is 4.6, and thus one third higher. The communities of the agglomeration belt of Geneva are an exception, as burglaries occur more often here than in the core cities.



Indicator “home burglaries”

⁸ www.bfs.admin.ch/bfs/portal/en/index/international/03/04/urbanauditatlas.html

Cross-border atlas

For the cities of Geneva and Basel, the “Atlas of cities” also shows maps for the extended cross-border agglomeration with French and German territory so as to better reflect the perimeters of the reality of these two cities. On the French side are the perimeters of the “Aires urbaines” in France included, while in Basel the communities of the trans-border agglomeration according to the FSO’s definition in 2000 were used. Data are collected in cooperation with the National Institute for Statistics and Economic Studies (INSEE) in France and the Statistical Office of Baden-Württemberg, with the consent of Eurostat.

Summary

The awareness and visibility of the Urban Audit Switzerland have been enhanced in recent years. In particular the valorisation has decisively improved the communication of Urban Audit Switzerland. The participatory process with the advisory group has played a key role in the process, and has functioned quite well thanks to the stakeholder structure of the Urban Audit Switzerland. Following its release, the publication on quality of life in the cities was quoted in a wide range of print media. The “Atlas of cities” and the annual updating of the indicators have also contributed to a heightened awareness of the project.

Dr. Anna-Katharina Lautenschütz is a scientific collaborator at the Swiss Federal Statistical Office (BFS) and project manager for the Urban Audit Switzerland (anna-katharina.lautenschuetz@bfs.admin.ch).

2 Urban Audit – a comparison of European cities

by Lars Lundström, Erik Blomdahl and Andreas Zeidlitz⁹

The municipality of Jönköping is one of thirteen Swedish cities participating in the Urban Audit. The report, based on a previous study conducted in 2007, analyses how Jönköping relates to 23 other municipalities in Europe. The municipalities included in the study are selected according to the principle one from each country and comparable to Jönköping in population size. Common to the selected municipalities is that most are university cities or significant education centres:



Scandinavia	Northern Europe	Southern Europe	The Baltic States	Eastern Europe
Jönköping Sweden	Cork Ireland	Trento Italy	Tartu Estonia	Sibiu Romania
Stavanger Norway	Wrexham United Kingdom	Larisa Greece	Panevezys Lithuania	Maribor Slovenia
Oulu Finland	Regensburg Germany	Poitiers France	Liepaja Latvia	Pleven Bulgaria
	Brügge Belgium	Logroño Spain		Nitra Slovakia
	Winterthur Switzerland	Setúbal Portugal		Gorzów Wielkopolski Poland
	Arnhem Netherlands			Nyíregyháza Hungary
				Ústí nad Labem Czech Republic

The municipalities included in the study. A short profile of each city can be found in Appendix 1 of the original report. As a German city, the municipality of Regensburg was picked (editor's note).

34 indicators from seven topics were included in the comparison. A wide range is covered, including indicators such as the dependency ratio, taxi fares and hours of sunshine. Each variable is presented in a map with a corresponding chart. For each chart there are supplementing comments. Though the data overall is considered reliable, the report points right at the beginning to delimitations when making international comparisons with data from various sources. In cases where data was missing for the reporting year 2012 the most current value from the period 2008-2011 has been used (cf. Appendix 3 of the original report).

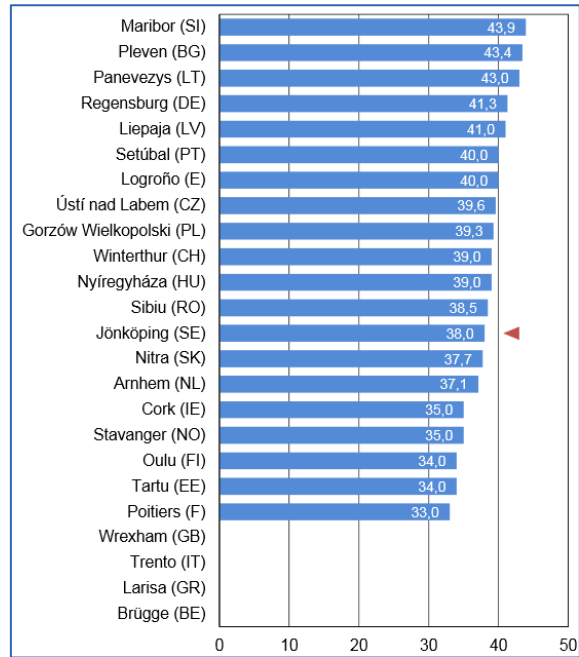
As an example, hereafter three indicators are presented, covering the topics demography, education and tourism.

⁹ This article is an adapted and abridged edition of the original report published by the city of Jönköping in 2014 (Jönköping Municipality (2014): *Urban Audit – a comparison of European cities*; www.jonkoping.se/download/18.6f09a03c14a14ad6d8a483b/1418206924307/Urban+Audit++a+comparison+of+European+cities+%28December+2014%29+English+version.pdf; edited by Alexandra Muth).

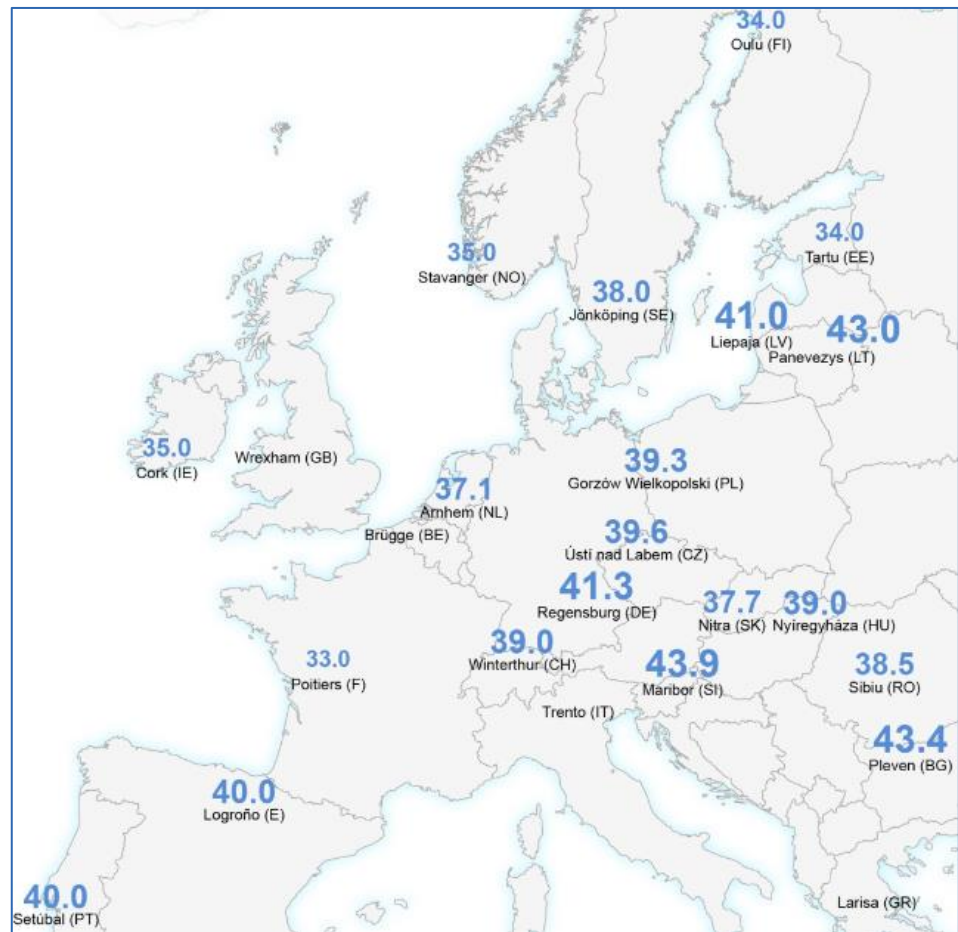
Median age

The median age, i.e. the age that divides a population into two numerically equal groups, is highest in Maribor, Slovenia with 43.9 years.

The Northern European municipalities generally have a slightly lower median age than the average, but apart from this the median age tends to vary between the municipalities, regardless of their geographic location.



Jönköping falls just below the average with a median age of 38 years. Poitiers, France has the lowest median age with 33 years.



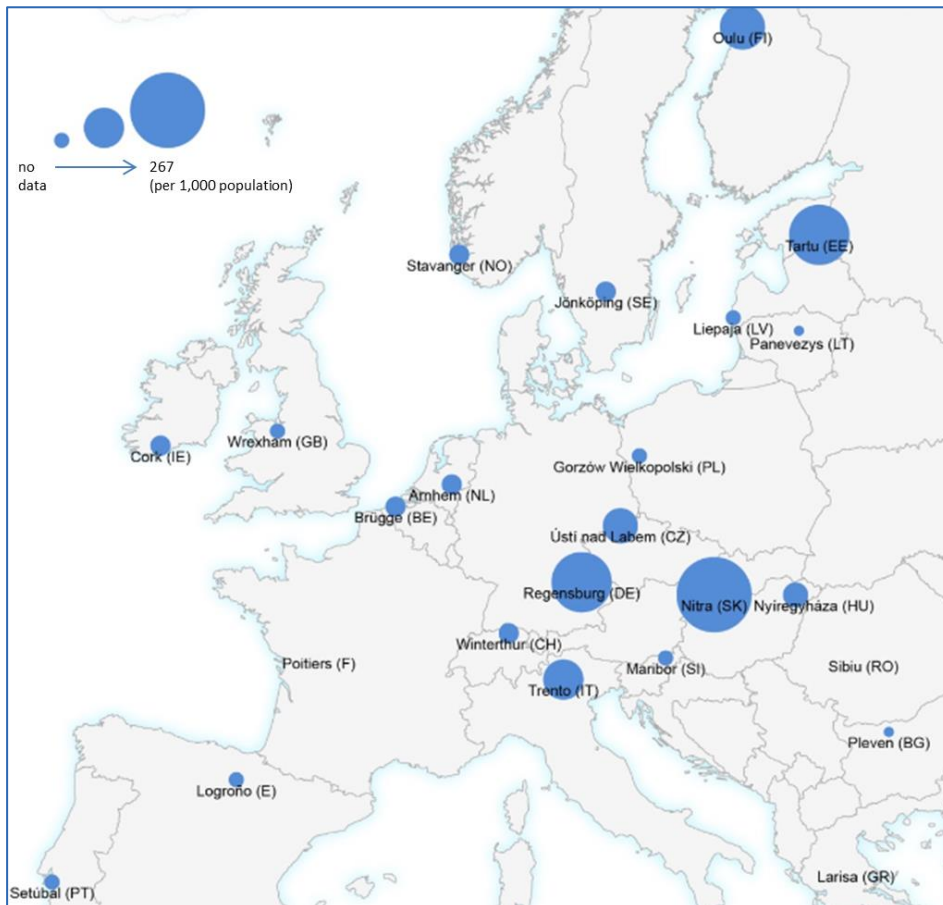
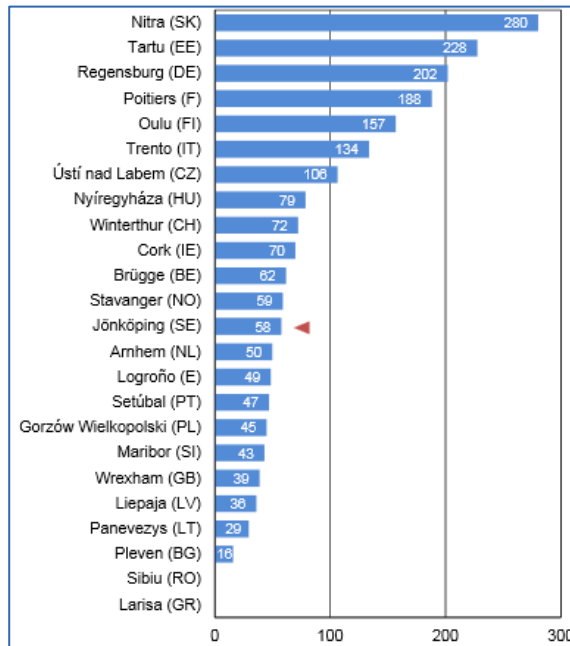
Median age

Students in higher education

Regarding the share of students in higher education, Nitra, Slovakia stands out with nearly 270 students per 1,000 population. Tartu, Estonia and Regensburg, Germany also have more than 200 students per 1,000 population.

In contrast to Tartu, the other two Baltic municipalities, Liepaja and Panevėžys, together with Bulgarian Pleven, have the lowest numbers of students per capita.

In comparison to the other municipalities, Jönköping ranks in the middle with 58 students per 1,000 population.



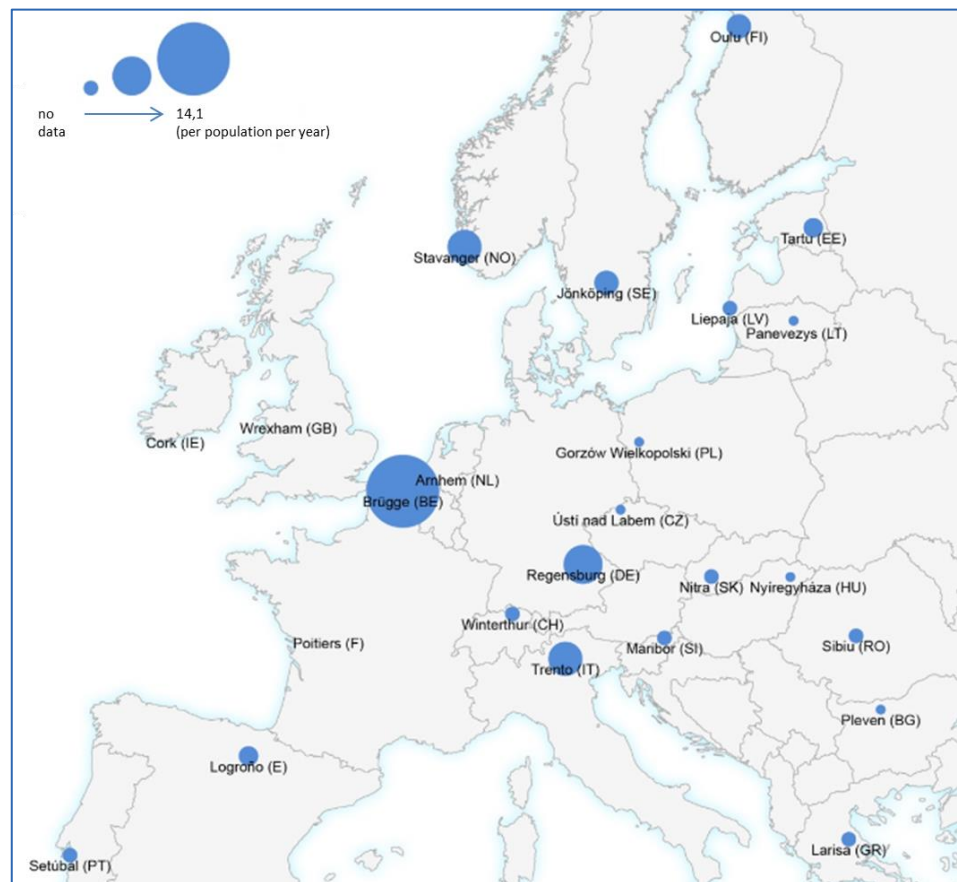
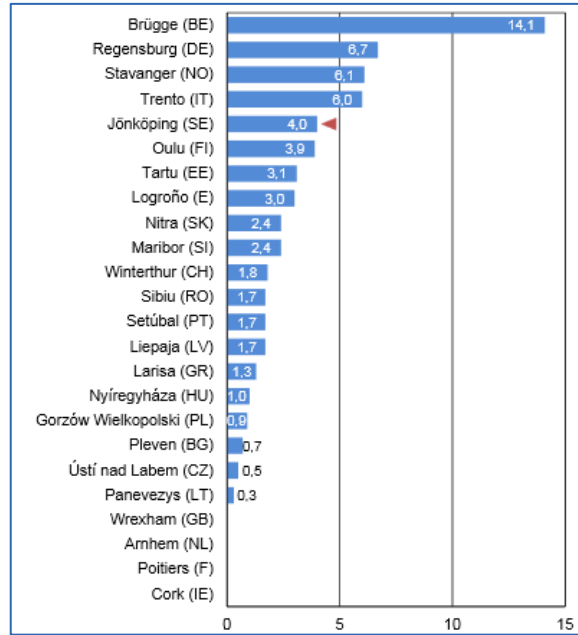
Students per 1,000 pop

Tourist overnight stays

The number of tourist overnight stays per inhabitant is highest in Bruges, Belgium with 14.1 nights per capita. That is more than twice as many as Regensburg, Germany which is the municipality with the second highest number of overnight stays.

Jönköping also ranks relatively high with 4.0 tourist overnight stays per inhabitant. The list is topped by Northern European municipalities with the exception of Trento, Italy in fourth place.

The lowest numbers of tourist overnight stays per inhabitant is observed in Eastern European municipalities. The lowest among these is 0.3 nights per inhabitant in Panevėžys, Lithuania.



Overnight stays per year per capita

Final thoughts – a Jönköping perspective

Jönköping has, during the past five years, had an annual population growth of nearly one percent. This can in part be attributed to the increase in the proportion of foreign born in the municipality which, since the previous report from 2007, has increased by a few percentage points. The gender distribution in the municipality is relatively balanced. The age distribution, however, stands out in the sense that both the proportion of children as well as the proportion of elderly residents is fairly high in Jönköping. This results in Jönköping having the second highest dependency ratio among the municipalities in the report. The ratio has, however, declined slightly from the previous report, 74 to 70 percent, which also implies that the pressure on the productive population has been somewhat alleviated.

The dependency ratio within the working age population has, however, been redistributed as the unemployment in the municipality has increased during the same period. Even so, unemployment in Jönköping is still relatively low and, in combination with a high employment rate, Jönköping ranks among the municipalities, primarily from Scandinavia and Northern Europe, with relatively strong labor markets. Moreover, the gender gap in the labor market is relatively small in the municipality with slightly higher rates among the men, both in terms of employment and unemployment.

Despite its university Jönköping does not stand out in comparison with the other municipalities, neither in terms of the population with higher education nor in terms of number of students per capita. Note, however, that the level of education was an important criterion in the selection of which municipalities to include in the report. Hence, a majority of the other municipalities also host universities.

As the geographically largest municipality in the report, Jönköping might be expected to also have a higher than average number of cars, since the need for cars generally is greater in rural areas than in urban ones. Nevertheless, although the number of cars per 1,000 inhabitants in Jönköping is higher than the average among the municipalities in the report, it is far from what could be expected given its relative size. However, income, petrol prices and a well-developed public transportation system are additional factors that are likely to affect the number of cars.

To some extent there also seems to exist a relationship between the number of cars and the rate of deaths in road accidents. Road traffic safety in Jönköping is nonetheless comparatively high and the municipality has one of the lowest death rates among the reviewed municipalities. The traffic-related death rate in Jönköping

Demography

Labor market

Education

Cars

Traffic-related deaths

is, for example, more than seven times lower than in the Eastern European municipalities of Pleven, Bulgaria and Sibiu, Romania. Factors that may affect the death rate are, for example, speed limits, alcohol limits and seat belt use.

Health

The death rate from cardiovascular disease is also comparatively low in Jönköping. Although the rate of premature deaths has increased marginally since 2007, it is still low in comparison to the other surveyed municipalities.

Cycle routes

Oulu can to some extent be regarded as the cycling capital of Europe. This is reflected in the statistics where Oulu tops the list with over 600 km of cycle routes. Jönköping comes in second place with a total of 300 km, twice the length of the cycle network in Regensburg, Germany in third place.

Mobility costs

As for other modes of transportation, the Scandinavian municipalities are relatively expensive. Jönköping ranks among the three municipalities with the highest prices, both in terms of public transport and taxis.

Weather & water consumption

The weather is largely dependent on the geographical location of the municipality. This is reflected in Jönköping's position as somewhat less sunny and more rainy than the average among the municipalities. The relatively high rainfall in northern Europe is also reflected in the statistics on water use. Jönköping ranks about average, while the municipalities in Southern Europe, where the need for irrigation in agriculture is greater, top the list.

Waste & environment

The amount of generated waste is generally higher in northern Europe and Jönköping ranks among the five municipalities with the highest amounts of waste per capita. Concentrations of PM10 are relatively low in Jönköping. Nonetheless, some of the monitoring stations in Jönköping still recorded values close to, or exceeding, the limits adopted by the EU, and in relation to the other Scandinavian municipalities in the report, concentrations in Jönköping were comparatively high.

Culture & recreation

The availability of cultural amenities and recreation facilities is fairly high in Jönköping. Nevertheless, the cinema attendance is relatively low, and with a total of three theaters Jönköping does not stand out in either direction. However, the number of museum visitors as well as the number of tourist overnight stays is substantially higher than the average.

In general, the report paints a rather positive picture of the situation in Jönköping. In those cases where the result can be interpreted as either positive or negative Jönköping often ranks on the positive side of the average, and in several cases in the top three.

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II Measuring quality of life and goal attainment – concepts, indicators, indices

by Alexandra Muth und Sabrina Weber

This second chapter offers multiple perspectives on possible applications of the Urban Audit data. More than anything else, it is intended as an inspiration and incentive for readers' own analyses.

The first article summarises and explains the concepts used in measuring quality of life. It utilises established products and then explains the extent to which these concepts, designed to enable national and regional comparisons, are also suitable for city comparisons using the Urban Audit data catalogue – and which characteristics could complement this data offering. The concept for measuring target attainment of the Europe 2020 strategy is discussed in this context as well.

The second article is initially “technical“ in nature – how to find data, how to calculate an index and which possible comparison groups are suitable for a cities comparison. It then goes on to describe two self-created indices and present the results for various groupings of the Urban Audit cities.

Chapter overview

Concepts for quality of life and goal attainment

Index creation and typing – theory and practice

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1 Concepts for quality of life and goal attainment

This article presents established concepts for measuring the quality of life, and briefly presents a concept for measuring attainment of the goals defined as part of the Europe 2020 strategy:

OECD Better Life Index	• National level: OECD countries plus two key partners
Eurostat / ESS Quality of life	• National level: EU countries
OECD Regional Well-Being	• Regional level: OECD regions (for Germany: federal states)
Europa 2020 Strategy	• National level: EU countries

Focus of the concepts:
countries and regions

As none of these approaches were developed for the urban level, their applicability is limited – in part because some of the indicators they contain are not suitable for a cities comparison, but also because data are often only available in national or regional aggregates and not for cities.

This article concludes with a summary of the dimensions and indicators used in the concepts and compares these with the characteristics catalogue of the Urban Audit.¹⁰

OECD Better Life Index

The Better Life Index¹¹ (BLI) of the Organisation for Economic Cooperation and Development (OECD) contains data for measuring the quality of life and material living conditions of the 34 OECD countries including two key partners (Russia and Brazil). The overall index comprises eleven topics of well-being relating to housing situation, income, employment, community, education, environment, civic engagement, health, safety, life satisfaction and work-life balance. The topics are presented in a graphical, dynamic representation in the form of blossoms – the size of the blossom petals vary as a function of the magnitude of the values of the individual indices. Depending on what they wish to learn, users can weight the information within the indices to place greater emphasis on individual indicators and topics.

OECD Better Life Index



¹⁰ Two further concepts are worth being mentioned here: the *Happy Planet Index* of the New Economics Foundation (www.happyplanetindex.org/) for 151 countries and the Deutsche Post *Glücksatlas 2014* (www.gluecksatlas.de/cms/2014/index.jsp) for 19 German regions.

¹¹ Cf. www.oecdbetterlifeindex.org.

Quality of life – the European Statistical System (ESS)

The Statistical Office of the European Union (Eurostat) provides an equally user-friendly, illustrated concept for quality of life on the national level¹². This concept, developed by the European Statistical System (ESS), contains 8 + 1 dimensions for all 28 European countries. These focus on general life satisfaction, material living conditions, housing conditions, employment, use of time, education, health, social relationships, safety, governance and the environment. Quantitative and qualitative indicators exist for each of these dimensions. The majority of the data comes from a variety of sources within the ESS, in particular from the EU Statistics on Income and Living Conditions (SILC), the EU Labour Force Survey (LFS), the European Health Interview Survey (EHIS), and from administrative sources¹³.

ESS quality of life



OECD Regional Well-Being

In addition to the Better Life Index, the OECD offers a further concept for measuring the quality of life. Unlike the BLI, however, this looks at regions instead of countries¹⁴. In all, it examines and enables comparison of 363 OECD regions. For Germany, the regions correspond to the 16 Federal states¹⁵. The graphical representation of the results is modelled closely on the petals of the Better Life Index. This set is restricted to nine indices with significantly fewer indicators compared to the BLI. Unlike the BLI, this index only considers objective data. The nine topics are safety and security, housing, access to services, civil engagement, education, jobs, the environment, income and health.

OECD Regional Well-Being



Europe 2020 strategy

To complement the concepts for measuring quality of life, the indicator set for measuring attainment of the targets defined in the Europe 2020 strategy are described here. This strategy, enacted by the European Council in 2010, sets out five core targets¹⁶ for the EU: employment, research and development, climate change

Europe 2020 strategy

¹² Cf. ec.europa.eu/eurostat/cache/infographs/qol/index_en.html and Eurostat (2015): *Quality of life*. Luxembourg: Publications Office of the European Union (ec.europa.eu/eurostat/documents/3217494/6856423/KS-05-14-073-EN-N/742aee45-4085-4dac-9e2e-9ed7e9501f23).

¹³ Cf. ec.europa.eu/eurostat/web/gdp-and-beyond/quality-of-life/data; the SILC indicators are also published according to the degree of urbanisation (Degurba).

¹⁴ Cf. www.oecdregionalwellbeing.org/index.html.

¹⁵ Cf. e.g. for Baden-Württemberg, one of the German Länder: www.oecdregionalwellbeing.org/region.html#DE1.

¹⁶ Cf. ec.europa.eu/eurostat/de/web/europe-2020-indicators/europe-2020-strategy.

and sustainable energy, education and combating poverty and social exclusion. In each of these categories, the member states are to achieve an improvement on the national level – not as a community – by 2020. The aim is to strengthen Europe in global competition. The core targets form the subordinate indices for this concept, and one to five core indicators were selected for each.¹⁷ The data are collected by the European Statistical System (ESS) and published by Eurostat¹⁸.

Urban Audit catalogue of characteristics

The Urban Audit data catalogue¹⁹ currently comprises around 150 characteristics from seven topic areas, so called domains. The individual domains are in turn divided into subdomains, which illustrate the broad topic range of the database:

Domain DE – Demografy Population Nationality Households	Domain EC – Economic aspects Labour market Economy Income	Domain EN – Environmental aspects Climate Air Quality Noise (Waste) water Waste management Land use
Domain SA – Social aspects Housing Health Crime	Domain CR – Culture and recreation Culture Tourism	Domain TE – Education Educational inclusion Level of education
	Domain TT – Transportation Transportation	

Over 900 cities in the EU member states, as well as in Norway, Switzerland and Turkey, participate in the data collection, with data availability varying depending on the individual countries and characteristics.

¹⁷ Cf. also Statistisches Bundesamt (2013): *Europa 2020. Die Zukunftsstrategie der EU*. Wiesbaden: Statistisches Bundesamt (www.destatis.de/DE/Publikationen/Thematisch/Internationales/BroschuereEuropa2020_0000149139004.pdf?__blob=publicationFile).

¹⁸ Cf. ec.europa.eu/eurostat/de/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard and Eurostat (2015): *Smarter, greener, more inclusive? – Indicators to support the Europe 2020 strategy – 2015 edition*. Luxembourg: Publications Office of the European Union (ec.europa.eu/eurostat/de/web/europe-2020-indicators/europe-2020-strategy/publications).

¹⁹ The catalogue of characteristics and the various data sources are described in detail in: KOSIS Association Urban Audit (2013) (ed.): *The German Urban Audit – Comparison of cities in the European Statistical System* (www.staedtestatistik.de/fileadmin/urban-audit/UA_Broschuere_2013_final_EN.pdf).

Overview of concepts on quality of life

The table below lists the topic-related aspects contained in the first three concepts presented and the extent to which they correspond to the seven domains of the Urban Audit database. This is supplemented here by the topics queried in the perception survey Quality of Life in Cities²⁰.

Concept / data collection	OECD Better Life Index	ESS / Eurostat Quality of Life	OECD Regional Well-Being	Urban Audit	Perception Survey	
territorial level / coverage	National level		Regional level	City level		
	34 OECD countries incl. 2 key partners	28 EU countries	363 OECD regions	~ 900 european cities	~ 90 european cities	
Topic areas	Housing	✓	Housing conditions	✓	Social aspects (SA)	✓
	Health	✓	✓	✓		✓
	Safety	✓	✓	✓		✓
	Income	✓	Material living conditions	✓	Economic aspects (EC)	✓
	Employment	Jobs	✓	Jobs		✓
	Education	✓	✓	✓	✓ (TE)	✓
	Environment	✓	✓	✓	Environmental aspects (EN)	✓
	Civic Engagement	✓	Governance	✓	x (CI)	x
	Community	✓	Social relations	x	x	x
	Life satisfaction	✓	✓	x	x	✓
	Time use	Work-Life-Balance	✓	x	x	x
	Access to services	x	x	✓	x (IT)	✓
	Transportation	x	x	x	✓ (TT)	✓
	Demography	x	x	x	✓ (DE)	✓
	Culture and recreation	x	x	x	✓ (CR)	✓

Summary of topics of concepts for measuring quality of life, the Urban Audit database and the questions of the perception survey on quality of life in cities.

The topic areas used in all approaches are clearly apparent here. Housing, health, income, employment, education and the environment are the common elements for measuring quality of life across all territorial levels. The areas of civic engagement and access to services were formerly covered in the Urban Audit as well (domains CI civic involvement and IT information society); however, these data are no longer collected for this database.

The overview on the next two pages shows specifically which indicators are considered in the respective indices or are available for the respective topic areas. The line-by-line comparison is not meant to imply that the indicators are identical. For reasons of space, the exact definitions and data sources have been omitted, but can be found with the respective “providers”. For the Urban Audit, a selection of indicators is listed for which the data are available to German cities.

²⁰ Cf. also Chapter III.

	OECD Better Life Index	ESS / Eurostat quality of life	OECD Regional Well-Being	Urban Audit	Perception Survey	
data collected	structural- and survey data	structural- and survey data	structural- and survey data	structural data	survey data	
Topic areas with indicators	Housing	Rooms per person	Overcrowding rate	Numbers of rooms per person	Persons per apartment, living space per person (m ²)	
		Housing expenditure			Annual rent for flats (per m ²), purchase price house / apartment	
		Dwellings with basic facilities				
			Housing satisfaction			Satisfaction with housing situation
	Health	Life expectancy	Life expectancy at birth	Life expectancy	Mortality rate by sex & age; infant mortality	
		Self-Reported health	Self-perceived health			Satisfaction with health care services
	Safety	Homicide rate		Homicide rate	Homicide rate	
		Assault rate			Car theft, domestic burglaries	
			Safety feeling when walking alone in the dark			Perception of safety (overall, day-/nighttime, neighborhood)
			Share of population reporting crime, violence or vandalism in the area			
	Income	Household net-adjusted disposable income	Annual median equivalised net income	Household disposable income per capita	Median / average annual net income (households); income distribution; persons / households at risk of poverty / dependent on benefits	
Household financial wealth						
		Satisfaction with finances			Satisfaction with financial situation	
					Problems paying bills	
Employment	Employment rate	Employment rate	Employment rate	Employment rate		
	Long-Term unemployment rate		Unemployment rate	Unemployment rate		
	Personal earnings					
	Job security					
		Job satisfaction			Satisfaction with job situation	
Education	Educational attainment	Population by educational attainment level	Share of labour force with at least secondary education	Educational attainment / inclusion (ISCED-levels)	highest level of education	
	Years in education					
	Students' skills					
Environment	Air pollution	Urban population exposure to air pollution by particulate matter	Luftverschmutzung		Satisfaction with air quality	
	Water Quality					
		Satisfaction with living environment			Satisfaction with noise level	
Civic engagement	Voter turnout	Voter turnout in EU parliamentary elections	Air pollution		Satisfaction with cleanliness	
	Consultation on rule-making					
		Trust in the legal system				

Summary of indicators for various topic areas.

	OECD Better Life Index	ESS / Eurostat quality of life	OECD Regional Well-Being	Urban Audit	Perception Survey
data collected	structural- and survey data	structural- and survey data	structural- and survey data	structural data	survey data
Topic areas with indicators	Community	Social support network	Share of people who have someone to rely on in case of need		
			Satisfaction with personal relationships		
					Satisfaction with integration
					Trust in fellow citizens
Life satisfaction	Life satisfaction	Overall life satisfaction			Satisfaction with life in general / place where people live
					Satisfaction with life in ...
					Prediction life satisfaction
Time use	Employees working long hours	Average weekly working hours			
	Time devoted to leisure and personal care	Satisfaction with time use			
Access to services			Households Broadband access		
Transportation				Journey to work (means of transport, duration, distance), commuters, taxi & public transport costs	Satisfaction with public transport
Demography				Population by age, sex, nationality; households	
Culture and Recreation				Theatres, museums, libraries, swimming pools; overnight stays, number of beds	Satisfaction with cultural facilities

Summary of indicators for various topic areas – continued.

A few examples illustrate whether the concepts mentioned above can be applied to the city level with data from the Urban Audit database. For instance, the OECD Better Life Index for housing uses three indicators.

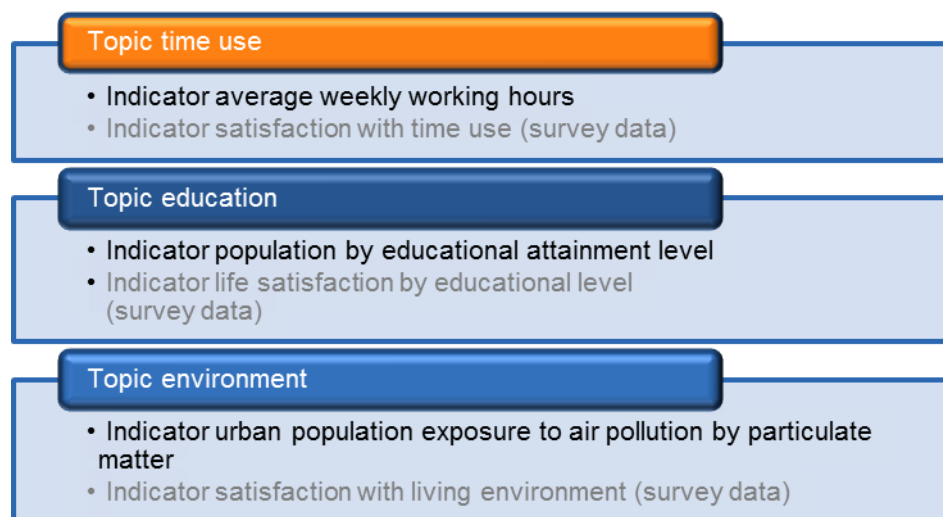
Index Housing

- Indicator **Housing expenditure**: ratio of housing costs on gross adjusted disposable income of the households
- Indicator **dwellings with basic facilities** (percentage of people with indoor flushing toilets in their home)
- Indicator **Rooms per person**: Average number of rooms shared per person in a dwelling

OECD Better Life Index “housing”

In calculating housing costs, the OECD takes into account such information as the cost of rent, water, heating, electricity, gas and amenities. The latter three data points are not available in the Urban Audit and cannot be derived from other indicators. Information on the rental costs²¹ is available, as well as information on household income²², though not in adjusted form. The Urban Audit also contains data on the water price and consumption²³. The second indicator is queried similarly by the EU for the Urban Audit²⁴, although no corresponding data is available to the German cities. The EU no longer queries the variable “overcrowded households”²⁵; instead, the database offers information relating to the number of persons per housing unit and living space²⁶.

The topic areas of time use, education and environment from the quality of life approach of Eurostat are examined in the following:



ESS / Eurostat quality of life: selected topic areas and indicators

As seen in the first topical summary of the concepts, the Urban Audit contains no data on time use – not even supplementary survey data from the Quality of Life Survey. The indicator life satisfaction as a function of educational level, however, could be calculated from these survey data – however, only around one tenth of the cities would have this. This is also true for the satisfaction indicator from the environment topic area. The Urban

²¹ SA1049V: Annual rent for a housing unit per m².

²² EC3039V: Available net annual income (median) of private households – median, EC3040V: Avg. net annual income of private households.

²³ EN3010V: Price of a m³ of domestic water - Euro, EN3003V: Total use of water - m³; available only approx. every four years.

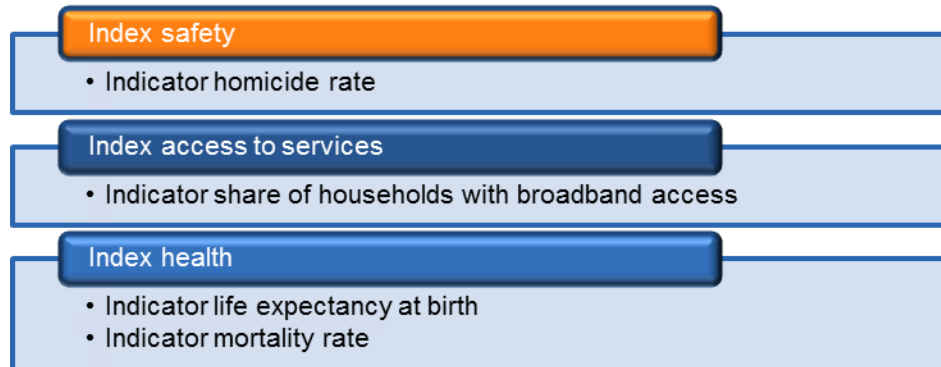
²⁴ SA1018V: Dwellings lacking basic amenities.

²⁵ SA1046V: Overcrowded households (> 1 person per dwelling room).

²⁶ SA1019V: Persons per occupied dwelling, SA1022V living space per pers. (m²).

Audit contains data on educational level²⁷ and air pollution²⁸; the latter are collected centrally by the EU.

The indices safety, access to services and health of the OECD Regional Wellbeing concept are considered; each one is made up of just one to two indicators:



OECD Regional Well-Being: selected indices and their indicators

The Urban Audit also contains an indicator for the safety aspect, which is operationalised in only one dimension here²⁹. Information on household internet access, as used by the OECD for the index “access to services” used to be contained in the domain IT of the database (see above) but is no longer queried for the Urban Audit. For the next index, “health”, the OECD uses the mortality rate and the average life expectancy at birth as standard indicators. The Urban Audit uses the mortality rate along with other indicators³⁰, but has no information respecting life expectancy.

Overview Europe 2020

Finally, the indicator sets for measuring target attainment of the Europe 2020 strategy³¹ and the characteristic catalogue of the Urban Audit database are compared. Even though some indicators are admittedly not useful for the city scale, cities in some cases might well be interested in learning how they stand with respect to these national targets.³²

²⁷ Variable range TE2xxxV (educational level).

²⁸ Variable range EN2xxxV (air quality and noise).

²⁹ SA3005V: reported murders and violent deaths.

³⁰ SA2016V-2021V: total deaths by sex and age; SA2004V infant mortality.

³¹ Cf. ec.europa.eu/europe2020/index_en.htm.

³² Cf. also: Dr. Susanne Schnorr-Bäcker und Alexandra Muth (2014): *Europe 2020 and the regional dimensions – observations from Germany*. Talk presented at the Eurostat Working Party on regional, urban and rural statistics on 21/10/2014 in Luxemburg (www.staedtestatistik.de/fileadmin/urban-audit/pdf/4_2_Europe_2020_regional_dimensions__observations_from_Germany__EU_WP_Regional_8Okt_14_fin_SB_AM.pdf) and ESPON (2013): *The role of cities in the EU2020 strategy: Key drivers and positioning in a European comparison* (www.espon-usespon.eu/dane/web_articles_files/685/supportmaterials_en.pdf).

Europa 2020 (National level, 28 EU countries)		Urban Audit (City level, ~ 900 european cities)	
Headline targets	Headline Indicators	Indicators	Topic area
Employment	Employment rate, total (% of the population aged 20-64)	Net activity rate residents aged 15-64 (EC1005I)	Economic aspects (EC)
Fighting poverty and social exclusion	People at risk of poverty or social exclusion (Mill.) ¹	Persons at risk of poverty or social exclusion (EC3067V) ³	
	People living in households with very low work intensity (% of population) ²	Persons living in households with very low work intensity (EC3064V)	
	People at risk of poverty after social transfers (% of population) ²	Persons at risk of poverty after social transfers (EC3065V)	
	Severely materially deprived people ²	Severely materially deprived persons (EC3066V) ³	
R&D	Gross domestic expenditure on R&D (% of GDP)		
Climate change and energy sustainability	Greenhouse gas emissions (index 1990=100)		Environmental aspects (EN)
	Share of renewable energy in gross final energy consumption (%)		
	Primary energy consumption (Million tonnes of oil equivalent)		
Education	Early leavers from education & training, total (% of population aged 18-24)	Early leavers from education and training (TE1039V)	Training and Education (TE)
	Tertiary educational attainment, total (% of population aged 30-34)	Persons (aged 25-64) with ISCED level 5 or 6 as the highest level of education (TE2031V)	

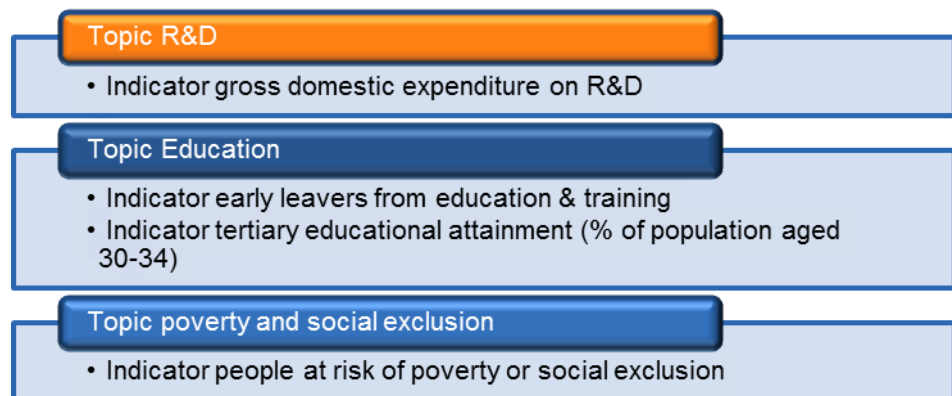
¹ People at risk of poverty or social exclusion are in at least one of the following three conditions: at-risk-of-poverty after social transfers (income poverty), severely materially deprived or living in a household with very low work intensity. Persons are only counted once even if they are present in several sub-indicators.

² Subindicator of headline indicator "People at risk of poverty or social exclusion".

³ Demanded for by the EU, yet no data available for german cities.

Comparison of core goals and leading indicators of the Europe 2020 strategy with topic areas and indicators of the Urban Audit database

A few of the indices are examined here as examples similar to the concepts for quality of life above. This article uses those relating to research and development (R&D), education and poverty and social exclusion.



Europe 2020 strategy: selected indices and their indicators

The indicator gross domestic expenditures for research and development, though certainly useful on the national level, is not available for the city level and not applicable in this form. The Europe 2020 index “education” uses two indicators, whereby the Urban Audit data on early school leavers is only available for 2011, and only for the administratively independent cities. Information on population with higher-education degrees, however, is available in the database, although not in this narrowly

defined age group. Data on persons at risk of poverty and social exclusion is queried by the EU for the Urban Audit, but is not available to the German cities.

As this article shows, the Urban Audit database contains numerous suitable characteristics that permit both the assessment of quality of life and the indicator-based strategic ranking of cities with respect to one another³³ or compared to other levels. A (further) expansion of topics would certainly enhance the value, particularly in the area of civic engagement. Expansion of the (coordinated) survey activity respecting quality of life in cities would enable the inclusion of valuable supplementary data for even more cities.

³³ Cf. also Makowsky, Oliver (2013): *Städtevergleiche als Beitrag zur kennzahlenbasierten strategischen Steuerung*. Vortrag im Rahmen des Urban Audit Workshops am 12.11.2013 in Frankfurt am Main (www.staedtestatistik.de/fileadmin/urban-audit/OM13_UrbanAudit_Frankfurt_Makowsky.pdf).

2 Index formation and comparison groups – theory and practice

The comparison of the individual concepts for measuring quality of life and the catalogue of characteristics of the Urban Audit database (cf. the first article in this chapter) shows which further characteristics could round out this database. At the same time, the comparison illustrates that the Urban Audit takes characteristics into account that are not considered in the other concepts. One possible reason for this surely has to do with the different observation scale. For example, the Urban Audit offers interesting characteristics from the areas of transportation and leisure time that are certainly more relevant to the city level than the regional or national levels. This article will examine these two areas in greater detail, using the basics of index formation and proposals for a useful compilation of cities into comparison groups, which are briefly presented in the first part of this article.

Index formation

The formation of a status index is the most useful starting point for this report³⁴. Such an index aggregates a variety of indicators to an overall indicator or statement for every statistical unit of the universe, e.g. for all university cities. Due to often different units of measurement and scattering, it is in many cases useful to first standardise the data to make the empirical values of the individual indicators assessable and mutually comparable on a numerical basis. For this purpose, a z-transformation is performed for every individual value of the characteristics. This step by itself enables satisfactory interpretation of the z-values for each individual indicator across all statistical units under consideration. To enable the values for each characteristic to be compiled to a status sum, it may be necessary to invert the sign of individual characteristics. For example, if an index is to include a distance measured in kilometres and a price of a monthly pass measured in euros, comparison on the same scale is possible immediately after transformation. However, if a long distance is to be interpreted as positive but a high price as negative, the sign of the z-value for the

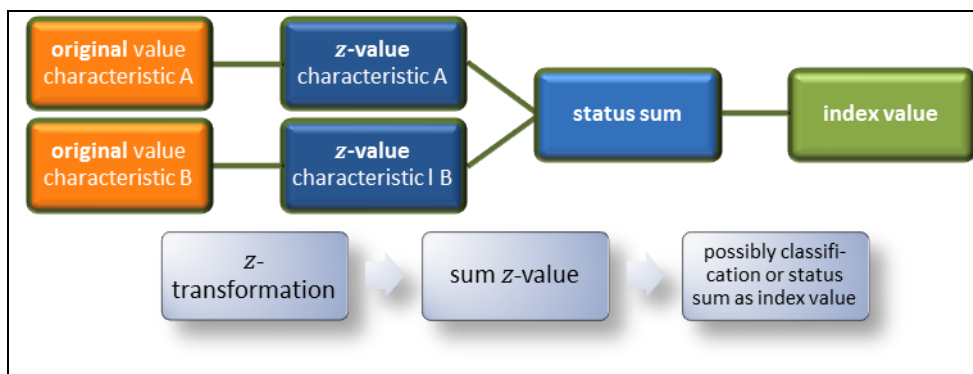
Basis for indexing: the z-transformation

Status sum = $\sum z_i$

³⁴ The term “status” is used here because this report examines the status of a characteristic in the year under consideration and not the dynamic over a time series. Cf. respecting this and the following procedure also www.hamburg.de/sozialmonitoring, particularly Pohl, Thomas, Jörg Pohlen and Achim Selk (2010): *Pilotbericht „Sozialmonitoring im Rahmenprogramm Integrierte Stadtteilentwicklung (RISE)“*. Hamburg.

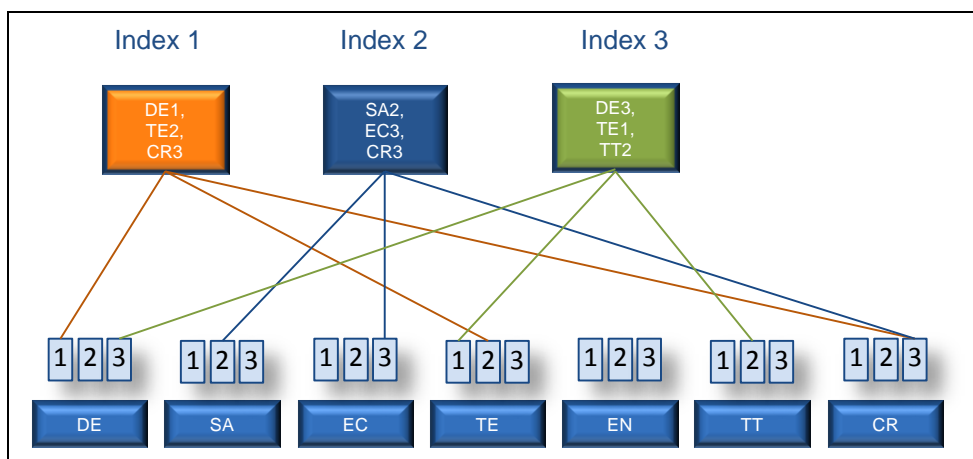
indicator “price of a monthly pass” must be correspondingly inverted prior to summing.

The status sums can then be used directly as index values. Alternatively, the status sums can also be classified across all status sums by means of the standard deviation (this procedure is applied in the following). An index is thus a topic field that is described in greater detail using various predefined indicators whose nature has previously been standardised and, where appropriate, quantified. The key is a selection of indicators that is well founded with respect to the universe and the classification for a valuation. The following illustration schematically represents the procedure for index formation with two indicators (characteristic A and characteristic B) for a statistical unit:



Procedure for determining an index value for a statistical unit

When this procedure is applied to the topic areas from the Urban Audit presented in the previous article, the result is a broad range of conceivable indices that can be created by combining indicators from one or more topic areas. The diagram below illustrates this process schematically. This article concludes with two practical examples.



Example for creation of own indices. The seven Urban Audit domains are given in the bottom row, identified by their abbreviations. Three characteristics are selected as the indicators for each index.

The base data for calculating indicators, and previously calculated indicators, can be easily accessed for own use in the **Urban Audit-information portal**³⁵.

Comparison groups of cities

In addition to a rational selection of data and, where appropriate, aggregation into one or more indices, the selection of a suitable comparison group, i.e. the selection of the statistical units, is decisive for the analysis. The inclusion of all 125 cities in the Urban Audit can be useful, but not necessarily so. For this purpose, a small selection of geographical, functional and dynamic³⁶ categorisations was included in the **Structural Data Atlas**³⁷, and the existing selection expanded.

Filter options for differentiated representation of data for the cities in the Structural Data Atlas (left) and

User manual for the Structural Data Atlas (right)

<ul style="list-style-type: none"> ➤ by federal state ➤ by capitals of federal states ➤ by population class ➤ by citytype ➤ by participation in the Urban Audit ➤ by growth or decline ➤ by city type as defined by the BBSR 2012 ➤ by differentiated city type as defined by the BBSR 2012 ➤ by university cities ➤ by cities with or without an art / music college ➤ by cities with or without an University of Applied Sciences ➤ by cities with or without a college ➤ by cities with or without an UNESCO world heritage site ➤ by functional level ➤ by belonging to a district 	
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The **help file**³⁸ of the Structural Data Atlas describes the filter options and details on the respective categorisation possibilities. In addition to these default categorisation options, users can still compile any cities into groups. This is also explained in more detail in the help file³⁹.

³⁵ Urban Audit Information portal: www.duva-server.de/UrbanAudit/.
 Additionally, Eurostat as the data-collecting entity maintains a broad offering of Urban Audit data. In addition to the data collected on core cities and urban regions, the offering also includes indicators on the various territorial levels and the results of the perception survey. The European data offering of over 300 characteristics for more than 800 European cities with their interlocking zones, the Functional Urban Areas (formerly LUZ), is contained in the Eurostat urban database (ec.europa.eu/eurostat/data/database).

³⁶ Cf. Heineberg, Hans: *Stadtgeographie*. Paderborn: Schöningh 2006, S. 25ff.

³⁷ Cf. apps.mannheim.de/statistikatlas/ua/strukturdatenatlas/en/index.html.

³⁸ Cf. apps.mannheim.de/statistikatlas/ua/strukturdatenatlas/en/pdf/User%20manual%20for%20the%20Urban%20Audit%20Structural%20Data%20Atlas%20.pdf.

³⁹ Cf. also Bachmann, Günther (2014): *Wissenschaftsstädte in Europa*. Talk presented at the Urban Audit-Workshop on 12/11/2013 in Frankfurt am Main (www.staedtestatistik.de/fileadmin/urban-audit/GB13_UrbanAudit_Frankfurt_Bachmann.pdf) and Rheinisch-Westfälisches Institut für Wirtschaftsforschung (ed.) (2010): *Second State of European Cities Report*. (ec.europa.eu/)

The Urban Audit data on the city and Larger Urban Zones (LUZ) level can also be used to generate an updated categorisation of cities in the ECOTEC city types⁴⁰ - certainly an exciting undertaking for the future that was not affordable here.

The methodological insights described above are applied to the areas of transportation and leisure time of the Urban Audit database in the following.

Index “traffic situation”

Means of transportation, particularly the car, contribute decisively to the individual mobility of a society. Mobility can make life easier – everyday activities can be planned more efficiently, and it becomes relatively easy to overcome great distances. On the other hand, mobility entails an increased volume of traffic, which can impair the quality of life of an (urban) society.

To make such a possible impairment measurable even without survey data, the ratio of personal motor vehicle use to that of eco-mobility (walking, cycling, public transport) for traveling to work is considered. Pedestrians and cyclists do not impact the environment with exhaust gases and noise. Although public transport generally produces an increased noise level, it transports a large number of passengers at once. To measure the traffic volume, an indicator was selected that quantifies how many people commute into or out of the city, and are thus part of the traffic. As commuter traffic is responsible for the times of day with the greatest traffic volume, commuters, whether inbound or outbound, provide a reliable estimation of this additional load. In order to obtain an estimation of the share, these are quantified as a proportion of the potential commuters, working persons. But time is also an important factor, in addition to the potentially negative factors of noise and mass. It is not possible to travel to one's destination expeditiously in traffic jams and typical urban stop-and-go traffic. The Urban Audit contains information on the distance to work in the form of both average distance in kilometres and average duration in minutes. This information can be used to compute an indicator for the average time required per kilometre,

Selected indicators

[regional_policy/sources/docgener/studies/pdf/urban/stateofcities_2010.pdf](#)) on forming own comparison groups.

⁴⁰ Cf. Frankfurter Statistische Berichte 4: *Das Urban Audit Projekt der Europäischen Union: Rahmenbedingungen europäischer Städtepolitik und erste Ergebnisse auf Grundlage der Lissabon-Strategie*. Frankfurt 2007 and ECOTEC Research and Consulting Ltd (heute Ecorys UK), in Kooperation mit NordRegio and Eurofutures: *The State of the European Cities*. Brüssel/Luxemburg 2007.

which provides an estimation as to whether commuter traffic travels relatively rapidly or slowly. As no information is available regarding the various speed limits on the streets, this indicator is only suitable for simplified measurements. To obtain a further indicator for “mass”, the number of registered personal motor vehicles per thousand inhabitants in the respective city is specified. All indicators used here can be easily taken from the **Urban Audit information portal**⁴¹.

Own product:
Index traffic situation
and corresponding
indicators

Index traffic situation

- Indicator ratio car & motorcycle as means of transport compared to environmental modes of transport for journey to work
- Indicator commuters as share of total working population
- Indicator average duration per km for journey to work
- Indicator registered cars & motorcycles per 1,000 population

Selected typing

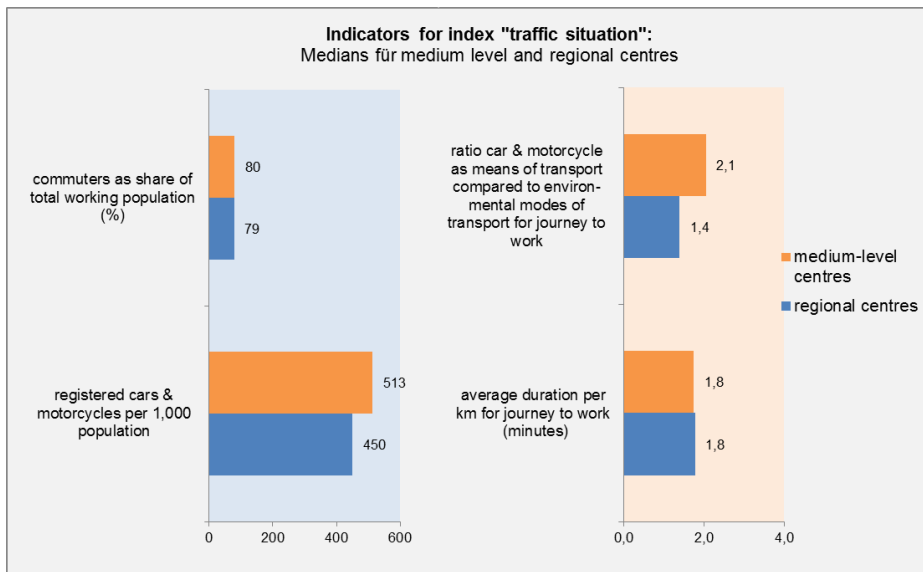
For analysis purposes, the cities were grouped according to their functional level as centres to permit comparison of the 103 regional centres with the 22 medium-level centres. The assumption is that both regional and medium-level centres are exposed to a greater traffic burden with relation to commuter traffic: the regional centres are the commuter destination on account of their function, and the medium-level centres show a greater motor vehicle density, likely on account of the distance to the next centre and the associated need for a flexible means of transport.

Results

As an initial overview, the medians of the indicators reveal which indicators show greater and smaller differences between the comparison groups. The median is particularly suitable because some indicators contained outliers. As may be seen in the illustration below, two of the indicators diverge considerably from the others. When looking at the medians of the distributions, the medium-level centres show a ratio of 513 personal motor vehicles per thousand inhabitants, 63 more than in a regional centre. A clear difference is apparent in the use of cars and motorcycles vs. public transport, cycling and walking (eco-mobility) as well: personal motor vehicles are used only 1.4 times more frequently than eco-mobility to commute to work in regional centres. In the medium-level centres, the corresponding figure is 2.1 times more often. By contrast, the comparison groups scarcely differ with respect to the other two indicators: around 80 percent of all employed persons in both types of centres are commuters, and in

⁴¹ www.duva-server.de/UrbanAudit/.

both groups, commuters need 1.8 minutes per kilometre to travel to work.



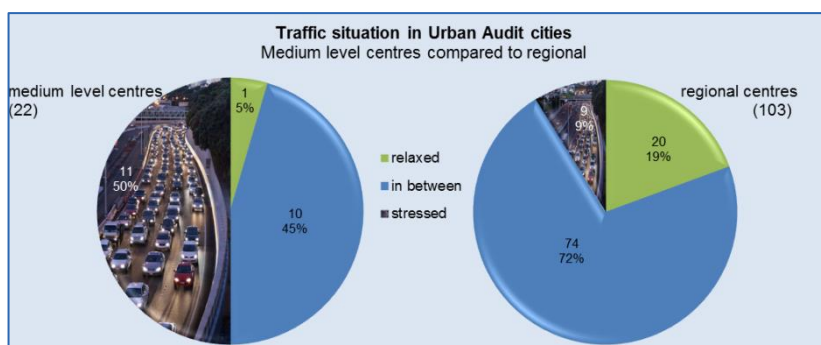
Indicators of the Index "traffic situation": medians for medium-level and regional centres

The table below shows the makeup of the classes used here. The average status sum for medium-level centres is 1.8, as compared to 0.4 for the regional centres. Although these averages fall in the medium range, a certain difference between the functional levels is still apparent.

Index class	Value range SD	Value range status sum
relaxed	> +1 SD	> +2,0
in between	-1 SD to +1 SD	-2,0 to +2,0
stressed	< -1 SD	< -2,0

The index classes of the index "traffic situation" and the corresponding value ranges in the form of standard deviations (SD) and status sums

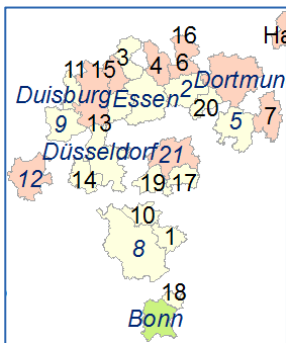
The next diagram now clearly shows that the medium-level centres report "stressed" conditions five times as often as regional centres and "relaxed" four times less. While half of all medium-level centres were classed as "stressed", this was the case for only one tenth of the regional centres. Additionally, 19 % of the regional centres were found to have a "relaxed" traffic situation, whereas for the medium-level centres this was true for only one case which accounted for five percent of the entire group.



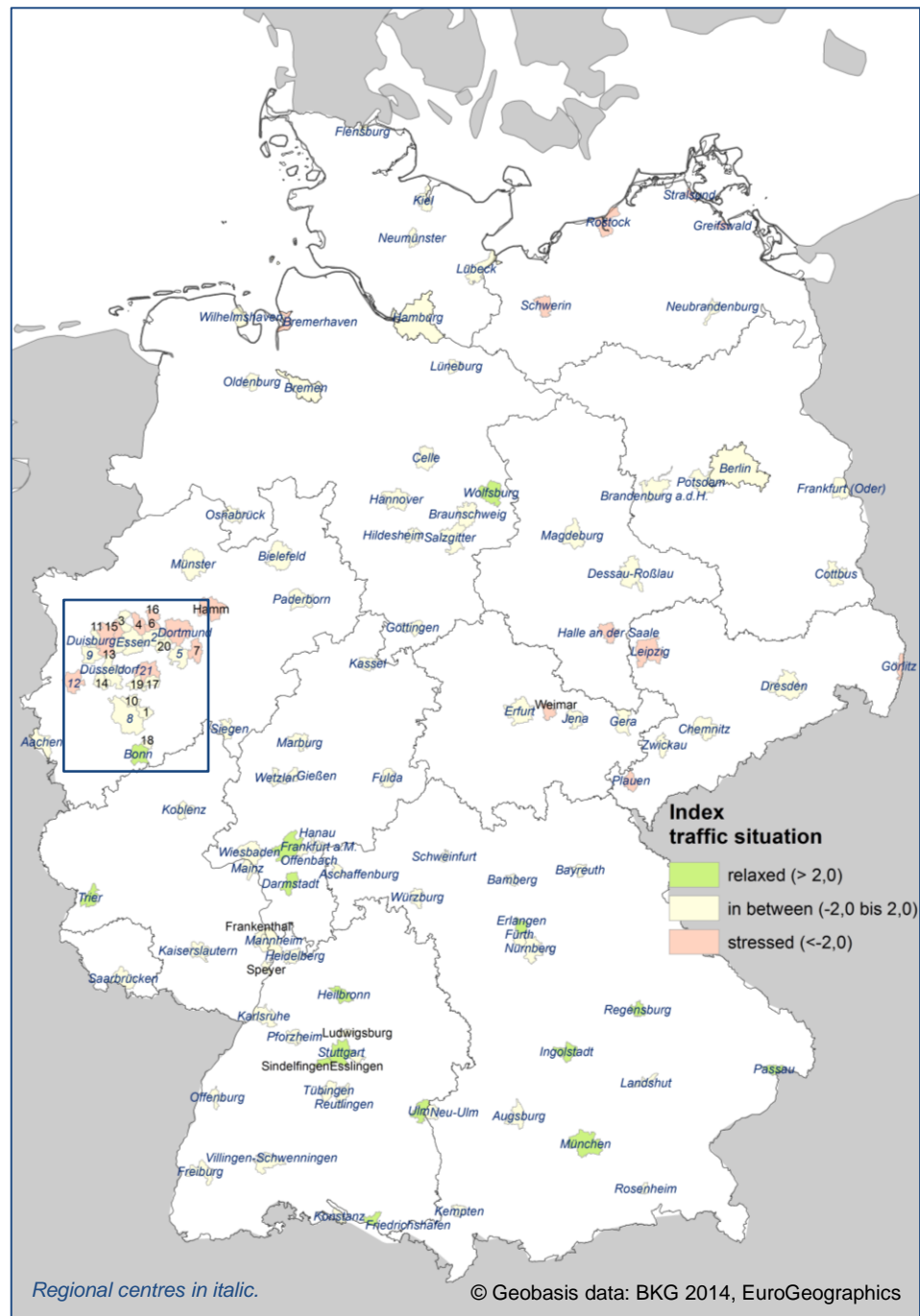
Traffic situation of Urban Audit cities: medium-level and regional centres in comparison (source of photo in graphic: www.flickr.com/photos/russellstreet/6810814107)

If all 125 cities are taken into account in class formation, the following picture obtains for the index “traffic situation”:

- 1 = Bergisch Gladbach
- 2 = Bochum
- 3 = Bottrop
- 4 = Gelsenkirchen
- 5 = Hagen
- 6 = Herne
- 7 = Iserlohn
- 8 = Köln
- 9 = Krefeld
- 10 = Leverkusen
- 11 = Moers
- 12 = Mönchengladbach
- 13 = Mülheim a. d. Ruhr
- 14 = Neuss
- 15 = Oberhausen
- 16 = Recklinghausen
- 17 = Remscheid
- 18 = Sankt Augustin
- 19 = Solingen
- 20 = Witten
- 21 = Wuppertal



Cartographic representation of all 125 Urban Audit cities, assigned by status sum points to the classes of the index “traffic situation”.



Index “leisure opportunities”

For an index referred to here as “leisure opportunities”, the data and indicators from mobility costs from the transportation domain (TT) are combined with those relating to cultural amenities in the domain culture and recreation (CR). With respect to the cultural amenities, the aspects of both availability (cinema seats per 1,000 inhabitants) and utilisation (museum/theatre visits per inhabitant) are covered. As a simplification, the price for one taxi trip and the

Selected indicators

costs for a public transportation monthly pass are considered as the cost of service provision.

Index leisure opportunities

- Indicator cinema seats per 1,000 population
- Indicator costs for a 5km taxi trip
- Indicator costs for a monthly public transportation ticket (central 5-10 km-zone)
- Indicator average museum visits per inhabitant per year
- Indicator average theatre visits per inhabitant per year

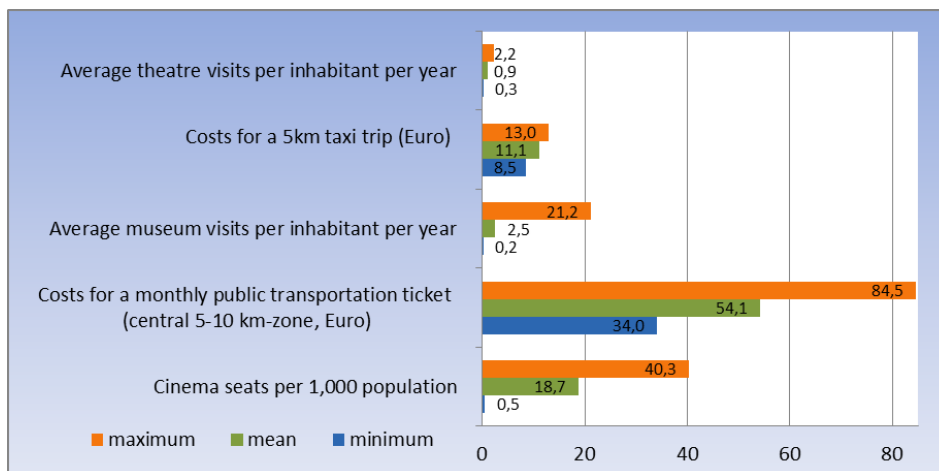
Own product: index “leisure opportunities” and corresponding indicators

Selected typing

The 71 Urban Audit university cities were selected for the typing of this index. Here, initial comparisons revealed that both the values for the provision as well as the utilisation of the amenities under consideration were consistently higher than for cities without a university. Even though this is certainly related to the fact that the majority of university cities are classified as “major cities” according to the BBSR typology, an examination of this group of cities appears interesting.

Firstly, the indicators in the following diagram are represented including their mean, minimum and maximum values. Here, it is striking that for the indicators concerning museum visits, the public transport monthly pass and cinema seats, the deviations with respect to the mean are sometimes extensive in both directions, so that the mean can be quite misleading. Particularly the prices for a combined monthly public transport pass vary greatly. Only the indicators relating to the taxi price and the annual theatre visits vary just slightly from the mean.

Results



Index “leisure opportunities”: key figures of the five indicators in the 71 Urban Audit-university cities

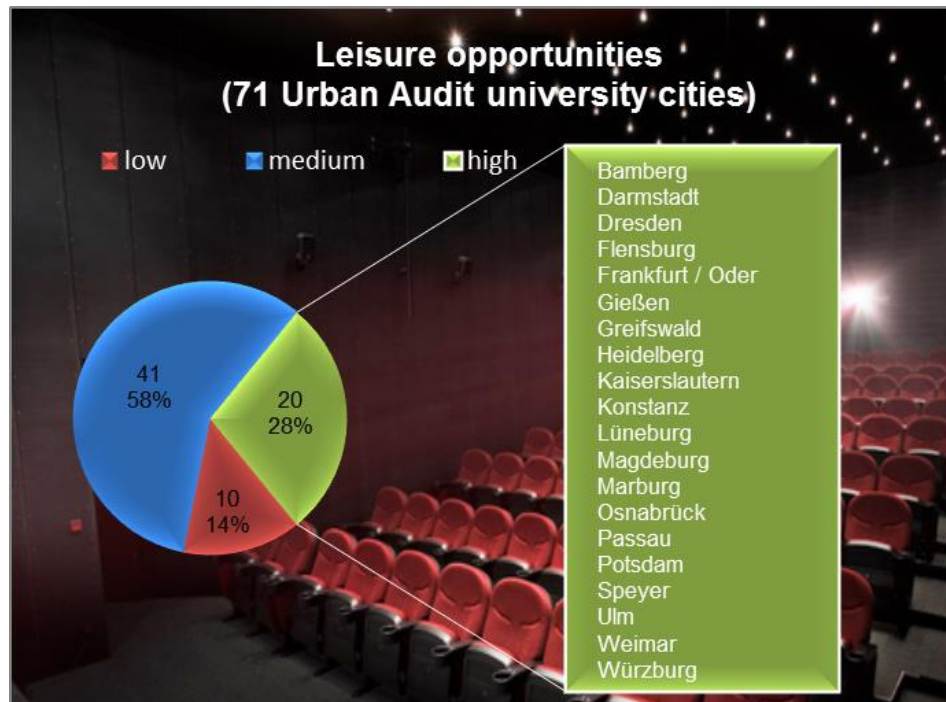
Once a z-value was calculated for every value of the indicators, the status sums could be determined for each of the 71 university cities. For this index, the standard deviation (SD) across all status

sums is 2.4. On the basis of the standard deviation, the cities were assigned to the classes “high”, “medium” and “low”:

Index classes of the index “leisure opportunities” and the corresponding value ranges in the form of standard deviations (SD) and status sums

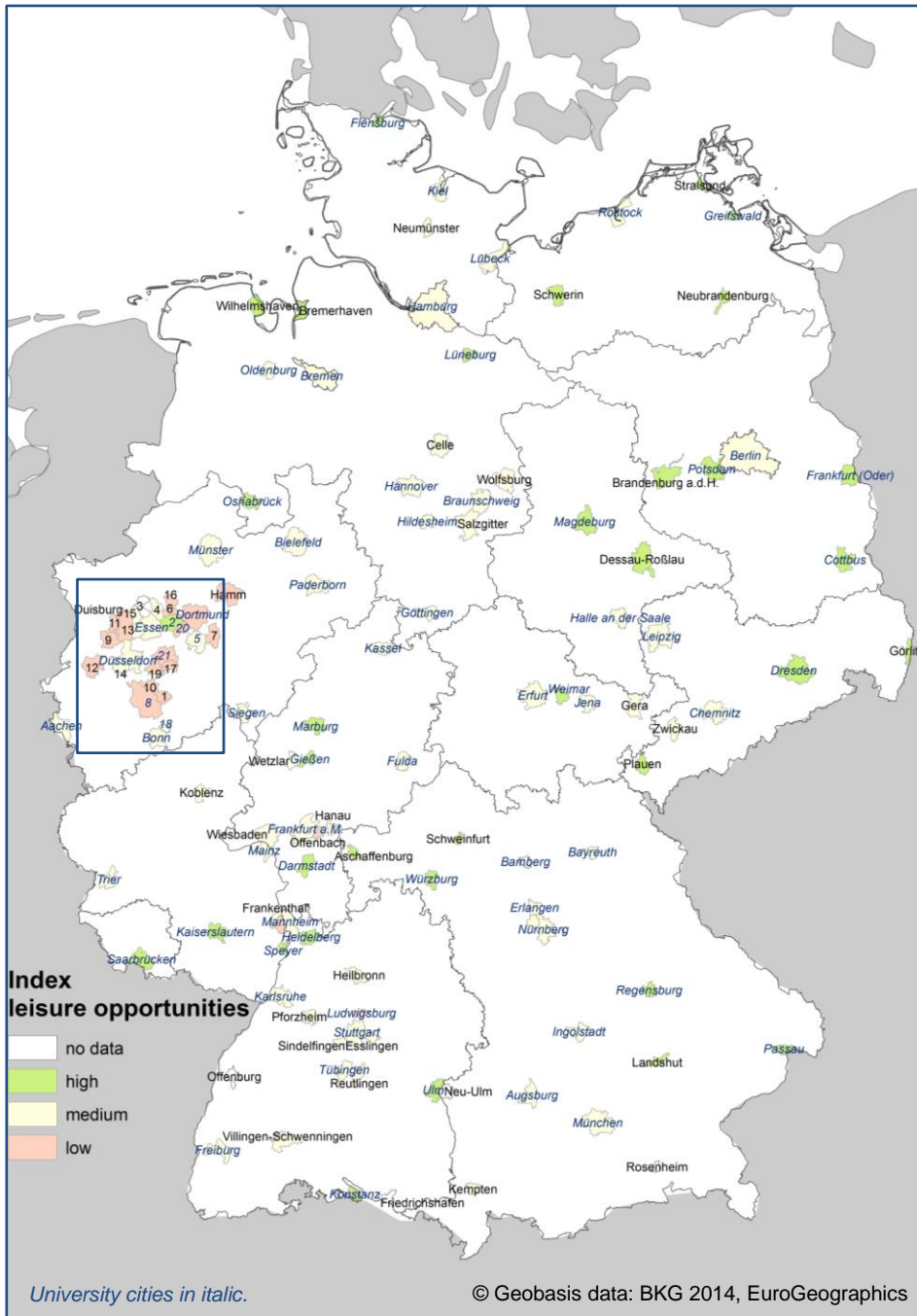
Index class	Value range SD	Value range Status sum
high	> +0,5 SD	> +1,18
medium	-1 SD to +0,5 SD	-2,4 to +1,18
low	< -1 SD	< -2,4

According to this classification, 20 university cities were assigned to the class “high”, which at 28 percent is equivalent to almost one third. 41 more cities are in the class “medium” and only ten (14 percent) are classed “low”:

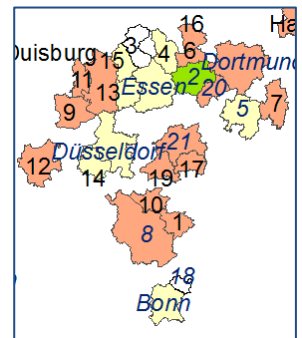


Leisure opportunities in the 71 UA university cities; source of background photo: www.kino-eichstaett.de/infos01.php

If we include all 125 cities in class formation, the index “leisure opportunities” gives us the following picture:



- 1 = Bergisch Gladbach
- 2 = Bochum
- 3 = Bottrop
- 4 = Gelsenkirchen
- 5 = Hagen
- 6 = Herne
- 7 = Iserlohn
- 8 = Köln
- 9 = Krefeld
- 10 = Leverkusen
- 11 = Moers
- 12 = Mönchengladbach
- 13 = Mülheim a. d. Ruhr
- 14 = Neuss
- 15 = Oberhausen
- 16 = Recklinghausen
- 17 = Remscheid
- 18 = Sankt Augustin
- 19 = Solingen
- 20 = Witten
- 21 = Wuppertal



Cartographic representation of all 125 Urban Audit cities with their assignment by status sum points to the index “leisure opportunities”.

III Survey data – quality of life from the citizens’ perspective

Chapter overview

The two articles in this chapter focus on the perception surveys of quality of life in European cities from the citizens’ perspective which complement the Urban Audit structural data base.

Coordinated quality of life survey

To begin, Ulrike Schönfeld-Nastoll and Ralf Gutfleisch from the surveys working group of the Association of German Municipal Statisticians (VDSt AG Umfragen) explain the history of the European survey and the reasons for the coordinated German parallel survey. This article also shows the breadth of topics covered by the question catalogue.

Quality of life by cities

In her article, Lena Willert describes the practical use of the results of the coordinated survey for the cities of Nuremberg and Fürth. The added value takes the form in particular in the comparability with other cities, which is why the data also can also be used effectively to supplement own surveys.

Reports of other cities

Publications of further cities involved in the 2012 survey cycle are cited here as additional examples:⁴²

State capital Düsseldorf (2013): *Koordinierte Bürgerbefragung zur Lebensqualität 2012/2013. Düsseldorf im deutschen Städtevergleich.*

State capital Stuttgart (2015): *Stuttgart im europäischen Städtevergleich.* Statistik und Informationsmanagement, Monatsheft 1/2015.

State capital Wiesbaden (2013): *Inklusion im Wiesbadener Meinungsbild.* Wiesbadener Stadtanalysen.

City of Braunschweig (2013): *Braunschweig im Urteil seiner Bürgerinnen und Bürger.* Stadtforschung aktuell 11.2013.

City of Frankfurt a. M. (2015): *Urban Audit: Lebensqualität aus Frankfurter Bürgersicht.* Frankfurter Statistische Berichte 2015.

City of Freiburg im Breisgau (2014): *Urban Audit: Lebensqualität aus Bürgersicht 2013. Deutsche und europäische Städte im Vergleich.* Beiträge zur Statistik der Stadt Freiburg im Breisgau.

City of Koblenz (2013): *Dritte koordinierte Bürgerumfrage zur Lebensqualität in deutschen Städten 2012 – Ergebnisse aus Koblenzer Sicht.*

City of Mannheim (2014): *Urban Audit. Umfrage zur Lebensqualität aus Bürgersicht.* Statistische Berichte Mannheim 04/2014.

⁴² These and other materials on this topic may be found on the VDSt AG Umfragen website (www.staedtestatistik.de/806.html?&K=0&F=1%2520).

1 Coordinated Survey on Quality of Life from the citizens' perspective

by Ulrike Schönfeld-Nastoll und Ralf Gutfleisch

To complement the quantitative collection of objective structural data, the DG Regio has been conducting the European Survey of Quality of Life (ECQL) in European Cities (Perception survey every three years since 2004, with the most recent one being in 2015⁴³. Since 2006, the survey targets citizens in 75 cities in the European Union (EU-27) as well as in five cities in Turkey and Croatia. In each city, 500 randomly selected inhabitants are surveyed by telephone.

With aim of conducting their own coordinated survey, the German Urban Audit Cities Association and the Association of German Municipal Statisticians (VDSt) formed a working group⁴⁴ to participate in the second EU survey cycle 2006/2007. Since then, this cooperative project group has been responsible for the participation and organisation of German cities in the Coordinated Survey on Quality of Life.

In spring 2009, the VDSt published a comprehensive report of the first coordinated city survey from 2006 under the title "Lebensqualität aus Bürgersicht – deutsche Städte im Vergleich"⁴⁵. A further publication presenting the results from 2012 is currently in preparation and is scheduled to be released as a VDSt report at the end of 2015.

As in previous survey cycles, the data from the EU survey are shared with the DG Regio and the Coordinated Survey on Quality of Life of the German cities. This means that both the European cities and the seven additional German cities can participate. The current survey cycle covers a total of 95 European cities, 28 of them German.

In the Coordinated Survey, urban quality of life is queried on the basis of a variety of components. One key aspect here is satisfaction with the urban infrastructure and municipal service

VDSt AG Umfragen



Aspects of quality of life

⁴³ Cf. European Commission (2010): *Survey on perception of quality of life in 75 European cities* (ec.europa.eu/regional_policy/sources/docgener/studies/pdf/urban/survey2009_en.pdf) and European Commission (2013): *Quality of life in cities* (ec.europa.eu/regional_policy/sources/docgener/studies/pdf/urban/survey2013_en.pdf).

⁴⁴ VDSt AG Umfragen (www.staedtestatistik.de/768.html?&K=0&F=1%20%22).

⁴⁵ VDSt (2008) (ed.): *Lebensqualität aus Bürgersicht - deutsche Städte im Vergleich*. Frankfurt am Main (www.staedtestatistik.de/fileadmin/vdst/ag-lebensqualitaet/Materialien/Lebensqualitaet_2006/Lebensqualitaet_aus_Buergersicht.pdf); German only.

offerings. These include such important areas as transportation, schools, health care as well as the leisure segment with green space availability, sport opportunities, cultural amenities, etc. The personal assessment of respondents with reference to the labour market offerings, housing supply and environmental issues are also a part of the survey module, as are questions on the integration of migrants, responsive administration and responsible use of public resources. The satisfaction with living in the respective city, as well as questions on the respondents' own financial situation and subjective perception of safety are included in the personal assessment.

21 German cities participating in 2015

In this year's survey cycle, 21 German cities participated in the survey at around the time of the EU survey. As both the survey methods and the contents correspond in large parts to the surveys of 2006, 2009 and 2012, the evaluation of the current survey permits analysis of the changes over time compared to the past survey years in each of the participating cities. This chronological comparison enables these cities to track developments in the corresponding areas more precisely so as to develop concepts for improving citizens' quality of life where appropriate. This increases the value of the analyses for policymakers even further.

In addition to the European basic module on quality of life, the working group has developed optional supplementary modules on family-friendliness of cities, civic participation, active aging and inclusion, which can be additionally asked if the cities are interested. This survey concept can thus be individually configured for every city.

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Dr. Ralf Gutfleisch is department head in the Statistics and Elections office of the City of Frankfurt am Main and alternate Special Representative for Surveys (ralf.gutfleisch@stadt-frankfurt.de).

Even though the selection of participating German cities does not permit any generalisations on the totality of German cities, the broad range of different size classes, geographical locations and economic structures of the participating cities enable differentiated regional comparisons. The results of this city study provide important insights for the participating cities for identifying possible "sore spots". The city comparison highlights the strengths and weaknesses of a city, which can then be used to develop new approaches for in-depth analyses.

2 Environmental satisfaction in Nuremberg and Fürth

by Lena Willert

The citizens of the cities of Nuremberg and Fürth are largely satisfied with the environmental conditions in their cities. The environment of a city is reflected in the availability of green spaces and public parks. Naturally, pollution, noise and air quality also play an important role. Recreational space accounts for 5 % of land use in Nuremberg and 4 % in Fürth⁴⁶. These undeveloped urban green spaces serve primarily as recreational and social space. By comparison, traffic area accounts for 18 % in Nuremberg and 12 % in Fürth⁴⁷; this can give rise to degradations such as noise and air pollution in the city, which the inhabitants find disruptive. Using the Urban Audit data, this article explores how citizens of Fürth and Nuremberg view their cities compared to other cities.

Citizens' subjective opinions are important in determining how the citizens assess the quality of life of their city so that policymakers can arrive at conclusions for urban planning. Since 2004, the "perception of the quality of life" has been surveyed every three years in 79 cities of the European Union by means of the Perception Survey on Quality of Life in European Cities. Concurrently with the EU survey, 20 German cities participate in this survey, including Nuremberg and Fürth as of the last survey cycle in 2012. The surveys discussed here were conducted at the end of 2012 and largely agreed with the survey methods and contents of the EU (perception survey) and German cities (Coordinated Survey). As in 2006 and 2009, the third survey in 2012 was conducted via telephone by opinion polling institutes. In addition to topics such as labour market, schools, housing supply, subjective security, health care and cultural amenities, the survey also covers the areas of transportation, availability of green space and environmental issues. Questions on the integration of migrants and satisfaction with the administration and with living in the city are also included. Additionally, supplementary modules on

**Importance of
citizens' opinions**

⁴⁶ Cf. Stadt Nürnberg – Amt für Stadtforschung und Statistik für Nürnberg und Fürth (2013): *Statistisches Jahrbuch der Stadt Nürnberg 2013*. Nürnberg (www.nuernberg.de/imperia/md/statistik/dokumente/veroeffentlichungen/tabellenwerke/jahrbuch/2004_2025/jahrbuch_2013.pdf) and Stadt Nürnberg – Amt für Stadtforschung und Statistik für Nürnberg und Fürth (2014): *Statistisches Jahrbuch der Stadt Fürth 2013*. Nürnberg (www.nuernberg.de/imperia/md/statistik/dokumente/veroeffentlichungen/tabellenwerke/jahrbuch_fuerth/jahrbuch_fuerth_2013.pdf); both German only.

⁴⁷ Ibid.

Coordinated Survey

the family-friendliness of cities, citizen participation, active aging and inclusion can also be added to the German parallel survey.

The European survey cycle surveyed 55,362 persons in all, and covered the German cities of Berlin, Dortmund, Essen, Hamburg, Leipzig, Munich and Rostock. The Coordinated Survey of the 20 other German cities queried 13,717 persons by telephone. At least 500 citizens were interviewed for each city. The participating cities had the option of increasing this figure, so that e.g. 800 interviews were conducted for Nuremberg. In Fürth, the minimum number of respondents was surveyed. In a direct comparison of the population structure of the two cities (cf. Table 1), it is apparent that older people are slightly overrepresented and that households with children and couples are much more strongly represented than single-person households, although these make up half of all households in actuality.

Table 1: Demographic structure of the the sample for Nuremberg/Fürth compared to the respective total population

	Sample Nuremberg	City of Nuremberg ¹	Sample Fürth	City of Fürth ¹
Total	100 %	100 %	100 %	100 %
Male	48 %	49 %	48 %	49 %
Female	52 %	51 %	52 %	51 %
German	91 %	81 %	92 %	85 %
Non-German	9 %	19 %	8 %	15 %
Age brackets				
15 to 17 years	3 %	3 %	3 %	3 %
18 to 24 years	10 %	10 %	10 %	9 %
25 to 34 years	17 %	18 %	16 %	17 %
35 to 44 years	16 %	16 %	17 %	16 %
45 to 54 years	17 %	17 %	19 %	19 %
55 to 64 years	14 %	13 %	14 %	14 %
65 years and older	24 %	23 %	21 %	21 %
Mean (average age)	47,3	43,5	46,9	43,0
Household structure				
Single-person households	19 %	50 %	18 %	45 %
Households with child(ren)	43 %	17 %	45 %	20 %
Couples without children	33 %	28 %	32 %	30 %
Other households	5 %	5 %	6 %	5 %
Average household size (persons per household)	2,6	1,8	2,7	2,0

¹ Effective 31/12/2013

Samples compared to the overall population

The last three survey cycles were conducted with largely identical contents and thus permit not only a comparison with other cities but also a representation of the developments over time in Nuremberg and Fürth. Nuremberg has been a survey participant since 2006, while Fürth did not join until 2009.

The results now make it possible to determine how satisfied Nuremberg's and Fürth's residents are with the various environmental aspects including green spaces, public transport, cleanliness of the city, noise and air quality within the city

boundaries. This is also to be conducted in comparison to the average of all major German and European cities surveyed and indicate how satisfaction in Nuremberg and Fürth has developed since previous surveys. Finally, the question as to what influence the evaluation of environmental factors has on the general satisfaction with the respective city is examined.

The city comparison reveals how the citizens see their city's strengths and weaknesses and what the relative positions of Nuremberg and Fürth are here. The consistent survey across all cities enables them to be compared, even though differences in the population structure can impact the results.

Satisfaction with urban environmental aspects

The first question concerns the respondents' satisfaction with the various urban topics. For this purpose, the cities of Nuremberg and Fürth are compared with each other and with the overall result for all 27 German and the remaining European cities (cf. Fig. 1). Like the respondents in all cities surveyed, the selected citizens in Nuremberg and Fürth were asked for their subjective assessment of public spaces in the city, such as pedestrian malls and open-air markets. As of 2012, 83 % of Nuremberg residents were satisfied with the public spaces in the city, somewhat more than the residents of Fürth with their city (77 %), and slightly above the average for all German cities (81 %). Compared to 2009, satisfaction is virtually unchanged in Nuremberg and has declined slightly in Fürth.

Green spaces in the city are intended for recreation and are used accordingly. In Fürth, 87 % of the population is satisfied with that city's public parks and gardens, somewhat more than the Nuremberg respondents (77 %). They were also above the average for all participating German cities (83 %). Nuremberg's satisfaction with its public green spaces has increased since 2006, but is still below the average for all participating German cities, although close to the average for all participating European cities.

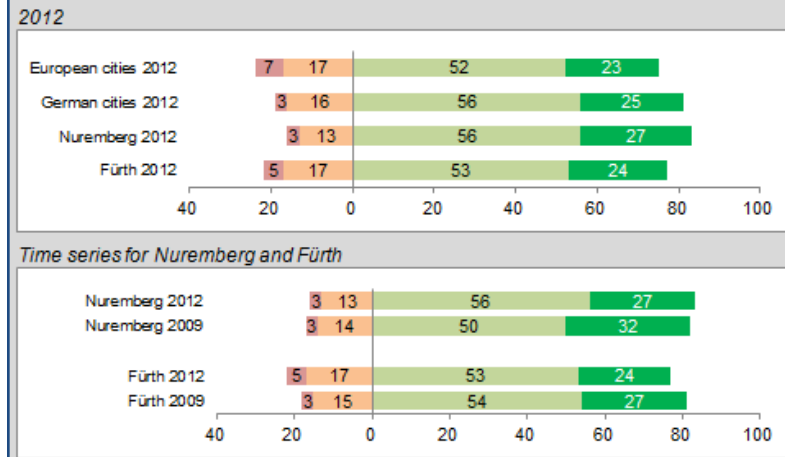
Satisfaction with urban environmental aspects

Fig. 1: Generally speaking, please tell me if you are very satisfied, rather satisfied, rather unsatisfied or not at all satisfied with each of the following issues in [CITY NAME]?

not at all satisfied rather unsatisfied rather satisfied very satisfied
(without "Don't know")

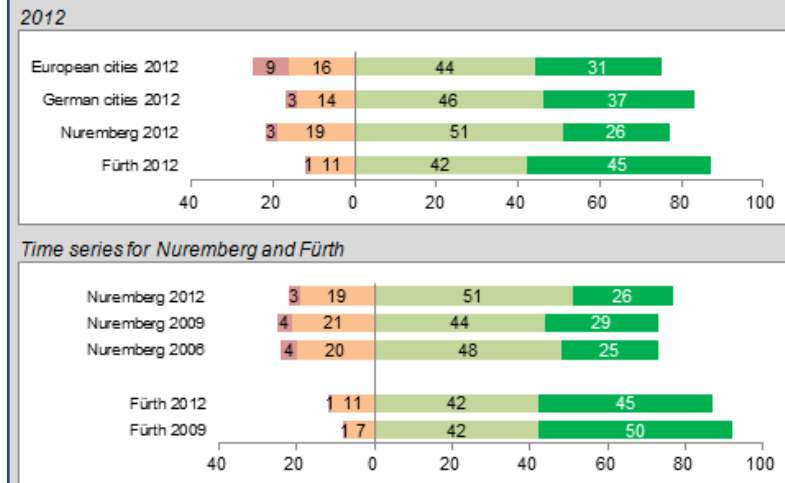
Public spaces

• Public spaces such as markets, squares, pedestrian areas. (Figures in per cent)



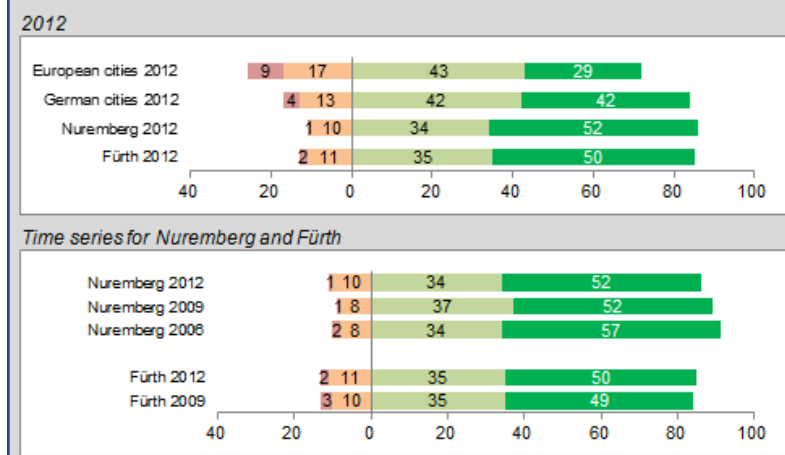
Green spaces

• Green spaces such as parks and gardens. (Figures in per cent)



Public transport

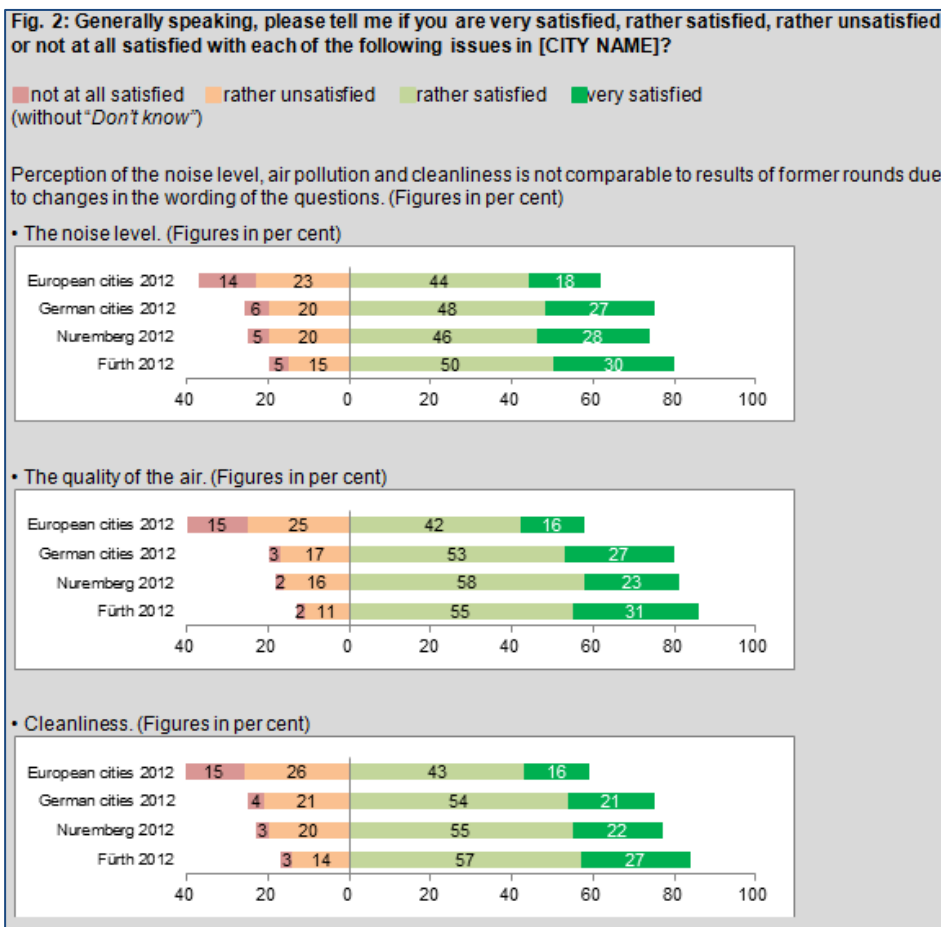
• Public transport, for example the bus, tram or metro. (Figures in per cent)



Public transportation is extremely important for relieving road congestion in a city. More frequent use of public transport can reduce traffic noise and improve air quality in the city. In both

Nuremberg (86 %) and Fürth (85 %), satisfaction exceeds both the German (84 %) and the European (72 %) average. However, satisfaction in Nuremberg declined consistently in the three surveys, while satisfaction in Fürth has remained virtually the same.

In all three environmental aspects (cf. Fig. 2), Fürth is ahead of Nuremberg in terms of its citizens' assessment, both cities lie above the other German cities – on average – and these in turn score significantly better than the other participating European cities together.



Noise

Air quality

Cleanliness

General statements on the city

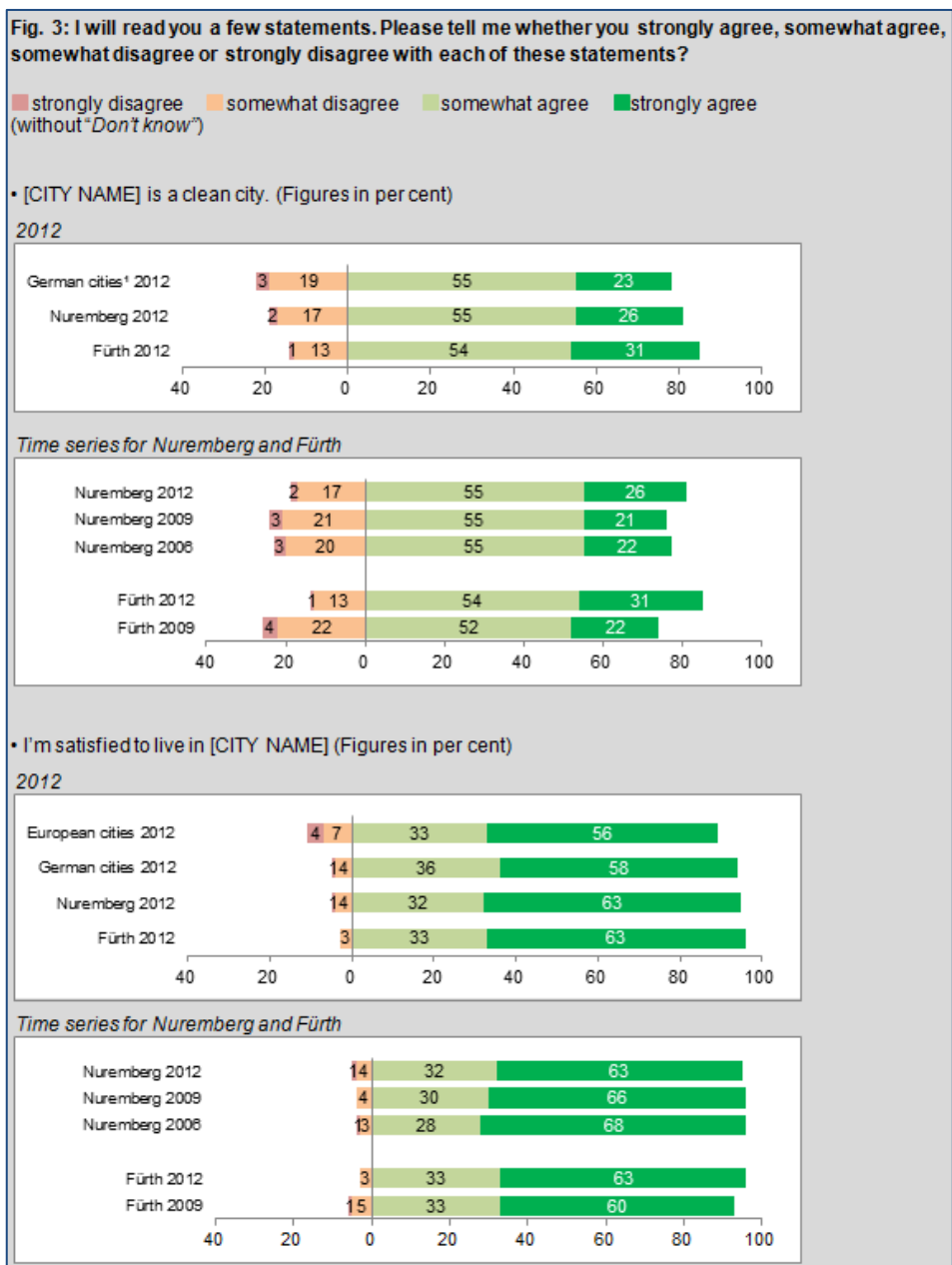
The second question of the survey aims to explore the extent to which the respondents agree or disagree with various statements (cf. Fig 3). For the statement "Nuremberg/Fürth is a clean city", the Fürth residents in particular expressed a high level of agreement (85 %). 31 % percent of respondents strongly agreed. Nuremberg also scores above average. Particularly Fürth, but Nuremberg as well, was rated above the other comparison cities in 2012. In the opinion of their citizens, both have improved significantly compared to 2009. Accordingly, a large proportion of the

General statements on the city

inhabitants of both Nuremberg and Fürth consider their city comparatively clean.

However, environmental aspects are only one part of life satisfaction. Certainly, the respondents were less satisfied with the cleanliness of their city than with their life there as a whole. This satisfaction with life in the city is quite high everywhere. In the German cities as in Nuremberg and Fürth, it is somewhat higher than the average of the other European cities. 63 % of the Fürth and Nuremberg populations strongly agree that they like living there.

Clean city

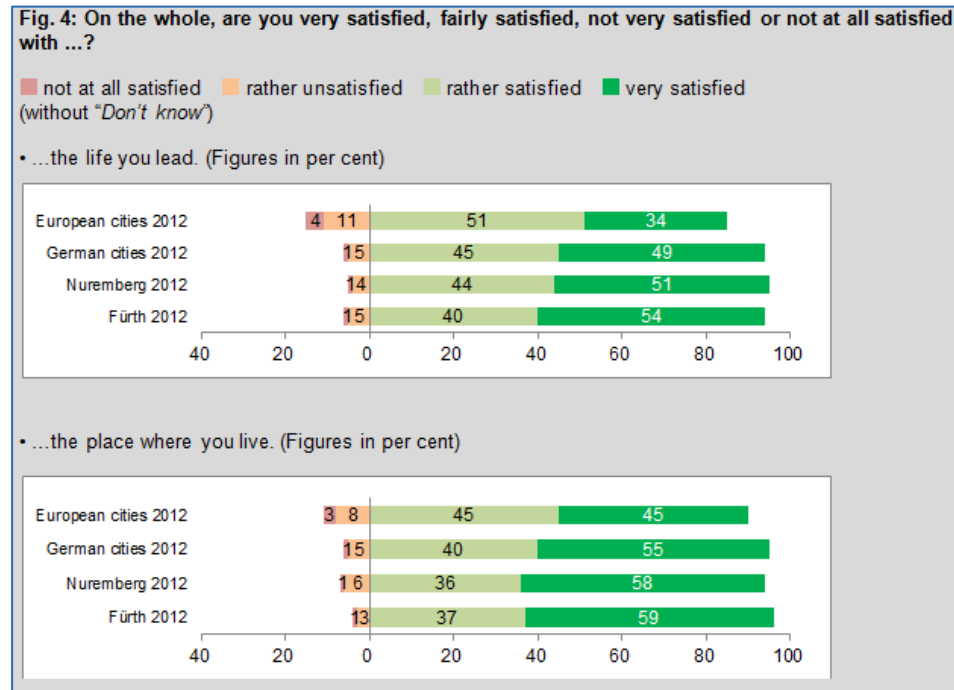


¹ Here only the 20 German cities of the supplementary survey.

General satisfaction

Whereas the previous two questions concern satisfaction with aspects of the city and life there, the third question focuses more generally on the respondents' satisfaction with their own lives (cf. Fig. 4). This is intended to show how respondents assess their own life satisfaction independently of their city. The respondents are largely satisfied with the lives they lead. In both Nuremberg and Fürth, around 94 % stated that they were satisfied, with half saying they were very satisfied.

General satisfaction



Satisfaction with life locally

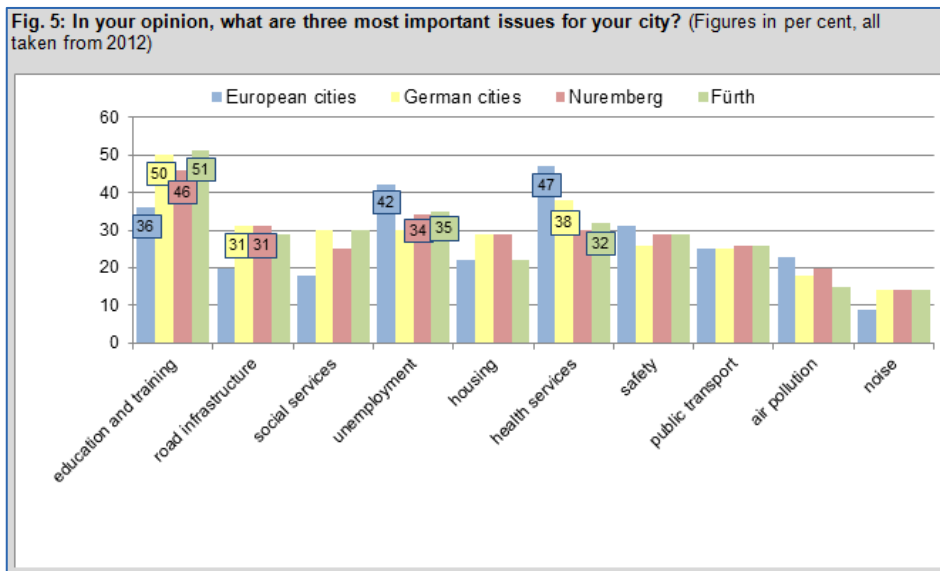
Additionally, respondents were asked about their satisfaction with where they live, independently of their living situation. Most respondents are very satisfied with where they live: in Fürth, almost 60 % are very satisfied with where they live. As with the question as to satisfaction with living in the city, the responses from the cities are extremely positive. Overall, the surveyed persons in Germany and Europe-wide are happy living in their cities.

Important issues of the cities

In the final question, the respondents were asked to name the three most important issues that play a role in their city (cf. Fig. 5). Nuremberg residents most often named the areas of "education and vocational training" (46 %), "unemployment" (34 %) and "street infrastructure" (31 %). The most important issues for the Fürth respondents were "education and vocational training" (51 %), "unemployment" (35 %) and "health care" (32 %). In the

Important issues of the cities

surveyed German cities, top issues were “education and vocational training” (50 %), “street infrastructure” (32 %) and “health care” (38 %) by a wide margin. This is the top issue for the average of the other European cities (47 %), followed by “unemployment” (42 %) and “education and vocational training” (36 %), which the respondents in Germany cited as one of the top problems.



Citizen perspective –
important issues

As in all participating cities, the issues “air pollution” (N: 20 %; FÜ: 15 %) and “noise” (N: 14 %; FÜ: 14 %) are among the less urgent issues in both Fürth and Nuremberg. “Public transport” (N: 26 %; FÜ: 26 %) falls in the middle both for Nuremberg and Fürth, as for the surveyed cities as a whole. A large portion of the respondents thus sees little need for action and is satisfied with conditions in their city in this respect. The environmental aspects also have a low priority in the European cities, in spite of a negative assessment.

Conclusion

Conclusion

The respondents in Nuremberg and Fürth are mainly satisfied with the environmental conditions in their city and are happy living there. The low importance of these issues for the individuals also indicates a high satisfaction and lower problem stress. The high satisfaction of Nuremberg and Fürth respondents with the environmental conditions in their cities and the generally perceived low problem pressure is likely to have a positive impact on their life satisfaction in the city. As environmental satisfaction and life satisfaction are generally high, there is a high mathematical correlation, which however does not say anything about any actual mutual dependency. Even though the statistical relationship has

been verified here, other aspects could still have a greater influence on the inhabitants. With 13 m² of public park space per person, for example, Nuremberg has relatively little green space⁴⁸. Yet the majority of inhabitants are satisfied with the green space and other environmental conditions, even though the satisfaction with green spaces is below the average of the German cities.

Virtually everywhere, the environmental issues have a lower priority than issues such as health care, unemployment and education/vocational training. With respect to citizens' opinions, Nuremberg and Fürth generally rank above the average of the German and particularly the European cities in terms of environmental quality. The primarily positive estimation is also confirmed by the 2013 housing and household survey *Leben in Nürnberg*, which is conducted at two-year intervals by the Office for Urban Research and Statistics for Nuremberg and Fürth⁴⁹. 98 % of citizens surveyed stated that they are happy to live in their city and are very satisfied with their city in general⁵⁰.

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⁴⁸ Cf. Stadt Nürnberg – Amt für Stadtforschung und Statistik für Nürnberg und Fürth (2013): *Statistisches Jahrbuch der Stadt Nürnberg 2013*. Nürnberg.

⁴⁹ Cf. Stadt Nürnberg – Amt für Stadtforschung und Statistik für Nürnberg und Fürth (2015a): *Bürgerbefragung. Wohnungs- und Haushaltserhebung Leben in Nürnberg 2013 - Grundauszählung*. Statistische Nachrichten für Nürnberg p. 244. Nürnberg (www.nuernberg.de/imperia/md/statistik/dokumente/veroeffentlichungen/berichte/sonderberichte/sonderbericht_2015_s244_wohaus2013_grundauszaehlung.pdf).

⁵⁰ Cf. Stadt Nürnberg – Amt für Stadtforschung und Statistik für Nürnberg und Fürth (2015b): *Glück und Zufriedenheit in Nürnberg*. Statistischer Monatsbericht für Juli 2015, M451. Nürnberg (www.nuernberg.de/imperia/md/stadtportal/dokumente/monatsbericht_2015_07.pdf).

Chapter overview

	The three articles in this chapter discuss different aspects of the Urban Audit sub-city level.
Data acquisition and provision	The first article provides an overview of which data have been collected below the municipal level for which cities or territories. It then discusses the preparation of the data for transmission to the EU, as well as the provision of the data for own use in the information portal and the still-emerging approach of visualisation of SCD data in the Structural Data Atlas.
Comparison of data catalogues	This chapter then assess and categorises the potential uses of the SCD data. Here, two approaches make a great contribution when it comes to illuminating the analysis purposes for which the SCD level is suitable. To this end, the article by Gabriele Sturm and Ralf Gutfleisch examines small-scale data catalogues of the IRB survey, KOSTAT and Urban Audit, which are widely used in Germany.
Comparability of territorial levels	Finally, in an article that was prepared in close cooperation with the KOSIS Association KORIS as part the merging project, Klaus Trutzel examines in detail the question of inter-municipal comparability of territorial levels and units.

1 Urban Audit sub-city districts – from data acquisition to visualisation

by Grazia Groß und Alexandra Muth

SCD data – collection, preparation and provision

The EU now only requires the SCD data for cities with more than 250,000 inhabitants, and only in the census years. The Steering Group of the Urban Audit has agreed to accept and process the data from every participating city annually on a voluntary basis. The cities currently collect data on the following characteristics:

- Inhabitants (total, by sex and age, by nationality and place of birth ([Germany, other EU country, non-EU country])
- Private households (total, single-person households [65 and older], households with children under 18, single-parent households)
- Dwellings, tenant households in social housing
- Deaths (total, under 65)
- Persons employed at place of residence and unemployed (total, by sex, 20 – under 65, 55 – under 65)

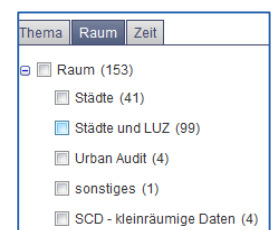
Catalogue of characteristics

Individual Excel forms are created for the participating cities to enable the SCD data to be imported to the DUVA system. The data are imported on Nuremberg’s request. Here, the data are then reviewed and checked for plausibility. City data from civil registers are additionally iteratively matched to the official data using a programme developed especially for the Urban Audit (SCDfit)⁵¹. Matching is performed individually for each city. This is followed by calculation of the indicators for the tabular and graphical representation. The base data and indicators are then available on the information portal⁵².

Import to DUVA

▲	Bezeichnung	Raum	Zeit	Datenquelle
<input type="checkbox"/>	Erwerbspersonen, Erwerbstätige, Erwerbslose (Basisdaten)	SCD - kleinräumige Daten	2005 - 2011	Daten der Städte
<input type="checkbox"/>	Altenquotient - Jugendquotient - Gesamtquotient (Indikatoren)	SCD - kleinräumige Daten	2004 - 2011	Daten der Städte angepasst an die amtliche Fortschreibung
<input type="checkbox"/>	Bevölkerung nach Altersgruppen (Basisdaten)	SCD - kleinräumige Daten	2004 - 2012	Daten der Städte angepasst an die amtliche Fortschreibung
<input type="checkbox"/>	Bevölkerungsanteile nach Altersgruppe (Indikatoren)	SCD - kleinräumige Daten	2004 - 2012	Daten der Städte angepasst an die amtliche Fortschreibung
<input checked="" type="checkbox"/>	Altenquotient SCD (Strukturdatenatlas)	SCD - kleinräumige Daten	2005 - 2011	Daten der Städte angepasst an die amtliche Fortschreibung
<input checked="" type="checkbox"/>	Bevölkerung SCD (Strukturdatenatlas)	SCD - kleinräumige Daten	2005 - 2011	Daten der Städte angepasst an die amtliche Fortschreibung

Preparation with SCDfit



Provision on information portal

For the visualisation in the Structural Data Atlas, the data from cities that have made the geometries of their SCDs available are correspondingly prepared and processed with InstantAtlas.

Preparation for InstantAtlas

⁵¹ The programme SCDfit is provided to the Urban Audit cities free of charge. Please direct inquiries to urbanaudit@mannheim.de.

⁵² www.duva-server.de/UrbanAudit/, under “Raum” select “SCD – kleinräumige Daten” (cf. also Chapter V in this publication).

SCD geometries – collection, matching and integration

To enable visualisation of the SCDs in the Structural Data Atlas, the corresponding geometries must be prepared and integrated. The individual cities hold the rights to these geometries. The cities participating in the Urban Audit with Urban Audit sub-city district level are requested to provide these geometries for the purpose of integration in the Structural Data Atlas. Although geometries exist for all cities from previous project phases, these are only for reference purposes for the EU and not for spatial localisation, which is why in some cases the geometries existed only as PDF maps or without a spatial reference.

Geometries – rights held by the cities

25 geometries integrated

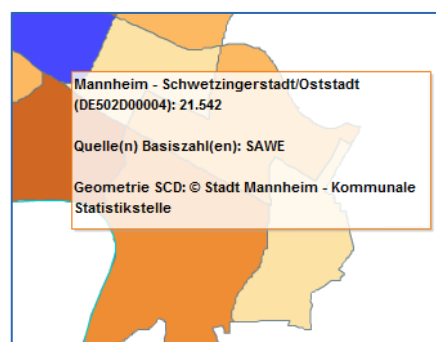
Harmonisation of different spatial references

Standardised assignment of attributes

Compilation

To date, 25 cities have provided geometries. The preparation required for integration is briefly described here. Using InstantAtlas requires a specific coordinate system. The geometries, usually provided as shapefiles, were initially reviewed for the presence of a spatial reference. In all cases, the geometries had to be transformed to the coordinate system required for use in the Structural Data Atlas. This was performed in ArcGIS, as was the filling of further columns for a uniform assignment of attributes. This was used as an opportunity to update all existing reference tables. The code valid for the EU was assigned to every territory. For individual geometries, this first required the (spatial) compilation of exemplary city districts to form SCDs. Placed in a unified coordinate system and provided with uniform columns, the geometries of the individual cities were then compiled in a single geometry. New geometries can be added at any time using the same process. Ownership of the rights to the SCD geometries is stated in the Structural Data Atlas itself:

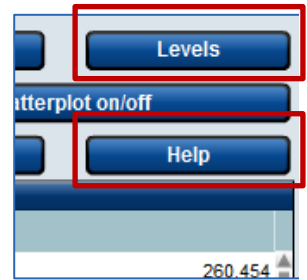
Notes in the map view and explanation window



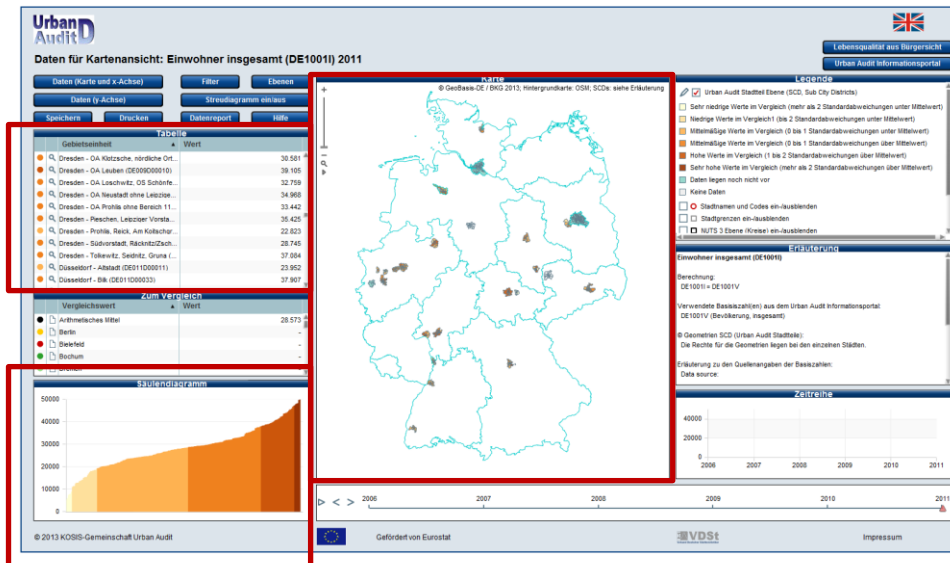
Erläuterung
Einwohner insgesamt (DE1001I)
Berechnung: DE1001I = DE1001V
Verwendete Basiszahl(en) aus dem Urban Audit Informationsportal: DE1001V (Bevölkerung, insgesamt)
© Geometrien SCD (Urban Audit Stadtteile): Die Rechte für die Geometrien liegen bei den einzelnen Städten.

Data visualisation in the Structural Data Atlas

When opened, the Structural Data Atlas, defaults to the city level. Users can switch to the Urban Audit sub-city district (SCD) level using the button “Levels”. This displays all SCDs in the map, in the table and in the bar chart. The individual elements can be zoomed in and out as needed. These and all other functions mentioned here are described in detail in the user help file of the Structural Data Atlas. The help file can be accessed directly in the Structural Data Atlas.

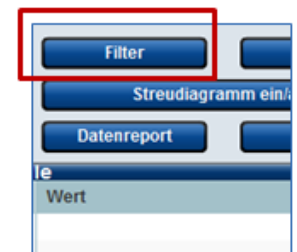


Selection buttons for changing levels and accessing the help file



SCDs in table, map and bar chart

In the basic configuration, the dynamic report puts all elements in relation to each other and colours the elements in the bar chart accordingly. The classification can be changed depending on how the user wants to view the data (e.g. quantiles instead of standard deviation). Users can also customise the colour scheme. Whereas the bar chart presents information on all districts in an easily readable fashion, the map view is less useful for this. Rather, this can be used effectively to zoom on a single section. However, it is also possible to limit the displayed SCDs using the filter function – cartographic focus on just one city is perhaps most effective. Once selected, the desired city is zoomed in. In the default classification (standard deviation), only the districts of the selected city are set in relation to one another. The selected filter is displayed in the title bar. Users can change the represented indicator using the button “Topic (map and x-axis)”.



Selection button for setting a predefined filter

Daten (Karte und x-Achse)

Karte und x-Achse

- Bevölkerung
 - Einwohner insgesamt (DE1001)
 - Jugendquotient (DE1059)
 - 2011
 - 2010
 - 2009
 - 2008
 - 2007
 - 2006
 - Alterquotient (DE1060)
 - Gesamtquotient (DE1058)
 - Medianalter (DE1073V)
 - Anzahl Frauen auf 100 Männer (DE1003)

Button and data selection

Indicator youth ratio (2011) for the SCDs of the City of Mannheim

Daten für Kartenansicht: Jugendquotient (DE1059) 2011, gefiltert nach Stadt (Mannheim)

Daten (Karte und x-Achse) | Filter | Ebenen | Karte

Daten (y-Achse) | Streudiagramm ein/aus

Speichern | Drucken | Datenreport | Hilfe

Gebiets Einheit	Wert
Mannheim - Feudenheim (DE502D00015)	28
Mannheim - Friedrichsfeld (DE502D00011)	25
Mannheim - Innenstadt/Jungbusch (DE502D00012)	18
Mannheim - Käferthal (DE502D00012)	30
Mannheim - Lindenhof (DE502D00005)	19
Mannheim - Neckarau (DE502D00016)	25
Mannheim - Neckarstadt-Ost (DE502D00000)	25
Mannheim - Neckarstadt-West (DE502D00000)	26
Mannheim - Neustadthausen/Mannheim (DE502D00017)	35
Mannheim - Rheinau (DE502D00017)	27
Mannheim - Seckhofen (DE502D00006)	25

Zum Vergleich

Vergleichswert	Wert
Arithmetisches Mittel	27
Berlin	26
Bielefeld	32
Bochum	26
Bremen	28

Stützelemente

© 2013 KOSIS-Gemeinschaft Urban Audit | Gefördert von Eurostat | VDSI

To access to the data simply, users can go to the Structural Data Atlas view directly from the information portal. When a globe symbol is displayed next to an evaluation, clicking on this takes the user directly to the corresponding indicator.⁵³

Grazia Groß is the point of contact for data collection of the KOSIS Association Urban Audit (Grazia.Gross@stadt.nuernberg.de).

Alexandra Muth is National Coordinator of the Urban Audit Project for Germany (alexandra.muth@mannheim.de).

⁵³ Depending on the browser and PC settings, it may be necessary to click "Refresh" in the browser again after opening the Structural Data Atlas; alternatively, users can switch to the SCD level by clicking the button "Levels" as described above.

2 Catalogues with small-scale data of German cities

by Ralf Gutfleisch und Gabriele Sturm

Qualified information on the basis of reliable data is vital for municipal planning and decision-making. Developments within the respective municipality are just as important as processes taking place in cities and regions with comparable structures on the national and international levels.

Urban observation is thus important not only for the individual municipalities but for every modern state and association of states as well. The European Union's interest in (small-scale) urban observation increased in particular as a consequence of the Lisbon Strategy promulgated in 2000 and the follow-on programme Europe 2020⁵⁴. The vision formulated in Lisbon called for making the EU a role model for economic, social and environmental progress in the world. Above all, the focus was on competitiveness and social cohesion: compensating for the continuing great economic and socio-structural differences between the EU member states, the European regions and their metropolises so as to ameliorate disadvantages requires a wide range of data, indicators and information as a decision-making basis.

How deeply observers look into the spatial units of administrative structures depends on the tasks of the observing level. In the federal system of the Federal Republic of Germany, the purpose of spatial observation is to preserve the political autonomy of the spatial administrative units and socio-cultural diversity, and to promote the socioeconomic and political integration and equivalence of living conditions. Accordingly, urban observation (even small-scale) focuses on the structure and mobility of the population, the economy and labour market, the availability of housing and infrastructure, and in part on natural resources and

EU interest in small-scale urban observation on account of Lisbon Strategy and Europe 2020

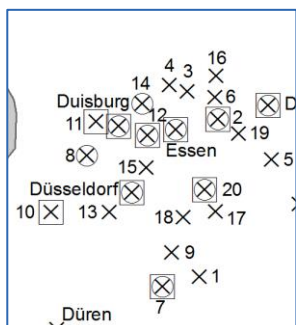
Spatial observation in a federal system

⁵⁴ The objectives of the Europe 2020 strategy focus on

- Increasing the labour participation rate of the population aged 20 to 64 from currently 69 % to at least 75 %,
- Increasing R & D investment to at least 3 % of gross domestic product, mainly by improving the conditions for R&D investments in the private sector
- Reducing greenhouse gas emissions by 20 % compared to 1990, increasing the share of renewable energy to 20 % and increasing energy efficiency by 20 %,
- Reducing the proportion of early school leavers from currently 15 % to 10 % and increasing the proportion of university graduates aged 30 to 34 from currently 31 % to at least 40 %,
- Reducing the proportion of citizens living below the respective national poverty level by 25 %, which would allow 20 million citizens to escape poverty.

the impacts on them. The European urban observation of the Urban Audit centres on the same complex of issues. The focus of the metropolitan comparison, however, only requires small-scale urban observation for major cities for sub-city district territories that are defined much larger compared to German data catalogues. The map below provides an initial overview of the participation of cities in the small-scale data collections discussed here:

- 1 = Bergisch Gladbach
- 2 = Bochum
- 3 = Gelsenkirchen
- 4 = Gladbeck
- 5 = Hagen
- 6 = Herne
- 7 = Köln
- 8 = Krefeld
- 9 = Leverkusen
- 10 = Mönchengladbach
- 11 = Moers
- 12 = Mülheim a. d. Ruhr
- 13 = Neuss
- 14 = Oberhausen
- 15 = Ratingen
- 16 = Recklinghausen
- 17 = Remscheid
- 18 = Solingen
- 19 = Witten
- 20 = Wuppertal



Cities by participation in the small-scale data collections KOSTAT, IRB and Urban Audit (SCDs)

© Geobasis data: BKG 2014, EuroGeographics

The IRB cooperation project “Intra-city spatial observation”

The Intra-city Spatial Observation (IRB) was founded in March 1986 as a cooperation project on the basis of a framework agreement on cooperation in the creation and use of a super-local database of urban statistics for spatial units below the municipal level and using the Ongoing Spatial Observation of the Federal Research Institute for Geography and Spatial Order (BfLR; predecessor of today’s BBSR). The IRB was reorganised in the survey year 2002. Since then, this catalogue has been maintained by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR). Annual meetings and an email network provide a framework for sharing experiences, consultation and developing the project further. Additionally, there is a close relationship between researchers at BBSR and their colleagues in the context of events of the association of municipal statisticians, Verband Deutscher Städtestatistiker (VDSt) and the KOSIS group it supports. From the start, the catalogue contained specialised geodata. All project participants may use the catalogue for their analyses. Academic use by third parties is strictly regulated.

Founded 1986,
reorganised 2002

Annual members meetings, close cooperation with VDSt and KOSIS

Use of data free for project partners

Regional context Size class 2015	East	North-west	Old industrial shaped Westen	Alongside the river Rhine	South
Cities mit with less than 480.000 pop.	Berlin Leipzig Dresden	Hamburg Bremen Hannover	Dortmund Essen Duisburg	Köln Frankfurt a.M. Düsseldorf	München Stuttgart Nürnberg
Cities with more than 200.000 pop.	Chemnitz Halle Magdeburg Erfurt Rostock	Bielefeld Münster Aachen Kiel Lübeck	Bochum Wuppertal Krefeld Oberhausen	Bonn Wiesbaden	Karlsruhe Mannheim Augsburg Freiburg
Cities and medium sized towns with less than 200.000 pop.	Potsdam Jena Weimar Frankfurt/O.	Kassel	Saarbrücken Mülheim/R.	Mainz Ludwigshafen Darmstadt Offenbach Koblenz	Heidelberg Regensburg Ingolstadt Würzburg Fürth Konstanz

IRB cities by population and regional context 2014 – 53 cities with a total of 3,000 spatial units

For 2014, data were delivered for 53 cities with a total of around 3,000 spatial units (statistical territories, sub-city/municipal districts). In the IRB development process, it was determined that the sub-city territorial units to be compared should not have more than 10,000 inhabitants on average. Additionally, the sub-city districts should be of a similar size. Most of the cities use the so called two-digit level (“Zweisteller”) as a sub-city structural level for the IRB data collection. In reality, this does not enable the desired sections of comparable size. The smallest SCD has zero inhabitants with permanent residence – the largest numbers close to 87,000 persons. On this sub-city level, the cities supply around

Units of similar size with
≤ 10,000 inhabitants

Location types
according to
geographical centrality
concept

30 tables or aggregate characteristics per year with a total of over 400 characteristic types.

For comparative analysis of intra-city dynamics, a distinction is made between various intra-city locations that are oriented toward a geographical centrality concept. For this purpose, the participating cities assess the location of a district with reference to the main centre of the city. The following terms are defined for intra-city locations:

- *Core city* and *core city outskirts* (including other city-centre districts), usually comprised under the designation “city centre”.
- *Inner-city outskirts* or close-in urban districts, often built in the urban expansion phases of the 19th and early 20th centuries and together with the above two location types form the “inner city”.
- The *outskirts*, also called the “outer city” to distinguish it from the inner city (slightly varying reference values can occur due to annexations).

Close-in area for
differentiating supra-
municipal migrations

In addition to the four location type variants, there is a “close-in area” of the cities that is significant for differentiating supra-municipal migrations. As the municipal authorities work with different delineations of the near vicinity, the data for local-area delineations refers either to a narrowly defined close-in area that usually encompasses only the adjacent municipalities, or a larger one that is defined in a manner typical to the metropolitan region.

over 21,5 mn
inhabitants –
85 % of the German
metropolitan population

The IRB cities with their over 21.5 mn inhabitants represent over 85 % of the German metropolitan population. Accordingly, the IRB can be understood as a catalogue for metropolitan observation. The BBSR uses the small-scale data of the IRB to identify urban development processes that can be generalised for specific regions, city or intra-city location types.⁵⁵

The catalogues in the KOSIS group

The KOSIS group is a municipal self-help organisation that organises cooperative and joint projects with the support of the Association of German Cities (DST). One objective of the KOSIS working group is to make municipal statistical data – particularly small-scale organisational systems and data organised on a small

⁵⁵ Cf. also BBR (ed.) / Sturm, Gabriele (2007): *Innerstädtische Raumbewachung – Methoden und Analysen* (Reports, vol. 25). Bonn: Selbstverlag des BBR and Sturm, Gabriele (2010): *Die Innerstädtische Raumbewachung des BBSR: Ein Großstadtkatalog für die Aggregatdatenanalyse*. In: Belina, Bernd; Miggelbrink, Judith (ed.): *Hier so, dort anders. Raumbezogene Vergleiche in der Wissenschaft und anderswo* (p. 239 – 263). Münster: Westfälisches Dampfboot.

scale – accessible to supralocal interests. Aside from the two KOSIS associations engaged in data collection, *AG Kostat* und *Urban Audit*, to be presented in more detail here, there are six other independent associations with different main subjects and corresponding programmes⁵⁶. The KOSIS working group operates under the aegis of the Association of German Municipal Statisticians (VDSt).

(a) KOSTAT

Since 2002, the KOSIS Association KOSTAT⁵⁷ has been collecting municipal statistical data, especially small-scale data, and making it available for municipal analyses, as well as for other public and private analysis purposes for a fee.

This working group was founded by the cities of Bielefeld, Dortmund, Frankfurt am Main, Hanover, Nuremberg and Stuttgart, with the participation of the BBR⁵⁸. The office was temporarily established in Dortmund before being relocated to Frankfurt am Main in 2014, where the Urban Statistics Office was based until 2014. The KOSTAT oversight body is currently the Bremen State Statistical Office. A members meeting is held once a year in the city where the office is located. The association's mission is to collect small-scale municipal statistical data and make it available to various users for a fee.

Around 100 German municipalities, including virtually all major cities, participate in this project. All major cities with over 500,000 inhabitants take part, as do the vast majority of cities with over 100,000 inhabitants. One fifth of cities over 50,000 also participate in this data collection. In terms of inhabitants, the KOSTAT cities account for close to one third of the German population.

Unlike the IRB, the catalogue contains both attribute and basic geodata. The basic geodata are delivered in the form of street indexes. Every year, around 100 supplying cities contribute attribute data to the catalogue, primarily on the third structural level (smallest-scale administrative level: in total approximately 10,500 spatial units). These comprise three aggregate characteristics with a total of eleven characteristic types, which the statistical offices of the participating cities harvest from the civil register and provide for KOSTAT. Due to the chronological variance in the preparation of the civil registers, the city data are collected in Bremen until the middle of the following year, and made available in prepared form in the fall. Access to the KOSTAT

KOSTAT

[www.staedtestatistik.de/
kostat.html](http://www.staedtestatistik.de/kostat.html)

⁵⁶ More information at www.staedtestatistik.de/kosis.html.

⁵⁷ Until 30 June 2014 "Arbeitsgemeinschaft Kommunalstatistik KOSTAT".

⁵⁸ Successor organisation to KOSTAT-DST GmbH.

catalogue for municipal analyses is free of charge for the contributing cities, and available for a fee for other public and private evaluation purposes.

(b) Urban Audit

Urban Audit, the Europe-wide data collection on urban quality of life, was launched in 1998 in a pilot phase by EUROSTAT and the Directorate-General for Regional and Urban Policy of the European Commission (GD Regio). The purpose of this survey was and is to enable observation, assessment and comparison of the disparate living conditions in European cities on the basis of comparable data. Additionally, the comparison of European cities is intended to provide an empirical foundation for the regional policy of the European Union and support national, regional and local urban policy. Today, the Urban Audit is a fixed institution and a permanent task in the European Statistical System (ESS).

Europe-wide, the Urban Audit is overseen by EUROSTAT, the statistical office of the European Union. The respective national statistical offices are responsible for collecting the data in the European Union member states. In the Federal Republic of Germany, the city comparison is organised and carried out by KOSIS Association Urban Audit in cooperation with the German Federal Statistical office and the state statistical offices. The process is coordinated in the Steering Group and the members meeting of the KOSIS association as well as the network for Urban and regional statistic (Netzwerk Stadt- und Regionalstatistik).

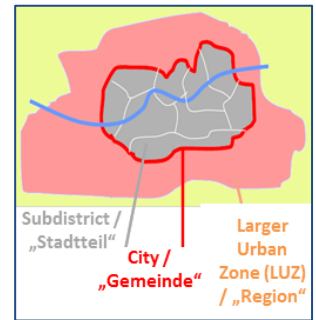
The number of participating cities has increased between the individual survey rounds. From the original 58 European pilot cities in 1999, of which nine were German, the number grew to over 800 urban centres throughout Europe in 2012. The Urban Audit today includes cities from Iceland and Norway to Rumania and even Turkey. Swiss cities take part in this project as well. In terms of territory, the study focuses on urban centres with more than 50,000 inhabitants, which are identified Europe-wide by the EU together with the Organisation for Economic Co-operation and Development (OECD) according to number of inhabitants and population density. In Germany, the Urban Audit today covers 125 cities in their administrative boundaries, including all major cities with over 100,000 inhabitants and all medium-sized cities with populations of between 50,000 and 100,000 that also function as regional centres.⁵⁹

⁵⁹ Cf. KOSIS Association Urban Audit (ed.) (2013): *The German Urban Audit – Comparison of cities in the European Statistical System*. Mannheim: KOSIS Association Urban Audit and City of Frankfurt am Main (ed.) (2007): *Das*

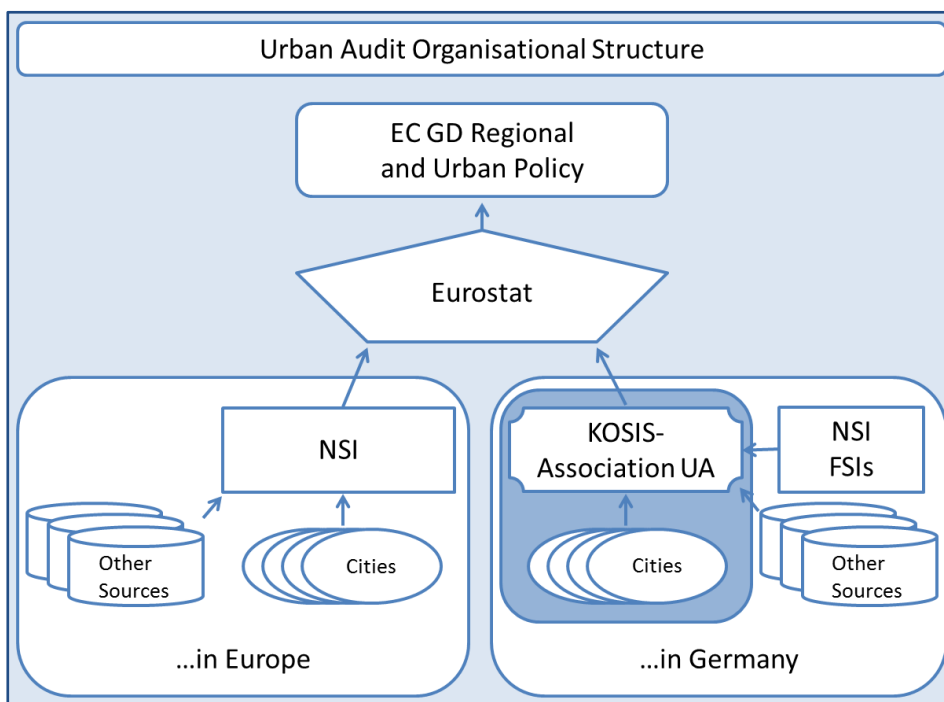
As part of the comprehensive catalogue of features, statistical characteristics are acquired on the overall city level from all areas of life for each UA city. Acquisition includes demographic, economic, housing- and environment-specific as well as cultural characteristics. The overall city data are supplemented by information respecting the European Larger Urban Zones (LUZ).

EUROSTAT makes the data through 2012, previously collected every three years, available free of charge. As of that year, the characteristics catalogue – as for UA Germany – is surveyed annually⁶⁰. Additionally, a reduced complex of characteristics is to be surveyed for sub-city districts (SCD) for cities with over 250,000 inhabitants every ten years, concurrent with census years. In contrast to KOSTAT or IRB delimitations, the aim is an average SCD size of 25,000 inhabitants. In past years, 35 German Urban Audit cities have already delivered data with varying population figures – only 19 of the cities supplying data to date have over 250,000 inhabitants.

Existing official or semi-official data sources are already being used for German data. Data from special analyses and estimates are also included, so that it is possible to fulfil a large portion of the EU data requirements.



Spatial levels of the Urban Audit catalogue



Urban Audit Organisational Structure

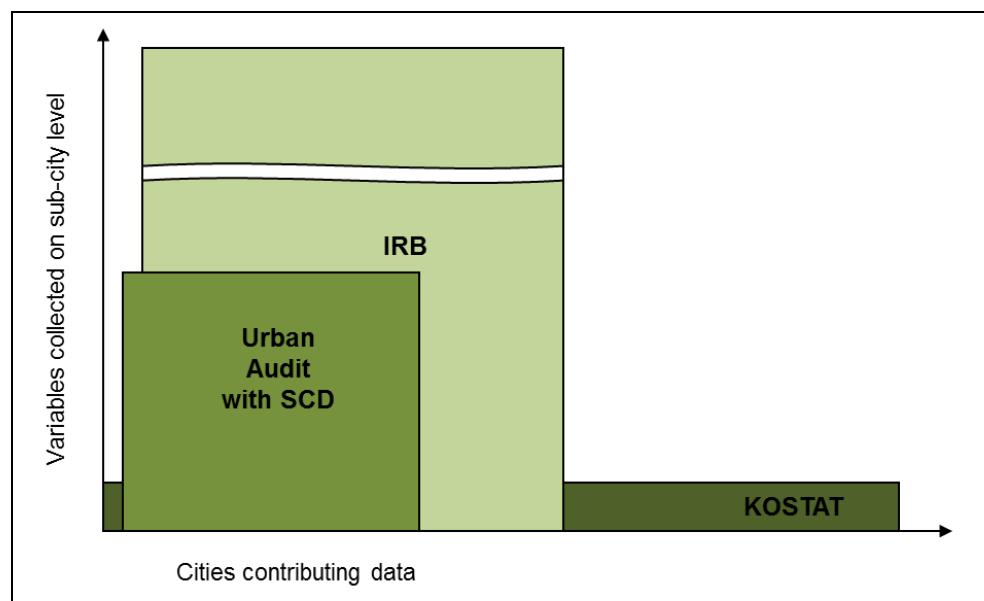
Urban Audit Projekt der Europäischen Union: Rahmenbedingungen europäischer Stadtpolitik und erste Ergebnisse auf Grundlage der Lissabon-Strategie (Frankfurter Statistische Berichte, no. 4). Frankfurt am Main: Bürgeramt, Statistik und Wahlen.

⁶⁰ See also the Structural Data Atlas for the German Urban Audit cities: apps.mannheim.de/statistikatlas/ua/strukturdatenatlas/

Comparison of catalogues and outlook

The three catalogues with small-scale data below the municipal level presented here were created and maintained by different initiators and in varying constellations to serve different purposes.⁶¹ They serve the interests of large German municipalities, urban observation of the federal government and city-level EU policy, respectively. Accordingly, conversion references exist for the definition of the spatial units of KOSTAT and IRB – though not between the spatial units of these purely German catalogues and those of the SCDs of the German UA cities. The definitions of the characteristics (attribute geodata) are also not always comparable between KOSTAT and IRB on the one hand and Urban Audit on the other for all categories. This is because policy advising uses different concepts in the various EU member states, which is particularly apparent in the labour and social policy areas. Additionally, it is difficult to compare the definitions of the variables: whereas the municipal statistics in KOSTAT and IRB are based on the civil registers, the municipal UA data passed on to EUROSTAT are first adapted to the current population estimates of the national and state governments so as not to contradict other EU statistics of the Federal Republic of Germany.

Catalogues with small-scale data of German municipalities by the number of individual characteristics provided on a small scale and the data of the delivering cities



⁶¹ Cf. also Gutfleisch, Ralf; Sturm, Gabriele (2013): *Kataloge kleinräumiger kommunalstatistischer Daten*. In: Arbeitsgruppe Regionale Standards (ed.) / Hoffmeyer-Zlotnik, Jürgen H.P.: *Regionale Standards* (Ausgabe 2013, S. 156-168). Mannheim: GESIS. Zugriff: www.destatis.de/DE/Methoden/Methodenpapiere/Download/RegionaleStandards_Ausgabe2013.pdf (last accessed October 2015) and BBSR (ed.) / Sturm, Gabriele (2013): *StadtZoom – Analysen kleinräumig vergleichender Stadtbeobachtung* (Informationen zur Raumentwicklung, no. 6.2013). Stuttgart: Franz Steiner.

The KOSIS municipalities that supply to the three catalogues are currently striving for greater standardisation of the formats and submission dates particularly within the municipal statistics offices.

The proposed objectives include:

- A standardised small-scale classification for city comparisons (possibly as a nested raster in addition to the administrative structure still required for local purposes),
- Central data procurement for those characteristics that are not maintained in municipal registers,
- Greater standardisation of data delivery packets with small-scale aggregate statistics, and
- More powerful internet-based routines for delivery.

At any rate, the planned changes are likely to facilitate the work of the municipal statistical offices, so as to free up more time for joint research endeavours and analysis, among other reasons.

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3 Development of comparative urban data collections – on the size of the small-scale spatial units

by Klaus Trutzel

The Task

City statisticians should resume their discussions on a common comparative database of small-scale sub-city statistics without any further delay. This discussion must be based on an inventory of the collections that already exist and must pay special attention to the comparability of the data. This paper is intended to contribute to this discussion. Standardisation and harmonisation are the important targets.

This inventory refers to the following data collections:

- the data of the inner-city monitoring IRB (Innerstädtische Raumbewachung) of the Federal Institute for Urban and Regional Research BBSR
- the KOSTAT data collection and
- the collection of data on sub-city districts SCD of the European Urban Audit.

All these projects are based on the hierarchical system of small-scale statistical sub-divisions of the municipalities following the recommendations of the Association of German Cities (Deutscher Städtetag).⁶² The cities aggregate their small-scale statistics according to the requirements of the projects. Gabriele Sturm and Ralf Gutfleisch compared the three data collections describing also the quality of their content.⁶³

After a quick look at the projects discussed here, this paper focuses on the size of the spatial units as they were analysed for the European project “Merging Statistics and Geographical References”. For this reason, the first part of this paper is the report submitted for the Merging Project. The second part will then show how the differing size levels of the units in these projects affect the possibility to detect territorial particularities.

⁶² Kleinräumige Gliederung des Gemeindegebiets, Empfehlungen zur Gliederung des Gemeindegebiets und Zuordnung von Daten nach Blöcken und Blockseiten sowie Entwurf einer Empfehlung zur Ordnung des Straßen-/Hausnummernsystems als Grundlage der Lokalisierung und Zuordnung von Daten unter Einsatz der ADV, in: Reihe H, DST-Beiträge zur Statistik und Stadtforschung, Heft 6, Köln 1976.

⁶³ Gutfleisch, Ralf und Sturm, Gabriele, StadtZoom - Analysen kleinräumig vergleichender Stadtbeobachtung, in: Informationen zur Raumentwicklung, BBSR, Heft 6/2013, S. 471 ff.; cf. also article 2 in this chapter.

The projects Urban Audit, Inner-City Monitoring of Spatial Development (IRB) and KOSTAT

Urban Audit has built up its data collection system in accordance with the requirements of Eurostat. The units should therefore be of a comparable size of between 5,000 and 40,000 inhabitants, be structurally homogeneous and form contiguous areas. A minimum of 10 territorial units should be established per city. Eurostat requires the voluntary provision of data for the census years only and only for cities of more than 250,000 inhabitants. However, the association of participating German cities has decided to collect the data annually if possible, from all cities willing to provide the data.

Urban Audit

The small-scale units are determined by Eurostat in cooperation with the cities and are identified by a hierarchical SCD code. The location of the units is digitally described by the polygons of their boundaries. Whilst the Urban Audit for the city as a whole is made publicly accessible on the internet by Eurostat and the KOSIS Association Urban Audit, the SCD data and its geometric description is reserved to the internal use by the European Commission – and in Germany - to the use of the participating cities. As regards their content, the data has undergone extensive plausibility checks carried out by the KOSIS Association and by Eurostat. Furthermore, SCD data is adjusted to the Urban Audit data for the cities as a whole. In addition, SCD data can be used for comparisons with the surrounding Larger Urban Zones (LUZ), which correspond to the metropolitan regions of the EU and OECD. At present, Urban Audit SCD data are available for 41 cities and their 724 units for reference year 2011.

The **Inner-City Monitoring of Spatial Development (IRB)** of the Federal Office for Building and Regional Planning (BBSR) is based on the so-called ‘second level’, hierarchical sub-city division. In 2013, it comprises 2,918 units from 51 cities. The units are identified by the official administrative code of the municipalities combined with the cities’ own code of their territorial sub-divisions. With the support of the cities involved, these units were assigned keys designating the following structural types:

IRB

- City
- Cityrand
- Innenstadtrand
- Stadtrand

City and city rim are usually combined as “city centre”.

BBSR makes the results of the IRB accessible to the cities involved. The cities have access to the general data collection after it has undergone extensive quality checks by BBSR. The institute has by contract agreed to neither publish nor distribute the data of the individual spatial units. The history and political relevance of this project have been described in more detail in a BBSR publication that also illustrates the territorial dispersion of the participating cities in a map.⁶⁴

KOSTAT

KOSTAT data collection was initiated by the KOSIS Association and the Association of German Cities (Deutscher Städtetag).⁶⁵ It is confined to a few population data which are provided on the so-called hierarchical ‘third level’ and are made available to third parties for a fee. It includes (in 2013) 9,145 small-scale units from approximately 100 cities. These units are identified by the official administrative code and a municipal three-digit code. The data collection is supplemented by street directories of the majority of participating cities, which describe the location of addresses in the corresponding territorial units. The coordinates of the surrounding boundaries of territorial units are also available for some of the cities. The development and territorial distribution are described in detail in the publication quoted above.⁶⁶

The relative size of the spatial units as a criterion for their comparability

Comparing objects with one another always means measuring one object in terms of the other. In order to be able to compare objects with one another, they must be of a categorical similarity. Wherever population characteristics of small-scale units are observed, proportions, like the proportion of foreigners in the total population, can, strictly speaking, only be compared, if they refer to the same population totals of the territorial units, unless it one can assume that the population groups considered are uniformly distributed within the units compared. This will be discussed later in greater detail. The questions asked are relevant as well.

Urban Audit aims at comparing cities as a whole, whilst IRB attempts to compare, across cities, sub-city functional units (e.g. city centres or city rims) with regard to their structures and evolution. Their respective size is in so far a significant criterion for

⁶⁴ Ibid., p. 475.

⁶⁵ KOSIS Association for the municipal statistical information system (Verbund Kommunales Statistisches Informationssystem) legally represented by the association of German municipal statisticians (Verband Deutscher Städtestatistiker e.V.)

⁶⁶ Gutfleisch, R. und Sturm, G., ibid. p. 477 f.

comparisons, as it influences the possible degree of structural homogeneity and also points to the functional importance of the area. On the other hand, significantly different sizes of the units disturb the comparison. Therefore, Eurostat requested the population size of the sub-city districts used by Urban Audit to stay within the range of 5,000 to 40,000 inhabitants. IRB adds the function and location of the units as further criteria; KOSTAT, by contrast, requests very detailed subdivisions to enable flexible groupings of the units.

As a starting point for further considerations regarding comparative standardisation, the size classes of the units in the comparative data collections Urban Audit, IRB and KOSTAT will now be examined⁶⁷:

Due to different target settings, the size of the territorial units, as measured by the number of their inhabitants, constitute different levels:

Data collection	Number of small-scale units with data	Total population	Population of the average unit	Population of the central unit (median)	Population of the smallest unit (minimum)	Population of the largest unit (maximum)
Urban Audit	724	19,048,589	26,310	25,842	4,787	84,783
IRB	2,918	21,126,712	7,240	5,682	0	87,783
KOSTAT	9,145	26,554,999	2,904	2,904	0	87,783

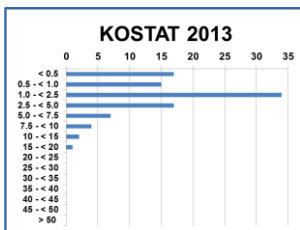
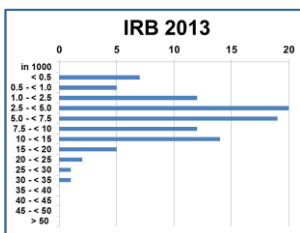
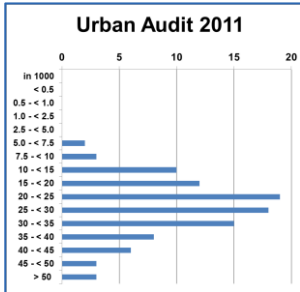
Size structure in the data stock of Urban Audit (2011), IRB and KOSTAT (2013)

KOSTAT, with the largest coverage (26.6 million inhabitants) and more than 9,000 territorial units has the smallest units of all three data collections in terms of population, with an average of 2,900 inhabitants and half of the units with less than 1,600 inhabitants. IRB covers 21.1 million inhabitants, comprising 2,900 small-scale units with an average of 7,240 inhabitants, of which half have a population of less than 5,700 inhabitants. Urban Audit, covers 19 million inhabitants, comprising only 724 units, but has the largest units with an average population of 26,000, of which half have more and less than this number of inhabitants. The two other projects differ from Urban Audit also by the fact that they don't combine elements to form bigger units so that they contain also units that don't contain any inhabitants at all. In KOSTAT, almost all spatial units have less than 20,000 inhabitants; for IRB the upper limit is around 35,000 and for Urban Audit more than 50,000 inhabitants.

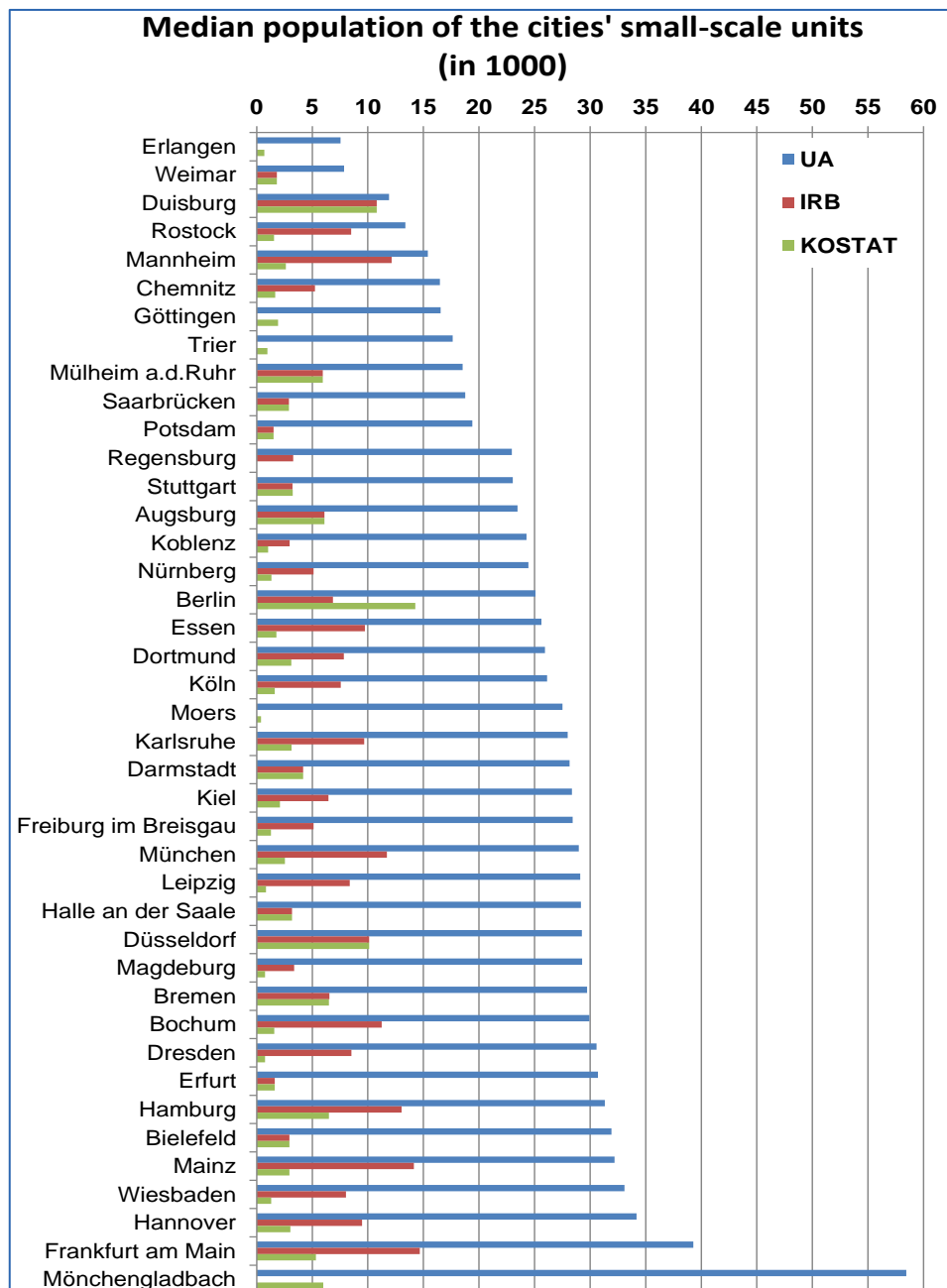
⁶⁷ My sincere thanks for providing the necessary content data go to the institutions and the experts in charge of the data collections; for the Urban Audit this is the managing department of the city of Mannheim, for IRB the BBSR and for KOSTAT the managing department of the Statistical Office of the City State of Bremen.

The following graphs describe the size structures and the differing sizes in the cities involved in more detail⁶⁸:

Size distribution of the small-scale units of Urban Audit, IRB and KOSTAT in %

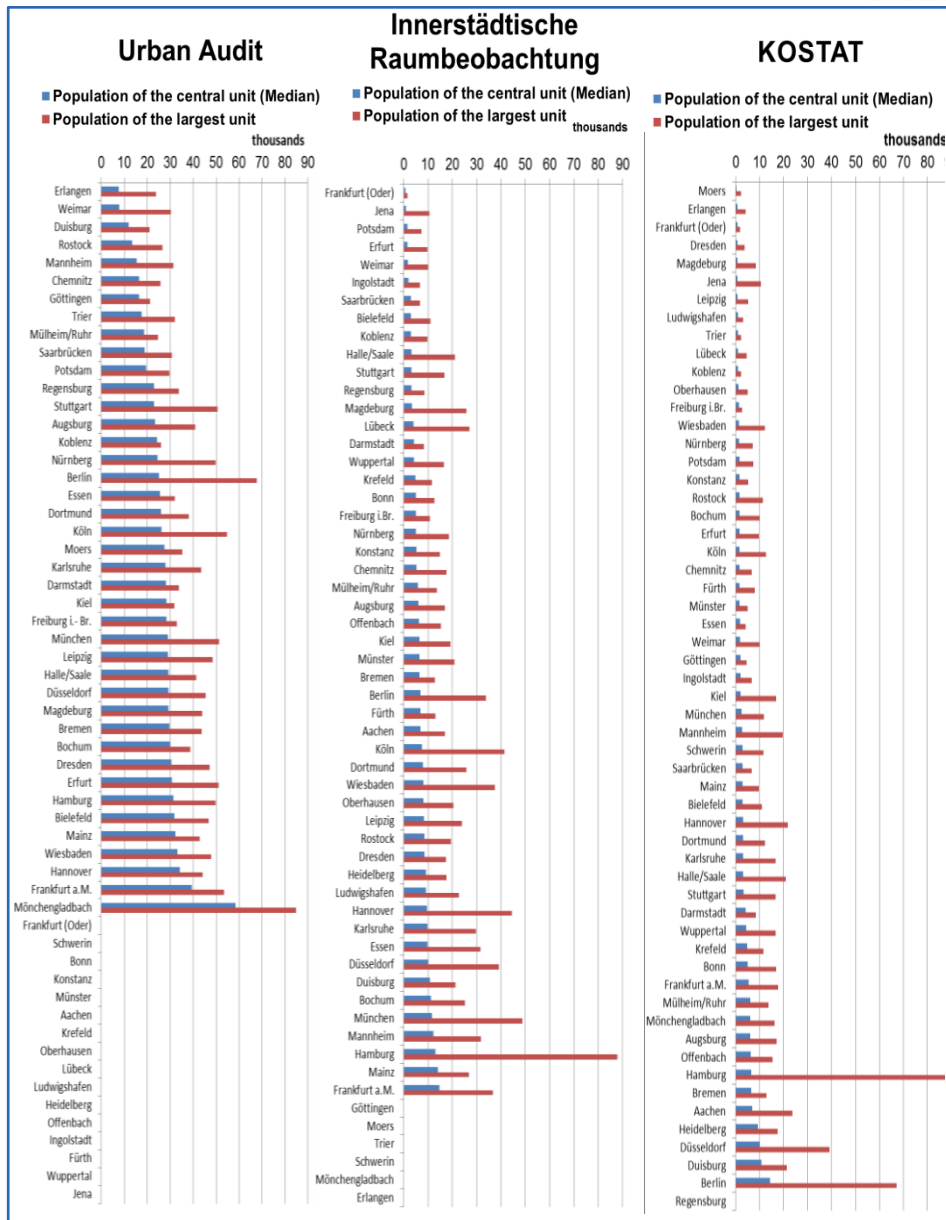


The territorial units are not nearly the same size, neither between the cities nor within the cities. They show a relatively high dispersion, as shown in the following graph. The closer the population of the largest unit is to the medium unit of the city, the more the city has paid attention to the comparability of the units. This has best been achieved by the Urban Audit, for which the cities had been requested to observe a lower and an upper limit to the population size (cf. graph).



Median population of the small-scale units compared

⁶⁸ Detailed tables of the results are part of the final report on the "Merging Project" to be available around the end of December 2015.



Size distribution of the urban small-scale units of Urban Audit, IRB and KOSTAT

With regard to comparability the small-scale units ought to be as homogeneous as possible in order to permit assigning them unambiguous evaluation categories. Very small units will show more pronounced structural differences than larger units, where small-scale differences are more likely to be balanced. Taking this aspect by itself, this would suggest keeping the units as small as possible. On the other hand, they must be big enough to be, from the point of view of the users, relevant evaluation units. With diminishing size of the units, problems of confidentiality increase, as smaller numbers would occur more frequently, thus facilitating the identification of individual persons.

On the other hand, the cities providing the data don't want to risk threatening their freedom of planning and decision making by publishing too detailed information. The cities' consent to provide sub-city data to the EU could only be reached by keeping the size

of the small-scale units relatively large. The general open data discussion will lead, however, to greater openness. The basic attitude of the cities, however, remains.

It is obvious, how great an advantage would result from a territorial harmonisation and standardisation of the territorial units of the three projects for the cities providing the data as well as for the users. Summarising the different aspects one would have to strive for a territorial size close to what the cities are willing to publish anyhow. This size would be close to a target value of 5,000 inhabitants.

The discussion on standards for a harmonised collection of comparable sub-city data that the cities will have to lead will make it necessary to take into account also other criteria of comparability in a suitable manner. The territorial size will then be an important but not the only criterion to be considered in an agreement on recommended standards.

Effects of the population size on the visibility of territorial particularities

Cities stand out by a great diversity of the people living and working there. The more the relevant aspects, like housing conditions, unemployment, migration background, single person households, precarious income situations or persons at retirement age, form local clusters, i.e. the less they are evenly distributed across the city, the more size and delimitation of the spatial units in question determine if local clusters can be recognised or if they are balanced out and thus become invisible in the statistical indicators calculated for them. This is true for the situation within the single territories as well as between them. It is therefore important for small-scale comparisons, to choose the boundaries and the size of the territorial units in such a way that the sub-divisions are internally as homogeneous as possible and differ from one another as much as possible. This requirement is generally known, but has not effectively determined the territorial sub-divisions on which small-scale statistics are based. General sub-divisions for territorial comparisons should at least result in units of similar population size.

The fact that abstract grid cells, though of equal surface area, don't pay attention to the number of elements occupying them, and therefore show serious shortcomings in the comparisons based on them, cannot be discussed here any further. The aim is only to illustrate, how in the existing small-scale data collections of the Urban Audit, IRB and KOSTAT the differing levels of population size affect their capability to detect territorial particularities.

Where certain facts cumulate can best be seen when looking at their share in the basic totals, clusters of one person households, e.g., from their share in all households in the respective territory, territorial clusters of population groups from their share in the total population of the population living there. If a population group is not evenly distributed among the basic population but clusters locally, the relative proportion of clusters of equal size in the area varies with the size of the total population, to which it is related. This trivial fact is obvious, as the proportion $P = M/N$, where M is the number of units in the group and N signifies the number of units in the total population. The more the group under consideration is territorially clustered, the greater is the risk that relatively small groups disappear in the great mass of the total population. Areas with a small number of inhabitants increase the chance that the population of the area is mainly composed of the members of the group so that the numbers “M” and “N” are not so very different and this territorial concentration of the group becomes clearly visible in comparison with other areas.

How clearly such groups show up in relation to the total population or “drown” in the average of the area, can be illustrated by looking at the different size levels of the spatial units of the Urban Audit, IRB and KOSTAT taking the proportion of seniors as an example in all three data collections and the unemployment rates in the Urban Audit and IRB. To this end, those cities were selected, for which data were available.

The **proportion of senior citizens** is of special importance for the provision of social infrastructure, public transport and the housing market. A proportion of > 30 percent seniors was reached by 14 out of 486 SCD in the Urban Audit, where the sub-city districts of had a population of 26,000 on average; in IRB with an average population of just below 6,000 inhabitants, this high share of senior citizens was reached by 81 out of 1578 spatial units and in KOSTAT by 235 out of 3348. None of the Urban Audit SCD had a share of more than 45 percent seniors in the resident population, in IRB 3 districts were above this level and KOSTAT showed 20 territorial units with this high proportion of elderly people. The shares of territorial units exceeding the respective thresholds illustrate the effect of the different size levels of the three collections:

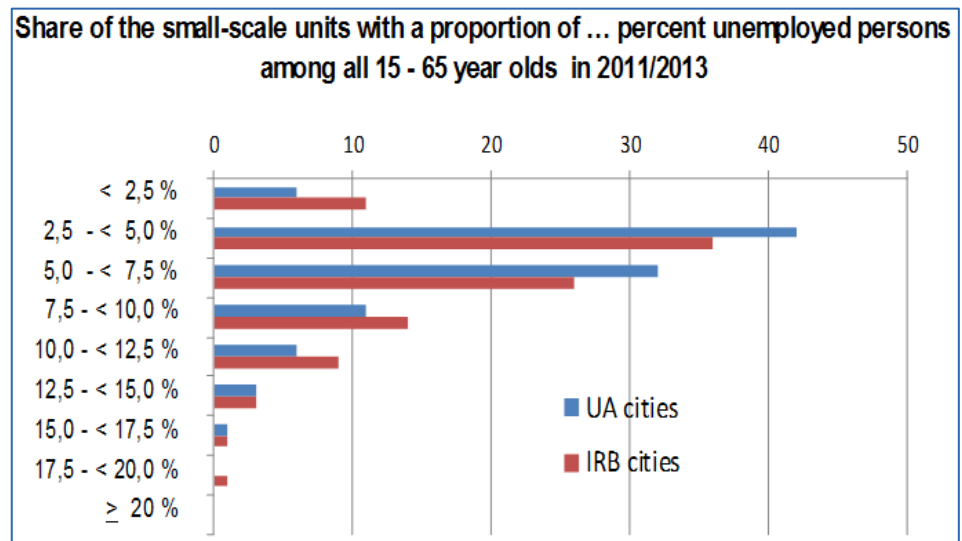
Proportion of seniors 65+ in the sub-city units	UA 2011	IRB 2013	KOSTAT 2014
< 30 %	97.1	94.9	93.0
30 - < 45 %	2.9	4.9	6.4
≥ 45 %	0.0	0.2	0.6

Unemployment also varies, by residential location and social planning area, in its regional concentration. In the sub-city districts of Urban Audit and IRB, for which data is available, none of the comparatively large UA SCD has an unemployment rate (unemployed persons in relation to the labour force of 15 – 65 year olds) of 17.5 % or more; in IRB 12 districts exceed this threshold. Accordingly, the dispersion of the proportions is greater, here.

Number of small-scale units with an unemployment rate of ... % among all 15- 65 year olds 2011/ 2013; only cities with data for UA & IRB and districts with >1,000 inhabitants)

Proportion of unemployed persons among all 15 - 65 year olds	UA-SCD	IRB districts	UA-SCD	IRB districts
	number of small-scale units		proportion of small-scale units	
total	463	1461	100	100
< 2,5 %	27	157	6	11
2,5 - < 5,0 %	193	532	42	36
5,0 - < 7,5 %	148	373	32	26
7,5 - < 10,0 %	52	197	11	14
10,0 - < 12,5 %	26	126	6	9
12,5 - < 15,0 %	14	47	3	3
15,0 - < 17,5 %	3	17	1	1
17,5 - < 20,0 %	-	11	-	1
≥ 20 %	-	1	-	-

The following graph illustrates again the wider and more selective distribution of the proportions of the smaller IRB districts in comparison with those of the Urban Audit.



Urban Audit cities with ≥ 15 % unemployed in ... SCD ≥1000 inhabitants*):			
Kiel	1	out of	9
Chemnitz	1	out of	14
Dresden	1	out of	17
IRB cities with ≥ 15 % unemployed in ... IRB districts ≥1000 inhabitants*):			
Kiel	2	out of	9
Bremen	2	out of	18
Essen	4	out of	22
Köln	2	out of	86
Bielefeld	1	out of	74
Dortmund	5	out of	60
Saarbrücken	6	out of	51
Potsdam	1	out of	50
Dresden	2	out of	61
Leipzig	1	out of	63
Halle (Saale)	2	out of	33
Erfurt	1	out of	52

Proportion of small-scale units with an unemployment rate of ... % among all 15- 65 year olds 2011/2013; only cities with data for UA & IRB and districts with >1,000 inhabitants.

* only cities with data for UA & IRB and districts with >1,000 inhabitants

The figure in the margin column shows, in which cities*, assuming a threshold level of 15 %, how many small-scale units reach or exceed this value.

Summary and perspectives

The number of small-scale units of the cities that contribute to the three municipal data collections differ considerably. They differ with regard to the number of inhabitants within and between the cities as well as between the three projects. The differing sizes impair their comparability when looking at aspects related to population.

From the point of view of statistical evaluations, the elements of urban sub-divisions should be aggregated in such a way that the resulting aggregates would optimally reveal the territorial concentrations of the aspects under consideration. This would mean that a common institution managing the collection and dissemination of the data should have access to the data of the territorial elements and compile them according to the specific questions asked.

It may be a more realistic strategy, however, to choose a common level for standardised data collections that ensures comparability by an agreed common population size suitable also for inner-city comparisons and for municipal publications. This recommendation goes beyond the presently discussed proposal to simply agree on the “second-level” sub-division of the territorial structures of the cities for general dissemination. It implies that the population size would be recognised as an essential precondition for meaningful comparisons within and between the cities.

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online.de).

Chapter overview

The data collected and prepared in the Urban Audit are available to all interested users without restriction on the internet. There are different ways to access it, depending on the intended use. The offering of the KOSIS Association Urban Audit includes an **Information portal** and a **dynamic report** (Urban Audit Structural Data Atlas) for all Urban Audit territorial units as well as a further dynamic report that additionally contains the results from the Quality of Life Survey in European cities. **Eurostat**⁶⁹, the statistical office of the European Union holds all the data ready in a database.

Structural Data Atlas



The **Structural Data Atlas**⁷⁰ at www.urbanaudit.de allows users to access this data in the menu option “Daten, Grafiken, Karten” via the cascading option “Grafiken, Karten”. As a dynamic reporting supplement to the information portal, it enables the interactive generation of custom data tables, diagrams and maps on selected basis data and indicators for different German Urban Audit territorial levels (municipal level, larger urban zone level (LUZ) and Sub-city district level - SCDs⁷¹) and reporting years. For the functionality of the Structural Data Atlas, please refer to the brochure „The German Urban Audit“⁷² and the online user documentation „Structural Data Atlas - User manual“⁷³.

Information portal

This chapter presents the information portal launched in 2015. This replaces the previous Urban Audit Web catalogue and, in addition to easier access to the data tables, offers direct access to the DUVA map tool. This lets users create printable maps in a predefined layout. The last part of this chapter explains how to use this tool.

Map tool

We will be happy to receive your questions and suggestions at urbanaudit@mannheim.de.

⁶⁹ ec.europa.eu/eurostat/de/web/cities/data/database.

⁷⁰ Direct link: apps.mannheim.de/statistikatlas/ua/strukturdatenatlas/en.

⁷¹ Cf. also Chapter IV, 1st article.

⁷² KOSIS Association Urban Audit (2013) (ed.): *The German Urban Audit – Comparison of cities in the European Statistical System* (www.staedtestatistik.de/fileadmin/urban-audit/UA_Broschuere_2013_final_EN.pdf).

⁷³ apps.mannheim.de/statistikatlas/ua/strukturdatenatlas/en/pdf/User%20manual%20for%20the%20Urban%20Audit%20Structural%20Data%20Atlas%20.pdf.

1 The DUVA information portal

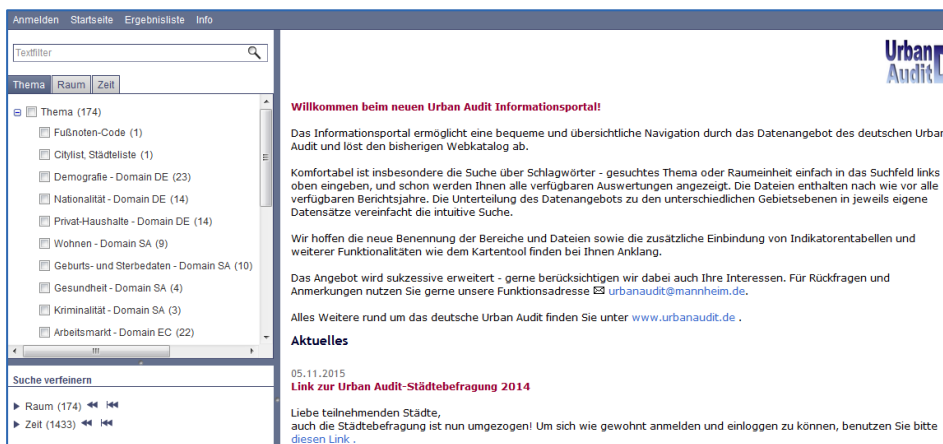
by Grazia Groß

The collected, recorded, adjusted and quality-tested data for all territorial units and reporting years of the German Urban Audit cities may be found in the DUVA-based **information portal**⁷⁴, accessible at www.urbanaudit.de via the menu option “Daten, Grafiken, Karten” using “Daten, Indikatoren”.

Data on cities, LUZs and SCDs, individual reference years, variable characteristics or characteristic groups can be individually selected and downloaded. For many characteristics, not only basis data are available, but supplementary indicators as well. This offering is rounded out by the cartographic display using the DUVA map tool and the possibility to directly access the evaluation and display options of the Structural Data Atlas.

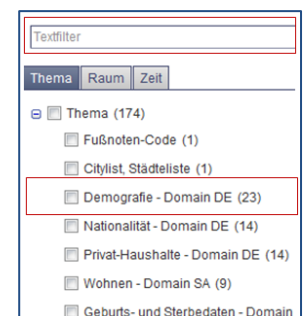
The pages of the information portal are organised in two areas: on the left are the selection fields: users can research using a (material) topic or by type of territory (cities, LUZ, SCDs). Free text searches are also possible. The window on the right displays the filtered or selected results (or the current information on the start page).

DUVA - information portal



Start page of the information portal: topic tree and free text search on left, current information in the right-hand window.

For instance, users looking for demographic data can either enter the term directly in the text filter or select it in the topic tree. The results this selection returns are now displayed in the right-hand window, and can be sorted by territory, time or data source simply by clicking on the respective term.



Free text search or direct selection

⁷⁴ www.duva-server.de/UrbanAudit/; further information on DUVA is available at www.duva.de.

Thema: PKW und Krafträder - Domain TT

Anzahl: 6

Ergebnisliste

Bezeichnung	Raum	Zeit	Datenquelle
Anzahl der registrierten Privat-PKW und Krafträder (Basisdaten) Quelle: Kraftfahrtbundesamt	Städte und LUZ	2005 - 2013	
Registrierte Krafträder je 1.000 Einwohner City (Karte, Strukturdatenatlas) Quelle: Kraftfahrtbundesamt	Städte	2005 - 2013	
Registrierte Krafträder je 1.000 Einwohner LUZ (Karte, Strukturdatenatlas) Quelle: Kraftfahrtbundesamt	LUZ	2005 - 2013	
Registrierte Privat-PKW je 1.000 Einwohner City (Karte, Grafik und Strukturdatenatlas) Quelle: Kraftfahrtbundesamt	Städte	2005 - 2013	
Registrierte Privat-PKW und Krafträder je 1.000 Einwohner (Indikatoren) Quelle: Kraftfahrtbundesamt	Städte und LUZ	2005 - 2013	
Registrierte Privat-PKW je 1.000 Einwohner LUZ (Karte, Strukturdatenatlas) Quelle: Kraftfahrtbundesamt	LUZ	2005 - 2013	

Datendownload | Tabelle IASS | Karte | Strukturdatenatlas | Grafik

Sorting by name, territory, time or data source in the results window at top, explanation of buttons below

In each evaluation, the column “Bezeichnung” shows whether the evaluation concerns basis data (= absolute figures) or indicators (= calculated values). The evaluations are continually updated and supplemented with further display options. The buttons that appear next to each evaluation show the display options for the respective basis data or indicators. The explanations to the symbols may be found below the results window, and are briefly described in the following:

Datendownload

Datendownload: The table generated when this button is clicked contains all variables, reporting years and territorial units contained in this evaluation. Currently (as of October 2015), this function is only available for basis data.

Tabelle IASS

Tabelle IASS: As in the old Web catalogue, evaluations of indicators and basis data are prepared by the internet wizard (IASS). This function allows users to generate a custom table and download it in csv format. The download starts when you click the floppy-disk button at the bottom of the table.

Urban Audit Internet-Assistent

lin_Domain_DE_20130326 • City - LUZ - Umland - Deutschland gesamt • 2005-2011 • Quelle: amtliche Bevölkerungsfortschreibung, Schätzung der Städtegemeinschaft

City-LUZ-Umland_Total	CityCode	VarCode_DE	RefYear	Footnote	Value
city	DE0001	DE0001 Deutschland - Total	2005	NAW	5.385.108
LUZ	DE0001	DE0001 Berlin - City	2009	NAW	3.494.037
Umland	DE0001	DE0001 Berlin - Umland	2009	NAW	3.418.255
	DE0201	DE0201 Hamburg - City	2009	NAW	2.431.025
	DE0201	DE0201 Hamburg - LUZ	2009	NAW	3.442.879
	DE0201	DE0201 Hamburg - Umland	2010	NAW	3.488.725
	DE0301	DE0301 München - City	2011	NAW	3.531.072

1

2


The territorial level(s), the territorial unit(s), the variable(s) and reference year(s) are defined from left to right. Finally the selection is confirmed by selecting the small arrow on the far right (1). The options for downloading are displayed under the table (2).

Karte

Karte: This function generates printable maps for the selected indicator using the DUVA map tool. This evaluation option is already available for numerous indicators and is being expanded

further. The map tool functions are explained in greater detail in the second article in this chapter.


Strukturdatenatlas: Clicking this button takes the user directly to the corresponding indicator in the Urban Audit Structural Data Atlas. Conversely, at many points in the Structural Data Atlas a link to the corresponding data tables from the information portal exists. For more information on the functionalities of the Structural Data Atlas, please refer to the brochure „The German Urban Audit“⁷⁵ and the online user help „Structural Data Atlas - User manual“⁷⁶ mentioned above.

 Strukturdatenatlas

Grafik: This function generates a predefined graphic for the corresponding indicator. A feature currently (as of November 2015) still being tested will make it possible to generate graphics directly from datasets. This evaluation option will be offered for all indicators as soon as possible.

 Grafik

PDF-Dokument: The footnotes with sources and further information are currently only stored in encrypted numerical form in the database. The plain texts are compiled in a PDF document that users can access directly in the topic tree on the start page of the information portal.

 PDF-Dokument

Grazia Groß is the contact person for data collection of the KOSIS Association Urban Audit (Grazia. Gross@stadt.nuernberg.de).

⁷⁵ KOSIS Association Urban Audit (2013) (ed.): *The German Urban Audit – Comparison of cities in the European Statistical System* (www.staedtestatistik.de/fileadmin/urban-audit/UA_Broschuere_2013_final_EN.pdf).

⁷⁶ apps.mannheim.de/statistikatlas/ua/strukturdatenatlas/en/pdf/User%20manual%20for%20the%20Urban%20Audit%20Structural%20Data%20Atlas%20.pdf.

2 The DUVA map tool

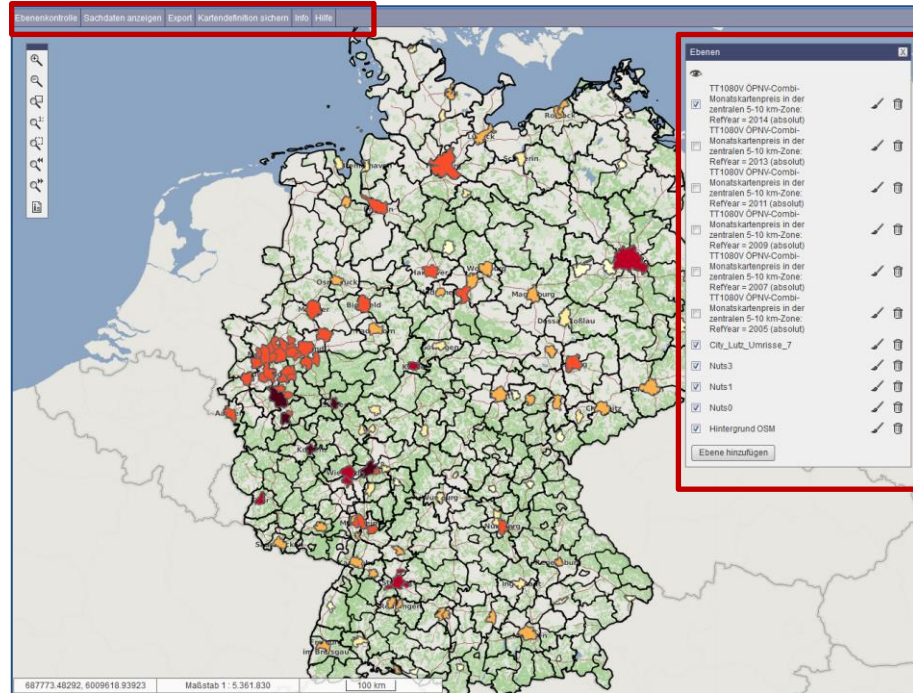
by Harald Scharbach



Clicking on the Map button opens the starting view of the map tool. It is possible to access the user help directly in the starting view; however, this article explains a few basic functions directly. The window “Ebenen” is opened first. This lets you check the boxes to whether to show or hide data, territorial boundaries and a background map.



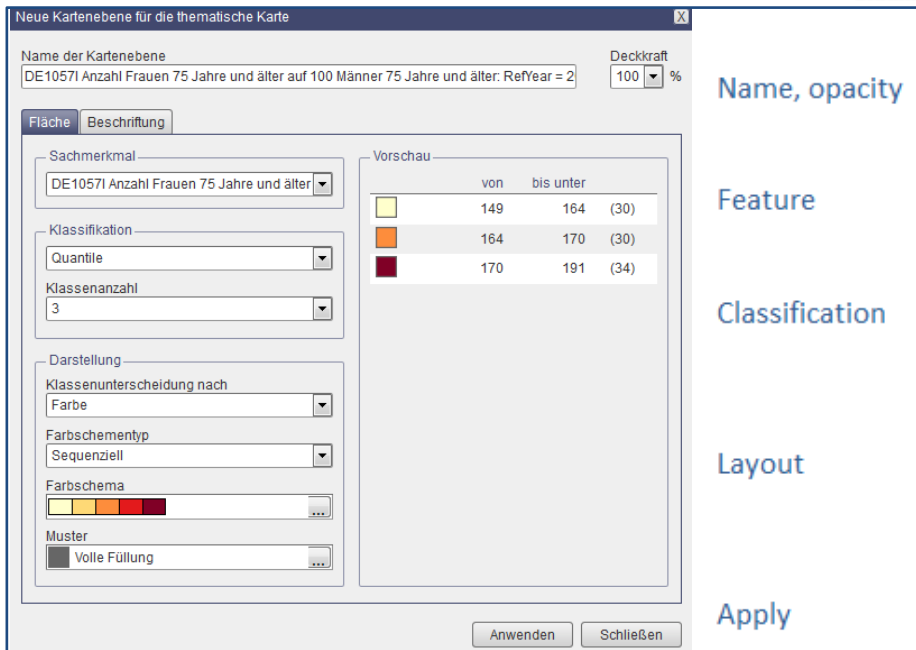
Accessing the user help (top)



Map tool start page: top left menu bar with selection buttons; level control on the right.



If you no longer wish to display a level, click the tiny wastebasket button – levels can be (re-)added and edited in a separate dialogue window that opens when “Ebene hinzufügen” is clicked. The characteristic to be displayed is selected under “Sachmerkmal”. This text is adopted for the name of the map level, and can be edited. This text appears in the display above the map caption. “Klassifikation” permits selection of different classifications and changing of the number of classes. The graphic can be configured (colours etc.) in “Darstellung”. When the setting “Deckkraft” is changed, for example, the background colour shows through the coloured elements in the map display. The button “Anwenden” generates the topic using the current settings.



Name, opacity

Feature

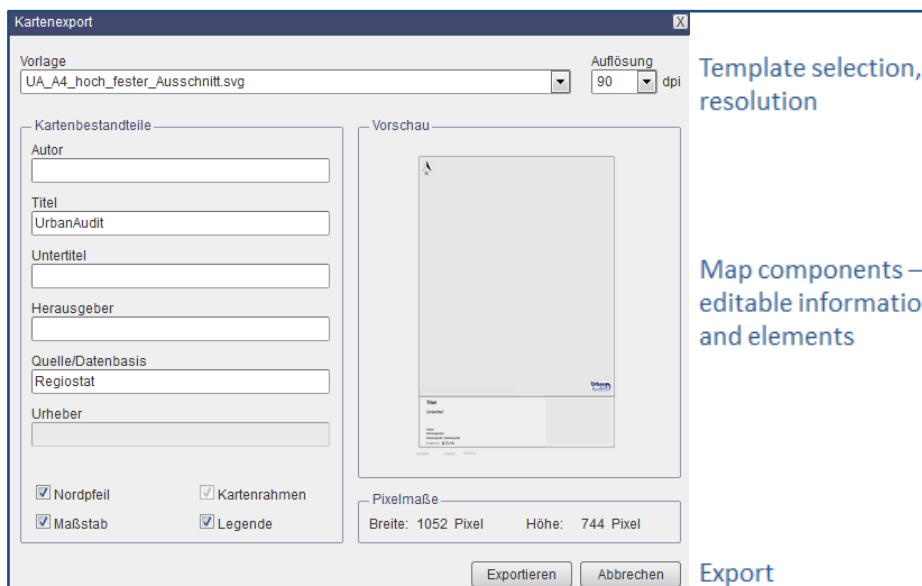
Classification

Layout

Apply

Map level

To export a map, users must first close the map level and click “Export” on the start page. This opens the map export window, which offers a choice of currently three predefined export templates. In the templates, a north arrow, a scale and a legend appear by default – if these are not desired, the corresponding check box must be cleared. If desired, the title, subtitle, author, publisher and data source can all be edited. Blank text fields are not displayed in the output. Resolution can be selected in predefined steps between 90 dpi and 600 dpi. When the “Export” button is clicked, the map is stored as a png-graphic.



Template selection, resolution

Map components – editable information and elements

Export

Harald Scharbach works for the Office for Citizen Service and Information Processing of the City of Freiburg im Breisgau (harald.scharbach@stadt.freiburg.de).

KOSIS Association Urban Audit



www.urbanaudit.de

Contacts and responsibilities

In Germany, the KOSIS Association Urban Audit acts as the project partner for data collection in support of the European urban comparison. In 2014, the City of Mannheim was elected as the Managing Office for a further two years. The project is supervised by that city's Municipal Statistical Office. The Managing Office undertakes business management, represents the Association within its mandate, leads the Steering Group, keeps the books and manages the funds of the Association..

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NUAC

In the European nations participating in the Urban Audit, the project is coordinated on the national level by the respective National Urban Audit Coordinator (NUAC).

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The Federal Statistical Office is the project coordinator for the structural data base and therefore the point of contact for Eurostat for all legal and financial matters. The contact person at DESTATIS is Dr. Susanne Schnorr-Bäcker.

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Federal Statistical Office



www.destatis.de

Eurostat Directorate E, Sectoral and Regional Statistics, has overall responsibility for the project. The contact person is Teodora Brandmüller in Sectoral and Regional Statistics.

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Eurostat



epp.eurostat.ec.europa.eu

The German survey, in parallel to the European survey on the quality of life from a citizen's perspective, is coordinated by the VDSt (Association of German Municipal Statisticians) Survey Working Group (VDSt AG Umfragen).

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VDSt AG Umfragen



www.staedtestatistik.de

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Charleroi Charleville-Mézières Chelm Chelmsford Cheltenham **Chemnitz** Cherbourg Chesterfield Chorzów City of London Ciudad Real Cluj-Napoca Coimbra Colchester Colmar Como Constanţa Córdoba Cork Cornellà de Llobregat Cosenza Coslada **Cottbus** Coventry Craiova Crawley Creil Cremona Croydon Częstochowa Dacorum Darlington **Darmstadt** Daugavpils Debrecen Delft Denizli Derby Derry **Dessau-Roßlau** Deventer Diyarbakır Dobrich Doncaster Dordrecht **Dortmund** Dos Hermanas **Dresden** Drobeta-Turnu Severin Dublin Dudley **Duisburg** Dundee City Dunkerque **Düsseldorf** Ealing East Staffordshire Eastbourne Ede Edinburgh Edirne Eindhoven Elbląg Elche Elda Elk Enfield Enschede Erfurt Erlangen Erzurum Espoo Essen Esslingen am Neckar Evry Exeter Falkirk Fareham Faro Ferrara Ferrol Firenze **Flensburg** Focşani Foggia Forlì Fort-de-France **Frankenthal** (Pfalz) **Frankfurt** (Oder) **Frankfurt am Main** **Freiburg im Breisgau** Fréjus Friedrichshafen Fuengirola Fuenlabrada **Fulda** Fürth 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Padova Palencia Palermo Palma de Mallorca Pamplona/Iruña Panevėžys Pardubice Paredes Paris Parla Parma **Passau** Pátra Pavia Pazardzhik Pécs Pernik Perugia Pesaro Pescara Peterborough **Pforzheim** Piacenza Piatra Neamţ Piła Piotrków Trybunalski Pisa Piteşti **Plauen** Plevén Plock Ploieşti Plovdiv Plymouth Plzeň Ponferrada Ponta Delgada Pontevedra Poole Pordenone Porto Portsmouth Potenza **Potsdam** Póvoa de Varzim Poznań Pozuelo de Alarcón Praha Prat de Llobregat, El Prato Prešov Preston Przemyśl Puerto de Santa María, El Purmerend Radom Râmnicu Vâlcea Ravenna Reading **Recklinghausen** Redbridge Redditch **Regensburg** Reggio di Calabria Reggio nell'Emilia Reims **Remscheid** Reus **Reutlingen** Reykjavík Richmond upon Thames Rīga Rijeka Rimini Roanne Rochdale Roma Roman Roosendaal **Rosenheim** Rostock Rotherham Rotterdam Rozas de Madrid, Las Rubi Ruda Śląska Ruse Rybnik Rzeszów **Saarbrücken** Sabadell Saint Denis Saint-Brieuc Saint-Etienne Saint-Quentin en Yvelines Salamanca Salerno Salford Salzburg **Salzgitter** Samsun San Cristóbal de la Laguna San Fernando San Sebastián de los Reyes San Sebastián/Donostia Sandwell Sankt **Augustin** Sanlúcar de Barrameda Sanremo Sant Boi de Llobregat Sant Cugat del Vallès Santa Coloma de Gramenet Santa Cruz de Tenerife Santa Lucía de Tirajana Santander Santiago de Compostela Sassari Satu Mare Savona Schiedam **Schweinfurt** Schwerin Sefton Seixal Sénart en Essonne Setúbal Sevilla 's-Gravenhage Sheffield 's-Hertogenbosch Shumen Šiauliai Sibiu Siedlce **Siegen** Siirt **Sindelfingen** Sintra Siracusa Sittard-Geleen Slatina Slavonski Brod Sliven Slough Słupsk Sofia Solihull **Solingen** Sosnowiec South Tyneside Southampton Southend-on-Sea Southwark **Speyer** Spijkenisse Split St Albans St. Gallen St.Helens Stalowa Wola Stara Zagora Stargard Szczeciński Stavanger Stevenage Stockholm Stockport Stockton-on-Tees Stoke-on-trent **Stralsund** **Stuttgart** Suceava Sunderland Sutton Suwałki Swansea Świdnica Swindon Szczecin Szeged Székesfehérvár Szombathely Talavera de la Reina Tallinn Tameside Tampere / Tammerfors Tamworth Taranto Târgovişte Târgu Jiu Târgu Mureş Tarnów Tarragona Tartu Tczew Telde Telford and Wrekin Terni Terrassa Thanet Thessaloniki Thurrock Tilburg Timişoara Toledo Tomaszów Mazowiecki Torbay Torino Torrejón de Ardoz Torremolinos Torrevecija Toruń Tower Hamlets Trabzon Trafford Trenchin Trento Treviso **Trier** Trieste Trnava Tromsø Trondheim **Tübingen** Tulcea Tunbridge Wells Turku Tychy Udine **Ulm** Umeå Uppsala Ústí nad Labem Utrecht Valence Valencia Valladolid Valletta Valongo Van Vantaa Varese Varna Västerås Veliko Tarnovo Velsen Venezia Venlo Verona Versailles Viana do Castelo Viareggio Vicenza Vidin Vigevano Vigo Vila Franca de Xira Vila Nova de Gaia Viladecans Vilanova i la Geltrú **Villingen-Schwenningen** Vilnius Viseu Vitoria/Gasteiz Vlaardingen Volos Vratsa Wakefield Wałbrzych Walsall Waltham Forest Wandsworth Warrington Warszawa Warwick Waterford Waveney **Weimar** Westminster **Wetzlar** Wien **Wiesbaden** Wigan Wilhelmshaven Winterthur Wirral **Witten** Włocławek Woking **Wolfsburg** Wolverhampton Worcester Worthing Wrexham Wrocław Wuppertal Würzburg Wycombe Yambol York Zaanstad Zabrze Zagreb Zamora Zamość Zaragoza Zgierz Zielona Góra Žilina Zlín Zonguldak Żory Zürich **Zwickau** Zwlle